REPORT

COMMON

HORIZONS:

The Role of Digital Public Infrastructures in Finance, Identity and Climate Justice

TECHNICAL DATA SHEET

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PRESS

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ABOUT US

Data Privacy Brasil is an organization that was born from the union between a school and a civil association to promote a culture of data protection and digital rights in Brazil and around the world.

Founded in 2018, Data Privacy Brasil Ensino emerged as a space to disseminate and innovate knowledge about privacy and data protection in the country. With content adapted to a more practical language, with exercises and case studies, this is a school for all those who are interested and want to delve deeper into the rich themes of privacy, data protection and new technologies.

The Data Privacy Brasil Research Association is a non-profit, non-partisan civil society organization that promotes the protection of personal data and other fundamental rights from a perspective of social justice and power asymmetries.

As of 2023, the two institutions will join forces to form a single organization, maintaining the same principles and activities. With the support of a multidisciplinary team, we provide training, events, certifications, consultancy, multimedia content, public interest research and civic audits to promote rights in a data-driven society marked by asymmetries and injustices. Through education, awareness raising and mobilization of society, we aim for a democratic society where technologies are at the service of people's autonomy and dignity.

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DATA PRIVACY BRAZIL AND THE DIGITAL PUBLIC INFRASTRUCTURE AGENDA

In 2024, Data Privacy Brasil plunged into the topic of Digital Public Infrastructures (DPIs) as one of its institutional priorities. Both in terms of research and national and international advocacy, we have brought the issue to the agenda of digital rights and public policies, from the perspective of data justice. This means that among the proposals for governance, we are looking for a holistic one in which the asymmetries of power and information are reduced, and whose processes involve the public interest through democratic participation.

One of our most important jobs this year was leading the Inclusive Digital Transformation task force of T20 Brazil, the G20 think tank engagement group. The theme of "digital government" was one of the priorities of the Brazilian presidency and also the subject of the work of the T20, which received dozens of policy briefs exploring this topic. Among the final recommendations of our task force, we put forward that the G20 countries should develop a common set of non-binding principles, especially for data justice, interoperability and openness, supported by a permanent research fund to evaluate the implementation of G20 policy recommendations. This would guarantee effective participatory governance, ensuring accountability, sustainability and inclusive digital development.

Data Privacy Brasil's activities in T20 are based on other activities developed in the areas of research and advocacy in recent years. In this regard, it is worth highlighting the project "Citizen Architectures in Digital Identity" supported by Ripple. This exploratory project aims to relate the themes of DPIs and digital identity to the promotion of fundamental rights, such as the protection of personal data, in an integrated way with the implementation of digital structures and choices of information architectures, ultimately aiming to create a public arena for debates on digital identity as a component of a digital public infrastructure, with a view to broadening civic participation in the design of this important information ecosystem.

During its implementation in 2024, Data Privacy Brasil published the booklet "The Infrastructure of Identity: The Influences of a Digital Identity as an Application of DPI", aimed at helping public and private agents working in the identity ecosystem. This booklet deals with various topics related to the DPI debate, including the definition of a digital public infrastructure, its applications, functions and purposes.

In 2024, Data also started the project "Digital public infrastructure and digital public goods in environmental policies", with the support of the Digital Public Goods Allian-

ce. The research sought to articulate the concept of DPI with that of digital public goods (DPGs), focusing on DPIs and DPGs that help combat climate change, bringing examples from Brazil, such as the Rural Environmental Registry (CAR), and initiatives around the world that show how data processing can bring more informed environmental policies. The project resulted in the publication of the report "Digital public infrastructures and digital public goods to combat climate change: Cases from Brazil".

We also raised the issue at an international level in our contributions to the UN Global Digital Compact, an annex to the Pact for the Future. In our contributions, we pointed out how DPIs and the vision of data as public goods are essential for fulfilling the agenda of the Sustainable Development Goals (SDGs), as well as contributing to maintaining the multistakeholderism that has historically been present in the governance of the Internet and emerging technologies. The agenda was given a dedicated section in the final text of the Pact, within the first of the document's five major objectives, relating to accelerating progress on the SDGs.

Finally, Data Privacy Brasil also took part in the discussions on DPIs during the World Telecommunication Standardization Assembly (WTSA-24), the main event of the standardization sector of the International Telecommunication Union (ITU-T). The topic of Digital Public Infrastructures applied to the telecommunications sector and information and communication technologies is gaining more and more ground within the ITU, which has led to the approval by the Union's standardization sector of a new resolution on improving standardization in digital public infrastructures (Resolution 103).

In the wake of these activities, we organized the event "Common Horizons: the role of digital public infrastructure in finance, identity and climate justice" in July at Dataprev's headquarters in Brasilia. The event was held as a parallel activity to T20 and was supported by three international organizations - the Digital Public Goods Alliance, the ODI and Ripple. Divided between exhibition panels on the concept of DPI and workshops on the three thematic tracks chosen, the event brought together national and international experts from various sectors, serving as a catalyst for the debate on DPI, one of the pillars of Brazil's inclusive digital transformation. The results of the discussions are presented in this report.

EXECUTIVE SUMMARY

The concept of Digital Public Infrastructures (DPIs) is a disputed field, especially with regard to the adjective "public" that qualifies this digital infrastructure. Despite the conceptual differences, which have practical implications, DPIs must ultimately serve the public interest and promote and respect human rights and fundamental freedoms.

The issue, which is considered to cut across different areas of life, has gained traction in recent years on both the national and international stage. At the international level, DPIs have gained notoriety in the public debate, especially due to India's presidency of the G20 in 2023.From a perspective of continuing the work done by a G20 presidency from the Global South, Brazil, in 2024, dedicated efforts to maintaining the public arena of debates in the G20 forums on this topic, in view of Brazil's history of using data to formulate public policies and digitizing government. In this sense, under the conceptual umbrella of "digital government", the G20 Digital Economy Group resumed discussions on DPIs during the Brazilian presidency as an opportunity to catalyze different digital public infrastructure projects that are already taking place around the world.

In turn, the national plan also reflects the centrality of DPIs in thinking about the processes of digitizing government, which is evident in the use of the terminology of Digital Public Infrastructures in the National Digital Government Strategy, published in June 2024.

It is in this context of the effervescence of discussions at national and international level about DPIs and considering Data Privacy Brasil's work on this topic and on Task Force 5 on Inclusive Digital Transformation of Think20 (T20) - the G20 engagement group for think tanks and research centers - in which the event "Common Horizons: the role of digital public infrastructure in finance, identity and climate justice" is located.

The main objective of this event was to deepen consensus and debate about the conceptual disputes surrounding DPIs and their possible applications in various areas of life and economic sectors, such as the development of identity systems, the improvement of the financial sector, as well as the use of DPIs to promote climate justice.

This report therefore describes the panel discussions and thematic workshops at the event. In order to lay the foundations for the activities, the sessions ranged from the debate on the concept and fundamentals to the applications of DPIs in different sectors.

The first panel, "Foundations of digital public infrastructure", explored the fundamental concepts of DPI and the interpretation of the "public" element of these technologies, highlighting characteristics common to these services such as shared systems, with open and interoperable standards, and oriented towards common goods. The panelists - representatives from government, academia and civil society - went through the history of terms related to DPIs, reflecting on the non-neutrality of infrastructures, the centrality of the data theme in this debate and the openness to the participation of different sectors in the development of these technologies. The panel also raised concerns about the concentration of value generated from these infrastructures in the private sector and discussed the importance of participatory initiatives, which broaden the dialogue between different governments, as well as between government and other sectors. In this sense, there was also an emphasis on Brazilian regulatory frameworks, such as the Brazilian Civil Rights Framework for the Internet (Marco Civil da Internet) and the General Data Protection Law (Lei Geral de Proteção de Dados), which present norms of trust and safeguards that are prerequisites for DPIs, also reinforcing the collective dimension of the right to data protection.

The second panel, "Digital public infrastructures in action: a sectoral approach", discussed DPI applications in specific sectors, highlighting experiences in the financial sector,environmental action and digital identity initiatives. Again, the discussion on data was highlighted: the government raised the need for integrated governance and strategic planning for the use of data to generate public value. Civil society speakers focused on the synergy between DPIs and digital public goods, highlighting the opportunities of existing applications, as in the case of the Rural Environmental Registry (CAR) in Brazil. The panelists also highlighted the need for participatory governance of these infrastructures, emphasizing the relationship between participation and the requirement for transparency, security and privacy, addressing the risks of using DPIs and the strategies to mitigate them, focusing on international examples of the use of digital identity. From the financial sector, the Brazilian government's innovations in the use of DPIs to expand financial inclusion were highlighted, exploring, among others, the case of Pix.

Finally, the report provides a detailed description of the thematic tracks that took place in the afternoon of the event, in three different rooms. The identity track was divided into small groups to debate questions posed by the Data Privacy Brasil team on the definition of DPI, identity initiatives and their impacts. The report includes discussions on identity, authentication, interoperability, security and inclusion, emphasizing the importance of thinking about risks and rights from the very development of the identity technology tool.

The financial track was divided into two parts, where the concept of DPI and its relationship with the Sustainable Development Goals (SDGs) were discussed first, and then focused on the implementation of financial DPIs based on existing cases.

The aspect of inclusion was much debated, starting with the options for expanding access to credit, talking about the Open Finance and Cadastro Positivo initiatives, as well as challenges for their governance and infrastructure (from the physical, in terms of hardware, to the digital). This led to the topic of massive data collection by this sector and its advantages and risks for the population, which would require greater cooperation with other authorities, such as the National Data Protection Authority (ANPD).

The climate justice track also started from existing cases of DPI use in the environmental agenda, especially international examples of monitoring, georeferenced maps, uses in agriculture, and open data updated in real time. It then focused on the Brazilian scenario and the case of the Rural Environmental Registry (CAR), a system managed by the Ministry of Management and Innovation in Public Services (MGI) for environmental control and monitoring. The topic of data governance was also on the agenda, focusing on transparency measures, social participation and efficiency indicators.

The report also includes a concluding section, pointing out the need to centralize a previously dispersed and rather initial debate on the subject of Digital Public Infrastructures. The event showed that the plural participation of various actors and sectors will be increasingly necessary in the construction and maintenance of these services, aimed at the public interest and integrated with the rights and needs of the population, while also contributing to a global logic of sustainable development.

CONTENTS

INTRODUCTION

LOCATION OF THE DEBATE HISTORICALLY – G20

The umbrella topic of Digital Public Infrastructures (DPIs) has gained prominence on the international stage, from the agenda of the Indian presidency at the G20 in 2023, to more recently in UN proposals. India has sought to emphasize its proposal by conceptualizing the term and its existing services. According to the documents produced in 2023, DPIs are:

A set of shared digital systems that must be secure and interoperable, and can be built on open standards and specifications to provide and ensure equitable access to public and/or private services on a societal scale. These systems are governed by enforceable legal frameworks and enabling rules to drive development, inclusion, innovation, trust and competition, and respect human rights and fundamental freedoms.

In addition, the Indian presidency recognizes that, based on the different contexts and characteristics of the G20 countries, this concept is constantly evolving. For Brazil, the presidency of the G20 in 2024 has been an opportunity to catalyze this agenda and advance initiatives that have been in the works for years; after all, the country has a strong history of using data for public policies. As such, the Brazilian presidency has made the topic of "digital government" one of its priorities in the area of Digital Economy, highlighting a different terminology in order to also work on its existing services (such as gov.br) and further develop this understanding. In its concept note, the Brazilian government once again uses the term "DPI", "IPD" in Portuguese, using digital government to build a reliable and inclusive DPI.

In these terms, the G20 sought to debate, during 2024, a set of principles for digital identity - one of the primacies of the Brazilian government; parameters for data sharing between public sectors and between government and the private sector; and how DPIs can foster public values and a meaningful ecosystem for both society and the private sector.

Beyond the G20 process, the very notion of DPIs shows that this is a very cross--cutting issue, so that other international processes and organizations are impacted by the emergence of digital public infrastructures. This is the case of the International Telecommunication Union (ITU), the UN's specialized agency for telecommunications issues, which over the years has also started to address issues related to the digital agenda, such as Internet access and artificial intelligence - through initiatives such as AI for Good. More recently, it has shown an interest in DPI-related topics, especially since the ITU deals with a critical infrastructure sector and is the mandate holder for the activities of the World Summit on the Information Society (WSIS).

THEORETICAL NOTE FROM WHICH WE START

The public debate on Digital Public Infrastructures in Brazil, as described above, took place relatively quickly. Less than a year passed between the initial formulation of this concept in an institutional space and its use to guide public policy and the Digital Economy Working Group at the G20. In this sense, Data Privacy Brasil has initiated research and advocacy projects to seek to understand the nuances of the DPI concept and its necessary connection with the personal data protection agenda.

We observed that during the process of building DPIs, not only is a special look required at how this data sharing infrastructure will be created and the governance of these new information flows, but also a reorientation of how we view data governance in public policy digitization processes.

Firstly, the concept of DPI is a field of dispute in itself. In particular, the notion of "public infrastructure" generates various possible understandings, from which governments should lead this process, to an infrastructure that serves the public interest, to the idea of "maximizing public value". As can be seen, the definition of the Indian G20 presidency and the definition in the "National Digital Government Strategy" present some divergences:

G20 DEFINITION

A set of shared, secure, interoperable digital systems. These systems must be able to be built on open norms and standards to deliver and provide equitable access to public and/or private services at scale. These systems must be governed by enforceable legal frameworks and rules to drive development, inclusion, innovation, trust and competition, and respect for human rights and fundamental freedoms.

This concept is only explicit in the G20 definition. It is important to recognize the interoperability and security nature of systems so that they can be used as a ground for other applications based on this foundation, infrastructure.

One of the pillars of the DPI is its open technology element, but this feature is not reinforced in the decree's definition.

"Equitable access at scale" is similar to the idea of "universal scale" in the Decree's definition.

The last part is identical. DPI should promote the respect for human rights and fundamental freedoms, so efforts should be made to understand how DPI applications affect people's rights.

DECREE DEFINITION

Digital public infrastructures - DPI: structuring solutions, transversal to various public policies, which adopt network technology standards built for the public interest, which allow universal scale, and enable the orchestration of uses by various players, from the public and private sectors, in an integrated manner in physical and digital channels, governed by applicable legal frameworks and enabling rules to promote development, inclusion, innovation, trust, competition, respect for human rights and individual freedoms.

An explicit concept only in the Decree, it reinforces DPI's commitment to the "public", which this booklet associates with the term "public value", as will be described in this topic.

The Decree's concept guarantees openness to other DPI-forming agents, not just the public sector. This understanding is in line with the concepts presented in this booklet.

Both definitions recognize the use of DPI for public and private services.

The last part is the same as the G20 definition.

both definitions recognize the use of DPI for public and private services

Secondly, the creation of DPIs represents more than just the digitization of public services and policies. It is the creation of a foundational layer through which not only governments and organizations can optimize their service delivery, but technologies can be developed and civic participation can take place. In this sense, more voices need to be heard in this process.

From these first two points, we identified that the study of the DPI agenda was still restricted to a small group of organizations. As we were at a decisive moment in terms of how this concept would guide the Brazilian agenda, it would be necessary to create a more inclusive forum and bring the views of organizations from different fields to the topic.

Thirdly, we assessed the cross-cutting nature of the DPI agenda in our research and some windows of opportunity. Since what is being debated is the creation of new infrastructures, it is necessary to connect discussions that take place in separate sectors in order to find common ground that should guide the creation of these infrastructures. Based on this, three tracks were designed - Digital Identity, Financial Inclusion and Climate Justice. These are fields made up of researchers, organizations and public bodies that sometimes don't have a constant dialogue, but which have expertise and perspectives that are important to share and to find common ground in terms of the needs and innovations generated by one of them so that the infrastructure being created can maximize its benefits and minimize its risks.

Finally, we have adopted the concept of a fair information ecosystem as the guiding principle for Data Privacy Brasil's work, and this is reflected in the choices of object, methodology and participants in the event, with the aim of debating a concept that is still little explored by civil society. There is no better case study for mobilizing this concept than the Digital Public Infrastructure agenda. Drawing on our expertise in the protection of personal data and the regulation of new technologies, we seek to bring together actors with other expertise (such as labor protection, public transparency, the environment, citizen data generation, technological development, free software, consumer protection) to exchange lessons, seeking to form a more complete picture of which social risks must be faced and mitigated in the construction of DPIs, beyond those traditionally linked to data protection and governance, thus composing a panoramic view of data justice.
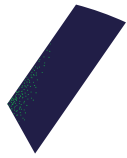
PARTICIPATION RULE – CHATHAM HOUSE

The activity conducted on the thematic tracks was closed and accessible only to those invited. It was agreed with all participants to respect the "Chatham House" confidentiality rule. This means that participants are free to use the information received, but neither the identity nor the affiliation of the speakers, nor that of any other participant, may be revealed.

For this reason, all mentions of the debate outside the event will be anonymized. The aim of this was to allow people to feel comfortable expressing their opinions in an environment of mutual trust.

EVENT ASSUMPTIONS

- ## MULTISTAKEHOLDERISM

Digital public infrastructure is a topic that transcends sectors and disciplines, requiring collaboration between government, private initiative, civil society and academia. Multistakeholderism is therefore an essential pillar of the event, as it recognizes that robust and innovative solutions can only emerge from a collaborative and inclusive approach. By bringing together different perspectives, the event fostered a rich and plural dialog, capable of aligning interests and building strategies that reflect the needs of society as a whole. Through the participation of representatives from the private, public, academic and organized civil society sectors, it was possible to understand the visions of different groups on DPI.

- ## GENDER AND RACIAL EQUITY

Recognizing that digital transformation must be inclusive, the event actively promoted gender and racial equity in its discussions, organization and participation. The aim of this equity was to enrich the debate with the diversity of experiences and perspectives that are fundamental to formulating fairer digital public policies. The presence of plural voices is essential to ensure that the proposed solutions meet the demands of historically underrepresented groups.

- **INCLUSION GRANTS**

To ensure that the event is truly accessible and representative, around 10 financial grants were offered for participation in the event. The aim of these scholarships was to make it possible for people who face economic or social barriers to take part, ensuring that individuals from different backgrounds and realities can contribute their perspectives and knowledge. This initiative reinforces the event's commitment to inclusion, broadening the diversity of participants and ensuring that no voice is left out.
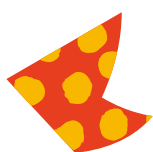
COMPOSITION OF THE EVENT

The event was attended by representatives of the following organizations, grouped according to their sector:

- **ACADEMIA**
  - IIPP/University College London
  - University of Brasilia
  - Maceió Urban Planning and Research Institute / Cities Coalition for Digital Rights
  - Federal University of Goiás
  - FGV
  - Insper's Center for Racial Studies
  - Nupef Institute

- **THIRD SECTOR**
  - MTST
  - Aapti Institute
  - INESC
  - Digital Public Goods Alliance
  - GIZ
  - Abiec
  - Institute for Society, Population and Nature ISPN
  - Open Knowledge Brazil
  - Innovation Foundation for Democracy
  - IPAM
  - CNA
  - Global Witness
  - Heinrich Böll Foundation
  - Imaflora
  - Fiquem sabendo

- Life Center Institute
- Idec
- Data Labe
- Gira Coletiva
- Coalition T
- ODI
- Lemann Foundation

- **PRIVATE SECTOR**
  - Bank of Brazil
  - Itaú Bank
  - Federal Savings Bank
  - Google Brazil
  - Netbr
  - AWS
  - Nubank
  - Incognia
  - Coop Vision
  - Unique
  - Startup Gringo
  - Genesis Analytics
  - Mastercard
  - EB Capital
  - LFM Consulting
  - Nic.br
  - Will Bank

- **GOVERNMENT SECTOR**
  - Ministry of Agriculture and Livestock
  - Ministry of Education
  - Federal Attorney General's Office
  - Ministry of Health
  - Ministry of Finance
  - Embrapa
  - Piauí's Secretariat for Artificial Intelligence, Digital Economy, Science, Technology and Innovation
  - Ministry of Management and Innovation in Public Services
  - Serpro
  - ICM Bio
  - Institute for Applied Economic Research - IPEA
  - Dataprev
  - Central Bank of Brazil
  - CGU
  - Ministry of Social Development and Fight against Hunger

DYNAMICS OF THE EVENT – EXPOSITORY PANELS IN THE MORNING AND TRACKS WITH PARTICIPATORY WORKSHOPS IN THE AFTERNOON

The event took place in person over a full day and was divided into two parts: we started in the morning with panels and presentations by experts; in the afternoon we returned to participatory debates conducted in workshop format for each thematic track. Participants were divided into small groups for in-depth analysis of the digital public infrastructure debate based on the axes: digital identity, climate justice and financial inclusion. At the end of the day, we concluded with a closing session, in which the participants of the tracks were invited to present the debates and consensus, with the aim of disseminating the knowledge generated in each track to the other participants.

Three panels were held in the morning, the first being the opening panel, with the participation of Mariana Rielli, co-director of the Data Privacy Brasil Research Association, Flávio Ronison, representing Dataprev, and Luanna Roncaratti, representing the Digital Government Secretariat of the Ministry of Management and Innovation in Public Services (MGI). The second panel was dedicated to "Foundations of digital public infrastructure" and the third dealt with "Digital Public Infrastructures in action: a sectoral approach", as described below.

FUNDAMENTALS

PANEL 1 – FOUNDATIONS OF DIGITAL PUBLIC INFRASTRUCTURE

The first panel of the event, called "Foundations of digital public infrastructure", was moderated by Stephanie Diepeveen (ODI), who sought to start precisely from the concept of DPI and list characteristics common to these services, such as shared systems, open and interoperable standards, and orientation towards common goods. In other words, the "public" in DPI refers to society, not just the government. She therefore opened the panel by questioning what public value DPIs actually bring.

Beatriz Vasconcelos (UCL) recovered other terms used in Brazil to refer to these services, until then called "digital government" or "electronic government", "digitization of services", and "government as a platform". The academic questioned the non-neutrality of infrastructures in general, bringing this concern to digital as well.

Francisco Gaetani (MGI), who represents one of the ministries leading this agenda in the executive branch, outlined the actions that have been promoted to develop DPIs in the most participatory and plural way possible. Gaetani recalled the importance of dialogue with the governments of other countries, with non-profit organizations and with the engineers of large technology companies.

Astha Kapoor (Aapti Institute) drew attention to the private sector, emphasizing the high amount of data generated by DPIs, the need to think about the value of this data and how companies know our preferences. Kapoor questioned how to promote decentralization and ensure accountability, and asked what Brazil brings to its DPI approach, where open government is very important. One differentiation Kapoor made with the Indian approach is that in her country it was a top-down process, and that Brazil has bottom-up participation as a possible advantage.

Finally, the panel's closing speech came from the director of Brazil's National Data Protection Authority (ANPD), Miriam Wimmer, who sought to answer Kapoor's question about what Brazil brings new to DPIs. Wimmer recalled Brazil's strong history with digital rights - laws such as the Brazilian Civil Rights Framework for the Internet (Marco Civil da Internet - Law No. 12965/2014), the General Data Protection Law (Lei Geral de Proteção de Dados - Law No. 13709/2018) and the constitutionalization of the right to the protection of personal data (Constitutional Amendment No. 115/2022), which bring norms of trust and safeguards that are prerequisites for DPIs. The director emphasized that the right to data protection is a social dimension, not an individual one, and that in addition to current legislation, the Federal Supreme Court has ruled on important cases that have established due process, such as precedents for data sharing.
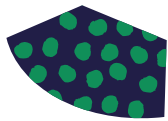
PANEL 2 – DIGITAL PUBLIC IN-FRASTRUCTURES IN ACTION: A SECTORAL APPROACH

The second panel, "Digital Public Infrastructures in action: a sectoral approach", focused on DPI sectoral debates. It was moderated by Louise Karczeski, from Data Privacy Brasil, and included Marcel Beer Kremnitzer Beer Kremnitzer Beer, representing the Central Bank of Brazil, Jameson Voisin, from the Digital Public Goods Alliance, Otávio Neves, from the Brazilian Office of the Comptroller General (CGU), and Maria Luciano, representing the Brazilian Institute of Defense of the Consumer (Idec).

With regard to a data-driven infrastructure for public authorities, Otávio pointed out that data is still perceived as operational assets held by a body. In other words, public bodies collect data for specific purposes, which, after use, must be stored securely, without taking on a relevant role, or without generating a link with other actors. Or data, including personal data, is collected without any specific motivation or reflection, but only because of the tradition of requesting it.

There is little guidance and planning on who the agents are that use the data, for what purposes it can be used, and what information is needed to do so. As a consequence of this lack of planning on data governance, public policies that depend on it are jeopardized. Data should not only be the work of the information technology areas, since other areas of an organization can benefit from its proper use. Data can be value-creating assets, because it can provide useful information for each agency.

Neves pointed out that the CGU is developing actions with public bodies to raise awareness of the importance of proper data processing. In this way, public bodies begin to perceive data as non-proprietary assets, demonstrating how they can generate value for the entire chain that makes up a given issue. Through this process of transparency, society takes on roles that go far beyond its consultative role. The CGU seeks to promote the participation of various actors in this data governance, from the design of infrastructures to making choices that are appropriate to the challenges it intends to face.

Faced with the development of different digital concepts, Jameson discussed the link between the elements of DPI and digital public goods (DPGs). For him, DPI requires collaboration between different actors and, given this complex ecosystem, DPGs work precisely as accelerators of the transformations inaugurated by DPI. DPG applications in DPI seek to promote transparency, trust and inclusion so that the assumptions of DPI are realized in their applications.

For an application to be classified as DPG, it must meet certain parameters, including openness, to ensure that specific objectives are met. An example of a DPG in DPI are the digital identity tools to solve identification deadlocks for climate refugees in countries such as Uganda, Kenya and Cambodia. Through common DPG parameters, these solutions do not become information silos and vendor lock-in practices[1] are avoided. In Brazil, Jameson points out that the Rural Environmental Registry (CAR) system can be interoperable and the basis for other applications, which is tangential to DPG concepts and parameters. Thus, for him, the environmental justice sector is one of the main sectors to be affected by the development of a DPI, especially if Brazil already uses the solutions developed so far.

In a critical perspective on DPI, Maria Luciano highlighted the risks of DPI related to privacy and security, with cases of data leaks and data exploitation practices. These activities impact not only data subjects, but also other people, especially in how they are classified by technologies and services are priced based on this data. Another category of risks concerns governance, given the lack of social participation, transparency, accountability mechanisms and tools for collective rights protection. These issues lead to a discussion about how to include the private sector while maintaining the public interest in DPI actions, without, for example, creating market reserves, as happened in India.

Regarding participation in the construction of DPI solutions, Maria Luciano pointed out the need for efforts to take public opinion into account, given the lack of a critical perspective in these spaces. There is a prevalence of an exclusionary and techno-solutionist language in which technological tools are promoted as the only appropriate tools for concrete challenges. For example, in Kenya, investment has been made in digital identity solutions, while other areas have been left without resources, such as the fight against hunger.

Digital solutions are not widely accessible in Brazil, so other offline solutions must be available so that people who do not have access to digital media can assert their rights. Maria Luciano also points to the lack of mechanisms for redressing violated rights and complaining about system inconsistencies. All these risks must be minimized by implementing mitigation measures, such as continuous assessment of the impacts of DPI in the face of economic, social, climate and privacy risks, as well as capacity building among all those affected, access to justice and the promotion of initiatives guided by community values.

Finally, Marcel Beer Kremnitzer presented three infrastructures linked to the fi-

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1   In free translation, it can be understood as "vendor lock-in". In the field of technology, it occurs when a solution is sold, but the person or organization that buys it can hardly switch suppliers. This can happen for technical reasons (incompatibility of systems, lack of inter-portability, etc.) or even administrative reasons (contractual clauses, lack of support).

nancial sector run by the Central Bank, namely Pix, Open Finance and Drex. One of the main impacts of Pix has been the financial inclusion it has caused, since simple transactions, previously made in analog, have become digital. Records indicate that more than 90% of financial transactions carried out with Pix are under 200 reais, which shows the capillarity of this solution. Open Finance aims to empower consumers to benefit from sharing their personal data. The rules for this infrastructure to work are made by the Central Bank itself, which enables secure data sharing, but this is bilateral, i.e. between financial institutions, not including the Central Bank. Drex, unlike Pix and Open Finance, is still in its pilot phase and aims to be a digital extension of paper money using distributed ledger structures, or Distributed Ledger Technology (DLT).

The panel discussed possible DPI applications in different sectors, including climate justice, identity and finance, with representatives from the third sector and

THEMATIC
DIVISION

the public sector, which plays a central role in infrastructure development.

TRACKS

- **DIGITAL IDENTITY**

The digital identity track was attended by an average of 15 experts from different sectors - private, public, academia and the third sector - who work on identity issues and applications. These professionals were divided into three groups to allow in--depth discussions guided by questions produced by Data Privacy Brasil. The questions were organized into three blocks: the first on identity initiatives, the second on the definition of DPI and, finally, on the impacts of identity as a DPI application.

At first, the groups debated and reacted to the provocations in the three blocks for about an hour. After that, the groups presented their interpretations and possible answers to the guiding questions to the other track participants. In this way, it was possible to share the groups' conclusions with the track, so that the discussions could be compared and the divergences and convergences between the groups could be seen.

In the first block of questions, regarding ID initiatives, the groups looked at the purpose of identity, its uniqueness, the function of biometrics and whether some examples were digital identities or not. The first group highlighted the difference between authentication and identity, the latter being made up of attributes that make a person unique, such as their name, date of birth, social ties and relationships they have, such as where they work or study, marital status, affiliation and other people they relate to. For the group, identity is an officially recognized document, like the Work and Social Security Registry (CTPS) and the Individual Taxpayer Registry in Brazil (CPF), which means that its reliability must be distributed, the identity must be accepted by all the agents who use it. For this reason, solutions such as the Gov.br login would not be identity because they would not necessarily be recognized in all spaces.

The second group differentiated between the concepts of identification and identity, the former being linked to a process of accessing spaces with a login and password, like an authentication process. Identity, on the other hand, is capable of singularizing and uniquely identifying a person in relation to a body or entity. This identity is made up of biographical and biometric elements, so privacy must be considered from the outset when planning and implementing the technologies involved in developing an identity system. Thus, the CNH Digital (the digital National Driver's License), the Gov.br login would be digital identities, but social network accounts and single sign-on solutions provided by them would not be identities, but forms of

identification.

For the second group, identity can be classified as functional or foundational, the latter being a first manifestation on which other identities are based, such as the relationship between the national identity card and the CNH or professional cards, such as the OAB (Brazilian Bar Association) and the Crea (Regional Council of Engineering and Architecture), which give access to specific functions. The identity must therefore have layers of security and be recognized by regulation.

The third group discussed whether in order to be considered a digital identity it is necessary to have capillarity, be accepted in various environments and be authenticated. Thus, the Gov.br login, digital certificates, accounts on networks with single sign-on solutions, and accounts at banking institutions would be digital identity solutions, but the CNH Digital and social network accounts would not.

Next, the three groups were asked to identify which elements are indispensable in an infrastructure and therefore define the DPI itself. Although the members of the tracks did not necessarily know the meanings of a DPI, this theme was developed in the previous panels in order to allow the participants to delve deeper into the elements that are indispensable or not to the infrastructure.

For the first group, DPI would be a digital infrastructure that can be used by everyone, in order to enable the resources needed to uniquely identify someone. The second group highlighted the role of interoperability as a requirement of DPI; it would be essential for different identities to access different infrastructures. Identity must be able to circulate between DPIs, without these being barriers to usability and the flow of identity data.

The third group believes that DPI is similar to the concept of government as a platform, being a new take on a more established theme. It would therefore be necessary to understand how DPI concepts relate to the Brazilian reality, in order to geopolitically locate the discussion. For the group, the state would be the authority responsible for people's identity, but questions were also raised about the issuing of identity as a form of power centralized in an agent. Elements such as scalability, interoperability and open standards would be essential for a DPI.

In the third block, the debate centered on the impacts of a digital identity as an application of DPI, as well as its benefits, risks and limits. The first group identified as a risk the possibility of excluding certain groups and intersectional aspects, such as people with disabilities, women, black people, indigenous people and trans people. This is because, during the very development of the internet, these groups were neglected, making their needs and characteristics unfeasible. In addition, decentralized identity models, with distributed registries, could be tools to help with issues of fraud, exclusion and "ownership" of personal data, since the identified person would then be at the center of the identity.

The second group drew attention to the implementation of governance practices, transparency, digital literacy, and plain language communication so that a DPI does not deepen analog problems. They pointed out that there is an opportunity to promote internet access and the inclusion of vulnerable groups through existing spaces and tools. One example would be the Manzanas del Cuidado in Bogotá, a physical space where people are available to help others access digital services and, through these, exercise their rights. The idea is that digital is one more layer of care, which is also considered in access to other rights, and not one more barrier.

The third group believes that the decentralization of the structure would be a matter of the system's digital security, and would not be related to performance. At the same time, the development of digital infrastructure indicates that more data is being produced, including personal data, which makes it easier to share and creates new functionalities for this data.

Finally, the groups shared their syntheses and knowledge with the track participants. At this point, it was possible to identify that the risks and limits of identity systems are linked to the concept of identity itself. The risks of not having an inclusive and universal identity put a strain on the objective of building an identity system, since if the risks are not considered from the moment the identity is developed, the system may not achieve its goals.

- **FINANCIAL INCLUSION**

The debate on the financial track was structured in two blocks: the first was guided by broader questions about digital public infrastructures - the concept, the financial aspect and the relationship with the Sustainable Development Goals (SDGs). The second block focused on more practical issues related to the implementation of financial DPIs, based on existing cases. There were 10 professionals present, representing different sectors, who were divided into two groups.

In the first block, the debate on the definition of DPIs led the groups in similar directions, approaching DPIs from different layers. One group highlighted three layers that make up these infrastructures: the physical layer, the platform or software layer and the public layer (referring to the public value of DPIs, how they meet the rights and needs of the population, how they interact with them, etc.).

The other group highlighted similar but more specific aspects in relation to the different layers that make up DPIs, such as: connectivity, processing and storage capacities; DPI traction for different countries in a digital sovereignty agenda; data; applications and regulatory infrastructures.

With regard to the use of DPIs in the financial sector, both groups discussed appli-

cations beyond payment functionalities - such as PIX - and how these infrastructures could promote financial inclusion by expanding access to credit, for example. Open Finance initiatives were addressed as opportunities, but also problematized through some aspects such as privacy (in relation to sharing the population's financial data); governance (difficulties in guaranteeing legal security in the use of this data) and more basic issues such as the effectiveness of expanding access to credit for financial inclusion.

Both groups identified direct links between financial DPIs and some of the SDGs: poverty eradication; decent work and economic growth; reducing inequalities; and peace, justice and effective institutions. One of the participants expressed that financial DPIs are new possibilities for interaction, which consequently are new possibilities for the market and development, i.e. an expansion of alternatives that thus boost the SDGs.

In this block, the following stand out: DPI opportunities for the state such as minimizing efforts, optimizing services and saving financial and personnel resources; DPI opportunities for citizens: improved access to services and legal support; challenges for the governance of these infrastructures (interoperability and harmonization between different sectors and databases; adequacy between technological and regulatory infrastructures); challenges for the meaningful participation of society in the development and benefit of these infrastructures (meaningful connectivity - access to devices, internet, literacy, etc. ; data protection and structural issues prior to the technological infrastructure, which can prevent the population from benefiting from financial DPIs).

This discussion was extended to the second block, referring to the practical cases of financial DPIs, in which the groups used experiences with DPIs already in action or being developed to point out areas for attention in relation to the topic. One of the consequences of this understanding was the discussion about the use of databases such as Serasa's Cadastro Positivo[2] or the Central Bank's Credit Information System (SCR) to define credit scores.

The topic raised controversies regarding the financial exclusion of different groups and ways of dealing with the issue, for example the controversies between the supply of credit and the indebtedness of the population. While some of the participants believe that the expansion of financial data infrastructures on the population would generate greater inclusion (increasing the predictive capacity of institutions), others believe that the massive collection of data in this sector is already a reality and the control of this data has generated predatory practices.

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2   Serasa's Cadastro Positivo is a database that gathers consumers' payment and credit history to generate a score that can facilitate access to credit and other financial services.

From there, the discussion moved on to a more consensual aspect of governance and cooperation: there is an understanding that governance in the financial sector is more advanced than in other sectors, however, there is a need for greater cooperation between this sector and other authorities, such as the National Data Protection Authority (ANPD), when it comes to developing DPIs.

This cooperation was raised as fundamental for DPIs to generate public value in the financial sector, seen as a sector that has historically depended on public pressure to develop best practices to guarantee citizens' rights. However, participants pointed out that the cooperation among institutions faces strategic and operational challenges, including the non-sectoral focus of the ANPD's current regulatory strategy and the lack of logistical capacity at the authority and the Central Bank both.

In this way, the discussion turned very much to data governance practices and how they can enable or hinder the development of DPIs for financial inclusion. There was a return to the question of the "public" in DPIs, discussing the possibility of big techs being perceived as DPIs and the risks of data monopolies within these companies, which have non-transparent governance practices.

Finally, the need for financial DPIs to be developed in an individual-centered way was highlighted, encouraging cooperation between different public bodies such as the Central Bank and the ANPD to ensure transparency in data governance and the provision of financial services and to minimize the social risks of using these technologies. To this end, the possibility of creating regulatory sandboxes to test these developments was mentioned.

- **CLIMATE JUSTICE**

The climate justice track aimed to identify the possible links between digital public infrastructures and the quest for climate justice. In terms of execution, the track was organized into three discussion moments. After a round of presentations, the participants were segmented into groups to first discuss international cases of the use of digital public infrastructures, to think about what was interesting, what was new and what caught their attention.

The international cases selected were:

1. Global Forest Watch -an online platform developed by the World Resources Institute, which makes it possible to monitor and manage forests, identifying natural changes or those caused by human activity, both legal and illegal. The data is widely open and updated in real time.

2. Farm Registry System - implemented by India's Ministry of Finance, it's a DPI that aims to register farmers and their land, linking them to land registries, crop registries and georeferenced maps. Its aim is to encourage development

and facilitate access to services, from crop information to obtaining credit and market intelligence. The system is open source and interoperable.

3. Kenya Agricultural Observatory Platform (KAOP) - the platform aims to improve food security and rural labor productivity and promote sustainable agriculture in Kenya. Analysis is carried out using satellite images, data from weather stations and agricultural sensors to obtain data on crops, weather patterns and soil health, as well as linking this data to farmers via an online portal and SMS. The system's data is made openly available, but it is not yet interoperable.

4. UN Biodiversity Lab (UNBL) - another global initiative, now dedicated to identifying impacts on biodiversity conservation and ensuring sustainable development. It uses open source code and relies on publicly available spatial data for its analysis. Its core objectives are (1) to democratize access to spatial data and analytical tools as a digital public good; (2) to support decision-makers; and (3) to empower stakeholders for national monitoring and reporting

The second stage of questions was aimed at understanding the participant's impressions of the DPI debate and bringing the discussion closer to their day-to-day work, such as which databases they usually use in their work, how this data is produced, how these systems work and how they are used. They were then asked how the DPI principles discussed in the morning panels could contribute to improving the functionality of these systems and whether it would make sense to think of any of them as DPI.

The final internal discussion in the groups focused on the brazilian national scenario and the future agenda. Following this approach, questions were asked about how the Rural Environmental Registry (CAR) could benefit from implementing the principles of this concept and how it would be possible to increase the transparency of the CAR if it were to become a full DPI. The CAR is a national database created to promote environmental control and monitoring, which is currently managed by the Ministry of Management and Innovation in Public Services (MGI) and which has already been seen as an DPI or potential DPI.

We also sought to guide the debate on the applications of DPIs in the environmental field. In other words, based on previous discussions about the day-to-day lives of participants and international and national examples, whether they could imagine any of the systems they use as DPIs. The intention was to think about whether certain obstacles could really be solved by reorganizing the systems and what limitations DPI still has, as well as its risks. They were also asked how they would think about the governance of this data: what measures would be needed to guarantee transparency and social participation, what could be done to mitigate risks and guarantee data security and what could be DPI efficiency indicators.

After the discussion in groups, some representatives were asked to share what had been discussed internally with the group. The main points discussed are listed below.

The centerpiece of the discussion was the CAR, which was already being discussed from the outset. One of the main points is the potential use of this system for various purposes - several of which have already been realized, such as deforestation alerts. However, there is still a lack of interoperability to make the processes more fluid and expand these capabilities.An example is agricultural product traceability systems based on the CAR, which is an initiative that is still rarely spearheaded by the public authorities, as the reality today is that many systems and documents that could benefit having CAR information are not linked to the database.

Along these lines, it was pointed out that there is a previous stage to overcome, which would be communication between public bodies, which is still not efficient and hinders these connection processes. The AgroBrasil+Sustentável platform[3] was highlighted as an initiative to improve this issue.

The identification of possible uses for the CAR and greater connection between agents is essential for identifying the public value of the tool and locating its beneficiaries beyond landowners. Connections between agents would help to raise awareness of transparency and sustainable development as a good practice, even in market terms, and as a way of linking agriculture and livestock to the sustainable agenda.

In addition to interoperability, it was pointed out that DPI could be a means of reducing bureaucracy, facilitating access to the CAR for small rural producers who still suffer from obstacles. This, together with greater efficiency in validating registrations, would be a major step forward, since there is still a large deficit in validating the regularity of registrations, or even registrations validated in an irregular manner, such as those overlapping indigenous lands or areas protected by the state.

Regarding the distribution of land occupation, it was discussed that it is impossible to analyze DPI in the environmental field and look at agriculture. The scenario that has emerged so far is a lack of management of land occupation, which leads to overlaps, lack of records, etc., due to the lack of integration with the bases of the sanitary agencies systems. This type of analysis would also be valid for directing credit as an incentive for proper occupation and sustainable development.

With regard to DPIs in general, the main point is the environmental impact they

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3   According to the Federal Government, this is a platform that is freely accessible through the Gov. br login and integrates official government data and information provided by the market, helping producers meet the social and environmental requirements of both domestic and international markets.

cause, whether in terms of processing or the type of activity they will enable. Thus, the suggestion made by the group is that there should be a principle of sustainability (green by default) that implies the need to think about the impacts that the DPI will have and assess the possibility of its implementation, as well as, if it is decided to develop it, that there should be a risk mitigation plan.

With regard to DPIs in the environmental context, one of the points raised is that in the Brazilian context we don't have a network of alerts and action protocols for extreme events, which is something that directly impacts climate justice, since places with less structure tend to suffer greater damage at these times. This type of climate analysis is also essential for cyclical events, for example, to offer support to regions that suffer from periods of drought or flooding.

In this sea of possibilities, it was also pointed out that the usefulness of data should not be an obstacle to transparency. It was pointed out that the more useful the data is, it seems to generate an impetus for restricting access. In this way, the importance of transparency throughout the development process and in making information available was reinforced in order to preserve public value.

In conclusion, it was pointed out that the plurality of actors involved would also be beneficial since the public authorities don't need to generate all the data and the private sector already has various technologies in place. Within this logic of pluralization, social participation is essential and relates directly to the point about transparency mentioned above. The inclusion of the system's "beneficiaries" is also part of the infrastructure. You can't develop and implement a system that aims, for example, to help a community in a given territory without consulting them and including their knowledge to define the paths to be followed.

CONCLUSION

CONCLUSION

The event "Common Horizons: the role of digital public infrastructure in finance, identity and climate justice", organized by Data Privacy Brasil, brought to light a debate that was still scattered and atomized due to the early stage of public discourse on digital public infrastructures. It was observed that within the context of the G20 and within federal executive bodies, there is a strong mobilization and search for a deeper understanding of this concept for its operationalization, which has led to a movement of companies and civil society organizations, as well as other government bodies and researchers, seeking to understand and participate in this debate. However, public forums dedicated to connecting actors and debating the issue are still limited.

It is hoped that the event was a kick-start for the creation of this space and that it can be expanded in the future to continue integrating more players into this collective deliberation and to continue monitoring the construction of digital public infrastructures in Brazil.

There is a significant window of opportunity for the whole of Brazilian society in this agenda. It's about creating a positive agenda for technological development geared towards promoting fundamental rights, rather than merely economic development or generating value for a niche group of players. In addition to discussing safeguards, risk mitigation measures and regulatory parameters, the DPI debate opens up the opportunity to **re-appropriate an essential layer of civic life and the construction of public policies through the lens of generating public value.** In other words, the challenge is, in the end, to define **what kind of technology we want as a society** - from fee-free instant payment methods that any actor can operate to how to detect deforestation in rural areas. In a context where over the last decade we have become more accustomed to passively following the development of new technologies driven by market demands, it could be said that this is an opportunity to reverse the logic of the market as the only driving force and prioritize technologies that meet social needs.

Finally, based on the debates that took place in the panels and in each of the tracks, this is a summary of some of the lessons we learned from the event:

- There is a consensus on the need for civic participation and intersectoral collaboration in the construction of DPIs.

- There is a demand for collaboration between different regulatory bodies, from sectoral bodies such as the Central Bank to transversal regulatory bodies such as the National Data Protection Authority, so that the legal parameters for buil-

ding DPI systems are clear and commonly understood.

- It is necessary to think about the objectives and parameters of success in DPIs beyond merely economic gains, which is an important but not the only factor to be sought.

- Brazil is in an advantageous position to give its own characteristics to the development of DPI in view of its solid history of digital rights and a robust multistakeholder field.

- Although there is a consensus on the need for public accountability in the development and implementation of these systems, there are still doubts about the best way to achieve this.

- There is a need for greater awareness of data protection regulations in Brazil, which are distinct from privacy protection, establishing their own procedures and mechanisms. There is still an idea that secrecy and consent are central parameters in assessing the legality of information flows, when in fact the General Data Protection Law brings other legal bases and principles to complement this analysis and make it, on the one hand, safer and more flexible for data processing agents and, on the other, more protective and participatory so that data subjects can be part of building a fair information ecosystem.

- There is still a need for greater training and exchange of expertise between different actors, especially civil society, so that a panoramic view can be taken of the risks and benefits in DPIs, integrating data protection debates with other rights such as environmental protection, discrimination, public transparency, interoperability and defense of competition and economic development.

REPORT
COMMON HORIZONS:
The Role of Digital Public Infrastructures in Finance, Identity and Climate Justice

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