Applying the Principles for Digital Development in Social Protection
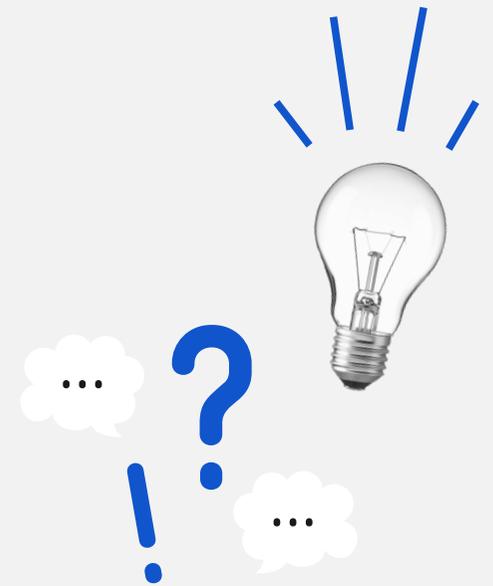
Digital Convergence
USP2030

Acknowledgements

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About the Digital Convergence Initiative

The Digital Convergence Initiative (DCI) is a joint effort by USP2030 members, governments, development partners, civil society organisations and private companies to create integrated and interoperable social protection information systems. Launched in 2021, the Initiative aims to build a global consensus on technical standards and guidelines for digital systems that enable the smooth exchange of data between programmes and institutions which are integral to the delivery of social protection. The members of the DCI believe that harmonised data sharing can improve the efficiency of social protection programmes and ultimately enhance social protection outcomes. The DCI is an open, transparent and virtual community that welcomes contributions from diverse stakeholders.

To learn more about the DCI, please visit **www.spdci.org**

Acronyms

API	application programming interface
CCT	conditional cash transfer
CEDSIF	Centro de Desenvolvimento de Sistemas de Informação de Finanças
CT-OVC	Cash Transfer for Orphans and Vulnerable Children
DCI	Digital Convergence Initiative
DPIA	data protection impact assessment
DSWD	Department of Social Welfare and Development
DTKS	Data Terpadu Kesejahteran Sosial
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
HSNP	Hunger Safety Net Programme
ICT	information and communication technology
ID	identification
IDB	Inter-American Development Bank
ILO	International Labour Organization
IMIS	integrated management information system
INAS	National Institute of Social Action
ISPA	Inter-Agency Social Protection Assessments
ISSA	International Social Security Association
IT	information technology
KII	key informant interview
LMIC	low and middle income country
M&E	monitoring and evaluation
MIS	management information system
NGO	non-governmental organisation
OECD	Organisation for Economic Co-operation and Development
PDD	Principles for Digital Development
PREGIPS	Platform of Integrated Registry for Social Programs of the Plurinational State of Bolivia
SASSA	South African Social Security Agency
SESSI	Sindh Employees' Social Security Institution
SP	social protection
SPIAC-B	Social Protection Inter-Agency Cooperation Board
SSN	social security number
TCO	total cost of ownership
UBR	Unified Beneficiary Registry
UIDAI	Unique Identification Authority of India
UN	United Nations
UNICEF	United Nations Children's Fund
WFP	World Food Programme

Executive summary

Universal social protection is central to realising the commitments made by international and national actors under human rights treaties and the 2030 Agenda for Sustainable Development. More recently, a number of countries and development partners have joined the **Global Partnership for Universal Social Protection (USP2030)**, which aims at accelerating progress towards this agenda. The USP2030's Call to Action emphasises the need to "provide universal access to social protection and ensure that social protection systems are rights-based, gender-sensitive and inclusive, leaving no one behind".[1] However, as of 2020, only 46.9% of the global population are effectively covered by at least one social protection benefit, leaving as many as 4.1 billion people unprotected.[2] Social protection systems designed through political decisions and governments need to ensure that they provide comprehensive, adequate and sustainable social protection for all. Digital technologies can enable inclusive delivery at scale to close gaps and accelerate progress towards universal coverage. The unprecedented scale and speed at which countries delivered social assistance during the COVID-19 pandemic is a testament to the potential of digital technologies.

While the potential of social protection information systems is immense, the risks posed by inappropriate design and implementation, especially to the most vulnerable, cannot be ignored. In various other sectors, development partners have sought to address these risks by creating a shared understanding of 'principles' or 'good practices' to ensure that the use of digital technologies is inclusive, rights-based, secure and purpose-driven. Against this backdrop, the **Digital Convergence Initiative (DCI) of USP2030** and the **Digital Social Protection Working Group of the Social Protection Inter-Agency Cooperation Board (SPIAC-B)** sought to consolidate existing guidance and produce consensus-based principles for building inclusive and robust digital social protection systems. After a review of the principles adopted by various initiatives, nine principles were selected as applicable to social protection systems. These principles are called the **Principles for Digital Development (PDD)**.

This document offers guidance on the application of the PDDs to social protection. After presenting the background and objectives, it sets out how each principle applies to digital social protection solutions. First, the original definition is presented for each principle, followed by the social protection perspective, and the key actions to apply it in practice. Barriers to implementation are highlighted and ways to overcome these barriers suggested. Country-level examples of good and bad practices, as well as additional resources, are provided throughout.

Although the principles relate to the 'design' of digital solutions, this document concludes by looking at the 'bigger picture', outlining the overarching organisational factors to be considered while applying the PDDs. It is important to take these factors into account to ensure the ultimate success of digitalisation in the social protection sector.

- Design with the user
- Understand the existing ecosystem
- Design for scale
- Build for sustainability
- Be data driven
- Use open standards, open data, open source, and open innovation
- Reuse and improve
- Address privacy & security
- Be collaborative

Source: Waugaman, A., *From principle to practice: Implementing the Principles for Digital Development*, The Principles for Digital Development Working Group, 2016

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1 **USP2030, 'Universal social protection', [online], USP2030, 2022**
2 **ILO,** *World social protection report 2020–22: Social protection at the crossroads – in pursuit of a better future***, International Labour Organization (ILO), Geneva, 2021**

Introduction

Background and objectives

Access to social protection (SP)[3] is a fundamental right, as enshrined in the Universal Declaration of Human Rights (1948) and in other major United Nations human rights instruments. Universal social protection is central to realising commitments made by international and national actors under the 2030 Agenda for Sustainable Development. Sustainable Development Goal 1 sets out target 1.3 to "implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and vulnerable". More recently, a number of countries and development partners have joined the **Global Partnership for Universal Social Protection (USP2030)**, which aims at accelerating progress towards this agenda. The USP2030's Call to Action emphasises the need to "provide universal access to social protection and ensure that social protection systems are rights-based, gender-sensitive and inclusive, leaving no one behind".[4] However, as of 2020, only 46.9% of the global population are effectively covered by at least one social protection benefit, leaving as many as 4.1 billion people unprotected.[5]

While significant gaps exist, digital technologies can enable inclusive delivery at scale and drive USP2030's Call to Action. While early digitalisation efforts were limited to digitising back-office records and putting processes and services online to reduce reliance on paper-based in-person procedures, information and communication technologies (ICTs) have gradually become key to meet the growing and diverse needs of citizens, while managing tight budgets. Social protection programmes are no longer just digitising their front-end standalone interfaces, they are using ICTs to implement integrated or coordinated systems for delivering multiple programmes across government institutions rather than operating separate systems for each programme.[6] Therefore, a growing number of countries and programmes are looking to leverage shared national infrastructure such as identification systems, common payment platforms, common data analytics platforms, integrated grievance redressal platforms, and so forth. ICTs are also creating a paradigm shift in how programmes are governed:[7] data has become central to social protection

delivery, as institutions rely on data-driven systems for efficient decision making – a trend that is progressively being marked by the use of emerging technologies such as machine learning, big data and artificial intelligence. These trends were reinforced during the COVID-19 pandemic, as ICTs proved critical to achieving unprecedented scale and speed in delivering social assistance.

While the potential of digital social protection is immense, the risks posed by inappropriate design and implementation, especially to the most vulnerable, cannot be ignored. The key risks include lack of administrative capacity, weak infrastructure, data- and technology-driven exclusion, poor data protection and privacy, among other things.[8] These risks are further amplified for the most vulnerable and marginalised groups such as women, children, people with disabilities, ethnically discriminated groups, and older persons. In his 2019 report on the digital welfare state, the UN Special Rapporteur for extreme poverty and human rights warned that these risks are already materialising across the globe, as "the systems of social protection and assistance are increasingly driven by digital data and technologies that are used to automate, predict, identify, surveil, detect, target and punish".[9]

In various other sectors, development partners have sought to address similar risks by creating a shared understanding of 'standards' or 'good practices' to ensure that the use of digital technologies is inclusive, secure and purpose-driven. For instance, the **Principles on Identification for Sustainable Development** aim to promote a common understanding of key issues and good practices when designing and implementing digital identification systems. Similarly, the **UN Principles for Responsible Digital Payments** seek to build trust around digital payment systems by establishing accountability across actors, thereby mitigating risks. While guidance on mitigating exclusionary risks in digital social protection systems has been developed by different actors, such efforts remain siloed in several different initiatives.

Against this backdrop, the **Digital Convergence Initiative (DCI)**[10] and the **Digital Social Protection Working Group of the Social Protection Inter-Agency Cooperation Board (SPIAC-B)**,[11] two closely related global initiatives working towards the convergence of global and national actors for digital social protection, sought to consolidate existing guidance and produce consensus-based good practices for building inclusive and robust digital social protection systems. After a review of the principles adopted by various initiatives, nine principles were selected as applicable to social protection systems. These principles are called the **Principles for Digital Development (PDD)**.

3 Social protection is defined as "the set of policies and programs aimed at preventing or protecting all people against poverty, vulnerability, and social exclusion throughout their lifecycles, with a particular emphasis towards vulnerable groups. Social protection can be provided in cash or in-kind, through non-contributory schemes, providing universal, categorical, or poverty-targeted benefits such as social assistance or contributory schemes with social insurance being the most common form" (ISPA, *CODI: Core diagnostic instrument – "What matters" guidance note*, Inter-Agency Social Protection Assessments, n.d.)
4 USP2030, 'Universal social protection', [online], USP2030, 2022
5 ILO, *World social protection report 2020–22: Social protection at the crossroads – in pursuit of a better future*, International Labour Organization (ILO), Geneva, 2021
6 Lindert, K., Karippacheril, T. G., Rodríguez Caillava, I., and Nishikawa Chávez, K., *Sourcebook on the foundations of social protection delivery systems*, World Bank, Washington, DC, 2020
7 Kaun A., and Dencik L., Datafication and the welfare state, *Global Perspectives, 1*(1), 12912, 2020; Henman, P. W. F., Digital Social Policy: Past, Present, Future, *Journal of Social Policy*, 1–6, 17 March 2022; ISSA, *Applying emerging technologies in social security*, Technical Commission

on Information and Communication Technology, International Social Security Association (ISSA), Geneva, 2019a
8 Barca, V., Hebbar, M., and Cote, A., *Inclusive information systems for social protection: Intentionally integrating gender and disability*, Social Protection Approaches to COVID-19: Expert Advice (SPACE), 2021
9 Alston, P., *Report of the Special Rapporteur on extreme poverty and human rights*, United Nations, 2019
10 The DCI was set up under the umbrella of the Global Partnership for **Universal Social Protection (USP2030)** in September 2021 to help countries converge on standards for meaningful data exchange across social protection delivery systems.
11 The SPIAC-B Digital SP Working Group aims to improve coherence and coordination across bilateral and multilateral organisations in advancing digital social protection systems.

Building on what already exists

In building consensus on standards and good practices for digital social protection systems, instead of reinventing the wheel, the DCI and SPIAC-B decided to build on what already exists. Hence, they looked at existing broad-based principles for digitalisation and sustainable development. After a review of various initiatives, the **Principles for Digital Development (PDD)**, stewarded by the Digital Impact Alliance (DIAL), was assessed as a good starting point. The PDD are nine living guidelines designed to help integrate best practices into technology-enabled programmes and are intended to be updated and refined over time. They include guidance for every phase of the project life cycle, and are part of an ongoing effort among development practitioners to share knowledge and support continuous learning. The PDD were created in a community-driven effort and are the result of many lessons learnt through the use of ICTs in development projects. With such a rich legacy and with **284 endorsing organisations**, the PDD provide the right entry point.

While the PDD provide a broadly applicable organising framework for digital SP, the DCI and SPIAC-B agreed that digital SP requires specific sectoral considerations to be incorporated into the guidance. The PDD emerged from widespread recognition of the failure of numerous ICT for development programmes (ICT4D) by the international development community. The PDD are aimed at organisations "whose primary mission is to further international development, whether as a non-profit, corporation, foundation or social enterprise".[12] While this context is broadly comparable with settings under which investments are being made by bilateral and multilateral agencies to support government-led SP digitalisation efforts, some key differences exist:

- The PDD focus on discrete digital solutions that 'enhance existing workflows'. In contrast, digital SP investments are embedded in the digital transformation of SP institutions, or even broader governmental transformation. Therefore, the scope of change is considerably more expansive, the time horizon is much longer, and the scale of complexity is far greater.

- The PDD are framed primarily around non-state actors implementing digital solutions to achieve development objectives. In contrast, the primary responsibility for social protection rests with national governments.

Finally, it is worth stressing that the PDD are only a starting point for ensuring that digital solutions help further social protection goals. Practical experience in applying these principles explicitly to the development of digital SP solutions is rare. As noted by several experts consulted for this exercise, the PDD are quite generic – by design. Without clear standards or performance indicators in the context of a particular digitalisation effort, the principles risk becoming mere 'window dressing', allowing digital initiatives to state commitment to the PDD without truly applying them. Practical measurement benchmarks will need to be developed over the long term for sustained adherence to these principles.

It is important to acknowledge that while the digitalisation of SP has accelerated in recent decades, unlike other sectors (e.g. health, public finance), underlying implementation processes are less documented. Evidence building and knowledge sharing in this area is a strategic priority for the DCI and SPIAC-B. This guidance document contributes to this aim. It is the outcome of a collaborative process spanning one year. The first draft of the document was developed based on a literature review, supplemented by semi-structured interviews with selected donor organisations and digital SP experts conducted between March 2021 and June 2021.[13] Key debates that emerged from the first draft were further discussed during a virtual consultation workshop held on 28 April 2022. Following the consultation workshop, the document was open for public feedback for three weeks. This final document incorporates feedback from the workshop and the public review.

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12 **Waugaman, A., *From principle to practice: Implementing the Principles for Digital Development*, The Principles for Digital Development Working Group, 2016**

13 The initial list of key informants was prepared by the author, GIZ and ILO. Additional informants were identified using the snowballing technique.

Structure of this document

The next section of this guidance document is structured in terms of the nine PDD. For each principles, this document seeks to:

- Articulate why the principle matters for digital social protection

- Illustrate with examples how the principle can be operationalised by information systems in the social protection sector

- Highlight barriers to the implementation of the principle and suggest ways to overcome them

- Illustrate with examples how things can go wrong when the actions enshrined in the principle are not applied and what we can learn from these mistakes

For each principle, the original definition is presented, followed by the social protection perspective, and the key actions to apply it in practice. Country-level examples of good and bad practices, as well as additional resources, are provided throughout. Although the principles relate to the 'design' of digital solutions, the document concludes by looking at the 'bigger picture', outlining the overarching organisational factors to be considered while applying them.

Design with the user

Understand the existing ecosystem

Design for scale

Build for sustainability

Be data driven

Use open standards, open data, open source, and open innovation

Reuse and improve

Address privacy & security

Be collaborative

Source: Waugaman, A., *From principle to practice: Implementing the Principles for Digital Development*, The Principles for Digital Development Working Group, 2016

Each principle is structured as follows:

- **PDD definition:** How is the principle defined in the PDD?

- **SP perspective:** What is the relevance of this principle to digital SP? Why does it matter (or not)? What are the insights and challenges shared by practitioners based on their experiences of embedding these principles – explicitly or implicitly – into digital SP solutions?

- **Putting the principle into practice:** What are the key actions required to operationalise this principle within digital SP solutions?

Under each principle, the following boxes might appear:

Examples of this principle in practice

This section illustrates the principle being discussed with practical examples from various countries.

Pitfalls of not applying this principle

This section shows how things can go wrong when the actions enshrined in the principle are not applied and what we can learn from these mistakes.

How do the PDD apply to digital SP solutions?

Principle 1: Design with the user

The PDD text:

Successful digital initiatives are rooted in an understanding of user characteristics, needs and challenges. User-centered design — also referred to as design thinking or human-centered design — starts with getting to know the people you are designing for through conversation, observation and co-creation. Information gathered through this engagement leads to building, testing and redesigning tools until they effectively meet user needs. By designing with the users, and not for them, you can build digital tools to better address the specific context, culture, behaviors and expectations of the people who will directly interact with the technology. Designing together means partnering with users throughout the project lifecycle, co-creating solutions, and continuously gathering and incorporating users' feedback.

The SP perspective

Who is the user of a digital SP solution? There is no ready answer, as there is no single monolithic user. Depending upon the type of digital solution, the range of users in the social protection delivery chain varies considerably, as do the implications of digitalisation depending on the type of user. **There are two main types of direct users of digital SP solutions: (external) intended beneficiaries and (internal) administrative users.**

Designing with intended beneficiaries is crucial to ensure that digital solutions actually ease access, rather than exacerbate exclusion. Intended beneficiaries are primarily impacted by solutions that digitalise the 'front-end' citizen interface (e.g. digital outreach, electronic registration, digital payments, online complaint mechanisms) as well as 'back-end' interventions (e.g. interoperability-based verification, centralised payments) that rely on digital infrastructure such as national identification (ID) systems and mobile phones. Whether digitalisation removes barriers to social protection depends on the availability, affordability and accessibility of these digital technologies by target populations.

When these factors are unevenly present, evidence shows that digitalisation can decrease access to social protection.

While beneficiary-facing digital initiatives and their implications have received explicit attention in the popular discourse, digital SP is more than delivering services over the Internet. Digitalisation not only results in a changed relationship between governments and citizens, it also alters how internal processes are organised and performed in a bid to make them more efficient. **Therefore, internal administrative users are a core constituent group for the development of digital solutions.** Spanning across administrative levels, they include frontline service providers, back-office managers, programme management staff and even high-level decision makers – each with their own, sometimes contradictory, expectations of the digital project. While the digital transformation of SP agencies is aimed at improving efficiency and reducing employee workload, evidence – primarily from developed countries – indicates that efficiency gains are not a given,[14] and that **designing with the various users is key to gathering their acceptance and ensuring the sustained use of the product.**

The objectives and needs of these two groups – i.e. intended beneficiaries and administrative users – are distinct and not always compatible, requiring strong leadership to navigate design decisions through this participatory process of designing with end users. Whereas solutions that are simple, quick and user-friendly are usually preferred by beneficiaries, considerations of robustness, security and monitoring are of interest to administrators, and may run against the first set of preferences.

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14 By digitising case notes and logs, the Welfare Case ICT Management System in Malta freed up caseworkers' time for actual client interactions and improved collaboration between social workers. On the contrary, service workers involved in the roll-out of Universal Credit in the United Kingdom expressed concerns about increased workload, as the change to an online system of welfare claims required them to assist users to manage their online accounts and solve technical problems (**Eurofound,** *Impact of digitalisation on social services,* **Publications Office of the European Union, 2020**).

Pitfalls of not applying the principle

A National Case Management System was piloted in five districts in **Zimbabwe** starting from 2014. The system was designed to integrate the records of various national child care and protection initiatives and support more efficient case management and referral by social workers. However, it was barely used by social workers, as it did not ease their work load. For instance, the management information system (MIS) did not produce mandatory reports in the desired format, resulting in the persistence of paper-based reporting by social workers.[15]

In **Kerala, India**, the Ration Card Management System, i.e. the system that issues cards to households eligible for subsidised food assistance, was computerised. Digitisation of the front-end via online applications sped up the application process, yet interviews with users indicated widespread disappoint with the system. While online applications made the process quicker, long waiting periods for results and uncertain outcomes persisted. This is because the new system, while dealing with the front-end aspect of applications, did little to solve problems at the back-end, with applications often becoming stuck in a central office that needed to handle them all, with limited capacity.[16]

In **Kenya's** Hunger Safety Net Program II, it was proposed that the MIS application would automatically compute the proxy means wealth ranking data on-site, as soon as enumeration was completed. The teams could then print these lists and validate the wealth rankings. However, technological constraints in remote areas made this approach impractical. The level of data manipulation and processing expected at the field level was also unrealistic, resulting in the backing up of data, which needed to be processed in main towns, undermining data integrity.[17]

Not all experts interviewed for this paper agreed with this principle in its entirety. Designing with the user, while adopting agile ways of working, can prove to be expensive, especially in resource-constrained settings, because the larger the project team, the greater the cost and the longer it takes to arrive at decisions. Country-level practitioners conceded that securing government buy-in for lengthy user engagement is difficult, as the core focus of SP modernisation in many countries is to reduce costs – this principle runs against such objectives (see the discussion in the final section). Existing research and consultations with specialist institutions[18] (see Principle 2: Understand the existing ecosystem) could help simulate user feedback at a lower cost. Another challenge relates to the short-term funding models and fixed deliverables, which prevent robust design work with real end-users.[19] Finally, while an iterative approach can accelerate solution discovery, it can also expose beneficiaries to additional risks. Reviewing the Universal Credit system in the United Kingdom in 2019, the Special Rapporteur on extreme poverty and human rights noted in the test-and-learn approach that there is "an unacknowledged risk that this approach could treat vulnerable people like guinea pigs and wreak havoc in real peoples' lives",[20] highlighting the need for a careful balance.

How you can put this principle into practice

- **Where possible, incorporate all users that are expected to interact with the digital solution.** Typically, requirements are primarily elicited from the 'business owner', for instance, the programme director who is responsible for programme delivery. Such an approach risks resistance from other users at subsequent stages, e.g. mid-level managers, frontline service providers and beneficiaries.

- **Understand the user needs that the solution is meant to address.** Digital SP solutions are undermined when there is a gap between the objectives designed into the technology, and those held by key stakeholders towards the system. Technology can only follow from the design of the core business processes, which is ultimately a programme/business decision and not an information technology (IT) decision. However, this distinction is sometimes not well-understood, often due to the lack of technology

15 Arruda, P., *Zimbabwe's social protection system and its harmonized social cash transfer programme*, International Policy Centre for Inclusive Growth (IPC-IG), 2018
16 Masiero, S., 'The origins of failure: Seeking the causes of design-reality gaps', *Information Technology for Development*, 22(3), 487–502, 2016
17 Fitzgibbon, C., *HSNP Phase II registration and targeting: Lessons learned and recommendations. Final report*, UK Department of International Development (DFID), 2014

18 For example, organisations for persons with disabilities and digital development think tanks.
19 Haikin, M., and Flatters, G., *Digital development: What is the role of international NGOs? ICT for development programmes and opportunities in the Horn, East and Central Africa*, OXFAM, 2017, p. 60
20 Alston, P., *Visit to the United Kingdom of Great Britain and Northern Ireland: Report of the Special Rapporteur on extreme poverty and human rights*, United Nations, 2018

expertise within SP institutions. Therefore, it is important to understand user needs and be clear on what the technology can do and, more crucially, what it cannot do.

- **Include marginalised groups to leave no one behind.** Within governments, the varying degrees of connectivity, hardware and know-how between federal and sub-national governments is a recognised challenge to digital service delivery.[21] Among target populations, women, persons with disabilities, children, the elderly and marginalised communities face significantly more challenges than the average population. Therefore, it is important to constantly ask 'who is being left behind' by the technology choices and to include these groups in the design process.

- **Designing with the user to ensure alignment with socio-cultural norms and values.** While there is an emerging global consensus on the digital foundations of SP systems, understanding how they interact with local socio-cultural norms and values is essential.

- **Develop using agile methods.** The failure of the digitalisation of social welfare delivery in developed countries is often attributed to a traditional linear approach, like the waterfall approach, which allows for very little changes once the project has started. Digitalisation occurs in volatile multi-stakeholder environments where priorities change rapidly, yet "specifications are drawn up in advance, 'solutions' are procured, and then delivery is managed against a predetermined timetable".[22] For instance, in the case of the National Case Management System pilot in Zimbabwe mentioned earlier, there was no plan or mechanism for early feedback, resulting in the failure of the pilot being recognised only many months into implementation. On the contrary, the agile methodology is much more sensitive to business-level changes, which require subsequent application logic modifications. Recognising the pitfalls of linear approaches, agile methods that involve rapid prototyping, testing and feedback are increasingly being adopted by digital SP solutions, ensuring that valuable time is not lost in developing an ill-specified solution.

- **Seek feedback from users beyond the initial deployment stage.** User participation is not a once-off exercise. Continuous feedback is crucial for the sustained use and continual improvement of the solution.

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21 Byrne, J„ and Pelter, Z., *Government services and children: Pathways to digital transformation*, UNICEF Office of Global Insight and Policy, 2021
22 Stephen, J., Myers, J., Brown, A., Watson, D., and Magee, I., *System error – Fixing flaws in government IT*, Institute for Government, 2011

Examples of this principle in practice

Designing with marginalised users

In **India**, the Unique Identification Authority of India (UIDAI) – the agency responsible for Aadhaar, the national biometric ID programme – conducted three Proof of Concept studies prior to the nationwide roll-out. While the studies did not systematically sample persons with disabilities, one of the key recommendations was to add usability and ergonomics as a criterion for iris sensor specifications. Accordingly, the list of requirements, which now forms part of the UIDAI's specifications for iris devices, includes requirements relating to ease of use of the device; physical, video and audio aids to assist with biometric capture; and the provision of feedback to the operator and the resident.

Further, the UIDAI engaged a visually impaired person – also an advocate for universal access – as a consultant to enable the participation of persons with disabilities in the design of the identity project. For instance, the design process involved the piloting of enrolment camps across two districts, in which about 870 persons with disabilities were enrolled. These pilot camps helped identify certain technical and procedural challenges with existing technical systems. The measures taken in response included the organisation of disability sensitisation workshops for state governments and enrolment agencies and the inclusion of questions relating to the UIDAI's biometric exception policy in the certification material for enrolment agents.

Being sensitive to socio-cultural norms

In **St Kitts & Nevis**, the managerial staff readily saw the business value of a social assistance information system in supporting centralised oversight and decision making. However, on the contrary, frontline social workers could not reconcile their community-oriented worldview with the rationalistic, codified worldview embodied by the information system. The original plan of the developers was to directly validate the MIS prototype with social workers, but given this disconnect, they first provided them with training in rhetorical styles that would assist them in seeing the connection between the goals of their practice and the logic of the technology solution. "The effect of the writing workshop was immediately evident. Whereas

before the officers only saw the MIS as an alternative way for storing data already available on paper forms, they now perceived it as a tool with the potential to facilitate and improve their work."[23]

Following agile methods

In **Timor-Leste**, each of the social protection information system modules was developed using an agile methodology, with a team of developers quickly designing and presenting a version of the system, then quickly responding to stakeholder's requests. The system has remained in agile development up until the present, as the government has requested additional features and modules be added to meet different programme goals.[24]

In **Mozambique**, the National Institute of Social Action (INAS) was contracted by the Centro de Desenvolvimento de Sistemas de Informação de Finanças (CEDSIF), a public institution under the Ministry of Economy and Finance, to develop e-INAS, the social assistance MIS. The INAS appointed a permanent team of six members from its IT team, who were physically located on a daily basis at the CEDSIF data centre, working alongside the teams of CEDSIF business analysts and developers. During the requirements gathering phase, the CEDSIF business analyst team worked alongside the INAS team to produce solid business processes and flows for the operations supported by the system. During the usability test phase, CEDSIF iteratively delivered various software versions to INAS for review. In this way, INAS ensured that the development was on the right track, and the end users tested the product and report any issues or further requirements.[25]

Seeking continuous feedback

After the MIS was established by the BOTA program in **Kazakhstan**, a working group was formed to note changing needs and expectations and make adjustments to the MIS.[26]

23 **Pitula, K., Sinnig, D., and Radhakrishnan, T.,** *Making technology fit: Designing an information management system for monitoring social protection programmes in St. Kitts,* **Paper presented at the SALISES 11th Annual Conference Turmoil and Turbulence in Small Developing States: Going Beyond Survival, Port-of-Spain, Trinidad & Tobago, 24–26 March 2010**
24 **Lann, T.,** *The benefits of agile implementation in social protection development interventions: A comparative analysis of social protection information system implementations in Timor-Leste, the Bahamas and Indonesia,* **Policy Research Brief No. 66, International Policy Centre for Inclusive Growth (IPC-IG), 2020**
25 **ILO,** *The case of e-INAS in Mozambique. Development of management information system for social protection,* **ILO, Maputo, Mozambique, 2019**

26 Saidulloev, F., and Dersham, L, *Mastering your information system in a conditional cash transfer program*, BOTA Foundation, IREX and Save the Children, 2013

Principle 2: Understand the existing ecosystem

The PDD text:

Well-designed initiatives and digital tools consider the particular structures and needs that exist in each country, region and community. Dedicating time and resources to analyze the ecosystem, or context where you work, helps to ensure that selected technology tools will be relevant and sustainable and will not duplicate existing efforts. Ecosystems are defined by the culture, gender norms, political environment, economy, technology, infrastructure and other factors that can affect an individual's ability to access and use a technology or to participate in an initiative. Initiatives that do not account for ecosystem challenges are less likely to achieve their objectives or scale. This may also lead to unintended consequences. The ecosystem is fluid, multifaceted and ever-changing, requiring that digital development practitioners regularly analyze the context to check their assumptions.

The SP perspective

Strong complementary 'analog' foundations are essential to reap digital dividends. While digital technologies have spread rapidly, "digital dividends – the broader development benefits from using these technologies – have lagged behind".[27] Evidence from public administration literature analysing the failure of information systems in developing countries shows that this mismatch arises from the gap between the way that technology projects are designed and the reality of the ecosystems they are deployed in.[28] Legal and policy frameworks; political and administrative institutions; access to and availability of affordable technologies; skills – all of these matter for digital solutions to succeed. For instance, e-government projects funded by the World Bank, including those

related to social protection, are more successful in countries with strong institutions.[29] As experience deploying digital SP solutions in low and middle income countries (LMICs) shows, beyond a very basic level, ICT infrastructure alone is not a sufficient condition to ensure the success of SP digitalisation: "progress is possible even in contexts with very limited ICT infrastructure, and even in contexts with advanced ICT infrastructure, governments may be slow to adopt digital solutions for a variety of reasons (e.g. bureaucratic obstacles, low levels of 'brain ware' in government relative to private sector, etc.)".[30] **Paradoxically, many LMICs look to digital technologies to address deep-seated challenges, such as weak rule of law, governance deficits, or poor accountability** – however, these are challenges that digital technologies cannot address, and may even reinforce.

In theory, the experts interviewed for this study felt this principle is a 'no-brainer'. Although, they acknowledged the difficulties of implementing the principle, as the ecosystem is constantly evolving. Further, the sheer breadth and depth of topics encompassed within this principle can overwhelm, rather than facilitate, its effective realisation – making a standardised assessment tool (along the lines of the Inter-Agency Social Protection Assessments [ISPA] tools) potentially useful.

How you can put this principle into practice

- **Understand the broader e-governance context.** A key lesson from early experiments in building digital SP systems has been to avoid developing silos in which **"different systems and IT infrastructures become an impediment to reconciling the whole relationship between the government and the individual"**.[31] Key activities in the social protection delivery chain (such as identifying beneficiaries, authenticating identities, and making payments) are inherently functions that cut across sectors and programmes for public administration. Therefore, it is important to ensure that efforts to digitalise these activities are built on the foundations of the broader e-governance context. The success of the **Integrated Social Assistance System in Turkey** and the **Registro Social de**

27 **World Bank,** *World development report 2016: Digital dividends,* **World Bank Group, Washington, DC, 2016**
28 Heeks, R., *Implementing and managing egovernment: An international text,* SAGE Publications, London, 2006

29 **World Bank,** *World development report 2016,* **2016**
30 **McClanahan, S.,** *Global research on governance and social protection: Global overview,* **United Nations Department of Economic and Social Affairs (UNDESA) and ILO, 2021**
31 **Cangiano, M., Gelb, A., and Goodwin-Groen, R.,** *Public financial management and the digitalization of payments,* **Center for Global Development, Washington, DC, 2019, p. 33**

Hogares in Chile are largely attributed to a very effective wider e-government environment. Key questions to ask include:

— Does a broader e-governance platform exist? What are its institutional arrangements? What existing systems can the SP solution draw on? What new systems are lacking and need to be developed? How can the new developments ensure openness and interoperability with the future needs of other government sectors?

— Is the government committed to a 'whole-of-government'[32] approach?

— Is there a government framework for ICT and interoperability?

— What are the existing legal and regulatory provisions for information access, cybersecurity, data security, data confidentiality, privacy standards, personal data protection, etc.? Are these sufficient?

- **Assess the availability, affordability and accessibility of infrastructure.** The groups that social protection is designed to serve, i.e. the most vulnerable and marginalised, are overrepresented among the most digitally excluded. Despite progress in recent years, vast gaps remain in terms of the components underpinning the digitalisation of beneficiary experiences, with considerable regional variations. The rapid expansion of social protection in response to COVID-19 relied, in many cases, on digital technology. Yet, an estimated 3.7 billion people do not use the Internet.[33] In 2019, 87% of individuals in developed countries were online, compared to 47% of people in developing countries, and 19% in the least developed countries. This divide is exacerbated by the persistent gender gap and urban-rural gap; for instance, in Africa, only 6.3% of households in rural areas have access to the Internet at home, compared to 28% in urban areas. In contrast, 90% of the global population is connected to a mobile network, although regional and gender differences still need to be taken into account.[34] While designing with users (see Principle 1) offers a closer look at users' perspective, existing research can inform these issues at the macro-level.

- **Understand ICT technology and the skills ecosystem.** Managing human resources that build, maintain and sustain digital SP is a significant challenge. Experience shows that the "skills to capture the benefits of technology for social protection delivery systems and to safeguard them well are specialised, scarce within social protection agencies, and highly remunerated, so often hard to attract on civil service salaries".[35] Key questions to ask include:

— How are existing government technology initiatives built?

— Is there existing IT capacity within the SP agency? How is this expected to evolve?

— Are there national universities or institutes that offer majors and courses in technology that can provide an assured pipeline of talent?

— What relevant firms exist in-country and what is their track record?

— What is the country's experience with using digital public goods?

— What possibilities exist for joint trustworthy partnerships with national institutions and firms?

- **Assess opportunities and constraints around interoperability.** Given the potential of interoperability to improve the efficiency and effectiveness of SP systems, it is crucial to understand what other information systems could usefully share data, both in the short and long term. In assessing this, it is equally important to reflect on who might be excluded by an approach to targeting that relies on data integration. For instance, women and persons with disabilities tend to be disproportionately excluded from civil registration and vital statistics systems (CRVS), ID systems, and taxation databases, which are commonly used in interoperability approaches.[36]

- **Understand the implications of the political climate.** Major reform agendas – ICT-enabled or otherwise – occur over a long time horizon, whereas the political conditions that catalyse them typically have a shorter lifespan. As ICT reforms in public financial management show, if reforms are to be far-reaching, then the broad political context needs to remain supportive.[37]

32 A whole-of-government approach refers to a cross-sector and cross-organisational consideration of individuals' needs in order to deliver services in a more integrated and coordinated manner.
33 UNDESA, *Leveraging digital technologies for social inclusion,* Policy Brief No. 92, United Nations Department of Economic and Social Affairs (UNDESA), 2021, p. 6
34 ITU, *Measuring digital development: Facts and Figures,* International Telecommunication Union, 2020

35 World Bank, *GovTech state of play: Challenges and opportunities,* World Bank Group, Washington, DC, 2020, p. 422
36 Barca et al., *Inclusive information systems for social protection,* 2021
37 Kostenbaum, S., and Dener, C., *Managing change in PFM system reforms: A guide for practitioners,* World Bank Group, Washington, DC, 2015

Examples of this principle in practice

While systematic assessments prior to developing digital SP solutions are increasing, they often focus on the technical parameters alone, rather than the entire ecosystem. For example, **Malawi** and **Bangladesh** assessed the various existing information systems and their underlying architecture to inform the development of the Unified Beneficiary Registry and the National Social Protection Information System, respectively. An assessment of existing information systems in **Uganda** prior to the development of the single registry was somewhat more expansive in scope, covering the efficiency of business processes, system architecture, and capacity/staffing. A feasibility assessment for a social welfare information management system in **Ghana** constituted a more comprehensive assessment and highlighted a range of issues, including:

▸ Limited technical capacity to support rollout of the system at the sub-national level

▸ Need for training on data use, both at the national and sub-national levels, for the system to be used to support improved programming and service delivery

▸ Need for significant hardware investments and additional IT staff, as well as a maintenance budget, given the low availability of technology at sub-national level

▸ Need to address issues related to Internet connectivity through an offline data entry function and mobile hotspots

▸ Need to adopt the eGIF, a nationally accepted e-government interoperability standard, as an integral part of implementation to ensure interoperability with other systems

▸ Need for a data sharing policy highlighting the indicators and data elements to be shared (and with whom) across both paper-based and electronic information systems

Where resources – time and money – are available, piloting can help provide a richer understanding of the ecosystem, as demonstrated in the case of the on-demand local-level electronic registration system for the social registry in Cambodia. In **Cambodia**, the Ministry of Planning, in collaboration with GIZ and AusAID, developed a mechanism to update changes to household circumstances more frequently in the Identification of Poor Households Program (IDPoor). The census survey approach, which was first used to populate the social registry, required substantial resources,

making updates feasible only once in three years. The proposed design of the new approach, known as On-Demand IDPoor (OD-IDPoor) used commune councils (i.e. local governments) to update data on a monthly basis. The design was piloted across 19 communes and sought to understand the feasibility of electronic tablet-enabled registration at the commune level. A consultation workshop was held with concerned ministries, implementation partners and sub-national implementers to obtain feedback on the design before field testing.

The pilot showed that the electronic registration process reduced logical errors due to in-built validation. Further, automatic calculation of the poverty scores was perceived as more accurate and unbiased by the households. The pilot identified key challenges to be streamlined before the nationwide roll-out:

▸ Contrary to concerns that commune councils may struggle with electronic interfaces, only 1 in 10 commune councils had difficulties using them. A bigger challenge was that most commune councils did not know how to open and/or operate an email account. One of the conclusions of the OD-IDPoor pilot was to include basic IT skills as part of training and to provide close support during the first few months. Printers at commune offices were not maintained properly and, therefore, the printing of the cards needed to be done at the district or provincial level.

▸ The communication of updates to user programmes via OD-IDPoor was considerably delayed. Some user programmes were unaware of the OD-IDPoor pilot and, therefore, refused the new cards. Although application programming interfaces (APIs) existed for user programmes to automatically access and download OD-IDPoor data, the user programmes lacked the technical know-how to do so.

The pilot provided crucial insights into how to redesign the solution to meet user needs. This preparedness for ground realities helped OD-IDPoor to be scaled up nationwide to support emergency cash transfers in response to COVID-19. The government and development partners are now working towards permanently replacing the census approach with the on-demand mechanism.[38]

38 Ministry of Planning, AusAID, and GIZ, *On-Demand Identification of Poor Households – Summary of pilot results and recommendations for a scale-up*, 2019

Principle 3: Design for scale

The PDD text:

Achieving scale is a goal that has been elusive for many digital development practitioners. The mHealth field, for example, has identified the problem of 'pilotitis,' or the inability to move initiatives beyond pilot stage. Achieving scale can mean different things in different contexts, but it requires adoption beyond an initiative's pilot population and often necessitates securing funding or partners that take the initiative to new communities or regions. Different implementers may define scale as reaching a certain percentage of a population or a certain number of users. Designing for scale means thinking beyond the pilot and making choices that will enable widespread adoption later, as well as determining what will be affordable and usable by a whole country or region, rather than by a few pilot communities. You may need to evaluate the trade-offs among processes that would lead to rapid start-up and implementation of a short-term pilot versus those pilots that require more time and planning but lay the foundation for scaling by reducing future work and investment. By designing for scale from the beginning, your initiative can be expanded more easily to new users, markets, regions or countries if the initiative meets user needs and has local impact.

protection systems are further consolidated and integrated, scaling across ministries and programmes is critical. Further, scaling up in response to shocks also becomes important, as social protection systems are increasingly being called upon to support disaster-affected households.

While experts agree that digital SP solutions should be designed for scale from the start, they concede that this is not often done. One reason for this is the lack of a programmatic vision and definition of scale, which then trickles down to the design of the IT solution. Therefore, not knowing how the programme is set to evolve, the IT solution also evolves organically, rather than deliberately, sometimes sending the solution back to square one after a few years of being live. Moreover, in the absence of digital expertise in SP institutions, the centrality of IT to a particular reform (e.g. development of a social registry) is often understood by stakeholders only after struggling with lack of scalability. Another potential reason, particularly in countries where political consensus around social protection is yet to emerge, is that the priority focus on building programmatic evidence often means that digital delivery systems are only treated as a means to an end. If the programme is scaled up, then more focused attention is paid to rebuilding digital systems. If the programme is not scaled up, it is still possible that elements of the digital solution can be reused, depending on its initial design.

The SP perspective

Designing for scale is crucial in SP, as programmes are often national in scope, and even sub-national schemes often extend to large sections of the population. As countries progress towards universal social protection systems that dynamically respond to population needs, the scaling of operations is only going to grow. Further, as large-scale shocks such as disasters, pandemics and conflict increasingly impact on people's lives, designing underlying systems that have the capacity to absorb extraordinary spikes in demand becomes all the more important.

While the PDD define scale as being able to move beyond pilots, additional dimensions of scale need to be considered when applying them to the social protection sector. As social

How you can put this principle into practice

- **Define what 'scale' means for your solution.** It is important that that your solution have a roadmap that defines its short-, medium- and long-term scale. Scale could imply one or more of the following: (i) in a single programme, the number of users and beneficiaries the solution is expected to serve, (ii) in integrated systems, the number of programmes the solution is expected to serve (with accompanying increase in the number of users and beneficiaries),[39] and (iii) in shock-responsive systems, the ability of the solution to be scaled up during crises.

- **As you make technology choices, think about whether they will make it easier or harder to scale up a programme.** Pilot programmes need to bear in mind both evolutions in technology and the implications of piloted technology on potential scale-ups. While many programmes in the mid-2000s collected paper forms at registration and transported them to the district or the capital city for data entry, rapid developments in digital data collection technology have meant that such designs are fast becoming obsolete.

Pitfalls of not applying the principle

Just three years into the **Ghana** Livelihood Empowerment against Poverty (LEAP) programme, in 2011, it was assessed that the original software application was no longer appropriate for a programme with just over 30,000 beneficiaries. This meant migrating to a higher capacity server in the short term and eventually completely replacing the application. The use of paper and vehicles in the **Kenya** Cash Transfer for Orphans and Vulnerable Children (CT-OVC) and **Ghana** LEAP schemes means that 25 data entry clerks have to be employed in Nairobi and 20 in Accra, despite the relatively small number of recipients of both schemes. Both schemes were designed as pilots, with insufficient thought being given to the implications of scaling-up. As a result, both schemes have large amounts of paper piling up in their central offices.[40]

- **Adopt a standardised taxonomy to the extent feasible.** While standardised business processes, workflows, and data fields are yet to emerge in the social protection sector (which is a key priority under **the DCI**), the **Sourcebook on Social Protection Delivery Systems** offers a good starting point. Adopting existing national e-governance standards can also improve scalability across national institutions.

- **Identify the resources needed to maintain the solution at scale.** Depending on the definition of scale, identifying the resources needed to achieve this vision is crucial. Planning for financial and non-financial resources is further discussed under **Principle 4: Build for sustainability**.

- **Adopt a modular approach to ensure that the solution can adapt to changing scale.** This is discussed further in **Principle 4: Build for sustainability**.

- **Keep it staged and realistic.** If the broader capacity is not there, aiming too high, too quickly (a comprehensive approach) is dangerous, as it means making things complicated and hard to implement, which risks backfiring. Instead, build up towards a comprehensive vision over time. It is essential to build broad-based consensus around "what is good enough for now", "which processes take time to develop" and "which processes take precedence in the immediate term".[41]

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39 For instance, Brazil's Cadastro Único was created in 2001 as an instrument to be used by federal social assistance programmes, which were consolidated into Bolsa Família in 2003. However, since then, it been has drawn upon by more than 27 programmes, including outside the social protection sector.
40 Kidd, S., and Chirchir, R., *Good practice in the development of management information systems for social protection: A summary of South Africa and Mauritius experiences, Annex to Briefing Paper No. 5, Development Pathways, May 2011*

41 Lindert, K., *SSN delivery systems & the challenges of scaling up of programs and the integration of systems, Social Safety Nets Core Course, World Bank, Social Protection and Labor, 2016*

Examples of this principle in practice

In **Myanmar**, the Ministry of Social Welfare, Relief and Resettlement and development partners sought to replace the paper-based processes, along with individual Excel or Access databases, that supported the Maternal and Child Cash Transfer, the Social Pension and the Child Protection Case Management system. The current scale and the long-term scale expected of the system were clearly set at the time of issuing the terms of reference.

Table 1: Business volume projections[42]

Programme	Current volume (approx.)	Project volume (approx.)
MCCT	300,000 beneficiary records	Additional 726,000+ projected records over next 12 months
Social pensions	188,000+ beneficiary records	Additional 280,000 projected records over next 12 months
Cases management (ISPS)	2,100+ cases with 15,000 activity records	Additional 600 cases projected over next 12–14 months

Note: MCCT = maternal and child cash transfer; ISPS = Integrated Social Protection System

Table 2: Current and projected number of MIS users[43]

Administra-tive level	No. of sites	Current number of users		Projected (next 3 years)		Projected (next 5 years)	
		Avg / site	Total (est)	Avg / site	Total (est)	Avg / site	Total (est)
Union (DSW head office)	1	30	30	50	50	70	70
State / region (DSW)	15	10	150	15	225	20	300
Districts (DSW)	76	5	380	10	760	15	1,140
Townships (DSW)	330	3	990	5	1,650	7	2,310
Wards / villages (DSW, GAD, others)	66,695	1	66,695	2	133,390	2+	199,905

Note: DSW = Department of Social Welfare; GAD = General Administration Department

In **Uzbekistan**, an interoperability-based approach to eligibility determination for social assistance was first piloted in a subset of regions. In the roll-out plan, the additional physical and human infrastructure needed was identified at all levels of the administration, which received timely financial commitment from the government as the scale-up began.[44]

Principle 4: Build for sustainability

The PDD text:

Building sustainable programmes, platforms and digital tools is essential to maintain user and stakeholder support, as well as to maximize long-term impact. Sustainability ensures that user and stakeholder contributions are not minimized due to interruptions, such as a loss of funding. A program built for sustainability is more likely to be embedded into policies, daily practices and user workflow. For many digital initiatives, institutional-ization by a nongovernmental organization, private company or local government is the ultimate goal in achieving long-term, positive impact. For others, institutionalization is achieved by developing a business model that has sustainable revenue generation.

The SP perspective

The sustainability of a digital solution is influenced by a range of factors. First, the solution should have buy-in from the government. Second, such government commitment should be backed by financial commitments towards the total cost of ownership (TCO) over the long term. Third, the IT skills ecosystem – within the government as well as outside – should offer effective capacity to support the solution, both in terms of future development and ongoing maintenance. Fourth, as the programmatic needs are continuously emerging, solutions should be adaptable to evolving needs. Fifth, solutions should not be siloed, but must be embedded within the national digital infrastructure, offering government-wide interoperability. Finally, solutions should be continuously tested for acceptance with the end-user (see Principle 1: Design with the user).

While there was consensus among interviewees regarding this principle, there are few examples of this principle being prioritised. One reason that emerged from discussions is that digital SP reforms focus on building national core digital infrastructure by pushing the realm of possibilities over very long and unknown time horizons. Optimising for current constraints (in terms of finances, talent etc.) is sub-optimal in the long term as these conditions are expected to evolve towards a more conducive steady state. For

instance, it is not uncommon for donors to lead conversations around the design of solutions given the lack of internal IT capacity in SP agencies – with the unstated assumption that any capacity issues at handover are likely to be transitional problems until the skills ecosystem catches up. However, these 'teething issues' can continue for many years, and even decades, reinforcing the need for digital SP solutions to encompass complementary investments that go beyond the social protection sector.

Pitfalls of not applying the principle[45]

The Platform of Integrated Registry for Social Programs of the Plurinational State of **Bolivia** (PREGIPS) originated in 2011 with a loan from the Inter-American Development Bank (IDB). Backed by the IDB loan and a law enacted in 2016, the social registry collected data via a census sweep from 250,000 households in 2015 (or 10% of the population). However, the sustainability of PREGIPS beyond this initial loan period has been under threat, as seen from the evidence below:

► During the IDB loan period (until 2016), PREGIPS had a strong institutional structure in the Ministry of Development Planning. The IDB financing made possible a structure with seven qualified people in the area of IT, social sciences and economics. However, since then, only four people have remained on the team – two external consultants hired by international institutions and two IT employees who are shared with the IT area of the Ministry of Development Planning – with no dedicated internal resources.

► The data from the census sweep could not be used for the implementation of social policies, as the platform was developed by a company contracted with resources from the IDB loan agreement. When the loan agreement ended in 2016, the contract with the data centre for maintenance of the database expired. Due to the risk of losing all the data from the 2015 registration, another company was hired in 2018, with resources from the Food and Agriculture Organization (FAO), to stabilise the functioning of the system. Only in 2019 did the data viewer came back into operation and, now, with the restored access to the data, it is possible to do the analysis again. Given the relative out-datedness of the information, a new en masse registration was planned in 2019.[46]

45 **Source: World Bank, *Social registries assessment tool: Platform of Integrated Registry for Social Programs of the Plurinational State of Bolivia (PREGIPS)*, World Bank Group, Washington, DC, 2019a**
46 This study could not ascertain whether or not new registration activities were indeed conducted.

How you can put this principle into practice

- **Estimate the total cost of ownership to ensure continued investments.** Clear estimation of the TCO – or the lifecycle cost – is crucial to plan and secure government commitment for the sustained implementation of the digital solution. TCO "involves all direct and indirect costs for the acquisition and use of a system or product. This includes any upfront development and capital expenditure (Capex) as well as any operations and maintenance expenditure or other operational expenditure (Opex) over a defined period".[47] Therefore, TCO encompasses all past (or sunk), present, and future costs required to develop, produce, deploy, and sustain a particular programme over its lifecycle. This includes:[48]

  — Software costs (licence, product per user charge, database, operating system software, server software, network software, maintenance fees, etc.)

  — Hardware costs (server hardware costs, network upgrades, desktop hardware, data centre facilities, power supply/generators/UPS, cooling, maintenance fees, etc.)

  — Consulting costs (individual consultants or consulting firms for design and implementation, deployment and upgrade, integration, future projects, etc.)

  — Personnel costs at central operating level (management, IT staff, administrators, etc.)

  — Frontline costs for citizen interface (social worker/interviewer staff time, data processors, supervisors, IT staff and costs, etc.)

  — Training costs (staff time, trainers, location costs, materials, etc.)

  — Communication costs (based on roll-out strategy)

- **In calculating the TCO, the importance of paying adequate attention to recurrent operational costs cannot be overstated.** In the social protection sector, initial capital investments have been commonly donor-financed,[49] with governments expected to take responsibility for ongoing maintenance and upgrades once donor-funded projects end.

- Donor-financed capital investments have ranged from USD 90 million in Mexico, USD 83 million in Argentina to USD 17 million in Chile, USD 10 million in Colombia and Turkey, USD 3.6 million in Uruguay and USD 1.7 million in Costa Rica.[50] The operational costs are less systematically estimated and documented with granularity, reflecting trends in broader e-government projects, in which cost estimation tends to focus on the initial investment, rather than ongoing operational recurrent costs. Given that for many e-government projects, recurrent costs exceed the once-off capital investment, costs are commonly underestimated.[51] However, the limited evidence available suggests that the operational costs of digital SP solutions are not trivial: for instance, for social registries, these costs are estimated at between USD 0.2 million in Costa Rica, USD 0.5 million in Uruguay and Chile, and USD 9 million in Brazil.[52]

- **Standardised guidance on cost estimation methodologies in the sector is yet to emerge, in part due to the practical complexities of modelling the cost of the deployment of long-term sophisticated technology within the government.** The vast variation in costs reported by different donor investments above highlights the need to bring transparency into the understanding of cost components. Some of the challenges include:[53] (i) there are different types of administrative costs, both for front-end and back-office functions; (ii) costs are spread over time, as these systems are never a once-off exercise and continue to evolve indefinitely; in addition, needs/requirements may change with time; and (iii) when many donors finance these systems, accounting for costs becomes even harder. An **example** of efforts to elaborate on a costing model is ID programmes; the Identification for Development (ID4D) programme at the World Bank has made attempts to identify the cost drivers in ID programmes to help policymakers plan, procure and implement foundational ID initiatives.

- **Identify and invest in in-house and external local capacity.** It is rare that the institutions responsible for the digital solution have the in-house capacity to develop and maintain the solution.[54] While countries with e-governance maturity can rely on

47 World Bank, *GovTech procurement practice note*, World Bank Group, Washington, DC, 2021
48 Leite, P.G., George, P., George, T., Sun, C., Jones, T., and Lindert, K. A., *Social registries for social assistance and beyond: A guidance note and assessment tool*, No. 117971, World Bank, 2017, pp. 1–119
49 For instance, evidence from Latin America indicates that "external financing appears to be a key element in allowing the initial disbursements needed" for building single registries and associated components (Azevedo et al. 2011, cited in Barca, V., *Integrating data and information management for social protection: Social registries and integrated beneficiary registries*, Commonwealth of Australia, Department of Foreign Affairs and Trade, Canberra, 2017). While the World Bank continues to be the main driver of these investments today, the Australian

Department of Foreign Affairs and Trade (DFAT), United Kingdom Foreign, Commonwealth & Development Office (FCDO), GIZ, United Nations Children's Fund (UNICEF) and World Food Programme (WFP) are also investing in building these systems in a growing number of countries.
50 Barca, *Integrating data and information management for social protection*, 2017
51 Heeks, *Implementing and managing egovernment*, 2006, p. 207
52 Barca, *Integrating data and information management for social protection*, 2017
53 Lindert, K., Colin, A., Msowoya, C., Paul, B. V., Chirwa, E., and Mittal, A., *Rapid social registry assessment: Malawi's Unified Beneficiary Registry (UBR)*, Discussion Paper 1803, World Bank, Washington, DC, 2018
54 Samson, Michael; Taylor, Nicholas, *Supporting Social Protection Systems*, Directorate-General for International Cooperation and Development European Commission, 2015

government ICT agencies, in many LMICs development and maintenance is contracted out to private vendors. Where the local technology ecosystem is nascent, donor-funded projects tend to draw on international vendors. Further, the entry of local firms is usually restricted by the qualifying criteria (in terms of years since incorporation, annual turnover, number of staff). These factors, combined with the challenges of staff retention in the government ICT space, pose serious threats to sustainability, especially in contexts where SP business processes are nascent and evolving.

- **Build a solution that can be adapted, as user needs and the ecosystem change.** The complexity of designing and iteratively implementing solutions that fully respond to the changing needs of users at all levels of administration, while also placing people at the centre, is often under-estimated. Digital SP solutions are always a work in progress. This is because, as both social protection systems and underpinning digital solutions mature, policy and operational needs evolve. The broader ecosystem is also continuously evolving, pushing the realm of possibilities. Therefore, a flexible, modular, technology-neutral approach is crucial to ensure that the solution is future-proof.

- **Identify partners that can legitimise and promote broader use of the solution.** As mentioned earlier, activities along the delivery chain are standardised business processes common to many programmes – within and beyond the social protection sector. When there is policy backing for the solution or the tool is used by a wide range of actors, its sustained use and continued enhancement is more likely. For instance, the legally mandated use of IDPoor in Cambodia for targeting by all social protection programmes ensures its sustainability beyond the GIZ funding period or the Ministry of Planning's commitment to further enhance the registry. Additionally, consultations and advocacy workshops with other potential user ministries enables the wide adoption of the solution. In contrast, the inadequate dialogue regarding single/social registries outside of the host ministry (e.g. in Kenya[55]) or by federal governments (e.g. in Pakistan) can lead to limited adoption and the duplication of efforts.

Examples of this principle in practice

Investing in sustainable capacity

▸ In **Kazakhstan**, the BOTA conditional cash transfer (CCT) programme hired an external firm to establish the MIS, as well as an MIS specialist to work alongside this team. This process helped ensure that the specialist knew the MIS well by the time it was handed over.[56]

▸ In **Malawi**, the software for the Unified Beneficiary Registry (UBR) was built in-house, using open-source software components, rather than being contracted out to external firms with their own proprietary software. The in-house team of developers 'co-developed' the solution with an international support consultant, who provided three months of development support and seven months of maintenance support. On the flipside, human resources need to be augmented for critical roles such as project management, service desk management, and risk monitoring.[57]

▸ The second phase of the development of the IDPoor registry in **Cambodia** was implemented by a consortium comprised of two (lead) international vendors and a local IT firm. Post-development (which was funded by GIZ) and ongoing maintenance (estimated at two days per month, funded by the government) was contracted to a local firm, with the international vendor continuing to play an advisory role. A key informant working in a South Asian country noted that such a consortium of international and national vendors does not guarantee a successful model, if the local firm has been included nominally to improve the consortium's win probability, as was the case in this context. Therefore, it is crucial to delineate the role of the local vendor vis-à-vis the international partner to ensure knowledge transfer and sustainability.

55 Gardner, C., Doyle, A., Farhat, M., Brockerhoff, S., and Merttens, F., *Opportunities of, and obstacles to, the utilisation of the Enhanced Single Registry*, Oxford Policy Management, 2021

56 Saidulloev and Dersham, *Mastering your information system in a conditional cash transfer program*, 2013
57 Lindert, et al., *Rapid social registry assessment, 2018*; KII

- In **Haiti**, the SIMAST (Système d'Information Ministère des Affaires Social et de Travail) system (originally a survey respondent database, which grew into a partial social registry) was designed by the World Food Programme (WFP), but developed by local application developers contracted jointly by the government and the UN. This kept the initial costs lower than if the entire process was managed externally. Also, as knowledge is maintained locally, the Government of Haiti is able to contact the developers separately to maintain and adapt the system over time. In this particular context, there was initially insufficient capacity to lead the design process, but due to the principle of 'build slow and local', the knowledge exchange was successful in building local expertise to lead in most of the strategic definition going forward.

Adopting a modular approach

- The modular approach undertaken by the BOTA programme in **Kazakhstan** means that the MIS is able to design, test and implement new functions and modules, as programme needs evolve. The in-house capacity mentioned earlier has proved instrumental in enabling such a modular approach.[58]

- In **Albania**, the shift from a paper-based MIS to an electronic one encompassed two of the largest social assistance programmes in the country: Ndihma Ekonomike and disability allowances. In the first phase, the MIS was designed to support eligibility determination, recertification, payments, and basic reporting. In the second phase, the MIS was expanded to cover additional modules on budget preparation and execution, monitoring and evaluation, appeals and complaints, identification of suspicious cases that could be affected by error or fraud, and case management.[59] ▶ **Annex Figure 1**

- In **Romania**, SaFIR, the MIS for social assistance programmes, was developed across multiple stages, starting with a pilot in two counties (2007–2008), extending to 500 users and 6 programmes nationally (2009), and subsequently adding new programmes, functions and interoperability-enabled data verification (2011–2012).[60]

- **Turkey's** Integrated Social Assistance System followed a modular approach, building modules on a rolling basis starting in 2009 and finishing in 2015. ▶ **Annex Figure 2**

- **Brazil's** Cadastro Único illustrates how the system's scale and functionalities have evolved over 15 years. ▶ **Annex Figure 3**

- **Colombia's** Sistema de Información de Familias en Acción (SIFA), which supports the large-scale CCT Familias en Acción, has also evolved in multiple phases. Between 1998–2002, the system only had an enrolment module with no long-term planning. In 2004–2005, payments and updates modules were added. The year 2007 saw a range of changes in the system, including its roll-out to municipal offices using web applications; adding modules for cross-checking and grievance redress. Between 2008–2010, an offline version of the application was introduced to support the completion of tasks in areas with low connectivity. In 2011, specific user profiles were added to facilitate access to customised monitoring reports.

58 Saidulloev and Dersham, *Mastering your information system in a conditional cash transfer program*, 2013
59 Tesliuc, E., Pop, L., Grosh, M., and Yemtsov, R., *Income support for the poorest: A review of experience in Eastern Europe and Central Asia*, World Bank, Washington, DC, 2014, p. 223

60 ibid.

Principle 5: Be data driven

The PDD text:

No amount of data will lead to accelerated impact if it is not used to inform decision making. When an initiative is data driven, quality information is available to the right people when they need it, and they are using those data to take action. The data produced by a digital initiative should be used for more than just outputs, such as published work or donor reporting. Examples of the types of data that can be collected to inform decision making include surveillance, research, operations, project management and data from secondary sources collected outside of the program.

The SP perspective

Digital information systems underpinning SP programmes are an important source of data to measure performance and design programmatic approaches accordingly. However, it is important to note that information systems are not a substitute for a monitoring and evaluation (M&E) framework. The logical design of the information system should be informed by a clearly articulated M&E framework, which is ultimately the responsibility of the programme manager, rather than IT experts.

The operationalisation of this principle could be constrained by factors beyond the remit of the digital solution. As demonstrated by the World Bank's review of the effectiveness of overall assistance to social safety nets, only 22% of the countries were found to use M&E fully for programme decisions; another quarter of countries used their M&E systems to some extent.[61] Some of key challenges to data-driven monitoring include:[62]

- Programme MIS pre-dates the monitoring framework, making it less useful from a monitoring perspective

- Monitoring was not a priority when the MIS was designed

- Limited infrastructure and capacity at sub-national level

How you can put this principle into practice

- **Emphasise protocols to measure and improve data quality.** Data use ultimately depends on trust in data quality. Therefore, SP institutions must build protocols to measure and improve data quality in order to maintain credibility and encourage sustained data use.

- **Design to measure programme performance.** Having a strong information system as a backbone for all programme operations means that administrative data is collected as a by-product of day-to-day activities, beyond the data collected at registration into the SP system/programme. This may include: time-stamped data on service delivery timelines (i.e. enrolment, verification, and payment), common reasons for rejection, bottlenecks causing delays, data on payment modalities accessed, trends coming from complaint mechanisms and the case management information system, among other things.

- **Encourage data use via intuitive reports and dashboards.** While data use is influenced by factors unrelated to technology, technology can encourage better uptake of data via intuitive reports and dashboards. Reports and dashboards generated by digital SP solutions should be differentiated based on the needs of the target audience. For instance, research from Ghana and Mozambique shows that higher level managers

61 **World Bank,** *Social safety nets: An evaluation of World Bank support, 2000–2010,* **World Bank Group, Washington, DC, 2011**
62 Barca, V., *Final report monitoring systems for SSNs in COMCEC region,* 2014; **Attah, R., Barca, V., MacAuslan, I., Pellerano, L., Ragno, L. P., Riemenschneider, N., and Simon, C.,** *How to move beyond the impact evaluation trap? Setting up comprehensive M&E systems for social protection programmes,* **One Pager No. 298, International Policy Centre for Inclusive Growth (IPC-IG), 2015**

are often not aware of the challenges and decision-making needs of lower levels.[63] Where infrastructure and capacity exist, decentralised access to reports at lower levels of implementation should be considered. For instance, the Hunger Safety Net Programme (HSNP) Dashboard in Kenya is an online system that allows managers and field staff to track who is getting assistance (and where), file and respond to complaints, scale up payments in emergencies such as the January–March 2015 drought, and assemble data for planning and reporting.[64]

- **Ensure seamless interoperability with other information systems that can be drawn on to produce analytical insights.** Data produced by SP information systems can be integrated with other – individual as well as aggregated – datasets to improve programme performance by enhancing coverage and reducing leakages (see box below for examples). If such integration is not seamless, robust and efficient analysis is undermined. For example, data feedback from the Social Cash Transfer Programme to the UBR in Malawi has been carried out to date using 'cron jobs' (batch matches that are run at specific intervals), rather than an API, making the process less efficient.[65] While Colombia's integrated beneficiary registry (RUAF) was designed to allow programmes to upload information in an interoperable way, each programme developed its information system platform in a disconnected fashion, leading to information not being shared in real-time.[66] Further, when combining datasets, it is important to consider the quality of the underlying information systems. For instance, the Single Registry in Brazil draws on the National Registry of Motor Vehicles to record vehicle ownership data. An investigation in 2009–2010 revealed that vehicles were falsely registered in the name of people registered in the Single Registry to hide their true owner – a form of recurrent tax fraud in Brazil. This investigative effort raised a broader debate on certifying the reliability of administrative registries.[67]

- **Design for fair, transparent and accountable data use.** The PDD mainly focus on the digitalisation of operational processes, but they do not consider the implications of 'datafication' on the design of the processes themselves. The ability of IT to collect, process and manipulate large quantities of data has caused a paradigm shift in how targeting decisions are made by social protection programmes.[68] Increasingly, data are being used to build algorithmic models to automate decision making. Although practical applications in LMICs remain limited,[69] COVID-19 has given momentum to the use of algorithmic targeting.[70] Based on experiences in developed countries, the UN Special Rapporteur warns that these systems are largely being used to "automate, predict, identify, surveil, detect, target and punish", rather than include, people.[71] There is growing concern that these systems can produce outputs that are flawed or discriminatory in nature, driven by incorrectly specified models and/or incomplete data. Further, the underlying analytical processes are complex and opaque and, therefore, could disempower citizens when claiming their rightful entitlements. Hence, building a governance framework around algorithmic targeting is an essential principle for the design of digital social protection systems.

Examples of this principle in practice

▶ In **Kazakhstan**, the BOTA programme's monitoring system has a long list of indicators, including measures of outputs (funds disbursed, number of beneficiaries reached), outcomes (improved knowledge measured with tests), and performance (relative cost with respect to other programmes, leakage, beneficiary satisfaction). These indicators can be easily disaggregated by gender and region (oblast or province), and further by rayon or district, village or settlement, rural or urban, and implementing field office, and so forth. During the roll-out stages, the MIS was used for planning and timing visits, as well as arranging spot-checks and identifying local offices that were having trouble with implementation. Information generated by the MIS was also used to develop tailored communication strategies.

63 Ibid.
64 Naughton, J., *Better data transfer reinforces Kenya's Hunger Safety Net, enables emergency payments* [online], DAI, 4 March 2015
65 Lindert, *Rapid social registry assessment*, 2018
66 Liete, P., *Stages in the process and the backbone: MIS*, World Bank, 5 December 2013
67 Bartholo, L., Mostafa, J., and Osorio, R. G., *Integration of administrative records for social protection policies: Contributions from the Brazilian experience*, Working Paper No. 169, International Policy Centre for Inclusive Growth (IPC-IG), Brasilia, 2018

68 Kaun, and Denick, 'Datafication and the welfare state: An introduction', *Global Perspectives, 1*(1), 12912, 2020
69 Ohlenburg, T., *AI in social protection – Exploring opportunities and mitigating risks*, Asian Development Bank and GIZ, 2020
70 Ohlenburg, T., *Social protection in a pandemic – trends, challenges & technology*, Asian Development Bank and GIZ, 2022
71 Alston, *Report of the Special Rapporteur on extreme poverty and human rights*, 2019

▶ In **Kenya**, the MIS underpinning the CT-OVC improved managers' understanding of implementation, helped them to undertake mid-course corrections, and enabled them to keep track of reaching orphans and vulnerable children.

▶ In **Brazil**, the Ministry of Social Development was concerned that extremely poor families were missing from the Cadastro Unico, the country's social registry. The ministry undertook statistical analysis that combined data from the registry with poverty maps to identify specific populations that were under-registered. An active outreach strategy was launched based on this analysis, which involved door-to-door visits by social workers, visits by mobile 'social assistance' vans to remote localities, as well as partnerships with government and civil society agencies.

▶ In **South Africa**, using a combination of geo-coded administrative data on grant recipients (for the numerator) and census data (for the denominator), eligibility and take-up rates of the Old-Age Grant and Child Support Grant were calculated and mapped at the municipality level to identify areas where take-up was low. The work was used by the Department of Social Development to promote take-up.[72]

▶ In **Ghana**, the COVID-19 crisis led to a spike in calls and text messages to the hotline operated by the Single Window Citizen Engagement Service (SWCES). The hotline was set up in 2017 to gather complaints and information related to the implementation of the government's non-contributory social protection programmes and social services. The data from the hotline was combined with other sources of data to map local areas with extensive demand for assistance.[73]

▶ In **Indonesia**, data from the Data Terpadu Kesejahteran Sosial (DTKS), the country's social registry, was used to implement an experimental evaluation that assessed the effectiveness of social protection cards in creating awareness of a subsidy programme among eligible beneficiaries.

▶ Also in **Indonesia**, the MIS underlying the national health insurance scheme, Jaminan Kesehatan Nasional (JKN), was used to monitor the outcomes of an experimental evaluation that sought to understand the impact of price subsidies on the take-up of health insurance.[74]

72 Noble, et al., 2005, cited in **ISSA,** *ISSA social security research and policy manual,* **International Social Security Association (ISSA), Geneva, 2010**
73 **Dadzie, C. E., and Raju, D.** *Data-driven social safety net response to the COVID-19 crisis in Ghana,* **World Bank Blog, 4 January 2021**

74 **Hanna, R., Olken, B., Banerjee, A., Widyasari, P. P., Amalia, F., Sumarto, S., and Alatas, V.,** *Admin Data Handbook: 16. Using Administrative Data to Improve Social Protection in Indonesia,* **(Preliminary version), 2020**

Principle 6: Use open standards, open data, open source, and open innovation

The PDD text:

Too often, scarce public and international development resources are spent investing in new software code, tools, data collection, content and innovations for sector-specific solutions that are locked away behind licensing fees, with data only used by and available to specific initiatives. An open approach to digital development can help to increase collaboration in the digital development community and avoid duplicating work that has already been done. Programs can maximize their resources — and ultimately their impact — through open standards, open data, open-source technologies and open innovation. By taking advantage of existing investments when you are able, you can apply finite digital development resources toward creating global goods. What being 'open' means for your initiative will depend on practical and technical constraints, security and privacy concerns, and the dynamics of the people and networks in your space. For example, to what extent your initiative uses open-source software will depend on the needs identified for your context and an assessment of which of the available options best meets those needs, factoring in their total cost of ownership.

The SP perspective

This principle attracted considerable debate among interviewees. It includes four different concepts, each with distinct implications for digital SP. Therefore, in applying this principle, each tenet has to be reviewed individually. The case for open data is not straightforward and needs to be justified on a case-by-case basis. This is because robust, secure and meaningful open data initiatives are costly to design, and may not always be a priority in resource-constrained settings. Ultimately, its importance depends on the maturity of the social protection system in a given country. The interviewees remained divided on open source: while some participants were committed to development partners' continued investment in open-source software, others were less positive about government uptake of these solutions, due to a perceived need for extensive, expensive customisation.

Indeed, interviewees were unanimous in prioritising the development of open standards, which are increasingly being seen as key to scalability across contexts.

Open standards

Open standards are critical to avoid vendor lock-in and ensure interoperability. Open standards are publicly available standards with proven implementation success. These "standards can be used in both open source and proprietary software to facilitate interoperability and data exchange among different products or services and are intended for widespread adoption".[75] When government agencies design software solutions based on open standards, it becomes easier to enable interoperability and integration with solutions developed by other agencies that are also built in compliance with those standards, thereby enabling a 'whole of government' approach to delivering services. Open standards are particularly relevant for social protection, given the overlaps between social protection building blocks in the delivery chain with other areas of public administration (communication, registration, identification, authentication, payments). Further, in a rapidly evolving technology environment, they help mitigate the risk of wasting resources on vendor locked-in systems that pose barriers to the future adoption of newer, more innovative or cheaper technologies.

Experiences to date reinforce the importance of open standards in digital SP. At the 2018 Annual Meeting of the ID4Africa Movement, a poll of the delegates identified lack of provider and technology neutrality as the biggest concern among those tasked with implementing national identification systems.[76] National ID programmes in Botswana, Cameroon, Côte d'Ivoire, and Ghana, in particular, have struggled with vendor lock-in.[77] Some experiments building social protection information systems in Sub-Saharan Africa have proven costly, having to rely on expensive proprietary licences.[78] Countries relying on data exchange to identify beneficiaries during COVID-19 have also experienced delays incurred due to manual matching in the absence of interoperability frameworks and standards (e.g. the Ehsaas emergency cash transfer in Pakistan and the Leave No One Behind cash transfer for informal workers in Thailand).

75 Blaya, J., and Otzoy, D., *Buy, build, or adapt: How to decide?: A guide to open source electronic health records (EHRs)*, Inter-American Development Bank, 2019
76 ID4Africa, *Putting government back in control: Solving vendor lock-in with open standards*, Secure Identity Alliance, 2019
77 World Bank, *The state of identification systems in Africa. A synthesis of country assessments*, World Bank Group, Washington, DC, 2017
78 TRANSFORM, *Management information systems and approaches to data integration – Manual for a leadership and transformation curriculum on building and managing social protection floors in Africa*, TRANSFORM, 2017

Open source

Open source is software with freely available source code, which anyone may modify and distribute their own versions of without incurring licensing fees. Building open source solutions can facilitate the delivery of programmes, save programme costs, prevent vendor lock-in, enable integration and interoperability across government, engender trust in robust and secure systems, and enable continuous innovation and enhance usability. For instance, in the initial phase of Ingreso Ético Familiar, the Chilean government's flagship CCT programme, the proprietary MIS entailed high licensing and training costs. Subsequently, the Ministry of Social Development shifted to open-source platforms, especially as it began to pursue integration with other information systems.[79] However, it is important to note that open source solutions also entail maintenance and support costs, with 'Software-as-a-service' models, and these costs need to be factored into the decision-making process.

A key challenge here is that "while some open-source solutions cater to the public sector, commoditised open-source software solutions to deliver critical applications, such as digital identity and social protection services, are few and far between".[80] Experts interviewed for this document agreed that: off-the-shelf open-source products that meet all requirements are rare and open source may not always meet the needs of administratively complex programmes. What is more common is to use a bundle of open-source components to build customised solutions. For instance, IDPoor in Cambodia combines open-source and closed-source tools. Regardless, the adoption of open source should be assessed based on local capacity to maintain the system at an acceptable total cost of ownership.

There are few examples of open-source tools emerging from government-owned digital SP solutions. A recent example is **OpenG2P**, which emerged out of the Ebola Payments Program in **Sierra Leone** between 2014 and 2016. Developed by a group of innovators at the Directorate of Science, Technology and Innovation, OpenG2P is a set of open-source building blocks to help governments worldwide digitise their social protection programmes.[81]

79 **Vargas, L. H., Cueva, P., and Medellín, N.,** *¿Cómo funciona Ingreso Ético Familiar?: Mejores prácticas en la implementación de programas de transferencias monetarias condicionadas en América Latina y el Caribe*, **Inter-American Development Bank, 2017**
80 **World Bank,** *Open source for global public goods*, **World Bank Group, Washington, DC, 2019b**
81 **OpenG2P, 'What is OpenG2P', [website], 2020**

Open data

Open data refers to open access to data, at a level of disaggregation useful to policy analysis and decision making, and is not related to the type of software licence used to collect or host the data. In public service delivery, open data is primarily a means of enabling transparency, accountability and citizen participation. Mere open access to data does not imply open data. There are many overlapping definitions of open data, but most comprehensive definitions include these eight characteristics: complete, primary, timely, accessible, machine readable, non-discriminatory, non-proprietary, and licence-free.[82] Where interoperability, comparability, aggregation or linkability are relevant, it is also important that open data uses open standards.[83]

Some examples of open data in the social protection sector include:

- In **India**, the **public data portal** of the National Rural Employment Guarantee Scheme (NREGS), the world's largest public works programme, provides open access to time series data on key performance indicators at a very granular level. For instance, the transaction-level data has been **used by civil society and academia** to highlight serious bottlenecks and delays in wage payments.

- In **Pakistan**, the **Ehsaas emergency cash transfer programme** shows disaggregated data regarding the progress of payments.

- In **the Philippines**, the Department of Social Welfare and Development provides regularly updated data on financial assistance provided at the municipal level, as well as a heat map of food assistance distribution.[84]

Open innovation

Open innovation refers to co-created ideas, concepts and design, or to inviting the contribution of ideas. However, open innovation remains a nascent concept in the social protection sector.

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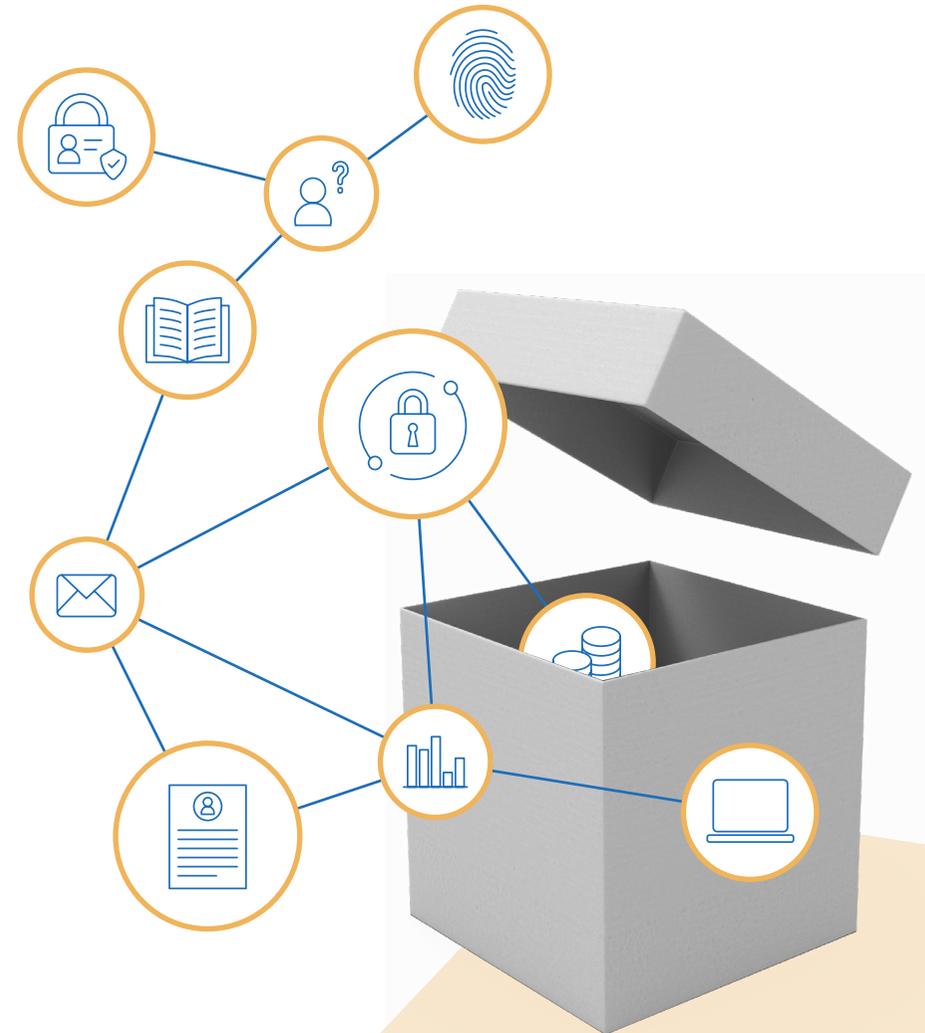
82 **Open Government Data, 'The annotated 8 principles of open government data', [online], n.d.**
83 **Open Data Institute, 'Open standards for data: When to use open standards for data', [online], ODI, n.d.**
84 **Open Government Partnership, 'A guide to open government and the coronavirus: Social safety nets', [online], Open Government Partnership, 7 May 2020**

Principle 7: Reuse and improve

The PDD text:

Instead of starting from scratch, programs that "reuse and improve" look for ways to adapt and enhance existing products, resources and approaches. Reuse means assessing what resources are currently available and using them as they are to meet program goals. Improve means modifying existing tools, products and resources to improve their overall quality, applicability and impact. Start by identifying relevant methods, standards, software platforms, technology tools and digital content that have already been tried and tested. You can learn about digital development tools that have been piloted or scaled through conferences, blogs, program evaluations and the digital development community. While an existing tool or approach may not exactly fit all your needs for reuse, consider improving and building on it, rather than creating something entirely new. The result is a tool that is now better and more reusable by all because of your improvements. Reusing and improving is not about designing shiny new objects or limiting a technology to internal use; it is about taking the work of the global development community further than any organization or program can do alone. Reusing and improving can also dramatically reduce the time needed for development and testing, and reduce your costs.

The SP perspective

The delivery of social protection entails standardised business processes common to many programmes – within and beyond the social protection sector. Therefore, digital solutions should aim to adapt solutions that already exist, rather than reinvent the wheel. This is even more important with the growing shift towards integrated systems that follow a whole of government approach. This means understanding that activities along the delivery chain (e.g. outreach, registration, enrolment, payments, and grievance redress, etc.) are being digitally delivered by other programmes and sectors, before even building the solution. As noted under **Principle 4: Build for sustainability**, financing, capacity and flexibility are key

to sustained implementation, and reusing solutions that already exist contributes towards this goal. As noted under **Principle 6: Use open standards, open data, open source and open innovation**, increasing the adoption of open standards and open-source solutions expands the suite of existing adaptable solutions available for SP digitalisation.

The interviewees broadly agreed with the essence of Principle 7, but pointed out that its appropriateness may vary on a case-by-case basis. Until recently off-the shelf solutions did not exist to support the SP delivery chain. Even when such solutions do exist, they may not always support the requirements of language or be suitable for low connectivity contexts, among other things. One stakeholder indicated that the implementation of this principle is also sometimes challenged by the lack of government trust in the global digital public goods that are advocated for by external partners.

How you can put this principle into practice

- **Identify the existing technology tools (local and global), data and frameworks that are relevant.** These technology tools could either be existing proprietary systems or open source solutions; the growth of the latter makes this particularly possible. Some illustrative examples include:

   — Digital registration: **Commcare**, **Kobo Toolbox**, **Open Data Kit**

   — ID: **MOSIP**

   — Payments: **Mojaloop**; **Mifos**

   — Social assistance delivery chain: **openIMIS**; **Core-MIS**; **OpenG2P**; **Govstack** (an initiative that is building generic reusable components to enable the whole-of-government approach to digital transformation that is considering **a social protection use case** in particular); **SP-MIS from Malawi** (open codebase)

- Reuse relates not only to technology, but also to data and data standards. SP solutions can draw on and interact with a host of existing data sources, both government (e.g. beneficiary registry, social registry, civil registry, tax records) and private (e.g. call data records, credit score). These sources should be identified and considered even before the solution is built.

- **Assess the viability of reusing existing solutions.** Reuse does not automatically imply reduced efforts or investments. The viability of reusing must be carefully assessed once solutions are identified. Sometimes reusing an existing solution can lead to higher costs later on because of being tied to a vendor or technology (vendor lock-in). Modifying an existing code might be more complex and take longer than building from scratch. Whether to build or buy is a decision to be made based on assessing the local capacity to develop using the technological stack, the complexity involved and the learning curve, as well as other aspects involved in assessing the true cost of ownership . The Inter-American Development Bank (IDB) document from the health sector, ***Buy, Build or Adapt***, provides some comparable guidance on this topic.[85]

- **Develop modular, interoperable approaches instead of those that stand alone.** This has been covered under **Principle 4: Build for sustainability**.

Examples of this principle in practice

- In **Gambia**, the openIMIS, an information system originally designed for managing social health protection schemes, **was used for the emergency cash transfer programme in response to COVID-19. The national vendor built on the modular open-source platform to tweak it to suit the needs of the programme. Using a global digital public good meant** that the vendor could call upon the openIMIS's online service desk for technical back-up.[86]

- In **Kenya**, until recently, only two of the five core social assistance programmes, the HSNP and the CT-OVC, had well-functioning MISs. The HSNP MIS, which is an open-source MIS, has been adapted for use by the remaining four programmes, thereby creating common standards and functionality across the MISs, including automatic links with the Single Registry, a common database within which information on the beneficiaries of all five cash transfer programmes is consolidated. This approach was based on a scoping study that found that while both the HSNP and CT-OVC MISs were fit for their purposes and functioned well, the HSNP MIS was superior due to its use of open-source software.[87]

- In **Bangladesh**, the World Bank-funded Cash Transfer Modernization project aims to link the grievance redress function with the national grievance redress platform being built by the ICT Division of the Government of Bangladesh, as part of the country's Digital Bangladesh strategy.[88]

- In **Iraq**, the WFP's SCOPE[89] platform, which supports beneficiary information management and transfer management for humanitarian cash transfers, is being adapted to support national social protection systems.[90]

- In **Cambodia**, a comprehensive case management system for child protection has been built atop two existing global goods, Primero and Open-Source Case-management and Record-keeping (OSCaR). Primero is a UNICEF-backed open-source software platform that helps social services, as well as humanitarian and development workers manage social protection-related data, with tools that facilitate case management, incident monitoring, and family tracing and reunification. OSCaR is a bilingual case management database used by child protection non-governmental organisations (NGOs) and civil society organisations in Cambodia to manage cases of children in residential care. OSCaR-to-Primero interoperability enables government partners and local NGOs to collaborate and systematically register and efficiently track children in Cambodia.[91]

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85 Blaya, and Otzoy, *Buy, build, or adapt: How to decide?*, 2019
86 BMZ, 'BMZ, openIMIS brings digital social benefits to The Gambia', [online], BMZ, 20 April 2021

87 World Bank, *National safety net program for results in Kenya: Program appraisal document*, World Bank Group, Washington, DC, 2013
88 KII
89 For more information on SCOPE, see **here**.
90 WFP, *WFP & social protection: Iraq case study*, World Food Programme (WFP), 2017
91 CPIMS, *Perseverance during the pandemic*, [online], Child Protection Information Management System (CPIMS), 4 August 2020

Principle 8: Address privacy & security

The PDD text:

Addressing privacy and security in digital development involves careful consideration of which data are collected and how data are acquired, used, stored and shared. Organizations must take measures to minimize collection and to protect confidential information and identities of individuals represented in data sets from unauthorized access and manipulation by third parties. Responsible practices for organizations collecting and using individual data include considering the sensitivities around the data they have collected, being transparent about how data will be collected and used, minimizing the amount of personal identifiable and sensitive information collected, creating and implementing security policies that protect data and uphold individuals' privacy and dignity, and creating an end-of-life policy for post-project data management.

The SP perspective

Privacy and data protection issues are central to social protection programmes, as they collect and/or process enormous amounts of personal information. Inadequate privacy and personal data protection in social protection programmes can have numerous negative impacts. First, it can harm individuals due to stigma, discrimination, abuse and exploitation. Second, it can undermine public support for programmes by diminishing public trust (as in cases of mass information disclosure). Third, it can compromise the effective functioning of social protection programmes (e.g. inducing exclusion errors).

Privacy and data protection risks are even higher in integrated systems, as the number of actors multiplies and it becomes difficult to prevent data misuse beyond the initial purpose for which it was collected.[92] The risks are amplified further when programme delivery is outsourced to private service providers (e.g. ID management, payment services) as information flows and associated governance issues become even more complex. The box below illustrates how these risks are already manifesting across the globe in the absence of adequate compliance with this principle.

The right to privacy and data protection is not only enshrined in international human rights instruments, but is explicitly embedded in the ILO Social Protection Floors Recommendation, 2012 (No. 202), which calls on States to "establish a legal framework to secure and protect private individual information in their social security data systems".[93] These rights are also recognised in a number of internationally agreed frameworks, including the Organisation for Economic Co-operation and Development (OECD) Guidelines on the Protection of Privacy and Transborder Data Flows of Personal Data, 1980, as amended in 2013; Council of Europe Convention for the Protection of Individuals with regard to Automatic Processing of Personal Data (No. 108), 1981, as amended in 2018; United Nations Guidelines for the Regulation of Computerized Personal Data Files, 1990; General Data Protection Regulation (GDPR) (EU) 2016/679 of the European Parliament and the Council of Europe, 2016; and United Nations Personal Data Protection and Privacy Principles, 2018. It is especially important to advocate for these rights, as social protection beneficiaries might lack the agency to claim recourse during data breaches, as they may view their entitlements as being conditional on surrendering their data.

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92 Barca, *Integrating data and information management for social protection*, 2017; Hosein, G., and Nyst, C., *Aiding surveillance: An exploration of how development and humanitarian aid initiatives are enabling surveillance in developing countries*, Privacy International, 2013, pp. 28–50; Barca V., Makin, P., and Bamezai, A., *Integrating digital identity into social protection: An analysis of potential benefits and risks*, Discussion Paper, Oxford Policy Management, 2018
93 ILO, R202 – *Social Protection Floors Recommendation, 2012 (No. 202)*, International Labour Organization, Geneva, 2012

Digital solutions should be cognisant of the challenges faced in complying with this principle:

- While the digitalisation of social protection systems has progressed rapidly in LMICs, the consideration of beneficiaries' privacy and data protection has not kept pace. Although 128 out of the 194 countries worldwide have introduced legislation to protect data and secure privacy, only 52 and 57% of the countries in Africa and Asia-Pacific, respectively, have a data protection law.[94]

- Some experts are concerned that, even where these legal protections exist, "in the great majority of cases, however, especially in developing countries, data protection laws and principles are not consistently applied in social protection systems".[95]

- In particular, LMICs face several constraints on the development of comprehensive data protection laws and their effective enforcement.[96] These include weak administrative capacity, lack of technical and financial resources, potential for misuse by authoritarian governments, lack of long-term institutional capacity creating dependence on private players, and donor-driven techno-managerial solutions without adequate assessment of risks, among other things. While some development partners indicated that they are including enforcement of such legislation as a condition for the financing of loans for digital solutions, the effectiveness of such mechanisms remains to be seen.

- Some experts felt that while data security features can be built-in, the broader governance issues need omnibus laws on data protection that can be uniformly applied across public and private sectors, rather policies that selectively regulate SP agencies.

Pitfalls of not applying the principle

- In **Brazil**, at least 180,000 beneficiaries of Bolsa Familia, the national conditional cash transfer programme, were targeted by a scam via WhatsApp in 2019 that promised them additional benefits. Beneficiaries were asked to submit their name, address and social security number, following which malicious files were installed on their phones. Earlier in 2018, Bolsa Familia beneficiaries were specifically targeted during presidential electoral campaigns with the promise of better benefits under the programme.[97]

- In **Colombia**, the Colombian Institute of Family Welfare (DNP), the managing institution for System of Identification of Social Program Beneficiaries (SISBEN), signed an agreement with Experian, a private credit rating agency. Under the agreement, SISBEN would use Experian's income prediction tool to reduce the number of people eligible for social benefits. In exchange, Experian would have access to the data of people registered in SISBÉN to develop applications and others services to be used by banking institutions in Colombia.[98]

- In **India**, the National Social Assistance Programme – which provides social pensions for the elderly, disabled and widows – publicly listed 9,432,605 banks accounts and 1,498,919 post office accounts linked with Aadhaar numbers, raising concerns about identity theft and financial fraud. While the UIDAI maintains that the centralised biometric repository has never been breached, publicly available non-biometric data has been used to make fake pension claims.[99]

94 **UNCTAD, 'UNCTAD, Data Protection and Privacy Legislation Worldwide', [online], United Nations Conference on Trade and Development (UNCTAD), n.d.**
95 Sepulveda Carmona, M., 'Biometric technology and beneficiary rights in social protection programmes', *International Social Security Review*, 72(4), 3–28, 2019
96 **Wagner, B., and Ferro, C.,** *Data protection for social protection: Key issues for low- and middle-income countries,* **Issue Paper, Social Protection Inter-Agency Cooperation Board (SPIAC-B), GIZ, 2020**

97 **Privacy International, 'Brazil's Bolsa Familia Program: The impact on privacy rights', [online], Privacy International, 13 May 2013**
98 **Privacy International, 'Benefitting whom? An overview of companies profiting from "digital welfare"', [online], Privacy International, 25 November 2020**
99 **Sinha, A., and Kodali, S., '(Updated) information security practices of Aadhaar (or lack thereof): A documentation of public availability of Aadhaar numbers with sensitive personal financial information', [online], Centre for Internet and Society (CIS), 1 May 2017**

▶ In **South Africa**, the South African Social Security Agency (SASSA) contracted Cash Paymaster Services Limited (CPS), a subsidiary of Net1 UEPS Technologies, to deliver payments via MasterCard debit cards to 17.2 million beneficiaries. While beneficiary data was strictly collected for disbursing social grants, CPS breached this by partnering with Grindrod Bank and MasterCard to market financial services to SASSA beneficiaries, in contravention of the Protection of Personal Information Act. CPS also automatically deducted payments towards mobile and electricity connections, funeral policies or water sold by other Net1 subsidiaries – deductions that beneficiaries were unaware of. In addition, CPS engaged in predatory lending and gave loans with social grants as collateral (which were assured of repayment via automatic deductions). CPS also began migrating beneficiaries into an 'EasyPay' account, outside of the SASSA environment, resulting in the company retaining access to biometric data on 1.5 to 2 million beneficiaries, despite SASSA ending its contract with CPS, following a verdict by the Constitutional Court.[100]

How you can put this principle into practice

The analysis in this section draws on three recent and comprehensive publications on this topic:

— *Is biometric technology in social protection programmes illegal or arbitrary? An analysis of privacy and data protection,* ILO, 2018

— *Data protection for social protection: Key issues for low- and middle-income countries*, SPIAC-B, GIZ, 2020

— *Good practices for ensuring data protection and privacy in social protection systems*, SPIAC-B, GIZ, 2022 (forthcoming)
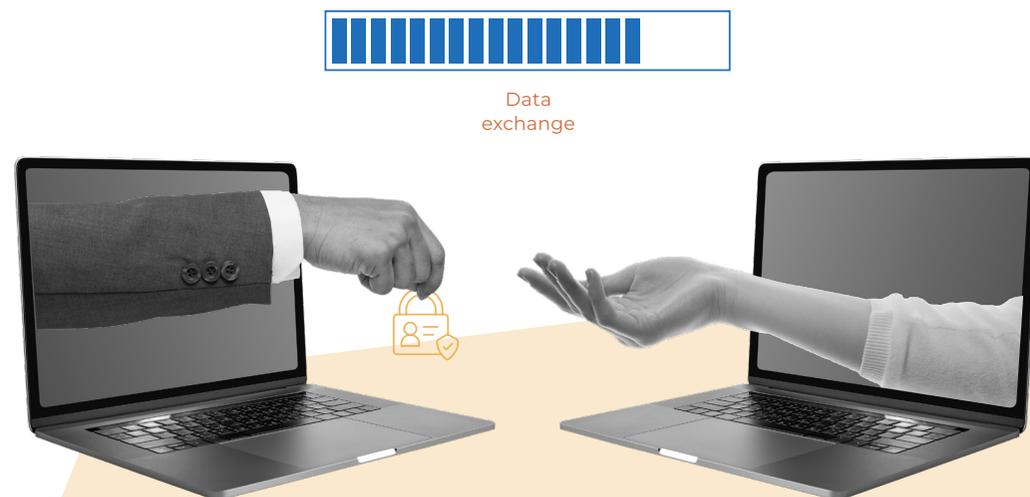
- **Ensure that there is a data governance framework in place.** Digital SP solutions exponentially increase the capacity to collect, transmit, process and analyse data. Therefore, digital solutions should be accompanied by a data governance framework that defines who is responsible for the data and the mechanisms in place in the event of a data breach. This framework should also reflect commitment to national laws regarding privacy and data protection.

- **Conduct a data protection impact assessment.** The purpose of a data protection impact assessment (DPIA) is to "identify, evaluate and address the risks to personal data – and, ultimately, to the data subject – arising from a project, policy, programme or other initiative".[101] A DPIA should lead to measures that contribute to the avoidance, minimisation, transfer or sharing of data protection risks. The literature review did not find any examples of DPIAs in social protection. The humanitarian sector, which faces comparable data protection risks, offers some practical lessons (see box below).

- **Minimise data collection.** Social protection programmes should always evaluate the amount of data to be collected, processed, stored, and shared. A good criteria for defining which data should or shouldn't be collected is to follow the purpose limitation principle. That is, only collect data for a determined, specific, and legitimate purpose, stated (and consented to by the beneficiary) at the time of collection, and further processing should also be compatible with this purpose.

- **Obtain informed consent.** Informed consent should be obtained whenever the data is processed for reasons other than which the consent was originally given. For instance, the emergency cash transfer in **Togo** collected consent whenever possible (e.g. phone survey respondents provided informed consent before participating and programme beneficiaries were asked for consent to use their data for programme administration during the Unstructured Supplementary Service Data-based registration process).

- **Ensure data security.** Personal data (during storage, transmission and use), as well as the infrastructure relied upon for processing, should be protected by security safeguards against risks such as unlawful or unauthorised access, use and disclosure, as well as loss, destruction, modification or damage to data. The controller and, where applicable, the processor must take reasonable security safeguards using appropriate technical and

100 **Black Sash, 'Black Sash Submission to UN General Assembly on Digital Technology, Social Protection and Human Rights', [online], Black Sash, 2017**

101 **Kuner, C., and Morelli, M. (eds),** *Handbook on data protection in humanitarian action (2nd Edition)*, **International Committee of the Red Cross (ICRC), Brussels Privacy Hub, 2020**

organisational measures. Processing sensitive personal data, such as biometric data, requires even higher security levels. This involves ensuring data security demands by having the appropriate equipment (i.e. hardware and software) and also having the necessary procedures and organisational guidelines in place. In addition, it is important to protect access to data, social programme installations, hardware and software. Decentralised data storage models should be considered where feasible.[102]

- **Ensure that data sharing and data integration are backed by clear policies and a strong legal framework.** While building for interoperability and open data, assess whether there are overarching policies and/or laws that define what information should be disclosed, to which agencies/programmes, under what circumstances, the conditions for disclosure, and the lines of accountability.

- **Balance the rights of beneficiaries with the need for transparency and accountability.** A key issue to consider is the trade-off between **Principle 6: Use open standards, open data, open source and open innovation** and Principle 8. The main motivation for openness is to ensure transparency in relation to public spending and discourage fraud/corruption. There is no consensus as yet on how the tension between privacy and openness is best reconciled. The tension between transparency and privacy is apparent at the country level, as evidenced in the following examples:

  — In **Brazil**, there is an obligation to publicly disclose beneficiaries' names and the amounts received, which appear in Caixa Econômica Federal, as well as on the federal transparency website (Portal da Transparência). In fact, other citizens are allowed to use this information to refer claims they perceive as fraudulent to the Ombudsman's Office. Approximately 60% of complaints contain the personal information of beneficiaries, including taxpayer registry number, mother's name and their social security identification number – a clear breach of beneficiary data rights.

  — In **Argentina**, the Supreme Court ruled in 2014 that publishing data on social protection programme beneficiaries is critical to guarantee social accountability and, far from stigmatising beneficiaries, it ensures equity.

— In **Chile**, the legal framework of Seguridades y Oportunidades guarantees personal data protection. In 2014, the Ministry of Social Development received a request for information related to all of the social benefits that a citizen had received in the past seven years. The Ministry denied the request, which was appealed by the requester with the Transparency Council, an independent body established by law to supervise compliance with the Chilean Access to Information Act. **The Transparency Council argued that by receiving a benefit from the state, the scope of beneficiaries' right to privacy is reduced, in order to enable adequate social control of who is granted such benefits.**

— At the other end of the spectrum are countries that only publish aggregate indicators from registries that are made available online (e.g. **Indonesia's DTKS, Costa Rica's SIBO and SABEN, Cambodia's IDPoor**). However, depending on the level of geographical disaggregation, such methods do not always guarantee anonymity.

Data exchange

102 **Pisa, M.,** *Governing data for development: Trends, challenges, and opportunities*, **Center for Global Development, 2020, p. 61**

Examples of this principle in practice

Guidelines to guarantee privacy and data protection

▶ In **Chile**, the Ministry of Planning and Cooperation must legally guarantee privacy and data protection for Chile Solidario's beneficiaries.

▶ In **Mexico**, broad privacy and data protection in Prospera's operational rules include obligatory compliance with federal laws protecting data and ensuring non-discriminatory information access.

Ensuring data security

▶ In **Azerbaijan**, the E-subsystem for medical and social expertise and rehabilitation (TSERAS) fully automates the disability assessment process using a special software. There is no longer a need for citizens to apply or interface with the Ministry of Health for disability assessments, as the relevant information is obtained electronically from the relevant information system and database of the relevant state agency. More importantly, the TSERAS system encrypts the personal information of the patient and only anonymous applications are sent to the Medical Social Expertise Commissions in order to assess the disability of the patients. After the commission makes a decision, the members of the commission use e-signatures to sign the final decision. It is only after a final decision on the disability has been made that the document is decoded and reposted into the system, ensuring that the patient's identity is protected throughout the process.[103]

Creating clear guidelines for data sharing

▶ The data sharing policy of IDPoor in **Cambodia** distinguishes between three types of users: guest user, standard user and advanced user. Guests are unregistered users whose access is limited to basic aggregate statistics. Standard users are registered users who can access a list of households classified as poor based on email verification. However, they cannot access individual variables, raw data or the APIs. Advanced users can access all of these and need to make a formal written request to the Ministry of Planning.

▶ In **Kenya**, the Social Protection Secretariat has developed and signed off on data sharing protocols that define: (i) procedures for applying to use Single Registry data; (ii) procedures for assessing the application, and (iii) procedures for approval, sharing, as well as (i) disposal of data. The data sharing protocols are based on the Kenyan Constitution, Kenya's Data Protection Act 2013 and other international conventions such as Council of Europe's Convention, United Nations Guidelines Concerning Computerized Personal Data Files, OECD Guidelines on the Protection of Privacy and Trans-Border Flows of Personal Data and Universal Declaration of Human Rights.

▶ The COVID-19 crisis saw unprecedented sharing of data to identify new cases. Some countries demonstrated their commitment to data protection during this crisis. For example, in **Namibia**, special provisions were needed to permit data sharing, pending the implementation of a general framework for data privacy. In **Colombia**, the government authorised public and private entities to share data, but issued a decree mandating that they could only be used for this purpose and guaranteeing their confidentiality.

103 ISSA, *E-subsystem for medical and social expertise and rehabilitation (TSERAS) – A case of the Ministry of Labour and Social Protection of the Population of the Republic of Azerbaijan*, International Social Security Association (ISSA), 2019b

Principle 9: Be collaborative

The PDD text:

Being collaborative means sharing information, insights, strategies and resources across projects, organizations and sectors, leading to increased efficiency and impact. This Principle brings all the others together in practice. People working in digital development have a shared vision to create a better world, and collaboration is essential to making this vision a reality. No single initiative or organization can make it happen alone. We have the most impact when we work together across geographies, focus areas and organizations and in partnership with local communities and governments. By collaborating, those working in digital development and beyond can pool their resources and expertise not only to benefit each initiative but also to strengthen the global community. Collaborating does not just happen accidentally; it requires time, planning and dedicating resources to look for and develop opportunities.

The SP perspective

Social protection is fundamentally multi-sectoral and, more often than not, there is no single institutional home for social protection. In most countries, social protection systems are characterised by fragmentation and lack of effective coordination. There is a real risk of creating disjointed digital systems, when operating in such siloed settings at the policy and institutional levels. This risk is heightened by the fact that digital SP reforms are intrinsically linked to the broader e-governance ecosystem, demanding even greater collaboration beyond the walls of SP institutions. Therefore, it is crucial that digital SP practitioners, managers and donors find ways to create opportunities for learning and avoid the duplication of efforts. As the desk review conducted for this paper demonstrated, the documentation of lessons learnt from developing digital SP solutions has not kept pace with their rapid adoption over the past decade. Most importantly, the shared goal of creating nationally-owned systems can only be achieved through collaboration, not competition.

Examples of this principle in practice

▶ The Digital Convergence Initiative's **Dialogue Series** provides a platform for cross-country knowledge sharing and learning.

▶ The Digital Social Protection Working Group SPIAC-B is a useful platform for knowledge sharing and coordination among the key development partners supporting and financing digital SP reforms.

▶ The **social protection information systems community** on socialprotection.org is a nascent, but growing, community that facilitates the sharing of best practices.

▶ The **GIZ Global Alliances for Social Protection programme** is explicitly focused on creating a dialogue on various aspects of social protection, including digital aspects. This is done via events and conferences, workshops, learning forums, webinars, etc. For instance, most recently, a knowledge exchange was facilitated between Indonesia, Peru, Pakistan and Ethiopia to learn from experiences using digital information systems in designing social protection responses to COVID-19.

▶ OpenIMIS has created a **global community** around supporting and learning from various country adaptations of the system.

▶ The e-INAS in Mozambique presents a good example of **documenting** the digital development process.
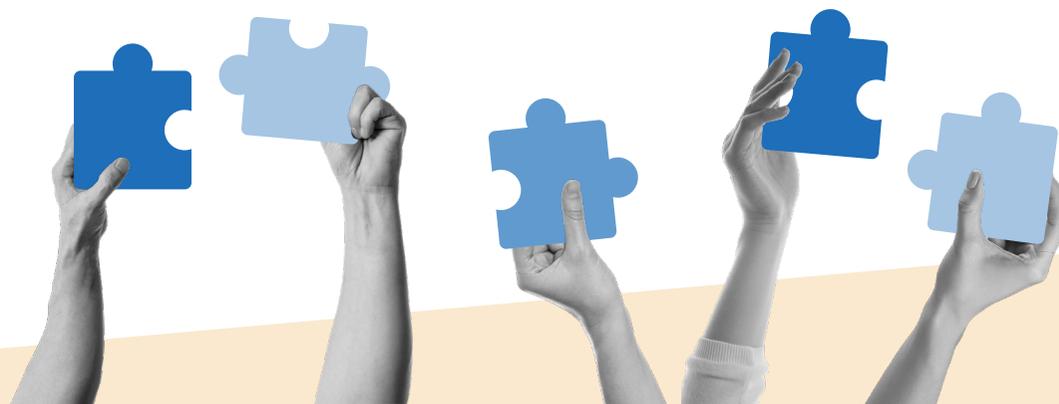
Looking at the big picture

It is important to emphasise that the PDD, and the analysis of their application to the SP sector presented in the previous section, focus on the design of digital solutions, which although important is only one aspect among many that influence the impacts of digitalisation. This section touches upon some of the foundational organisational factors that are emerging as important in the ultimate success of digitalisation in the social protection sector.

Start with policy

Using technology as a proxy for policy is among the key reasons why the discourse on digitalisation in SP delivery is polarised. The starting point is policy: technology can only enable what government policies want to achieve:

- If governments want to maximise welfare, digital technologies can help them pursue this goal. For instance, automatic enrolment in the Child Money Program in Mongolia based on birth registration, or proactive registration into the Universal Health Coverage scheme in Thailand, follow from an overarching policy commitment by these countries to universality, which is then enabled by interoperability. Technology does lower operational barriers to dynamic inclusion, however, ultimately, coverage expansion depends on policy commitment, backed by adequate and flexible budgets.

- On the other hand, if governments want to minimise costs and restrict access, digital technologies can also be put to use for this objective by restricting the number of beneficiaries according to certain parameters. These eligibility criteria are politically decided, technology is simply used to operationalise the politically set objective in an efficient manner. Similarly, data updating in social registries via interoperability does not automatically translate into dynamic inclusion in its user programmes in the presence of fixed budget quotas.

While systematic surveys of policy goals pursued via digital technologies in LMICs are unavailable, evidence from high-income countries demonstrates the significant focus on cost-cutting and control. Comparative studies of computerisation in the social security systems of 13 OECD countries show that technology is more likely to be used for controlling staff and claimants, rather than empowering them. Increasing productivity, improving decision making, cutting costs and increasing the responsiveness of service delivery were frequently cited among the top three aims of computerisation. More tellingly, increasing uptake was not reported among the top three aims in any country.[104] As the UN Special Rapporteur on poverty and human rights recently noted, "digitalization of welfare systems has been accompanied by deep reductions in the overall welfare budget, a narrowing of the beneficiary pool, the elimination of some services".[105]

Of course, the policy discourse is not as cut-and-dry in practice, as limited budgets and weak governance are real issues facing LMICs. What is clear is that this not an 'IT decision', although it is often perceived to be so. From the perspective of development partners, what this means is that strategic policy choices need to be actively influenced while advocating for digital technologies. Most importantly, technological possibilities should not dictate what are essentially political decisions (e.g. automated decision systems are not a fix for lack of accountability mechanisms).

104 **Adler, M., and Henman, P., 'Computerizing the welfare state',** *Information, Communication & Society, 8*(3), 315–342, **2005**
105 **Alston, P.,** *Report of the Special Rapporteur on extreme poverty and human rights*, **2019**

Be clear about what needs to change and why

"If you add digital, on top of a thing that is broken, you will have a broken digital thing".[106] It is important to understand the root causes of an SP challenge (e.g. low coverage) and assess the extent to which it can be addressed by going digital. As mentioned earlier, SP digitalisation is typically part of broader organisational modernisation and transformation processes. It is likely that institutional arrangements and relationships would need to change to be able to realise the benefits of going digital. Therefore, a more strategic perspective on digital change is crucial.

Examples of this in practice

In **the Philippines**, the World Bank is working with the Department of Social Welfare and Development (DSWD) to develop a strategy for a medium-term digital transformation vision and framework. The maturity of the information systems at the DWSD is quite high, as systems have already been developed to implement standardised business processes. However, these systems are quite fragmented in the absence of a clear vision. Therefore, a digital transformation firm will work with the DSWD to frame a strategy to define and re-imagine the business processes using digital tools. The aim is to guide the design and upgrade of individual information systems and develop a roadmap towards integrated and inter-operable information systems within the DSWD and responsible data sharing with other required agencies.[107]

Define ownership and accountability

As foundational digital infrastructure become more integral to programme delivery, it is critical that ownership and accountability are clearly defined. Except for programme or sectoral information systems, SP programmes increasingly rely on digital assets built and maintained by other public/private institutions (e.g. ID systems, civil registries, payment platforms, grievance platforms etc.). When clear delineation of responsibilities and enforceable service standards do not exist, reliance on these digital assets can exacerbate exclusion.

Pitfalls of not applying the principle

India's foundational biometric ID, Aadhaar, is managed by the Unique Identification Authority of India (UIDAI). While the institutional responsibilities for ID enrolment are clear, when it comes to the authentication of ID during social transfers, they are ambiguous. Many studies and activists have documented widespread exclusion caused by poor quality biometrics, yet there is little clarity on who is responsible when things go wrong. The Aadhaar (Authentication) Regulations 2016 provide that any entity that seeks to use the UIDAI's authentication facility is also required to implement exception-handling and back-up authentication mechanisms, but this has been largely been left to the discretion of the implementing agencies.[108] As a key stakeholder at the UIDAI notes, *"We provide identity verification services to any agency that wants to use it to do their own work. We do not participate in how they do their business. If they mess up in using their Aadhaar-enabled data, how can you blame us for it?"*[109]

106 Anonymous, as seen **here**.
107 **Government of the Republic of the Philippines, Department of Social Welfare and Development,** *Beneficiary FIRST (Fast, Innovative, and Responsive Service Transformation) Social Protection Project stakeholders engagement plan (Sep)*, **August 2020**

108 **Centre for Internet and Society (CIS), 'Digital identities: Governing ID: Use of digital ID for delivery of welfare', [online], CIS, India, 2 July 2020**
109 **Singh, R., 'Whose fault is it anyway?', [online], Blog, 26 January 2019**

Manage change effectively

Going digital usually challenges the existing business model or institutional identity and, therefore, without a sound change management plan, digital projects are unlikely to succeed. As experts interviewed for this exercise noted, "digitalisation is 20% IT, 80% managing change".[110] As operating models of social security institutions are driven more and more by data and technology, organisational practices and staff capacity will need to be adapted accordingly to realise the full potential of ICTs.[111] While evidence and examples of the critical nature of change management for digitalisation of SP systems remain less documented, experiences from related sectors in LMICs are instructive in this respect. For instance, failure of complex government e-health projects in Latin America and the Caribbean have been partially attributed to an asymmetry in the importance given to organisational culture relative to the purchasing of hardware or software.[112] In a review of the 55 World Bank projects implementing financial information management systems, inadequate capacity to sustain and institutional resistance ranked among the top reasons why these projects struggled.[113]

Change management is not just about having a capacity building plan or creating a project management unit. Change management "is about helping individuals impacted by the 'change', and building the required capacity to implement and manage the change".[114] Change management is explicitly emphasised by the **ISSA guidelines** on ICT implementation in social security institutions.

Examples of this in practice

As part of the ILO enabled compensation agreement that compensates victims of the Ali enterprises garment factory in Baldia (in Karachi, **Pakistan**), ILO is providing technical assistance for digitalisation at Sindh Employees' Social Security Institution (SESSI). The short-term purpose of the digitalisation strategy is to install a document management system in order to digitise and store the files of the beneficiaries related to the Baldia Arrangement. The long-term vision is to build upon this experience to create a software architecture in order to install an MIS to manage the core business processes for the Baldia Arrangement files, as well as for the entire population covered at SESSI.

The assessment undertaken to inform the strategy showed that there was no IT infrastructure of IT governance at SESSI. Core operations relied heavily on paper-based processes, with no standardised business processes across districts. Given these weaknesses, change management is one of the key pillars of the proposed digitalisation strategy. This involves informing all stakeholders of the need for change, training them in new ways of working, and gaining their acceptance of change through ongoing discussions.

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110 KIIs
111 Gujral, G., 'Reshaping the social security agency around improved human capital and technology', *International Social Security Review, 69(3–4), 51–62, 2016, doi:10.1111/issr.12112*
112 Baum, A., and Giussi, M., *Irresistible: Change management for digital health*, Inter-American Development Bank, 2019
113 Kostenbaum and Dener, *Managing change in PFM system reforms, 2015*
114 Ibid.

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Annexes

Annexes

Figure 1: Modular evolution of the social assistance MIS in Albania

Initial version

- Application
- Enrolment and proxy means test (PMT)
- Monitoring
- Payment list generation
- Search function

First upgrade

- Database of service providers and case managers
- Online reports
- Integration of a new category of beneficiary

Second upgrade

- PMT module – segregation by rural and urban areas
- Automation of IBANs and semi-automation of bank cards entry
- Integration of GIS module

Third upgrade

- Payment module – adjustment to multiple banking systems
- Quality control checks

Figure 2: Modular evolution of the ISAS in Turkey

2010	2011	2012	2013	2014	2015
		Human resources module	Home care module		External user and communication module (e-governmant portal)
		General health insurance module	Cash assistance for needy military families module		Central risk assessment and inspection module
	Social assistance module (Temporary Assistance Module)	Cash assistance for widowed women module	Project assistance module (Income generating and social service projects)	Employment aid module	Decision support system module
Conditional cash transfer module	Accounting and resource management module	Disabled and elderly salaries module	Fund committee and social assistance general directorate module	Inventory stock management and in-kind aid module	Case management module

Figure 3: Evolution of the Cadastro Unico in Brazil
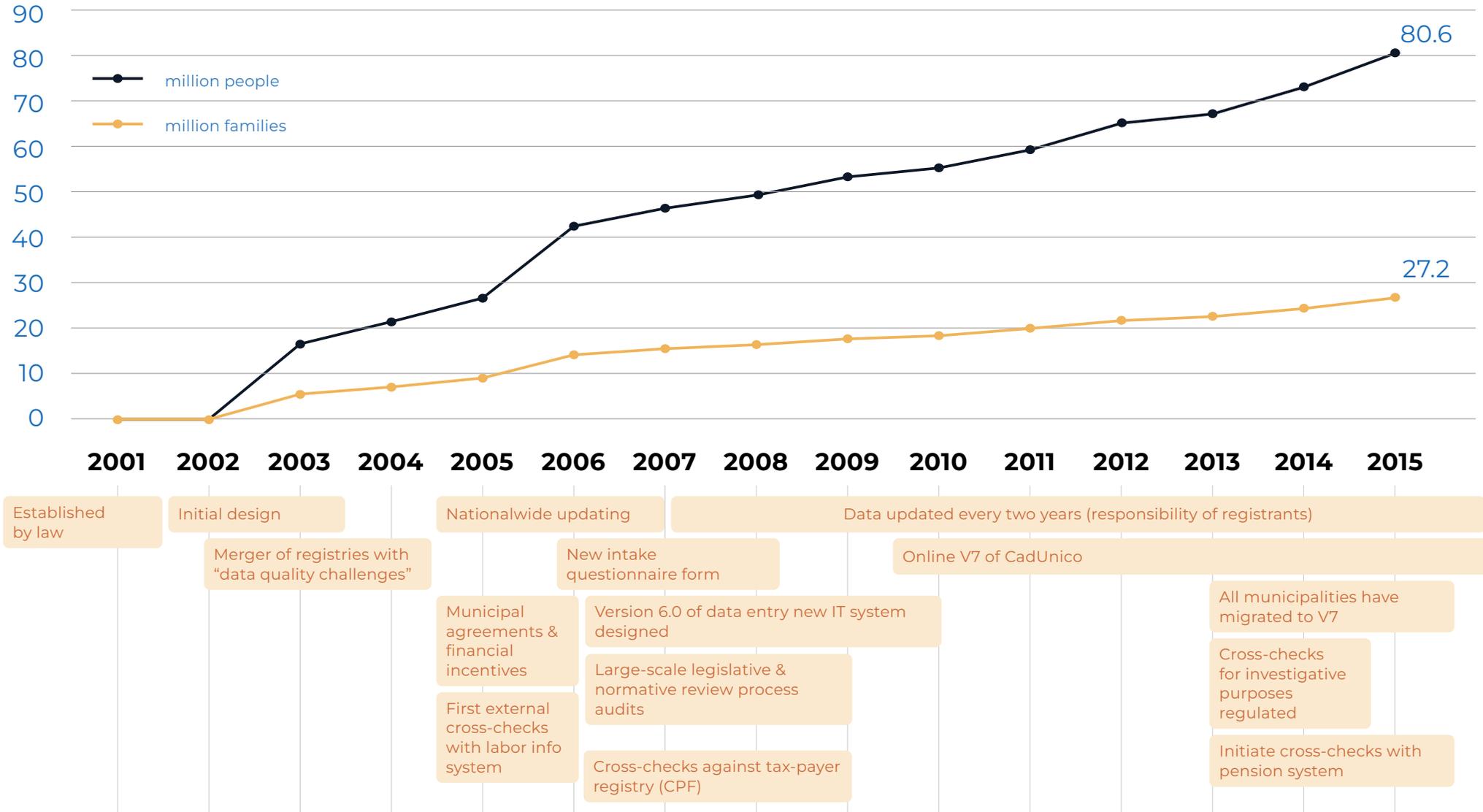
Imprint

Published by:

Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH
On behalf of the Digital Convergence Initiative

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Programme / project description:

Applying the Principles for Digital Development in Social
Protection

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© 2022 Madhumitha Hebbar

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Editing:

Susan Sellars

Layout / illustrations:

SCHUMACHER Brand + Interaction Design GmbH
schumacher-design.de

URL links:

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Responsible for the content:

Ralf Radermacher (GIZ)
for the Digital Convergence Initiative Bonn
February 2023

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