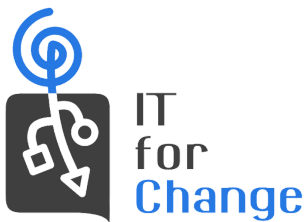# POLICY FRAMEWORKS FOR DIGITAL PLATFORMS - MOVING FROM OPENNESS TO INCLUSION

RESEARCH FRAMEWORK

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IT for Change

IT for Change is an NGO based in Bengaluru, India. We aim for a society in which digital technologies contribute to human rights, social justice and gender equality.

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Overview

In our background paper (IT for Change, 2017), we outlined the case for focussed research enquiry on the platformization of the global economy. We touched upon some broad social and economic fallouts of the phenomenon – market capture, the access-for-data regime, the discursive influence of platform monopolies and crystallization of exploitative economic arrangements. We argued the need for forward looking policy frameworks as platforms become ubiquitous, to ensure that economies of the future are inclusive and equitable.

In this document, we build on this discussion to put forth a research framework for 'Policy Frameworks for Digital Platforms - Moving from Openness to Inclusion'. First, we outline and clarify a shared understanding of key concepts invoked in this project. Second, we offer a broad meta research framework for the project. This framework has been constructed ground-up from a synthesis of the research proposals from the network. It is intended to serve as the common basis upon which the different research projects will develop their respective research design.

Situating the 'platform' in relation to the research

A wide body of literature has engaged with the discursive (Cockayane, 2016; Ert *et al*, 2016; Finck & Ranchordas, 2016), sociological and economic (Lewis *et al*, 2015; Pon, 2015; Drahokoupil & Jepsen, 2017; Dufva *et al*, 2017) fallouts of the new social and economic arrangements afforded by the digital. This latter process of digitalized reorganization has been interchangeably described as the sharing, gig and collaborative and platform economy (Frenken & Schor, 2017).

This research concerns itself with the broader phenomenon of the 'platformization' of the economy – the game changing ways in which key sectors of the world economy – transportation, agriculture, hospitality, commerce and trade, tourism and travel, financial services and credit – have become transformed through the advent of the platform model, from supply chain dynamics, customer end transactions and interactions, to automated and data based regimes of management. Effectively the biggest platforms today have come to stand in for public infrastructure despite being closed, privately held entities wielding enormous clout. The research therefore focuses on the key modus operandi for value generation and capture through platforms, seeking to explore how value creation is being transformed on a planetary scale with the orchestration of markets, work organization and economic activity by platforms.

As the diverse sectors of the economy digitalize and are recast by platform strategies, public policy processes will need to address a whole range of social and economic considerations. Platforms are often mythified as simply an 'app' on a phone that takes no more than the space on a device to function (Dyer-Witherford, 2014; Sandoval, 2015) because "the way technology is experienced in daily life is far removed from the physical work and material resources that go into it." (Maxwell & Miller, 2012). There are multiple layers of 'offline' or material resources, structures and systems that converge behind the scenes to create the digital, public face of a platform, the one we often become most familiar with. We may not consider the extensive warehousing and logistics operations that makes Amazon run like clockwork, or extractive labor deployed in the mines of the Democratic Republic of Congo for the rare earth minerals that fuel our 'smart devices,' (Scholtz, 2016) or the incredible levels of micro-management by Uber of its drivers, who are trained in sessions to speak, dress and present themselves optimally (even while being cast as ostensibly free agents of the gig-economy) or the billions of dollars of hard venture capital that actually feeds the platform. But they all power the "technological marvel" we experience, so to speak.

While the platform in general is made possible by the unprecedented power of the Internet, in its particular configurations, each platform emerges as a product of its technological, economic and social organization, which is important to explore and unpack from a public policy perspective – to

deliberate upon how goals of equity and inclusion can be served best. This is why the research project focuses on a broad range of case studies spanning various domains.

Operationalizing 'platforms' (in lieu of a definition)

Srinicek (2017) refers to the broad functions platforms play, describing them as "digital infrastructures" that enable two or more groups to interact. Thus, in making such interactions possible, platforms, "position themselves as intermediaries that bring together different users: customers, advertisers, service providers, producers, suppliers, and even physical objects." They may also come with a series of tools that enable their users to build their own products, services, and marketplaces.

While recognizing that platforms may be best comprehended through the interactions and actions they make possible, we would like to propose a simple working definition, borrowing from Kenny & Zysman's (2016) summation of platforms as "a set of digital frameworks for social and marketplace interactions." Such a 'framework' approach allows us to examine how "platformization" mediates a fundamental shift in the terms of such interactions. Further, in relation to public policy, Kenny and Zysman (2016) argue the need to explore appropriate market and social rules for the platform economy and society, highlighting how government decisions tend to be constrained by code or the "facts" in the software and corporate strategies with regard to say, workers, determine social outcomes. These are useful pointers for the proposed research study and argue the need to zoom in on a wider area of inquiry that implicates the 'platform ecosystem' as a whole in its relationship to economy and society.

What elements of the platform ecosystem are significant for our inquiry?

To define the elements of a typical platform ecosystem, we adopt a domain/industry/vertical agnostic perspective. Irrespective of the different functions they perform, the ability of the platform ecosystem under study to restructure economic activity and social relationships remains the common focus of this research project. Towards this end, we identify some key features of platforms (to explore in the empirical investigations):

- There is a significant disruption/re-orchestration of the market which gives rise to new ways of sourcing, sale, retail and consumption (Kenny & Zysman, 2016; Scholtz, 2016; Srinicek, 2017). E.g. The rise of Video on Demand (VoD) platforms leading to new forms of media production and broadcasting, the growing trend of aggregator business models. Small players can displace incumbent business models to orchestrate this disruption and become first movers who eventually carve out monopolistic markets.

- There is a reconfiguration of labor and asset arrangements from internally sourced/held to externally managed. Often times, these are hidden or invisibilized (Scholtz, 2016). E.g. Gig work on platforms such as TaskRabbit, Lyft, Uber, MechanicalTurk.

- Resource ownership is recast in new ways and is aligned towards the goals of lean or asset light models (Alstyne *et al* 2016; Scholtz, 2016). For instance, Airbnb may offer more accommodation rentals than all hotels combined, but does not own any property, nor does it bear the cost of maintaining the same (taxes, upkeep or otherwise).

- The classic understanding of a value chain that produces a product or service of value at the end does not hold in the platform ecosystem. Rather, in this schema, roles, dynamics and power relationships are arranged in a network of multiple nodes, with providers, producers, suppliers and consumers/users scattered in a web of social and economic interactions (Van Alystyne *et al*, 2016; Srinicek 2017). What distinguishes a platform from a traditional pipeline model is that value generation is the collective and ever-growing value of the platform ecosystem itself (Kenny & Zysman, 2016). Leveraging the network effect, the ecosystem becomes the source of value, and hence its growth and expansion becomes the

primary objective (Van Alstyne *et al,* 2016; Fuchs, 2015; Srinicek, 2017). Amazon may have started out as an online book retailer, but has become a 'super platform', extending itself across and beyond its e-commerce portal to providing cloud services, a digital wallet, video on demand service and devices (Kindle, Amazon Fire TV Stick, Amazon Echo, Alexa, etc.) Similar examples of what have been termed super platforms include Apple, Google and Facebook, whose forays are not restricted to a particular industry, but span an ever-widening set of value propositions to exploit and consolidate control over the entire platform ecosystem, in an almost parasitic way. Not only is Amazon a super platform in the online world, but its growing interest in brick and mortar business reflects its intent to future proof its advantage through digital disruption in traditional sectors. Amazon's venturing into book shops and acquisition of Wholefoods are a case in point.

- Data ownership and management becomes valuable and core to the platform's operations. This data is deployed towards re-engineering social and economic value for the ecosystem in many ways including:

  ○ enhancing and leading the platform's technological and internal processes and offering new value propositions, thus creating a data regime (E.g. building better algorithms for supervision and management).

  ○ re-bundling data into revenue models that are externally monetized, such as analytics, modeling and trends prediction, and advertising.

- Knowledge management and ownership in platformization takes place through a unique 'access and control' regime. On one level, there is a desire to grow the *ecosystem* by making it amenable to developers to build on. Thus there is an 'openness' extended to collaborators through Application Programing Interfaces (APIs) which allows developers to build products and services for a given platform (IOS and Android) and create value for the *ecosystem*. However, data and core algorithms may still be proprietary and tightly controlled through an increasingly patent oriented approach, thus protecting the Unique Selling Proposition (USP) and the financial interests of the platform and ensuring concentration and consolidation of knowledge.

- The hegemonic players of the emerging platform ecosystem often self identify as "mere" connectors/intermediaries, etc. in relation to legal and policy and cast themselves as neutral agents in the phenomenon (Cohen, 2017). These conceptualizations of platforms have acquired tremendous ideological currency and have become the discursive frameworks in which states and policy makers develop governance regulation.

Mapping the platform ecosystem

To truly understand in depth how platformization impacts economic, social and environmental justice, the project must undertake the necessary task of mapping the platform ecosystem – its economic arrangements, actors/stakeholders, information infrastructures, datafied layers, technical protocols, and even the connectivity paradigm upon which it is predicated. Further, such mapping must explore the interaction of these elements with incumbent policy frameworks, including, the rhetorical devices of the platform economy that shape policy discourse.
Three critical axes of the platform ecosystem require in-depth inquiry:
- actors that make up the platform ecosystem;
- structures that constitute the norms, rules and practices of the platform ecosystem; and
- value extracted by/contained within the platform ecosystem

Layer 1: Network of actors who make up the platform ecosystem

Information society scholarship has elaborated on the idea of the network society (Castells, 2001; Fuchs, 2012), an integral way in which we have come to understand the organizational structure of economic and social relationships in contemporary societies. Borrowing from this conceptualization, we may understand various actors in a platform *ecosystem* as nodes in a vast network of economic activity. These include;

- Market actors – Market actors include all those who are part of the economic activity around a given platform. From owners who operate the business to investors who fund them, to producers/providers/suppliers who are intermediating the various forms of transactions to consumers. These actors are able to hold and wield varying amounts of power and reap differing dividends
- State actors – State actors include all those stakeholders who are involved in the governing, operation and regulation of platforms. These can include governments and government bodies, regulators and the Judiciary and also local regulatory and legislative actors.
- Regional/Multi-lateral institutions – Institutions such as the WTO, EU, ASEAN policy structures are also implicated in the network of the platform ecosystem. They are instrumental in deliberating and deciding upon global and regional policy regimes of trade, competition, and data protection.
- Non state actors – These can include both industry bodies and consortiums which work to influence policy on behalf of market interests as well as organizations that advocate the cause of public interest.

Layer 2: Structures that constitute the norms, rules and practices of the platform ecosystem

As has been discussed earlier, there is a mythified 'weightlessness' around how platforms operate (Maxwell & Miller, 2012). However, there are different kinds of structures that form the material and discursive basis of the platform ecosystem. These are outlined below:

- Material Structures – Material structures include the means of production and include all forms of capital, asset and labor arrangements;
- Techno Structures – Techno structures include different layers of digital services and infrastructure. These include connectivity and access architecture, general software layers that support digital activity (operating systems, office suites, browsers, the applications that provide a gateway to the platform ecosystem and the large data and cloud computing apparatus, algorithmic models, machine learning and Artificial Intelligence, and technical protocols (Singh, 2017);
- Discursive Structures - Discursive structures refer to the ways in which social imaginary and discourse around the platform ecosystem is framed and reinforced through positive popular vocabulary, ideas and a certain degree of myth-making. E.g. the precarious nature of gig work becomes recast as flexibility;
- Policy structures – Policy structures include legal and quasi-legal arrangements and frameworks – regulation, laws and legislation, trade regimes and agreements, contracts and terms of use/service agreements, data sharing and ownership policies, privacy policies and many others.
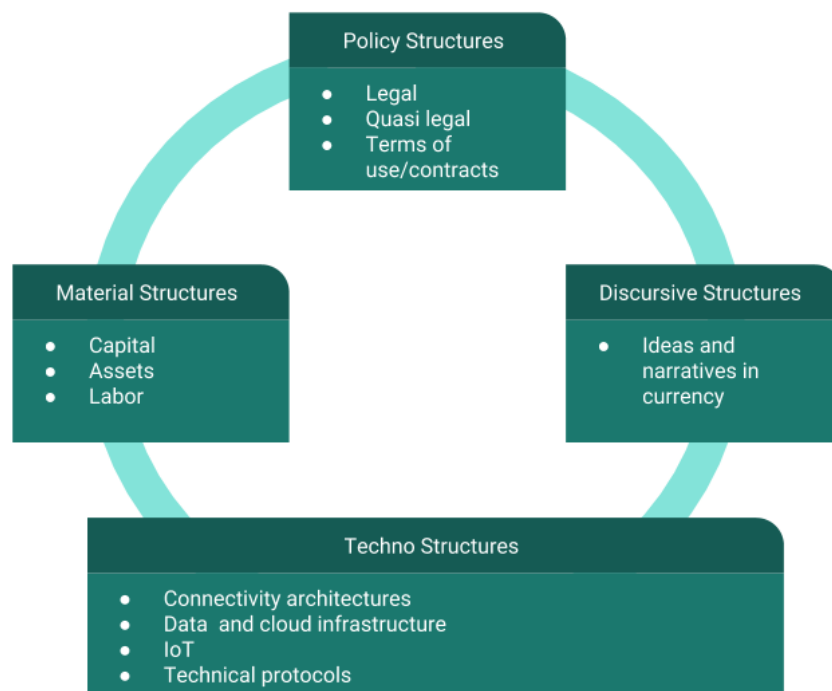
Figure 1. Structures of the platform ecosystem

Layer 3: Value of/in the platform ecosystem

As previously discussed, the primary source of value in a platform ecosystem is the ecosystem itself. Value here is not restricted to its conception in classical and neo-classical economics – that is, value derived from labor employed or transactional worth in use/exchange, but encompasses the highly lucrative value that the network effect begets. There has been a depth of scholarship that has explored 'value' in the digital economy (Fuchs, 2012; Arvidsson and Colleoni, 2012; Rigi, 2015). From building upon the idea of commodity audience (Smythe as cited in Fuchs, 2015) where user transaction and constant interaction generates value for the enterprise, to the idea of informational value as a form of rent seeking (Rigi, 2015) where externalities of social reproduction are passed onto non-users, there have been many ways in which surplus value generation in informational capitalism has been theorized.

For the purposes of this study, we place value in the platform ecosystem along a continuum of privatized to public value, involving multiple forms of value orchestration and redistribution for various actors. These can be categorized into four broad scenarios:

1. Privatized-corporatized value: This refers to value that is expropriated by corporations and may broadly be understood as all forms of value that accrues to the platform ecosystem as economic and social dividends. Deploying data regimes and other tools that entrench the platform's utility for the network, the ecosystem generates value that is internalized and also externally monetized. Ecosystems are able to grow by re-channeling their network driven assets into adjacent industries and sectors and incorporating them into their arsenal of control (Iansiti & Lakhani, 2017).
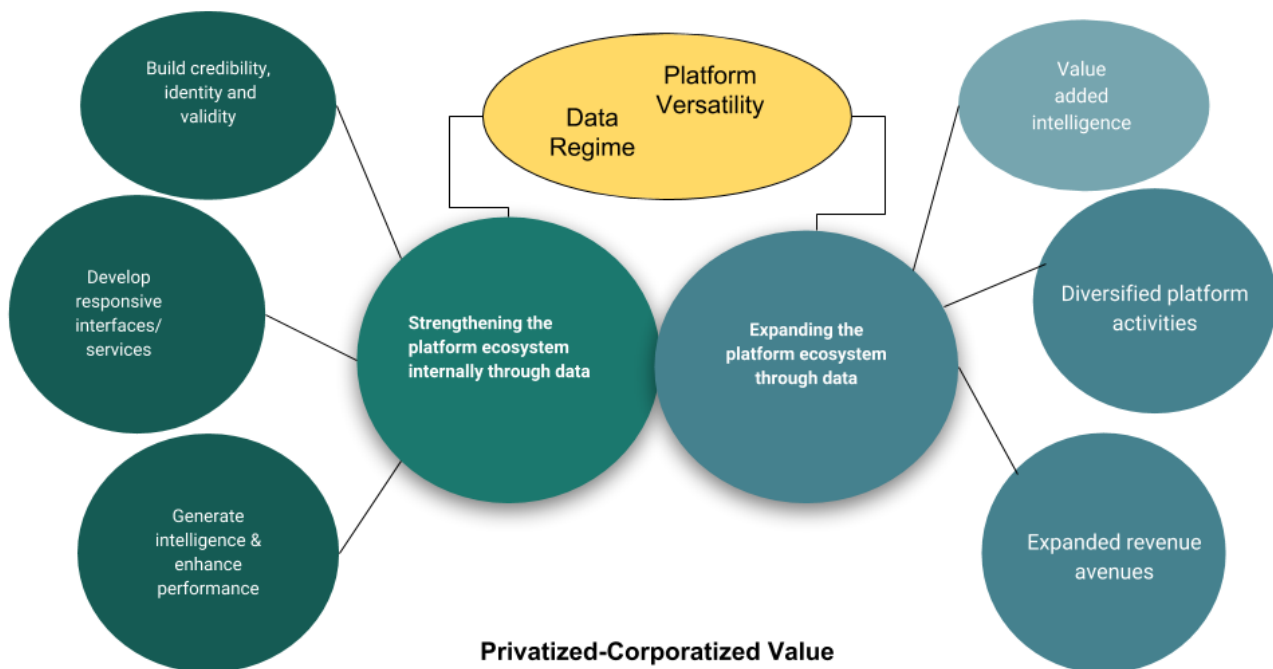
Figure 2. An illustration of privatized-corporatized value in the platform ecosystem

To illustrate this better, consider an aggregator platform application 'x' engaged in food delivery service in a tier 1 city. Transactional activity and arrangements between the consumer, restaurant and the platform results in the generation of conventional forms of economic value – commission accrued from restaurant on every transaction, delivery fee levied upon the customer and other revenue generation avenues the platform may have set up (e.g. hyperlocal advertising). In addition to this, borrowing from network value analysis (Verna, 2008) we can locate the value that is built in the network through platform activity primarily through the data generated. Every transaction yields granular and lucrative data on consumer behaviour, patterns of consumption, geographical location, demographics, real time tracking of traffic, travel time and many more. The platform knows what resident 'A' in locality 'B' likes to eat on a rainy Tuesday night and can capitalize on that. When we add to this the enormous digital labor of users, the platform is able to harness user inputs that are constantly working to validate the platform (restaurant ratings and reviews, satisfaction surveys). We can see the many ways in which (as discussed in previous sections) platform 'x' is able to harness existing value and generate new value – feeding data into bettering its logistics and operations, creating pricing models that can leverage geographical and consumer behaviour (attractive offers on a sporting event day; surge pricing on rainy days), cut costs by eliminating poorly performing restaurants from its service list based on user ratings. It can not only bundle and monetize this data by selling it to others, but can also use it effectively to grow the ecosystem. Platform 'x' is able to diversify further and make its ecosystem robust. It can in due time add a digital wallet, enable single sign in and data portability across applications, create social media plugins, add a price compare feature – all things that will ensure that the network users that prop up the platform become more entrenched, unlikely to switch loyalties and ever amenable to imbibe its other offerings. According to Barabási, digital-network formation creates positive feedback loops that lead to highly entrenched and connected 'hubs' (Iansiti & Lakhani, 2017). Thus, when platform 'x' is ready to venture into grocery e-tail, it can now do so with the complete benefit of intensely, microscopic intelligence about the city, its traffic patterns, its customers and their behaviour and a large network of users/consumers who will adopt the service based on their positive experience with the platform.

2. Private-individual value: This refers to the particular forms of social and economic value that accrues to individual actors in the platform ecosystem, including consumers and workers. Different actors are able to reap differential value, based on their position and bargaining power in the platform ecosystem at various times. It should be no surprise that users with high social and economic capital who can leverage the network effect to their benefit are likely to derive more value than those at the peripheries. These arrangements can be rivalrous/non-rivalrous based on the context. For instance, frequent customers on a platform service may get better deals and discounts on a given service, become 'preferred customers,' leverage referrals for points/goodies, and maintain and cultivate a high social credit thereby securing their ranks in the network economy. Such a situation may be considered a non-rivalrous accruement of value (though there is still an underwriting of costs being done by the platform in lieu of potentially larger economic gains in the future).

On the other hand, consider a financially secure upper middle college student who is a gig-worker doing house chores over the weekends on a work platform. He/she may view the low wage precarious work as an added source of spending money and thus low-ball their asking rate for a given task. For the employer seeking the service on the platform, there is significant time and opportunity savings by outsourcing a 'menial task' for the lowest cost possible. Another low-skill informal gig-worker whose main income is contingent on the platform has little bargaining power in such a race to the bottom. Unable to demand a higher wage for fear of being passed over, they inevitably get the least value out of such an arrangement even if he/she will get the same economic remuneration as the first gig-worker. In effect, we can make the argument that the gains enjoyed by the first gig-worker and the platform user seeking the service are subsidized or underwritten by the loss of value borne by the second gig-worker. The platform has thus orchestrated a distribution logic that might very well lead to overall value creation for all actors, but one that is inherently designed to exploit the weakest link.

3. Privatized public value: While privatized-corporatized and private-individual value generated in and through the platform ecosystem may be somewhat easily understood, privatized public value may be a harder concept to pin down. At the basic level we must recognize that even while a platform ecosystem's primary motive remains profit, it can end up creating particular forms of public value even if it is just by facilitating a positive consumer/user experience or opening up an opportunity or option that they may have not had before. For instance, the advent of ridesharing apps has provided many women with an alternative and affordable modes of commuting to overcrowded or many times unavailable private/public transportation at night times, thus having a real and discernible impact on their right to mobility. Platforms can also generate additional and symbiotic gains for the network of users who come to see their transactions and participation in the platform ecosystem as value generating. 'Local guides' who contribute to Google maps by adding reviews and ratings for places they visit are one such example. They may receive Google credits as compensation for their efforts and more importantly, perceive their contribution as valuable and enriching a public informational service that everyone can access.

At a more institutional level, state actors may bring platform ecosystems into the fold through various arrangements to engineer public value. This analytical axis, while has been well explored in public policy and public administration literature, has found more resonance in current digital debates, especially with regard to resource management around data. One strand is public value theory (Turkel & Turkel, 2016) which as an emerging discipline explores how in the context of opportunities for value generation through technologies, state entities can broker arrangements with digital players. E.g. Google's Sidewalk, partnering with various smart city initiatives in Columbus and Toronto to enhance various sectors of urban governance, or the Spanish town of Jun which conducts all its day to day public communication and citizen response through Twitter.

In such cases, institutional will and commitment to citizen accountability will ultimately dictate how exploitative or mutually beneficial such arrangements work out to be. There can be cases where a given platform ecosystem 'freerides' on public expense and infrastructure to create a low-resource

intensive service layer or application for public value, but controls all the techno-material structures, cornering disproportionate economic gains in the bargain. There can also be arrangements where governments insist upon equitable sharing of digital resources that can maximize oversight and even redistribute public value to underserved segments of society. The town of Curtiba in Brazil, for instance, has mandated data sharing from ride-sharing platforms. In Brazil, private transport providers are also offered incentives to ply to low income neighbourhoods and compliance is ensured through GPS tracking. Thus state actors can re-orchestrate the network effect for more equitable gains. Questions remains of course if such public value creation has public interest outcomes. We are yet to know, what the tradeoffs for such governance arrangements will be and when over-dependence on privately engineered public value will trigger a systemic crisis. As data and platform driven governance become the new normal, how much control will be ceded to these instruments will be a question to ponder, especially when governments will have to make hard calls about optimizing efficiency and convenience gains vis a vis justifying a continued role for human discretion and intervention. Strengthening the network to redistribute value may inevitably come at the cost of weakening citizen control over resources and 'messy' decision making or worse, diminishing the public sphere. Political subjectivity itself could stand to become recast as citizens transform into platform immersed 'users' and 'user-communities'.

4. Public value through public good: This discussion brings us to the final point in our value continuum – a scenario where value is created through platforms that function as public goods. In such a scenario, where ownership models are co-operative and/or people owned (governed through state bodies and entities), all value accrued by the platform ecosystem can be potentially democratized for private and public purposes. Consider a ride-sharing aggregator run in a cooperative model by a city. It can generate valuable data for urban governance from platform operations, service low income neighborhoods, fill a transportation gap, and redistribute revenues towards public use and functions, pay better wages and offer better terms of employment to workers. A digital national agricultural trade platform like the one created by the Indian Government is another example of a public good. On such a platform, various private actors may come on board and conduct economic transactions for private gains. In theory, as a pure intermediary without a profit motive, the platform refrains from gaming the system, allowing for more open and optimal terms of transaction betweens other actors in the ecosystem.

Figure 3. Value hierarchy in the platform ecosystem on the continuum of private to public value

It bears remembering that public value also operates on pre-existing axes of exclusion. Public good platform structures, while more amenable to value distribution, will still be susceptible to value capture. Such challenges must be accounted for when thinking about how platform ecosystems can generate social/public good as against private good, which is a key focus of this project. Critically mapping and studying the nature of value (social/economic/privatized/public) and its accumulation and distribution among actors in a platform ecosystem helps us understand the dynamics of power, allowing an examination of the social and economic outcomes for development. We arrive at a final research schema for the project that moves from a mere mapping of the situation, to a critical analysis of outcomes, and furthermore, to suggesting future directions for inclusive policy and regulation development.
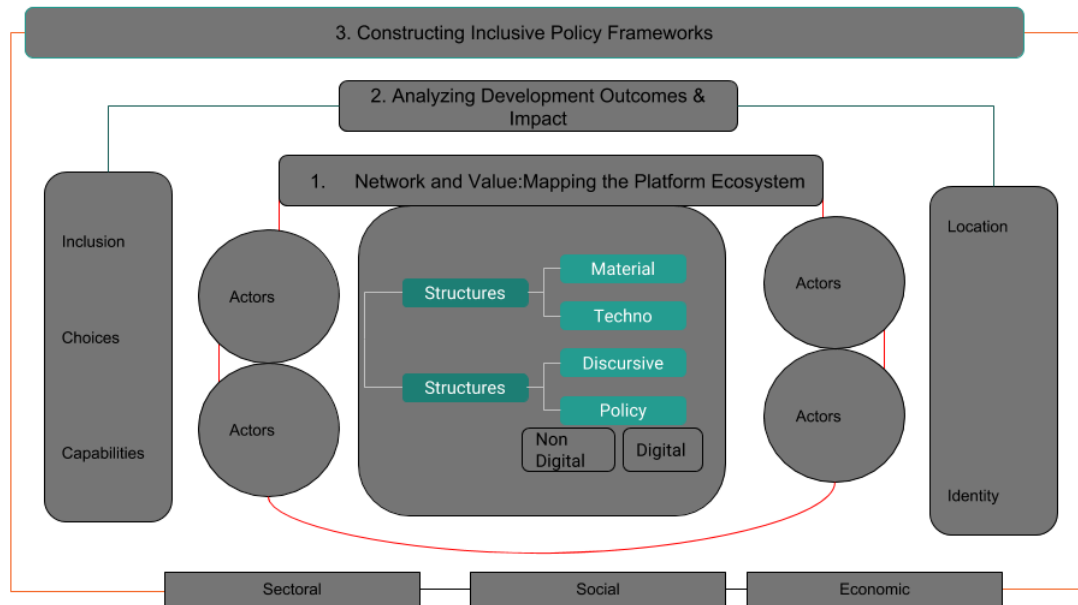

Figure 4. An illustration of the research framework

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