DFS LAB

Opportunities to expand financial inclusion within Indonesia's digital platform economy

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Executive Summary

This paper takes a critical look at the potential for digital platforms to be partners in expanding financial inclusion in Indonesia. While we focus on financial inclusion, many of the strategies and interventions we discuss might also be beneficial seen through the lens of economic empowerment and growth. Our approach in conducting this research was based largely on desk research and interviews with industry experts and platform managers as well as field visits to Indonesia.

Rather than view all platforms as a homogeneous group, we differentiate across business models (hybrid, marketplace, and niche) which we believe will produce different economic and financial inclusion outcomes and imply different intervention strategies for donors and governments.

There are a variety of different kinds of platform models (e.g. see the Caribou Digital Taxonomy below) including transactional platforms that facilitate transactions of various forms, innovation platforms that facilitate innovation, and hybrid platforms that do both. In this paper we look at three kinds of marketplace platforms -- transactional platforms that facilitate the exchange of goods and services. We look at the mainstream ecommerce marketplace platforms including Lazada, Bukalapak, Tokopedia and others; we look at niche platforms that serve priority sectors such as fishers, farmers, and MSMEs; and finally we look at hybrid platforms such as Grab and Gojek, that allow new services and products to launch over their marketplace infrastructure.

We believe these types of platforms specifically have the greatest potential to expand financial inclusion, because they combine financial services with income generating opportunities for the suppliers (gig workers or marketplace sellers), many of whom are low income and unbanked before joining these platforms.

Each of these different models seem likely to have different financial inclusion outcomes. With traditional providers (e.g. banks), many low income people seem to use these accounts for little beyond getting paid then withdrawing wages, G2P, or remittances. Users who adopt bank accounts or wallets to join marketplace and niche marketplace platforms would likely have a similar use profile of getting paid their platform earnings though there seems to be more scope than with traditional players for adding on merchant payments and digital credit driven

by platform income data. The hybrid platforms offer an even wider range of financial services that includes investing, insurance, and more credit options, though it's not clear how many use all these products. Also, many of the platform based services are geared to increase loyalty and effort, thus may not fully align with user welfare (e.g. health insurance which only covers drivers while they drive for the platforms).

In the Indonesian context, there are a number of positive opportunities as well as potential downsides to trying to increase financial inclusion via platforms. Below we look at a few of the most prominent tradeoffs, including:

- Gig work and platform sellers do represent income opportunities for low-income people but these jobs can be precarious and lack agency
- O2O and ecommerce agents represent a powerful distribution model but appear to be fundamentally limited in rural areas[1]
- Marketplace platforms can see the poor as low-cost suppliers (rather than loss-making consumers) but still appear to bias away from the very poorest and hardest to reach
- Some sector-specific marketplace platforms show promise in serving low income or rural areas but struggle with scale and financing
- Achieving meaningful use of a comprehensive set of financial services seems possible, especially for the hybrid platforms, but the full potential has yet to be reached in reality

Given the above tradeoffs, we investigate a number of hypotheses regarding which kinds of interventions might be the most promising for the different kinds of platform models. We explore three main areas including:

- Partnering the National and Provincial Government banks to build robust rural retail and CICO infrastructure while marketplace and niche platforms build financial services products on top
- Supporting innovation and scale up of successful niche platform models in agriculture, fisheries, and informal MSMEs (e.g. Tanihub, Haratoken, Payfazz, Eden Farm, etc)
- Policies to expand income opportunities to urban poor and protect gig-workers on the hybrid platforms (e.g. Grab and Gojek)

We find significant and exciting potential in the way these different platforms can drive a complementary package of financial services adoption and income-generating activities. Also exciting are the inherent incentives that allow these platforms to see the poor not as low-value consumers but as low-cost (thus high-value) suppliers. Lastly, we believe there is a possibility to expand these models to reach a wider segment of Indonesia's low-income population and to build robust networks in rural areas. This will likely require new partnerships between digital platforms, government and state banks to subsidize the infrastructure.

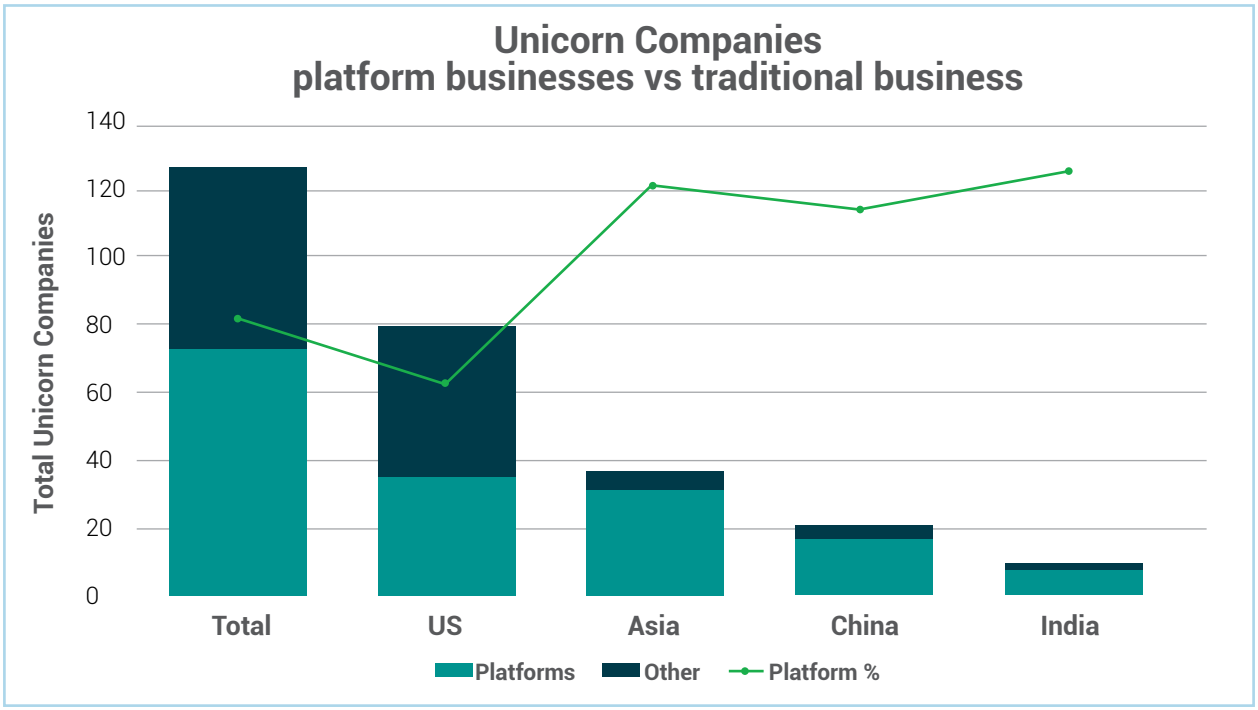
Despite the exciting potential, there are also risks and downsides to these models. While they have a theoretical incentive to reach even low income people — they do not appear to reach the very poorest or most rural due to a variety of practical challenges and barriers. There is also significant risk that platforms may diverge to become exploitative and/or put workers and sellers in precarious economic positions if not given clear guide rails by well designed policy. There has not been enough rigorous research on the experiences of online workers and sellers and further work would be welcome to guide policies in this area through better understanding of workers and small scale sellers situations.

While there are clearly limits and some risks to platform models, we believe the potential is there and warrants attention and investment by donors and governments.

1. O2O stands for Online-to-Offline and represents the physical touch points with digital platforms when they recruit stores, other retail locations, drivers, or field agents to manage payments, logistics, customer onboarding, and other processes.

Platform business models dominate the digital landscape in Asia, including Indonesia[2]

In China and the rest of Asia, digital platform businesses increasingly dominate the digital economy, representing up to 90% of 'unicorns' as shown below.



Indonesia has five home-grown unicorns, of which all are platforms of one kind or another: Tokopedia (ecommerce), OVO (payments), Bukalapak (ecommerce), Traveloka (travel), and Gojek (on-demand/ride hailing). Investors see the digital platform as one of the only models that justify billion dollar and higher valuations in Indonesia and elsewhere in Asia -- whereas this is not the case in the US or Europe. Part of the explanation for this pattern may be that the tightly integrated, self-contained ecosystems that platforms often create are able to sustain economic activity and extract value much better than standalone business models that must rely on low quality or fragmented infrastructure provided by third parties or governments in areas such as payments, ID, logistics, or connectivity.

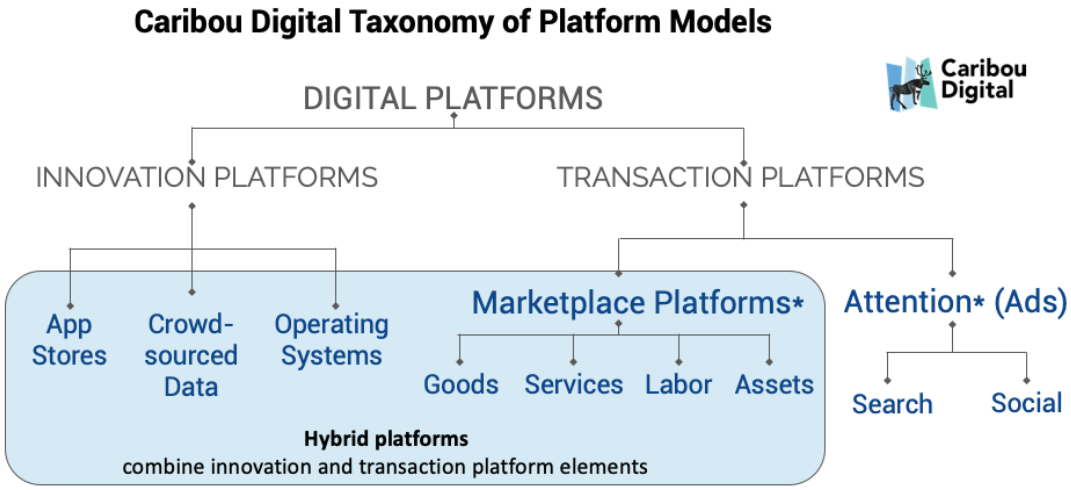
The scale and ubiquity of digital platforms have been a driving force for adoption and usage of digital financial services in India and China, with both markets showing huge CAGR growth in digital payments in recent years (though with some differences in the models, notably with India being driven by a stronger government infrastructure play in the form of the India stack).

Within the platform universe, there are a variety of different kinds of models including those that facilitate transactions of various forms (transactional platforms) and those that facilitate innovation (innovation platforms) as well as hybrid platforms that do both. The most valuable platform businesses (and these rank among the most valuable companies in the world) are all hybrids: Microsoft, Apple, Amazon, Alphabet, Facebook, Tencent, and Alibaba globally where Grab and Gojek are the locally relevant examples in Indonesia.

Clearly these models are important for investors and for the economy as a whole, but can they be partners to give economic opportunities to low-income people? And if so, how can donors or other policymakers productively engage with this sector? The next section addresses these questions.

What are the different kinds of digital platforms and how might they relate to financial inclusion?

There are different platform models that may seem to be each very distinct from the others but they share a number of key features.The Caribou Digital Taxonomy of Platform Models lays the main models and subgroupings out below.



Platforms are typically bifurcated into innovation platforms which create standards and infrastructure to enable innovation and transactional platforms which create conditions necessary for exchange of goods and services. We focus here on marketplace platforms and hybrid platforms which are essentially marketplace platforms with features of innovation platforms that encourage third parties to launch new products or services over their infrastructure.

Marketplace platforms

Marketplace platforms are those which market goods and services or rental assets. The category includes the big ride sharing platforms like Grab and Gojek and their competitors; the major ecommerce platforms like Bukalapak and Tokopedia; as well as the smaller niche platforms like TaniHub, Haratoken, Aruna and EdenFarm. Ideally, marketplace platforms aspire to bring together fluid digital transaction and distribution infrastructure that connects large numbers of clients to payment and logistics plumbing with historical data, ratings, and ID to facilitate trust, authentication, and risk scoring.

Many successful marketplaces eventually allow third party innovations and new services and thus become innovation platforms as well as transactional marketplaces.

Hybrid platforms

Hybrid platforms is the term we use for marketplace platforms that open their infrastructure to other players thus evolving from their original role of marketplace to add on elements of an innovation platform. One area of innovation that has appeared most prominently on these hybrid models is add-on financial services, including lending, merchant solutions, insurance, and robo-advising wealth management for both platform users and for the gig-workers and SMEs who populate the supply side of these platforms (many of whom are lower income). Table 1 below documents some of the add-on financial services within the Gojek and Grab ecosystems.

Table 1: Examples of 3rd party financial services offered over hybrid platforms in Indonesia

Use Case	Model	Platform	Fintech/bank Partner	Growth
Driver Micro-Insurance	Micro-insurance products for drivers	gojek	PasarPolis.com	1 million drivers
POS Micro-Credit	Subscription-based credit line for recurring purchases	gojek	Findaya	$2 billion in GMV
SME Credit	Credit and subsidized loans for restaurants based on order data	gofood Powered by gojek	BNI	50% y.o.y. growth in BNI's subsidized loans
Payments	O2O e-wallet and digital payments	Grab tokopedia	OVO	1 billion transactions
Last Mile Agents	Agent-led distribution, digital sales, and ecommerce points	Grab	kudo	2.8 million drivers*
Robo-investing	Wealth management service for Grab users, driver-partners and merchant-partners	Grab	bento	Going live Q2 2020

*Across Southeast Asia

Many of these services are offered by third party partners rather than the platform itself though the trend has been for the platforms to buy these smaller companies in many cases (Kudo and Bento are examples of Grab acquisitions).

Table 2: How do different platform models relate to financial inclusion for workers/sellers?

Institution	Traditional banks/ MNO	Marketplace platforms	Hybrid innovation platforms
Examples	BNI, BRI	Tokopedia, Bukalapak, Tanihub	Gojek, Grab
Financial inclusion model	Traditional bank account or MNO wallet as standalone product with Cash in/out (CICO) accessed via ATM, branch, or agent	Digital wallet, card, or bank account linked to the platform; Often suppliers or workers need to register to get paid, creating strong incentive. CICO is usually via standard channels or O2O agent networks	Similar to Marketplace platform model except that a variety of add-on or 3rd party financial services are often also available via platform in a tightly integrated way
Financial inclusion outcome	Often the poor use these providers to receive 1-2 big payments per month (e.g. wages, G2P, or remittances) then cash out immediately (pay-and-withdraw to cash style usage)	As with traditional providers, many workers/sellers seem to use these accounts for little beyond getting paid, though there seems to be more scope for merchant payments and digital credit add ons within these platforms than with traditional players	Here workers access a wider range that includes investing and insurance and competitive credit marketplaces, though it's not clear how many use all these options, and many of the services are geared to increase loyalty and effort, thus may not fully align with user needs

Both Hybrid and Marketplace platforms that engage gig-workers, laborers, or small-scale informal vendors (like farmers) can theoretically have positive incentives that encourage them to see low-income people as low-cost suppliers rather than simply low-value customers, which could make them good candidates as partners in the goal of financial inclusion.

Further, Hybrid platforms open to third party financial services have at least a greater potential for creating meaningful use across a comprehensive package of financial services (rather than simple pay-and-withdraw to cash style usage). See Table 2 for an analysis of how the different platform models will likely impact financial inclusion for workers or sellers on the platform.

That said, there are many caveats and widespread meaningful use seems to be still a future possibility rather than a current reality in Indonesia.

Does financial inclusion matter anymore if joining platforms improves income dramatically?

The data referenced below seems to show that at least some proportion of drivers and service providers on Gojek raise their income by a meaningful amount. As we pointed out above, this creates strong incentives for workers and vendors on platforms to adopt financial accounts—if nothing else, just to get paid from their work or sales on these platforms.

One could ask if we are getting the logic backwards to think of income as an inducement for financial inclusion—shouldn't increased income itself be the goal for financial inclusion? Income is clearly of chief importance, but financial inclusion still matters regardless. Financial services can help create longer run opportunities through investment (e.g. in schooling for kids, or entrepreneurship) that continue to grow and improve welfare status over time and even generations. Perhaps even more important, it can improve resilience and stability via products like insurance and retirement savings that buffer low income families from being pushed back into poverty at moments of financial stress.

Indonesia's financial services and platform landscape

The traditional financial sector

Overall, Indonesia is at a middle level of financial inclusion where there is widespread ownership of bank accounts and some formal credit but still large swaths of the population—especially those with middle levels of income or SME owners—who could use finance but don't have access to compelling formal products. Some relevant facts include:

- Indonesia has the fourth largest population of unbanked adults in the world (after China, India, and Pakistan): 95 million people . 55.7% of adults own an account at a formal financial institution. There is a huge opportunity for impact.
- Adults with a formal financial account lept from 35.1% in 2016 to 55.7% in 2018, driven by a G2P initiative that onboarded 15.6M adults; state-owned banks and telecoms expanding rurally; and proactive government policy.
- The unbanked are equipped to be banked -- 88.8% of the unbanked have the necessary ID, and 83.2% live less than five kilometers from a financial institution branch or agent.
- Formal credit is rare. Only 8.5% of adults have received a formal loan backed with collateral. There is a massive US$330bn financing opportunity for MSMEs, which fintechs should be well-placed to serve.
- Indonesia is relatively well covered by insurance for a country at its level of income due to the public health insurance option (BPJS), which 51.8% of adults report having used. An additional 18.9% of adults report having formal insurance outside of BPJS.

Thus, financial product coverage from traditional institutions is incomplete with gaps in bank accounts and credit coverage for low- and middle-income populations as well as SMEs. There is also room for growth in insurance, especially outside of health insurance. The new models of digital lending and digital payments are the most advanced but there are more specialized fintech offerings that are growing rapidly to fill these niches.

The digital services sector

Indonesia has a highly connected, economically-active population. Over half the adult population had a smartphone as of 2019, nearly . They are estimated to have the largest internet economy in Southeast Asia, reaching US$40 bn in 2018 and recently growing at over 40% per year.

The digital services sector is developing apace with this highly digital segment of the population. Thirty nine entities had e-money licenses as of October 2019, including the country's three major telecommunications companies; state-owned Telkom Indonesia (Telkomsel), Indosat Ooredoo, and XL Axiata. There are two major ride-hailing companies, Gojek and Grab (see box below); in the ecommerce space there is Tokopedia, Bukalapak, Shopee, Lazada and others; and in the digital wallet space there is GoPay, Dana, Ovo and a host of smaller competitors. These large players also heavily overlap. For example, Ovo is the payments provider for both Grab and Tokopedia, which Grab is pushing to merge with Dana so it can garner more market share against Gojek's payment service, GoPay.

Grab vs. Gojek -- The Indonesian Super Apps

A super app allows users to access transport, groceries, hot meals, banking and more within a single app -- features that would typically only be available through multiple standalone native apps. This model was pioneered by Tencent's WeChat in China; customers in China can conduct most of their daily digital transactions without ever leaving the app.

Gojek and Grab have both expanded well beyond their initial range of mobility offerings to pursue this super app strategy, offering services including lifestyle, entertainment, and financial needs; Gojek even calls themselves a super app on their website. Ride hailing platforms are well positioned to become super apps because they have both large audiences of frequent users and embedded payments. What is even more crucial in the Indonesian context, though, is their ubiquitous physical presence—the drivers who enable their core offerings of ride hailing and logistics support for all their other services, such as delivery. What's at stake in the Grab vs. Gojek battle, then, is who controls the online-to-offline (O2O) layer for the daily needs of Indonesians. In payments, this physical network is also key because enabling users to cash in with drivers helps solve the cash-to-digital transaction for the 95 million Indonesian adults who do not have a bank account. Grab's acquisition of the O2O payments startup Kudo gave it a strong advantage particularly in rural areas and with offline customers.

Table 3: Top 5 ecommerce marketplaces in Indonesia by monthly visits (Q1 2020)

Merchant	Monthly Web Visits	AppStore Rank	PlayStore Rank	Twitter	Instagram	Facebook	Number of Employees
1 Shopee	93,440,300	#1	#1	320,800	4,851,200	17,841,400	5,100
2 Tokopedia	86,103,300	#2	#3	445,100	1,780,500	6,377,800	4,100
3 Bukalapak	35,288,100	#4	#4	188,600	1,060,900	2,482,800	2,400
4 Lazada	22,021,800	#3	#2	391,800	2,014,000	29,880,700	3,100
5 Blibli	18,307,500	#6	#6	501,600	1,255,600	8,591,600	1,800

Source: iPrice

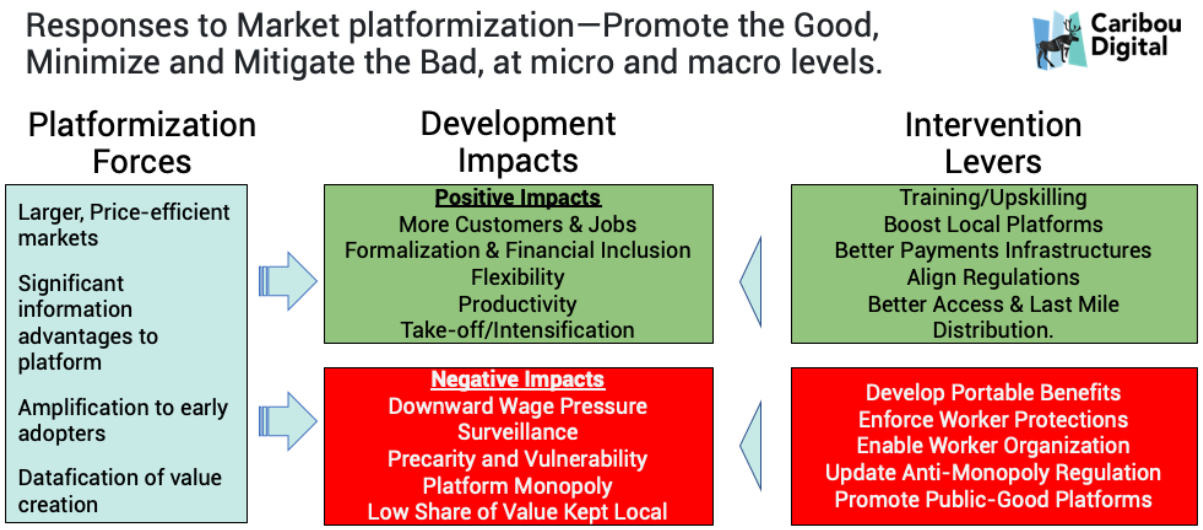
While providers report strong growth and have networks of millions of agents, much of this activity has limited relevance to financial inclusion as it is focused in urban areas targeting a small, wealthier, urban population. As a consequence, only 4.7% of the population uses e-money as of 2019—mostly urban youth while other ecommerce users rely on bank-based payment products.

There is much potential for growth in businesses adopting digital payments and online strategies as well. According to a report by Indonesia's IT Ministry, only 16% of Indonesia's 65 million MSMEs have adopted digital technology in their businesses and only 9% have used ecommerce platforms, while the rest relied on brick-and-mortar outlets (36%), internet browsers (31%), or social media (24%).

1. O2O stands for Online-to-Offline and represents the physical touch points with digital platforms when they recruit stores, other retail locations, drivers, or field agents to manage payments, logistics, customer onboarding, and other processes.

Key opportunities and risks of platform models

The following section looks at the digital marketplace and hybrid platform landscape in Indonesia to assess their potential to expand economic opportunity and increase financial inclusion.



Framework taken from: Caribou Digital "Platforms and Livelihoods in Sub-Saharan Africa" 2019

As shown in the above framework developed by Caribou Digital, there are a variety of forces unleashed by the platformization of markets generally—some of which are positive and some negative which suggests levers span both carrots and sticks.

In the Indonesian context, there are a number of positive opportunities as well as potential downsides to trying to increase financial inclusion via platforms. Below we look at a few of the most prominent tradeoffs, including:

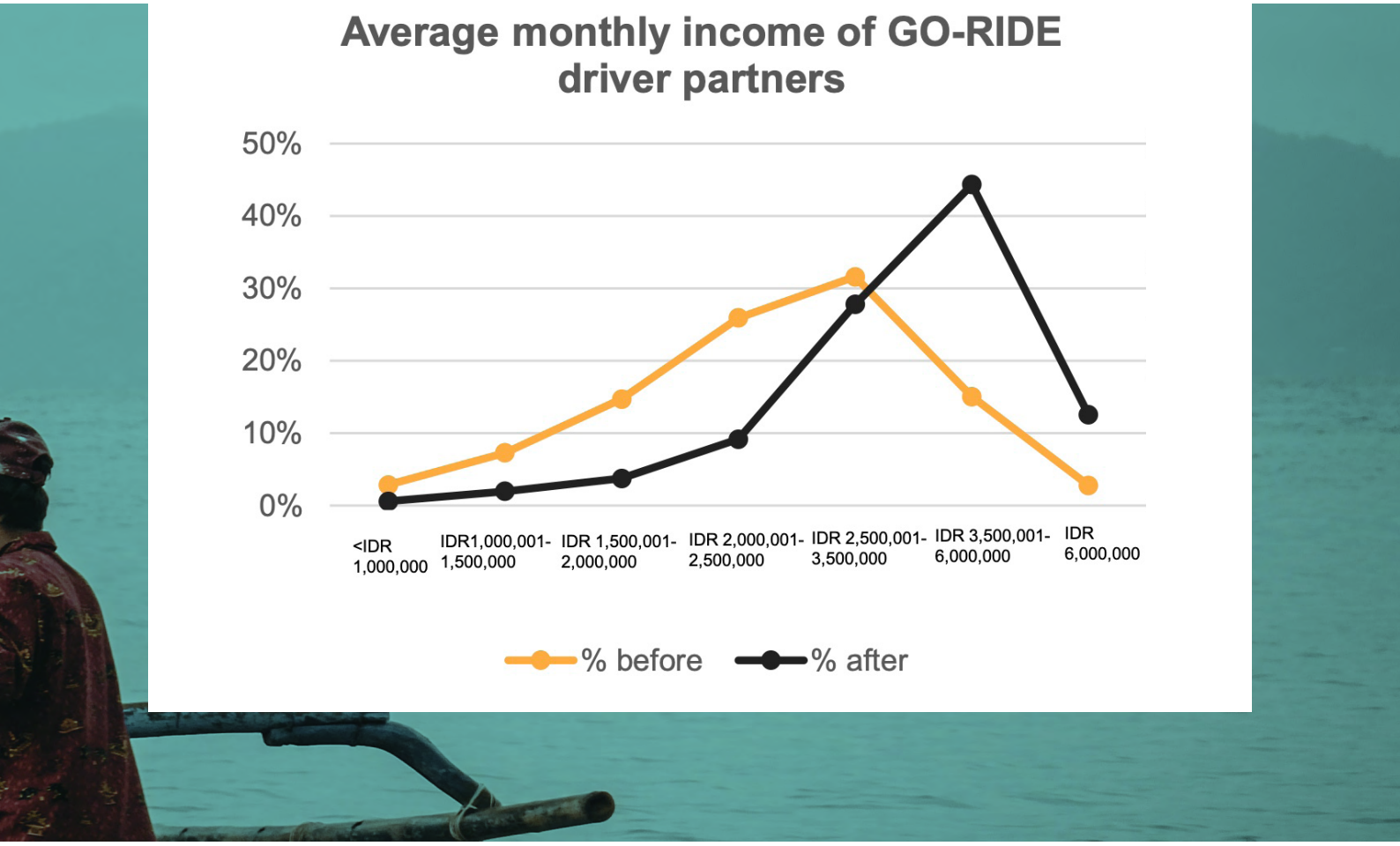
- Gig work and platform sellers do represent income opportunities for low-income people but these jobs can be precarious and lack agency
- O2O and ecommerce agents represent a powerful distribution model but appear to be fundamentally limited in rural areas
- Marketplace platforms can value the poor as suppliers (rather than loss-making consumers) but still appear to bias away from the very poorest and hardest to reach
- Some sector-specific marketplace platforms show promise in serving low-income or rural areas but struggle with scale and financing
- Achieving meaningful use of a comprehensive set of financial services seems possible, especially for the hybrid platforms, but the full potential has yet to be reached in reality

We think the financial inclusion opportunity presented by digital platforms is real and worth pursuing; however, the risks and negative incentives should be recognized by those in the development community or government sector who wish to develop collaborations with digital platforms. We go through each of these tradeoffs in turn.

Gig work does generate income opportunities for low-income people but can be precarious and often lacks agency

Some platform gig work or seller opportunities can give the poor the ability to make significant income at sometimes large multiples of what they are able to make in other occupations for which they are qualified. That said, wages have been dropping over time and many workers complain of harsh conditions and precarious economic situations (though this applies primarily to urban driver gig-work and not necessarily to farmer or fisher platforms in rural areas). Additionally, achieving meaningful use of a comprehensive set of financial services seems possible, especially for the hybrid platforms, but the full potential has yet to be reached in reality.

> One study shows Gojek workers boost income potential and a significant number of Gojek MSME partners digitize their payments



A survey from the University of Indonesia in late 2018/ early 2019 looked at workers and service providers on the Gojek platform to assess their economic benefits. The work was supported by Gojek and the data are self-reported so it's not clear that the sample will be representative of all Gojek workers. Nevertheless—as one of the only surveys of drivers on this topic—the data are interesting and do show significant income earning potential within the sample they surveyed. Below are some key results:

Drivers and service providers are from lower income backgrounds:

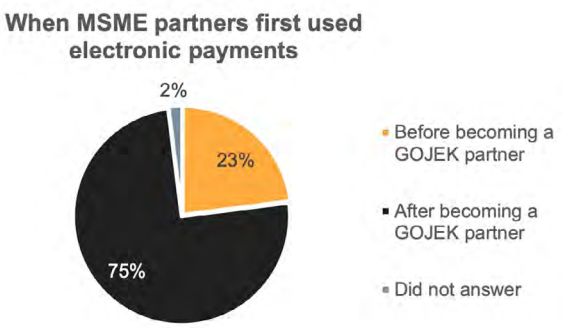
Most (86%) of GO-RIDE (2-wheel) drivers had a high school diploma or lower and many reported being underemployed or working in the informal sector before, indicating they likely come from lower income households. GO-LIFE service providers (primarily cleaners and masseuses) were even more likely to be women (70%) or low income (91% high school or lower).

Service providers increased income within the sample:

GO-RIDE drivers increased self-reported income by 45% (considerably more than minimum wage in both Jakarta and beyond), while expenditures increased by only 25% ; GO-CAR (4-wheel) drivers had similar results. GO-LIFE providers reported an even higher increase in incomes (72%).

Food merchants on the platform began accepting digital retail payments at a high rate:

For 75% of GO-FOOD merchants, their partnership with Gojek is the primary reason they went "digital", accepting non-cash payments. More than half of stores saw their revenue increase after joining GO-FOOD.



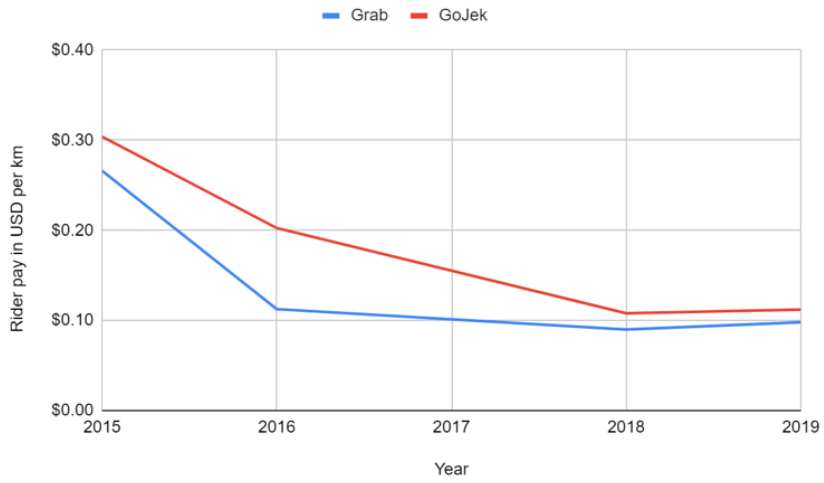
Nevertheless, platform gig work is grueling, the benefits precarious, and competition is driving down wages

Platform work is often hard, stressful, and involves long hours. Also, as competition increases over time, wages decrease (see box, below). While most platforms still find many willing gig-workers (indicating that people still find the opportunity compelling) there have been a series of protests against driving platforms in Indonesia where workers have expressed their concerns (see box, below).

Many workers appear to view driving or other gig work opportunities as temporary steps on the way to bigger opportunities. Some, for example, want to raise a certain amount of money then use it to go on to start a business or go to school. This gig-work churn means those who leave may lose access to some of the platform benefits and financial services they had acquired.

Falling wages and driver protests

While many drivers appear happy with the earning potential on Gojek and Grab, there have been regular protests staged by drivers to protest difficult driving conditions, decreasing wages, and other concerns. The below shows the evolution of rider pay and a partial timeline of driver strikes and protests along with the primary issue causing each protest.



Partial list of Gojek and Grab driver protests:

- Summer 2016 -- Protests against the drive performance evaluation system of apps
- July 2017 -- Drivers protest against being shut out of a bridge
- September 2017 -- Hundreds of Gojek-drivers protest and strike
- November 2017 -- Protests by drivers in front of the Gojek office
- March 27th, 2018 -- 10,000 protest in Jakarta
- April 23rd, 2018 -- 30,000 protest
- All 2018 -- Monthly demonstration in Jakarta
- July 27, 2018 -- Tens of thousands of drivers demand higher fare tariffs at the start of the Asia Games
- Aug./Sept. 2018 -- 200 drivers block the office of Grab for the whole day

O2O and ecommerce agents represent a powerful distribution model but appear to be fundamentally limited in rural areas

Successful digital platforms aggregate large numbers of potential customers and have already created many of the transactional rails for payments, identity, data, logistics, and risk ratings. They thus provide a dramatically different cost structure for customer acquisition and distribution of financial services that can make many low-income customers profitable—in contrast to pure digital models that are not based on the platform structure (e.g. neo-bank models). This is especially true for hybrid platforms who open their infrastructure to third parties (see Table 1 above).

Examples of rapid scale up deploying new services over existing platforms

In Kenya, the M-PESA mobile money system can be seen as a kind of primordial hybrid platform, where access to the infrastructure is heavily gated by policy and poorly-built API connectivity. Nevertheless, M-Shwari was one early example where the product was deployed over the M-PESA platform and reached nearly 3 million people within 3 months. Two years later, there were nearly 10 million users of which nearly 40% were under the national poverty line. Even faster rates of growth have been seen on other digital platforms.

The opportunity to capture in previously untapped rural markets is especially powerful. Pinduoduo, a Chinese ecommerce platform that started in late 2015 specifically targeting lower-income customers, became the fastest growing app in the history of Chinese internet companies. The platform grew from zero to 140 million users in two years. Pinduoduo has become the digital payment entry point for millions of rural Chinese customers at a speed unimaginable by policymakers hoping to spur digital uptake. It has succeeded at reaching the hardest to reach customers with 42% of its customers with a high school level education or lower and more than 40% from the lowest tier areas in China.

Another example is Shihuituan which piggybacks off of the WeChat platform as a "mini-program" to sell produce and other goods to lower-income customers in rural areas. It uses local agents that aggregate and support customers in WeChat groups. These agents help facilitate digital payments and get people comfortable with ecommerce, mostly through the WeChat messaging platform at minimal cost. This cost structure further expands the types of customers ecommerce and digital payments can reach. They are able to be profitable on a 10 RMB ($1.41) order which shows how low they've pushed marketing and distribution costs.

In Indonesia, when Ovo's wallet was launched by parent company Lippo, it was only within Lippo's own ecosystem. Eventually they realized it couldn't win against its competitors with this approach which spurred the partnership with Grab. Ovo now has 13 million registered users and 250,000 transactions per day and forms the payments base layer for other Grab financial services highlighted above.

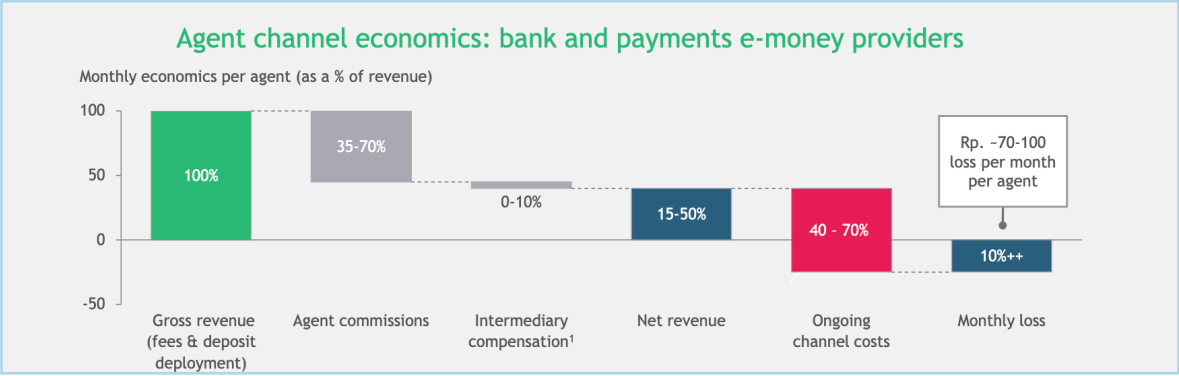
Platforms often gate access to service providers and struggle to reach rural areas

Platforms often gate access to third party partners so that the products and services launched are restricted to those that augment the core business model via enhanced loyalty and engagement and may thus blunt their welfare benefits. Another potential downside is the fact that platforms are not applicable to many segments of the population, especially non-smartphone users and those in rural areas.

In particular, the challenge of creating a profitable rural business model that supports dense, cash in cash out networks in rural areas continues to foil banks and digital players alike as it has in most other parts of the world and is a major hurdle to bringing rural users onboard.

BCG Study of CICO Economics in Indonesia Finds Little to be Hopeful About

A BCG study in 2019 finds that typical agent channel economics result in negative margins and that this is true across Bank and e-money agents. They find a grim combination of low fundamental demand (due partly to lack of use cases for digital finance) combined with high costs due to challenges with liquidity, agent activation and training, technical infrastructure, and government policy barriers.



The authors of the study also conducted a geospatial analysis. Despite the fact that nationally, the more than 1M laku pandai and 3M non-bank agents assure 87% of adults are within 5km of a CICO point, rural areas still have poor service quality, liquidity, and low geographic coverage where only 27% are within 5km of a service point. One important observation is that while ecommerce agents are very numerous they add only about 2% to the amount of population within 5km of an access point. This is because they are clustered around existing bank branches in more populated areas and thus don't extend coverage to more rural areas.

Marketplace platforms can value the poor as high-value, low-cost suppliers (rather than loss-making consumers) but still appear to bias away from the very poorest and hardest to reach

Marketplace platforms have inherent incentives to acquire low-income users both to maximize network effects and to populate the service providers side of their platforms (e.g. drivers, sellers, and other forms of workers.) This is in contrast with most financial service providers (and private sector enterprises in general) who often see low income as a proxy for low value as a customer.

Marketplace platforms offer income-generating opportunities that can be significant for some low-income people. And the platforms value low-income service providers who are easier to motivate even at lower wages.

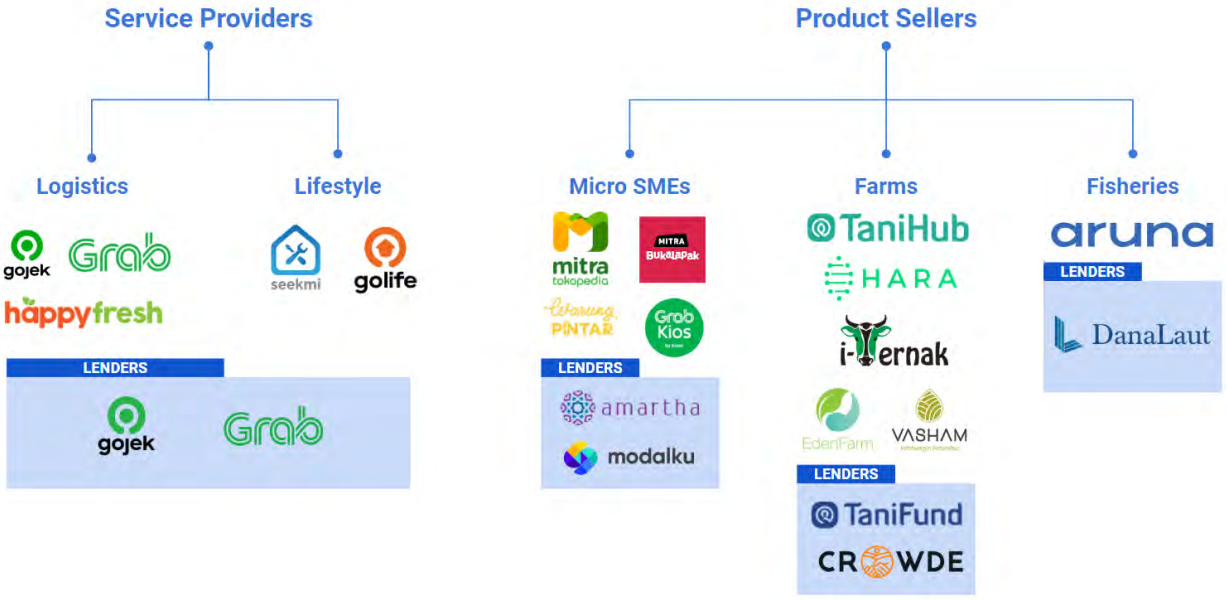
There are a few main types of platform-based work that are most relevant including:

- Lifestyle services (domestic services, gardening, repairs, beauty and wellness, maintenance, and electrical and plumbing)
- Transport and logistics (ride-hailing platforms and delivery including restaurant food)

Additionally there are a few main groupings of income-generating opportunities from online sales relevant to low-income Indonesians:

- Produce, livestock, or other farm output (farm to retail/wholesale platforms)
- Fisheries focused specifically on remote fishing communities
- MSME improvements where small, physical storefronts are connected to digital marketplaces to buy stock and sell goods
- Small stores serving the daily needs of the local community that are modernized top sell digital good such as airtime and billpay
- Specialty craft stores selling artisanal goods online

Figure 1: Examples of opportunities for low income indonesians to earn income on platforms



Each of these activities has potential to generate income for low-income people. They would in turn adopt digital payments in order to transact and likely expand their options for credit and other digital financial services.

There are barriers that exclude many from earning income and becoming financial included through platforms

While lower-income people are a main source of gig workers and agricultural sellers on some platforms, low-income people are not a homogeneous group and these income opportunities are only available to the subset the platforms find easiest to recruit, train, equip, and motivate.

Some of the more challenging groups and geographies include:

- Those without phones or with limited digital literacy
- The illiterate and very poor with limited work experience
- The blind and otherwise handicapped
- Those in rural areas with limited access to connectivity, electricity, or transportation
- Those without bank accounts or wallets to transact and get paid -- especially in rural areas without banking retail outlets to facilitate account opening or CICO.

These challenges are especially prominent in rural areas as we discuss in the next section.

Some sector-specific marketplace platforms show promise in serving low income or rural areas but struggle with scale and financing

Among the platforms shown in Figure 1 are some who focus almost exclusively on lower income populations as an inherent part of their model—e.g. those focused on agriculture or fisheries or on informal MSMEs like Eden Farm or Tanihub. This makes them likely candidates for donor or government support.

However, these sector-specific platforms suffer most from the logistical and recruitment challenges laid out in the previous sections, especially when it comes to operating in rural areas and managing cash in and cash out. They also deal with interrelated challenges of a mostly rural population who have fewer phones and limited exposure to the digital world.

These challenges in serving difficult segments and geographies include:

- The lack of adequate cash out options, resulting in an underlying anxiety about accepting digital payments and keeping cash digital
- The challenge of having to opening bank accounts or wallets for low-income clients who are unbanked (and related challenge of partnering with rural banks to do so)
- Few in rural areas have access to smartphones or may lack the confidence or skills to effectively use them
- Poor network coverage and connectivity degrades user experience in rural areas. Digital familiarity and comfort decrease as well.
- Many sellers lack digital marketing skills and know-how to create a profile and position their storefront so that it can be discovered in otherwise crowded online marketplaces
- Last-mile logistics can be a struggle in rural areas so niche platforms are sometimes required to build out their own logistics, at great cost
- Limited access to debt and equity capital due to less intense interest from investors in rural, fisheries, or informal oriented business models

Related challenges reported by niche platforms:

- Limited ability to attract investment from top venture capital and private equity investors who view them as risky and unfamiliar, especially at early stage
- Challenges with unit economics due to cost of customer acquisition and rural logistics

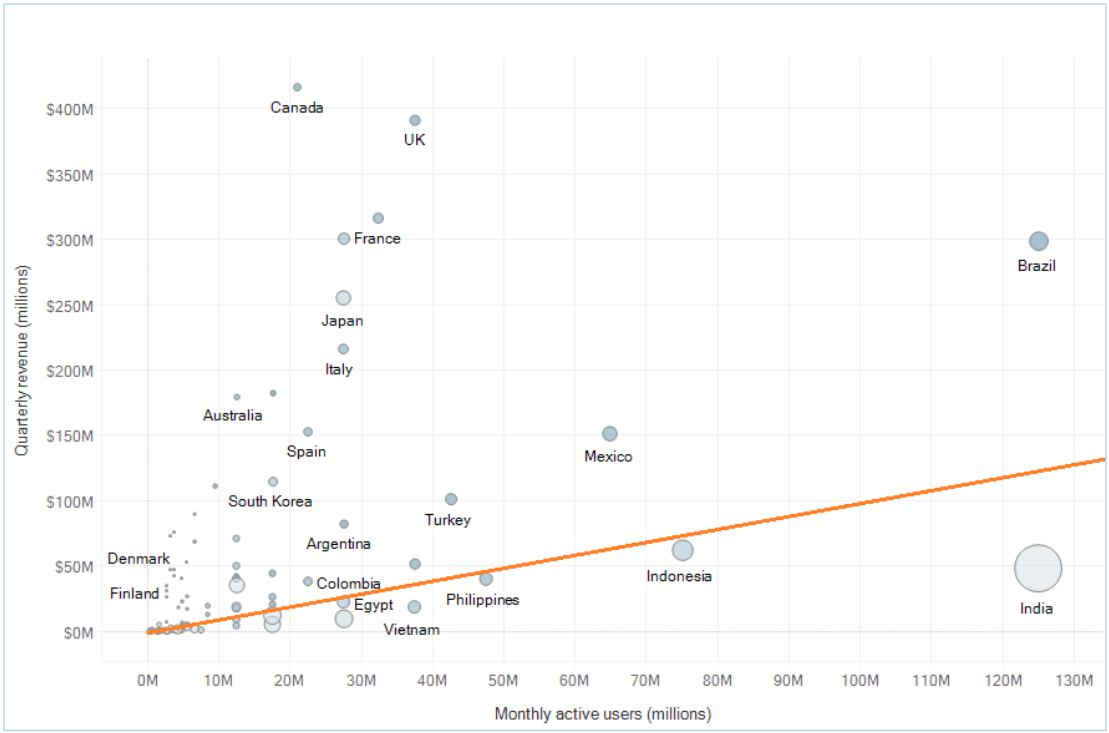
These challenges illustrate the intertwined and codependent nature of financial services, digital connectivity, and economic opportunity in rural areas. Without the economic activity implied by agriculture- or fisheries-related ecommerce for example, demand for financial services (and even smartphone-based connectivity) in rural areas is often low. But without robust financial services and connectivity coverage, ecommerce players find it challenging to operate in these areas.

Data from Facebook paints a picture as to why marketplace platforms reach the poor better than advertising platforms

Facebook is the world's largest advertising platform. As such, users are valuable to the extent they can buy something from advertisers—thus their value will be closely tied with their income. Facebook's quarterly revenue per user (see chart below) shows that many countries are simply not profitable on average, largely because advertisers are not willing to pay enough to target their citizens due to their lower levels of income but also because these people are harder to target given the lower levels of online activity. Thus, Facebook doesn't see low- income people as desirable customers except to the extent they might induce positive network effects with its social network.

The challenge for Facebook is those countries that are down and to the right in the graph below — lots of users, but little revenue. At an estimated operating cost per user of around US$1 per quarter (shown as an orange line), dozens of countries — including larger ones such as Nigeria, Indonesia, India, Vietnam, and the Philippines — would likely be unprofitable for Facebook.

The implication for digital businesses in emerging markets is that instead of the Silicon Valley internet business model, where moving up the user adoption hockey stick is the success metric that keeps the venture capital flowing, Global South businesses have to build more strategically, working toward profitability from the beginning. Not having the ability to pull the advertising trigger and instantly start monetizing their user base may therefore be a helpful constraint, as it forces these businesses to instead develop more disciplined revenue models that can support more organic growth. This economic imperative as well as the lack of logistics, payments, and other infrastructure pushes the platform business model and its transactional revenue streams to the fore.



What are the key opportunities for expanding financial inclusion through digital platforms?

While the digital sector in Indonesia is exciting, there are still major barriers to serving the poor and rural populations that donors can address in partnership with the government and private sector.

In this section we focus on three specific, interconnected opportunities for intervention to overcome some of the barriers outlined in the last section that hinder platforms from creating benefits for the poor.

These opportunities are: partnering state-owned banks with the private sector to build robust cash in cash out and distribution networks in rural areas; helping platforms expand gig-work opportunities on marketplace platforms to a wider segment of the low-income population; and helping platforms to reach small-scale sellers in sectors like agriculture, fisheries, or informal MSMEs.

Table 4: Platforms fall into three main categories with different incentives to serve the poor

Platform type	Hybrid (Ridesharing)	Marketplace (gig/ ecommerce)	Niche marketplace (Ag or MSME)
Examples	Grab, Gojek	Bukalapak, Tokopedia, Lazada	Tanihub, Haratoken, Eden Farm, PayFazz
Relevant incentives	Rideshare model implies a focus on urban population. To grow, they need more drivers and service providers who will work for low wages.	Seek to grow ecommerce value transacted. Rural and low income generate (limited) volume but are challenging to onboard/support.	Dedicated to serve rural and/or low income. Challenges with seed and growth financing. Challenges with unit economics and scale.
Potential Interventions	Policies to expand income opportunities to more urban poor and protect workers. Improve financial services to be more valuable to lower income people.	Partnerships with the government to expand infrastructure and onboarding to rural areas. Support marketplaces to open up as hybrid platforms.	Partnerships with the government to expand infrastructure and onboarding to rural areas. Support innovation in new entrants and scale up of successful models.

Table 4 above lists a number of hypotheses regarding which kinds of interventions might be the most promising for different kinds of platforms. Below we explore three main areas including:

1. Partnering the National and Provincial Government banks to build robust rural retail and CICO infrastructure while marketplace and niche platforms build financial services products on top
2. Policies to expand income opportunities to urban poor and protect gig-workers on the hybrid platforms
3. Supporting innovation and scale up of successful niche platform models in agriculture, fisheries, and informal MSMEs

We believe that some of the other hypotheses, such as partnering with hybrid platforms to help build more appropriate financial services for low-income platform workers, and searching for policies or infrastructure investments that would help the larger marketplace platforms open up to their party innovation (i.e. evolve into hybrid platforms) are also worthy of further study but we don't cover them here.

Partnering Government banks to build robust rural infrastructure while marketplace and niche platforms build the products on top

The challenge of building robust rural retail, distribution, and CICO networks to engage the rural population has mostly defeated banks and ecommerce sellers globally—Indonesia is no exception.

Lean by design and placeless, marketplace platforms are often highly customer centric and have the capacity to create deeply compelling user experiences and value propositions. But they often balk when faced with the expensive non-digital process of building out physical infrastructure networks (e.g. for rural CICO or delivery) or onboarding non-smartphone users in areas with limited connectivity.

Banks are their natural complement. Many (the state-owned banks and provincial development banks in particular) have a large reach into rural areas or even cities on less populated islands such as Papua. What they lack is a fluid sense of product development and customer need.

As we explain below, we believe there are new models that should be explored where state-sponsored banks in partnership with government extension programs would incur the cost to build out and support rural branch and agent networks for account opening and CICO. The digital payers could be brought in as partners to drive traffic and demand via value added services such as remittances, bill payments, and various ecommerce scenarios.

Three potential models linking rural banks and digital platforms

A key pillar of the Chinese rural development strategy of the last decade was to support digital platforms and ecommerce players to grow their user base in rural areas, especially users who were on the supplier/seller side of the platform generating rural income opportunities. See the Box below for more detail.

There may be room to support similar collaborative models in Indonesia, where the provincial development banks could use their existing retail footprint of agents and branches, banking infrastructure, and regulatory imprimatur to form a infrastructure "backbone" responsible for physical presence and cash handling while the private sector players layer on their products and value added services that could be served and supported through this infrastructure. Part of this effort will require an agreement on the role each stakeholder must play to foster a healthy last-mile ecommerce ecosystem including CICO as well as value-added products. Focus should be on platforms that target informal and low-income markets but could extend to ecommerce players that would allow rural SMEs to market their products to a national audience.

Three potential models follow.

Enabling agricultural and other rural platform models to onboard customers for banks

Platforms that seek to onboard farmers, fishermen, and other rural producers often find customers don't have bank accounts and wish to build account signup into their onboarding process. Some digital players have already begun to explore one-off or ad hoc partnerships with local banks but more streamlined and automated processes facilitated by APIs and digital KYC could allow these platforms to bank larger numbers of rural farmers serving both the platform's goals and the bank's customer acquisition goals.

Creating shared infrastructure and onboarding extension programs to build a population of low-income ecommerce sellers

There are a number of rural ecommerce onboarding models (cited in the Box below) from India, China, Kenya and other markets that could be models for government and digital platform collaboration to generate opportunity in rural Indonesian areas.

In most of the programs we reviewed, rural ecommerce training for users was a collaborative effort between digital players and local government. The government subsidizes digital skills and onboarding training for the rural population on the digital platforms with the goal of creating more economic activity and financial inclusion, especially in the agriculture sector.

To have the best chance of success rural digital onboarding initiatives in Indonesia should follow lessons learned from some of the other contexts described in the box below:

- They should have a clear vision of the population group they are trying to help and the needs of that group (often some combination of connectivity, awareness, and skills)
- They can benefit by leveraging existing government programs and extension efforts but not if this dilutes the mission
- The government should partner closely with digital players as key stakeholders in the design and development of the programs
- Engaging local government, NGOs and community groups can often improve engagement and achieve greater awareness of the program

Examples of different government collaborations to onboard small scale or rural ecommerce sellers around the world

Flipkart launched its Samarth program in 2019 to bring India's artisans, weavers, and handicraft workers online via its platform and give them access to a national customer base of more than 150 million buyers. The program was designed to support the ecommerce journey for artisans from on-boarding until they reach familiarity with the process of selling online. The benefits include dedicated support for onboarding, cataloguing, account management, business insights, dedicated seller support, reduced commissions, and warehousing support. Part of the vision of Samarth was to work with local NGOs and government bodies who have existing relationships with small scale entrepreneurs who could benefit from the program. By December 2019, Flipkart had brought 135,000 MSMEs onboard via the program.

"Flipkart Samarth will work closely with reputed NGOs and government bodies and livelihood missions to reach a large number of rural entrepreneurs, with a special focus on women-led enterprises, differently abled entrepreneurs, artisans, and weavers, who often face obstacles such as lack of access to working capital, poor infrastructure, and inadequate training. Flipkart has systematically assessed the pain points and aspirations of these groups and designed Flipkart Samarth to address their problems and make it easier for them to list and sell online." -- Flipkart blog post, July 31st, 2019

Amazon India also has a similar program where it has inked MOUs with local governments to collaborate in bringing small scale sellers online.

The Ajira Digital Kenya program is an example of government sponsored digital skills training aimed at helping low- income people gain income opportunities online. The free program was launched by the Ministry of Information, Communications, and Technology (ICT) under the Cabinet Secretary Joe Mucheru and allows people to sign up and train at local government offices throughout the country. This program equips youths to acquire digital platform based income generation opportunities as a way of combating increasing unemployment in the country. A key aspect is that it leverages a network of government offices where people can get training and use free computers and wifi so that people don't have to be online already to benefit.

China's ecommerce onboarding programs

eCommerce onboarding programs have proven to be critical in China to help the digitally novice adapt to digital platforms. These programs can range from a government sponsored center led by village organizers to official consulting organizations that serve tens of thousands of customers.

In the village model, the local government often contributes to an ecommerce center/space which includes computers, classrooms, and photography setups. In one example, the government contributed 30K RMB out of a 130K RMB ecommerce center which was run by digital natives in the village without cost to trainees. Third-party ecommerce trainers visit periodically to teach specific skills.

CICO agents (bank-led) are often used as recruiters to help draw their customers to these training programs. In one example, agents were paid 300 to 400 RMB per referral which is a significant boost to income.

The larger ecommerce platforms augment the public sector services with end-to-end SME consultancies. They can help customers run their ecommerce storefronts directly, or train new digital sellers in skills like creating a login, taking pictures, marketing, and retaining users. In one province, customers were paying a 6,688 RMB fee per year for Alibaba ecommerce training.

Partnerships to share existing retail footprint and CICO of rural banks

A third model would focus on state-owned bank branches and agents that partner with digital players who can drive use cases that leverage their retail footprint and cash management capabilities. Examples might include remittances, bill payments, digital goods purchases, and ecommerce order processing. These services might be connected via APIs to local agent or branch staff interfaces allowing multiple digital partnerships in one outlet. These add-on services could increase traffic and revenue for the banks leveraging their fixed cost investments in retail and cash management. A similar model could be explored for merchant payments.

In China, shared infrastructure has been key to promote the expansion of income-generating ecommerce opportunities. One example of shared infrastructure was the collaboration between China Post and the Postal Savings Bank of China to offer CICO and logistics services through rural branches. These distribution points have been utilized and expanded upon by the ecommerce platforms to ensure last-mile logistics coverage and CICO services. The Box below explores the history of China's ecommerce and rural banking programs more deeply.

History of Collaboration with Digital Players within China's Rural Banking Initiative

While China has been expanding rural banking for decades, it wasn't until 2000 that the country set forth a rural commercial bank policy, building upon credit cooperatives that already existed in rural areas:

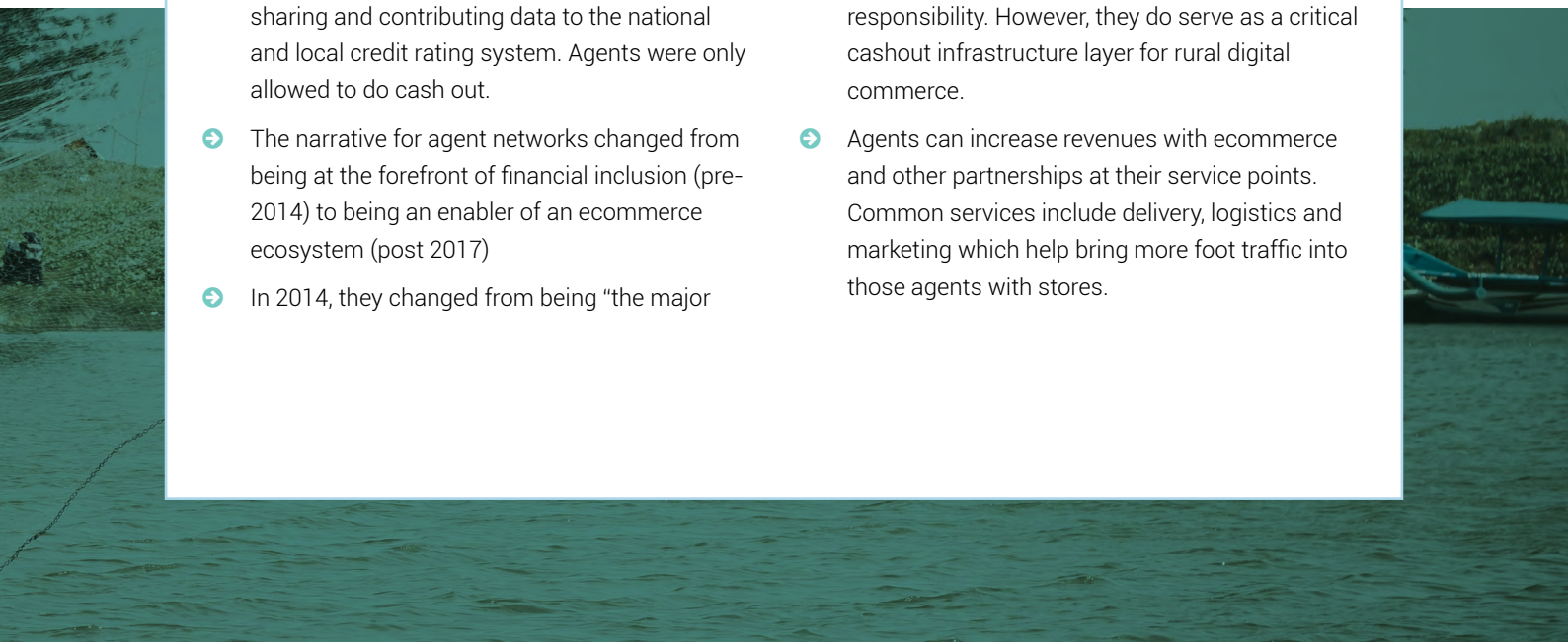
- Rural commercial bank ("RCB") pilot zones were created in 2000 in Jiangsu province when three rural credit cooperatives ("RCCs") were allowed to transform into rural commercial banks (which are allowed to go public). Additional RCBs emerged after 2013 when the central bank allowed for limited lending by the RCCs.
- The first agent network pilot zone was created in 2000 in several cities which allowed rural credit cooperatives to use contractors to provide services when there's no local bank branch. In 2011, this was formalized which paved the way for mass expansion of the network (97% coverage by 2018), led by the same RCCs. The Postal Savings Bank of China, the Agricultural Bank of China, and several local banks also began to roll out agents focused only on card-based cash out.

Then, as digital payments began to gain traction in 2013, the role of the agent network and rural banking was forced to change.

- The 2011 bank card policy moved G2P payments from cash to card. Initially, this meant every beneficiary had multiple cards for different subsidies/payments and that led to confusion and complexity. Later, this was amended with a "single card" policy that allowed a singular checking account to receive all benefits. This was made possible by different government agencies sharing and contributing data to the national and local credit rating system. Agents were only allowed to do cash out.
- The narrative for agent networks changed from being at the forefront of financial inclusion (pre-2014) to being an enabler of an ecommerce ecosystem (post 2017)
- In 2014, they changed from being "the major financial service provider for rural areas, spearheaded poverty alleviation and rural revitalization" to "promoting and facilitating the adoption of digital payments." Agents were allowed to do deposits, bill pay, P2P, and credit in a program that slowly phased agents in based on risk.
- In 2017, they shifted again to "incorporating multiple functions to serve rural and provide last-mile service coverage for all." The rural CICO agents became a cash out backbone of the ecommerce sector.

The Chinese rural banking expansion offers several lessons for Indonesia:

- Rural banking adapted to the fintech reality in China. It expanded heavily on the back of a card-based G2P scheme, but soon shifted to promoting digital payments, and more recently to supporting the digital ecosystem. Banks did not want to make these shifts but were forced to by consumer behavior change - the central bank helped this transition.
- Poor governance plagued Chinese rural banks at each stage of reform. Particularly, there were issues with rural banks investing deposits into urban projects to maximize returns rather than investing to develop local economies.
- It's unrealistic to expect rural banks and their agent networks to become profitable or self-sustainable in the very last-mile. In China, last mile agents are not running profitable CICO businesses and rather are seen as social responsibility. However, they do serve as a critical cashout infrastructure layer for rural digital commerce.
- Agents can increase revenues with ecommerce and other partnerships at their service points. Common services include delivery, logistics and marketing which help bring more foot traffic into those agents with stores.



Supporting innovation and scale up of successful niche platform models in agriculture, fisheries, and informal MSMEs

There are a number of digital platforms that focus on lower-income populations and rural areas, primarily serving small scale sellers and micro merchants in the sectors of agriculture, fisheries, and informal MSMEs. Some larger platforms also have special programs to reach small-scale sellers and there are also sector-specific niche platforms who target small scale sellers of agricultural and fisheries output or informal businesses (a partial landscape of these platforms was shown above in Figure 1 where the Product Sellers branch is the relevant section.)

Many of the niche platforms we spoke to state that the MSMEs and farmers they reach are largely unbanked or underbanked but become banked and may get access to credit or other services when they join the platform. Thus, the financial inclusion impact from onboarding them to these niche platforms is clear.

In fact, there is likely a two way linkage between niche platform models and financial inclusion where the growth of niche marketplace platforms both promotes financial inclusion but is also hindered by the lack of it, given it is much easier to sign up sellers who are already banked. Some platforms report they go through significant efforts to give unbanked users accounts during their onboarding process and some have informal partnerships with local banks to make the process go more smoothly. Nevertheless, if the population were more banked, this friction would go away.

As noted above, these efforts face unique challenges in both onboarding clients as well as finding financing for their own growth that could be addressed through government policy or donor action. Three potential ideas are listed below.

An innovation fund to support new pilots and a test-and-learn approach to reach small-scale sellers in priority sectors

While there are some promising approaches, it's not clear there is a well-defined business model yet for engaging low-income small-scale sellers in Indonesia. Given the market is still at an early stage of development, the government or development sector should find ways to support experimentation and innovation in the form of new platform startups and innovative new product or partnership initiatives.

We believe an innovation fund combined with support appropriate to early stage companies could be effective if aimed at supporting new startups and possibly experimentation at existing companies with the goal of building commercially-viable models. It should be launched in partnership with existing private sector investors and VCs who would invest in the best companies that came through the program.

Finance facilities to support and de-risk the most promising niche models

A major barrier to scale for some niche platform models at the mid to later stages of their development (especially those that seek to incorporate credit into their models) is the challenge of finding wholesale credit financing to fund their growth. Banks are always challenged to fund new models, even ones that have a solid track record.

One potential intervention to address the lack of wholesale credit and growth financing would be to create an investment facility for mid to late stage niche platform startups to help them scale proven models more quickly. Again, this could be done in partnership with private equity and other investors to augment the investments they are already doing and use their investment as signalling as to which companies are likely to be viable in the longer run.

A technical assistance fund to encourage use of the regulatory sandbox by smaller, digital players

Indonesia's existing regulatory sandbox allows fintechs and other digital platform players to experiment with bank-like products and new forms of agent networks. Nevertheless many of the smaller players with more innovative models find it hard to test new approaches to agent banking or bank partnership models because they may not have the staff or resources to navigate the bureaucracy or develop partnerships with slower moving banks. Augmenting this to make it more accessible to new entrants would encourage innovation. A technical assistance fund to help pay some of the costs associated with partnerships between institutional bank partners and more nimble digital players might help grease the wheels in an effective way.

Policies to expand income opportunities to urban poor and protect gig workers on the large platforms

As discussed above, digital marketplace platforms (especially the large hybrid platforms like Grab and Gojek) can represent major income opportunities as gig workers for low-income in urban areas. They also create active innovation platforms where payment services, credit products, insurance, and other financial services can be pushed to low income people. However, there are barriers that exclude many from this opportunity including lack of literacy or awareness, poor communications or language skills, poor vision or other impairments, or lack of a smartphone.

Many platforms express a desire to onboard more service providers and an appetite for expansion if some of the key barriers are addressed. As an example, some platforms have even incorporated phone purchase plans into their recruitment approach so that they finance phones for new gig-workers who don't have them.

More research is needed to help guide policy and donor investment

Surprisingly, there are very few robust studies of the gig economy in the global south, let alone Indonesia, looking at how participating in the digital platform economy impacts income and improves digital or financial inclusion, or trying to understand worker journeys, and the true size of the segments.

Better data on income and work patterns, as well as more nuanced investigations into other questions around gig worker welfare, would fill out a more complete picture that would allow policy makers and donors to design better policies and interventions in Indonesia.

Policy agenda to support platform income earners

One area that donors and other stakeholders could play a helpful role in is to support the creation of a policy framework to protect people who make their income on digital platforms. Any policy agenda should be grounded in strong research and created in collaboration with the platforms so that the policies are not overly restrictive or too binding on platform growth and innovation.

Special features to enable specific user segments

Many driving platforms create special platform features to enable different user segments to work on the platform more effectively. Some facilitate hearing impaired drivers by sending the passenger a message through the app to expect the driver to not respond to verbal cues. For driving platforms like Grab, these kinds of approaches create inclusive and socially-beneficial impact as well as increase their driver recruiting and retention goals. Another example is Grab's special program for female motorcycle drivers. Many male riders in Indonesia find it awkward to hold the waist of a female driver whom they don't know. Grab created a program where women motorcycle drivers could opt to only pick up food and package deliveries to avoid creating the awkward situation of male riders canceling at the last minute when they realize their driver is female.

While more research and consultation with key stakeholders will help shape a nuanced agenda, high level policy areas to explore include:

- Worker protection for unionization and wage negotiations. The principle should be that workers get a fair share of value they create and have the ability to organize to demand better conditions, benefits, and minimum wages.
- For workers who work more than a certain amount, a basic package of worker benefits could be available -- commensurate with other jobs at similar levels of wages.
- Both policy and technical infrastructure should support portable benefits, data, and risk ratings so that workers are not trapped on any given platform and own their history.
- Algorithms that rate and pay workers should be transparent and should be subject to audit for bias and discrimination.
- Upskilling should be encouraged or even subsidized such that platforms have an incentive to invest in the skills and capabilities of their workers.
- Platforms should be encouraged to achieve inclusivity (e.g. women, people with disabilities or impairments, and other vulnerable groups). Platforms which make decisions algorithmically should allow many forms of bias to be reduced but some groups need special design features to be able to effectively participate (see Box: Grab's female driver program)
- Platforms raise special questions and issues regarding competition for regulators as they often span multiple markets and have complex scale dynamics due to network effects. Support to competition regulators can develop optimal frameworks which enable platform growth and investment while limiting monopolistic abuses.

Any such policy agenda must recognize the inherent incentives and industry dynamics in the platform sector. For example, there can be a "tragedy of the commons" issue that discourages action from a first mover - once the logistics networks, financial accounts, onboarding, phone financing, and training is done - challenger platforms can come recruit these platform workers at a much lower cost. Any policy or subsidy should work to protect the extra investment made by first movers and recognize the extra risks they took.

Conclusions

This paper attempts to take a critical look at the potential for digital platforms to be partners in expanding financial inclusion in Indonesia. Rather than view all platforms as a homogeneous group, we differentiate between the different business models (hybrid, marketplace, and niche) which we believe will produce different financial inclusion outcomes where hybrid models have the potential to achieve the richest and most comprehensive including through a variety of investment and risk management tools while simple marketplace or niche marketplace models will likely achieve digital payment inclusion perhaps coupled with credit geared to fund on-marketplace activity but not much beyond that. Similarly each platform model calls for different interventions that target barriers to including more people via expanded rural distribution, improved financing, and policy protections for income earners, and other interventions.

We find significant and exciting potential in the way these different platforms can drive a complementary package of financial services adoption and income-generating activities. Also exciting are the inherent incentives that allow these platforms to see the poor not as low-value consumers but as high-value suppliers. Lastly, we believe there is a possibility to expand these models to reach a wider segment of Indonesia's low-income population and to build robust networks in rural areas. This will likely require new partnerships between digital platforms, government and state banks to subsidize the infrastructure.

Despite the exciting potential, there are also risks and downsides to these models. While they have a theoretical incentive to reach even low-income people — they do not appear to reach the very poorest or most rural due to a variety of practical challenges and barriers. There is also significant risk that platforms may diverge to become exploitative and/or put workers and sellers in precarious economic positions if not given clear guide rails by well designed policy. There has not been enough rigorous research on the experiences of online workers and sellers and further work would be welcome to guide policies in this area through better understanding of workers and small scale sellers situations.

While there are clearly limits and some risks to platform models, we believe the potential is there and warrants attention and investment by donors and governments.

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