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Digital Highways for Social Protection: Delivering Entitlements on the Doorsteps

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THE EMERGENCE AND SIGNIFICANCE OF WATER SUPPLY AND SANITATION LENDING

9.1. Introduction

The social protection landscape in India is transforming at rapid speed owing to the digitization of the various systems that are involved in the process flow of social protection delivery. Especially in the aftermath of COVID-19, this phenomenon has gained even greater momentum. In this chapter, I describe this phenomenon, which is unfolding around the world, with India leading the way in many respects. I also describe the constitutive elements of an evaluation framework that various stakeholders could use to assess the performance of these newly emerging tech systems.

9.2. Social Protection for the Informal Sector

The state of the informal sector in India and its need for social protection are articulated in this author's chapter contribution to the IFI Report of 2020.[2] In this section, I briefly recall the contents of that chapter, as they will be relevant for this chapter. The first thing to note is that according to some estimates, as of 2017–2018, the non-farm informal sector had grown by 34% since 2004–2005.[3] The COVID-19 pandemic has produced even further 'informalization'. According to a World Bank report,[4] more than 30% of the labour force that could be categorized as formal in December 2019 had transitioned to informal status by April 2020. Perhaps reproducing the experience of the previous 15-odd years, much of this recent growth would most likely have happened at the micro-end of the small-business sector (solo, nano, etc.).

These trends are of concern because employers in the informal sector are not subject to the Code on Social Security, 2020, which would otherwise have held them responsible for providing certain forms of social protection to their employees. The Unorganized Workers' Social Security Act, 2008, provided for registration of unorganized workers, but did not make specific provisions for social security measures, which is a failing that in fact does not incentivize unorganized sector workers to register in the first place. There is, instead, a mélange of schemes for the informal sector, but not designed for that sector per se (they are meant to cover any person outside the scope of organized sector employment). Also these schemes are not coherently conceived to offer comprehensive protection. Indeed, most of them are formulated via executive order which often seems to traverse an arbitrary course via the politics of representation as the political landscape appears to shift from one electoral cycle to the next.

Yet, informality brings with it specific forms of vulnerability that are deeply problematic from a poverty alleviation perspective, if not just a humanitarian one. Informal sector workers do not have steady and assured employment and income. Data from the May–August 2020 wave of the Centre for Monitoring Indian Economy's (CMIE) Consumer Pyramids Household Survey (CPHS) indicate that (a) almost the entire informal sector is dependent on daily or weekly payment of wages, (b) informal laborers suffered substantial pay cuts in the immediate aftermath of COVID-19, (c) the majority of informal sector households carried negative surpluses during May 2020, (d) the proportion of informal sector households below the poverty line increased by 2 percentage points (from 13% to 15%)

between May 2019 and May 2020. At times of income stress, informal sector households are unable to liquidate financial assets, because they hardly own any – instead, most of their wealth is locked up in illiquid real assets.[5] Likewise, the CPHS data also reveal that informal sector households have limited access to basic risk protection mechanisms such as life insurance, health insurance and pensions (income during retirement). This is particularly troubling since informal sector workers are often employed amidst the most hazardous workplace conditions, and a serious workplace injury to the primary income earner in an informal sector household is one of the most common reasons for such a household to slide into poverty.

The difficulties faced by the informal sector during times of severe income strain became all too evident during the pandemic-induced lockdown. In order to understand how households coped during the lockdown, Dvara Research added some questions to the CMIE CPHS survey wave of May–August 2020. The survey indicated that among households that suffered an income loss, more than 10% had members looking for additional sources of income. Other coping strategies were borrowing in kind from social networks, reduction in consumption and use of savings by households to manage liquidity crises. Of these coping strategies, reductions in consumption were used by 60% or more households that were surveyed. This would have imposed long-term costs on household health (and, therefore, household finances) as both quantity and quality of food intake were most likely compromised.

Wave 1 of the pandemic and its attendant lockdowns were accompanied by announcements in March 2020 and May 2020 of a slew of government programmes intended to provide relief to the informal sector. Many of these programs involved direct transfers of cash to beneficiaries through digitized modes. This is the new face of Direct Benefit Transfers (DBTs), wherein cash entitlements under welfare schemes are directly transferred into the bank accounts of registered beneficiaries. This brings us to the theme of this chapter, which is the digitized delivery of social protection. Dvara Research has documented several forms of exclusion that continued to happen in the implementation of DBT schemes during the COVID-19 pandemic underscoring the equal, if not greater, importance of avoiding erroneous exclusion vis-a-vis preventing erroneous inclusion. Indeed, exclusion was found to occur at every stage of the delivery chain from the first step of identification all the way through to

the last step of cash-out, even as the digitization of social protection has continued apace in India, as elsewhere in the world.

It is against this background that an assessment of these newly emergent social protection tech systems becomes a matter of timely reckoning. If we are locked in on an irreversible course towards a future where all manner of social protection programs are to be digitally administered and implemented, for the most part, then the following questions arise: What is the nature of such systems? What are some examples of these systems? What challenges and risks do these systems pose? Is it possible to articulate a set of normative criteria against which the performance of such systems could be evaluated? These are the questions that I take up for investigation in the subsequent sections of this chapter.

9.3. The 'Platformization' of Social Protection, or SP-ODEs

The digitization of social protection is one aspect of a broader change sweeping the globe. This is the digitization of governance itself. Pope cites India Stack as a prominent example of this new phenomenon. IndiaStack is 'a set of Application Programming Interfaces (APIs) that allows governments, businesses, start-ups and developers to utilize a unique digital infrastructure to solve India's hard problems toward presence-less, paperless, and cashless service delivery'.[7] Pope also offers examples from the United States, Estonia, UK, Italy and Argentina. In each of these cases, critical aspects of the government establishment are being re-conceptualized and re-instated as a 'platform', which is a 'whole ecosystem of shared APIs and components, open-standards and canonical datasets, as well as the services built on top of them and governance processes that (hopefully) keep the wider system safe and accountable'[8] The users of such a platform could be the team developing it, politicians and senior government officials, administrators, procurement managers, designers, developers and the general public. Argentina's MiArgentina is a service delivery platform that offers a host of public services, one of these is digital driving licenses. In 2019, the country's then Undersecretary of Digital Government, Daniel Abadie, was quoted as saying that the next areas MiArgentina would look to cover are car insurance, vehicle ownership and disability certificates[9].

Platforms for governmental services are also variously referred to as GovTech systems, digital

government systems, and Open Digital Ecosystems (ODEs). In what follows, I will use the last of these terms (ODEs) to describe government platforms. According to a 2020 report by Omidyar Network India and Boston Consulting Group, ODEs are 'open and secure digital platforms that enable a community of actors to unlock transformative solutions for society, based on a robust governance framework'.[10] The ODE approach is to create a shared technology infrastructure for service delivery by both public and private entities, in accordance with a set of design principles such as interoperability among disparate systems and datasets and an explicit and heightened concern for data protection and data security. In what follows, I use the term social protection tech systems, or social protection ODEs, SP-ODEs in short, to characterize the harnessing of such ODEs for the delivery of social protection.

In the context of social protection delivery, openness has the following meanings: (a) 'open' to engaging non-government actors such as non-governmental organizations, civil society and payment delivery players across all processes supported by the ODE for social protection, (b) the presence of 'open-source' building blocks to prevent vendor lock-in, and (c) 'open' to innovation that leverages data for citizen-centric use-cases. The first of the above requirements will become clearer further when I lay out the functional processes that an SP-ODE is designed to execute, and we will also see, in the form of a diagram, how these various actors feature in an SP-ODE. The second of the above requirements refers to building blocks which are 'packages of functionality designed to meet business needs'.[11] Essentially, they are built using open standards and to serve a specific technological or business purpose. They can function independently while also having cross-functional usage. Most importantly, they are interoperable with other building blocks and systems through open APIs. For instance, the Aadhaar ID could be a building block for an SP-ODE that wishes to identify beneficiaries in an efficient, pan-India manner. The third of the above requirements implicates the idea of 'citizen-centricity', to which I return later when I discuss the evaluation of SP-ODEs.

At this point, it will be useful to define the term 'social protection' to mean something specific. In accordance with scholars Stephen Devereux and Rachel Sabates-Wheeler, I take it to mean 'public initiatives that provide income or consumption transfers to low-income households and individuals, protect them against livelihood risks, and enhance their social status and rights'.[12] The end-to-end design and delivery of these public initiatives consist of various elements, each one essential to the composite function of social protection. This composite function is shaped by a comingling of financial budgets, political economy, scheme design, delivery systems and legal frameworks (among other aspects) aimed at providing support to the vulnerable households in the country. These are the various essential elements that together constitute social protection.

An SP-ODE is, then, a delivery mechanism for social protection as defined above, that is constructed using building blocks according to an ODE approach. The delivery of social protection involves multiple functional processes, and an SP-ODE may also be thought of as an assemblage of multiple moving parts primarily designed to support these processes. As mentioned earlier, an SP-ODE is also intended to host a wide range of stakeholders (citizens, government departments, service providers, etc.) who play various roles in each of the processes of delivery that the ecosystem supports. While different SP-ODEs may end up being different combinations of these elements, I present further, in Figure 9.1, a schematic representation of how a fully fitted SP-ODE may be understood. This schematic representation is derived mostly from ongoing SP-ODE formations in India, which is in many respects a world-leader in building these systems, and I will therefore focus on the Indian experience from here on in this chapter.

The flowchart in Figure 9.1 may be read in order of five functional processes.

1. **Identification and enrolment:** Primarily connecting the citizen with the concerned government department, this process pertains to the enrolment of citizens into social protection schemes as well as the verification of their identities, and eligibility as per scheme rules. This function may be enabled by the 'Citizen Module' of a digital platform, further supplemented by an 'Assisted-Access Module' for citizens to directly (albeit with assistance, if needed) enrol themselves for social protection schemes, submit requisite documentation, etc. This enrolment may sometimes end in the creation of a beneficiary registry, a comprehensive database of all citizens and their eligibility status. This database may be further enriched with data from other state-level databases. Typically, in such exercises of combining several databases into 'a single source of truth', a process of de-duplication is necessary to ensure that a single entry in the registry maps to a single individual in the real world.

2. **Coordination and orchestration:** The second functional process facilitated by the SP-ODE has to do with the back end, administrative aspects of social protection delivery. This may be supported by an 'Administrator Module', for government officials at various levels to discharge their scheme-related responsibilities. The module may be utilized to target citizens for various schemes, with the help of the registry created under the first process. It may also include monitoring and analytical capabilities to empower government officials with information regarding scheme performance.

3. **Payments:** This function is primarily activated for schemes that involve some element of cash transfer, and permits government departments to update information on eligible, enrolled beneficiaries (possibly powered by the registry, if one exists) whose payments are due. Payment channels may follow the DBT or non-DBT routes and optionally be supplemented by an alternate payment method. For example, in Andhra Pradesh, social protection payments were delivered door-to-door by a network of volunteers recruited at the Gram Panchayat level[13].

4. **Delivery of benefits:** To truly understand social protection delivery end to end, it is essential to understand how citizens may access benefits after transfers have been made to their bank accounts. The Delivery of Benefits process is a crucial component of access to social protection, and its efficacy may be determined by various factors such as the existing infrastructure of banks/ATMs, or even by the network of agent-led service delivery models (e.g., Common Service Centres, or CSCs) that exist today.

5. **Service provisioning:** The Service Provisioning process plays a key role in allowing the SP-ODE to host the gamut of social protection schemes that have a non-cash element. The key stakeholder in this function (Service Providers) will be private or public actors that provide the unit of social protection directly to the citizen. Service providers may be hospitals (in the case of health insurance schemes), financial service providers (in the case of, say, crop insurance or loan schemes), gas agencies (for LPG reimbursements), etc.

6. **Grievance redressal:** Finally and perhaps the only function that is crucial to any SP-ODE, no matter the context, is the presence of robust grievance redressal mechanisms supplemented by the requisite feedback loops. As the flowchart below depicts, grievance redressal modules may be located at various parts of the social protection delivery chain and interact differently with various stakeholders. For instance, grievance redressal may be accessible to citizens through the Citizen Module, grievances visible to administrators in the second function and service providers may collect and/or resolve grievances as well. This final function is a bedrock element in any SP-ODE and its influence pervades all other functions. While other processes may be more well-defined linear processes, the grievance redress mechanisms underpin the functioning of the entire delivery ecosystem.

As already mentioned, Figure 9.1 represent a fully fitted SP-ODE. Most real-world SP-ODEs are still in formation and, therefore, will not conform to this representation in toto. Nevertheless, the full picture is essential for gaining an appreciation of how these emerging tech systems are coming into formation. I turn to this next.
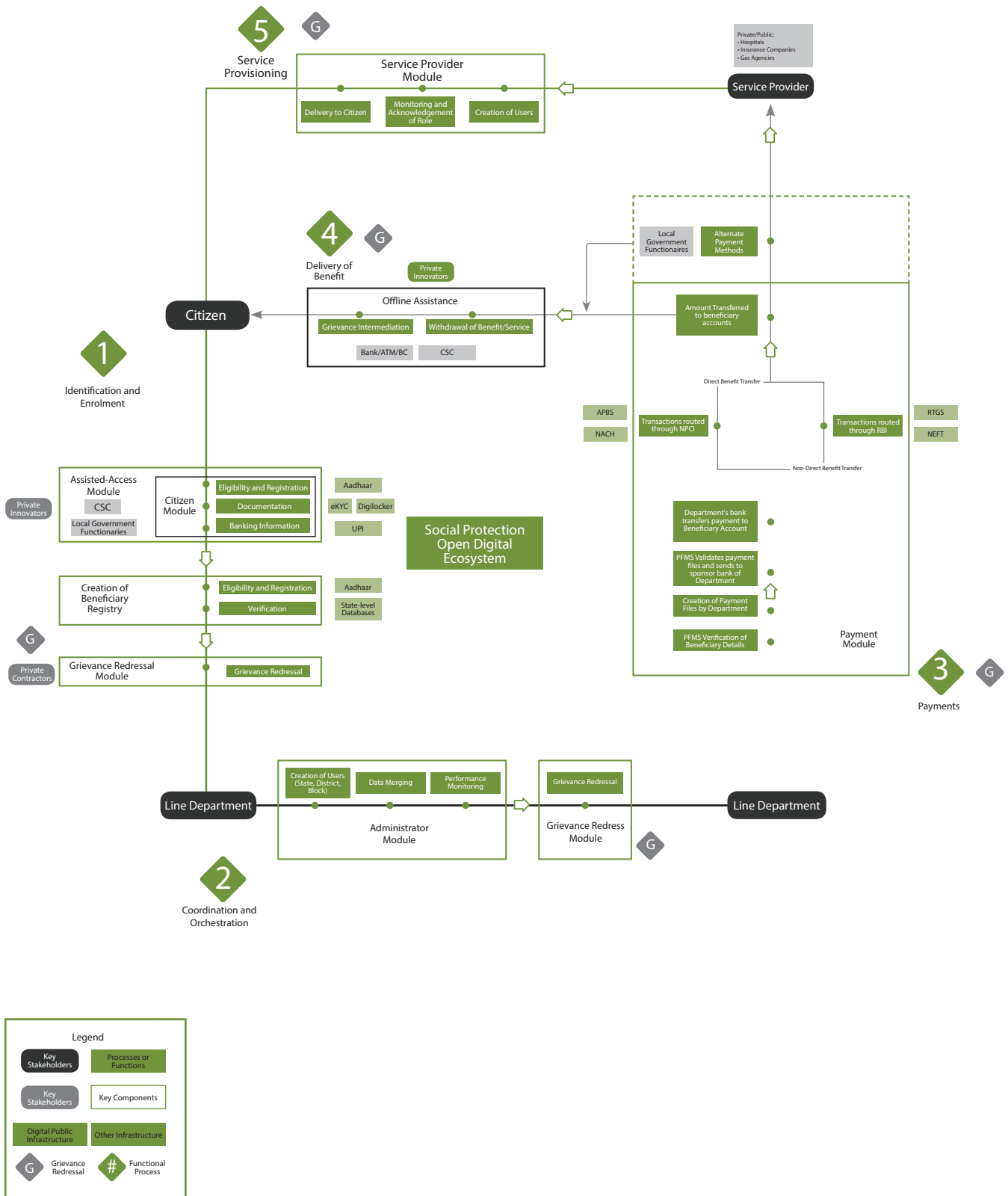
Figure 9.1. Schematic Representation of an SP-ODE

9.4. Some Use-Cases of SP-ODEs

I start with the use-case of the CoWIN ecosystem for booking vaccination appointments. It might be argued that this is a non-obvious use-case in that the service it offers does not exactly map to the definition of social protection advanced earlier. Yet, there are several reasons to include it in this section. Firstly, we can map the CoWIN ecosystem to the schematic of Figure 9.1, and this allows the reader to understand the schematic better. Secondly, the

CoWIN ecosystem is a very contemporary example and, therefore. will be of considerable natural interest to the reader. Finally, given the highly contagious nature of the COVID-19 pandemic, it is not difficult to appreciate the attribution of a social protection element to the functioning of this ecosystem. Figure 9.2 depicts this ecosystem, and we notice that functions/processes 3 and 4 from the generalized schematic are suppressed since they are not relevant for this use-case.
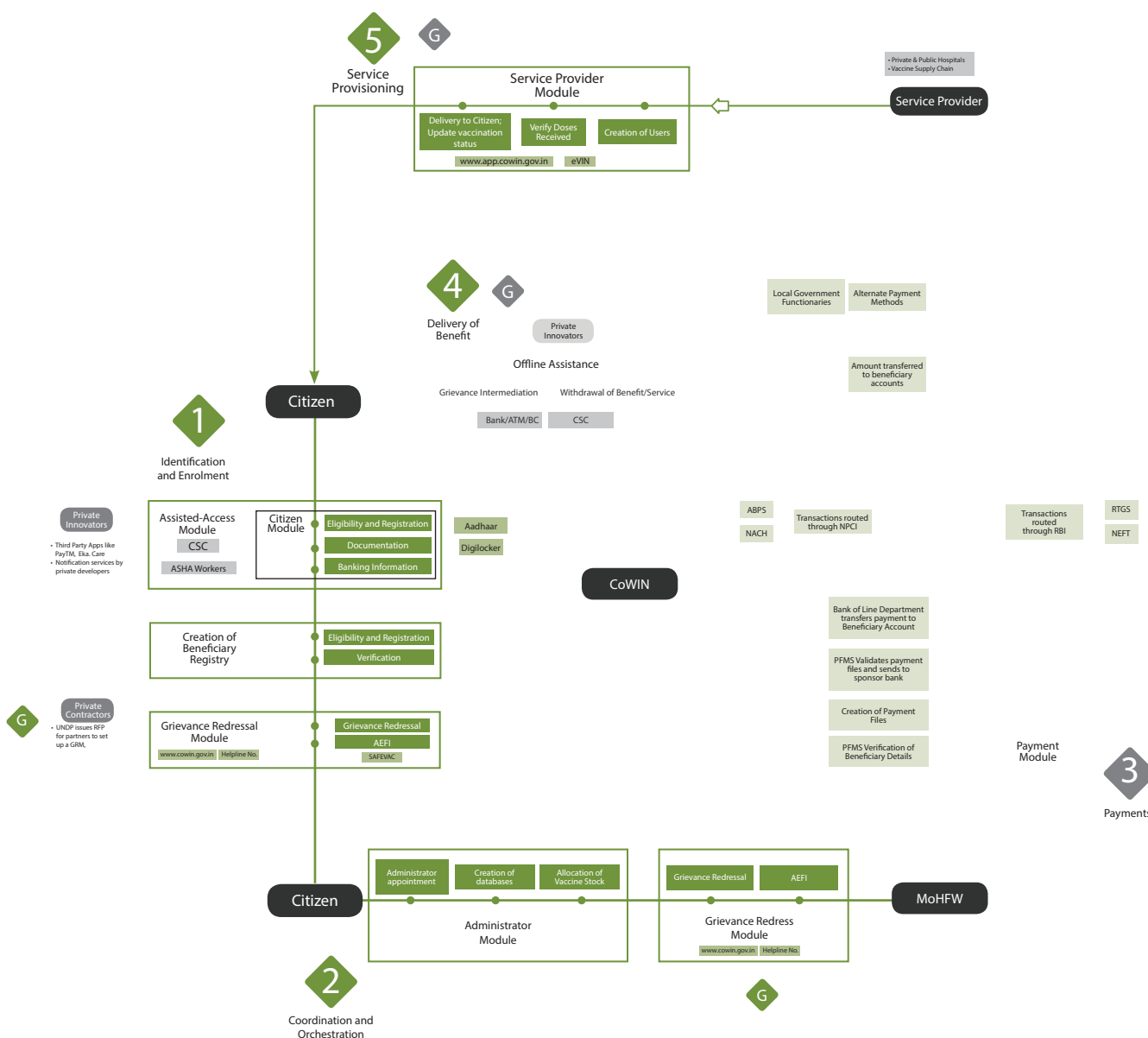

Figure 9.2. The CoWIN Ecosystem

The CoWIN ecosystem was announced in December 2020 as the platform that would facilitate India's vaccination effort.[14] The ecosystem acts as a 'cloud-based IT solution for planning, implementation, monitoring, and evaluation of Covid-19 vaccines in India.'[15] It has been conceptualized to provide 'end-to-end' support for the Covid-19 vaccination delivery system.[16] Managed by the Ministry of Health and Family Welfare, it was developed by the United Nations Development Programme (UNDP) on the ministry's behalf.[17]

The ecosystem is made up of four modules each performing a particular function in the vaccine delivery chain. It can assist in administrative management (through the 'Orchestration Module'), monitor vaccine supply chains (Vaccine Cold Chain Module), onboard citizens as vaccine recipients (Citizen Module), and update their vaccination status (Vaccinator Module), and issue certificates after inoculation (Certificate, Feedback and After-Effects of Immunization [AEFI] Module). The orchestration module creates administrators at the national, state and district levels to be high-level coordinators: creating databases, allocating roles to other system users, managing inventory and tracking registered beneficiaries (through www.app.cowin.gov.in). The vaccine cold chain module supports the procurement and supply chain logistics for vaccine stocks with a repurposed version of an existing web-based vaccine management system—Electronic Vaccine Intelligence Network. The tool digitizes COVID-19 vaccination stock and permits the real-time, remote monitoring of storage temperatures by vaccine and cold chain handlers through a mobile application and works in tandem with the citizen registration module. The vaccinator module is operated by vaccination officers to verify citizen identity and update citizens' vaccination status at the session site. The citizen registration module permits citizens to enrol themselves as vaccine beneficiaries and book appointment slots through one of the following access points: the www.cowin.gov.in website, the Aarogya Setu application or the UMANG application. The final module of CoWIN provides a second layer of ex-post interaction between the citizen and vaccine administrator for three purposes: issuance of vaccine certificate, collection and management of feedback and grievances and, finally, the reporting of relevant AEFI.

The remaining use-cases, eight of them, are collected in Table 9.1 below with brief descriptions of their various elements that should be self-explanatory. They represent a seven state-level and one centre-level SP-ODEs, some of them still in formation or under construction.

TABLE 9.1. SP-ODE USE-CASES

State/Centre and Implementing Department/Ministry	Name of Project	Status	Key Features and Objectives	Nature of Benefit	Digital Infrastructure/s Created/Used
Haryana, Citizen Resource Information Department	Parivar Pehchan Patra (Family Database Project)	Implemented	Create authentic, verified and reliable data on all families Issue family identity cards to every family (an 8-digit unique ID number) Ensure automatic delivery of various benefits and services	Cash, in kind, services	Created: Family Database Registry
Haryana, State Government	Antyodaya Saral	Implemented	Make all schemes and services available on a single integrated online platform Ensure end-to-end processing of applications in an online and paperless manner Reengineer process flows to make them user-friendly Establish state-of-the-art service delivery centres at district, sub-division and tehsil levels Ensure all schemes and services are delivered within clearly stipulated time limits Provide clear visibility to citizens (and officials) at all stages of the status of applications	Cash, in kind, services	Created: Antyodaya Saral Portal

Madhya Pradesh, Social Justice Department	Samagra Samajik Suraksha Mission (SSSM) [Samagra Social Registry & Integrated Social Protection System]	Implemented	Provide IT support and databases Rationalize rates of scheme and assistance amount Simplify rules and procedures Make computerized information available on the website (transparency) Provide all facilities to the beneficiary at one place as far as possible Disseminate information about plans and programs	Cash, in kind, services	Created: Samagra Family ID & Individual ID, Samagra Portal State Population Registry Used: Aadhaar
Odisha, State Government	Social Registry & Social Protection Delivery Platform (SPDP)	Under construction	Monitor the well-being of beneficiaries of several state and central welfare schemes while weeding out ineligible claimants Super database in which databases of all departments would be integrated	Cash, in kind, services	Created: Social Registry & SPDP Used: KALIA database, Aadhaar, DBT infrastructure
Rajasthan, State Government	Jan Aadhaar Yojana	Implemented	Unify the state's service-delivery ecosystem on the basis of a single-card, single-number, single-identity philosophy Serve as the sole vehicle for delivery of all kinds of cash and non-cash benefits and services through an intertwined network of e-Mitra kiosks	Cash, in kind, services	Created: Jan Aadhaar ID, Jan Aadhaar Mobile App
Telangana, ITE&C Department	Samagra Vedika	Implemented	Create a 360-degree profile of every citizen to plug all possible loopholes in its welfare programmes Alternative approach without using Aadhar or any other ID All records in all data sources have name, address; some records also have DoB, phone number, father's name, photo A combination of the above attributes which are already available in every record will be used to identify an entity, with a hoped-for accuracy nearer to Aadhar-based linkage with no manual intervention	Cash, in kind, services	Created: Samagra Vedika Database, Samagra Platform, Samagra Vedika Search Software
Uttar Pradesh, Social Welfare Department	Integrated Pension Portal	Implemented	Receive applications for pensions under old-age, widows, divyang and leprosy state pension programs Process applications and transfer to the PFMS (Public Fund Management System) after electronic approvals for necessary payments directly to the bank accounts of the beneficiaries	Cash	Created: Integrated Pension Portal
Centre, Ministry of Labour and Employment	National Database for Unorganised Workers & eSHRAM Portal	Implemented	Include all unorganized workers from all over India and help link them to social security schemes (e.g., accidental insurance cover) of the Government of India Boost last mile delivery of the welfare schemes	Cash, in kind	Created: eSHRAM portal, eSHRAM card with 12 digit UAN, National Database of Unorganized Workers (NDUW) Used: Aadhaar, DBT infrastructure

9.5. Evaluating SP-ODEs

In this section, I will draw exclusively on Dvara Research's recent efforts to construct an assessment or evaluation framework for SP-ODEs.[18] The framework is a long checklist of questions that seeks to discover whether actual (real-world) SP-ODEs manifest certain desirable attributes. The framework is itself an extrapolation of Dvara Research's earlier work on last mile delivery of social protection benefits (in collaboration with Gram Vaani, Tika Vaani and University of Montreal). That work highlighted several shortcomings in the current social protection delivery systems in much of India.[19] Since the promise of social protection tech systems or SP-ODEs is to address and resolve these shortcomings, it is possible to leverage Dvara Research's work on last mile delivery to extrapolate a set of desirable attributes that 'good' or 'citizen-centric' SP-ODEs should manifest. These attributes serve as normative criteria against which the performance of actual SP-ODEs may be measured.

Before I proceed to the attributes, a disclaimer is in order. It is to be noted that the evaluation framework serves to evaluate the delivery of social protection schemes and not to evaluate the schemes themselves. That is, questions about the delivery of social protection may be separated and treated distinctly from questions about the design of social protection. Therefore, the normative criteria are not those that one could readily use to evaluate the efficacy or adequacy or appropriateness of this or that particular social protection scheme. This is important to keep in mind as we move forward since the qualitative attributes listed further could easily be mistaken for attributes that social protection schemes should possess, whereas my intention is to single them out rather as attributes that the delivery systems should possess.

In what follows, I delve deeper into the attributes expected of a citizen-centric SP-ODE, and I explain the meaning and conceptual content of these attributes.

9.5.1. Inclusive

An essential feature of an effective social protection delivery system is its inclusivity, or its ability to reach the intended population and include vulnerable populations.[20] In 2019, the UN *Special Rapporteur on Extreme Poverty and Human Rights* submitted to the General Assembly that digital social protection systems should 'devise new ways of caring for those who have been left behind', formally acknowledging the need to address exclusion.[21] In the social protection literature, exclusion errors are defined as being the proportion of those wrongfully excluded from beneficiary lists created using some targeting methodologies.[22] This has resulted in an understanding of exclusion limited to the identification and targeting stage of any social protection scheme, but it ignores the potential for exclusion to arise downstream from successful identification and targeting. Dvara Research calls this latter type of exclusion 'incidental', not because it is less frequent or less important than exclusion in identification and targeting, but because it implicates the breakdown of downstream processes during their everyday functioning, for a host of reasons that escape obvious categories of error classification at the system level.[23]

Constructing a digital social protection delivery platform that is truly inclusive will require acknowledging the risks of incidental exclusion, which may manifest in the form of cash shortages, machine failures at citizen access points, breakdowns of communication channels for the citizen, the requirement of inaccessible documents or even errors in data entry causing payments to stall. Furthermore, incidental exclusion can also be sourced to structural issues that result in inequitable access to SP-ODEs, such as demographic barriers (illiteracy), economic limitations (low-income), social barriers (gender, religion, caste) and administrative bottlenecks (absence of citizen touch points), all of which may exclude beneficiaries at various stages of their interaction with the social protection delivery system.

Another dimension of exclusion is the disposition with which the citizen is addressed during their interactions with the SP-ODE. When the citizen is treated in a dismissive or disrespectful manner, it reduces their likelihood of attempting to interact with the SP-ODE in the future, thereby complicating access and adding to exclusion. Especially since some of these interactions are at the last-mile and may be outsourced to agents, the concern of poor conduct of service providers or even government functionaries at the last mile arises. Indeed, a guiding principle is to design SP-ODEs such that they work well for the most marginalized. It is then doubly essential to prioritize that all citizens (in their interaction with the SP-ODE) are treated with respect and their needs are held in high regard. While such requirements are not specific to an SP-ODE, the transition to a digital delivery system must not result in additional stigma or hardship for the citizen.

9.5.2. Responsible

An SP-ODE is a type of digital delivery architecture that leverages a digital information system or a

social registry/integrated database. This information system facilitates the flow of information within and from the SP-ODE to other sectors. The system enables governments and other service providers to deliver social protection benefits by providing 'dynamic and real-time data' relating to all the processes within the social protection delivery chain such as registration, identification, assessment and enrolment of beneficiaries.[24] For example, Rajasthan collects real-time data from 28,000 service points under its food subsidy program.[25] Similarly, Andhra Pradesh collects 'all service delivery data generated through Aadhaar-based transactions in real-time, analyses it and provides dashboards for monitoring implementation'.[26]

To complete the processes within the social protection delivery chain, beneficiaries submit substantial amounts of data such as their name, address, phone number, gender, bank account details, identification proof among many others. All such data points have been identified as sensitive personal data in the Personal Data Protection (PDP) Bill (2019) and they must be protected to preserve citizens' informational privacy.[27] Hence, there is a strict requirement for all data flows to and from the SP-ODE to be managed responsibly.

A responsible SP-ODE will handle data in a manner that protects the personal data of the users while preserving their autonomy and trust in the use of their data, aggregated for delivering social protection benefits. The attribute of responsibility implicates measures and provisions that protect the personal data of citizens and that preserve their digital rights. Data protection specifically relates to the legal rules that regulate to what extent and under which conditions citizens' personal data may be collected, processed, shared and stored. Autonomy refers to the individual's capacity to make informed decisions, or in other words to maintain control over certain aspects of one's data. Finally, trust refers to active trust which presupposes a decision, namely, the choice to expose oneself to risk toward the counterpart, in the expectation that the counterpart will not unduly profit from the situation. These three priorities together lead to an 'ethic' of data protection that complies with the laws of the land, affords controls to citizens over their data and protects them from harms that they cannot foresee.

In the current form, the PDP Bill contains principles and clauses that ensure responsible data management. However, artificial intelligence technologies such as automated systems, Big Data and machine learning are also rapidly being adopted in digital social protection delivery systems, introducing new forms of risks that the provisions of the PDP Bill, as it is currently stated, are inadequate to deal with.[28] These are risks of exclusion, data breaches, discrimination, deception and frauds, trust deficits and the lack of transparency for citizens.[29] A responsible SP-ODE will use automated systems and machine learning responsibly by (a) mitigating exclusion, (b) piloting for the development, testing and validation of new algorithmic systems so as to ensure that the data powering the algorithms is representative, (c) putting in place mechanisms to ensure that decisions taken by automated systems are sufficiently explainable, (d) designing automated systems to be transparent and auditable and (e) permitting users to contest automated decisions.

Until the PDP Bill becomes law, the creation of a responsible SP-ODE would require 'clear governance structures, privacy protocols, data access and sharing protocols, and grievance redressal systems' to minimize privacy harms and to encourage responsible innovation.[30]

9.5.3. Efficient

An SP-ODE is capable of realizing efficiencies of time, cost and effort for all parties involved in the platform. But it is the efficiency gains for citizens that should be of first importance in evaluating the performance of an SP-ODE. This is required by the overall criterion of citizen-centricity that the SP-ODE is supposed to conform to.

An SP-ODE would minimize the citizen's search cost and effort required for enrolment and registration into schemes. For instance, the onboarding of various schemes onto a single citizen-facing digital platform would enable citizens to access multiple programmes through a single window. If the platform is so designed, citizens may be able to avoid the re-submitting of documents each time they seek enrolment into a different program.[31] Some platforms may support the functionality of providing citizens with a comprehensive view of scheme eligibility, documentation requirements, timelines, etc., which would be an improvement over the status quo in which prospective applicants often run pillar to post in pursuit of accurate information.

On the side of administrators, an SP-ODE can facilitate the optimization of bureaucratic processes in social protection schemes. By streamlining the efforts of various departments responsible for various social protection schemes, an SP-ODE can eliminate process inefficiencies.[32] For instance, common procedures such as payments, grievance redressal, etc., may be made applicable across multiple programmes. Intake and registration

processes across schemes may also be shared, rather than collecting similar information multiple times from the citizen.[33] While such efforts of streamlining do primarily benefit the administrator, the benefits also cascade down to the citizen who experiences thereby an improved quality of service delivery and smoother interaction with the delivery platform.

An SP-ODE also permits evidence to inform decision-making and management. The improved availability of regularly updated data and robust grievance mechanisms (among other things) allows programs to incorporate feedback loops to constantly keep improving those elements of process design that are not working well for citizens.[34]

SP-ODEs will allow non-public actors to participate in social protection service delivery in various fashions. One example is the innovation of solutions for citizens, built upon the digital platforms of an SP-ODE. Such 'service delivery innovations' may help government departments efficiently utilize their resources to deliver social protection services, realize better outcomes and enhance citizen satisfaction. For instance, civil society organizations such as Gram Vaani (which facilitates collection of citizen grievances through a simple IVR helpline) may be able to plug into the ecosystem to assist in grievance mediation. It is to be noted that this form of innovation is categorically different from the kind of innovation described under the responsibility attribute. There, innovations are undertaken not to enhance the efficiency of the social protection delivery process, as they are here, but rather to create new value-added services for commercial purposes.

9.5.4. Accountable

The design of an SP-ODE should uphold a two-fold structure of accountability: to the taxpayers by virtue of them paying for the SP-ODE and to the beneficiaries by virtue of them receiving the benefits. In the first instance, the public exchequer will need information in order to evaluate the performances of the social protection delivery platform and of the community of actors participating on the platform to serve citizens. An important performance metric will be the degree to which the SP-ODE facilitates the disclosure of information to citizens in a manner that is transparent, accessible and easy to understand. To this end, the exchequer may also find it necessary to encourage the participation of civil society and media organizations on the platform.[35] Some examples of mechanisms include publishing annual reports in the public domain, disseminating data on the case-load management of the platform,

financial audits, performance audit reports of the platform and the services built on top of it.

In the second instance (accountability to the beneficiary), an SP-ODE should consist of accountability mechanisms that will strengthen the beneficiary's voice (especially that of marginalized communities) when they either receive or are excluded from services. In addition, such mechanisms will ensure transparency in the processes of an SP-ODE and provide redress to beneficiaries who face hurdles while accessing the SP-ODE. Modern feedback systems leverage digital technology to collect and process data in real time that enable beneficiaries to monitor services and administrators to improve service delivery. Mittal et al. describe the role of digital feedback loop systems such as text messages, robocalls, performance surveys and embedded ratings (for service providers), all of which encourage beneficiary participation and involvement. They also help administrators to identify and 'take action' on the feedback in real time. For example, Andhra Pradesh actively solicits feedback from beneficiaries through quality surveys and robocalls whenever they draw ration from ration shops. Beneficiaries with negative feedback are then contacted by a manual feedback loop system to register complaints. The complaint is then transferred to the appropriate administrative department where they must be resolved within the specified time period. Hence, soliciting feedback represents only the first step in the feedback loop mechanism; it ought to be followed by a mechanism to ensure that action is taken to incorporate beneficiary feedback to improve the system. Digital feedback loop systems combined with effective grievance redressal mechanisms will ensure ex-ante and ex-post accountability of the platform and its service providers to the beneficiaries. This concludes my discussion of attributes and the evaluation framework, and it also brings the chapter to a close. I have attempted in this chapter to provide the reader with an understanding of the newly emergent technological forms that are transforming the social protection landscape in India, and to articulate a set of normative criteria by which one might evaluate the performance of these new forms. It is hoped that as SP-ODEs come on stream, the evaluation criteria in this chapter will be further developed and sharpened through a reiterative process of application and reflection. The design and performance of SP-ODEs are also expected to improve alongside such a process. And in the final instance, the enhanced performance of SP-ODEs is expected to benefit all stakeholders, foremost among them citizen beneficiaries.

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