Global Workshop on Digital Public Infrastructure (DPI) – Accelerating Action

Summary of sessions

The Global Workshop on Digital Public Infrastructure (DPI) – Accelerating Action, hosted by the World Bank, took place from September 12-13, 2023. Digital public infrastructure (DPI) are the foundational digital platforms, including institutional and legal frameworks, that underpin society-wide functions and services. This typically includes platforms for identification and authentication (as well as trust services such as e-signatures and verifiable credentials), data exchange, and payments. DPI emphasizes cross-sectoral and whole-of-government collaboration, openness, interoperability, user centricity and choice, modularity, and public-private cooperation at its heart.

Vyjayanti Desai, Practice Manager, ID4D and G2Px highlighted the pivotal role the World Bank's multi-sectoral sister initiatives – Identification for Development (ID4D) and Government-to-Person Payment (G2Px) are playing in accelerating global momentum on the DPI agenda. ID4D is providing tailored support on the development of ecosystem models for identification and civil registration to nearly 60 different countries, improving ID for over 500 million people. G2Px has scaled up its efforts to provide technical assistance to 38 countries on the adoption or improvement of their digital G2P payments.

The workshop, which was the first of its kind, brought together 120 practitioners from over 30 countries[1], experts and thought leaders, development partners, and World Bank staff and consultants, to exchange knowledge and experiences on this agenda. The first two days covered important topics, such as trends in digital ID, models for trusted data sharing, the landscape for digital G2P payments, essentials of privacy and security by design and more.

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[1] Including Angola, Bangladesh, Burundi, Brazil, Chad, Central African Republic (CAR), Cameroon, Cambodia, Costa Rica, Colombia, Dominica, Democratic Republic of Congo (DRC), Ethiopia, Fiji, Grenada, Indonesia, India, Malawi, Maldives, Morocco, Lesotho, Lebanon, Madagascar, Mozambique, Nigeria, Philippines, Rwanda, Singapore, Sri Lanka, St. Vincent and the Grenadines (SVG), and St. Lucia.

Day 1 | Tuesday, September 12th, 2023

Session 1: Unpacking Digital Public Infrastructure and its Importance

Keynote presentations

- **David Eaves,** Associate Professor in Digital Government and Co-Director, Institute for Innovation and Public Purpose, University College London
- **Pramod Varma,** Co-Chair, Centre for Digital Public Infrastructure and former Chief Architect, Aadhaar and India Stack

A conversation with World Bank Directors

- **Christine Qiang,** Global Director, Digital Development, World Bank
- **Jean Pesme,** Global Director, Finance, Competitive and Innovation, World Bank
- **Iffath Sharif,** Global Director, Social Protection and Jobs, World Bank

The opening session defined the concept of **Digital Public Infrastructure (DPI) and highlighted its importance**, emphasizing the need for a new 'infrastructure thinking' approach to digitalizing services and government and economies more broadly. Speakers highlighted numerous successful DPI implementations from countries like Estonia, India, Korea, Singapore, France, Australia, and Brazil, all of which are testimony to the novelty of DPI's design and governance principles including interoperability, minimalism, and openness. Speakers also highlighted that while DPI's implementation costs are often modest, its ability to spur market creation at scale is significant.
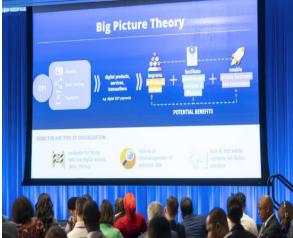
Session 2: Why This Matters: Evidence on DPI

- **Julia Clark,** Senior Economist, ID4D, World Bank
- **Georgina Marin,** Program Officer, G2Px, World Bank

This session highlighted the "theory of change" behind DPI and why it matters: when DPI is well-executed, it can help individuals fulfill their rights and access services and opportunities, boosting convenience, inclusion, and empowerment. For governments and firms, building DPI can foster savings (lower transaction and disbursement costs; improved targeting; reduced leakages and identity-related fraud), build trust (via data and identity verification and improved transparency), and enable innovation.

However, digitalization also introduces inherent risks, including potential exclusion of individuals with limited digital access, skills, and literacy; mishandling or misuse of personal data; and the risk of vendor lock-in or systems not adequately tailored to their intended purpose.

As countries accelerate DPI adoption, robust data collection is crucial to ensure that systems are functioning well, learn from implementation, and able to quickly identify and mitigate any issues that arise. Furthermore, it is essential to plan for rigorous impact evaluation from the beginning of projects to obtain credible estimates of their benefits for people, government and the private sector.

Session 2: Models and Trends for Digital Identity

- **Anna Metz,** Program Officer, ID4D, World Bank
- **Teguh Setyabudi,** Director General, Directorate for Population and Civil Registration (Dukcapil), Indonesia

In this interactive session, Anna Metz highlighted that while the world has made significant progress in terms of improving ID coverage, gaps still exist. Currently, 850 million people globally don't have an official ID—and thus have difficulties accessing essential services. Furthermore, approximately 5 billion don't have access to a digital identity for official online transactions. Some other trends:

- 90% of countries worldwide are now storing identity records in a digital format, enabling easier reusability, retrieval, and verification of this data;
- Approximately two-thirds of countries offer some form of digital verification or authentication, for in-person services and transactions, albeit there is substantial variation in sophistication levels;
- Official digital IDs that can facilitate remote authentication and enable secure access to services and transactions online are now available around one-third of countries, predominantly high-income economies.

To demonstrate how countries evolve, Teguh Setyabudi along with Mensuseno shared Indonesia's journey from paper-based record and manual data processing towards a digitalized ID ecosystem and now the introduction of a digital ID for online services. The new digital ID application, known as *Identitas Kependedukan Digital* (IKD), was launched in 2022 and the pilot to date has 4.5 million users. A key message from Indonesia was the importance of building on strong foundations of population and civil registration to ensure inclusion and reliable data.

Session 3: Trusted Data Sharing: Building Capabilities for Secure and Seamless Data Sharing

- **Christopher Tullis,** Program Officer, ID4D, World Bank
- **David Porteous,** Founder and CEO, Integral: Governance Solutions
- **Eduardo Magalhães de Lacerda-Filho,** General Coordinator, Digital Government Agency, Brazil
- **Kamya Chandra,** Chief Strategy Officer, Center for Digital Public Infrastructure

This session highlighted that in today's digital economy, data sharing serves several key purposes. Economically, sharing data drives innovation, enables the creation of personalized services, and new analytics-based business models, as well as foster competition in the market. Administratively, it enhances collaboration for the provision of public services, saving costs and preventing fraud. More data sharing is not always better: Trusted data sharing is about optimizing the amount of data shared to maximize the societal benefits while ensuring that the integrity of data can be trusted and that adequate protections are in place, especially for personal data. The role of data governance frameworks is to align incentives to help achieve that optimum, implementing controls to prevent excessive sharing of sensitive data, while simultaneously incentivizing data sharing when it furthers social goods such as transparency and innovation.

Session 4: Building User-Centric DPI: Practical Tools

- **Marie Eichholtzer,** Program Officer, ID4D, World Bank
- **Tariq Malik,** Technical Advisor, World Bank
- **Rahel Abraham,** Deputy Director, National ID Program, Ethiopia
- **Anir Chowdhury,** Policy Advisor, Aspire to Innovate (a2i) Project, Government of Bangladesh

This session highlighted the ways that human-centered design is critical for the development and implementation of DPI. Speakers shared real-world examples of how innovative citizen engagement

mechanisms played an important role in driving adoption of DPI in Pakistan, Bangladesh and Ethiopia. Several specific tools available to practitioners for gathering user input effectively, including surveys, interviews, and focus groups were mentioned. The speakers also demonstrated how prototyping and user testing can be used to refine solutions and ensure they fit the diverse needs of their future users. Integrating user personas and utilizing collected data to identify and address emerging issues are essential steps. Collaboration with stakeholders possessing insights into the context further enriches the design process, ensuring more user-centric and efficient solutions.

Session 5: DPI Use Case: Digital G2P Payments to Accelerate Development Outcomes

- **Anir Chowdhury,** Policy Advisor, Aspire to Innovate (a2i) Project, Government of Bangladesh
- **Julius Exequel B. Gorospe,** Assistant Secretary and Chief Information Officer, Department of Social Welfare and Development (DSWD), Philippines

This session outlined the concept of G2P payments and provided an overview of modern G2P architecture, brought to life with several country examples. Speakers emphasized that digitizing G2P means not only making payments into bank or mobile money accounts but also using digital systems for the end-to-end process. A modernized G2P architecture is all-encompassing and includes infrastructure, product and market design and process designed for inclusion and empowerment. In this session Bangladesh and the Philippines shared their recent innovations and progress. The session presented a framework for identifying a country's stage of modernization, depending on base infrastructure and enabling conditions. The stages of the framework are:

- G2P 1.0: Single program with single provider
- G2P 2.0: Single program with single provide but digital payments
- G2P 3.0: Single program with multiple providers giving beneficiaries choice
- G2P 4.0: Multiple programs with multiple providers with one shared infrastructure

Day 2 | Wednesday, September 13th, 2023

Session 6: Understanding and Exploring Emerging Trends in Fast Payments Systems

Hosted by Finance, Competition and Innovation (FCI) Global Practice, World Bank

- **Carlos Eduardo Brandt,** Head of Management and Operations, Pix, Brazil
- **Nasir Ali,** Senior Business Development & Operations Specialist, Jordan Payments & Clearing Company (JoPACC)
- **Dilip Asbe,** Managing Director & CEO, National Payments Corporation of India (NPCI)

The session highlighted the potential of fast payments to drive financial inclusion, reduce gender gaps, and foster competition. Based on the experiences of PIX (Brazil), IPS (Jordan) and UPI (India), speakers also emphasized that for fast payments to reach full potential, they need to invest in in tech design and include many partners—both public and private—in the ecosystem.

Session 7: Operationalizing Trust: Essentials of Privacy-by-Design and Security-by-Design

- **Rory Macmillan,** Digital and Telecommunications Lawyer, Partner, Macmillan Keck
- **Anura Dissanayake**, Secretary to the Prime Minister of Sri Lanka
- **Rahul Matthan,** Partner and Head of Telecom, Media, and Technology Practice, Trilegal
- **Pam Dixon,** Founder and Executive Director, World Privacy Forum
- **Chinenye Chizea,** Security Architect and Technical Lead, Nigeria (ID4D Project) and Former Chief Information Security Officer, Nigeria Identity Management Commission (NIMC)
- Moderated by **Nay Constantine,** Legal Specialist, ID4D, World Bank

This session highlighted the importance of building trust as DPI, the digital backbone of governments is built up. Rory Macmillan emphasized the need for trusted rules in DPI to alleviate concerns about data vulnerabilities. He advocated for a shift in privacy approaches beyond legal enforcement, stressing the importance of a culture of distributed compliance based on risk assessment. Anura Dissanayake discussed Sri Lanka's efforts to build trust through the Digital Sri Lanka 2030 roadmap, recent data protection legislation, and cost-saving benefits from digital delivery. Rahul Matthan also highlighted the role of techno-legal solutions in building trust, drawing on India's Data Empowerment and Protection Architecture (DEPA) as an example of a federated approach to data usage and suggested the concept of data-blind consent managers. Pam Dixon also highlighted that privacy by design principles, need to be used in ecosystems that have guardrails, laws, and policies in place to avoid countereffects of privacy-enhancing technologies. Chinenye Chizea highlighted Nigeria's digital ID experience, emphasizing the importance of adhering to principles of data minimization and data classification to address fragmentation in the ID space.

Session 8 (Part A): Verifiable Credentials, Decentralized Identifiers, and Digital Wallets

- **Jerome Buchler,** Digital ID Expert, World Bank
- **Adam Cooper,** Digital ID Expert, World Bank
- **Ali Yasir,** Mobile Application Engineer, Digital Identity Project, National Centre for Information Technology, Maldives
- **Ramesh Narayanan,** Chief Technical Officer, Modular Open-Source Identity Platform (MOSIP)
- Moderated by **Christine Kim,** Senior Principal, Co-Develop

Jerome Buchler gave an overview of what decentralized identity and digital wallets are, as well as relevant initiatives and standards that are emerging. He underscored that the adoption of new standards for digital credentials will allow a diversity of user-centric, privacy-preserving authentication solutions. Adam Cooper the new eIDAS regulation on digital wallets. He also shared the core technical requirements for the EUDI Wallet and plans for conducting large scale pilots in real life scenarios. Ali Yasir also provided the example of eFaas in Maldives and Ramesh Narayanan provided an overview of the functioning of Inji, a mobile wallet and authenticator developed by MOSIP.

Session 8 (Part B): Introducing Choice in G2P Payments: Enablers and Payment Service Provider Arrangements

- **William Cook,** Senior Financial Sector Specialist, Consultative Group to Assist the Poor (CGAP)
- **Karol Karpinski,** Senior Financial Sector Specialist, World Bank)
- **Moustapha N'ait Ouhm,** Directeur du Pôle Solidarité et Allocations, Caisse de Dépôt et de Gestion, Morocco
- **Hajara Ahmed,** National Program Manager, National Cash Transfer Office, Nigeria
- **Maliki,** Acting Deputy for Population and Employment, Ministry of National Development Planning (Bappenas), Indonesia
- Moderated by **Maria May,** Senior Program Officer, Bill and Melinda Gates Foundation)

In this session, World Bank/CGAP representatives emphasized that the G2P landscape has evolved significantly over the past decade, primarily driven by the shift towards digital and increased emphasis on individual 'choice'. Consequently, this transformation has required proactive collaboration with Payment Service Providers (PSPs) to provide diverse payment options customized to the specific needs of each country. The session commenced by outlining the technical aspects involved in engaging financial service providers in a choice model for G2P payments. Then, country representatives shared their experiences in implementing choice in G2P payments, including Prakerja in Indonesia (a social protection program), Tayssir in Morocco (a conditional cash transfer program for education), and NASSP in Nigeria (a social safety net program). The session ended with breakout discussions on ways to mitigate challenges of implementing choice and the feasibility of enabling choice universally.

Session 9 (Part A): Biometrics Deep Dive

- **Ted Dunstone,** Biometrics Expert, World Bank
- **Jonathan Marskell,** Senior Program Officer, ID4D, World Bank

This session on biometrics covered various modalities, such as face, fingerprints, and iris recognition. It highlighted that no single biometric modality is flawless, and most systems utilize a combination of them. Risks associated with biometric collection and verification, such as function creep, data leaks, cross-matching, and bias, were discussed, along with actionable mitigations. The session introduced the open-source Biometric Quality Assessment Tool (BQAT) for assessing the quality of biometric data. Identifying the root causes of performance issues can often be complex, making biometric assessment tools invaluable in evaluating biometric quality.

Session 9 (Part B): e-Signatures Deep Dive

- **Adam Cooper,** Digital ID Expert, World Bank
- **Ghada Sabbagh,** Senior Legal Counsel, Central Bank of Lebanon
- **Christopher Tullis**, Program Officer, ID4D, World Bank

This session highlighted the pivotal role of e-signatures in enabling trust in various kinds of online interactions. Risk-based approaches are needed to allow a variety of technologies to be leveraged, since each has advantages in terms of usability, cost, accessibility, and security. Ghada Sabbagh shared Lebanon's experience with implementing e-signatures to allow bank customers to open accounts online, in which the regulator sought to create space for private sector innovation to drive down costs for this low-risk use case to allow the banking sector to onboard new clients amidst a nationwide economic crisis. Adam Cooper shared the experiences of the EU in regulating e-signature, where regulators establish common standards applicable to public- and private-sector e-signature providers alike, allowing interoperability and competition.

Session 9 (Part C): Interoperability for G2P Payments

- **Ercan Dansuk,** Family and Social Services Specialist, Ministry of Family and Social Services, Türkiye)
- **Ali Demiröz,** IT Engineer, Ministry of Family and Social Services, Türkiye
- **Rodrigo Zeledon Rivera,** Financial Director, National Treasury – Ministry of Finance, Costa Rica
- **Ariane Mugisha,** Chief Digital Officer, Ministry of Local Government, Rwanda
- **Pramod Varma,** Co-Chair, Centre for Digital Public Infrastructure and former Chief Architect, Aadhaar and India Stack
- **Melis Guven,** Global Lead for Social Protection Delivery Systems, World Bank
- **Anita Mittal,** Lead Technical Expert – Social Protection & ID Systems, World Bank

This session highlighted the importance of developing a converged and interoperable architecture for G2P payments to foster efficiency, inclusion and reduce public expenditure. Countries then showcased their interoperable architecture designs: Türkiye's Integrated Social Assistance System (ISAS), Costa Rica's Unified System of Payment of Social Resources (SUPRES), and Rwanda's ongoing journey to introduce a dynamic (rather than static) social registry. Bearing in mind of the various resources available for developing interoperable systems in civil society, the session also covered the ways to engage with two highly relevant initiatives—the Digital Convergence Initiative (which builds consensus for standards of social protection systems) and G2P Connect (an open-source effort to support the delivery of G2P payments).

Session 10: Building DPI Feedback Loops: How to Improve your Impact in 5 Simple Steps

- **Claire Casher,** Research Specialist, ID4D, World Bank
- **Minita Varghese,** Program Officer, G2Px, World Bank
- **Dennis Beng Hui,** Managing Director, Technopoly, Philippines
- **Emil Fernandez,** Principal Consultant, Technopoly, Philippines

This session highlighted the importance of data for DPI – to track performance, improve planning, and demonstrate impact. DPI inherently collects valuable transaction metadata, making it useful for quality monitoring and transparency. To maintain user-centricity, continuous feedback collection is vital, requiring regular data and research systems to establish a responsive feedback loop and unlock its potential.

The session provided an overview of various Monitoring, Evaluation and Learning (MEL) methods, and the roles they can play in DPI programs. The session included an interactive deep dive with Technopoly on the Time Motion Study (TMS) methodology. Dennis and Emil led the audience in an interactive TMS simulation, then shared experiences and results from a TMS recently conducted in the Philippines focusing on local government services, banking, and social protection programs that could make use of the new Philippine Identification System (PhilSys).

Session 11: Digital Trends and DPI: Paving the Path to Sustainable Development

- **Jennifer Lassiter,** Executive Director, Digital Dollar Project (DDP)
- **Elizabeth Wong,** Assistant Director of the Digital Utilities Programme Office, InfoComm Media Development Authority (IMDA), Singapore
- **Thampy Koshy,** CEO, Open Network for Digital Commerce (ONDC)
- **Antoine Sebera,** Chief Innovations Officer, Rwanda Information Society Authority (RISA)
- Moderated by **Bhaskar Chakravorti,** Dean of Global Business, Fletcher School at Tufts University

This session highlighted trends and emerging use-cases that are shaping the DPI landscape. Jennifer Lassiter explained the use of tokenization and blockchain technologies in the financial sector. She also underscored the inseparability of technology and policy for building trust and accountability in innovative solutions that are reshaping traditional business models. Thampy Koshy, shared India's emerging approach to building DPI, which involves a shift from 'platforms' to 'protocols'. He also shared that India is currently employing this approach to democratize its e-commerce sector – through the Open Network for Digital Commerce (ONDC). Based on Singapore and Rwanda's experiences, Elizabeth Wong and Antonie Sebera both highlighted the importance of engaging with the private sector to unlock the power of DPI.