State of Open Digital Ecosystems for Social Protection (SP-ODEs) in India

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Executive Summary

I. Introduction to Open Digital Ecosystems for Social Protection

Social protection is broadly understood as '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' (Devereux & Sabates-Wheeler, 2004). Typically, delivery of social protection benefits to citizens has been fragmented and requires each government department to create capabilities in the form of personnel, infrastructure, and operating procedures. This entails duplication of workflows across departments and a consequent increase in administrative costs. Simultaneously, such a siloed approach to benefit delivery requires citizens to apply for each scheme individually and go through the onboarding process several times to get access to the full suite of services they are entitled to.

Technological advancement is enabling governments to break away from this fragmented model and adopt an approach that allows individual departments to share infrastructural capacities. In policy parlance, this new approach is referred to as an 'ecosystem-based' delivery model, wherein several government departments are integrated at the back end, operate on the same platform, with their workflows interoperable with each other. At the front-end, the citizens benefit from a single sign-on platform, supported by one-time authentication and onboarding to claim entitlements across different schemes. Further, these ecosystem-based delivery models are typically supported by social registries which are 'information systems that support the outreach, intake, registration, and determination of potential eligibility for one or more social programmes' (Leite et al., 2017). Data integration and interoperability frameworks that permit the exchange of data across information systems are thought to facilitate economies of scope and scale while improving the coordination and monitoring of programmes (Barca and Chirchir, 2020). Integration between management information systems (MIS) of different schemes is also thought to facilitate better emergency social protection responses in the event of unforeseen, large-scale shocks (Chirchir and Kidd, 2011).

This creation of an ecosystem-based approach to delivery of social protection also reflects the broader trend of platformisation of governance. Policymakers are optimistic that the creation of digital public infrastructures that are shared across governments and private sector providers, and harness data collected from different aspects of the economy, could help in achieving better public policy outcomes. Open Digital Ecosystems (ODEs), defined as, 'open and secure digital platforms that enable a community of actors to unlock transformative solutions for society, based on a robust governance framework'[1], represent this platformisation of governance.

There is a growing appreciation that for ODEs to realise their intended objective of realising better public policy outcomes, they must operate in accordance with a set of design principles such as interoperability among disparate information systems, openness with respect to participation by non-

[1] Omidyar Network India & Boston Consulting Group. (2020). *The Potential of Open Digital Ecosystems: Building India's Digital Highways*

state actors and accessibility to source code — accompanied with an explicit and heightened concern for data protection and data security.

This report concerns itself with a specific type of ODE, i.e., ODEs designed for delivering social protection referred to as Social Protection Open Digital Ecosystem (SP-ODE). There is a significant momentum around creation of SP-ODEs in India, especially at the state level. These systems are live and expanding in states such as Madhya Pradesh Telangana, Haryana, Rajasthan, Odisha, among others.[2] This report serves to familiarise the reader with the concept of SP-ODEs. It is written for policymakers, who may benefit from the discussion on the design principles for embedding citizen centricity in tech platforms designed for social protection delivery. The insights in this report allow it to be used both ex-ante — to guide the creation of citizen-centric SP-ODEs — and ex-post, to reflect on the citizen centricity of existing SP-ODEs. Further, the thinking in this report is future-facing and robust to technological advancements over time.

II. Objectives of the Report

The aim of this report is four-fold. It seeks to (i) *provide readers with a nuanced understanding of an archetypal SP-ODE through a schematic representation of its various components*, (ii) *lay down a set of attributes that comprises a blueprint for building citizen-centric SP-ODEs*, (iii) *provide a framework of design features that operationalises the above attributes,* and lastly, (iv) *use this framework to build case studies of live SP-ODEs in India.*

The design principles in this report have been distilled from a rigorous review of literature on considerations for designing tech-based social protection delivery systems in low to middle income countries. They have also been shaped by views of various stakeholders, ranging from those involved in architecting such ecosystems to those who are invested in understanding frictions faced by citizens at the last mile. Finally, this work has benefitted from the learnings of the Social Protection Initiative and Future of Finance Initiative at Dvara Research, which bring their respective expertise in the fields of social protection and digital innovation in financial services.

III. Unpacking Citizen-Centric SP-ODEs

SP-ODEs are Open Digital Ecosystems created for delivery of social protection benefits. However, we contend that this class of ODEs needs to be intentional about its ability to serve the most marginalized population in the country, given its mandate of delivering social protection benefits and entitlements. This mandate of SP-ODEs obliges us to characterize them in a manner that accords a high weightage to their ability to reach to and effectively interface with the remote, digitally excluded last mile of the country. Therefore, we provide a *normative* definition of citizen-centric SP-ODE, which calls out specific desirable attributes that make an SP-ODE citizen-centric. A citizen-centric SP-ODE is:

[2] States like Madhya Pradesh (Samagra Samajik Suraksha Mission) have created a comprehensive centralised database and an inter-operable platform for monitoring and management of all major welfare transfers in the state. Telangana's Samagra Vedika integrated government databases for proper targeting of beneficiaries and accurate decision making by officials.

'A set of entities and processes (both tech and non-tech) that will together constitute a citizen-centric social protection delivery system, i.e., it will be *inclusive*, *responsible*, and *efficient*, while being supported by *accountability* mechanisms.'

There are two key aspects of this definition. First, an assemblage of entities and processes together constitute an SP-ODE, second, an SP-ODE must necessarily be citizen-centric and designed to be inclusive, responsible (with citizens' personal data), efficient (for the citizens), and accountable. We discuss each aspect in turn.

We envisage an SP-ODE as a coordinated set of processes and entities. We build on this intuition to create an archetype of a mature, fully digitised SP-ODE, presented in Figure 1.

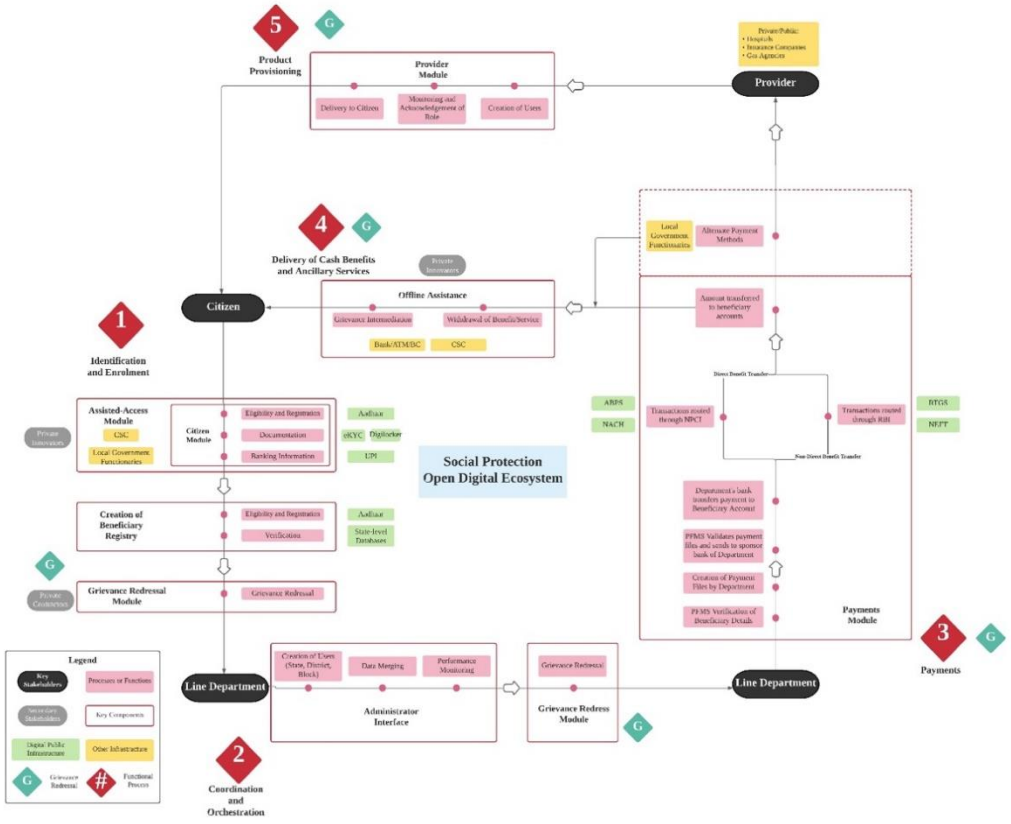

Figure 1: Schematic Representation of an SP-ODE

Our work indicates that a mature SP-ODE comprises six processes:

1. *Identification & Enrolment*, which entails connecting the citizen with the concerned government department, enables the enrolment of citizens into social protection schemes. It also includes verification of their identities and eligibility as per scheme rules. This process may also, in some cases, result in the creation of a citizen registry which is a comprehensive database of all citizens and their eligibility status vis-à-vis certain social protection schemes.

2. *Coordination & Orchestration*, which relates to the back-end of social protection delivery, involves a range of administrative activities. Typically supported by an *Administrator Module*, these activities include targeting citizens for various schemes with the help of the registry created under the first process, analysing, and monitoring scheme performance, and acting upon the insights thus generated. The registry of citizens (in case an SP-ODE hosts one) plays a key role in this process.

3. *Payments* as a process entails transfer of cash benefits from the government department to citizens' bank accounts, often using infrastructure provided by the SP-ODE. In India, payment channels may follow the Direct Benefit Transfer (DBT) or non-DBT routes and may be supplemented by an alternate delivery protocol.[3] The process is also used to make payments for providers involved in provisioning of in-kind social protection benefits such as food grains, cooking fuel, etc.

4. *Delivery of Cash Benefits and Ancillary Services* as a process encompasses pathways through which citizens get access to their benefits at the last mile. It includes citizen interfaces such as Common Service Centres (CSCs) or Business Correspondents (BCs) which facilitate the delivery of cash and ancillary services (such as the provision of certificates) at the last mile.

5. *Product Provisioning* applies to social protection benefits that either have an in-kind component or have an intermediating provider involved in their delivery. The key stakeholders in this process are providers, who may be private or public actors that provide the unit of social protection directly to the citizen. Providers could be hospitals (in the case of health insurance schemes), financial service providers (in the case of say, crop insurance or loan schemes), or gas agencies (for LPG reimbursements), etc.

6. *Grievance Redressal* relates to the continuous process of crowding-in grievances and maintaining feedback loops.[4] In our conceptualisation, grievance redressal mechanisms are embedded in the functioning of the entire delivery ecosystem. This process is the bedrock of a citizen-centric SP-ODE and its influence pervades all other processes.[5]

These six processes are carried out by several government departments, agencies, and private enterprises, that work in tandem with each other, through interoperable technological modules.

IV. Conceptualising Citizen Centricity of SP-ODEs

The benefits of open, digital ecosystems have been emphasised in various policy papers and reports including the *Strategy for National Open Digital Ecosystems* set out by the Ministry of Electronics and Information Technology. Given the realities of the last mile in India, a digital-only delivery system of social protection runs the risk of inequitable access due to the persistent digital divide, gaps in literacy, and infrastructural limitations. It also requires citizens to navigate interfaces characterized

[3] In Andhra Pradesh, social protection payments are being delivered door-to-door by a network of volunteers recruited at the Gram Panchayat level (Real Time Governance Society, 2019).
[4] A feedback loop would improve the concerned process by incorporating the comments of citizens.
[5] For the sake of convenience, all questions relevant to *Grievance Redressal* are grouped together in the Framework.

with both information *and* power asymmetry. To address these issues, we introduce the notion of citizen centricity which encompasses attributes that could act as guardrails for citizens, when they interact with SP-ODEs. Our conceptualisation of citizen centricity comprises the following four attributes. Each of these attributes is discussed in further detail in Chapter 2 of this report.

1. *Inclusive:* In our formulation, *inclusivity requires that the SP-ODE strives to eliminate the occurrence of all possible forms of exclusion across the social protection delivery chain. Should exclusion still occur, an inclusive SP-ODE will offer a re-entry loop for those mistakenly excluded.*

   Inclusivity or the ability of an SP-ODE to reach the intended citizens and service vulnerable populations without friction is an essential feature of an effective social protection delivery system (Lindert et al., 2020). Our learnings from studying exclusion at the last mile reflect that exclusion can occur at any stage of social protection delivery and is not localised to identification and targeting (Dvara Research et al., 2021). Data mismatches, transaction failures, inability to access last-mile delivery points are some causes that explain exclusion of those who are otherwise identified as eligible beneficiaries. In addition to these procedural hurdles, the disposition with which a beneficiary is addressed during their interactions with the SP-ODE could also engender exclusion. When a citizen is treated dismissively or disrespectfully, it reduces their likelihood of attempting to interact with the SP-ODE in the future, thereby complicating access and adding to exclusion. The principle of inclusivity aims to suppress the occurrence of these forms of exclusion.

2. *Responsible*: Our formulation of *responsibility mandates the SP-ODE protect citizens' personal data. More specifically, this feature requires that the SP-ODE handles citizens' personal data in a way that protects their data, upholds their privacy while preserving their autonomy and trust in the use of their data.*

   Digitisation of social protection delivery creates as well as uses personal information of citizens extensively. Any lapse in protecting citizens' personal data could manifest two kinds of harms. The first kind of harm relates to incursions on their privacy, which is a fundamental right recognised by the Supreme Court of India. The second kind of harm relates to the adversities that citizens face when their personal data is misused, such as losing their entitlements on account of identity theft. A responsible SP-ODE, therefore (i) safeguards citizens' privacy, (ii) protects their data, and (iii) maintains their autonomy where algorithms are used.

3. *Efficient:* Our formulation of *efficiency focuses on reducing barriers faced in accessing social protection benefits. Specifically, it emphasises minimising citizen's search costs and eliminating process inefficiencies to ensure better delivery.*

   Digitisation promises efficiencies for both government and the citizens. Our experience shows that the latter is under-emphasised in the design of SP-ODEs. Our definition of efficiency emphasises four kinds of efficiencies, i.e., efficiency for the citizen, the administrator, system level efficiencies and efficiencies spurred by innovations in service delivery, typically realised through participation of private players. Digitisation enables integration of various schemes. This enables citizens to access a suite of schemes through an integrated platform, saving them efforts and costs of time and money. This aspect of efficiency also encourages SP-ODEs to move towards an entitlement-based approach, away from a demand-based disposition of 'benefit delivery'. It redistributes the responsibility of

identifying the schemes that one is eligible for, from the entitlement-seeker to the SP-ODE. An integrated system also does away with the need for each government department to create its own onboarding, authentication, and benefit delivery mechanisms. System-level efficiency is harnessed through evidence-based decision-making which is facilitated by feedback loops and grievance redress channels. The final aspect of efficiency relates to innovations in social protection delivery,[6] typically offered by private participants, that either create new streamlined processes or improve existing ones (The Innovation Policy Platform, 2015).

4. *Accountable:* In our formulation, *accountability refers to the answerability of the SP-ODE to the taxpayer who is paying for it and to the beneficiaries who are its primary stakeholders.*

SP-ODES, unlike private players, do not benefit from the disciplining effect of market competition. This creates a power imbalance between beneficiaries and the last-mile delivery agents, where the former is not able to exert any power on the latter. The attribute of accountability emphasises devising mechanisms that can help beneficiaries hold the SP-ODE and the last-mile delivery agents to account. Further, citizens (who may not be beneficiaries of social protection programmes) typically, have no means to assess the performance of SP-ODEs, even when they pay for the functioning of these systems through their taxes. Our framework emphasises a two-fold structure of accountability which encompasses the SP-ODE's answerability to the taxpayers and to the beneficiaries that it intends to serve.

V. Studying Citizen Centricity of SP-ODEs: A Framework

The report proposes a guiding framework that facilitates comprehensive case studies of live SP-ODEs. The framework allows a critical appreciation of the level of citizen centricity embedded in the design of an SP-ODE. The framework can be used *ex-ante*, i.e., before an SP-ODE is designed, as a ready reckoning of design features need to make it citizen centric or it can be used *ex-post,* as a tool to critically appraise the citizen centricity of existing SP-ODEs. It comprises two sections.

The first section builds an overview of the SP-ODE and captures the form, function, and constituents of the SP-ODE. To this end, it entails questions that capture information about the governance structure of the SP-ODE, its form (integrated or disaggregated), the delivery mechanisms, stakeholders it supports, and the status/degree of its integration with Digital Public Infrastructure (DPI), among others.

The second section of the framework guides the discussion of the SP-ODE through the lens of citizen centricity. It translates the attributes of inclusivity, responsibility, efficiency, and accountability into design features for each process performed by the SP-ODE. As a preview, we summarise the framework by presenting select design features under each attribute, to help the reader form an impression of the case-study framework. More involved readers are directed to

[6] The Innovation Policy Platform (2015) recognises six types of innovation in the public sector namely, service, service delivery, administrative and organisational, conceptual, policy, and systemic.

Chapter 3 of the report which discusses this framework and to Appendix II, which presents the framework in its entirety.

1. *Inclusivity-specific design features:* As discussed earlier, the attribute of inclusivity seeks to minimise the incidence of wrongful exclusion along the value chain of social protection delivery. This necessitates the presence of design features such as a strong network of last-mile delivery agents responsible for delivering cash or in-kind benefits to beneficiaries, expansion of the functionalities of last-mile delivery agents to edit beneficiary details (and thereby minimise exclusion that occurs on account of convoluted processes of data correction), expansion of categories under which grievances can be filed, etc.

2. *Responsibility-specific design features:* The attribute of responsibility focuses on safeguarding citizens' personal data. Select design features that give effect to this attribute include the presence of a law that enables the creation of an SP-ODE and collecting personal data for its purposes, the presence of an easily accessible privacy policy setting out how the SP-ODE treats citizens' personal data, audits and revisions of algorithms used to identify beneficiaries, and compliance with data protection principles.

3. *Efficiency-specific design features:* The attribute of efficiency strives to reduce the time, effort, and costs that citizens must incur in accessing benefits. Select design features that help realise efficiency include proactive communication to the citizen on the status of their entitlements, proactive identification of eligible beneficiaries, tracking of citizens' complaints until they are closed, and establishment of feedback loops to use the intelligence from citizens' experiences and systems' performance to revise system design.

4. *Accountability-specific design features:* The attribute of accountability focuses on providing levers to both beneficiaries and non-beneficiaries to discipline the system and hold it to account. Some features that embed accountability in the system include publication of performance reports of the system, publication of transaction failures, audits of last-mile delivery agents, ability of citizens to rate the performance of last-mile delivery agents, among others.

VI. Case Studies: The State of Citizen Centricity of Select SP-ODEs in India

Using the framework, we build three in-depth case studies, describing three state-level SP-ODEs: the Jan Aadhaar Yojana of Rajasthan, the Antyodaya Saral of Haryana, and the Samagra Samajik Suraksha Mission of Madhya Pradesh. These systems are first among equals in terms of their maturity, functionality, and scale, which makes them appealing candidates for in-depth analysis. The involved reader is directed to Chapter 4, which discusses each of these case studies in detail. We summarise the key findings from the three cases below.

All systems that were studied report the ambition to move to an entitlement-based model of benefit delivery, where the system would be able to automatically identify relevant beneficiaries and deliver benefits to them, *without* the beneficiary having to apply for individual schemes. MP's Samagra exhibited these capabilities when it graduated about 5 lakh citizens to higher paying pension schemes. Similarly, Rajasthan's Jan Aadhaar Yojana has begun automatically issuing caste certificates to new-

borns, based on the castes of their parents, without requiring parents to file new applications for the same.

Next, all systems build upon existing physical and digital infrastructure of the state and on systems that may have been constructed to serve other domains of public service delivery. Some systems are also open to use by the Union Government of India (GoI). For instance, the Samagra system of MP, is designed as an integrated platform that can be used by GoI to run the MIS for the automation and implementation of its schemes (Department of Administrative Reforms & Public Grievances, 2017). The Antyodaya Saral system of Haryana is built atop GoI's Service Plus Platform, which is an open source, low-code/no-code architecture, making it reusable across different apps and contexts (Antyodaya Saral: Streamlining public service delivery in Haryana, n.d.).

Further, all these systems are inclusive to the extent that they are supported by networks of last-mile delivery agents to supplement the digital channels of accessing the SP-ODE. This could also be explained by the design of financial inclusion efforts in the country which emphasise furthering the reach of financial services through last-mile agents such as banking correspondents. For instance, some features of the Samagra system were conceptualised as elements of the Samruddhi program for financial inclusion and have positive spill-over effects on the inclusivity of the Samagra ecosystem.

Finally, all systems provide IVRS-based channels for grievance redress. However, Rajasthan's Jan Aadhaar Yojana comes out as first among equals for providing a 24*7 helpline. This makes grievance redress accessible and easier for beneficiaries by not requiring them to divert time away from working days or hours.

Our study also helped us surface some gaps in the design of these SP-ODEs. A particularly concerning absence across the SP-ODEs studied is that of features concerning the *responsibility* attribute. These systems lack features that (a) elicit citizen consent while obtaining and using their data and (b) ensure the privacy and security of the personal data obtained. The Jan Aadhaar Yojana stands out in this respect, as citizen data is secured by a consent mechanism and select security-by-design principles. However, there is still much to be desired on this front, it would be prudent for the builders of SP-ODEs to pay more attention to the various design features that would make an SP-ODE more responsible.

Another conspicuous absence pertains to the *inclusivity* attribute, wherein there is a lack of features that would ensure that digital interfaces could be accessed by all. The design of the citizen interfaces is not mobile-first, implying that the citizens need to rely on CSCs or have access to computers to navigate their profiles. The latter is a lofty assumption, considering only 23% urban and 4% rural households could access a computer in 2020 (Gohain, 2020). Given the deep penetration of feature phones in the country, especially among low-income users, these systems can significantly shore up inclusivity by becoming accessible over feature phones. In addition to not being mobile phone friendly, majority of the systems studied were not designed to service persons with disabilities, with only Jan Aadhaar Yojana emerging as an exception. The Jan Aadhaar Yojana website complies with W3C Web Content

Guidelines that enable persons with visual impairments to access the website and the information on it through assisted technologies (Screen Reader Access, 2022).

Strengthening state's accountability to beneficiaries is a big promise of digital social protection. Haryana stands out in this regard. The Antyodaya Saral platform has baked Haryana's Right to Service Act into the system. The Saral dashboard allows department officials to view compliance of their staff with timelines notified under the Haryana Right to Service Act of 2014 at the state as well as the district level, which gives them insight into whether services are being delivered in a time-bound manner . It is worth noting that not all states' SP-ODEs have the backing of such an Act.

Another striking gap in strengthening accountability is the inability of citizens to rate the performance of last-mile delivery agents. As discussed earlier in the report, the absence of a well-defined market relationship between beneficiaries of services and last-mile delivery agents/providers, creates a power imbalance between the beneficiary and the last-mile delivery agents, leaning in the favour of the latter. Mechanisms such as rating of delivery agents, discussion of their performance with citizens, and relaying feedback to agents would help discipline the last-mile agents and counter the power asymmetry between them and the citizens.

We finally note that most SP-ODEs in the Indian context are systems in flux and continue to evolve based on learnings that come from implementation. We intend for some of the learnings from these case studies and the accompanying framework to help inform this evolution in a manner that makes SP-ODEs increasingly citizen-centric.

1. Introduction to Open Digital Ecosystems for Social Protection

The delivery of social protection schemes is traditionally fragmented across government departments, which has been criticised for causing inconvenience to both citizens and administrators. Fragmentation at the back end causes duplication of efforts across government departments, and at the front end requires citizens to run from pillar to post between multiple departments while accessing their social protection benefits. While the 2006 National e-Governance Plan had established the core digital infrastructure to supplement public service delivery, it has been found lacking in integration and interoperability among government applications and databases (Digital India, n.d.). In 2015, the then Ministry of Communications and Information Technology had also acknowledged that India's e-Governance systems and databases have been established 'in silos as per the specific requirements of the individual public agency', and that 'interoperability among these systems is an urgent challenge' (Department of Electronics and Information Technology, 2015a).

The World Bank and the UNICEF (2013) have also noted the need for a systemic approach to data and information management for social protection that focuses on exploiting the interactions across social protection programmes. This led to the emergence of social registries which are 'information systems that support the outreach, intake, registration, and determination of potential eligibility for one or more social programmes' (Leite et al., 2017). An extensive body of literature has evolved around the concept of social registries, and the benefits of integration that they afford to both policy design and operations management (Barca and Chirchir, 2014; Leite et al., 2017; Chirchir and Kidd, 2011). Data integration and interoperability frameworks that permit the exchange of data across information systems are thought to facilitate economies of scope and scale while improving the coordination and monitoring of programmes (Barca and Chirchir, 2020). Integration between management information systems (MIS) of different schemes is also thought to facilitate better emergency social protection responses in the event of unforeseen, large-scale shocks (Chirchir and Kidd, 2011). The use of cross-departmental social registries is thought to be a backbone of 'adaptive' social protection,[7] which seeks to enhance social protection systems to build household resilience to covariate shocks such as COVID-19. Registries could potentially facilitate immediate access to the information required to immediately identify those most vulnerable and target social protection to them. Some countries (such as Brazil, Uganda) have adopted social registries to identify and target citizens for multiple schemes together, while others (such as South Africa) have separate MISs for schemes with mechanisms that enable intercommunication of data (Rao, 2013). Most developing countries are moving towards a paradigm that includes consolidation of social protection programmes, creation of integrated platforms and extensive databases of citizen information, to integrate the delivery of transfers to citizens in an efficient manner (Ahmad, 2019).

India has been one of the many countries who are in the vanguard of such a trend and has been pivoting its policy environment to support an ecosystem-based delivery of social protection benefits. In 2015, the e-Kranti paradigm was introduced as an update to the 2006 NeGP. Some key changes to the vision were the renewed focus on service integration using open Application Programming

[7] This World Bank publication is a comprehensive resource to understand adaptive social protection (ASP) better.

Interfaces (APIs), and the space for public-private partnership business models in social protection delivery (Department of Electronics and Information Technology, 2015b). In 2019, the India Enterprise Framework (IndEA) was published, to break sectoral barriers and silos, and 're-architect the government as a single enterprise' (Ministry of Information Technology [MeitY], 2019). A 2022 update to IndEA lays out 27 principles for administrators to guide the creation of digital public service delivery ecosystems (MeitY, 2022). Presently, most state governments have already adopted digitised service delivery – they are equipped with digital platforms for citizens to access services and with MIS for back-end coordination (State Data Centre, n.d.). For the better part of the past decade, policymakers have been constructing the requisite building blocks in the form of digital public infrastructures in the payments and identity spaces (such as Aadhaar and India Stack). Some states, such as, Madhya Pradesh, Rajasthan, and Haryana have made significant progress in creating delivery ecosystems and have assembled technology platforms backed by communities of innovators and relevant governance frameworks.[8] **The generic name for such platforms is Open Digital Ecosystems (ODEs), and their adoption for the specific use case of social protection delivery is the principal motivation for and focus of this report.**

The Boston Consulting Group and Omidyar Network India (2020) define ODEs as 'open and secure digital platforms that enable a community of actors to unlock transformative solutions for society, based on a robust governance framework'. In the context of social protection delivery, openness has the following meanings:

- 'open' to engaging non-government actors such as non-governmental organisations (NGOs), civil society, and payment delivery players across all processes supported by the ODE for social protection,
- the presence of 'open-source' building blocks to prevent vendor lock-in, and
- 'open' to innovation[9] that leverages data for citizen-centric use cases.

The stacking of social protection delivery on open digital platforms creates Social Protection Open Digital Ecosystems (SP-ODEs). Inevitably, the digitisation step exacerbates the risk of inequitable access for possibly large sections of the population due to the persisting digital divide. This risk needs to be mitigated as much as possible, otherwise, SP-ODEs will have failed to create delivery systems that work better for *all* citizens. A guiding principle, therefore, is to design SP-ODEs for the most marginalised from the very outset. Since the most marginalised citizens are likely to be frequent users of the SP-ODE and are therefore its intended beneficiaries, SP-ODEs must be designed to serve them. We anchor our working definition of an SP-ODE to the concept of 'citizen centricity' as follows:

[8] In Chapter 4 of this report, we present long form case studies of the SP-ODEs in these states.

[9] We distinguish between 'service innovation' (innovations which create value-added services/products, made possible by the ODE), and 'service delivery innovation' (innovations which improve the delivery processes already encompassed within the SP-ODE).

An SP-ODE is a set of entities and processes (both tech and non-tech) that will together constitute a citizen-centric social protection delivery system, i.e., it will be ***inclusive****,* ***responsible****, and* ***efficient****, while being supported by* ***accountability*** *mechanisms.*

Notably, the attributes of *inclusivity* and *accountability* bear principally the burden of equity that an SP-ODE is charged with carrying.

Another aspect of SP-ODEs that deserves to be mentioned here is their adaptability to changes in technology and business processes, by way of certain features that make them 'future-ready'. To this end, the *building blocks* approach for designing the architecture of SP-ODEs is vital. Building blocks are 'packages of functionality designed to meet business needs' (MeitY, 2019). Essentially, they are built using open standards 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 (Department of Agriculture, Cooperation and Farmer Welfare, 2021). Building blocks may constitute data, applications, or a set of interfaces. For instance, Tamil Nadu's State Family Database and the Aadhaar ID are two examples of building blocks, while the Indian Digital Ecosystem for Agriculture (IDEA) is an ODE that has been created using the building blocks approach.

For SP-ODEs to adapt to the ever-changing technological landscape and host relevant use-cases that may emerge in the future, their components are often built using open standards and are interoperable with open APIs. We embed the need for future readiness of an SP-ODE (with the requisite limitations provided by the four attributes of citizen centricity) into the framework for case studies discussed in Chapter 3 of this report. This is necessary, as interoperability through open APIs implies that data is easily and seamlessly shared from an SP-ODE to other external (public or private) systems. However, we do emphasise that any data shared from an SP-ODE with a third party for a purpose other than providing social protection benefits must be allowed only after obtaining fresh, prior, and informed consent from citizens. Section 2.4 of Chapter 2 discusses the need for such consent in greater detail. Citizens should not be denied social protection benefits if they 'opt-out' or do not consent to their data being shared with third parties for such services.

1.1 Processes Supported by an SP-ODE

As the definition indicates, an SP-ODE is an assemblage of multiple moving parts primarily designed to support the key processes of social protection delivery. Each of these processes is supported by various components of the SP-ODE (digital interfaces and databases being examples of such components), which derive further value from their links to existing digital public infrastructure (DPI) (such as Aadhaar, DigiLocker, etc.). 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, Figure 2 presents a schematic representation of how a fully fitted SP-ODE may look like.

The flowchart presented in the figure indicates the order of the following six processes:

1. Identification & Enrolment: Primarily connecting the citizen with the concerned government department, this process relates 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*, 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 result in the creation of a citizen registry which is a comprehensive database of all citizens and their eligibility status. This database may be further enriched with data from other state-level databases.
2. Coordination & Orchestration: The second process facilitated by an SP-ODE includes aspects related to the backend of social protection delivery, involving a range of administrative activities. This may be supported by an *Administrator Module*, for government officials at various levels to discharge their scheme-related responsibilities. The module may be utilised 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 provide government officials with information regarding scheme performance. The registry of citizens (in case an SP-ODE hosts one) plays a key role in this process and supports various administrative functions.
3. Payments: This process allows government departments to make payments to enrolled citizens as well as update information related to such payments. It permits government departments to transfer funds directly to citizens' bank accounts, often using infrastructure provided by the SP-ODE. Payment channels may follow the Direct Benefit Transfer (DBT) or non-DBT routes and may be supplemented by an alternate delivery protocol (for instance, in Andhra Pradesh, social protection payments are being delivered door-to-door by a network of volunteers recruited at the Gram Panchayat level [Real Time Governance Society, 2019]). The process is also used to make payments to providers who may be involved in provisioning in-kind social protection benefits such as cooking fuel, insurance, etc.
4. Delivery of Cash Benefits and Ancillary Services: 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. This process is a crucial component that secures access to social protection. All channels through which citizens may access cash benefits, and ancillary services (such as the provision of certificates) are encompassed within this process. The network of last-mile delivery agents is the key stakeholder in this process. These may include agent-led service delivery kiosks (such as Common Service Centres) or Business Correspondents (BCs).
5. Product Provisioning: This process applies to social protection benefits that either have an in-kind component or have an intermediating provider involved in their delivery. The key stakeholders in this function are providers, who may be private or public actors that provide the unit of social protection directly to the citizen. Providers could be hospitals (in the case of health insurance schemes), financial service providers (in the case of say, crop insurance or loan schemes), or gas agencies (for LPG reimbursements), etc.
6. Grievance Redressal: The final process, another crucial element of citizen centricity, relates to grievance redressal mechanisms and feedback loops.[10] As the flowchart below depicts, grievance

[10] A feedback loop would improve the concerned process by incorporating the comments of citizens.

redressal modules may be located at various parts of the social protection delivery chain and interact with various stakeholders. For instance, grievance redressal may be accessible to citizens through the citizen interface, grievances may be visible to administrators in the second process, and service providers may collect and/or resolve grievances as well. This final process is a bedrock element in any SP-ODE and its influence pervades all other processes.[11] While other processes may be more well-defined linear processes, the grievance redress mechanisms are embedded in the functioning of the entire delivery ecosystem.

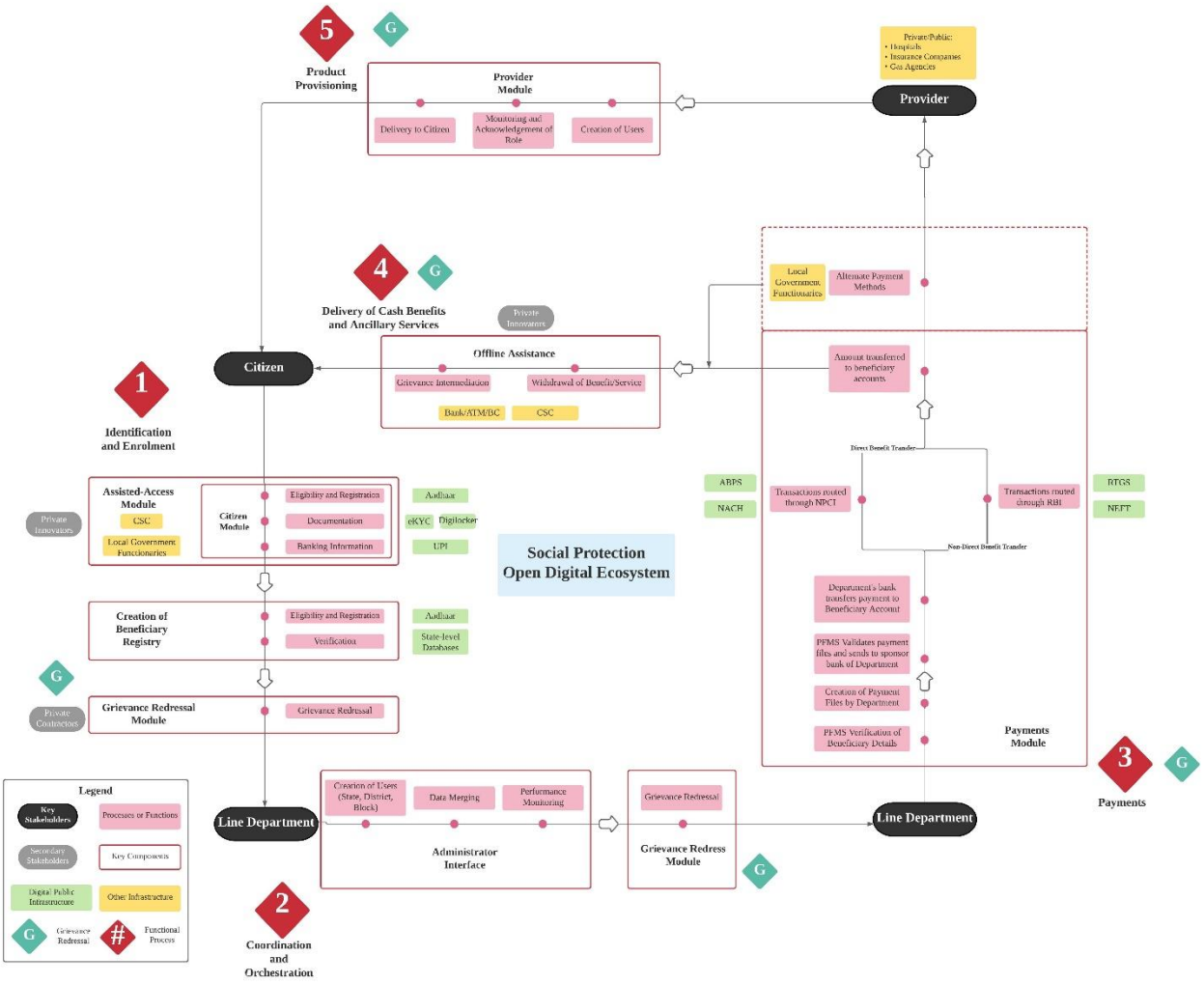

Figure 2: Schematic Representation of an SP-ODE

[11] For the sake of convenience, all questions relevant to *Grievance Redressal* are grouped together in the Framework.

1.2 Scope of our Work

Social protection is defined as 'a set of 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' (Devereux & Sabates-Wheeler, 2004). The end-to-end design and delivery of these 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 a given jurisdiction. These are the various essential elements that together constitute social protection.

Our purpose in this report is to isolate the element of delivery systems for analysis, to consider a special case of such systems, namely SP-ODEs, and to analyse this case carefully through the lens of citizen centricity. Our implicit prior is that SP-ODEs have the potential to be a highly efficacious mechanism for delivering social protection. Our goal is to define what such efficacy should amount to, in practice.

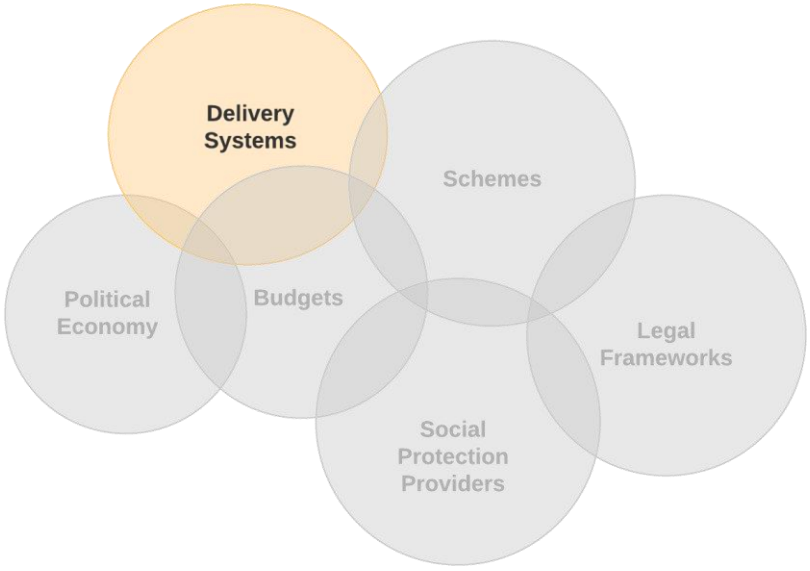

Figure 3: The Universe of Social Protection

It should be noted that our prior is not that SP-ODEs are the only possible efficacious delivery system for any one or all forms of social protection. Our work is limited to considering SP-ODEs as one of many possible means of delivering social protection and asking – if the delivery of social protection is to meet certain normative criteria for citizen centricity, which design features will enhance citizen centricity and how we can uncover their status (whether present or absent) in an SP-ODE. Therefore, our work addresses the limited question of 'how' social protection is delivered. That is, SP-ODEs use

technology to improve the 'plumbing' of social protection delivery and not the 'water supply' that flows through that plumbing. Even within the 'how', our work does not touch upon the aspect of public finance relevant to a social protection delivery system. In studying SP-ODEs, we are not concerned with questions about 'what' benefits are delivered, to 'whom' they are delivered, or whether those benefits are adequate protection for a household or vulnerable group. These questions concern the design of social protection itself and not the design of how it is delivered. We acknowledge that the design of the thing that is to be delivered cannot be entirely divorced from the design of the thing that will perform the delivery. Yet, the two spheres of questioning are distinct, and the distinctions are rendered sharper and more salient by the phenomena of digitisation and 'platformisation', which typically have the effect of modularising a composite function into distinct, independent modules.

Even though our work has a limited scope, it has tremendous value within this limited arena. It is important to appreciate that SP-ODEs are emergent configurations within a certain existing context of extant schemes and non-digitised delivery systems. It will be critical to ensure that legacy issues in those existing systems do not spill over into the functioning of evolved digital systems such as SP-ODEs. This is where our work gains in significance because it lays down normative criteria based on a citizen-centric approach for describing these new systems.

2. Attributes of a 'Citizen-Centric' SP-ODE

The prime focus of this chapter is the detailed conceptualisation of the four attributes we believe embody a 'citizen-centric' SP-ODE, that is, *inclusivity*, *responsibility*, *efficiency*, and *accountability*. Overall, the chapter intends to break down these four attributes (which till now have been presented at a broad level of abstraction) and contextualise them within the larger narrative on SP-ODEs.

The chapter is structured as follows. First, Section 2.1 details the research methods adopted in composing the four attributes of citizen centricity. Section 2.2 then includes a detailed discussion of each attribute.

2.1 Research Method(s)

We adopted two strategies to develop a comprehensive understanding of the various attributes of citizen centricity. These include:

Theoretical Conceptualisation of Citizen Centricity

Primarily, our conceptualisation of the four attributes has been built using the expertise we have developed from our previous work on last-mile delivery, exclusion, and grievance redressal in social protection, and on privacy and data security in financial services for low-income households. In applying this expertise to the concept of SP-ODEs, we also took cues from the international literature on digitisation and interoperability in social protection systems. We were thus able to draw from existing guidelines for administrators to improve the quality of social protection tech systems. This multi-pronged approach ensured that our conceptualisation of the attributes is a) suitable for the realities of the social protection delivery landscape in India, and b) sufficiently protective of citizen-interests while also being flexible and adaptable to innovation.

Consultations with Experts

Once the attributes had been delineated, we subjected them to a peer-review process. To achieve this, we presented our conceptualisation of the attributes at multiple forums to experts with diverse interests – individuals who had worked closely with state-level SP-ODEs in some capacity, academics with a focus on the last-mile delivery systems, and representatives from civil society organisations with a field presence. The comments and suggestions so obtained were accommodated where appropriate, and the framing of attributes have benefitted from this additional layer of insight.

The following section describes the outcomes from these research methods – the four attributes of citizen centricity.

2.2 Citizen-Centric Attributes

We conceptualise the following attributes that an SP-ODE must possess to be characterised as 'citizen-centric':

1. Inclusive: An inclusive SP-ODE will strive to eliminate the occurrence of all forms of exclusion across the social protection delivery chain. Should exclusion still occur, an inclusive SP-ODE will offer a re-entry loop for those excluded.
2. Responsible: A responsible SP-ODE will handle citizens' personal data in a way that protects their personal data, upholds their privacy, while preserving their autonomy and trust in the use of their data.
3. Efficient: An efficient SP-ODE will minimise citizens' search costs, eliminate process inefficiencies to result in better benefit-delivery, and incorporate performance data to improve processes that do not work well for citizens.
4. Accountable: An accountable SP-ODE will answer to the taxpayer who is paying for it, and to the beneficiaries who are its primary stakeholders.

We discuss each of these attributes in detail below.

Inclusive

In 2019, the United Nations' 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 (Special Rapporteur, 2019).

In social protection literature, exclusion errors[12] are the proportion of people who are wrongfully omitted from a social transfer programme due to inaccurate targeting methodologies (Sabates-Wheeler, et al. 2014). This has resulted in an understanding of exclusion being limited to the identification and targeting stage, ignoring exclusion that occurs in stages beyond these processes.[13] We call this latter type of exclusion 'incidental',[14] 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.

Constructing a digital social protection delivery system that is truly inclusive will require acknowledging the risks of incidental exclusion, which may manifest in various forms. Issues such as cash shortages, machine failures at citizen access points, cumbersome documentation requirements, data errors, etc. are a few examples of incidental exclusion.[15] This type of exclusion can also be sourced to structural issues that may result in inequitable access to SP-ODEs, such as demographic barriers (illiteracy), economic limitations (low-income), social barriers (gender, religion, caste), and

[12] Typically, an exclusion error indicates that members of a targeted group are wrongfully excluded as beneficiaries of the program.
[13] Chapter 2 of the World Bank Sourcebook on the Foundations of Social Protection Delivery provides an overview of the various stages involved in the delivery of a social protection benefits to citizens.
[14] See the forthcoming State of Exclusion Report by Dvara Research for an in-depth explanation of the same.
[15] A detailed list of these factors that can prompt exclusion of even a citizen enrolled into a given scheme (for four of India's prominent social protection schemes) is provided in Appendix I.

administrative bottlenecks (absence of citizen touch points), all of which may exclude citizens at various stages of their interaction with the social protection delivery system.

Another dimension of exclusion is the disposition with which a citizen is addressed during their interactions with the SP-ODE. When a citizen is treated dismissively or disrespectfully, 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 or local government functionaries who are often poorly monitored. As we have mentioned earlier, a guiding principle to design SP-ODEs is that they must work well for the most marginalised. It is then doubly essential to prioritise 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 (Social Protection and Human Rights, n.d.), the transition to a digital delivery system must not result in additional stigma or hardship for the citizen. This theme of ensuring respectful interactions between the citizen and the SP-ODE reflects in the framework for building case studies, summarised in Chapter 3.

We submit that all such factors that complicate access should be categorically recognised as causes of exclusion, especially since the most marginalised and vulnerable citizens are most likely to be excluded. To operationalise this broader understanding of exclusion from social protection, we adopt an *exclusion framework* approach, wherein exclusion is conceived of as an end-to-end phenomenon, and potential points of exclusion are mapped against the various stages in the process flow of a scheme.[16] This process-wise understanding of exclusion is particularly relevant for the design of an SP-ODE since it is intended to facilitate the implementation of social protection schemes. The *exclusion framework* presents those points along the process flow of a social protection scheme where potential exclusion is likely. This approach permits systematic documentation of exclusion at every stage of the citizen's interaction with a scheme. Most importantly, it helps contribute to an ecosystem-wide focus on eliminating all forms of exclusion.

Our insistence that SP-ODEs be inclusive in the sense described above goes against the grain of standard practice in India, wherein the priority in social protection delivery has been accorded to eliminating wrongful inclusion rather than eliminating wrongful exclusion. Large scale deletion of names from beneficiary lists has been undertaken in many states including Odisha, Kerala, and Punjab.[17] The deletion of 'ghost' ration cards has been a key focus of the Public Distribution System (PDS) over the last few years as well.[18] These deletion exercises seek to eliminate the names of deceased citizens, names where Aadhar linkage is incomplete, duplicate profiles, and bogus profiles intending to defraud the system.

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[16] See Gupta (2021) for an introduction to the exclusion framework for Direct Benefit Transfer (DBT) schemes specifically.

[17] Odisha plans to use Aadhaar data and bank account details to remove ineligible and dead beneficiaries crowding the list of social protection schemes. The state governments of Kerala and Punjab have in the past carried out an exercise to weed out ineligible beneficiaries in state pension scheme and other financial assistance schemes.

[18] In November 2020, 43.9 million bogus ration cards were cleaned up from the PDS databases to ensure that only 'genuine' beneficiaries get food grains under National Food Security Act (NFSA).

Indeed, the minimisation of inclusion errors is potentially a significant benefit to social protection, enabled by the digitisation and interoperability of information systems. When done well, the instant verification of data facilitated by registries can be a compelling reason to adopt SP-ODEs. However, there is compelling evidence that these pruning exercises are often indiscriminately conducted, and that the result is wrongful exclusion (Muralidharan et. al, 2020; Dreze et al, 2017). [19] In other words, the procedural focus on excluding the ineligible has produced the unintended consequence of denying benefits to the eligible, and for the most vulnerable, such denial can be perilous.[20]

Considering this trade-off, our preference for according a higher priority to exclusion errors is inspired by the work of scholars such as Cornia and Stewart (1993), who argue that *exclusion errors are more costly than inclusion errors* from a *humanitarian perspective, as well as from the perspective of achieving programme objectives.* Perhaps the prioritisation of inclusion errors has partly stemmed from the absence of systematic approaches to conceptualising exclusion errors, against the easier task of quantifying inclusion errors in budgetary and financial-cost terms. Our work rectifies this imbalance. By allowing for a recognition of incidental exclusion, our exclusion framework facilitates the systematic documentation of wrongful exclusion (for instance by way of grievance or citizen feedback data) and thereby permits administrators to direct their attention to its specific forms and incidences. We, therefore, submit that our exclusion framework offers an appropriate setting for evaluating the inclusivity of SP-ODEs, and for helping them become more inclusive, especially for the most marginalised and vulnerable sections of the population.

In consideration of all the above factors, an 'inclusive' SP-ODE will strive to eliminate the occurrence of all possible forms of exclusion across the social protection delivery chain. If exclusion should still occur, an inclusive SP-ODE will offer a re-entry loop for those excluded.

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 systems. The system enables governments and other service providers to deliver social protection benefits by providing 'dynamic and real-time data' relating to all processes within the social protection delivery chain such as registration, identification, assessment, and enrolment of citizens (Barca and Chirchir, 2020). For example, Rajasthan collects real-time data from 28,000 service points under its food subsidy programme (Mittal, Mukherjee, & Gelb, 2017). Similarly, Andhra Pradesh collects 'all service delivery data generated through Aadhaar-based transactions in real-time, analyses it, and provides dashboards for monitoring implementation' (Mittal, Mukherjee, & Gelb, 2017).

[19] Virginia Eubanks' book, *Automating Inequality,* delineates multiple case studies world-wide of how digital systems of social protection delivery can result in considerable cost for the citizen.

[20] A 2021 audit of the Unique Identification Authority of India (UIDAI) revealed that duplication within the Aadhaar database is concerning. Nearly half a million Aadhaar IDs had been issued to different residents but had identical biometric data, indicating that the automatic de-duplication process within the Aadhaar database was faulty. This implies that de-duplication exercises that were reliant on Aadhaar for identity verification would also have been imperfect.

To complete the processes within the social protection delivery chain, citizens submit substantial amounts of personal data such as their name, address, phone number, gender, bank account details, identification proof among many others. All such data points are sensitive in their nature. A lapse in their protection could compromise citizen's privacy. It could also inflict material harms on marginalised citizens, such as, monetary harms due to the misuse of this information for unauthorised financial transactions. Hence, managing personal data responsibly is crucial to citizen centricity of SP-ODEs.

We submit that a responsible SP-ODE handles data in a manner that *protects the personal data of the users*, *upholds their privacy*, while preserving their *autonomy and trust* in the use of their data, aggregated for delivering social protection benefits. . 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. Privacy here relates to informational privacy, i.e., the ability of citizens to control who accesses their personal data. 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 four 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.

Data protection measures are concerned with protecting citizens' personal data and their privacy by operationalising privacy-by-design principles throughout the data life cycle in an SP-ODE. Such measures create privacy-preserving conditions:

- during *data collection* by providers,
- through the phases *of data processing, sharing, storage, deletion*, and *security,* and
- while ensuring *data quality* by involving citizens. When implemented well, data protection upholds citizens' privacy.

Citizen autonomy over their personal data is enhanced by:

- giving them *control* over their personal data either directly or through obligations on providers,
- ensuring they make an *informed choice* to assert control,
- upholding and safeguarding their *informational privacy*, and
- making data processing activities *transparent*.

Cultivating trust among citizens in the SP-ODE entails:

- designing the digital interfaces in a manner that is *familiar* and *intuitive*,
- upholding *citizens' expectations* about data processing and *mitigating the negative effects* of failing expectations,
- reinforcing trust by informing citizens about *adequate safeguards* and following through with their implementation,

- ensuring organisational, technical, and regulatory *transparency* and *accountability* to citizens about their data, and
- protecting citizens from *harms* that may emerge from the use of their personal data.

Notably, artificial intelligence (AI) technologies such as automated systems and machine learning are rapidly being adopted in digital social protection delivery systems, introducing new forms of risks that we think are not adequately addressed in the Digital Personal Data Protection Bill, 2022, as it is currently stated. For example, the Australian Department of Human Services deployed an automated programme called CentreLink, which automatically detected overpayments of social security benefits to citizens (Dvara Research, 2020). It relied on cross-verifying income data reported on its portal with the Australian Tax Office's (ATO) database (Dvara Research, 2020). Unfortunately, large sums of wrongful debt were levied on citizens due to discrepancies in the ATO database (Dvara Research, 2020). This highlights how AI-based technologies are susceptible to problems of exclusion, data protection, discrimination, deception and frauds, reduce transparency for citizens and engender trust deficit between citizens and the governments (Ohlenburg, 2020). To this end, our conceptualisation of a responsible SP-ODE folds in the imperative of using automated systems and machine learning responsibly. Responsible use of AI in an SP-ODE entails:

- Mitigating exclusion: If trained on a biased dataset or not designed with the intention to be inclusive, algorithms could exacerbate exclusion. Many applications of algorithms in social protection have further entrenched exclusion instead of mitigating it. It is imperative that safeguards of algorithmic accountability be put in place wherever algorithms are being used (Park and Humphry, 2019).
- Piloting the development, testing, and validation of new algorithmic systems: It is imperative to ensure that the data powering the automated systems are representative of the population (Ohlenburg, 2020) and the machine learning rules do not cause harms such as exclusion, discrimination etc. For this purpose, it is integral to test such systems in the field before scaling them.
- Decisions taken by automated systems should be sufficiently explainable: It has been observed that it is typically hard to understand the logic behind decisions made by artificial intelligence (AI) systems from the outside. Explainability of AI systems, 'obligates the AI systems to supply evidence, support, or reasoning for each output'. This allows an appreciation of the logic of the AI system, detect risks of harm *ex-ante* such as through bias in its design and build trust in AI (Phillips et al., 2020).
- Designing automated systems to be transparent and auditable: Automated systems adopted in social protection delivery systems should be transparent enough that they can be reviewed by an *independent third party* (Ohlenburg, 2020). Transparency and regular audits are essential to maintain and *deepen the trust* of citizens in such systems.
- Retaining the right to object for users to contest automated decisions: Citizens ought to be given clear channels for expressing their objections to decisions taken by an automated system that they disagree with, and to rectify any problems of adverse consequences for the quality of their data because of such objectionable decisions (Monetary Authority of Singapore, n.d.).

The functional characteristics of responsible SP-ODEs discussed above should be supported by a robust governance structure. A responsible SP-ODE should fulfil the three-step requirement laid down by the Supreme Court of India in the *Puttaswamy vs Union of India* (2017) (Privacy Judgement) case (Justice K.S. Puttaswamy vs. Union of India, 2017). The judgement identified various instances where the state may legitimately need to process citizens' personal data, affecting their right to privacy. Delivering social protection benefits by using the personal data of citizens is one such case. However, the judgement unambiguously recognises that this restraint on the privacy of individuals for delivering social protection benefits cannot be absolute and must be checked. It sets out three requirements that need to be fulfilled by the state before it can process citizens' personal data. These include (i) legality, i.e., be, 'sanctioned by law', (ii) necessity, i.e., 'necessary for pursuing a legitimate state aim' and, (iii) proportionality, i.e., 'proportionate to this aim i.e., there cannot be unbridled access to personal data, and it should be the least intrusive measure connected to the purpose of fulfilling this aim' (Dvara Research Foundation, 2020).

The creation of a responsible SP-ODE would require, "clear governance structures, privacy protocols, data access and sharing protocols, and grievance redressal systems" to minimise privacy harms and to encourage responsible innovation (Reddy, Bedi, & Sinha, 2020). Stringent data sharing protocols combined with measures to ensure responsible use of AI ought to be designed alongside SP-ODEs for its effective governance. These measures are also essential prerequisites for the innovation of new services by state and non-state actors within an SP-ODE. This type of 'service innovation' relates to developing new types of products or services for the citizens (The Innovation Policy Platform, 2015). For example, the India Digital Ecosystem for Agriculture (IDEA) envisions a key role for the private sector in the co-creation of various value-added and innovative services in the spaces of crop planning, supply chain, logistics, and financial services for farmers (Department of Agriculture, 2021). They go beyond the mandate of delivering social protection benefits for citizens and, therefore, utilisation of data for activating these services would require fresh consent from the citizens.

It is important to note here that there is a distinction between citizen's consent for sharing their personal data for social protection benefits and such value-added services. This distinction is based on what happens with citizens' data. When citizens consent to share their data for the limited purpose of receiving social protection benefits, they allow their data to be shared between government and service providers to provide the service and/or to optimise the delivery chain. On the other hand, when citizens consent to data sharing for the provision of value-added services, they allow various actors within and outside SP-ODEs to use the data to innovate new services that may not be related to social protection – for example, sharing of citizens' data with financial service providers, who may offer customised financial products to citizens. The former type of consent cannot automatically mean that citizens are also consenting for value-added services. Additionally, citizens cannot be denied social protection benefits if they refuse to or withdraw consent for value-added services. This distinction must be made clear to the citizens in the consent form with the clear articulation of the benefits and risks of sharing their data with third-party service providers for value-added services.

In conclusion, we submit that a responsible SP-ODE is designed to adhere to provisions and protocols that protect citizens' personal data; uphold their privacy; establish and maintain their autonomy over their data; cultivate and deepen their trust in the use of their data, and account for the risks associated with the adoption of AI technologies.

Efficient

The idea that migration to a digital system of social protection delivery would create efficiency gains is by no means novel. A well-functioning delivery system is necessarily efficient and must be able to move citizens along each phase of the delivery chain at a reasonable cost to themselves and the administrator (Lindert et al., 2020). The primary enabler of such efficiencies is the creation of integrated social registries, or the intercommunication of data across respective government departments' databases. Such data integration exercises are facilitated by the science of record linkage,[21] or the identification of an individual's record from another administrative database.

An SP-ODE is capable of realising efficiencies of time, cost, and effort for all parties involved in the ecosystem. However, we emphasise that it is the efficiency gains for citizens that should be of prime importance while gauging the citizen centricity of an SP-ODE.

Some efficiencies that an SP-ODE has the potential to facilitate are:

- Efficiency for the citizen: An SP-ODE would minimise 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 re-submitting documents each time they seek enrolment into a different programme (Barca and Chirchir, 2020; Leite et al, 2017; Lindert et. al, 2019). Information related to scheme eligibility, documentation requirements, timelines, etc. is usually difficult to access, resulting in significant amount of time and cost being spent by the citizens. SP-ODEs can introduce functionalities that address this issue.
- Efficiency for the administrator: An SP-ODE can facilitate the optimisation of bureaucratic processes in social protection delivery. Efficient delivery systems can 'exploit synergies within and across programmes to minimise costs for administrators and promote integration across programmes to minimise costs for clients', (Lindert et al, 2020). By streamlining the efforts of various departments responsible for various social protection schemes, an SP-ODE can eliminate process inefficiencies (Barca and Chirchir, 2020). For instance, common procedures such as payments, grievance redressal, etc. may be made available across multiple programmes. Intake and registration processes across schemes may also be shared, rather than collecting similar information multiple times from the citizen (Lindert et. al, 2020). While such efforts of streamlining do primarily benefit the administrator, the benefits also trickle down to citizens who experience an improved quality of social protection delivery, and smoother interaction with the system.
- System-level efficiency: An SP-ODE provides avenues for evidence-based decision-making and management. The improved availability of regularly updated data and robust grievance

[21] The OECD's glossary of statistical terms defines data linkage as 'a merging that brings together information from two or more sources of data with the object of consolidating facts concerning an individual or an event that are not available in any separate record'.

mechanisms allow programmes to incorporate improvements through feedback loops, addressing system-level issues (Barca and Chirchir, 2020).

- Efficiency spurred by innovation: SP-ODEs are envisioned to manifest the participation of private actors in social protection delivery. One such avenue for their participation is the innovation of solutions for citizens, built upon the various components of an SP-ODE. Such 'service delivery innovations' may help government departments efficiently utilise their resources to deliver social protection services, realise better outcomes, and enhance citizen satisfaction. The scope of innovation here is limited to innovations in social protection delivery,[22] that either create new or optimise existing ways of delivering services to citizens (The Innovation Policy Platform, 2015). In 2021, India's vaccine management ecosystem, CoWIN, experimented with innovation hosted within the ecosystem of delivery. The CoWIN platform allowed third-party service providers to allow citizens to enrol/register for vaccinations with the help of protected APIs. It put in place data access and sharing protocols for private service providers to access 'protected' APIs.[23] We categorically encourage such innovations that make delivery more efficient, as long as they are governed by appropriate guidelines and laws. Innovations based on the utilisation of digital technology can be used by governments to create customised services according to the needs of the citizens, reduce transaction costs, and enhance access conditions for citizens (The Innovation Policy Platform, 2015; Council for Social Development, 2016). Similarly, civil society organisations may innovate new ways of driving citizen participation. For instance, organisations such as Gram Vaani (which facilitates the collection of citizen grievances through a simple IVR helpline) may be able to plug into the ecosystem to assist in grievance mediation. The creation of space for private actors to participate in an SP-ODE should be monitored and evaluated based on various parameters including cost and time savings for the citizen and quality of the service provided (Council for Social Development, 2016).

Hence, an efficient SP-ODE will be the one that helps citizens and service providers (public and private) realise efficiencies of time, cost, and effort. Such efficiencies may be realised by creating a single digital platform for citizens to access all social protection schemes; optimising bureaucratic processes and exploiting synergies within and across social protection programmes; enabling evidence-based decision-making and innovating new ways of delivering benefits and engaging with citizens.

Accountable

A citizen-centric SP-ODE is designed to ensure that recipients of social protection benefits receive them in a manner that is efficient, inclusive, and responsible. But that is not all. The SP-ODE would fall short of achieving citizen centricity if it did not have the support of accountability mechanisms.

[22] The Innovation Policy Platform (2015) recognises six types of innovation in the public sector namely, service, service delivery, administrative and organisational, conceptual, policy, and systemic.

[23] It must be noted that these provisions were put in place only after an intervention by the Delhi High Court.

These mechanisms would empower and inform citizens and beneficiaries[24] alike of the performance of the social protection delivery system and the community of actors engaging with it.

The following problems arise in the absence of accountability:

- Disciplining last-mile agents and/or providers: There exists a principal-agent dilemma between actors that may be involved in the delivery of social protection in an SP-ODE and the SP-ODE's beneficiaries. These actors may be *last-mile delivery agents* or *providers*.[25] The dilemma stems from the absence of a well-defined market relationship between beneficiaries of services and last-mile delivery agents/providers. In a competitive market transaction, the individual/principal exercise direct power over and commands accountability from the last-mile delivery agents/providers for the services rendered, as the citizen pays for the services. This is called the 'client power' of the individual over the last-mile delivery agents/providers (Pritchett & Pande, 2006). If the provider does not perform, the individual can simply choose another provider. This creates enforceability and pushes the provider to perform (Pritchett & Pande, 2006). According to the World Bank framework, this is called the 'short route' to accountability (The World Bank, 2004). The two key determinants of 'client power' are the *kinds of information* and the *choice of last-mile delivery agents/providers* available to the individuals. In social protection delivery, beneficiaries have little or no power over actors that have been contracted by policymakers, the latter being directly accountable to citizens.
  Without accountability mechanisms, citizens (who may not be beneficiaries of certain social protection programmes) have no means to assess how well their money is being spent via the programme or its impact. Our work on grievance redressal systems has shown that marginalised and disadvantaged citizens find such systems difficult to access and complex to understand, and therefore their voice hardly ever reaches the ears of policymakers (Dvara Research, et. al., 2021). Additionally, they do not have access to information about the performance of last-mile delivery agents/providers and policymakers. Studies have shown that accountability mechanisms like 'participatory budgeting' for a social protection programme could help citizens hold the policymakers and service providers accountable (The World Bank, 2004). Furthermore, the dissemination of information in a manner that is accessible and understandable for the citizens helps create awareness around social protection delivery (United Nations Development Programme, 2006).

Therefore, the design of an SP-ODE must 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.

- Accountability to the taxpayer: The accountability mechanisms in an SP-ODE should ensure that the exchequer has information that can be used to discern the performance of the social

[24] While so far in this report, we have used the term citizen to indicate beneficiaries of a social protection scheme, for the purpose of this section, we make the distinction between beneficiaries of social protection and citizens (who may be considered potential beneficiaries, or taxpayers), since they may have separate interests.
[25] Recall that last-mile delivery agents and providers are respectively the key stakeholders in the processes of *delivery of cash benefits and ancillary services* and *product provisioning*. See footnotes 78 and 79 for the detailed definitions of these stakeholders.

protection delivery system and of the community of actors participating in the system to serve citizens. In this way, the exchequer plays the vital role of an agent who ensures that taxpayers' money is well spent. 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 organisations in the system (United Nations Development Programme, 2006). Some examples of such accountability mechanisms include publishing annual reports in the public domain, disseminating data on the case-load management of the system, financial audits, performance audit reports of the system and the services built on top of it.

- Accountability to the beneficiary: The accountability mechanisms in an SP-ODE will strengthen the beneficiary's voice (especially that of marginalised communities) when they either receive or are excluded from receiving benefits. 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. These mechanisms would seek to promote and enhance the client power of the beneficiaries vis-à-vis the social protection delivery system. These mechanisms may include social audits and community audits, provisions for ratings and digital feedback channels that beneficiaries can leverage to improve the performance of the system. Mechanisms like social audits and community audits are traditional feedback systems that ensure 'short-route' accountability between beneficiaries and last-mile delivery agents/providers (Gelb, Mittal, & Mukherjee, 2019). Modern feedback systems leverage digital technology to collect and process data in real-time that enable beneficiaries to monitor services and administrators to improve delivery. Digital feedback systems such as text messages, robocalls, performance surveys, and embedded ratings (for agents/providers), etc. encourage beneficiary participation and involvement (Gelb, Mittal, & Mukherjee, 2019). Similarly, they help administrators to identify and 'take action' on the feedback in real-time (Gelb, Mittal, & Mukherjee, 2019). For example, in Andhra Pradesh, feedback is actively solicited from beneficiaries through quality surveys and robocalls whenever they draw ration from ration shops (Gelb, Mittal, & Mukherjee, 2019). Beneficiaries with negative feedback are then contacted by a manual feedback system to register complaints (Gelb, Mittal, & Mukherjee, 2019). The complaint is then transferred to the appropriate administrative department where it must be resolved within the specified period (Gelb, Mittal, & Mukherjee, 2019). Hence, soliciting feedback represents only the first step in the feedback loop mechanism. It ought to be followed by a provision to ensure action is taken to incorporate beneficiary feedback to improve the system. Feedback loops combined with effective grievance redressal mechanisms will help ensure ex-ante and ex-post accountability of the system. The grievance redressal mechanism will promote basic fairness for citizens, as it will enable beneficiaries to report any failure within the SP-ODE (Gauri, 2011). For example, it will enable the beneficiaries who are excluded arbitrarily (failure of the system) to voice their grievance and claim compensation. Additionally, it will also enable policymakers to observe and

effectively sanction the behaviour of last-mile delivery agents/providers and other actors who deviate from expected performance standards (Gauri, 2011).

Accountability is critical for a truly citizen-centric SP-ODE. The two-fold structure of accountability discussed above ensures that citizens have the relevant information to hold other stakeholders in the ecosystem accountable. It guarantees that even the most marginalised beneficiaries have a voice if they are wrongfully excluded or underserved. Accountability to the taxpayer resolves in the final instance to accountability to the beneficiary.

3. Framework for Building Case Studies of SP-ODEs

This chapter discusses the case study framework (hereinafter referred to as the 'framework') that helps describe the citizen centricity of a wide variety of SP-ODEs. Citizen centricity, as discussed in Chapter 2, is gauged through the presence of design features that are in the service of four attributes - inclusivity, responsibility, efficiency, and accountability.

3.1 Summary of the Framework

This framework comprises 76 questions, divided into two sections. Section I, titled '*Framework for Building an Overview of an SP-ODE*,' is a set of 11 questions that elicits information about the structural form and functionalities of an SP-ODE. Section II, titled '*Framework for Guiding the Discussion on an SP-ODE*' comprises 65 granular questions. This section overlays the attributes of citizen centricity on the six constituent processes of an SP-ODE. Such a structure allows the overall framework to shed light on the degree of citizen centricity built into each process. The questions in this section are framed to reflect design features that enhance citizen centricity and uncover their status (whether present or absent) in an SP-ODE. The questions build on our work on last-mile exclusion, privacy, and data protection (see Chapter 1), and literature on the functions and features of SP-ODEs. This framework has also been refined over multiple iterations. In-depth conversations with experts involved in architecting and operating SP-ODEs, including state government personnel, helped us recognise and fix any redundancies and gaps in the framework.

In its current form, the framework lends itself to a descriptive analysis of actual SP-ODEs in India. It allows the user of the framework to highlight design features of these SP-ODEs that promote citizen centricity and could therefore be adopted by newer systems that are still in the design stage. Equally, the framework allows the user to identify gaps in citizen centricity that the SP-ODE's architects need to address. Appendices I and II present the framework.

Section I: Building an Overview of an SP-ODE

The questions in this section help us understand the broad structure of an SP-ODE by surfacing information on aspects such as the governance mechanisms that steer the system, the stakeholders that interface with it, and the nature of functions that it is designed to perform. Responses to the questions in this section also help us appreciate the form that the SP-ODE takes in terms of the degree of aggregation among its processes. For instance, unlike the archetypal SP-ODE, the Jan Aadhaar Yojana system has a disaggregated form i.e., the functions of the system are performed by various platforms that are integrated at the back end but remain fragmented at the front end (see Section 4.2 of Chapter 4).

The first question under this section seeks to identify the entity type (a specific state department, an autonomous government agency, a public sector undertaking, etc.) responsible for governing the SP-ODE. This is critical to determining the regulatory environment within which the system operates and establishing the centre of accountability for the system. Question II attempts to understand the level of integration of the SP-ODE with existing state and national-level DPIs (such as the Aadhaar

ecosystem, Digilocker, Unified Payments Interface (UPI) etc.) to understand the extent of interoperability offered by the system. Similarly, Questions X and XI attempt to understand the linkages of the system with the Direct Benefit Transfer (DBT) architecture.

The second key aspect covered in this section is the type of benefit(s) delivered by a particular SP-ODE. Question III attempts to identify the nature of the benefit delivered, whether it is cash,[26] in-kind,[27] or in the form of services.[28] Another sub-set of questions in this section is dedicated to the underlying registry or database of an SP-ODE. These are concerned with the types of datasets and algorithmic processes used to populate the said registry (in case an SP-ODE hosts one) and its features such as interoperability with other databases (including the Aadhaar database), use of open-source software, etc. Lastly, Question IX attempts to understand the possibility of delivering value-added services such as credit, insurance, etc. on the SP-ODE.

Put together, this section offers an overview of the SP-ODE. It also sets out the context for Section II of the framework that delves into the citizen centricity of the features that Section I helps demarcate.

Section II: Guiding a Discussion on an SP-ODE

This section of the framework facilitates a process-wise discussion of citizen centricity of an SP-ODE. As discussed above, questions under each process guide our understanding of how the four attributes of citizen centricity may (or may not) become manifest via the presence (or the lack) of provisions, functionalities, and features embedded in the SP-ODE's design.

Process 1: Identification and Enrolment

Identification and enrolment are the first steps in our conceptualisation of the social protection delivery chain. Inclusivity in this process entails the removal of all barriers that may cause exclusion when citizens attempt to access enrolment facilities. For this reason, we denote the presence of multiple (both offline and digital) pathways for citizens to enrol themselves, as an indicator of the inclusivity of the process through the following question: 'Is an offline mode provided to the citizens to access enrolment functionalities?'. In addition, our framing of inclusivity requires that the registry used by administrators to identify citizens be kept up to date. The use of outdated datasets runs the risk of excluding citizens at the identification stage. For this reason, we ask 'What are the various ways in which the underlying registry is updated?'. The presence of multiple modes of updating records indicates that the registry reflects current data, rendering the process more inclusive.

Citizens submit a range of ID documents and biometric data to authenticate themselves at the time of enrolment. Responsibility of this process requires that the SP-ODE have in place safeguards that protect citizens' privacy and personal data. In this spirit, this section attempts to signal the presence

[26] Schemes that classify as cash-based are G2C payments, where a cash transfer is made directly to the citizen.
[27] Schemes that classify under this category primarily have a non-cash element. Typically, we refer benefits under the Public Distribution System (PDS) as in-kind benefits.
[28] The type of schemes categorised here are those which have an in-kind component or have an intermediating provider involved in their delivery (such as insurance schemes and cooking fuel). This category also includes ancillary services such as the provision of certificates.

of data protection safeguards through questions such as 'What obligations are there in the privacy policy for the data fiduciary?', 'Which security-by-design principles have been adopted by the SP-ODE?', and 'Are there provisions to seek citizen's consent when data from the registry is used to authenticate their identity?'.

The attribute of efficiency requires that enrolment mechanisms be citizen-friendly and reduce the time and monetary costs citizens incur at the time of entry into a social protection programme. Features such as multiple communication channels and proactive enrolment[29] reduce the effort that citizens undertake at the time of enrolment. This section uncovers information on these features through questions such as, 'Does the registry proactively identify social protection beneficiaries for new or existing schemes?', and 'What is the mode of the status update to the citizen?'.

Lastly, the attribute of accountability emphasises greater transparency in the functioning of the SP-ODE. Transparency through publishing performance reports in the public domain invites wider scrutiny of the working of the SP-ODE and potentially resolves the principal-agent dilemma (as defined in Section 2.2 of the report) that characterises social protection benefit delivery. This section, therefore, comprises questions such as, 'Are there provisions for the performance reports regarding the functioning of the platform to be made publicly available?' and 'Has any institution/entity been designated to oversee the functioning of the registry?'. Affirmative responses to these questions signal the presence of accountability of this process.

Process 2: Coordination and Orchestration

Inclusivity of this process requires that citizens be able to approach the nearest government functionaries to get updates on their case statuses or get their erroneous data corrected. The inability of last-mile functionaries to perform these functions can result in incidental exclusion (LibTech India, 2020; Dvara Research et al., 2021). Therefore, this section includes questions such as 'Can government functionaries at the last-mile edit citizen details in the registry?' and 'Can government functionaries at the last-mile view individual citizens' case statuses in real-time?'. An affirmative response to these questions reflects favourably on the inclusivity of this process.

Efficiency of the coordination and orchestration process mandates that government departments at the back end monitor the performance of the SP-ODE. This enhances efficiency by alerting the administrators to the bottlenecks being faced by citizens, triggering a redesign of processes where warranted. This section comprises one question, 'Which functionalities are available to such administrators? (Select all that apply)'. The response options are '(i) Monitor the performance of different schemes, (ii) View statistics/data regarding grievances (for instance, typology and location of complaints), (iii) Generate metrics on scheme performance, disaggregated by important indicators

[29] Linking of databases enables administrators to proactively enrol citizens in social protection schemes. This implies that citizens are enrolled for a scheme as soon as they become eligible for it. For example, in the Jan Aadhaar Yojana system when a person turns 60 years and is drawing ration under Nation Food Security Act, they are automatically provided with social security pension without the need for a physical validation of eligibility.

such as gender, geography, caste, etc.'. A greater number of affirmative responses contributes favourably towards efficiency.

Accountability of this process protects citizens from undue delays in the sanctioning of their benefits. This attribute is realised through the question, 'Do the services under SP-ODE fall under the ambit of the Right to Public Service Act or any other legislation that guarantees time-bound delivery of such services?'. An affirmative response signals that the design of the SP-ODE obliges it to deliver benefits within pre-specified timelines.

Process 3: Payments

Inclusivity of the payments process addresses exclusion that arises from inaccessible cash-out points. Our work suggests that activating multiple cash-out points and finding ways to deliver cash benefits to unbanked citizens could enhance inclusivity in the payments process (Dvara Research et al., 2021). Questions such as, 'What are the various modes in which payments under social protection schemes can be made to citizens?', gauge the number of channels through which citizens can receive their in-cash benefits. A wider variety of channels available indicates a greater likelihood that the process is inclusive.

Efficiency of the payments process requires that citizens have visibility of their payments. Our analysis of citizen complaints has revealed that errors of Aadhaar mismatch, spelling errors in the name of the citizen, blocked bank accounts, etc., are a significant source of exclusion during the payment processing stage (Dvara Research et al., 2021). Proactive communication on the status of payments reduces information asymmetry between the system and the citizen. It also alerts the citizens to the steps that might be needed to resolve the issue. Further, for this communication to be effective, it needs to be through channels that the citizen is likely to access. Therefore, one of the questions we ask is, 'What is the mode used to update the citizens on the payment status?'.

Measures such as maintaining public records of transaction failures and their most common causes open the system to scrutiny and shine a light on problem areas. This fosters accountability of the process. In this spirit, the framework poses questions such as, 'Are the provisions for the reasons for transaction failures under SP-ODE to be made publicly available?'.

Process 4: Delivery of Cash Benefits and Ancillary Services

An inadequate number of physical touchpoints for citizens is known to cause exclusion (Dvara Research et al., 2021). Hence, the availability of such touchpoints is an indicator of the inclusivity of this process. Therefore, the framework asks questions such as, 'What type of last-mile agents are part of the SP-ODE delivery chain?'. Responses to this question help us form an impression of the variety of access points that are embedded in the system. A robust, varied, and extensive offline infrastructure designed to deliver cash and ancillary services will reflect positively on the inclusivity of the system.

The attribute of accountability emphasises the presence of levers through which citizens can hold last-mile agents accountable. Last-mile agents such as business correspondents, provide cash-out services to citizens. Our primary work points to rampant instances of last-mile agents overcharging or

defrauding citizens (Parthasarathy and Gupta, 2020). It also appears that citizens lack client power and other levers to discipline these agents. To address this gap, we ask questions such as, 'Are there guidelines for onboarding last-mile agents that participate in the SP-ODE benefit delivery chain?', and 'Can citizens rate the performance of last-mile agents that participate in benefit delivery?'. Affirmative answers to these questions indicate the presence of accountability mechanisms in the design of the SP-ODE.

Process 5: Product Provisioning

This process facilitates the delivery of social protection benefits that either have an in-kind component or have an intermediating provider involved in their delivery. These include benefits such as cooking fuel, insurance, and any other in-kind benefits. If the primary stakeholders in this process, i.e., the providers, are able to perform multiple functionalities, the delivery process becomes more accessible and inclusive for citizens. For instance, providers may be equipped with the ability to enrol citizens into schemes, raise grievances on their behalf, etc. This allows the citizen to access the product through a single, unified window, eliminating the need to approach different functionaries for different steps involved in the product provisioning process. To that end, we ask, 'Which functionalities are available to providers of social protection? (Select all that apply)'. The response options are: '(i) Enrolling citizens, (ii) Raising requests for identity and eligibility authentication, (iii) Raising grievances on behalf of the citizens, (iv) Other and (v) None of the above'.

Accountability of this process rests on safeguards that can discipline providers. As discussed earlier, providers and delivery agents in social protection are shielded from client power. For this reason, questions relating to the accountability of both last-mile delivery agents and providers are identical in the framework. Accountability in these instances can be fostered through guidelines and laws that prescribe a code of conduct for these last-mile agents and providers, while simultaneously providing a direct mechanism for citizens and administrators to audit and rate their performance. Therefore, the framework includes questions such as, 'Is there a mandate for the administrator(s) of the SP-ODE to audit the services provided by last-mile delivery agents/providers involved in benefit delivery?'.

Process 6: Grievance Redressal

The grievance redressal process accepts complaints from citizens on any aspect of benefit delivery, at any point in time. Inclusivity of this process requires that the grievance redress channel be supplemented by a feedback channel, which allows citizens to escalate grievances that have not been redressed to their satisfaction or to comment on their experience of the system. Thus, by asking questions like, 'Are there mandates for the SP-ODE to facilitate a feedback mechanism?', we comment on the inclusivity of the grievance redressal process.

Efficiency of the grievance redressal process implies effectively communicating the various services available through the SP-ODE. This empowers citizens to claim services from the SP-ODE and raise grievances when the system fails to perform satisfactorily. Therefore, we pose questions such as, 'Are there provisions to proactively inform citizens of the various functions that the SP-ODE performs?'. The attribute of efficiency also requires informing citizens about the avenues available to them to

contest the decisions of the SP-ODE and providing adequate ways to address their concerns. To this end, the framework poses questions such as 'Are there provisions for a 24/7 citizen support service?' and 'Are there provisions to track the lodged complaints until their final closure?'.

Finally, the attribute of accountability requires that the SP-ODE be answerable for its grievance redressal activities. To be accountable to taxpayers, it must maintain publicly accessible records of administrative data of the grievance redressal mechanism including but not limited to the number of cases resolved, time-taken to resolve a case, the most common types of grievances, etc, (see Chapter 2). Thus, we ask, 'Are there provisions for the grievance caseload management data (number of grievances received and disposed of, time taken for disposal, citizen's feedback etc.) to be made publicly available?'. An affirmative response to this question signals the presence of accountability mechanisms in this process.

In the next chapter, we apply this framework to describe three state-level SP-ODEs, i.e., Jan Aadhaar Yojana of Rajasthan, Antyodaya Saral of Haryana, and Samagra Samajik Suraksha of Madhya Pradesh. It is to be noted that a limitation of the framework is that it can only take stock of what is provided for today and cannot account for functionalities likely to activate in the future. Further, the case study framework is a tool to surface features that enhance citizen centricity in the design of an SP-ODE; it does not describe how well these features fare at the last mile. An analysis of the lived experiences of citizens interfacing with these systems is needed to fully appraise these systems but such an analysis remains outside the scope of this work. The next chapter discusses the case studies.

4. State of SP-ODEs in India

This chapter brings together the various dimensions of citizen centricity as discussed above and uses them to unpack a set of SP-ODEs in the Indian context. It consists of three case studies, delineating three state-level SP-ODEs: the Jan Aadhaar Yojana of Rajasthan, the Antyodaya Saral of Haryana, and the Samagra Samajik Suraksha Mission of Madhya Pradesh. This chapter is structured in the following manner. First, it provides an overview of the research methods used to both select and study the cases selected. Each case study[30], in turn, begins with a short overview of the background and context against which the SP-ODE evolved. It then delves into the key findings from primary and secondary research, enabling a discussion along two key axes: (i) an overview of the general form and structure of the SP-ODE and (ii) a detailed discussion of specific design features that determine the degree of citizen centricity offered by the SP-ODE.

As mentioned in Chapter 3, the framework helps signal the presence of design features that increase the likelihood of an SP-ODE being citizen-centric. While it allows us to take stock of such features, it does not allow for a survey of their on-ground performance. We further acknowledge that, as a result, the discussion of the SP-ODEs' design features is skewed towards parsing the intent/rationale behind them rather than towards documenting their execution and the gaps therein. While the design of the framework itself draws heavily from our earlier fieldwork on last-mile delivery challenges, the exercise of applying it to real-life SP-ODEs does not entail any field engagement, at least at this stage of the project. A complementary field survey or any form of citizen engagement is a prospective exercise that we may consider going forth. As mentioned in Chapter 2, we prescribe that SP-ODEs, at the outset itself, are to be designed for the most marginalised citizens – since they are likely to be frequent users of the SP-ODE and therefore form the core of its intended target base. We reflect this sentiment in these case studies as well and focus our discussion of each SP-ODE's design features from the perspective of the most marginalised citizens.

4.1 Research Methodology

The research methods comprise two strands: (i) selection of the cases and (ii) collecting information required under the case study framework developed. These have been discussed below.

Identification of SP-ODEs for Case Studies

We developed two sets of criteria to shortlist SP-ODEs that would lend themselves to the case study framework developed. The first set of criteria was used to determine a system's eligibility for being included in the study. The second served to identify a priority order in which the shortlisted SP-ODEs would be studied. A flowchart explaining these criteria is presented in Figure 4 below.

The *eligibility criteria* required that the system should fulfil a minimum set of conditions that would qualify any generic digital delivery system as an SP-ODE. As a starting point, the system would have to deliver benefits that could be classified as 'social protection' as per the definition laid out in Chapter

[30] Each of these case studies is accompanied by a completed case study framework, produced in Appendix III.

1. Further, the system must be supported by digital portals for citizens and administrators, a database of citizens, and must deliver benefits under multiple schemes. Finally, the system must have been built using some form of building blocks architecture. For the systems that were deemed eligible, a priority order was determined using two key criteria: degree of maturity and the scale at which the SP-ODE had been implemented (national vs. state). We accorded preference to SP-ODEs that were more mature (in terms of the amount of time that had passed since their inception) for two reasons, (1) a certain degree of maturity would facilitate information discovery and (2) it would increase the likelihood of the SP-ODE performing a wider set of the processes laid out in Figure 1 since many processes in some of the nascent SP-ODEs are yet to be developed or launched. The second eligibility criterion looked at the scale of implementation. SP-ODEs at the state level were prioritised over those at the national level since the latter introduced the dimension of vertical integration (i.e., processes that involved coordination and orchestration between the Central and the state tiers), a dimension that does not feature in our current construction of an SP-ODE archetype. Based on the above criteria, three systems were identified: Jan Aadhaar Yojana of Rajasthan, Antyodaya Saral of Haryana, and Samagra Samajik Suraksha Mission of Madhya Pradesh.

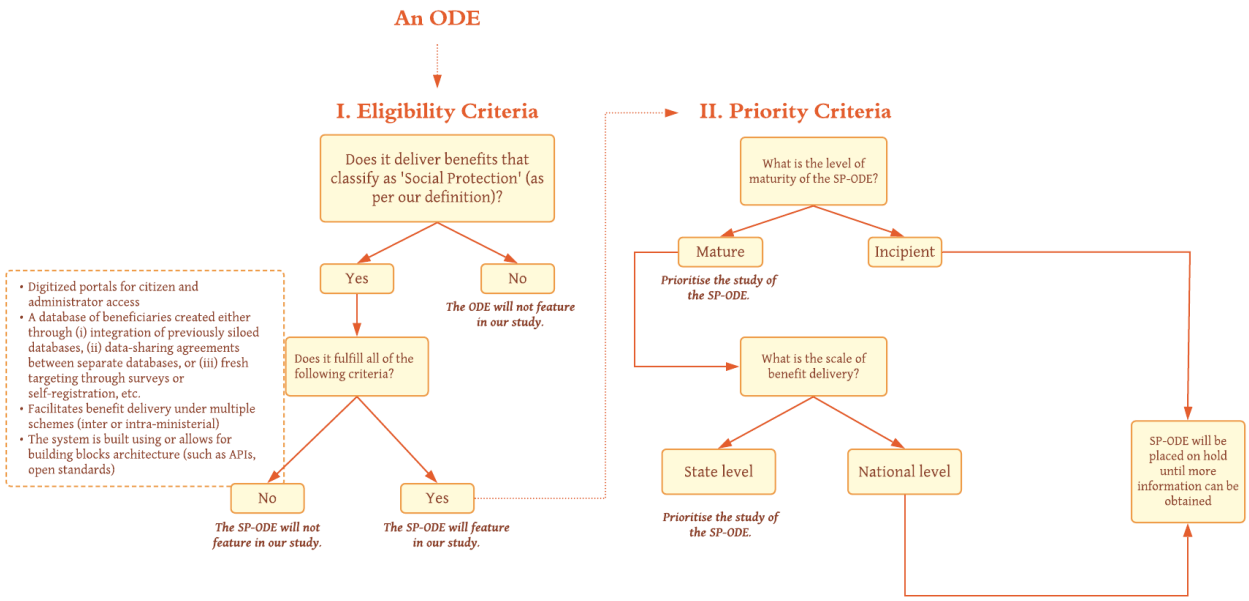

Figure 4: Identification of SP-ODEs for Case Studies

Collecting Information under the Case Study Framework

Both secondary and primary information was collected and analysed to study the shortlisted SP-ODEs. These components are discussed next.

Secondary Research Component

To aggregate information on each of the selected SP-ODEs, the foremost strategy employed was a thorough scan of the relevant information available in the public domain. Information sources ranged from official government documents/circulars, Requests for Proposals (RFPs) issued as part of the creation of such systems, media reports, and academic studies. While rich in detail, these sources proved inadequate in understanding the end to end working of an SP-ODE, especially for its back end. Therefore, primary research was conducted to complement the information gathered through secondary sources.

Primary Research Component

To obtain information unavailable in the public domain, the next step was the identification of sources (individuals/organisations) that were likely to host richer information on the SP-ODE being studied, by virtue of their former or current association with the system's administration. We conducted semi-structured, open-ended interviews with such experts. This format allowed us the freedom of steering the conversations in directions that these experts were enthusiastic about, without overwhelming them with a lengthy list of questions. It also allowed for a balanced stocktaking of the system — enabling identification of any potential inadequacies while also allowing us to maintain a tone of appreciation and empathy for the administration's efforts in building the said SP-ODE. We also learned that these are systems in flux, characterised by a certain degree of dynamism in their design and that the officials administering such systems were actively engaged in the process of improving them with time.

4.2 Case Study 1: Jan Aadhaar Yojana, Rajasthan

History and Context

Bhamashah Yojana, introduced in 2014, is the predecessor of the Jan Aadhaar Yojana (JAY). The delivery system under Bhamashah was conceptualised as an 'end-to-end digital service delivery platform to transfer cash and non-cash benefits to targeted beneficiaries' (The World Bank, 2015). To this end, a database with details of all state residents was also conceptualised, containing all the relevant data points required to determine the eligibility of the residents for a variety of social protection benefits (The World Bank, 2015). In December 2019, the Bhamashah portal and its state-wide database were renamed and reintroduced as the Jan Aadhaar platform and the Jan Aadhaar Data Repository (JADR) respectively.

Rajasthan's delivery system for social protection has benefitted from the state's legacy of e-governance initiatives. Over the years, the state has built foundational IT infrastructure such as the State Data Centres,[31] RajNet,[32] RajSwan,[33] etc., which, in turn, facilitated and supported the emergence of systems such as JAY. The common digital platforms such as the Rajasthan Single Sign-On,[34] e-Sanchar,[35] Raj eSign,[36] etc. were built as standard interoperable IT solutions that any government department could use to perform the common processes in the public service delivery chain. Citizen facing portals such as Rajasthan Sampark, Jan Soochna, and e-Mitra portals were also built as interoperable digital interfaces that performed specific processes in the service delivery chain. In addition to sharing such digital solutions with other departments, every department also built a separate portal, where citizens could apply for the schemes and programmes specifically administered by it.[37,38]

While there is a certain degree of fragmentation at the front-end (given the multitude of citizen interfaces available), the different platforms are integrated at the back end, enabling interoperability (RajCOMP Info Services Limited (RISL), 2021). JAY is an ecosystem of distinct and interoperable digital platforms that perform specialised processes within the social protection delivery chain instead of an integrated digital platform that subsumes all or most of the processes. It must be noted that such back-end linking forms the basis for characterising JAY as an SP-ODE, even when it does not strictly adhere to the archetype detailed in Chapter 1.

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[31] State Data Centre: 'IT infrastructure on cloud and shared basis is available, apart from caging facilities for departmental servers'.
[32] RajNet: 'Integrated network solution for connectivity up to the Gram Panchayat level'.
[33] RajSwan Project has 'provided high bandwidth and throughput to more than 4800 Govt buildings including 5200 govt offices'.
[34] Rajasthan Single Sign On provides 'centralized access to all state government applications and systems through a single URL and one identity.'
[35] e-Sanchar is a 'centralised communication platform for all e-governance applications. It provides API interfaces for Push SMS, Pull SMS, Outbound Voice Calls, Outbound IVRS calls'.
[36] Raj eSign is an 'electronic signature service that allows easy, efficient, and secure signing of electronic documents by authenticating signers through Aadhaar eKYC services'.
[37] Social Justice and Empowerment Department Portal
[38] Social Security Pension Portal

Overview of Structure and Functionalities of the Jan Aadhaar Yojana: An Assemblage of Multiple Digital Platforms

Figure 5 illustrates the structural form of JAY. The system comprises the following key components — (i) the Jan Aadhaar platform and the JADR that are used to identify and enrol citizens; (ii) the Integrated Financial Management System and the Rajasthan Payments platform that are used to process and disburse payments; (iii) e-Mitras that deliver cash benefits and ancillary services at the last mile; (iv) providers such as fair price shops, hospitals, and/or insurance companies, that facilitate the delivery of products (such as commodities under the Public Distribution System, insurance products, etc.), and lastly, (v) the Rajasthan Sampark portal that facilitates grievance redressal. There is also a back-end interface for administrators from different government departments to coordinate among themselves. All these processes operate under a common governance framework, laid down in the Rajasthan Jan Aadhaar Authority Act, 2020. The Act prescribes, among other things, that the Jan Aadhaar Authority will have the power to 'frame policy for the use of JADR, monitor the delivery of social protection benefits through JAY platform', and govern all actors and processes in JAY (The Rajasthan Jan-Aadhaar Authority Act, 2020). While the Jan Aadhaar Authority governs the entire ecosystem, RajComp Info Services Ltd (RISL), a government of Rajasthan's undertaking, specifically manages and oversees compliance of the JAY platform and the JADR to the provisions of the Jan Aadhaar Authority Act (RISL, 2021).

Next, we discuss the functions of these components of JAY. The Jan Aadhaar platform along with the JADR performs the identification and enrolment process. The JADR is a database of 'identity information and photographs of all Jan Aadhaar cardholders' (Rajasthan Jan-Aadhaar Authority Act, 2020). It is also the 'master database of clean, authentic, and up-to-date' details of resident families and their members (RISL, 2021). The JADR is designed to serve as the core of JAY. The Jan Aadhaar Authority Act prescribes all state government departments seed[39] their databases with Jan Aadhaar IDs, bank account numbers, and Aadhaar numbers (The Rajasthan Jan-Aadhaar Authority Act, 2020). All state government departments are also mandated to use the JADR while transferring social protection benefits to the citizens (Rajasthan Jan-Aadhaar Authority Act, 2020). Additional features of the JADR include interlinkages with the Aadhaar infrastructure, interoperability with other government databases, and the use of deduplication algorithms[40] (Rajasthan Jan-Aadhaar Authority Act, 2020). The process of coordination and orchestration between the administrators of JAY and the specific state government department's portals is carried out at the back end[41] (RISL, 2021). The Integrated Financial Management System (IFMS) and the Rajasthan Payments Platform (RPP) are used as an accounting system and payments gateway respectively for DBT payments channelled through JAY (RISL, 2021).

[39] Seeding: The process of electronically inserting Jan Aadhaar ID, Aadhaar Number, bank account number of a family or any of its members, in the databases of the public welfare schemes or services being provided by the government bodies.
[40] This information was obtained through semi-structured interviews with SP-ODE-specific experts.
[41] This information was obtained through semi-structured interviews with SP-ODE-specific experts.

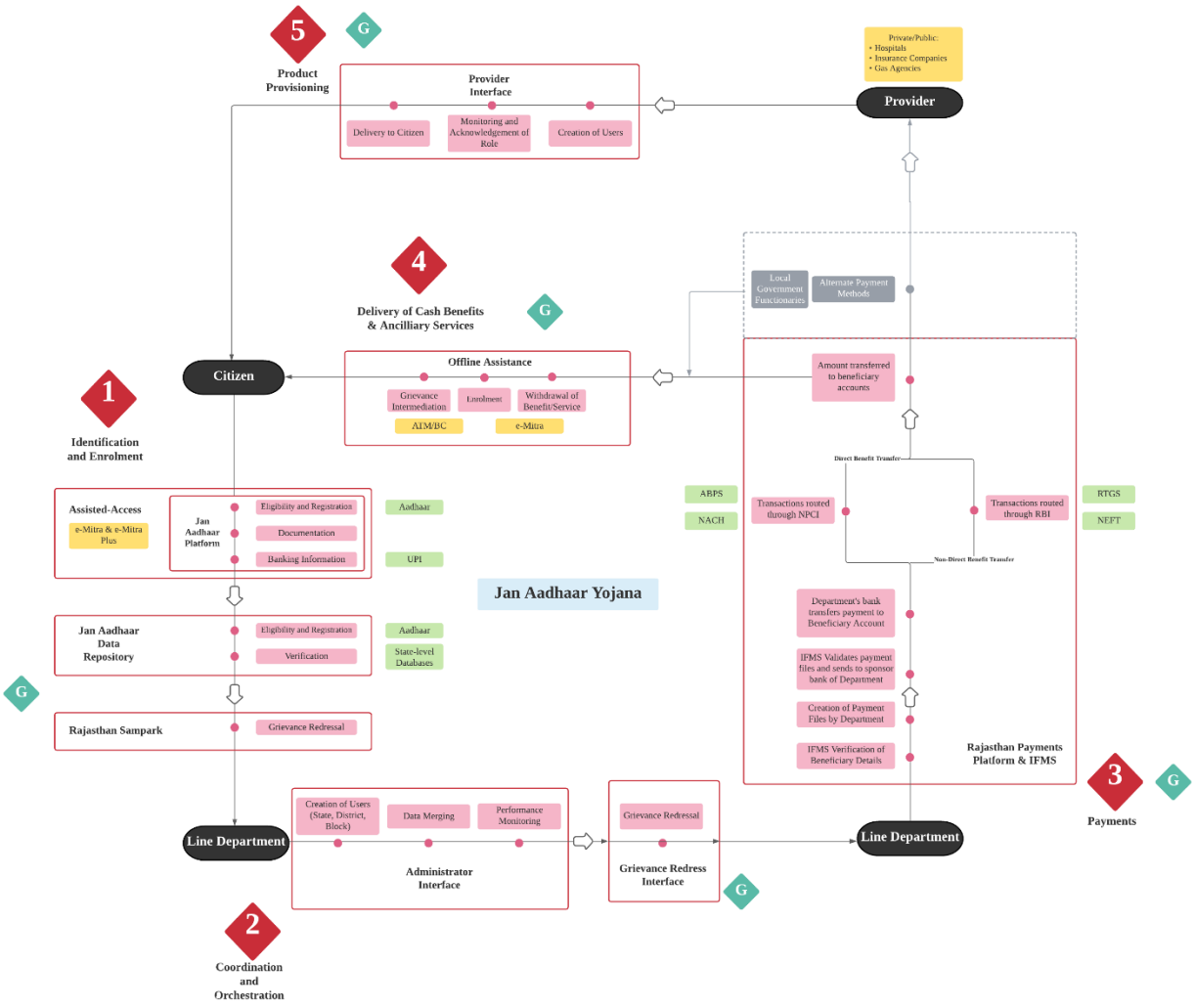

Figure 5: Schematic Representation of Jan Aadhaar Yojana

Delivery of cash benefits and ancillary services is performed by the extensive network of e-Mitras and e-Mitra Plus kiosks in the state.[42] e-Mitras provide both cash-out services and certificates at the last mile while also linking the citizens to the various services offered by JAY. For the product provisioning process, JAY has an interface for Fair Price Shops (FPS) and hospitals which is used to share information about the authentication and eligibility of the citizen (Department of Information Technology and Communication, 2021). For example, subsidised ration is provided to citizens using the Jan Aadhaar ID and biometric authentication service at an FPS (Department of Information Technology and Communication, 2021). Similarly, beneficiaries of the Mukhya Mantri Chiranjivi Swasthya Bima Yojana can avail of cashless treatment in empanelled hospitals by using their Jan Aadhaar IDs (Department of Information Technology and Communication, 2021). Lastly, the Rajasthan Sampark platform facilitates grievance redressal (RISL, 2021). Citizens can raise grievances

[42] This information was obtained through semi-structured interviews with SP-ODE-specific experts.

against any process or actor in the SP-ODE through this portal either by themselves or through e-Mitras.

Parsing Jan Aadhaar Yojana's Design Features: A Discussion on Citizen Centricity

In this sub-section, we discuss the various features of JAY in the context of the four attributes of citizen centricity, inclusivity, responsibility, efficiency, and accountability. We first start by identifying features that exhibit citizen centricity, discussing each attribute in turn. Subsequently, we highlight those citizen-centric features that are yet to be incorporated into the design of JAY.

One of the motivations of the inclusivity attribute is the need to tackle incidental exclusion, which can arise from structural issues (such as demographic barriers or economic limitations) that result in inequitable access to an SP-ODE. Such inequitable access is particularly likely for the most marginalised citizens, who are the primary users of an SP-ODE. To preclude such exclusion, we identify the need for offline structures to complement systems that overwhelmingly rely on technology and digital methods. This would ensure that citizens who are unfamiliar with digital modes, for any reason, are not wrongfully excluded from the digitised delivery system. While digitisation may reap considerable efficiency rewards for the administrator, and potentially even for the citizen, digitisation without regard for the citizen's context and ability to access digital modes, could create a mismatch between the intentions and outcomes of a delivery system.

The Jan Aadhaar system leverages an extensive network of nearly 70,000 e-Mitras to provide offline support to citizens in the last mile. This enables citizens with no or limited access to the internet or digital devices to access the JAY and its related services in an offline mode (Planning Department, 2021).[43] Further, e-Mitras have been assigned a variety of roles such as enrolling citizens for schemes, adding them to the JADR, raising grievances on their behalf, delivering cash benefits through cash-out points such as ATMs, and delivering ancillary services such as issuance of certificates. These functionalities (except for the cash-out modalities) can also be accessed through the online user interface of JAY which is available in both English and Hindi with enabling provisions to support access for persons with disabilities (PwDs). Furthermore, there are provisions to inform citizens about the status of their applications along with the reason(s) for any delay/rejection (Planning Department, 2021).

The more typical framing of exclusion from social protection relates to how administrators may fail to identify or target citizens due to methodological oversights. One of the motivations behind a transition to an SP-ODE such as the Jan Aadhaar Yojana is to reduce the very possibility of such exclusion, by using comprehensive databases for identification and targeting. However, the risk that exclusion errors percolate into SP-ODEs does persist and our framework checks for it. We believe that even though identification and targeting are backed by a universal database, there are chances that inadequacies in such a database may result in errors of exclusion. For instance, a database may not be updated frequently enough, and hence lose its status of universality. Related to this, we note some

[43] This information was obtained through semi-structured interviews with SP-ODE-specific experts.

features of the JAY that ostensibly enhance the inclusivity attribute. The JADR was built by compiling the state resident database and it was overlaid with family data, collected through validation surveys[44] (RISL, 2021). For updating the JADR, the Jan Aadhaar Authority Act mandates that the JADR be kept up to date by linking various state government department databases and allowing on-demand registration for residents. The presence of such measures enhances the possibility that JADR remains a dynamic, accurate, and comprehensive database of resident information and, in turn, reduces the possibility of exclusion of citizens.

As is the case with most SP-ODEs, JAY processes a significant amount of citizen's personal data, making the responsibility attribute critical for upholding citizen centricity. The Jan Aadhaar Authority mandates agencies/departments that deliver social protection benefits take citizens' consent before authenticating their Jan Aadhar IDs through the JADR (The Rajasthan Jan-Aadhaar Authority Act, 2020). Additionally, the Act also states that agencies that do not deliver social protection benefits and want to collect, store, or use the Jan Aadhaar ID must take citizens' consent only after expressly informing them about (a) the purpose of data collection, (b) data storage modalities, and (c) any available alternatives to the Jan Aadhaar ID (The Rajasthan Jan-Aadhaar Authority Act, 2020). By making it legally mandatory to capture the consent of citizens before processing or exchanging their personal data, JAY's design increases the likelihood of protecting/promoting the digital rights of the citizens. Additionally, since JADR stores personal data of citizens, there are provisions in the Jan Aadhaar Authority Act that reflect security-by-design principles such as confidentiality, availability, integrity, safety form theft, negligence, loss, or unauthorised access and an obligation to notify in case of any violation or misuse of data. Such provisions are in the service of the responsibility attribute, as they enhance the possibility of protecting citizens' data and promoting their autonomy and trust in the use of that data (Planning Department, 2021).

As discussed earlier, the efficiency attribute includes efficiencies of time, cost, and effort expended by the citizens. There are provisions in JAY such as informing citizens about the status of their applications through multiple modes (SMS, calls, emails, web portal) that may help citizens save time, cost, and effort. Similarly, the customer support service is available 24*7 and is designed to assist citizens with any information or grievances related to JAY. For administrators, there are provisions to build interactive dashboards and generate analytics reports according to the needs of specific government departments (RajCOMP Info Services Limited (RISL, 2021). This provision enables administrators to identify bottlenecks in the social protection delivery chain and generate data on the performance of various actors in JAY. Consequently, it provides administrators with relevant information, which can be used for initiating system-level changes.[45] Another notable feature of JAY is that the JADR can be used to proactively identify and enrol citizens into social protection schemes.[46] This is made possible through its integration with the Rajasthan Civil Registration database, which enables administrators to use automated systems to identify and enrol/remove citizens by querying

[44] This information was obtained through semi-structured interviews with SP-ODE-specific experts.
[45] This information was obtained through semi-structured interviews with SP-ODE-specific experts.
[46] This information was obtained through semi-structured interviews with SP-ODE-specific experts.

the latest information on births and deaths.[47] While this provision ostensibly makes the SP-ODE design efficient, it also raises concerns related to the responsibility and inclusivity attributes, as gaps in the accuracy and reliability of such automated systems can compromise citizens' privacy and cause wrongful exclusion.

In our understanding of accountability in an SP-ODE, we identify the need for robust accountability mechanisms for non-state actors along the social protection delivery chain. We discuss the importance of such mechanisms as the citizen themselves may be unable to establish direct lines of accountability with such actors. To this end, last-mile agents and providers (like hospitals, fair price shops) that are empanelled as part of the JAY are bound by onboarding and conduct guidelines that are available in the public domain. In case either is found flouting the guidelines, there are provisions to enable citizens to raise complaints against them on Rajasthan Sampark. Additionally, administrators of JAY are responsible for regularly monitoring and evaluating the performance of last-mile agents and providers. If they are found to be underperforming or flouting the guidelines, the administrators can levy penalties and, in extreme cases, revoke their licenses. These measures are likely to bolster JAY's accountability to citizens.

Our framing of the accountability attribute also surfaces the need for state actors prevalent in the SP-ODE to be accountable for their actions. On this note, a key feature of JAY is that an autonomous authority governs it i.e., the Jan Aadhaar Authority which, in turn, derives its powers from the Jan Aadhaar Authority Act, 2020. As discussed previously, the Act empowers the Jan Aadhaar Authority to formulate policies relating to various processes and govern the actors in JAY. The Act also makes it mandatory for the Jan Aadhaar Authority to prepare annual reports, detailing its activities. Such reports provide official information to citizens about the performance of the Authority, which, in turn, increases the possibility of citizens holding it accountable. Similarly, provisions to publish data related to grievances such as the number of grievances received, time taken to resolve them, citizen's feedback, etc. in the public domain can inform the citizens about the performance of JAY, fostering a certain degree of accountability of the system to the citizens. Additionally, in 2011, Rajasthan had enacted the Right to Guaranteed Delivery of Public Services (RGDPS) and many schemes delivered through JAY fall within the ambit of this Act. This implies that there is a stipulated time frame within which such benefits and services need to be delivered to the citizens.[48] The provisions of RGDPS create avenues for citizens to hold administrators accountable in case benefits are not delivered within the stipulated time frame. Such provisions foster a certain degree of accountability of the system to the citizens.

While the aforesaid features have the potential to enhance the citizen centricity of JAY, a few avenues for improvement remain. For instance, in terms of inclusivity, JAY is not accessible through feature phones. While people with feature phones may access JAY through an e-Mitra, a provision for feature phone compatibility will significantly enhance JAY's inclusiveness. Similarly, there are no provisions for citizens to raise grievances against cash-out points through Rajasthan Sampark, the platform facilitating grievance redress under JAY. This is a conspicuous exception as most processes and actors

[47] This information was obtained through semi-structured interviews with SP-ODE-specific experts.
[48] Please note that the enforcement of the same is a different matter altogether, lying outside the scope of this case study.

otherwise fall within the purview of the platform. Cash-out points play a critical role in ensuring the benefits reach the citizens. They might also prove to be avenues for the exclusion of citizens in the absence of accountability rules that govern them (Narayanan, Dhorajiwala, & Khambhatla, 2020).

With respect to the responsibility attribute, JAY lacks a privacy policy that would have set out privacy safeguards for citizens' data. This issue is compounded by the absence of provisions that adhere to the privacy-by-design principles in the design of the JADR. This is a serious concern as the Right to Privacy is a fundamental right and provisions that preserve the privacy of the citizens are essential for fostering citizen centricity. Further, it is to be noted that deduplication algorithms are used to update the JADR. As per our understanding, these algorithms were not field-tested and are currently not available for public scrutiny. Although the use of algorithms to deduplicate entries and enrich the database is not a new practice, it is now well established that such use needs to be supported by measures of algorithmic accountability.[49] Hence, efforts ought to be made to develop and/or improve these features to make JAY more responsible and in turn, more citizen-centric.

Finally, one of the ways to ensure accountability in last-mile transactions at citizen interfaces is to allow citizens to rate the performance of providers. This feature, when adopted under JAY, will help incentivise reliable performance on part of providers that are otherwise inadequately monitored.

Citizen Centricity: Wins	Citizen Centricity: Gaps
Inclusive: • An extensive network of last-mile delivery agents (e-Mitra and e-Mitra Plus). • Last-mile delivery agents provide a comprehensive list of services including cash-out services through ATMs and BCs. • Provisions for online and offline enrolment of citizens for social protection schemes and in the registry. • Citizens can raise grievances through offline and online modes. **Responsible:** • The presence of a consent mechanism before authenticating citizens' data from the registry is a good practice. • The presence of provisions that adhere to all security-by-design principles in the registry. **Efficient:** • Citizens are informed about the status of their applications through multiple modes.	**Inclusive:** • The citizen interface is not accessible through feature phones. **Responsible:** • The absence of privacy or a data policy is a concern. • Lack of algorithmic accountability. **Accountability** • No provision for citizens to rate the performance of providers.

[49] Algorithmic Accountability is defined as the 'process to assign responsibility for harm when an algorithmic decision-making results in discriminatory and inequitable outcomes'.

• Administrators have access to interactive dashboards and can generate relevant performance data. • Citizens can be auto-enrolled into social protection schemes. • Citizen support service is available 24x7. **Accountable:** • The governing body of JAY i.e., the Jan Aadhaar Authority draws its powers from the Jan Aadhaar Authority Act, 2020. • Presence of a Right to Guaranteed Delivery of Public Service to establish timelines for service delivery. • Provisions to hold last-mile delivery agents and providers have been established.	

4.3 Case Study 2: Antyodaya Saral, Haryana

History and Context

The development of Antyodaya Saral in Haryana was a response to the fragmented design of its social protection delivery system and the problems it posed for citizens and administrators alike. For citizens, the fragmentation of front-end interfaces, a lack of standardisation in enrolment forms, the absence of systems to track the status of applications and that of a unified grievance redressal platform made access to social protection benefits difficult (Dwivedi & Sahu, 2022). For administrators, the back-end management of numerous citizen applications received from disaggregated front end interfaces proved to be cumbersome.

To address some of these issues, the Antyodaya Saral platform was introduced by the Digital Haryana Cell in the Chief Minister's Office in 2017 (Khasnabis et al., 2021). It was developed by the National Informatics Centre, powered by an interoperable, scalable, and wholly government-owned IT solution called ServicePlus (Dwivedi & Sahu, 2022). The platform has been built as an integrated digital platform that extends several state-level schemes and subsidies to citizens. It enables citizens to track their application throughout the delivery chain using a Saral ID, which is issued to citizens after they submit their application for a scheme or service (Khasnabis et al., 2021). The platform also provides citizens with information related to Right to Service (RTS) timelines[50] for each scheme and service (Khasnabis et al., 2021). Furthermore, a grievance redressal hotline number is also available to citizens. For administrators, the back-end interface of the platform enables government departments to receive online applications, provides them with visibility of the processes involved in the service delivery chain, and allows them to monitor the performance of the platform through dashboards created for the purpose (Dwivedi & Sahu, 2022).

The digital architecture of Antyodaya Saral is supported by an array of physical touchpoints. These touchpoints function as dedicated, offline interfaces, enabling citizens to access the Antyodaya Saral platform. At the village/ward level, CSCs, or Atal Sewa Kendras function as touchpoints, followed by Antyodaya Saral Kendras at the tehsil/sub-division level, and by Saral Kendras at the district level (Dubey et al., 2021). These physical touchpoints provide assisted access to those citizens who may not be able to easily access and navigate the online platform. The structure of Antyodaya Saral closely resembles that of the SP-ODE archetype illustrated in Figure 1 in Chapter 1.

Overview of Structure and Functionalities of Antyodaya Saral: An integrated, multi-purpose platform

Antyodaya Saral is governed and managed by the Digital Haryana Cell in the Chief Minister's Office (Dwivedi & Sahu, 2020). It is integrated with Digital Public Infrastructure[51] (DPI) such as the Aadhaar system, Digilocker, eSign, payGov, and Rapid Assessment System (Dwivedi & Sahu, 2020). The

[50] These are timelines stipulated by the Haryana Right to Service Act, 2014 to ensure timely delivery of public services.
[51] DPI refers to digital solutions that enable basic functions essential for public and private service delivery, i.e., collaboration, commerce, and governance. India's Aadhaar and UPI systems are examples of DPI.

platform delivers over 500 state-level cash benefits and ancillary services (Dwivedi & Sahu, 2020). Figure 6 provides a detailed view of the platform.[52]

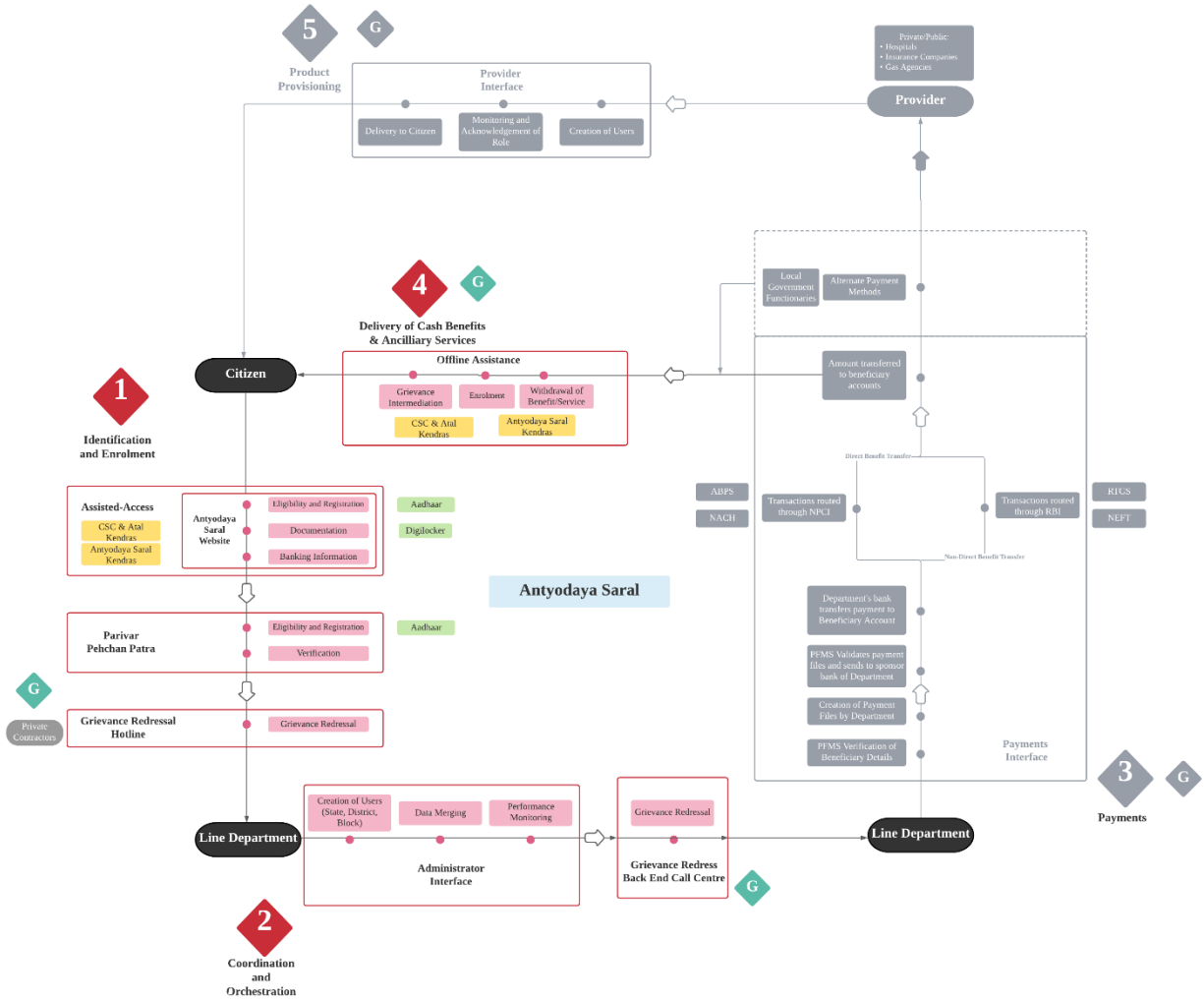

Figure 6: Schematic Representation of Antyodaya Saral

[52] Please note that the processes currently not part of Antyodaya Saral have been coloured grey in Figure 6.

Antyodaya Saral comprises an integrated platform called the Antyodaya Saral platform that subsumes most of the processes in the social protection delivery chain (Khasnabis et al., 2021). The platform is integrated with and utilises the Parivar Pehchan Patra (PPP) ID and the Family Information Data Repository, which is a family-level database of resident families in Haryana (The Haryana Parivar Pehchan Act, 2021). It was introduced in 2020 to help government departments deliver social protection benefits by assisting them in authenticating the identities and determining the eligibility of the members of a family (The Haryana Parivar Pehchan Act, 2021). All families whose data is verified, receive an eight-digit family ID, which can be used by any member of the family to apply for social protection schemes and services (The Haryana Parivar Pehchan Act, 2021). The database is linked with Aadhaar, is interoperable with other government databases, and utilises deduplication algorithms (The Haryana Parivar Pehchan Act, 2021). Although Antyodaya Saral does not currently facilitate payments' processing and disbursement,[53] it is equipped to do so.[54] Notably, Antyodaya Saral has an interface for citizens, administrators, and last-mile agents but does not offer the same to providers such as Fair Price Shops and hospitals.[55] The platform does not facilitate the product-provisioning process yet.[56]

Parsing Antyodaya Saral's Design Features: A Discussion on Citizen Centricity

In this section, we discuss the various features of Antyodaya Saral in the context of the four attributes of citizen centricity, inclusivity, responsibility, efficiency, and accountability. As specified in case study 1, we will first start by identifying features that exhibit citizen centricity, discussing each attribute in turn. Subsequently, we will highlight those citizen-centric features that are yet to be incorporated into the design of Antyodaya Saral.

The attribute of inclusivity requires SP-ODEs to embed features and provisions that mitigate factors that cause incident exclusion in social protection delivery (see case study 1). To reduce instances of such exclusion, Antyodaya Saral offers both offline and online interfaces for several processes in the delivery chain. It enables enrolment into the registry (PPP) and social protection schemes through offline and online modes (Digital Haryana Cell, n.d.; Citizen Resource Information Department, 2021). This feature enables the citizen to overcome the barrier of access to and usage of the internet and digital devices. Once the citizen is enrolled, the system also has the provision of communicating information regarding the status of their enrolment application and reasons for delay/denial of the same. Notably, the system also provides information to citizens on the actions needed to resolve application errors. Furthermore, there are also provisions to contact citizens through IVRS for feedback at different points in the delivery chain such as after application submission and/or after the receipt of a benefit or service (Digital Haryana Cell, n.d.). To qualify as responsible, SP-ODEs ought to deploy provisions that protect citizens' personal data, uphold their privacy and preserve their autonomy and trust in the use of their data. We find that the PPP registry is supported by a data policy that closely resembles a privacy policy. It sets out a range of data protection and privacy safeguards

[53] This information was obtained through semi-structured interviews with SP-ODE-specific experts.
[54] This information was obtained through semi-structured interviews with SP-ODE-specific experts.
[55] This information was obtained through semi-structured interviews with SP-ODE-specific experts.
[56] This information was obtained through semi-structured interviews with SP-ODE-specific experts.

that guide the design and functionalities of the registry. This data policy adheres to select principles of data protection and privacy such as purpose limitation, collection limitation, and maintenance of the quality of data processed (Citizen Resource Information Department, 2021). We observe that the range of privacy safeguards set out in the policy is narrow and needs to be further expanded. The system's data policy also sets out some provisions for data security by design. These include provisions related to confidentiality and safety from theft, negligence, loss, and unauthorised access to data (Citizen Resource Information Department, 2021).

Several design features of Antyodaya Saral impart greater efficiency to the system. To reiterate, we understand efficiency in terms of reduction in the time, effort, and cost incurred by citizens and administrators in navigating the benefit delivery process. Consequently, this attribute promotes the incorporation of features such as proactive communication of status of applications and benefits, functionality for the citizen to correct their information etc. To this end, Antyodaya Saral offers multiple modes (SMS, call, etc.) to communicate the status of applications to citizens (Digital Haryana Cell, n.d.). Similarly, some provisions prescribe Saral Kendra executives to proactively inform citizens about the various functions performed by Antyodaya Saral, a feature that further reduces information asymmetry between the government and the citizen and equips citizens to make better use of the functionalities offered by the platform ('Guidelines Regarding Operationalisation and Monitoring of Antyodaya Saral in Jhajjar District', 2022). A new feature called the Auto Appeals System has also been introduced to facilitate grievance redressal in Antyodaya Saral. The system is designed to automatically submit a grievance application on behalf of the citizens in case their grievances are not resolved within a pre-specified timeframe.[57]

The presence of such provisions can lead to the realisation of efficiencies of time, cost, and effort by the citizens. Antyodaya Saral's design also enables administrators to monitor schemes, collect statistics, and generate scheme-related reports.[58] This creates efficiencies of time and effort incurred by the administrators to assess the performance of the SP-ODE. It further facilitates evidence-based revisions to the design of the delivery system.

The previous case study has already underlined the need for strong accountability mechanisms for stakeholders in social protection delivery, such as last-mile delivery agents and providers (like Fair Price Shops, hospitals). The Saral system hosts a range of accountability-induced design features for both these stakeholders. Both are bound by guidelines that define the scope of operations they may undertake and are held accountable through monitoring mechanisms/audits by the administrator.[59] Both providers and last-mile agents also stand to lose their licenses (in the event of violations) to execute their responsibilities in the delivery of cash benefits and ancillary services and product provisioning processes respectively. These features bode well for the accountability of the Antyodaya Saral ecosystem. Additionally, the SP-ODE is governed by a specific state department, located within the Chief Minister's Office. Regular meetings are held between officials in charge of the Antyodaya

[57] Auto Appeals System - Dashboard
[58] This information was obtained through semi-structured interviews with SP-ODE-specific experts.
[59] Guidelines Regarding Operationalisation and Monitoring of Antyodaya Saral in Jhajjar District

Saral platform and the Saral Kendras, often leading to a review of processes and bottlenecks.[60] Further, most schemes delivered through Antyodaya Saral fall in the purview of Haryana's Right to Service (RTS) Act, 2014. The Act mandates the delivery of notified schemes and services within pre-specified timeframes.[61] To ensure that government departments adhere to the provisions of the RTS Act, the Antyodaya Saral dashboard publishes daily RTS scores. The RTS scores indicate the proportion of applications processed within the timelines specified under the Act.[62] Government departments or districts with low RTS scores are provided with requisite support to enhance their performance.[63] The RTS score is a commendable mechanism to hold government departments accountable. Similarly, there are provisions for the system to publish data on the number of grievances received, resolved, and unresolved (Deepak & Alok, 2019).

While the aforesaid features have the potential to enhance the citizen centricity of Antyodaya Saral, a few avenues for improvement remain. Developing a solution to provide access to the Antyodaya Saral platform to persons with disability can add to the inclusivity of the platform. Similarly, integrating Saral Kendras and Antyodaya Saral Kendras with cash-out points such as ATMs and BCs can enhance the functionality of these centres and foster convenience for citizens, thereby making the system more inclusive. This is especially important in the light of evidence that distant cash-out points precipitate the exclusion of citizens (Seth et al., 2021).

The platform's data policy needs to be strengthened by incorporating the full spectrum of privacy-by-design and security-by-design safeguards and bolster the responsibility of the system. Currently, it does not set out provisions for data breach notifications, which are critical for curtailing harms in cases of unauthorised access to personal data (Holm & Mackenzie, 2014). The data policy is also silent on the form in which data is stored within the registry. The requirement for encrypting data appears to be lacking. Furthermore, limitation on data retention is conspicuous by its absence, in effect allowing the platform to store citizens' data indefinitely. Moreover, the data policy is not accessible over feature phones or in vernacular languages, significantly limiting its reach to a large proportion of its intended users. This can have the effect of citizens consenting to share their personal data without fully understanding how it might be used, which undermines the principle of informed consent.

[60] This information was obtained through semi-structured interviews with SP-ODE-specific experts.
[61] Consolidated List of Services Notified Under Haryana's Right to Service Act, 2014
[62] Antyodaya Saral Dashboard
[63] This information was obtained through semi-structured interviews with SP-ODE-specific experts.

Citizen Centricity: Wins	Citizen Centricity: Gaps
Inclusive: • Allows for online and offline enrolment of citizens for social protection schemes and in the registry. • A comprehensive network of last-mile delivery agents (Atal & Saral Kendras). • Online and offline mode of grievance redressal. **Responsible:** • Presence of a data policy for the registry that adheres to a few data protection privacy-by-design and security-by-design principles. **Efficient:** • Citizens are informed about the status of their applications through multiple modes. • Administrators have access to interactive dashboards and can generate relevant performance data. **Accountable:** • Presence of a Right to Service (RTS) Act to establish timelines for service delivery. • Provision to hold government departments accountable by ranking them based on the RTS score. • In the event of a delay in service delivery, the Auto Appeals System raises a grievance on behalf of the citizen. • Well-structured mechanisms for administrators to hold last-mile agents accountable.	**Inclusive:** • Citizen interface does not seem to be easily accessible for persons with disabilities and for mobile phone users. **Responsible:** • Significant privacy-by-design and security-by-design principles are absent from the data policy. • Data policy is unavailable in vernacular language and cannot be accessed through feature phones. **Efficient:** • Citizen support service is not available 24x7. **Accountable:** • Citizens are unable to rate the performance of delivery agents.

4.4 Case Study 3: Samagra Samajik Suraksha Mission, Madhya Pradesh

History and Context

In 2010, the Madhya Pradesh Legislative Assembly passed Resolution 37, initiating an assessment of the factors inhibiting effective social protection provisioning in the state (Sharma, Copestake & James, 2019). Of the problems identified, a significant one was that of the administration lacking visibility over the socio-economic status (and consequently, eligibility) of residents. Further, two forms of duplication were also observed: the duplication of benefits provided by different departments to citizens, and the duplication of effort in workflows across departments, especially where the capture and use of data was concerned (MAPIT, n.d.). These reasons formed the primary motivation for the introduction of the Samagra Samajik Suraksha Mission (SSSM) in 2012.

The problems identified above prompted an 'integrated approach', implying that functions along the social protection delivery chain would be integrated across departments and schemes to reap economies of scale and scope (Barca and Chirchir, 2020). The Samagra Samajik Suraksha Mission (SSSM) was deployed in response to these issues. The SSSM set out to standardise and rationalise social protection benefits and converge back-end processes where appropriate. The SSSM was built atop a state-wide registry of all citizens, called the Samagra.

At the time of its inception, the SSSM also envisioned a shift from a 'demand-based' model of service delivery to an entitlement-based one. Before the implementation of Samagra, departmental databases were siloed, and departments had no visibility on the total number of citizens eligible for benefits. They could only view citizens who had already applied for support under a particular social protection scheme (Sharma, Copestake & James, 2019). This was a challenge for administrators, who were keen to ensure that all those who were eligible for support would receive it. This justified the shift to an 'entitlement-led' model of delivery. The new system enabled greater visibility at the back end: departments would be able to view each household's 'status', the entitlements each member was eligible for, and the benefits being drawn (Sharma, 2019). From the citizen's perspective, the entitlement-based model would reduce the informational burden that citizens often bear in accessing social protection (PWC, 2016). The system would instead automatically entitle citizens to benefits, introducing transparency and accountability in the system.

A complete appreciation of the evolution of Samagra would not be possible without discussing the state's simultaneous efforts to deepen financial inclusion through the Samrudhhi effort (UNDP, 2014). The Samruddhi programme in the state prioritised activation of financial institutions at the last mile, and these institutions also performed the function of delivering digitised social protection payments (Bhatnagar and Gupta, 2013). Considering that those were the early days of DBT (SSSM was one of the early adopters of DBT), the synchronous activation of financial institutions at the last mile along with the roll-out of DBT deepened both penetration of formal finance and reach of social protection benefits. Another component of the Samruddhi programme was the sharing of data (regarding individuals not in possession of a bank account) from the Samagra database to banks, which further promoted bank account opening (State Level Bankers Committee, 2013).

The primary components of Samagra are the all-encompassing common database which uses a state-wide universal identifier known as the Samagra ID and the front-end portal for the citizen. These components play crucial roles throughout the welfare delivery chain. The Samagra database serves as a real-time population registry used by participating departments for the targeting and identification of citizens, and for verifying the identities of applicants. The Samagra portal allows citizens to self-register for the Samagra ID, update their information, and obtain details regarding schemes. Other portals that use the Samagra system (such as the Pensions portal, Sparsh portal, and Shiksha portal) permit citizens to enrol into various relevant schemes with possession of a Samagra ID being a prerequisite for such enrolment. Further, the Samagra system can assist administrators in the management of back-end workflows. It automates various administrative processes where appropriate (PWC, 2016) and allows digital payments to be triggered to citizens (Bhatnagar and Gupta, 2013). These components form the core of the Samagra ecosystem and are supported by the broader public service delivery infrastructure in the state in the form of the network of agent-based delivery systems, the state's Public Service Guarantee Act, and the grievance redressal infrastructure provided by the CM Helpline. The following section unpacks each of these components in closer detail.

Overview of Structure and Functionalities of SSSM: Use of the Samagra Population Registry for Targeting, Identification, and Payments

The monitoring and execution of the Samagra programme are tasked to the Samagra Samajik Suraksha Mission (SSSM), an autonomous government body registered under the Societies Act, 1860. The Department of Social Justice is the nodal department in charge of all matters relating to the implementation of the Samagra system. The Samagra system hosts a range of schemes related to the social security sector (such as pensions, marriage assistance schemes, assistance to persons with disability, etc.), the education sector (such as scholarships, fees reimbursements, and provision of free uniforms/textbooks, etc.), and the public distribution system (PDS). Of these, all Government-to-Citizen (G2C) cash benefits are delivered digitally to citizens using a state-level e-FMS and the DBT architecture, integrated with the Samagra system (UNDP, 2014).

The Samagra system is integrated with digital infrastructure in the form of Aadhaar and relies on state-level infrastructure in the form of a unique identifier, the Samagra ID,[64] created as part of the project. A key feature of the Samagra system is an electronic database of residents in the state – the Samagra Population Register (SPR). The SPR was initially created using data from the Socio-economic Caste Census (SECC) 2011, as well as the National Population Register (NPR). It was later supplemented by data from a comprehensive state-wide, door-to-door survey where the detailed profiles of all families in the state were captured (DARPG, 2017). Various features of the SPR make it likely to be a reliable and representative database. At the time of the creation of the SPR, significant cleaning and the removal of duplicate records was undertaken using de-duplication algorithms (Sharma, Copestake,

[64] This Samagra identifier (the Samagra ID) has two components in the form of a unique eight-digit ID (assigned per family) and a nine-digit ID (assigned per individual).

and James, 2019). Further, the SPR is linked with various other registers[65] - making it by some accounts, a nearly universal dataset, capturing data of all citizens requiring social protection assistance (DARPG, 2017). A feature of the SPR which is cited to ensure the absence of duplicated entries is the use of Aadhaar as an identifier (Sharma, 2021). However, to our understanding, such use of Aadhaar is not always an assurance of accurate de-duplication (Khera, 2019).

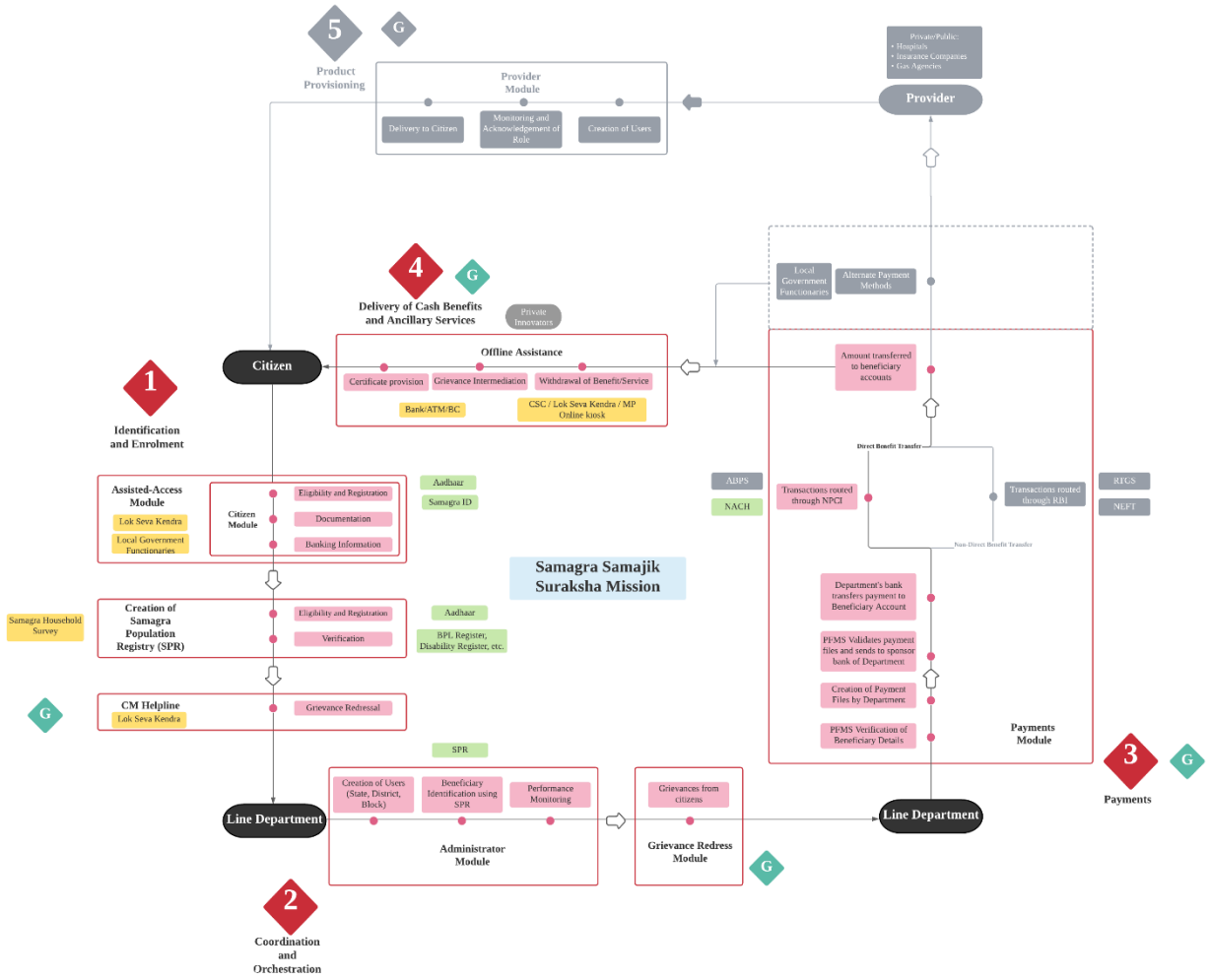

Figure 7: Schematic Representation of SSSM

Figure 7 sets out the structure of the Samagra system. The primary platform of Samagra[66] supports the three processes of identification and enrolment, coordination and orchestration, and payments. The platform facilitates the enrolment of citizens into the SPR (that is, by obtaining a Samagra ID),

[65] The SPR is linked with the Below Poverty Line (BPL) Register, the register of all Scheduled Caste (SC)/Scheduled Tribe (ST) individuals, the register of Persons with Disabilities (PwDs) and the register of casual labourers.
[66] Accessible at www.spr.samagra.in.

and permits citizens to edit/update various details. On the other hand, administrators can generate eligibility lists, monitor scheme performance, and trigger payments to citizens, among other functionalities. For the Samagra ecosystem, the remaining processes (of delivery of cash benefits and ancillary service, product provisioning, and grievance redressal) are not directly supported by the Samagra platform, though some amount of integration seems to be in place.[67]

The network of Lok Seva Kendras, Citizen Service Centres (CSCs) and Madhya Pradesh Online (MPO) kiosks primarily perform the delivery of cash benefits and ancillary services process. Additionally, the function of last-mile cash-out services is performed by BCs as part of the network of financial institutions in the state. The agent-led kiosks are primary components of the Madhya Pradesh government's broader public service management system (known as the e-District initiative) which provides frontend channels for all government services to citizens at the last mile (NIC-MPSC, 2012). These kiosks primarily only undertake the delivery of services empanelled under the Madhya Pradesh Public Service Guarantee Act (PSGA) of 2010 (World Bank, 2021). However, certain Samagra services have been notified under the PSGA ("Lok Seva Guarantee Portal", n.d.), and hence it is appropriate to identify these as the primary agents involved in benefit delivery for the Samagra ecosystem. A similar theme emerges for the grievance redressal process as well, i.e., while the CM Helpline can accommodate grievances relating to Samagra, it has been created for public service delivery in general and does not serve Samagra exclusively.

Parsing SSSM's Design Features: A Discussion on Citizen Centricity

In this sub-section, we discuss the various features of the Samagra system in the context of the four attributes of citizen centricity, inclusivity, responsibility, efficiency, and accountability. As specified in Case Study 1, we will first start by identifying features that exhibit citizen centricity, discussing each attribute in turn. Subsequently, we will highlight those citizen-centric features that are yet to be incorporated into the design of the system.

The SSSM does a remarkable job of creating provisions for offline architecture to complement a digitally advanced system. The need to preclude incidental exclusions at the last mile has already been discussed in the previous case studies. The intention to develop Samagra as a system that is inclusive at the last mile comes through in multiple instances. First, there is an offline option for every service facilitated by the Samagra system. Citizens may obtain a Samagra ID or edit members in the family ID via the Samagra portal, but the same functionalities are also provided by the network of last-mile delivery agents, and by local government functionaries as well. The provision for the latter is commendable – our field experiences have revealed that local government functionaries (such as the Gram Panchayat) are often the first point of access for citizens facing any query regarding social protection.[68]

[67] Please note that the processes currently not part of the Samagra System have been coloured grey in Figure 7.
[68] See our report titled Delivery of Social Protection Entitlements in India: Unpacking Exclusion, Grievance Redress, and the Relevance of Citizen-Assistance Mechanisms.

Further, towards the creation of offline infrastructures, we credit the Samagra system for its deployment of the Samruddhi programme for financial inclusion alongside the Samagra system. The Samrudhhi programme was an innovative model which intended to dually account for the entitlement and access to social protection in the state. It envisioned integration between the following three pillars to achieve financial inclusion: the Samagra database, an e-FMS system for timely and correct payments to citizens, and the permeation of Ultra-Small Banks (USBs) or Customer Service Points (CSPs). The government at the time had realised that the adoption of any one component in absence of the others would defeat the purpose of integration (Bhatnagar and Gupta, 2013). From our framework, we point to the presence of the third pillar as particularly important – the presence of geographical norms directing the placement of USBs/CSPs is a crucial provision that makes the system more inclusive. The system goes beyond just cursory calls to set up more cash-out access points and instead provides a formal policy to manage the number of agents servicing an area. While the implementation of such a policy remains to be seen, we interpret its presence as the intention to create an inclusive system. Recalling that the Samagra system was implemented in the early days of the DBT system, the consideration for last-mile accessibility (a problem often unaddressed even a decade after implementation (Rajendran, Dhorajiwala, and Kambhatla, 2020)) speaks to its forward-looking nature. These features reduce the scope for incidental exclusion and consequently make the system more inclusive.

We have earlier laid out the context on the need to ensure that any registry powering social protection is kept current, and of high quality. Here, the SPR appears to be quite thorough in ensuring data remains up to date. It has provisions for multiple modes through which the registry is kept current (beyond the time of initial creation), such as the linking with other government department databases, the use of surveys/field exercises to fill gaps identified from the initial datasets chosen, and the use of on-demand registration. These features ensure that the database remains dynamic and reflects the current situation of households in the state. In this manner, it improves the quality of targeting/identification and makes the system more inclusive.

The SSSM generates and processes copious amounts of citizen personal data for a variety of purposes. Our conceptualisation of the responsibility attribute manifests in a suite of data protection safeguards. The SSSM writes certain aspects of such safeguards into its design, especially those aspects related to the security of data. For instance, to maintain the confidentiality of citizen data, a multi-level security infrastructure ensures that departments have access and editing rights to only data fields relevant to the schemes they administer (Sharma, Copestake, and James, 2019). The design of the system also accounts for the security-by-design principle of integrity, by way of role-based access controls wherein different users' functionalities are limited as designated by an administrator (Sharma, Copestake, and James, 2019). These design features are intended to ensure that citizen data is safe from unauthorised access. Additionally, the SSSM is expected to follow strict standards for seamless sharing and exchange of data among departmental applications (DARPG, n.d.). There is also a requirement that all aspects of Samagra follow semantic interoperability so that the precise meaning of exchanged information is understood across applications. The presence of stringent rules that bind interoperability and data sharing seems to bode well for the responsibility attribute.

In keeping with the theme of true citizen centricity, we have interpreted the efficiency of an SP-ODE as the savings of time, cost, and effort for the citizen. Through the social protection delivery chain, as enabled by the SSSM, there indeed seems to be a focus on lowering the burden borne by the citizen. One of the motivations of adopting a system such as the SSSM was to reduce the hassle faced by citizens in obtaining their social protection benefits. The system also marked a shift from the demand-based model to an entitlement-based model of governance (DARPG, 2017). The idea behind such a shift was that all citizens may not avail themselves of the benefits under those schemes where they are entitled, due to a host of reasons including lack of awareness. The SPR played a key role here. Since the database contained all attributes required to confirm the eligibility and enrolment status of any individual, the concerned department could proactively approach and include them into a scheme. The ability of government machinery to identify citizens in need of assistance from a universe of citizens (i.e., the SPR), verify their eligibility, and proactively disburse benefits to them is a compelling feature and achieves two outcomes. First, the system transfers some of the burdens of accessing social protection from the citizen to the state and second, it empowers the system with a powerful tool during times of emergency. An interesting application of this 'entitlement-based' model was in the system of pensions delivered through Samagra. The Samagra system was equipped to identify persons eligible for other pension-type schemes that offered a higher amount than the scheme they were currently enrolled under (DARPG, n.d.). This 'auto-switch' feature was triggered by software to switch an individual from one pension scheme to another with a higher pension amount. Until 2016, approximately 5 lakh pensioners were auto switched,[69] earning them a total additional amount of INR 3,40,000 (DARPG, n.d.). As elsewhere in this chapter, whether the manner of implementation of this feature made the Samagra system more efficient for citizens is inconclusive. However, we note the provision for such a feature was promising.

In our understanding of the accountability of an SP-ODE, we identify the need for robust accountability mechanisms for any non-state actor along the social protection delivery chain. We discuss the importance of such mechanisms as the citizen themselves may be unable to establish direct lines of accountability with such actors. In the Samagra system, we have discussed above the presence of a network of agents involved in benefit delivery – BCs, LSKs, MPO kiosks, and CSCs. Our impression is that there are strong accountability mechanisms in place for agents involved in the delivery of cash benefits and ancillary services. Since such agents largely feature under the Madhya Pradesh e-District project, the measures of accountability they are bound by are specified as such. For instance, there are guidelines and minimum requirements to be fulfilled during the onboarding of any new agents and a code of conduct specified by the Department of Public Service Management that such agents must abide by (District e-Governance Society, 2019). LSKs also face the risk of being penalised (in the form of fines) when they fail to uphold a certain standard of service. For instance, a penalty is levied when the operator has demonstrated an inability to receive applications due to a lack of electric supply/manpower (District e-Governance Society, 2019). The digital module used by such agents is also equipped with monitoring capabilities, allowing administrators at the district and state

[69] Please note that the auto-switch feature is no longer in use since the amounts under various pension schemes have been standardised.

levels visibility over real-time information and analytics on service delivery (NIC Madhya Pradesh, 2012).

Another aspect of the accountability attribute is how state actors may be held accountable for the role they play in the Samagra ecosystem. Concerning this, Samagra services have been notified under the Public Service Guarantee Act (PSGA). The PSGA specifies timelines within which citizens are entitled to receive certain services and the channels through which issues (if any) may be escalated. It is also worth mentioning that a 2016 World Bank project on the larger service delivery ecosystem in the state envisioned that the SPR database would be linked with the database of beneficiaries of PSGA services (World Bank, 2016). The outcome of such linking could potentially indicate closer integration between the Samagra system and the PSGA. While the exact implications of such linking are yet unclear, in general, the presence of legislation backing the time-bound delivery of services cultivates a sense of accountability in social protection delivery. Citizens feel empowered to lodge formal complaints when issues are encountered, and administrators are legally bound to address them.

Our framework also surfaces areas that have scope for improvement. For example, the digital interface supported by Samagra could adopt more features to be accessible to citizens, and by extension, be more inclusive. The interface is primarily available in vernacular language, but is not mobile-phone friendly, and does not possess features that make it accessible for persons with disabilities. We identify this as a problem – for Samagra to truly permit citizens to enjoy its full functionalities, the portal they engage with should necessarily be accessible via mobile phone. As acknowledged in a piece co-authored by one of the chief architects of the system, 'the internet, browser-based nature of the Samagra portal has negatively impacted timely access for remote and rural communities, where many of the most vulnerable and marginalised citizens live' (Sharma, Copestake, and James, 2019). Further, since social protection schemes for the disabled are one of the focus areas for Samagra, the portal could integrate features (such as screen reader access) to make the experience friendly for them.

Next, on the attribute of responsibility, we identified the presence of various provisions to achieve data security. However, these provisions are mostly at the administrator-end. We imagine that the responsibility attribute assumes a slightly different burden when considered from the citizen perspective. It is likely that the citizen is concerned with the privacy of their data, and whether consent is properly obtained during the collection of such data. There is a jarring absence of provisions that safeguard citizens' privacy and safeguard their data from the system. This significantly undermines citizen centricity. Perhaps even more worryingly, it fails to uphold citizens' right to privacy. As set out in the Privacy Judgment (Justice KS Puttaswamy vs Union of India, 2017), the recognition of the right to privacy as a fundamental right obliges the state to promote privacy and to prevent wrongful encroachment on users' privacy. The absence of data protection safeguards violates both these duties.

While earlier paragraphs have appreciated the SSSM's commitment to cultivating efficiency in terms of the citizen's effort, a feature that the system could benefit from is the inclusion of a 24x7 citizen support service. Currently, the CM Helpline in Madhya Pradesh (which supports the Grievance Redressal process) is available for citizens from 7 AM – 11 PM, during weekdays. We believe that the availability of a 24x7 helpline reflects better on the efficiency of the system.

This section has described the SSSM as accountable on many counts, but one conspicuous issue stands out. The system can consider permitting citizens to rate the performances of delivery agents. While more formal mechanisms of performance monitoring are in place, the provision of a simple feedback mechanism could prompt citizens to critically evaluate the services they are receiving and encourage a culture of formally reporting problems as and when they arise. In the status quo, our experience shows that poor quality of service delivery often goes unreported, to the extent that such agents may become complacent in the role they play in social protection delivery chains. The institution of a simple feedback mechanism can be a powerful tool in the hands of citizens to exercise accountability.

Citizen Centricity: Wins	Citizen Centricity: Gaps
Inclusive: • Multiple modes to keep the Samagra Population Registry up to date. • Focus on offline architectures to complement digital systems: ✓ A comprehensive network of last-mile delivery agents. ✓ Focus on provision of last-mile cash out infrastructure. ✓ The ability of government officials at the last mile to edit citizen details in the registry. ✓ Phygital grievance redressal. **Responsible:** • The interoperability across databases is secured by security-by-design principles and interoperability guidelines. **Efficient:** • Considerable focus on lowering the burden on citizens via auto-enrolment of beneficiaries into schemes. **Accountable:** • Well-structured mechanisms to uphold accountability: ✓ Mechanisms to hold last-mile agents accountable, and ✓ Presence of a robust Public Service Guarantee Act.	**Inclusive:** • Citizen interface does not seem to be easily accessible for persons with disabilities or mobile-phone users. **Responsible:** • Lack of a privacy policy/terms of service and a consent mechanism are concerning. **Efficient:** • Citizen support service (CM Helpline) is not 24x7. **Accountable:** • Citizens are unable to rate the performance of delivery agents, depriving them of a powerful accountability mechanism.

4.5 Concluding Remarks

To summarise, certain design features of social protection tech systems are common across the systems of different states. All systems that were studied report the ambition to move to an entitlement-based model of benefit delivery, where the system would be able to automatically identify relevant beneficiaries and deliver benefits to them, *without* the beneficiary having to apply for individual schemes. MP's Samagra exhibited these capabilities when it graduated about 5 lakh citizens to higher paying pension schemes. Similarly, Rajasthan's Jan Aadhaar Yojana has begun automatically issuing caste certificates to new-borns, based on the castes of their parents, without requiring parents to file new applications for the same.

Next, all systems build upon existing physical and digital infrastructure of the state and on systems that may have been constructed to serve other domains of public service delivery. Some systems are also open to use by the Union Government of India (GoI). For instance, the Samagra system of MP, is designed as an integrated platform that can be used by GoI to run the MIS for the automation and implementation of its schemes (Department of Administrative Reforms & Public Grievances, 2017). The Antyodaya Saral system of Haryana is built atop GoI's Service Plus Platform, which is an open source, low-code/no-code architecture, making it reusable across different apps and contexts (Antyodaya Saral: Streamlining public service delivery in Haryana, n.d.).

Further, all these systems are inclusive to the extent that they are supported by networks of last-mile delivery agents to supplement the digital channels of accessing the SP-ODE. This could also be explained by the design of financial inclusion efforts in the country which emphasise furthering the reach of financial services through last-mile agents such as banking correspondents. For instance, some features of the Samagra system were conceptualised as elements of the Samruddhi program for financial inclusion and have positive spill-over effects on the inclusivity of the Samagra ecosystem. Finally, all systems provide IVRS-based channels for grievance redress. However, Rajasthan's Jan Aadhaar Yojana comes out as first among equals for providing a 24*7 helpline. This makes grievance redress accessible and easier for beneficiaries by not requiring them to divert time away from working days or hours.

Our study also helped us surface some gaps in the design of these SP-ODEs. A particularly concerning absence across the SP-ODEs studied is that of features concerning the *responsibility* attribute. These systems lack features that (a) elicit citizen consent while obtaining and using their data and (b) ensure the privacy and security of the data obtained. The Jan Aadhaar Yojana stands out in this respect, as citizen data is secured by a consent mechanism and security-by-design principles. However, there is still much to be desired on this front, it would be prudent for the builders of SP-ODEs to pay more attention to the various design features that would make an SP-ODE more responsible.

Another conspicuous absence pertains to the inclusivity attribute, wherein there is a lack of features that would ensure that digital interfaces could be accessed by all. The design of the citizen interfaces is not mobile-first, implying that the citizens need to rely on CSCs or have access to computers to

navigate their profiles. The latter is a lofty assumption, considering only 23% urban and 4% rural households could access a computer in 2020 (Gohain, 2020). Given the deep penetration of feature phones in the country, especially among low-income users, these systems can significantly shore up inclusivity by becoming accessible over feature phones. In addition to not being mobile phone friendly, majority of the systems studied were not designed to service persons with disabilities, with only Jan Aadhaar Yojana emerging as an exception. The Jan Aadhaar Yojana website complies with W3C Web Content Guidelines that enable persons with visual impairments to access the website and the information on it through assisted technologies (Screen Reader Access, 2022).

Strengthening state's accountability to beneficiaries is a big promise of digital social protection. Haryana stands out in this regard. The Antyodaya Saral platform has baked Haryana's Right to Service Act into the system. The Saral dashboard allows department officials to view compliance of their staff with timelines notified under Haryana Right to Service Act of 2014 at the state as well as the district level, which gives them insight into whether services are being delivered in a time-bound manner or not. It is worth noting that not all states' SP-ODEs have the backing of such an Act.

Another striking gap in strengthening accountability is the inability of citizens to rate the performance of last-mile delivery agents. As discussed earlier in the report, the absence of a well-defined market relationship between beneficiaries of services and last-mile delivery agents/providers, creates a power imbalance between the beneficiary and the last-mile delivery agents, leaning in the favour of the latter. Mechanisms such as rating of delivery agents, discussion of their performance with citizens, and relaying feedback to agents would help discipline the last-mile agents and counter the power asymmetry between them and the citizens.

We finally note that most SP-ODEs in the Indian context are systems in flux and continue to evolve based on learnings that come from implementation. We intend for some of the learnings from these case studies and the accompanying framework to help inform this evolution in a manner that makes SP-ODEs increasingly citizen-centric.

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Appendix I: Sources of Exclusion across Key Social Protection Schemes[70]

Exclusion Code	Source of Exclusion	Description
Direct Benefit Transfer (DBT) Schemes[71]		
E2 (Enrolment Procedures)	*Documentation Requirements*	Scheme applicants bear both time and monetary costs to procure documents to prove their eligibility, especially under list-based schemes.
	Application Processing	Inordinate delays in the processing of scheme applications have excluded many deserving people who continue to await the receipt of their entitlements. General opaqueness, lack of status communication, and weak GRM (Grievance Redressal Management) make cash transfers inaccessible for many citizens.
E3 (Benefit Processing)	*Failure of Benefit Crediting*	The failure to receive DBT entitlements in one's bank accounts. The reasons for failure may vary, including improper Aadhaar seeding, database errors, blocked bank accounts, etc.
E4 (Cash Withdrawal)	*Availability of Access Points*	Includes availability of a proximate banking point to withdraw or check the status of DBT entitlements.
	Operational Issues	Includes issues such as overcrowding at banks, time-consuming provision of services, network failures, cash shortages, biometric authentication failure, glitches related to Point of Sale (PoS) devices, etc. Some of these issues may not lead to exclusion necessarily but result in high costs (both temporal and monetary) for beneficiaries.
	Overcharging	Includes instances of bribery, fraudulent behaviour, or any other improprieties on the part of cash-out point personnel.
MGNREGA Exclusion		

[70] This table first appeared in the report titled, 'Delivery of Social Protection Entitlements in India: Unpacking Exclusion, Grievance Redress and the Relevance of Citizen-Assistance Mechanisms'.

[71] Since most cash transfer schemes under the DBT umbrella follow similar process flows, it is convenient to apply the same framework to all of them.

E2 (Entry Stage)	*Job Card Application Processing*	Includes issues where a job seeker is unable to obtain a job card, despite having enquired about/applied for the same. This may be due to non-cooperation from the enrolment point, or a processing error post-submission of documents.
E3 (Benefit Processing)	*Work Allocation*	The job cardholder is unable to obtain work, despite having requested the same. This category includes cases wherein cardholders faced issues in raising their demand for work and were consequently excluded from unemployment benefits. It also includes the ad-hoc allotment of work for only a few days despite requests for longer periods.
	Wage Payment Processing	Includes all improprieties after work allocation, such as workers being unpaid/partially paid or experiencing payment delays.
E4 (Cash Withdrawal)	*Availability of Access Points*	*Same as above*
	Operational Issues	
	Overcharging	
PDS Exclusion		
E1 (Pre-Entry Stage)	*Targeting Methodologies and Eligibility Rules*	The eligibility rules for identifying beneficiaries of ex-gratia in-kind transfers under PMGKY excluded many people who required government support but did not receive free ration due to lack of a ration card.
E2 (Enrolment)	*Documentation Requirements*	The citizen is unable to procure the required documentation to prove their eligibility as a ration cardholding candidate.
	Application Processing	The citizen has not been allotted a ration card despite having submitted the requisite forms and documentary proof. They may experience undue delays due to impropriety at the enrolment point, or issues with the submitted documents/forms causing rejection or stalling of an application.
	Details in Ration Card	Citizens may face issues in updating details on their ration cards. These issues may be about the addition/deletion of

		family members after a change in family structure or to errors/changes in addresses, names, etc.
E3 (Benefit Processing)	*Supply Chain Issues*	Any disruptions in the transportation of foodstuff between godowns, or from godowns to the Fair Price Shop can cause exclusion due to supply chain issues.
	AePDS Back-end	Includes issues related to the linkage of Aadhaar and ration card or other back-end database issues that lead to the failure of ration collection at FPS.
E4 (Ration Collection)	*Accessibility*	Implies exclusion due to the unavailability of a proximate Fair Price Shop. It also accounts for improper operation of the Fair Price Shop in the form of crowding or erratic hours of functioning.
	Authentication Failures	Authentication failures may be caused by POS device errors, biometric failures or network errors that prevent citizens from collecting their entitled grains at the Fair Price Shop.
	Non-Compliance	Includes all problems caused by improper behaviour by the Fair Price Shop Officer, who may charge higher prices than stipulated, provide lower quantity than entitled, or exercise discretion in how they distribute grain.
PF Exclusion		
E2 (Enrolment Procedures)	*Completion of Employee Records*	Includes failures due to incomplete employee records that ultimately impede withdrawal of PF by workers: KYC procedures of the employee must be complete, and bank details must be in order. The Date of Joining/Date of Exit provided must be correct. If the employee transfers from one company to another, either company must make the requisite linkages between the old and new PF accounts.

	Registration Process (of either Employer or Employee)	Inclusive of all issues that may arise during the registration process: The company's registration with the PF Office may be expired or incomplete. Second, the employer may fail to properly register an employee with the PF Office.
E3 (Benefit Processing)	*PF Contribution*	Includes issues where the employer fails to match the employee's contribution to their provident fund monthly.
E4 (Withdrawal)	*Fund Withdrawal Issues*	Includes issues employees face while withdrawing their PF entitlement due to company closure or company not cooperating. Can arise if the company has shut down and is not available for approving the withdrawal application or is not cooperating to sign-off on the withdrawal forms.

Appendix II: Case Study Framework

Section I: Framework for Building an Overview of an SP-ODE

<table>
<tr><th>S. N.</th><th>Question</th></tr>
<tr><td>I</td><td>Who is responsible for the governance of the SP-ODE?
o Specific State Department.
o Autonomous Government Agency.
o Public Sector Undertakings (PSU).
o Other: _____</td></tr>
<tr><td>II</td><td>What are the various kinds of Digital Public Infrastructure that support the SP-ODE? (Select all that apply)
o Aadhaar.
o DigiLocker.
o Other National-level infrastructure: _____
o Other State-level infrastructure: _____</td></tr>
<tr><td>III</td><td>What are the various types of benefits delivered through the SP-ODE? (Select all that apply)
<table>
<tr><th></th><th>State</th><th>Central</th></tr>
<tr><td>Cash[72]</td><td>Yes/No</td><td>Yes/No</td></tr>
<tr><td>In-Kind[73]</td><td>Yes/No</td><td>Yes/No</td></tr>
<tr><td>Services[74]</td><td>Yes/No</td><td>Yes/No</td></tr>
</table></td></tr>
<tr><td>IV</td><td>In the case of disaggregated SP-ODEs,[75] name the platforms performing each individual function. (Answer N/A if the various processes under SP-ODE are being facilitated through a single platform.)
<table>
<tr><th>Process</th><th>Platform(s) on which the process is hosted</th></tr>
<tr><td>Identification and Enrolment[76]</td><td></td></tr>
<tr><td>Coordination and Orchestration[77]</td><td></td></tr>
<tr><td>Payments[78]</td><td></td></tr>
</table></td></tr>
</table>

[72] **Cash:** Schemes that classify as cash-based are G2C payments, where a cash transfer is made directly to the citizen.
[73] **In-Kind:** Schemes that classify under this category primarily have a non-cash element. Typically, we refer benefits under the Public Distribution System (PDS) as in-kind benefits.
[74] **Services:** The type of schemes categorised here are those which either have an in-kind component or have an intermediating provider involved in their delivery (such as insurance schemes and LPG subsidies). This category also includes ancillary services such as the provision of certificates.
[75] **Disaggregated SP-ODEs:** In contrast to SP-ODEs which host most or all their processes on a single platform, disaggregated SP-ODEs rely on using different platforms/mechanisms for separate processes. For instance, the Jan Aadhaar Yojana of Rajasthan consists of a set of platforms, each fulfilling a specific function like grievance redressal, database registration etc. whereas Antyodaya Saral of Haryana has an integrated platform on which most of its processes have been hosted.
[76] **Identification and Enrolment:** This process is the foremost point of connection between the citizen with the concerned government department and facilitates identification of citizens as beneficiaries under social protection schemes (as per scheme rules), their enrolment as well as the verification of their identities.
[77] **Coordination and Orchestration:** This process includes the SP-ODE's back end, specifically the administrative aspects of social protection delivery wherein government officials at various levels discharge their scheme-related responsibilities such as targeting of citizens and monitoring of scheme performance
[78] **Payments:** This process permits government departments to manage the flow of payments to eligible and enrolled beneficiaries.

	Delivery of Cash Benefits and Ancillary Services[79,80]	
	Product Provisioning[81]	
	Grievance Redressal[82]	
V	For which stakeholders is an interface under the SP-ODE available? (Select all that apply) ○ Citizens.[83] ○ Administrators.[84] ○ Providers.[85] ○ Last-Mile Delivery Agent.[86]	
VI	Is the SP-ODE supported by a registry/database of citizens?[87] (Yes/No)	
VII	*If 'Yes' to (VI):* Which datasets were used to create/originate the registry for the SP-ODE? (Select all that apply) ○ Public Distribution System (PDS) Beneficiary list. ○ Socio-Economic Caste Census (2011). ○ Census of India (2011). ○ Any other: ____ ○ Not Applicable.	
VIII	*If 'Yes' to (VI):* What features are applicable to the registry? (Select all that apply) ○ The registry is linked with Aadhaar for validation and verification of citizen's information. ○ The registry is interoperable with other databases.	

[79] **Delivery of Cash Benefits and Ancillary Services:** Once G2C payments are made to a citizen's bank account, there may be various channels through which such benefits are accessed by the citizen - such as banking correspondents, or citizen service centres. This process encompasses all such channels.

[80] **Ancillary Services:** Ancillary services such as the provisioning of certificates and relevant ID documents are also usually made through citizen service centres.

[81] **Product Provisioning:** This process applies to social protection benefits that either have an in-kind component or have an intermediating provider involved in their delivery. The key stakeholder in this function (providers) can be private or public actors that provide the unit of social protection directly to the citizen. Providers can be hospitals (in the case of health insurance schemes), financial service providers (in the case of say, crop insurance or loan schemes), or gas agencies (for LPG reimbursements), etc.

[82] **Grievance Redressal:** This process enables citizens to raise complaints/grievances at any stage of the social protection delivery chain and against any actor in the SP-ODE.

[83] **Citizens:** The targeted recipients of the social protection benefits being delivered through the SP-ODE.

[84] **Administrators:** Government functionaries (at any level of hierarchy) that are provided access to the SP-ODE as an administrator. Administrators are the key stakeholders in the coordination and orchestration process.

[85] **Providers:** Private or public actors that provide the unit of social protection directly to the citizen, for schemes that do not qualify as strictly G2C. They are the primary stakeholder in the product provisioning process. Providers may be of two types: Providers of social protection, and providers of value-added services.

[86] **Last-mile Delivery Agent:** These are agents who assist the citizen with various services related to the delivery of cash benefits and ancillary services such as issuance of certificates to the citizen. They are the key stakeholders in the delivery of cash benefits and ancillary services' process. The two types of agents are Business Correspondents and Service Centres.

[87] **Registry:** A registry is a comprehensive database of all citizens, usually containing data on individuals and households pooled from various government databases. It is typically used for identifying beneficiaries and determining eligibility status of beneficiaries for government schemes and services.

	○ De-duplication algorithms[88] used to identify citizens from different databases. ○ Built using open-standards and open-source software. ○ Other: _____ ○ None of the above.
IX	Can the SP-ODE facilitate service innovation[89] in order to make value-added services available to citizens? (Yes/No)
X	Is the SP-ODE linked to the Direct Benefit Transfer architecture? (Yes/No)
XI	*If 'Yes' to (X):* Which management information system is used by the SP-ODE? ○ State-level e-FMS. ○ PFMS.

Section II: Framework for Guiding the Discussion on an SP-ODE

Identification and Enrolment

Inclusive				
S. N.	**Question**			
1	*If 'Citizens' selected in (V):* what are the functionalities that citizens can avail themselves of? (Select all that apply) ○ Apply to be part of the registry/database. ○ Apply for social protection schemes. ○ Self-correction of citizen details in the registry.			
2.	*Answer the following questions based on the answers to (1).*	**Apply to be part of the registry/database**	**Apply for social protection schemes**	**Self-correction of citizen details in the registry**
2. A	Are citizens provided information on the status of their application?	Yes/No	Yes/No	Yes/No
2. B	If 'Yes' to any of the options under (2. A): Is the specific reason for rejection/pendency of application/request provided to the citizen?	Yes/No	Yes/No	Yes/No
2. C	If 'Yes' to any of the options under (2. A): In the case of rejection or	Yes/No	Yes/No	Yes/No

[88] **De-duplication algorithms:** De-duplication is a process of eliminating duplicate copies of the same data. By employing de-duplication algorithms, this process is automated as the database is combed through and repeated data identified by the software is automatically deleted.

[89] **Value-added Services:** The SP-ODE may facilitate service innovations by allowing providers to create value-added services/products for citizens. For example, the creation of credit/insurance products for citizens.

	pendency of application/request, is the citizen provided information regarding the action required to resolve the case?			
2. D	Is an offline mode provided to the citizens to access enrolment functionalities?	Yes/No	Yes/No	Yes/No
3	*If 'Citizens' selected in (V):* Is there a mechanism for registration and creation of ID documents for those without identification documents? (Yes/No)			
4	*If 'Citizens' selected in (V):* Is the citizen-facing interface easily accessible? (Select all that apply) o Supports vernacular/regional language. o Supports feature phone access. o Friendly for persons with disabilities.			
5	*If 'Yes' to (VI):* Are/were multiple alternate methods employed for data verification during the creation of the underlying registry? (Yes/No)			
6	*If 'Yes' to (VI):* What are the various ways in which the underlying registry is updated? (Select all that apply) o By obtaining data from various government databases. o Through surveys. o Through on-demand registrations.			
Responsible				
7	Is the SP-ODE supported by a privacy policy? (Yes/No)			
8	*If 'Yes' to (7):* What are the features of such a privacy policy? (Select all that apply) o The privacy policy contains information regarding the data rights of beneficiaries. o The privacy policy contains a grievance redress number. o The privacy policy is available in more than one language. o The privacy policy is available on feature phones. o Other: _____ o None of the above.			
9	*If 'Yes' to (7):* What obligations are there in the privacy policy for the data fiduciary? (Select all that apply) o Purpose limitation. o Collection limitation. o Notice requirement for collection or processing of data. o Quality of data processed. o Restriction on retention of personal data. o Embodies privacy-by-design principles. o Other: _____ o None of the above.			

10	Is the SP-ODE bound by any terms of service?[90] (Yes/No)
11	*If 'Registry is linked with Aadhaar for validation and verification of citizen's information' is selected in (VIII):* Are there provisions to seek citizen's consent when data from the registry is used to authenticate their identity? (Yes/No)
12	*If 'Yes' to (11):* What type of information is provided in the consent form? (Select all that apply) o Explanation of the purpose of data collection. o Circumstances under which citizens' data will be shared with and processed by third parties. o Explanation of the extent to which citizens' data will be shared with third parties. o Explanation of how fresh consent will be sought from citizens to use their data for any purpose other than delivering social protection benefits. o Explanation of how citizens' data will be stored. o Alternatives are available to citizens for authenticating identity. o Other: ____ o None of the above.
13	*If 'Yes' to (IX):* Are there provisions for the SP-ODE to provide a consent notice to citizens before registering them for value-added services? (Yes/No)
14	Which security-by-design principles[91] have been adopted by the SP-ODE? (Select all that apply) o Confidentiality. o Availability. o Integrity. o Safety from theft, negligence, loss or unauthorised access. o A notification obligation in case of any violation or misuse of data. o Other: ____ o None of the above.
15	*If 'Yes' to (20):* What are the features of the Automated Decision-Making System (ADMS),[92] if there is one? (Select all that apply) o Tested in the field for being representative of the population.[93] o Updated regularly. o Available for public scrutiny. o Other: ____ o None of the above.

[90] **Terms of Service:** A document detailing the terms of service is a legal agreement between the owner of a service i.e., department of the respective government which has configured the service, and the user. It delineates the rights and obligations of both parties regarding the services provided.

[91] **Security-by-design:** A set of principles that guide the security measures that must be adopted while building the digital components of the SP-ODE.

[92] **Automated Decision-making Systems (ADMS):** ADMS is defined as 'any system which utilises computational and algorithmic tools to automatically process information and generate an output or decision which is of consequence to an individual or a community.'

[93] **Field Testing of Algorithms:** The data that is fed to an algorithm must be representative of the people/communities that may be affected by the decisions of the algorithm. This includes the manner in which data will be collected and processed, as these processes may benefit certain communities or groups and negatively impact others.

16	*If, 'De-duplication algorithms are used to identify beneficiaries from different databases' is selected in (VIII):* Are the algorithms used for de-duplication available for public scrutiny? (Yes/No)
17	Are there interoperability guidelines for sharing data between government databases? (Yes/No)
18	If data-sharing using APIs,[94] with private-sector parties is provided for, are there any guidelines for such parties to adhere to? (Yes/No)
19	*If 'Yes' to (VI):* What kind of protocols and provisions exist for the functioning of the registry? (Select all that apply) o Protocols available in case of self-reported data of citizens not matching with the data in the registry. o Protocols available to ensure data quality while pulling data from other government databases. o Provisions to flag inconsistencies in the database. o Provisions to prevent, identify, and rectify frauds. o Other: ____ o None of the above.
Efficient	
20	Are there provisions for automated decision-making systems (ADMS) to determine the eligibility of citizens? (Yes/No)
21	*If 'Yes' to (VI):* Does the registry proactively identify social protection beneficiaries for new or existing schemes? (Yes/No)
22	*If 'Yes' to any of the options under (2. A):* What is the mode of the status update to the citizen? (Select all that apply) o SMS. o Multiple Modes including SMS. o None of the above.
Accountable	
23	*If 'Yes' to (VI):* Has any institution/entity been designated to oversee the functioning of the registry? (Yes/No)
24	Are there provisions for the performance reports regarding the functioning of the platform to be made publicly available? (Yes/No)

Coordination and Orchestration

Inclusive	
25	*If 'Administrators' selected in (V):* Can government functionaries at the last mile view individual citizen's case statuses in real-time? (Yes/No)
26	*If 'Administrators' selected in (V)* and *'Yes' selected in (VI):* Can government functionaries at the last mile edit citizen details in the registry? (Yes/No)
Efficient	

[94] **Application Programming Interface (API):** In the context of SP-ODEs, APIs allow different government databases to interact with each other to exchange data and may also allow stakeholders to plug into the database and utilise it for specific purposes.

27	*If 'Administrators' selected in (V)*: Which functionalities (other than those specified in Questions 25 and 26) are available to such administrators? (Select all that apply) ○ Monitor the performance of different schemes. ○ View statistics/data regarding grievances (for instance, typology and location of complaints). ○ Generate metrics on scheme performance, disaggregated by important indicators such as gender, geography, caste, etc. ○ Other: _____ ○ None of the above.
Accountable	
28	Do the services under SP-ODE fall under the ambit of the Right to Public Service Act or any other legislation that guarantees time-bound delivery of such services? (Yes/No)

Payments

Inclusive	
29	What are the various modes in which payments under social protection schemes can be made to citizens? (Select all that apply) ○ Aadhaar number. ○ Bank account number & IFSC code. ○ Other: _____ ○ None of the above.
Efficient	
30	Which of the following types of information on the status of such payments is provided to the citizen? (Select all that apply) ○ Generation of a Fund Transfer Order (FTO). ○ Beneficiary record accepted by PFMS/Bank. ○ Payment sent to citizen's bank account. ○ Payment failure. ○ The specific reason for the failure of payment. ○ Action required to resolve future payments. ○ Other: _____ ○ None of the above.
31	*If (30) is answered:* What is the mode used to update the citizens on the payment status? (Select all that apply) ○ SMS. ○ Multiple Modes including SMS. ○ None of the above.
Accountable	
32	*If 'No' to (X):* Are there any pre-defined timeframes within which citizens must receive their payments? (Yes/No)
33	Are there provisions for the reasons for transaction failures under SP-ODE to be made publicly available? (Yes/No)

Delivery of Cash Benefits and Ancillary Services

Inclusive	
34	What type of last-mile agents are part of the SP-ODE delivery chain? (Select all that apply) ◦ Business Correspondents.[95] ◦ Service Centres.[96] ◦ Other: _____ ◦ None of the above.
35	Is there a provision to define/actively manage the number of such agents servicing a designated area? (Select all that apply) ◦ Business Correspondents. ◦ Service Centres. ◦ Other: _____ ◦ None of the above.
36	*If 'Service Centres' selected in (34):* Which functionalities are available to service centres at the last mile? (Select all that apply) ◦ Registering citizens. ◦ Verifying documents submitted. ◦ Assessing their eligibility. ◦ Accessing citizen registry/database. ◦ Raising grievances on behalf of citizens. ◦ Ancillary services such as certificate provision. ◦ Cash-out facilities. ◦ Other: _____
Accountable	
37	Are there guidelines for onboarding last-mile agents that participate in the SP-ODE benefit delivery chain? (Yes/No)
38	Are there conduct obligations specified for last-mile agents that participate in benefit delivery? (Yes/No)
39	Are there guidelines/SOPs that define the scope and nature of operations for last-mile agents? (Yes/No)
40	Is there a mandate for the administrator(s) of the SP-ODE to audit[97] the services provided by last-mile agents involved in benefit delivery? (Yes/No)

[95] **Business Correspondents:** Retail agents engaged by banks for providing banking services at locations other than a bank branch/ATM.

[96] **Service Centres:** Agent-based access points for a range of enrolment and withdrawal services relevant to social welfare schemes (among other services). For example, Common Service Centres.

[97] **Audit:** Any provisions for monitoring and evaluation of the services provided by last-mile agents in social protection delivery.

41	Can last-mile agents' licenses be revoked if they violate the guidelines? (Yes/No)
42	Can citizens rate the performance of last-mile agents that participate in benefit delivery? (Yes/No)
43	Can last-mile agents that participate in benefit delivery raise grievances? (Yes/No)
44	*If 'Yes' to (40):* Are there provisions for the criteria used for such an audit to be made publicly available?[98] (Yes/No)

Product Provisioning

Inclusive	
45	What type of providers are part of the SP-ODE product provisioning process? (Select all that apply) o Providers of Social Protection. o Providers of Value-Added Services.
46	Is there a provision to define/actively manage the number of such providers servicing a designated area? (Yes/No)
47	Which functionalities are available to providers of social protection?[99] (Select all that apply) o Enrolling citizens. o Raising requests for identity and eligibility authentication. o Raise grievances on behalf of citizens. o Other: _____ o None of the above.
Accountable	
48	Are there guidelines for onboarding providers? (Yes/No)
49	Are there conduct obligations for providers? (Yes/No)
50	Are there guidelines/SOPs that define the scope and nature of operations for providers? (Yes/No)
51	Is there a mandate for the administrator(s) of the SP-ODE to audit the services provided by providers involved in benefit delivery? (Yes/No)

[98] The availability of such information in the public domain will help facilitate audits by third parties (such as Civil Society Organisations).

[99] **Providers of Social Protection:** Private or public actors that provide the social protection benefit directly to the citizen, for schemes that do not qualify as strictly G2C. Example: Fair Price Shops, Hospitals, Insurance Companies.

52	Can providers' licenses be revoked if they violate the guidelines? (Yes/No)
53	Can citizens rate the performance of providers? (Yes/No)
54	Can providers raise grievances? (Yes/No)
55	*If 'Yes' to (49):* Are there provisions for the criteria used for such an audit to be made publicly available? (Yes/No)

Grievance Redressal

Inclusive	
56	For which processes can citizens raise grievances? (Select all that apply) ○ Identification and Enrolment. ○ Coordination and Orchestration. ○ Payments. ○ Delivery of Cash Benefits and Ancillary Services. ○ Product Provisioning.
57	Is grievance redressal available in a 'phygital'[100] format? (Yes/No)
58	Are there mandates for the SP-ODE to facilitate a feedback mechanism?[101] (Yes/No)
59	*If 'Yes' to (56):* Are there provisions for the feedback mechanism to solicit feedback from the citizen through an Interactive Voice Response System (IVRS)? (Yes/No)
Efficient	
60	Are there provisions to proactively inform citizens of the various functions that the SP-ODE performs? (Yes/No)
61	Are there provisions for a 24/7 citizen-support service? (Yes/No)
62	Are there provisions to track the lodged complaints until their final closure? (Yes/No)
63	Are there provisions to analyse grievance and feedback data to identify system-level weaknesses? (Yes/No)

[100] **Phygital:** An amalgamation of the words 'Physical' and 'Digital', it refers to the availability of both physical and digital access points.

[101] **Feedback Mechanism:** A mechanism through which beneficiaries can hold the SP-ODE accountable. It captures the feedback of citizens on the performance of various stakeholders and processes in the SP-ODE.

Accountable	
64	Are there provisions to seek confirmation on complaint resolution from the citizen, before it is marked as closed? (Yes/No)
65	Are there provisions for the grievance caseload management data (number of grievances received and disposed, time taken for disposal, citizen's feedback etc.) to be made publicly available? (Yes/No)

Appendix III: Completed Framework for Case Studies

A. Completed Framework for Case Study 1: Jan Aadhaar Yojana (Rajasthan)

Section I: Framework for Building an Overview of Jan Aadhaar Yojana

S.N.	Question	Answer
I	Who is responsible for the governance of the SP-ODE?	Jan Aadhaar Authority, an autonomous government agency.
II	What are the various kinds of Digital Public Infrastructure that support the SP-ODE?	JAY utilises Aadhaar infrastructure, Unified Payments Interface, and a unique ID known as the Jan Aadhaar ID.
III	What are the various types of benefits delivered through the SP-ODE?	JAY delivers cash, in-kind benefits, and services of both the Rajasthan state government and the Union government.
IV	In the case of disaggregated SP-ODE, name the platforms performing each individual function?	The processes of *identification* and *enrolment, and coordination and orchestration* are facilitated by the Jan Aadhaar platform. The process of *payments* is facilitated by the State e-FMS (IFMS) and Rajasthan Payments Platform (RPP). The *delivery of cash benefits and ancillary services* process is facilitated by the e-Mitras. The *grievance redressal* process is facilitated by the Rajasthan Sampark platform.
V	For which stakeholders is an interface under the SP-ODE available? (Select all that apply)	Citizens, administrators, last-mile delivery agents, and service providers have access to an interface within JAY.
VI	Is the SP-ODE supported by a registry/database of citizens?	Yes, the Jan Aadhaar Data Repository (JADP) is the registry under JAY.
VII	Which datasets were used to create/originate the registry for the SP-ODE?	State Resident Database.
VIII	What features apply to the registry?	Registry linked with Aadhaar, interoperable with other govt. databases, de-duplication algorithms used to identify beneficiaries from different databases are features applicable to the registry. The registry has not been built using open standards and open-source software.
IX	Can the SP-ODE facilitate service innovation in order to make value-added services available to citizens?	*The answer to this question is not clear due to limited information availability.*
X	Is the SP-ODE linked to the Direct Benefit Transfer (DBT) architecture?	Yes.
XI	Which management information system is used by the SP-ODE?	The JAY system uses a state-level e-FMS (IFMS as stated above) to transfer DBT payments.

Section II: Framework for Guiding the Discussion on JAY

1. Identification and Enrolment		
1. A. Inclusive		
S. N.	Question	Answer
1	What are the functionalities that citizens can avail themselves of?	Citizens can apply to enrol into the registry, can apply for social protection schemes, and self-correct their details.

2. A	Are citizens provided information on the status of their application?	Yes, for all the functionalities specified in Question (1).
2. B	Is the specific reason for rejection/pendency of application/request provided to the citizen?	Yes, for all the functionalities specified in Question (1).
2. C	In the case of rejection or pendency of application/request, is the citizen provided information regarding the action required to resolve the case?	*The answer to this question is not clear due to limited information availability.*
2.D	Is an offline mode provided to the citizens to access enrolment functionalities?	Yes, for all the functionalities specified in Question (1).
3	Is there a mechanism for registration and creation of ID documents for those without identification documents?	Yes.
4	Is the citizen-facing interface easily accessible?	The citizen-facing interface is available in vernacular/regional languages and is friendly to persons with disabilities. It does not support feature phone access.
5	Are/were multiple alternate methods employed for data verification during the creation of the underlying registry?	Yes.
6	What are the various ways in which the underlying registry is updated?	The JADP is updated by obtaining data from various government departments and through on-demand registrations. It is not updated through surveys.
1. B. Responsible		
7	Is the SP-ODE supported by a privacy policy?	No.
8	What are the features of such a privacy policy?	NA.
9	What obligations are there in the privacy policy for the data fiduciary?	NA.
10	Is the SP-ODE bound by a term of service?	No.
11	Are there provisions to seek citizens' consent when data from the registry is used to authenticate their identity?	Yes.
12	What type of information is provided in the consent form?	The consent mechanism in JAY entails communicating with citizens the explanation of the purpose of data collection, an explanation on how fresh consent will be sought from citizens to use their data for any purpose other than delivering social protection benefits, explanation on how their data will be stored, alternatives for authenticating identity. The mechanism does not contain information on circumstances under which data will be shared with third parties and the information on the extent to which data will be shared.
13	Are there provisions for the SP-ODE to provide a consent notice to citizens before registering them for value-added services?	Yes.
14	Which security-by-design principles have been adopted by the SP-ODE?	JAY has adopted several security-by-design principles such as confidentiality, availability, integrity, safety from theft, negligence, loss, or unauthorised access, notification obligation in case of any violation or misuse of data
15	What are the features of the Automated Decision-Making System (ADMS), if there is one?	Automated Decision-Making Systems are used in JAY and are updated regularly. They are not tested in the field for being representative of the population and are not available for public scrutiny.
16	Are the algorithms used for de-duplication available for public scrutiny?	No.
17	Are there interoperability guidelines for sharing data between government databases?	*The answer to this question is not clear due to limited information availability.*

18	If data-sharing using APIs, with private-sector parties is provided for, are there any guidelines for such parties to adhere to?	*The answer to this question is not clear due to limited information availability.*
19	What kinds of protocols and provisions exist for the functioning of the registry?	There are protocols in the JADR in case self-reported data of citizens does not match with the data in the registry, there are also protocols to prevent, identify, and rectify frauds. However, there are no protocols in the JADR to ensure data quality while pulling data from other government databases and no provision to flag inconsistencies in the database.
1.C. Efficient		
20	Are there provisions for automated decision-making systems (ADMS) to determine the eligibility of citizens?	Yes.
21	Does the registry proactively identify social protection beneficiaries for new or existing schemes?	Yes.
22	What is the mode of the status update to the citizen?	Multiple modes, including SMS, are used to update citizens.
1.D Accountable		
23	Has any institution/entity been designated to oversee the functioning of the registry?	Yes, the JADP is managed by the Jan Aadhaar Authority and Rajasthan Information Services Limited.
24	Are there provisions for the performance reports regarding the functioning of the platform to be made publicly available?	Yes.
2. Coordination and Orchestration		
2.A. Inclusive		
25	Can government functionaries at the last mile view individual citizens' case statuses in real-time?	Yes.
26	Can government functionaries at the last mile edit citizen details in the registry?	Yes.
2.B. Efficient		
27	Which functionalities are available to such administrators?	Administrators can monitor the performance of different schemes, view statistics/data regarding grievances (for instance, typology, and location of complaints), and generate metrics on scheme performance, disaggregated by important indicators such as gender, geography, case etc.
2.C. Accountable		
28	Do the services under SP-ODE fall under the ambit of the Right to Public Service Act or any other legislation that guarantees time-bound delivery of such services?	Yes, Rajasthan has a Guaranteed Delivery of Public Service Act, 2011 that serves this function.
3. Payments		
3.A. Inclusive		
29	What are the various modes in which payments under social protection schemes can be made to citizens?	Payments can be made in JAY using the Aadhaar number and Bank account number & IFSC code.
3.B. Efficient		
30	Which of the following types of information on the status of such payments is provided to the citizen?	*The answer to this question is not clear due to limited information availability.*
31	What is the mode used to update the citizens on the payment status?	Multiple modes, including SMS, are used to update citizens.
3.C. Accountable		

32	Are there any pre-defined timeframes within which citizens must receive their payments?	NA.
33	Are there provisions for the reasons for transaction failures under SP-ODE to be made publicly available?	*The answer to this question is not clear due to limited information availability.*
4. Delivery of Cash Benefits and Ancillary Services		
4. A. Inclusive		
34	What type of last-mile agents are part of the SP-ODE delivery chain?	JAY hosts Business Correspondents and service centres as last-mile agents.
35	Is there a provision to define/actively manage the number of such agents servicing a designated area?	*The answer to this question is not clear due to limited information availability.*
36	Which functionalities are available to service centres at the last mile?	Last-mile agents in JAY can register citizens, verify documents submitted, assess their eligibility, access citizen registry/database, raise grievances on behalf of citizens, and disburse certificates. Service centres also double as cash out points.
4.B. Accountable		
37	Are there guidelines for onboarding last-mile agents that participate in the SP-ODE benefit delivery chain?	Yes.
38	Are there conduct obligations specified for last-mile agents that participate in benefit delivery?	Yes.
39	Are there guidelines/SOPs that define the scope and nature of operations for last-mile agents?	Yes.
40	Is there a mandate for the administrator(s) of the SP-ODE to audit the services provided by last-mile agents involved in benefit delivery?	*The answer to this question is not clear due to limited information availability.*
41	Can last-mile agents' licenses be revoked if they violate the guidelines?	Yes.
42	Can citizens rate the performance of last-mile agents that participate in benefit delivery?	No.
43	Can last-mile agents that participate in benefit delivery raise grievances?	Yes.
44	If 'Yes' to (40): Are there provisions for the criteria used for such an audit to be made publicly available?	*The answer to this question is not clear due to limited information availability.*
5. Product Provisioning		
5.A. Inclusive		
45	What types of providers are part of the SP-ODE product provisioning process?	Providers of Social Protection (see footnote 70).
46	Is there a provision to define/actively manage the number of such providers servicing a designated area?	*The answer to this question is not clear due to limited information availability.*
47	Which functionalities are available to providers of social protection?	Providers of social protection can raise requests for identity authentication. They cannot register citizens, view their case status, or raise grievances on behalf of the citizens.
5.B. Accountable		
48	Are there guidelines for onboarding providers?	Yes.
49	Are there conduct obligations for providers?	*The answer to this question is not clear due to limited information availability.*
50	Are there guidelines/SOPs that define the scope and nature of operations for providers?	Yes.

51	Is there a mandate for the administrator(s) of the SP-ODE to audit the services provided by providers involved in benefit delivery?	Yes.
52	Can providers' licenses be revoked if they violate the guidelines?	Yes.
53	Can citizens rate the performance of providers?	*The answer to this question is not clear due to limited information availability.*
54	Can providers raise grievances?	Yes.
55	Are there provisions for the criteria used for such an audit to be made publicly available?	*The answer to this question is not clear due to limited information availability.*
6. Grievance Redressal		
6.A. Inclusive		
56	For which processes can citizens raise grievances?	Citizens can raise grievances against identification & enrolment, coordination & orchestration, payments, delivery of cash benefits and ancillary services, and product provisioning. Citizens cannot raise grievances against private cash-out points.
57	Is grievance redressal available in a 'phygital' format?	Yes.
58	Are there mandates for the SP-ODE to facilitate a feedback mechanism?	Yes.
59	Are there provisions for the feedback mechanism to solicit feedback from the citizen through an Interactive Voice Response System (IVRS)?	Yes.
6.B. Efficient		
60	Are there provisions to proactively inform citizens of the various functions that the SP-ODE performs?	*The answer to this question is not clear due to limited information availability.*
61	Are there provisions for a 24/7 citizen-support service?	Yes.
62	Are there provisions to track the lodged complaints until their final closure?	Yes.
63	Are there provisions to analyse grievance and feedback data to identify system-level weaknesses?	Yes.
6.C. Accountable		
64	Are there provisions to seek confirmation on complaint resolution from the citizen, before it is marked as closed?	Yes.
65	Are there provisions for the grievance caseload management data (number of grievances received and disposed, time taken for disposal, citizen's feedback etc.) to be made publicly available?	Yes.

B. Completed Framework for Case Study 2: Antyodaya Saral (Haryana)

Section I: Framework for Building an Overview of Antyodaya Saral (AS)

S. No.	Question	Answer
I	Who is responsible for the governance of the SP-ODE?	A Specific State Department, the Digital Haryana Cell under the CMO.
II	What are the various kinds of Digital Public Infrastructure that support the SP-ODE?	AS utilises Aadhaar infrastructure, DigiLocker, eSign functionality, payGov and Rapid Assessment System.
III	What are the various types of benefits delivered through the SP-ODE?	The JAY delivers cash benefits and services at the State level.
IV	In the case of disaggregated SP-ODE, name the platforms performing each individual function?	The Antyodaya Saral platform hosts all processes.
V	For which stakeholders is an interface under the SP-ODE available? (Select all that apply)	Citizens, administrators, and last-mile delivery agents have access to an interface within the AS ecosystem.
VI	Is the SP-ODE supported by a registry/database of citizens?	Yes, the Parivar Pehchan Patra (PPP), also known as the Family Information Data Repository.
VII	Which datasets were used to create/originate the registry for the SP-ODE?	SECC 2011 and State Resident Database
VIII	What features apply to the registry?	PPP is linked with Aadhaar, it is interoperable with other government databases, de-duplication algorithms are used to identify beneficiaries from different databases. It is not built using open standards and open-source software.
IX	Can the SP-ODE facilitate service innovation in order to make value-added services available to citizens?	No.
X	Is the SP-ODE linked to the Direct Benefit Transfer (DBT) architecture?	No.
XI	Which management information system is used by the SP-ODE?	NA.

Section II: Framework for Guiding the Discussion on Antyodaya Saral

1. Identification and Enrolment		
1. A. Inclusive		
S. No.	Question	Answer
1	What are the functionalities that citizens can avail themselves of?	Citizens can apply to enrol into the registry, can apply for social protection schemes, and self-correct their details.
2. A	Are citizens provided information on the status of their application?	Yes, for all the functionalities specified in Question (1).
2. B	Is the specific reason for rejection/pendency of application/request provided to the citizen?	Yes, for all the functionalities specified in Question (1).
2. C	In the case of rejection or pendency of application/request, is the citizen provided information regarding the action required to resolve the case?	Yes, for all the functionalities specified in Question (1).
2.D	Is an offline mode provided to the citizens to access enrolment functionalities?	Yes, for all the functionalities specified in Question (1).

3	Is there a mechanism for registration and creation of ID documents for those without identification documents?	Yes.
4	Is the citizen-facing interface easily accessible?	The citizen-facing interface is available in vernacular/regional languages. It is not friendly for persons with disabilities, and it does not support feature phone access.
5	Are/were multiple alternate methods employed for data verification during the creation of the underlying registry?	Yes
6	What are the various ways in which the underlying registry is updated?	PPP is updated through on-demand registration. It is, however, linked to other government databases. It is not clear whether the PPP is updated through this linkage or not. PPP is not updated through surveys.
1. B. Responsible		
7	Is the SP-ODE supported by a privacy policy?	Yes
8	What are the features of such a privacy policy?	The data policy of AS contains information regarding the rights of beneficiaries. It does not contain a grievance redress number, it is not available in more than one language, and is not available on feature phones.
9	What obligations are there in the privacy policy for the data fiduciary?	The data fiduciary's obligations include purpose limitation, collection limitation, and maintaining the quality of data processed. However, data fiduciaries need not present notice for collecting or processing data, practice restrictions on the retention of personal data, or adhere to privacy-by-design principles.
10	Is the SP-ODE bound by a term of service?	Yes.
11	Are there provisions to seek citizens' consent when data from the registry is used to authenticate their identity?	No.
12	What type of information is provided in the consent form?	NA.
13	Are there provisions for the SP-ODE to provide a consent notice to citizens before registering them for value-added services?	NA.
14	Which security-by-design principles have been adopted by the SP-ODE?	AS has adopted several security-by-design principles such as confidentiality and safety from theft, negligence, loss, or unauthorised access. It does not adhere to security-by-design principles such as availability, integrity, and notification obligation in case of any violation or misuse of data.
15	What are the features of the Automated Decision-Making System (ADMS), if there is one?	*The answer to this question is not clear due to limited information availability.*
16	Are the algorithms used for de-duplication available for public scrutiny?	*The answer to this question is not clear due to limited information availability.*
17	Are there interoperability guidelines for sharing data between government databases?	Yes.
18	If data-sharing using APIs, with private-sector parties is provided for, are there any guidelines for such parties to adhere to?	NA.
19	What kinds of protocols and provisions exist for the functioning of the registry?	*The answer to this question is not clear due to limited information availability.*

1.C. Efficient		
20	Are there provisions for automated decision-making systems (ADMS) to determine the eligibility of citizens?	*The answer to this question is not clear due to limited information availability.*
21	Does the registry proactively identify social protection beneficiaries for new or existing schemes?	Yes.
22	What is the mode of the status update to the citizen?	Multimode including SMS.
1.D Accountable		
23	Has any institution/entity been designated to oversee the functioning of the registry?	Yes, the PPP is managed by the Parivar Pehchan Patra Authority.
24	Are there provisions for the performance reports regarding the functioning of the platform to be made publicly available?	Yes.
2. Coordination and Orchestration		
2.A. Inclusive		
25	Can government functionaries at the last mile view individual citizens' case statuses in real-time?	Yes.
26	Can government functionaries at the last mile edit citizen details in the registry?	Yes.
2.B. Efficient		
27	Which functionalities are available to such administrators?	Administrators can monitor the performance of different schemes, view statistics/data regarding grievances (for instance, typology, and location of complaints), and generate metrics on scheme performance, disaggregated by important indicators such as gender, geography, case etc.
2.C. Accountable		
28	Do the services under SP-ODE fall under the ambit of the Right to Public Service Act or any other legislation that guarantees time-bound delivery of such services?	Yes.
3. Payments		
3.A. Inclusive		
29	What are the various modes in which payments under social protection schemes can be made to citizens?	NA.
3.B. Efficient		
30	Which of the following types of information on the status of such payments is provided to the citizen?	*The answer to this question is not clear due to limited information availability.*
31	What is the mode used to update the citizens on the payment status?	Multiple Modes including SMS.
3.C. Accountable		
32	Are there any pre-defined timeframes within which citizens must receive their payments?	Yes.

33	Are there provisions for the reasons for transaction failures under SP-ODE to be made publicly available?	*The answer to this question is not clear due to limited information availability.*
4. Delivery of Cash Benefits and Ancillary Services		
4. A. Inclusive		
34	What type of last-mile agents are part of the SP-ODE delivery chain?	The system hosts service centres as last-mile agents. It does not host Banking Correspondents.
35	Is there a provision to define/actively manage the number of such agents servicing a designated area?	Yes, for Service Centres
36	Which functionalities are available to service centres at the last mile?	Service centres can register citizens, verify the documents submitted, assess their eligibility, access citizen registry/database, raise grievances on behalf of citizens, disburse certificates. Service centres cannot act as cash-out infrastructure.
4.B. Accountable		
37	Are there guidelines for onboarding last-mile agents that participate in the SP-ODE benefit delivery chain?	*The answer to this question is not clear due to limited information availability.*
38	Are there conduct obligations specified for last-mile agents that participate in benefit delivery?	Yes.
39	Are there guidelines/SOPs that define the scope and nature of operations for last-mile agents?	Yes.
40	Is there a mandate for the administrator(s) of the SP-ODE to audit the services provided by last-mile agents involved in benefit delivery?	Yes.
41	Can last-mile agents' licenses be revoked if they violate the guidelines?	Yes.
42	Can citizens rate the performance of last-mile agents that participate in benefit delivery?	*The answer to this question is not clear due to limited information availability.*
43	Can last-mile agents that participate in benefit delivery raise grievances?	Yes.
44	If 'Yes' to (40): Are there provisions for the criteria used for such an audit to be made publicly available?	*The answer to this question is not clear due to limited information availability.*
5. Product Provisioning		
5.A. Inclusive		
45	What types of providers are part of the SP-ODE product provisioning process?	*The answer to this question is not clear due to limited information availability.*
46	Is there a provision to define/actively manage the number of such providers servicing a designated area?	*The answer to this question is not clear due to limited information availability.*
47	Which functionalities are available to providers of social protection?	Providers of social protection can raise requests for identity authentication. They cannot register citizens, view their case status, or raise grievances on behalf of the citizens.
5.B. Accountable		

48	Are there guidelines for onboarding providers?	Yes.
49	Are there conduct obligations for providers?	*The answer to this question is not clear due to limited information availability.*
50	Are there guidelines/SOPs that define the scope and nature of operations for providers?	Yes.
51	Is there a mandate for the administrator(s) of the SP-ODE to audit the services provided by providers involved in benefit delivery?	Yes.
52	Can providers' licenses be revoked if they violate the guidelines?	Yes.
53	Can citizens rate the performance of providers?	*The answer to this question is not clear due to limited information availability.*
54	Can providers raise grievances?	Yes.
55	Are there provisions for the criteria used for such an audit to be made publicly available?	*The answer to this question is not clear due to limited information availability.*
6. Grievance Redressal		
6.A. Inclusive		
56	For which processes can citizens raise grievances?	Citizens can raise grievances against identification & enrolment, coordination & orchestration, payments, delivery of cash benefits and ancillary services. Citizens cannot raise grievances against product provisioning.
57	Is grievance redressal available in a 'phygital' format?	Yes.
58	Are there mandates for the SP-ODE to facilitate a feedback mechanism?	Yes.
59	Are there provisions for the feedback mechanism to solicit feedback from the citizen through an Interactive Voice Response System (IVRS)?	Yes.
6.B. Efficient		
60	Are there provisions to proactively inform citizens of the various functions that the SP-ODE performs?	Yes.
61	Are there provisions for a 24/7 citizen-support service?	No.
62	Are there provisions to track the lodged complaints until their final closure?	Yes.
63	Are there provisions to analyse grievance and feedback data to identify system-level weaknesses?	Yes.
6.C. Accountable		
64	Are there provisions to seek confirmation on complaint resolution from the citizen, before it is marked as closed?	Yes.
65	Are there provisions for the grievance caseload management data (number of grievances received and disposed of, time	Yes.

	taken for disposal, citizen's feedback etc.) to be made publicly available?	

C. Completed Framework for Case Study 3: Samagra Samajik Suraksha Mission (Madhya Pradesh)

Section I: Framework for Building an Overview of SSSM

S. No.	Question	Answer
I	Who is responsible for the governance of the SP-ODE?	An autonomous government agency, the Samagra Mission.
II	What are the various kinds of Digital Public Infrastructure that support the SP-ODE?	The SSSM utilises Aadhaar infrastructure and has created a unique ID known as the Samagra ID.
III	What are the various types of benefits delivered through the SP-ODE?	The SSSM delivers cash and in-kind benefits of both the State and Centre. The delivery of services through Samagra remains to be seen.
IV	In the case of disaggregated SP-ODE, name the platforms performing each individual function?	The processes of *identification and enrolment*, *coordination and orchestration*, and *payments* are performed by the Samagra platform. The *delivery of cash benefits and ancillary services* process is performed by the Lok Seva Kendras in the state. The *grievance redressal* process is borne by the CM Helpline.
V	For which stakeholders is an interface under the SP-ODE available? (Select all that apply)	Citizens, administrators, and last-mile delivery agents have access to an interface within the Samagra ecosystem.
VI	Is the SP-ODE supported by a registry/database of citizens?	Yes, the Samagra Population Registry.
VII	Which datasets were used to create/originate the registry for the SP-ODE?	Socio-Economic Caste Census (2011) and National Population Register (NPR).
VIII	What features apply to the registry?	The registry is linked with Aadhaar, interoperable with other government databases, and uses de-duplication algorithms to identify beneficiaries across databases. It is unclear whether the registry is built using open standards and open-source software.
IX	Can the SP-ODE facilitate service innovation in order to make value-added services available to citizens?	No.
X	Is the SP-ODE linked to the Direct Benefit Transfer (DBT) architecture?	Yes.
XI	Which management information system is used by the SP-ODE?	The Samagra system uses a state-level e-FMS to transfer DBT payments.

Section II: Framework for Guiding the Discussion on SSSM

7. Identification and Enrolment		
1. A. Inclusive		
S. No.	Question	Answer
1	What are the functionalities that citizens can avail themselves of?	Citizens can apply to enrol into the registry and correct their details as per the registry. However, whether they can apply for social protection schemes through the same portal remains unclear and requires further clarification.
2. A	Are citizens provided information on the status of their application?	Yes, for both the functionalities specified in Question (1).

2. B	Is the specific reason for rejection/pendency of application/request provided to the citizen?	Yes, for both the functionalities specified in Question (1).
2. C	In the case of rejection or pendency of application/request, is the citizen provided information regarding the action required to resolve the case?	Yes, for both the functionalities specified in Question (1).
2. D	Is an offline mode provided to the citizens to access enrolment functionalities?	Yes, for both the functionalities specified in Question (1).
3	Is there a mechanism for registration and creation of ID documents for those without identification documents?	*The answer to this question is not clear due to limited information availability.*
4	Is the citizen-facing interface easily accessible?	The citizen-facing interface supports vernacular/regional language, but does not support feature phone access, and is not friendly for persons with disabilities.
5	Are/were multiple alternate methods employed for data verification during the creation of the underlying registry?	Yes.
6	What are the various ways in which the underlying registry is updated?	The SPR is updated by obtaining data from various government databases, through surveys, and through on-demand registrations.
1. B. Responsible		
7	Is the SP-ODE supported by a privacy policy?	No.
8	What are the features of such a privacy policy?	NA.
9	What obligations are there in the privacy policy for the data fiduciary?	NA.
10	Is the SP-ODE bound by a term of service?	No.
11	Are there provisions to seek citizens' consent when data from the registry is used to authenticate their identity?	*The answer to this question is not clear due to limited information availability.*
12	What type of information is provided in the consent form?	*The answer to this question is not clear due to limited information availability.*
13	Are there provisions for the SP-ODE to provide a consent notice to citizens before registering them for value-added services?	*The answer to this question is not clear due to limited information availability.*
14	Which security-by-design principles have been adopted by the SP-ODE?	The security-by-design principles of confidentiality, integrity, and safety from theft, negligence, loss or unauthorised access are adopted by the SSSM. It is unclear whether there is a notification obligation in case of any violation or misuse of data.
15	What are the features of the Automated Decision-Making System (ADMS), if there is one?	The algorithm is tested in the field for being representative of the population. It is not updated regularly, or available for public scrutiny.
16	Are the algorithms used for de-duplication available for public scrutiny?	No.
17	Are there interoperability guidelines for sharing data between government databases?	Yes.
18	If data-sharing using APIs, with private-sector parties is provided for, are there any guidelines for such parties to adhere to?	*The answer to this question is not clear due to limited information availability.*
19	What kinds of protocols and provisions exist for the functioning of the registry?	*The answer to this question is not clear due to limited information availability.*
1.C. Efficient		
20	Are there provisions for automated decision-making systems (ADMS) to determine the eligibility of citizens?	Yes.

21	Does the registry proactively identify social protection beneficiaries for new or existing schemes?	Yes.
22	What is the mode of the status update to the citizen?	*The answer to this question is not clear due to limited information availability.*
1.D Accountable		
23	Has any institution/entity been designated to oversee the functioning of the registry?	Yes, it is managed by the Ministry of Information Technology through the state-level NIC in Bhopal.
24	Are there provisions for the performance reports regarding the functioning of the platform to be made publicly available?	*The answer to this question is not clear due to limited information availability.*
8. Coordination and Orchestration		
2.A. Inclusive		
25	Can government functionaries at the last mile view individual citizens' case statuses in real-time?	*The answer to this question is not clear due to limited information availability.*
26	Can government functionaries at the last mile edit citizen details in the registry?	Yes.
2.B. Efficient		
27	Which functionalities are available to such administrators?	Administrators can monitor the performance of different schemes and generate metrics on scheme performance. It is unclear whether they can view statistics/data regarding grievances.
2.C. Accountable		
28	Do the services under SP-ODE fall under the ambit of the Right to Public Service Act or any other legislation that guarantees time-bound delivery of such services?	Yes.
9. Payments		
3.A. Inclusive		
29	What are the various modes in which payments under social protection schemes can be made to citizens?	Payments can be made to citizens using their bank account number and IFSC code, but not using Aadhaar.
3.B. Efficient		
30	Which of the following types of information on the status of such payments is provided to the citizen?	Beneficiaries receive a status update when payments are sent to their bank account. However, it remains unclear whether other status updates are sent to citizens (such as when an FTO is generated, when the beneficiary record is accepted by PFMS/Bank, upon payment failure, etc.).
31	What is the mode used to update the citizens on the payment status?	*The answer to this question is not clear due to limited information availability.*
3.C. Accountable		
32	Are there any pre-defined timeframes within which citizens must receive their payments?	NA.
33	Are there provisions for the reasons for transaction failures under SP-ODE to be made publicly available?	*The answer to this question is not clear due to limited information availability.*
10. Delivery of Cash Benefits and Ancillary Services		
4. A. Inclusive		
34	What type of last-mile agents are part of the SP-ODE delivery chain?	Business Correspondents and service centres are both part of the Samagra delivery chain.
35	Is there a provision to define/actively manage the number of such agents servicing a designated area?	There are provisions to define the number of Business Correspondents per designated area, but the same provision does not exist for service centres.

36	Which functionalities are available to service centres at the last mile?	Service centres can register citizens, verify the submitted documents, access the citizen database, raise grievances on behalf of citizens, and issue certificates to citizens. It is not clear whether service centres act as cash out points.
4.B. Accountable		
37	Are there guidelines for onboarding last-mile agents that participate in the SP-ODE benefit delivery chain?	Yes.
38	Are there conduct obligations specified for last-mile agents that participate in benefit delivery?	Yes.
39	Are there guidelines/SOPs that define the scope and nature of operations for last-mile agents?	Yes.
40	Is there a mandate for the administrator(s) of the SP-ODE to audit the services provided by last-mile agents involved in benefit delivery?	Yes.
41	Can last-mile agents' licenses be revoked if they violate the guidelines?	Yes.
42	Can citizens rate the performance of last-mile agents that participate in benefit delivery?	No.
43	Can last-mile agents that participate in benefit delivery raise grievances?	*The answer to this question is not clear due to limited information availability.*
44	If 'Yes' to (40): Are there provisions for the criteria used for such an audit to be made publicly available?	*The answer to this question is not clear due to limited information availability.*
11. Product Provisioning		
5.A. Inclusive		
45	What types of providers are part of the SP-ODE product provisioning process?	*The answer to this question is not clear due to limited information availability.*
46	Is there a provision to define/actively manage the number of such providers servicing a designated area?	*The answer to this question is not clear due to limited information availability.*
47	Which functionalities are available to providers of social protection?	*The answer to this question is not clear due to limited information availability.*
5.B. Accountable		
48	Are there guidelines for onboarding providers?	*The answer to this question is not clear due to limited information availability.*
49	Are there conduct obligations for providers?	*The answer to this question is not clear due to limited information availability.*
50	Are there guidelines/SOPs that define the scope and nature of operations for providers?	*The answer to this question is not clear due to limited information availability.*
51	Is there a mandate for the administrator(s) of the SP-ODE to audit the services provided by providers involved in benefit delivery?	*The answer to this question is not clear due to limited information availability.*
52	Can providers' licenses be revoked if they violate the guidelines?	*The answer to this question is not clear due to limited information availability.*
53	Can citizens rate the performance of providers?	*The answer to this question is not clear due to limited information availability.*
54	Can providers raise grievances?	*The answer to this question is not clear due to limited information availability.*
55	Are there provisions for the criteria used for such an audit to be made publicly available?	*The answer to this question is not clear due to limited information availability.*
12. Grievance Redressal		

6.A. Inclusive		
56	For which processes can citizens raise grievances?	*The answer to this question is not clear due to limited information availability.*
57	Is grievance redressal available in a 'phygital' format?	Yes.
58	Are there mandates for the SP-ODE to facilitate a feedback mechanism?	Yes.
59	Are there provisions for the feedback mechanism to solicit feedback from the citizen through an Interactive Voice Response System (IVRS)?	Yes.
6.B. Efficient		
60	Are there provisions to proactively inform citizens of the various functions that the SP-ODE performs?	*The answer to this question is not clear due to limited information availability.*
61	Are there provisions for a 24/7 citizen-support service?	No.
62	Are there provisions to track the lodged complaints until their final closure?	Yes.
63	Are there provisions to analyse grievance and feedback data to identify system-level weaknesses?	Yes.
6.C. Accountable		
64	Are there provisions to seek confirmation on complaint resolution from the citizen before it is marked as closed?	*The answer to this question is not clear due to limited information availability.*
65	Are there provisions for the grievance caseload management data (number of grievances received and disposed of, time taken for disposal, citizen's feedback etc.) to be made publicly available?	Yes.