MicroSave HELIX
INSTITUTE OF DIGITAL FINANCE

Redesigning Digital Finance for Big Data

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About the *Helix*

The Agent Network Accelerator (ANA) project is funded by the Bill and Melinda Gates Foundation, the United Nations Capital Development Fund (UNCDF), Financial Sector Deepening – Uganda (FSDU), Karandaaz Pakistan and managed by *MicroSave*. It was designed to distil the most salient aspects of strategic operations in agent network management for the DFS industry.

The Helix Institute of Digital Finance launched the project in 2013 and since then has conducted over 31,500 agent interviews in 11 countries, providing assessments to over 40 leading agent networks around the world. While our research is aimed primarily at delivering business intelligence to individual DFS providers on a confidential basis, another major objective is to provide the industry with rigorous quantitative data, which allow a more precise understanding of best practices and benchmarks for building and managing agent networks across the globe.

For each country where we conduct research, we publish a country report, which contains essential information about the performance of the agents and the providers who manage them. We also maintain a blog, where we provide strategic and operational insights for the industry. We contribute to thought leadership through our publications:

» *Designing Successful Distribution Strategies for Digital Money* is designed to help providers understand their goals for building an agent network, and then think through the model of building one best fit to their needs.

» *Successful Agent Networks* builds on the understanding that networks are the channel providers use to deliver distinct value propositions to different customer target groups. It lays out a comprehensive analytical framework for analysing agent network success along several key dimensions.

» *Agents Count: The True Size of Agent Networks in Leading Digital Finance Countries* This paper lays out a framework for understanding agent network size, drawing the distinction between agent tills and agent outlets. It also discusses agent activity rates and calculates customer to agent outlet ratios, providing updated benchmarks for the industry.

» *OTC: A Digital Stepping Stone or a Dead End Path?* discusses the pros and cons of Over the Counter (OTC) transactions and argues that they should be seen as a stepping stone to mobile money account adoption and use.

Our research powers the curriculum for the world-class training offered by The *Helix* Institute of Digital Finance. This training covers a wide range of topics and is supported by the Bill and Melinda Gates Foundation, the United Nations Capital Development Fund (UNCDF), the International Finance Corporation (IFC) and the Financial Sector Deepening Trust (Africa).Our research also informs the work of other *MicroSave* teams working on digital financial services across the globe.

The *Helix's* research and training workshops combine classroom instruction with hands-on field visits, case studies and conversations with the practitioners who have built some of the most impressive roll-outs in the world. These courses are tailored to local markets and are offered in either English or French.

Our deep industry knowledge and our close partnerships with industry practitioners have enabled us to bring fresh perspectives and creative thinking to the operational challenges most providers face in the market place.

Beyond training, *MicroSave* also provides on-site advisory and technical assistance to diverse range of actors serving the mass market, and driving financial and social inclusion. This helps these players implement lessons learnt and to overcome internal and external constraints to delivering quality services in over 40 countries.

CONTENTS

Introduction

This paper suggests important strategies that digital finance providers (mobile network operators [MNOs], banks and third parties) should adopt to manage the influx of fintech players in this space.[1] Some of these players have already begun to disrupt the digital finance space, most notably in BRICS (Brazil, Russia, India, China, South Africa) markets, whilst others are inevitably preparing to. Implementing these strategies now should enable MNOs and banks to either face this emerging competition head on, or build up valuable assets to collaborate with them later. Either way, these strategies should improve their options as this new wave of development breaks.

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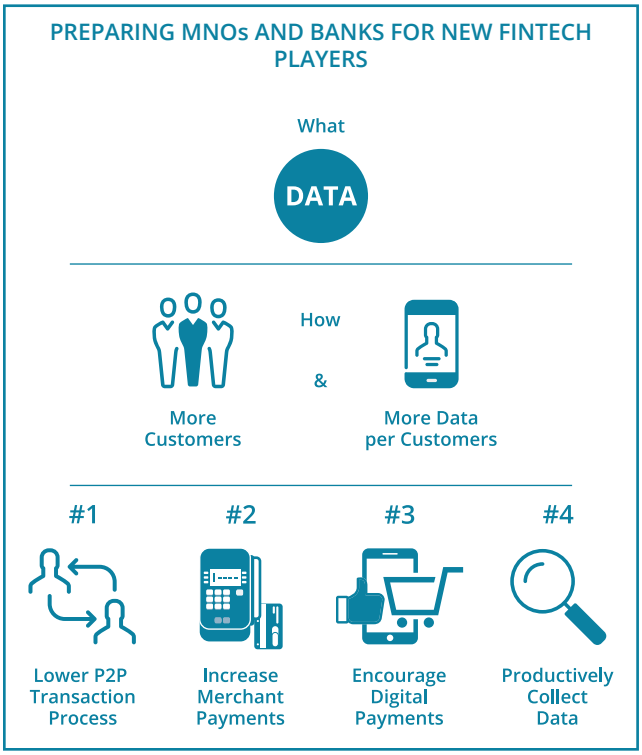
We believe that to compete or collaborate, providers need to augment their customer data. This will involve increasing the number of customers they have registered on digital finance systems, and the frequency of transactions made by those customers. This will enable providers to build much more complete datasets on consumer behaviour. Data is one of the most valuable assets for an organisation in this era, where the design and delivery of financial services is done through technology.

This paper suggests four strategies for doing this. The first is to lower person-to-person transaction prices to incentivise more customers to register for, and use, the service. The second is to strategise around merchant payments to garner more frequent customer usage across the system. The third is to encourage digital payment for online goods to capture more data from retail transactions. The fourth and final suggestion is to proactively increase data collection beyond financial data.

These recommendations are in no specific order. We believe that a combination of the four will drive digital finance providers towards building a robust client database.

By implementing these suggested activities to increase data collection, providers should be in an improved strategic position to compete or collaborate with new fintech companies. The digital finance industry is now much more sophisticated than it was even a few years ago, and therefore more able to implement these suggested changes. Furthermore, Internet connectivity and smartphone penetration in most developing markets is still not mature enough for fintech providers to unleash much of their potential. Therefore, if there is the willingness, we think there is the ability, and enough time, for digital finance providers to make these necessary changes now, so they can meet fintech companies on an 'even playing field'.



1 See 'Section One' for the distinction we make between 'digital finance' and 'fintech' players for this paper.

Section 1 - Understanding Fintech

1.1 Digital Finance versus Fintech

Although the terms digital finance and fintech are both used loosely in the industry, for this paper we will create the below distinction between digital finance and fintech businesses in order to discuss the two groups of businesses and their future convergence.

In the developing world, there have been very notable advancements from digital finance providers. These providers are generally banks and telecoms offering mobile money or agent banking services at the retail level. These services are usually accessible over a simple feature phone with customers using an agent network to facilitate cash-in and cash-out of their systems. Mobile wallets can also be loaded with digital cash through bank-to-mobile transfers. Regardless of whether they are a bank or a telecom, they are often one of the bigger corporate entities in the country where they operate, they tend to outsource most of their technology needs, and they do not conduct much research or engage in much risk-taking.

Fintech companies also operate in the financial sector, but they have completely different corporate DNA and skill sets than digital finance organisations. Fintech companies are generally technology companies, based in the developed world,[2] and have capital and management structures that encourage research and risk-taking, as well as reward innovation. In comparison to digital finance, customers usually require access to a smartphone with Internet connectivity to use these services. They also generally need a bank account, or a credit/debit card, to facilitate funds moving in and out of these systems.

2 Fintech players with similar characteristics have also begun to appear in emerging markets, such as Paytm in India, and WePay in China. We are also starting to see some, generally smaller, Fintech players enter developed markets. The demographic of these players is discussed in Section 1.2 of the paper.

Figure 1: Fintech vs. Digital Finance

Who	Customer Base	Access	Funds-in / Funds-out	Level of Research, Risk Taking & Innovation
Fintech				
Technology Companies (majority from developed markets)	Banked	Smartphone with Internet access or through a website on the Internet	Debit / Credit Card or Bank Transfer	High
Digital Finance				
Banks, Mobile Network Operators, Third Party Providers (in developing markets)	Banked & Unbanked	Simple, Feature Phone (or Smartphone), or Card-based solution	Mostly Agent Network but Bank-to-mobile transfer is also possible	Low

1.2 Categorising Fintech Players

As fintech is still an emerging industry, firms come in all shapes and sizes.

Figure 2: Breaking Down Fintech Players

Fintech Players		
(Small and Medium-Sized) Local Fintech Providers	KOPO KOPO	TALA
(Larger) Local Fintech Providers	paytm	WeChat
Local E-Commerce Companies	Flipkart	JUMIA
Global Fintech Providers	PayPal	stripe
Global E-Commerce Companies	Alibaba Group	amazon.com
Global Internet Giants	facebook	Google

» **Small and Medium-Sized Local Fintech Providers:** These are smaller, sometimes start-up, fintech companies based in developing markets, although their management may not be made up entirely of local talent. Tala[3] and Branch[4] in Kenya have developed digital credit solutions for their customers, while KopoKopo[5] has developed an operating system for merchant payments.

» **Larger, Local Fintech Providers:** Again, these are firms whose fintech operations are based in developing (or 'emerging' as in the case of China) markets, but these players are much larger in size and reach. In India, there has been a boom in 'M-Wallets',[6] such as Paytm,[7] Citrus[8] and MobiKwik,[9] which provide customers access to mobile payment solutions. The products offered over these platforms usually range from mobile recharge to bill pay, money transfer and online retail payments. Generally, regulations prohibit them from offering financial services, such as credit and savings, to their customers. Paytm, however, was granted a payments bank licence by the Reserve Bank of India in 2015.[10]

  In late 2013, Tencent's WeChat, a Chinese social messaging app, launched a similar product called WePay, which enables users to transfer money, pay utility bills and manage their personal wealth funds over the system.[11] Although WeChat is now available in South Africa,[12] it has struggled in other markets,[13] and as such, we still place it in the 'local fintech provider' category.

» **Local E-Commerce Companies:** These are companies whose e-commerce operations are based in developing markets. Again, they may not be fully locally owned companies.[14] These e-commerce companies are slowly making moves into financial services. Jumia, an online shopping website founded in 2010 in Nigeria, has now spread to over 15 African countries,[15] and announced plans to launch its own mobile money wallet in August 2016.[16]

  India's Flipkart, a leading player in the country's estimated US $38 billion e-commerce market,[17] launched a digital wallet, Flipkart Money, in August

3 *www.tala.co*

4 *www.branch.co*

5 *www.kopokopo.com*

6 Yuthika Bhargava - The Hindu (2016), "M-wallets may make hard currency history". Available at: *www.thehindu.com/business/Economy/mwallets-may-make-hard-currency-history/article8544351.ece*

7 *https://paytm.com/*

8 *http://www.citruspay.com/*

9 *https://www.mobikwik.com/*

10 Jai Vardhan - Your Story (2015, "RBI approves payments bank licence to Airtel, Paytm, Vodafone and 8 others". Available at: *https://yourstory.com/2015/08/rbi-approves-payments-bank-license/*

11 McKinsey & Company (2016), "Disruption and Connection: Cracking the Myths of China Internet Finance Innovation". Available at: *http://www.mckinsey.com/industries/financial-services/our-insights/whats-next-for-chinas-booming-fintech-sector*

12 Finextra (2015), "WeChat launches mobile wallet in South Africa." Available at: *https://www.finextra.com/newsarticle/28178/wechat-launches-mobile-wallet-in-south-africa*

13 Steve Millward - TechinAsia (2016), "WeChat's global expansion has been a disaster". Available at: *https://www.techinasia.com/wechat-global-expansion-fail*

14 Jumia, although founded by a Nigerian, Tunde Kehine and his Ghanaian partner, Raphael Afaedor, it now has *multimillion-dollar investment from Berlin-based investor Rocket Internet*

15 Paul Adepoju, VentureBurn (2015), "Why Africa's 'largest retailer' Jumia calls itself a startup." Available at: *http://ventureburn.com/2015/06/africas-largest-retailer-jumia-calls-startup/*

16 Jumia (2016), "Jumia to launch its own mobile wallet, JumiaPay." Available at: *https://blog.jumia.com.ng/jumia-launch-mobile-money-wallet-jumia-pay/*

17 Forbes (2016), "Amazon Tops Indian E-Commerce Market in Web Traffic." Available at: *https://www.forbes.com/sites/greatspeculations/2016/06/27/amazon-tops-indian-e-commerce-market-in-web-traffic/*

2016.[18] Flipkart Money was launched in a bid to take on rival m-wallets, such as Paytm and MobiKwik.

» **Global Fintech Providers:** These providers have a global reach, although many companies, such as Stripe, still focus their operations in developed markets. These players started as dedicated fintech providers and are continuing to disrupt the market. PayPal, a global online payment service, is now available worldwide.[19] In mid-2015, the company was valued at US $52 billion.[20] Stripe, a US technology company that offers similar online payment processing services for individuals and businesses, is now available in 25 countries.[21] The company is valued at US $5 billion.[22]

» **Global E-Commerce Companies**: These are large e-retailers, with a global reach for their operations,[23] who are also getting involved in financial services. Alibaba Group, the Chinese e-commerce website, launched Alipay in 2004, an online payment platform that reported 451 million annual active users in mid-2016, the majority of which are in China.[24] In 2015, Alipay was rebranded to Ant Financial Services Group, under which the Alipay payment platform sits. Alipay recently overtook MasterCard in terms of worldwide usage.[25] It is reported to be almost three times the size of PayPal.[26]

  Amazon, the famous e-commerce giant, re-launched its payment business 'Amazon Payments'[27] in 2013. Amazon customers can pay for goods using their Amazon account, and merchants can use the service as a payment solution.[28]

» **Internet Giants:** These are large technology players, such as Google, Apple, Samsung and Facebook,[29] who have developed databases to track the behaviour of their substantial customer bases and are now trying to figure out how to best monetise these in the fintech space. Google[30], Apple,[31] Facebook[32] and Samsung[33] have all launched their own various payment services, but have yet to expand these into developing markets.

18 Madhav Chanchani - The Economic Times (2016), "Flipkart launches online wallet to take on rivals like Freecharge and Paytm." Available at: *http://economictimes.indiatimes.com/industry/services/retail/flipkart-launches-online-wallet-to-take-on-rivals-like-freecharge-and-paytm/articleshow/51239445.cms*

19 *www.paypal.com/uk/webapps/mpp/country-worldwide*

20 Devika Krishna and Mari Saito - Reuters (2015), "PayPal returns to market with $52bln valuation". Available at: *http://www.reuters.com/article/paypal-hldg-debut-idUSL3N1003YD20150720*

21 *www.stripe.com/global*

22 Citi GPS, "Digital Disruption - How FinTech is Forcing Banking to a Tipping Point". Available at: *https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D*

23 Amazon is now available in 15 countries, including India and Mexico. Alibaba helps connect exporters in China (and other countries across the world), with companies in *190 countries across the world*.

24 Ant Financial (2016), "Alibaba Investment Day", Available at: *http://www.alibabagroup.com/en/ir/pdf/160614/12.pdf*

25 Ben Stevens - Retail Gazette (2016), "The Body Shop poised for Chinese Golden Week with integrated Alipay." Available at: *http://www.retailgazette.co.uk/blog/2016/09/the-body-shop-poised-for-chinese-golden-week-with-integrated-alipay*

26 Leena Rao - Fortune (2015), "Alipay's US chief talks expansion, Uber China partnership and more." Available: *http://fortune.com/2015/06/19/alipay-china-uber-alibaba/*

27 *www.payments.amazon.co.uk/*

28 Arjun Kharpal - CNBC (2016), "Amazon expands payments to take on PayPal." Available at: *http://www.cnbc.com/2016/04/04/amazon-expands-payments-to-take-on-paypal.html*

29 Josh Constine - Techcrunch (2016), "Facebook Messenger now allows payments in its 30,000 chat bots." Available at: *https://techcrunch.com/2016/09/12/messenger-bot-payments/*

30 *www.google.co.uk/wallet/send-money/*

31 *www.apple.com/uk/apple-pay/*

32 Josh Constine - Techcrunch (2015), "Facebook introduces free friend-to-friend payments through messages." Available at: *https://techcrunch.com/2015/03/17/facebook-pay/*

33 *www.samsung.com/uk/samsung-pay/*

1.3 The Power of Data

Whichever set of players you look at, fintech companies all have one common dominator: data. The three data sources outlined below are adapted from Chen and Faz's (2015)[34] report on 'The Potential of Digital Data'.

Figure 3: Data Collection by Different Fintech Providers

	DATA COLLECTED				
	Local Fintech Providers (All Sizes)	Local E-Commerce Companies	Global Fintech Providers	Global E-Commerce Companies	Internet Giants
Individuals' Financial data*	Yes	Limited (still mainly cash on delivery)	Yes	Limited (to sales and purchase history)	Some
Individuals' Digital Interaction data**?	Some	Yes	Some	Yes	Yes, a lot
Market data***?	No	No	No	No	Some

*Financial data is defined as: customer's monetary transactions and behaviour, including use of financial services, information from credit bureaus, and sales and purchase history (e.g., from an e-commerce website)

**Digital interactions are defined as: mobile phone records (calls, texts, location, airtime top-up, battery use, etc.), social media interactions, online buying behaviour, activity across the Internet

***Market data is defined as: information collected about a country or region, such as agricultural records, weather or household surveys

> Recognising what emerging fintech providers have, and what they need, will be key when it comes to discussions around collaboration and competition

While 'Internet Giants' have a lot of 'digital interaction' data and are looking at fintech to monetise it, others are already collecting various levels of financial and customer data, and are analysing it efficiently. Different fintech providers can collect different types of data. Recognising what emerging fintech providers have, and what they need, will be key when it comes to discussions around collaboration and competition.

To date, the use of digital data in retail finance has most frequently been associated with extending credit. Digital finance providers, such as M-PESA with their M-Shwari product, and fintech organisations like Tala, Branch and FirstAccess,[35] all use various forms of data to help improve the speed and efficiency of their credit scoring. In comparison to banks, which collect data from traditional sources, digital finance and especially fintech providers are more innovative with the data they collect and analyse.

The collection and use of 'unconventional' data is at the centre of this new approach to credit scoring. Kreditech, referred to as the 'Amazon of consumer lending in emerging markets',[36] utilises a broad range of data, from online shopping history to the geo-location of mobile phone calls, in its credit scoring technology.[37] Lenddo,[38] a technology solutions company, specialises in the use of non-traditional data to determine customers' ability and willingness to pay back

34 Gregory Chen and Xavier Faz – CGAP (2015) – "The Potential of Digital Data: How Far Can It Advance Financial Inclusion". Available at: *http://www.cgap.org/sites/default/files/Focus-Note-The-Potential-of-Digital-Data-Jan-2015.pdf*

35 *www.firstaccessmarket.com*

36 Sangwon Yoon - Bloomberg, "Lot of contacts in your mobile phone may get you loans." Available at: *www.bloomberg.com/news/articles/2015-11-15/lot-of-contacts-in-your-mobile-phone-you-may-qualify-for-a-loan*

37 ibid

38 *www.lenddo.com/*

loans. Its 'LenddoScore' product maps relationships between over 120 million social media profiles.[39] Digital finance providers are also starting to embrace alternative data sources. In Kenya, M-PESA's M-Shwari product uses mobile phone records to set customers' initial credit limits.

Digital data can also be used to help improve insights on customer needs, leading to better product development. The collection of data enables companies to really understand who customers are, namely their behaviour patterns, desires and needs in a market. By using data to understand their customers better, providers are increasingly able to deliver compelling value propositions through more personalised and better-designed products. These products are likely to be used by more people on a more regular basis, leading to significant impacts on both a commercial and social scale. Organisations are also using data to find new customers, deepen customer relationships and manage risks.[40]

By using data to understand their customers better, providers are increasingly able to deliver compelling value propositions through more personalised and better-designed products

The fintech industry is designed to leverage large volumes of data to deliver financial services quickly, safely and efficiently to their customers. Improved computing power has enabled these large volumes of data to be stored, processed and analysed more efficiently. Spending on big data is projected to grow by a compounded annual growth rate (CAGR) of 23% each year until 2019.[41]

Global capital markets are beginning to clearly understand the power of data, and are betting on this being the future of finance. Accenture reports that more than US $50 billion has been invested in over 2,500 fintech companies since 2010.[42] In 2015, the value of global fintech investment grew by 75% to US $22.3 billion.[43] This sector represents both power and potential. If digital finance providers are looking to either compete or collaborate with fintech players as they enter their markets, data collection must be central to their strategy moving forward.

It is also important to note the risks that come with increased data collection. Although there is not enough scope within this paper to go into consumer protection issues in detail, we note that data privacy must be central to an organisation's data collection policy. Furthermore, policymakers need to develop clear guidelines on data ownership, collection, and usage to ensure that organisations respect user privacy.

39 Lending Times (2016), "Lenddo - The Google of Lending Algorithms." Available at: *http://lending-times.com/2016/02/29/lenddo-the-google-of-lending-algorithms/*

40 Gregory Chen and Xavier Faz – CGAP (2015) – "The Potential of Digital Data: How Far Can it Advance Financial Inclusion". Available at: *http://www.cgap.org/sites/ default/files/Focus-Note-The- Potential-of-Digital-Data-Jan- 2015.pdf*

41 Fintech Ranking (2016), "Big Data and Online Scoring: Fintech and Beyond." Available at: *http://fintechranking.com/2016/03/17/big-data-and-online-scoring-fintech-and-beyond/*

42 Accenture (2016), "Fintech and the evolving landscape: landing points for the industry." Available at: *www.fintechinnovationlablondon.co.uk/pdf/Fintech_Evolving_Landscape_2016.pdf*

43 ibid

1.4 Space for Collaboration

Regardless of the type of fintech player that comes to the developing world, they will not arrive with all the data they need. They will be looking for help, and will likely seek strong partnerships, just as they have done in the developed world. We think that, in most cases, it will be more strategic to partner than to compete, as there seems to be some exciting synergies that could drive business and innovation. Identifying the needs of fintech providers is key to identifying potential avenues for collaboration. The table and text below highlight what these players have, as well as what they need. Most of the identified avenues for collaboration involve the sharing of data. Therefore, we recommend that digital finance providers implement our suggested changes to build up their datasets for these future partnerships.

In thinking about digital finance and fintech partnerships, it is prudent to first look internally at the history of partnerships in the digital finance sector, as they will probably be predictive of future issues. Unfortunately, the sector has been defined by 'walled gardens', and players have generally chosen to compete rather than cooperate. Even when more forward-looking companies have attempted partnerships, the vast majority have failed (see Appendix 1). It is important to ensure that this does not continue to be a future impediment.

Figure 4: Identifying Fintech Gaps

Identifying the Needs of FinTech Providers

	Local Fintech Providers	Local E-Commerce Companies	Global Fintech Providers	Global E-Commerce Companies	Internet Giants
Data on Developing Market Customers	Limited: Data predominantly on 'banked' customers	Limited: Due to preference for cash-on-delivery	Limited: Data predominantly on 'banked' customers	Very Limited: Yet to enter developing markets	A lot: However, they lack financial data
Level of Expertise in Finance	Medium - High	Limited	High	Limited	Low
Level of Expertise in Technology	Medium - High	Medium - High	High	High	High
Owner of Banking Licence in Developing Markets	Usually Not*	No	Some	No	No
Level of: Knowledge of Developing Markets	High, but with gaps	High, but with gaps	Limited	Limited	Limited

* Paytm in India was recently granted a payment licence by the Reserve Bank of India

» **Larger, Local Fintech Providers:** Many of these large players have local customers. However, these are generally already "banked" due to the requirements of getting funds-in and out of the system, and the lack of banking licences themselves. Additionally, these customers are required to have a smartphone and access to the Internet to use the service.

Both of these requirements eliminate many potential, underserved customers.[44] Digital finance providers have an opportunity to register and gather data on this customer segment. This gives them a powerful bargaining tool when it comes to future talks on collaboration. An added bonus would be

44 Recent reports on the introduction of *$2 smartphone in India*, and promises of *cheap 4G Internet* in the country, have, no doubt, excited fintech players. However, these developments will still only benefit portions of society. *Jio's offer of 4G Internet* service will not reach areas of the country that are still connected to 3G or 2G infrastructure. Last year, the *2G network represented 83% of all connections* in India.

if the digital finance provider could perform Know Your Customer (KYC) for these customers as well.

» **Smaller Local Fintech Providers:** These companies are usually looking for datasets for their algorithms, and scale through corporate partnerships to make them viable. Digital finance businesses can provide these datasets if they implement our suggested changes. Both small and large fintech players will likely lack the licences to do much on their own. The ones that are mature enough to make corporate deals may provide some of the best partnerships in the field.

» **Local E-Commerce Companies**: Although many of these local e-retailers report impressive numbers,[45] providers are struggling to incentivise customers to pay online. In Q4 of 2015, over 80% of Indian consumers said they used cash on delivery for their online purchases. In Africa, fewer than one-third of customers have the Internet services they need to go online.[46] Providers will be looking to digital payment providers to help digitise these transactions. This is discussed in Section 2.3.

» **Global Fintech Providers:** These players have the potential to be dangerous, because while they will generally not have any data on local customers, their success has been defined by their ability to collect data quickly and monetise it effectively. Digital finance providers must work on building their customer datasets before more of these global fintech providers enter developing markets.
When entering these markets, these global fintech players will also be looking for partners to help with facilitating funds-in and out of their systems. This is another area in which digital finance providers can find space for collaboration.

» **Global E-Commerce Companies:** As seen in China with Alibaba's Alipay, these players have the potential to be very disruptive. While many of them will start with little in terms of financial expertise or data on local customers, their sales and distribution experience will prove beneficial when it comes to selling products online to local customers. While these players are yet to enter most developing markets, in India local e-commerce providers are already beginning to face increasing competition from Amazon's India arm.[47]

» **Internet Giants:** These companies may have a lot of customer data, but financial data on these customers is usually limited to what they glean through their advertising programmes. They lack expertise in finance, knowledge of local markets, banking licences and local talent. Their datasets would complement local datasets with customers' financial histories. In partnership with local digital finance providers they would also provide better interfaces for communicating with clients, and better processes for product development.

45 Neha Alawadhi - The Economic Times (2016), "India's e-commerce market expected to cross Rs 2 lakh crore in 2016." Available at: *http://economictimes.indiatimes.com/industry/services/retail/indias-e-commerce-market-expected-to-cross-rs-2-lakh-crore-in-2016-iamai/articleshow/52638082.cms*

46 Jack Bright - The New Yorker (2016), "An E-Commerce Challenge in Africa: Selling to People who aren't Online." Available at: *http://www.newyorker.com/business/currency/e-commerces-african-challenge-selling-to-people-who-arent-online*

47 Itika Sharma Punit - Quartz India (2016), "Is Flipkart turning into the perfect example of what a tech startup must not do?" Available at: *http://qz.com/670705/is-flipkart-turning-into-the-perfect-example-of-what-a-tech-startup-must-not-do/*

Collaboration between Fintech Players – Open APIs

Players will likely want to collaborate by plugging into, or sharing, existing application programming interfaces (APIs). Smaller firms will want to connect with the wider technology architecture, enabling them to save time and resources by not having to build existing code from scratch.[48] Cutting out this upfront development investment will allow them to focus their energy and resources on building innovative solutions on top of the basic services that are already available. By opening their APIs, larger firms will benefit by capitalising on their existing assets, as well as extending their reach to a larger customer base.[49] Together, this collaboration can provide a unique and context-sensitive customer experience.

Moving Forward with Data Collection

Although the story is different in markets such as China,[50] for most fintech firms it is still too early to make plays in the developing world. While some other BRICS countries have market characteristics like China – low penetration of financial services, a supportive regulatory environment, developed e-commerce market, and a high level of mobile and Internet connectivity – most developing world countries are still working on the latter three.

This provides digital finance organisations with some time to adapt, but this window might not be open for very long. Digital readiness is increasing in these countries, with increasing mobile phone penetration and the growth of smartphone use. By the end of 2015, 40% of the total mobile phone connections in the developing world were through smartphones.[51] In 2018, it is estimated that 56% of all connections in developing markets will be smartphone connections.[52] Internet access is also on the rise, with 4G connection now available in 151 countries around the world.[53]

While digital finance represents some of the most interesting innovations in the developing world, it is still struggling to scale in most countries, and has become "daily relevant" in none (Appendix 2). Digital finance providers will be the first choice for partnerships with fintech firms, and alternatively could represent the toughest competition fintech faces if relationships sour. However, until they find ways to serve more customers, more frequently, and garner significant data from these customers, they will neither be the perfect partner nor an unassailable adversary.

The rest of this paper is focused on preparing digital finance players to collect the assets they need to offer synergies for fintech players.

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48 Matt Grasser – FIBR Medium Blog (2016), "Three Reasons Why Open APIs Will Transform Fintech Innovation in Emerging Markets" available at: *https://medium.com/fibr/three-reasons-why-open-apis-will-transform-fintech-innovation-in-emerging-markets-BDF494FE5289#.SC1SC4GIX*

49 Abhinav Sinha, Piyush Singh, Priya Garg and Anil Kumar Gupta – *MicroSave* Blog (2016), "Open Application Programming Interfaces (API): Purpose and Possibilities", available at: *http://blog.microsave.net/open-application-programming-interfaces-api-purpose-and-possibilities/*

50 *In China*, low levels of financial inclusion among underserved customer segments, a supportive regulatory environment, a developed e-commerce sector, and high-level of mobile phone and Internet connectivity has provided a nurturing environment for fintech. *96% of e-commerce sales* in the country are now conducted without a bank. In November 2015, Tencent reported *200 million users on its payment service*. WePay's competitor, Alipay, which holds *80% of China's mobile payments market*, is reported to handle *over 50%* of all transactions in China. As a comparison, despite the success of M-PESA in Kenya, *close to 90% of transactions* are reported to be made in cash.

51 GSMA, (2016), "Mobile Economy Report". Available at: *http://www.gsma.com/mobileeconomy/*

52 ibid

53 ibid

Section 2 - Strategies for Data Collection

One of the first issues digital finance providers need to confront is that while GSMA counts 271 providers globally, only 11 of them (4%) make more than 10% of their revenues from their digital finance business.[54] Therefore, while some providers are generating significant revenue, most do not, and probably will not. However, at the same time, with technology increasingly becoming the backbone of digital finance, those who do not play a role in the digital finance industry will become obsolete.

In this regard, digital finance players should not be engaging in the industry to try and earn a significant amount of short-term transactional profits. They should be playing to effectively manage their transition into a digital ecosystem. Telecoms are fundamentally sales and distribution companies, and banks are stalwart institutions designed to mitigate risk. Neither is well suited to transform into a technology company that will handle the "tech" part of fintech.

However, neither of them has to. Sales and distribution, as well as finance, will continue to be important in a fintech-driven world. Digital finance players need to figure out how to ensure their business models synchronise with new fintech models, and that the assets they bring to the bargaining table will be valued by their potential partners. Currently, the transactional business models being used, and the shallow datasets being collected, are of little long-term value.

In this section, we suggest starting to build a long-term customer database, as opposed to short-term revenue targets. This involves: 1) lowering person-to-person transaction prices to get more people using digital finance systems; 2) strategising around merchant payments to encourage those using these systems to do so more frequently; and 3) driving the digital payment of digital goods to further expand the frequency of digital transactions. The final section will look at how to garner more customer data beyond financial data.

...digital finance players should not be engaging in the industry to try and earn a significant amount of short-term transactional profits. They should be playing to effectively manage their transition into a digital ecosystem

54 GSMA (2015), "State of the Industry Report on Mobile Money." Available at: *http://www.gsma.com/mobilefordevelopment/programmes/mobile-money/industry-data-and-insights/sotir*

A dataset missing most its values is not going to be useful for creating digital profiles of customers, and will therefore not be very valuable to potential fintech partners

In summary, these suggested activities will help get more customers on the systems and establish more enriched datasets on these customers. This is because, despite the fanfare around digital finance, in markets where mobile money is available, only 10% of mobile connections are now linked to a mobile money account.[55] Furthermore, as mentioned above, even those who do have a mobile money account do not use it very often, especially in comparison to the number of transactions they do monthly in cash. This means a lot of potential financial data is not being captured. A dataset missing most its values is not going to be useful for creating digital profiles of customers, and will therefore not be very valuable to potential fintech partners.

2.1 Lower Person-to-Person Transaction Prices

Lowering the Price to Increase Customers

Providers around the world interested in scaling customer numbers quickly have done this by offering some core services for free, or at least for very low prices. Famous examples of this are Google, Facebook and iTunes, which have offered free services to garner large customer databases, which they are now monetising. The finance sector has also used this strategy. Most notably, credit card companies issue cards for free,[56] later making revenue on those users that do not repay their credit balances by the due date. Looking at fintech development in China, both WeChat and Alipay operate on very low margins for their payment services, offering payments that do not exceed their daily or monthly limits for free.[57] Both companies view the payment business as a volume driver rather than a profit driver, focusing more on the data and traffic it can delivery, rather than the potential revenue.[58]

In March 2013, the average monthly number of transactions per active ZAAD user was 41, four times the global average of just over 10 transactions

This concept is not new to digital finance either. Providers like Telesom's ZAAD in Somaliland, Davivienda's DaviPlata in Colombia, and Equitel in Kenya are already offering free transfer or payment services to customers. Telesom's ZAAD service had over 70% of their telecom subscribers actively using mobile money just over a year after its launch.[59] Safaricom in Kenya has still not reached that level with M-PESA.[60] Furthermore, ZAAD customers use the system much more frequently. In March 2013, the average monthly number of transactions per active ZAAD user was 41,[61] four times the global average of just over 10 transactions.[62]

Equity Bank, the corporation behind Equitel, which offers its payment services for free,[63] in early 2016 reported a 26% (quarter on quarter) growth in its

55 ibid

56 Note that some credit card companies do also charge annual fees, and they do charge merchants, who in the developing world often pass that cost on to consumers. Hence a low usage of credit cards in the developing world.

57 China Internet Watch (2015), "WeChat Payments to Charge Service Fee". Available at: *https://www.chinainternetwatch.com/15226/wechat-transfer-no-longer-free-charges/*

58 Gabriel Wildau - Financial Times (2016), "Tencent backs down in mobile payments war with Alibaba". Available at: *https://www.ft.com/content/df82fc8e-0d36-11e6-9cd4-2be898308be3*

59 Claire Pénicaud and Fionán McGrath - GSMA (2013), "How Telesom ZAAD Brought Mobile Money to Somaliland". Available at: *www.gsma.com/mobilefordevelopment/wp-content/uploads/2013/07/Telesom-Somaliland.pdf*

60 *Safaricom's Annual Report 2016* reports a customer base of 25.2 million. Active M-PESA customers are reported at 16.6million, which equates to 66% of the customer base.

61 Claire Pénicaud and Fionán McGrath - GSMA (2013), "How Telesom ZAAD Brought Mobile Money to Somaliland". Available at: *www.gsma.com/mobilefordevelopment/wp-content/uploads/2013/07/Telesom-Somaliland.pdf*

62 GSMA (2014), "State of the Industry Report on Mobile Money." Available at: *www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/03/SOTIR_2014.pdf*

63 Transfers are free when they are kept within the Equity Bank system. Transfer to external parties carry charges.

transactions via its banking agents.[64] Its digital banking offerings are said to play a large part in the bank's 20% rise in profits (before tax) in the first quarter of this year.[65] Riding on the initial success of the Equitel service, Equity Bank has recently launched 'EazzyBanking', enabling customers to access a range of banking products via the digital channel.[66] Although M-PESA conducted five times more transactions than Equitel in the period from Q4 2015 to June 2016, their market share dropped from 91% of the total value of transactions to 84.3%[67], mainly due to Equity's growth. Given the ubiquity of M-PESA, this could represent an important market shift.

This strategy of offering services for free, or for very low prices, is designed to give away services that will ultimately have lower margins, to garner customers who will eventually buy higher margin services. In the world of finance, payments comprise a low-margin business, whereas lending and investment provides much higher returns. Globally, banks only derive about 7% of their profits from payments,[68] so decreasing the focus on earning revenue from this channel makes sense, if there is a benefit to doing so. The major benefit, in this case, is increased use of digital payment systems by existing customers, as well as by new customers who are drawn into the system.

This strategy of offering services for free, or for very low prices, is designed to give away services that will ultimately have lower margins, to garner customers who will eventually buy higher margin services

While switching to a pricing strategy like this could help generate higher volumes of use, and therefore more valuable customer data, it would be a big shift for most banks and telecoms. Almost all other mobile money providers charge fees on both cash-out at agents, as well as transfers from handsets, which generally cost the telecom nothing. Banks in the developing world still generally offer products with transaction fees, and account maintenance fees, which limit their retail base.

Clearly, this transition must be made carefully. We are by no means recommending that providers should simply lower or eliminate their transaction prices. We recommend trying it and measuring results by offering lower prices for a predetermined amount of time and/or in a selected area to measure the rates of new customer acquisition and the number of transactions per customer. It should also be clearly understood that in many cases, lowering prices alone will not significantly increase volumes if the value proposition is not aligned correctly, or if the agent network is not accessible enough to make the service convenient.

Providers, however, will be happy to note that we are not just recommending giving up revenue on transactions by lowering prices; we are also recommending collecting alternate revenue streams and lowering operational costs, strategies that are discussed in more depth in the next two sections.

64 Eric Wainaina - Techweez (2016), "Equitel's Transaction Volumes rose 562% as Equity Bank turns Digital for Growth. Available at: *http://www.techweez.com/2016/05/10/equitel-banking-platform/*

65 ibid

66 Techmoran, "Equity Bank partners Oracle to launch EazzyBanking, a Banking As a Service platform. Available at: *http://techmoran.com/equity-bank-partners-oracle-launch-eazzybanking-banking-service-platform/*

67 Patrick Alushula - Standard Media (2016), "Equity doubles its value of mobile money business." Available at: *http://www.standardmedia.co.ke/business/article/2000218177/equity-doubles-its-value-of-mobile-money-business*

68 Citi GPS (2016), "Digital Disruption - How FinTech is Forcing Banking to a Tipping Point". Available at: *https://ir.citi.com/D%2F5GCKN6uoSvhbvCmUDS05SYsRaDvAykPjb5subGr7f1JMe8w2oX1bqpFm6RdjSRSpGzSaXhyXY%3D*

Adjusting the Revenue Model

For providers to balance their books when lowering transaction prices, this paper also recommends that revenue models be reworked so that these digital financial service providers earn larger financial margins from bigger mass-market customer bases.

For most digital finance players, this will mean partnerships. Telecoms need to partner with institutions that have banking licences, so that the funds they hold for mobile money clients can be intermediated, and so they can offer higher margin financial services, such as credit, to their customers. Banks need to partner with telecoms to increase their base of retail customers so they can make more money. They also stand to benefit from the sales and marketing expertise of telecom firms to help them have more mass-market appeal.

These partnerships have great fundamental synergies for those who understand the importance of making them and prioritise them as a business goal. Not only will they help recover lost revenue from reducing transactional prices, as discussed in the last section, but this strategy will also help attract more customers and increase frequency of use, therefore enriching the dataset these institutions hold. The time to change these revenue models is now. Kenya's KCB M-PESA Account and M-Shwari, Tanzania's M-Powa, and Uganda's MTN MoKash are already leading the way on this.[69]

Even with the ability to generate more traditional financial revenues through intermediation, the effect of low to no prices on transactions will be hard for most digital finance players who already struggle to generate revenue. That is why it is important to also address costs, the other side of the financial equation.

Reducing Operational Costs

While there are plenty of studies showing the reduced costs of serving customers digitally, the truth is that operational costs of digital finance are still much higher than they need to be. Reducing them can help cushion these recommended shifts in pricing and revenue, while helping to increase transaction volumes.

In terms of the overall business model, we need to think of operational costs in two ways. The first is that we need to account for the reduced operational costs that digital finance brings to the core business of banking and telecommunications to help justify continued investment in it. The second is that we need to reduce the additional costs of engaging in mass-market finance.

Accounting for Reduced Operational Costs to Encourage Investment

There is already some good research showing that, especially for mobile network operators, significant cost savings can come from offering customers a transaction platform like mobile money. Research carried out by GSMA in 2012[70] found that indirect benefits unique to MNOs, such as savings from airtime distribution, reduction in churn, and increased share of wallet for voice and SMS, accounted for 48% of mobile money's gross profit.

69 We note, however, growing concerns around these first-generation digital credit products and the need to refine them with improved market research and better data. See "*Key New Year Resolutions for the Success of Digital Financial Services*". Available at: *http://blog.microsave.net/key-new-year-resolutions-for-the-success-of-digital-financial-services/*

70 Paul Leishman - GSMA (2012), "Is There Really Any Money in Mobile Money?" Available at: *www.gsma.com/mobilefordevelopment/wp-content/uploads/2012/03/moneyinmobilemoneyfinal63.pdf*

This all contributes to the business's bottom line for a telecom. Telecom's ZAAD in Somaliland reported saving around US $2 million in airtime distribution in 2012 by selling it through their mobile money channel.[71] GSMA's SOTIR 2015 reported that in FY2014, by selling 38% of its total airtime through M-PESA, Safaricom reduced its traditional airtime distributor commission outgoings by an estimated US $64 million.[72]

Similarly for banks, offering their services across a digital channel can have huge cost-saving benefits. CGAP estimated that offering branchless banking services to customers costs at least 50% less than what it would cost to serve them through the traditional channels.[73] Branchless banking helps address two fundamental costs—setting up a physical bank branch presence, and handling low-value transactions. Bank agents have been referred to as 'human ATMs', creating improved customer convenience whilst simultaneously reducing the cost of bank service distribution.[74] In Peru, Banco de Credito estimates that a cash transaction at a branch costs US $0.85, whilst the same transaction at an agent costs US $0.32.[75] Similarly, Tameer Bank in Pakistan estimates that the cost of setting up a bank branch would be 30 times more than setting up an agent network.[76]

CGAP estimated that offering branchless banking services to customers costs at least 50% less than what it would cost to serve them through the traditional channels

Offering financial services digitally also improves the delivery of services and enhances differentiated customer uptake. *MicroSave* research in India showed that bank branch staff were spending 51%[77] of their time on activities that should be undertaken by agents. Moving these activities to agents would free up time for bank branch staff to focus on marketing and servicing high net worth individuals.

These cost reductions from digital services should be factored in when evaluating its benefits. However, the direct costs incurred from operating a digital finance business are quite burdensome and need to be decreased to increase the overall margins of the business and lessen its burden on the parent company.

Reducing the Direct Costs of Operating a Digital Finance Business

SOTIR 2015 reports that for "the top ten providers, 54.4% of revenue goes to agent commissions".[78] Safaricom shows in their 2016 Annual Report that they pay 35% of the revenue they earn from M-PESA in agent commissions.[79] Given the above recommendations on reducing the price of transactions, limiting these operational costs will greatly help keep the business going while it develops deeper datasets and more products.

71 Claire Pénicaud and Fionán McGrath - GSMA (2013), "How Telesom ZAAD Brought Mobile Money to Somaliland.". Available at: *www.gsma.com/mobilefordevelopment/wp-content/uploads/2013/07/Telesom-Somaliland.pdf*

72 GSMA (2015), "State of the Industry Report on Mobile Money." Available at: *http://www.gsma.com/mobilefordevelopment/programmes/mobile-money/industry-data-and-insights/sotir*

73 CGAP (2008), "The Early Experience with Branchless Banking." Available at: *https://www.cgap.org/sites/default/files/CGAP-Focus-Note-The-Early-Experience-with-Branchless-Banking-Apr-2008.pdf*

74 CGAP (2008), "Banking through Networks of Retail Agents." Available at: *https://www.cgap.org/sites/default/files/CGAP-Focus-Note-Banking-Through-Networks-of-Retail-Agents-May-2008.pdf*

75 CGAP (2008), "The Early Experience with Branchless Banking." Available at: *https://www.cgap.org/sites/default/files/CGAP-Focus-Note-The-Early-Experience-with-Branchless-Banking-Apr-2008.pdf*

76 ibid

77 *MicroSave* (2013), "Great Business for Banks - So why are they slow to build agency banking?". Available at: *http://blog.microsave.net/great-business-for-banks-so-why-are-they-slow-to-build-agency-banking/*

78 GSMA (2015), "State of the Industry Report on Mobile Money." Available at: *http://www.gsma.com/mobilefordevelopment/programmes/mobile-money/industry-data-and-insights/sotir*

79 Safaricom (2016), "Annual Report 2016". Available at: *http://www.safaricom.co.ke/images/Downloads/Resources_Downloads/Safaricom_Limited_2016_Annual_Report.pdf*

Providers should be collaborating on access, and competing on delivering products over the channel

In general, providers need to segment their agent channel into: 1) agents that are doing sales of new products; and 2) agents that are just doing cash-in and cash-out transactions to service existing products. We recommend that providers keep a direct relationship with the first set of agents, but they will not need a lot of them.

The second set of 'transactional or service agents', who will make up the large majority, just need to keep the system liquid by cashing customers in and out of it.

The good news is that there is a large duplication of costs for maintaining these transactional agents. In almost two-thirds of markets (60 of 93 markets)[80] where mobile money is available, there are multiple banks and telecoms all trying to build and manage their own agent networks. They compete, as it is largely seen as a competitive advantage to have an agent network, and in some markets where one or some providers are far ahead of others, it is. Generally, however, this is a short-sighted strategy due to the resources required to build and achieve a successful and sustainable agent network.

Providers should be collaborating on access, and competing on delivering products over the channel. This is the same as how, in many developed markets, a third-party firm owns the telecom towers and each provider buys some bandwidth from it, and then competes on selling it in the form of airtime. This is also similar to how the banking system works. Generally, banks do not share branches, but they do allow customers from another banks to use their ATM network.[81]

Providers need to employ this philosophy of sharing to their agent networks. Providers need to adopt at least one of the three following strategies to significantly limit the reoccurring operational cost of maintaining a large agent network.

1. They can form an association to jointly manage agents that would at least reduce the duplication of costs of having everyone manage agents.[82]
2. They could encourage the development of third-party firms that run the agent networks, and then split the costs of paying them.
3. (Subject to regulatory requirements) they could follow the 'Uber' model, allowing customers to also serve as agents.[83]

While all of these options represent a fundamentally different perspective on distribution, any of them would greatly improve their profit and loss accounts.

Some markets are leading the way by reducing their operational costs through shared agent networks. Although the impetus behind this is often due to regulation, lessons can be learnt from this model. In both Bangladesh and Nigeria, regulation prohibits telecoms from providing financial services to their customers. It does not, however, stop them from building channels across which banks can offer their digital financial services.

80 GSMA (2015), "State of the Industry Report on Mobile Money." Available at: *http://www.gsma.com/mobilefordevelopment/programmes/mobile-money/industry-data-and-insights/sotir*

81 Although, note that this is very much still a market under development, even in the developed world where many banks charge customers a fee for using their ATM if they are not a customer of that bank.

82 In this model, quality control officers need to be employed by providers to regularly visit and monitor agents. This represents a major cost within the agent network management process.

83 This was recently suggested in this *MicroSave* paper and has been tossed around in the industry for a while: *http://www.MicroSave.net/files/pdf/PB_15_Re_Imagining_the_Last_Mile_for_Agents.pdf*

In Bangladesh, GrameenPhone created an agent network under the MobiCash brand offering a distribution solution to any other provider offering digital financial services. Similarly, Nigeria Globacom, a leading telecom company, launched GloXchange, which features a network of digital finance agents through which banks are able to offer their services.[84] In summary, while lowering the price of person-to-person transactions is our first suggestion, we further recommend adjusting the revenue model and lowering operational costs to create a more competitive business model for the future.

2.2 Increase Merchant Payments

In addition to reducing costs, the recommendations in the last section should help increase customer numbers, and the frequency of remote payments such as person-to-person (P2P) transfers and bill pay. However, even if people start conducting all their bill pay, airtime top-ups, and P2P transactions on the digital platform, this will still only constitute a very small percentage of their daily transactions, and will mean providers are still missing out on a lot of customer data.

In India, only 6% of Indian merchants accept any form of digital payment, including mobile money and debit cards

Therefore, to capture a more complete customer profile providers need to recognise that most payments are for purchases, and that capturing these retail payments digitally could increase volumes exponentially. As McKinsey reports, 'strong use of digital payments is empirically linked to widespread merchant acceptance'.[85]

While there has been a large focus in the digital finance industry around developing a merchant network, it has proven very hard, and there has been almost no success. In these markets, consumers are trapped in a cash ecosystem. In Kenya, the bastion of mobile money, the majority of transactions are still done in cash (Figure 5) – although Safaricom is eliminating fees for transactions of less than Ksh.100 to try and address this.[86] In India, only 6% of Indian merchants accept any form of digital payment, including mobile money and debit cards.[87] 97% of retail transactions in India are made using cash or check.[88]

In 2015, merchant payments represented just 1.9% of total mobile money transaction volumes.[89] However, with the new incentives from the Indian government, this might change.

84 See our blog "Building Big Backbones for Innovation' for more details on these two models: *https://www.cgap.org/blog/building-big-backbones-innovation*

85 McKinsey & Company (2016), "Digital Finance for All: Powering inclusive growth in emerging markets". Available at: *http://www.mckinsey.com/global-themes/employment-and-growth/how-digital-finance-could-boost-growth-in-emerging-economies*

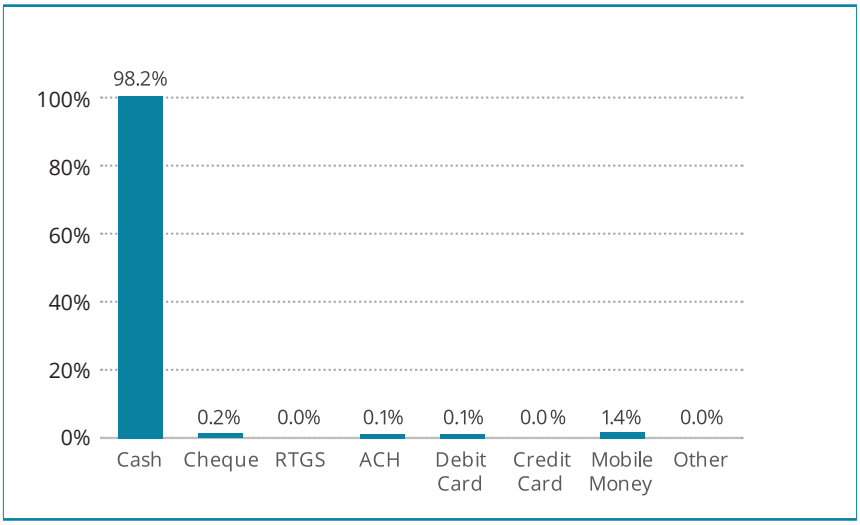
86 East African, "Safaricom Drops Some M-PESA Charges as it Posts $239.3 Million Profit" available at: *http://www.theeastafrican.co.ke/business/new-mpesa-charges-as-safaricom--posts-millions-profit/2560-3440888-143wir1z/index.html*

87 Elliot Maras - Cryptocoins (2016), "India: Moving a Billion People into Digital Finance." Available at: *https://www.cryptocoinsnews.com/report-examines-move-india-digital-finance/*

88 ibid

89 Francesco Pasti - GSMA (2016), "Driving mobile money usage for merchant payments through awareness and engagement". Available at: *http://www.gsma.com/mobilefordevelopment/programme/mobile-money/driving-mobile-money-usage-merchant-payments-awareness-engagement*

Figure 5: Kenya, Retail Transaction Volume[90]



However, that is not to say that merchants will not be accepting digital payments in the future. This section outlines a number of areas providers should focus on when driving forward their merchant payment strategy.

1) Technology

While we will talk about merchant networks in this section, we also acknowledge that they might have to wait until smartphone penetration is higher. It is our belief that until technology is improved (i.e., through NFC, biometrics) to make merchant payments faster and more convenient, they will not be a truly mass-market play. According to Payments UK, in 2015, contactless payments grew threefold, with more than a billion 'wave-and-pay transactions'[91] during the year. They believe that by 2025, only one-quarter of payments will be made in cash. The current, clunky design of mobile money applications, which involve multiple inputs to pay for even the smallest grocery item, is failing to provide the same convenience that digital financial services offer in developed markets or that cash currently does everywhere.

Some new technologies are starting to be used in developing markets. In India, merchants can buy an Ezetap mobile phone card reader for US $50.[92] Other technologies, such as QR codes, which are hugely popular among Chinese digital payment users, could be another area for providers to explore. Both Tencent and Alipay have heavily promoted this technology for their merchant payments.[93]

90 Julie Zollmann and Laura Cojocaru - FSD Kenya (2015), "Cash Lite: Are We There Yet?" Available at: *http://fsdkenya.org/wp-content/uploads/2015/08/15-02-12-Cashlite-report.pdf*

91 Patrick Collinson - The Guardian (2016), "Cashless Britain advances as contracts and edit cards thrive." Available at: *https://www.theguardian.com/money/2016/may/23/cashless-britain-advances-contactless-debit-cards-thrive*

92 McKinsey & Company (2016), "Digital Finance for All: Powering inclusive growth in emerging markets". Available at: *http://www.mckinsey.com/global-themes/employment-and-growth/how-digital-finance-could-boost-growth-in-emerging-economies*

93 Tracey Xiang - Mobile Business Insights (2016), "How QR code became popular among mobile users in China." Available at: *http://mobilebusinessinsights.com/2016/05/how-qr-code-became-popular-among-mobile-users-in-china/*

2) Acquiring Merchants

At *MicroSave*, we have worked with providers around the world and note that merchant networks are fundamentally a different strategy than agent networks – at least for now. However, there are still certain demographics of merchants where digital payments can already beat cash. While we have seen some of these demographics vary by country, and local research needs to be conducted, some general trends are:

4. Merchants are usually not also agents. Agents tend to run small stores with high traffic, selling fast-moving consumer goods. Merchants usually have larger businesses with more than two employees and less foot traffic.
5. Merchants are almost always in urban areas, and are generally more educated than agents. One of the drivers of digital payments for merchants is the ability to pay suppliers digitally, while another is to spend less time on the reconciliation of cash.
6. While very small transactions are still best done in cash, and large ones are usually still done by bank transfers and personal cheques, there might be a middle ground for merchant payments, especially in markets where card penetration is low. Transactions for electronic goods and petrol seem to be good sizes. Furthermore, places where there is more time to make the transaction are better. For example, health clinics, restaurants and beauty salons seem to work well.

When setting up a merchant network, segmenting and targeting the right merchants will help ensure the right quality of service.

3) Ecosystem Adoption

To build an effective merchant network, customers need to have money regularly flowing into and being stored on their wallet, and suppliers need to be able to accept payments digitally. Incentivising customers to store money digitally is most likely the larger challenge. Different theories have emerged on the best way to do this, from promoting saving mechanisms[94,95], to pushing money into customers' accounts through bulk Government-to-Person payments, such as public sector salaries, pensions or social funds.[96]

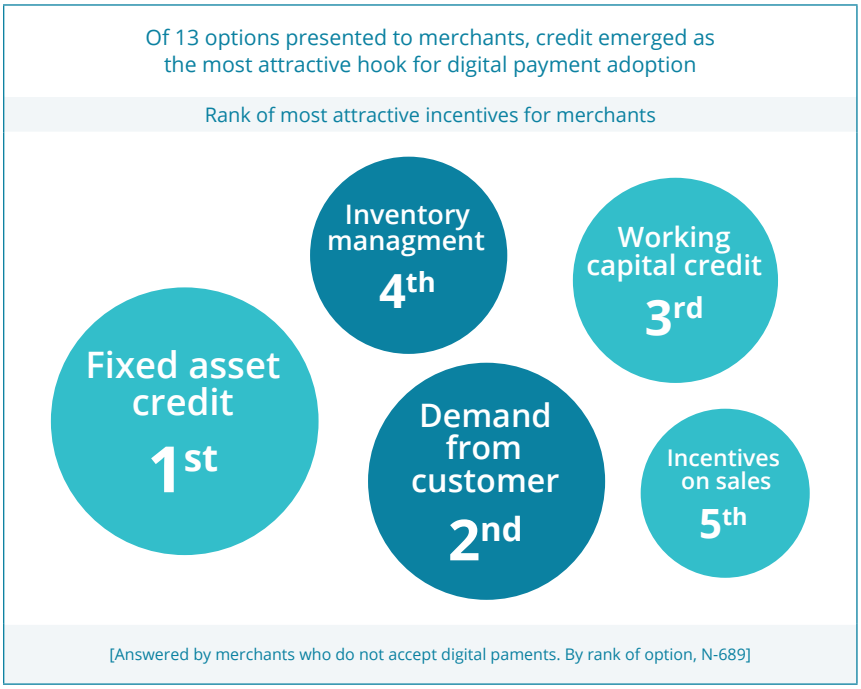
Merchants also need to be incentivised to adopt digital payments. Incentives such as offering credit could be a driver of adoption, as shown from research carried out in India (Figure 6).

94 Innocent Ephraim, Ignacio Mas and Daniel Mhina - FSDT, "The next digital finance frontier: Filling the accounts." Available at: *https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1985587*

95 Ignacio Mas - Centre of Financial Inclusion (2013), "Savings is Key to Merchant Payments in Developing Countries." Available at: *https://cfi-blog.org/2013/09/30/savings-is-the-key-to-merchant-payments-in-developing-countries/*

96 Arunjay Katakam - GSMA (2014), "Setting up shop: Strategies for building effective merchant payment networks." Available at: *http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2014/10/2014_DI_Setting-up-shop_Strategies-for-building-effective-merchant-payment-networks.pdf*

Figure 6:[97] Most Attractive Incentives for Merchants



In a bid to drive merchant payments in Kenya, Kopo Kopo has developed a platform that offers a range of value-added services to their merchants to stimulate retail payment activity.

These range from merchant cash advances[98] to customer analytics through a back-end MIS portal. Research showed that these types of engagements can stop merchant interest from waning.[99]

Red Quibo in Mexico, a partnership between a baking company, Group Bimbo, and Blue Labels Telecoms, has helped create an inclusive ecosystem of digital payments.[100] Their service model leverages the constant contact between their delivery drivers and small retailers. The model uses drivers to deliver POS terminals, educate merchants on digital payments, and provide a service of collecting and depositing cash in their accounts.[101]

In another bid to incentivise and improve the adoption of merchant payments, Tigo Pesa in Tanzania has adopted Juntos' two-way communication service.[102] The Juntos technology[103] uses communication between customers and merchants to help build confidence in using the services.

97 Data from: Elliot Maras - Cryptocoins (2016), "India: Moving a Billion People into Digital Finance." Available at: *https://www.cryptocoinsnews.com/report-examines-move-india-digital-finance/*

98 KopoKopo (2014), "KopoKopo launches 'Grow' merchant cash advance service", Available at: http://kopokopo.com/press-release-kopo-kopo-launches-grow-merchant-cash-advance-service/

99 Francesco Pasti - GSMA (2016), "Driving mobile money usage for merchant payments through awareness and engagement". Available at: *http://www.gsma.com/mobilefordevelopment/programme/mobile-money/driving-mobile-money-usage-merchant-payments-awareness-engagement*

100 McKinsey & Company (2016), "Digital Finance for All: Powering inclusive growth in emerging markets". Available at: *http://www.mckinsey.com/global-themes/employment-and-growth/how-digital-finance-could-boost-growth-in-emerging-economies*

101 ibid

102 Francesco Pasti - GSMA (2016), "Driving mobile money usage for merchant payments through awareness and engagement". Available at: *http://www.gsma.com/mobilefordevelopment/programme/mobile-money/driving-mobile-money-usage-merchant-payments-awareness-engagement*

103 *www.juntosglobal.com/*

4) Interoperability

Interoperability across digital finance systems will benefit all users of the services. However, encouraging competing banks and MNOs to adopt interoperability across networks is still a slow process. Account-to-account interoperability has launched in a number of markets,[104] although agent or merchant interoperability remains largely untested.

Merchant interoperability has been enabled by the likes of MasterCard and VISA in some countries, but primarily for card-based transactions. Several countries have also developed systems for debit card interoperability; China's UnionPay and India's RuPay are prime examples. In many markets there is a big gap, though, with banks and MNOs implementing their own solutions with third parties. However, no national initiative that could make all banks or all MNOs, or both, interoperable has been taken up in these countries.

In some markets, digital finance providers have collaborated behind merchant payment initiatives. In Pakistan, Easypaisa and MobiCash have partnered with a third party, Wemsol, which operates under the brand name Keenu, to help with their merchant payments solutions.[105] Keenu acquires merchants and provides them with suitable mPOS machines. The cost of the device is covered by Keenu and the merchant discount rate is shared between the operators and Keenu.

Infrastructure that accepts payments from multiple providers will need to be built for merchant payments to expand beyond the limited scope they cover in most markets. India could be set to tackle this with its Unified Payment Interface (UPI), which went live in August 2016.[106] The UPI permits 30 banks to interconnect and transfer funds.[107] It also provides a single, digital interface across smartphones that links to these various bank accounts.[108] Although the UPI is currently only linked to banks, there is hope that this will ultimately be extended to other financial providers. Once this reaches the digital finance space, it should enable merchants to accept payments with ease.

There are many different factors that need to be considered when building a merchant network. Here we have listed several key recommendations that we believe will make merchant payments more convenient than cash in the future. Merchant networks can play an important role in increasing transactions per customer, and therefore data on these customers. Due to the scope of the paper, certain issues, such as pricing, have not been discussed. However, GSMA has covered this topic in their literature.[109]

104 GSMA (2015), "*State of the Industry Report on Mobile Money*." reports seven markets with interconnected services.

105 ibid

106 Finextra (2016), "India's Unified Payments Interface goes live with 21 banks". Available at: *https://www.finextra.com/newsarticle/29359/indias-unified-payments-interface-goes-live-with-21-banks*

107 ibid

108 Graham Wright on LinkedIn. Available at: *https://www.linkedin.com/pulse/unified-payments-interface-game-changer-india-graham-wright*

109 Arunjay Katakana - GSMA (2016), "Merchant Payments: Choosing the right pricing model." Available at: *http://www.gsma.com/mobilefordevelopment/programme/mobile-money/merchant-payments-choosing-the-right-pricing-model*

2.3 Encourage Digital Payments for Online Purchases

It is not, however, necessary to build a physical merchant network to start moving into retail payments. Digital disruption is also affecting the retail space. In developed markets, a whole new industry of online e-retailers has emerged. These range from brick-and-mortar stores launching online businesses, individuals or small merchants selling their goods online through portals, such as eBay, to the emergence of global e-commerce giants, such as Amazon and Alibaba. Most these businesses only deal with digital payments.

Similar e-commerce players have emerged in developing markets, such as FlipKart in India and Jumia in Africa. Although these players accept online payments, as discussed above, cash on delivery remains the payment of choice. Digital finance providers have an opportunity to help support the efforts of these local e-commerce companies, thus driving more traffic, and data, onto their digital finance system.

This approach involves a two-pronged strategy: 1) encourage online retailers to accept digital payments for physical goods; and 2) develop the marketplace for digital goods.

Digital Payments for Physical Goods

To sell physical goods digitally, existing retailers need a platform for digital sales, and completely new digital stores will need to be developed. For either of these solutions, digital marketing, digital payments, and the delivery of the goods will be issues that digital finance players can help solve.

Mobile phones linked to either a bank account or a mobile money wallet can help retailers collect payments from customers when purchases are done digitally, or when payments are better made remotely. Jumia[110] sells goods like Amazon does, and also allows people to sell their own goods like eBay does. In Kenya, Tanzania and Uganda, people can now pay for goods using mobile money.

WeChat has recently expanded to South Africa and Latin America and has developed a platform called WeChat Shop, allowing any of its users to open one of five types of stores to sell goods and collect payments.[111] Furthermore, online food delivery is a growing business and companies like HelloFood and its affiliate, FoodPanda, report operating in 40 countries,[112] and are integrated with mobile money providers in places like Kenya, Uganda and Tanzania. In terms of enabling remote payments, M-Kopa in Kenya uses M-PESA to collect payments for solar lights and other consumer electrical goods it sells around the country.

110 It is interesting to note that MTN, Millicom and Orange are all investors in this online retailer: *https://group.jumia.com/*

111 *www.walkthechat.com/wechat-shops/*

112 AllAfrica (2015), "Tanzania: Food Delivery Revolutionised." Available at: *http://allafrica.com/stories/201503161990.html*

Beyond serving as a payment provider for digital retail, in many developing countries there are neither postmen who deliver goods nor even reliable addresses to deliver them to. This is another potential revenue stream for the large agent networks that many providers have already developed. Larger ones could serve as mini-warehouses, while the smaller ones could serve as pick-up locations for customers that have bought physical goods.[113]

StoreKing in India, riding on the existing distribution network set up by traditional FMCG companies, has enabled online-assisted commerce to people in rural India. It has not only increased agent revenues, but has also helped people living in small towns and villages who are unable to shop online. Equity Bank in Kenya is already experimenting with using its agents to sell solar and cookstove technology, and then have its agent network warehouse products and serve as pick-up locations.

Digital Payment for Digital Goods

With digital goods and services, the delivery issue is automatically solved, but the need for payments is just as relevant. Digital goods have been sold around the world in the form of apps, ringtones, animated emojis, online games and music. In China, Tencent's WeChat started by selling animated emojis and downloadable sticker packs to their customers. Social gaming and mobile payments were then added in August 2013.[114]

WeChat has now developed into a massive payment provider, processing an estimated US $550 billion in payments per year.[115] Transport services like Uber for taxis, TravelStart[116] for airlines, and small local ones like Sendy[117] for messenger services, all offer mobile money payments in countries that have significant customer bases. MTN Play[118] sells everything from news to music and videos. EcoCash in Zimbabwe now offers digital textbooks and curriculum on a subscription basis to students.[119]

...in addition to digitising saving products, another means to encourage customers to store money digitally is through the digital payment for digital goods

It has been argued that to drive merchant payments, and therefore the daily use of digital finance systems, providers need to develop saving products for customers to start saving their money in their digital wallet. It is indisputable that payments cannot be made with an empty wallet,[120] and that customers need to be incentivised to store value on their mobile money wallet to have enough digital money available when and where it is needed. However, in addition to digitising saving products, another means to encourage customers to store money digitally is through the digital payment for digital goods.

WePay built up their customer base and encouraged their customers to store money digitally by offering the purchase of digital goods over their platform.

113 This could look something like the Doodle model: *https://www.doddle.com/*

114 Steve Millward - TechinAsia, "WeChat is 5 years old. Here's how it's grown". Available at: *https://www.techinasia.com/5-years-of-wechat*

115 Jon Russell - Techcrunch (2016), "Messaging app WeChat is becoming a mobile payment giant in China." Available at: *https://techcrunch.com/2016/03/17/messaging-app-wechat-is-becoming-a-mobile-payment-giant-in-china/*

116 It is interesting that MTN has made an investment in TravelStart: *http://www.itweb.co.za/index.php?option=com_content&view=article&id=149541*

117 *https://sendyit.com/business*

118 *http://www.mtnplay.com/playweb/index.html*

119 Tatenda Gumbo - VOA (2014), "Econet Wireless launches Innovative Educational Tool". Available at:*http://www.voazimbabwe.com/a/zimbabwe-econet-launches-innovative-educational-tool/2498549.html*

120 Ignacio Mas - Centre of Financial Inclusion (2013), "Savings is Key to Merchant Payments in Developing Countries." Available at: *https://cfi-blog.org/2013/09/30/savings-is-the-key-to-merchant-payments-in-developing-countries/*

Rather than incentivising customers to store money on their e-wallets by promoting a digital saving account, this storage was built up organically through WePay's online retail system.

Digital finance providers have the option of getting involved with digital retail through partnerships with existing retail companies to provide them with digital payment services, and potentially even help them deliver the goods. They can also become more involved, like MTN,[121] in the digital goods marketplace. Either way, digital finance providers can help this industry grow, and can benefit from it by garnering more transactions on their systems from it.

2.4 Proactively Collect Data

Financial data is one of the most valuable data sets providers can have on customers. For this reason, the entire paper to this point has analysed how to increase the amount of financial information digital financial providers have on their customers.

However, it is also very important to bear in mind that fintech companies are now augmenting financial data with other datasets, and digital finance players need to do so as well. This will involve more proactively collecting data on customers through increased customer interaction, as well as ensuring that current digital behaviour is being tracked.

Data that will help predict customer behaviour is not always obvious. Kreditech notes that they use over 20,000 data points to appraise a customer's creditworthiness.[122] Some of these data points measure how long a customer is on a website before they query for a loan, or if they cut-and-paste data or fill it in themselves.[123]

When a customer conducts a transaction over the digital platform, it is not only important to collect the "what" describing what they bought or "how much" they paid. It is also important to look at where they were, how long they took, and possibly who they were with to try and determine the "why" about the transaction they made.

Lenddo, a credit risk management organisation, uses 'digital footprints', such as social media activity and browsing data, to analyse customers' creditworthiness.[124] Tala, previously called InVenture, uses data that is collected on an individual's smartphone, such as communication records and social media data, to determine their customers' creditworthiness. Their chief data scientist reports:[125]

121 Thames Mochiko - Financial Mail (2016), "MTN goes in a new e-commerce direction". Available at: *http://www.financialmail.co.za/features/2016/06/10/mtn-goes-in-a-new-e-commerce-direction*

122 *www.kreditech.com/what-we-do/*

123 Financial Times, "Kreditech: A credit check by social media." Available at: *https://www.ft.com/content/12dc4cda-ae59-11e5-b955-1a1d298b6250*

124 PR Web (2015), "Lenddo launches revolutionary credit risk and verification technology for mobile lenders." Available at: *http://www.prweb.com/releases/2015/07/prweb12837462.htm*

125 Tala (2015), "Proving Potential - How a Data Scientists sees People." Available at: *https://medium.com/tala/proving-potential-10ee6fa49aa8#.itehx0bgz*

> *"What's fascinating about mobile data – and the reason it works so well for these purposes – is that our phones are windows into our identities and behaviour and one of the strongest links to who we are. This is an area of data science that hasn't really been tackled before, and we're using it to benefit people in a very direct, very tangible way."*
>
> Tala's chief data scientist

"What's fascinating about mobile data – and the reason it works so well for these purposes – is that our phones are windows into our identities and behaviour and one of the strongest links to who we are. This is an area of data science that hasn't really been tackled before, and we're using it to benefit people in a very direct, very tangible way."

These fintech providers[126] are all collecting and using a vast array of mobile phone, social media, psychometric and geospatial data in order to create a deeper understanding of their customers' digital identities. Digital finance players should learn from these innovative fintech companies to proactively increase their means of data collection and analysis.

Both banks and telecoms should ensure that they are creating the associated non-financial data that corresponds to the financial transaction data they are already collecting. Telecoms in Africa, in particular, also have another advantage which is that a very high percentage of Internet connections are via mobile data.[127] This offers another great opportunity to collect customer information on their digital habits.[128]

Additionally, digital finance customers often have digital profiles that are not yet associated with their digital finance profiles. Digital finance providers should take a serious look at account linkages that would help them garner more information on their customers. Incentives could be given to integrate their mobile wallets or digital bank accounts with their messaging services, such as their WhatsApp or Facebook accounts. This would allow providers to understand more about how their customers communicate in the digital space, which could be valuable information used to predict their financial behaviour.

Lastly, there is a lot of data that is still not being collected, even though we have the means to do so. Communications that go out to customers are still generally just about deals and promotions. Although there is an industry of mobile phone survey companies now,[129] they are generally interested in looking at demographic trends. Investments should be made into data collection and analysis mechanisms that help enrich customers' digital profiles.

126 Beyond Kreditech and Lenndo, other interesting organisations to look at are *EFL*, *FirstAccess*

127 Deloitte (2015/2016), "Game of Phones: Deloitte's Mobile Consumer Survey". Available at: *https://www2.deloitte.com/content/dam/Deloitte/za/Documents/technology-media-telecommunications/ZA_Deloitte-Mobile-consumer-survey-Africa-300816.pdf*

128 For more information on the power of data collected from individuals digital habits, see Caribou Digital's in-depth research into the digital lives of low-income people in Ghana, Kenya and Uganda - *http://cariboudigital.net/new/wp-content/uploads/2015/12/Caribou-Digital-Digital-Lives-in-Ghana-Kenya-and-Uganda.pdf*

129 Ureport is an interesting example of this. *http://ureport.ug/about/*. Frontline SMS (*http://www.frontlinesms.com/*) is another example that provides SMS communication software to enable companies to send, receive and manage SMS communication.

There are limited efforts to engage in digital communications with customers to get to know more about them. Customers could be offered promotions to enrol in a programme where they are asked questions every so often, and then get points for answering them. These questions would be designed to collect information on their habits, which could help the provider better understand their needs and design products for them.

Two-way communication solutions, such as Juntos, could be used to garner more data on customers. Juntos is a platform that 'allows financial institutions to carry on personalised, electronic conversations with customers through text messages'.[130] Their powerful data analytics is used to tailor messages to customers. In addition to ensuring that providers stay engaged with their end users, this type of technology could also be used to garner non-financial information and data from their customers.

130 http://juntosglobal.com/

Conclusion

Digital finance has done a lot in the developing world to improve people's access to finance. Services like agent banking and mobile money have drawn hundreds of millions of new people into the formal financial system. As the financial industry continues to become more driven by technology, the next stage of development is inevitably going to be marked by the emergence of fintech players in the space. This paper has suggested strategies that digital finance providers should adopt to strategically manage this fintech revolution.

Customers are not only important for the revenue they bring today, but also for the data that they provide on who they are. This data allows providers to build digital user profiles over time and will become quite lucrative in the future, as they can help predict what products and services they might purchase, and how best these can be marketed to individual users. More customers and better datasets will provide digital finance providers with more options in the future to either partner or compete with fintech firms when they start focusing on the developing world's markets.

This paper provides advice on how digital finance providers can improve the amount of customer data they have. The first set of recommendations directs companies to lower their transactional prices, shift to a more traditional banking revenue model, and slash operational costs. These recommendations are all geared towards obtaining a richer set of financial data from customers for the activities they are already conducting on the digital finance platforms (P2P, airtime top-ups and bill pay).

We then also point out that most people's financial transactions are in the retail space. To date, most providers have struggled to digitise retail payments. We have therefore provided some advice on how to take a targeted approach to building a merchant network, and then to complement it by focusing on different types of digital retail opportunities that are already sprouting up around the developing world.

Lastly, we encourage looking beyond financial data to create better customer profiles. We note that there are already some great ways to do this through tracking behaviour on the systems, linking digital finance products to other digital profiles, and proactively engaging in communications with customers that will help to understand their needs better.

While most developing-world markets are not digital enough yet to be targets, that is changing quickly, so our recommendation is for digital finance providers to start preparing now, ensuring that they are ready to evolve with the industry.

Appendices

Appendix 1: The History of Digital Finance Partnerships

Cooperation is rarely part of the core business model of banks or telecoms. Many banks do not even share credit information with each other when it would be mutually beneficial, and telecoms only share basic infrastructure like towers in some countries, or in rural areas where it is the only way to expand. Both industries are still in rapid races to expand either financial services to burgeoning middle-class customers, or telecommunications and data to markets still posting large growth rates. This has meant that industry players are generally very profitable, and have had little motivation to change the way they have been doing business to either cut costs or bolster revenues.

Furthermore, cross-sector partnerships between banks and telecoms, which generally offer significant synergies, have been equally rare. Again, high growth in each of their respective core businesses often means this is not a priority, and even when it is, distinctive corporate DNA has prevented the majority from lasting very long.

In a few cases where forward-looking banks have decided to infuse themselves with telecom talent, partnerships have been fruitful.

Equity Bank in Kenya founded a holding company called FinServe and hired telecom talent to run it. It has a partnership with Airtel and runs an MVNO called Equitel, which has produced some promising numbers (see Box 1). Additionally, Kenya Commercial Bank (KCB) has a young dynamic CEO that wants to aggressively expand his retail market share. He hired telecom professionals to build his agent banking strategy, and then signed a partnership with Safaricom to launch a co-branded product called KCB M-PESA Account (see Box 1).

BOX 1: Results from Two Successful Partnerships

Equity Bank's financial results from August 2016 showed a 308% increase in loan disbursement due to the convenience and ease of accessing credits and loans through their Equitel digital finance channel. The number of loans grew from 1,061,000 to 4,327,999 out of which 3,557,913 loans worth Kshs 20.8 billion (US $205.4 million) were disbursed through Equitel.

In August 2016 KCB announced that its KCB M-PESA saving and loans account had disbursed a total of Ksh 10.2 billion (US $100.7 million) in loans since March 2015. Over 6.4 million accounts have been opened and over Ksh 286 million (US$2.8 million) has been saved over the platform.

Three important lessons from this history are: 1) partnerships have been infrequent, and generally are not a priority for digital finance players; 2) partnerships have occurred in a few cases where corporate synergies between firms have been very well aligned; 3) in the few cases where they have worked well, one firm has shifted some operations to become more like the other, and acquired talent that can speak their language and understand their goals.

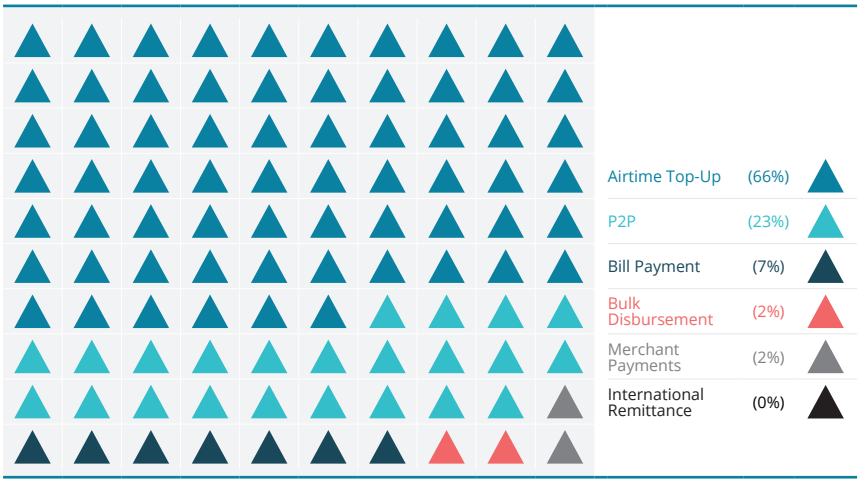
Appendix 2: Digital Finance - Still Struggling to Reach Scale

To really understand the character at the cutting edge of the digital finance industry, we need to look at Kenya and its flagship provider M-PESA. In March 2017, the famous M-PESA service will turn ten years old, and therefore, so will the digital finance industry. In the past decade, M-PESA has amassed more than 16 million active[131] customers and reached an annual revenue of Kenyan Shilling (Ksh) 41.5 billion (US $409.5 million[132]) in 2015.[133]

Following in the footsteps of M-PESA, a multimillion-dollar industry has grown around mobile money and agent banking - now generally referred to as digital finance. Over 271 banks and telecoms in over 93 developing countries around the world are trying to leverage technology to offer financial services to the mass market.[134]

However, use of these digital financial services in developing markets is still low, and most transactions are still made in cash. Of the 411 million registered mobile money accounts across the world, only 33% are active on a 90-day basis, meaning that the vast majority lie dormant.[135] When they are used, the average user only makes 11.2 transactions per month, many of which are airtime top-ups, which represent 66% of the global volume of transactions (see Figure 7).[136]

Figure 7: Global Product Mix by Volume (December 2015)[137]



131 Active on a 30-day basis.

132 All Kenya Shilling to US Dollar exchange uses mid-market rates from 9th September 2016: KES 101.35 = US $1

133 GSMA (2015), "State of the Industry Report on Mobile Money." Available at: *http://www.gsma.com/mobilefordevelopment/programmes/mobile-money/industry-data-and-insights/sotir*

134 ibid: It should be noted that this count does not include all banks offering digital financial services, and so should be viewed as a lower bar estimate.

135 ibid: Reports 411 million registered accounts and 134 million active accounts on a 90-day basis.

136 ibid: Further shows that 4.8 of these monthly transactions are airtime top-ups, which should already be captured in the GSM dataset. Furthermore, 3.9 of these transactions are either cashing in or out of the system, meaning that there is only an average of 2.5 transactions per month that give additional data on how the digital money is being used in the system.

137 Data from: ibid

As a result, the majority of transactions, even in leading mobile money markets, are made in cash. In Kenya, estimates for the proportion of payments made in cash range from 73% to 98.2%.[138] While digital finance represents impressive innovation compared to the financial systems that preceded them, even in countries where it is most advanced, it is only being used in specialised cases, and only every so often. Furthermore, the progress made by the majority of the industry falls far behind the handful of leading providers. Only 12 providers have over one million active accounts on a 90-day basis.[139] The majority of digital finance providers are still stuck in the first stages of development, struggling to build value propositions, and large agent networks to deliver their services at the scale they need to make any money.

138 Julie Zollmann and Laura Cojocaru - FSD Kenya, "Cash Lite: Are We There Yet?" Available at: *http://fsdkenya.org/wp-content/uploads/2015/08/15-02-12-Cashlite-report.pdf*

139 GSMA (2015), "State of the Industry Report on Mobile Money." Available at: *http://www.gsma.com/mobilefordevelopment/programmes/mobile-money/industry-data-and-insights/sotir*

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