



*Partnership for* **FINANCE**  
*in a* **DIGITAL AFRICA**

# **Which financial needs can be (and should be) addressed by DFS?**

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## NOTES

The views presented in this paper are those of the author(s) and the Partnership, and do not necessarily represent the views of the Mastercard Foundation or Caribou Digital.

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## ABOUT THE PARTNERSHIP

The Mastercard Foundation Partnership for Finance in a Digital Africa (the "Partnership"), an initiative of the Foundation's Financial Inclusion Program, catalyzes knowledge and insights to promote meaningful financial inclusion in an increasingly digital world. Led and hosted by Caribou Digital, the Partnership works closely with leading organizations and companies across the digital finance space. By aggregating and synthesizing knowledge, conducting research to address key gaps, and identifying implications for the diverse actors working in the space, the Partnership strives to inform decisions with facts, and to accelerate meaningful financial inclusion for people across sub-Saharan Africa.

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# What we know

## — *Digital finance deployments, and therefore access to financial services, continue to grow*

Across the developing world, digital finance services (DFS) are being implemented to serve the financial needs of various underserved and/or unbanked customer segments. From the launch of the first mobile money service in 2001 to the 277<sup>th</sup> service in 2016, DFS is now available to over 170 million customers in more than 90 countries.<sup>1</sup> Access to digital financial services helps meet the unmet demand for financial services and seeks to solve many pressing needs, especially in low-income countries where the formal financial system is failing to serve large segments of the population.

## — *A gap exists between access and use*

Despite the growth of DFS, and successful efforts to register customers onto these digital financial systems, providers are struggling to close the gap between adoption and use. At the end of 2016, only 21% (118 million) of the 556 million globally registered mobile money accounts were used more than once a month.<sup>2</sup>

## — *Even among those who do use DFS, use is narrow*

DFS accounts are used infrequently, and they are limited to specific activities. To date, in many markets, DFS is used predominantly as a “flexible instrument to swiftly and safely move money.”<sup>3</sup> Payments remain the most popular services of choice,<sup>4</sup> with limited product use beyond the transfer of money from one account to another.

## — *Limited uptake and use have been associated with the challenge of replicating informal financial needs digitally*

Struggles to drive regular use have been attributed to a failure to digitally replicate the complex financial needs and money management strategies of low-income populations. These needs are usually classified into four universal categories: managing short-term liquidity, accumulating large lump sums of money (to invest or pay a large expense), dealing with unforeseen expenses (household/income shocks), and making and receiving payments.<sup>5</sup> While these needs are similar across income levels, in poorer communities they exist alongside volatile incomes, unpredictable cash flows, and unexpected financial shocks.<sup>6</sup> Therefore, the informal financial strategies that low-income populations employ to manage these needs are different from the financial solutions of higher-income individuals.

Despite this increased awareness of how different income groups manage their finances, many providers have tried to offer developing markets clients financial services designed for higher income salaried individuals, instead of designing services around the needs of the poor. Although many DFS offerings are being embraced in low-income markets, infrequent use of “sophisticated financial services”<sup>7</sup> may well be related to a failure to replicate informal financial needs digitally.

To help understand the financial needs of low-income segments, several demand-side surveys have been conducted. From Stuart Rutherford’s

1 GSMA, “State of the Industry Report on Mobile Money: Decade Edition: 2006-2016.”

2 GSMA.

3 MM4P, “Advancing Digital Financial Services in Benin: Needs and Hurdles.”

4 See Snapshot 3 for more on the nature of DFS use.

5 McCaffrey and Schiff, “Finclusion to Fintech: Fintech Product Development or Low-Income Markets,” 10.

6 Hughes, “Technology Must Solve Real Problems for Low-Income Customers.”

7 We define “sophisticated financial needs” as savings, credit, and insurance. This is compared to “basic financial needs” that revolve around payment and transfers, such as bill payment, remittances, and bulk disbursements.

“Portfolios of the Poor” to Kenyan financial diaries,<sup>8</sup> the industry is building up a foundation of knowledge on the complex and varied financial needs and behaviors of various target segments. The next stage of development must focus on developing innovative means to address these complex financial needs across digital platforms.

In this Snapshot, we discuss the financial needs that are being addressed through DFS, the gaps in supply and demand, as well as some of the consequences of delivering DFS digitally.

## Addressing financial needs through digital services

— *Although DFS addresses many transfer and payment needs, different markets demand different services*

Transfer and payments (such as remittances, bulk disbursements, and bill payments) can and are being addressed through DFS. These products tend to be the “anchor” value propositions through which financial service providers have launched their services. Digital channels are not only addressing these transfer and payment needs, but doing so in a more convenient, cost-effective,<sup>9</sup> secure, and transparent<sup>10</sup> way.

When talking of success in DFS, people often look to Kenya, the so-called bastion of mobile money, where 67% of the adult population has a registered mobile money account.<sup>11</sup> In 2007, M-PESA, the now leading mobile money services in Kenya, launched a “send money home” person-to-person (P2P) domestic remittance service, with the value proposition of making P2P remittances faster, safer, and more secure. By overcoming the cost and convenience of informal alternatives, such as sending money via a bus, digital domestic remittances successfully addressed the need to transfer money over large distances. This enabled households to better manage unexpected financial shocks<sup>12</sup> and ensure smooth consumption during these difficult periods.<sup>13</sup>

Many studies on mobile money focus on the Kenyan and East African success story, where P2P transaction volumes and value have consistently

remained high over the years. While using P2P as an anchor product has proved successful in this region, alternative needs have emerged in other countries, perhaps as an indication that different markets have a greater demand for different services.

- In 2011, bill pay was prominent in the Middle-East and Central Asia, representing 66% of functional transactions in those regions, whereas elsewhere, it accounted for 2% or less of the overall product mix.<sup>14</sup>
- In El Salvador, rather than P2P being the driver of growth, Tigo Money has gained traction through its international remittance and bill payment services.<sup>15</sup>
- More recently, international remittances uptake has been particularly significant in West Africa, accounting for 37.9% of global international remittances sent via mobile money in 2014.<sup>16</sup>
- There have also been lasting differences in the ways P2P has evolved, with the dominance of over the counter transactions (OTC) in South Asia.<sup>17</sup>

Considering transfer and payment use, it is important to note, however, that many providers are still struggling to address clients’ day-to-day payment needs. Not only are transaction flows for small, daily purchases slow and complex, but the lack of collaboration between players and the “bewildering array of inconsistent options” is leaving the potential for digital retail payments untapped.<sup>18</sup> The struggle to digitize merchant payment is discussed further in Snapshot 3.

— *Sophisticated financial services are struggling to beat informal alternatives*

While in many markets providers are innovating beyond transfer and payment services to more sophisticated financial services (credit, insurance, savings), uptake has been slower than we hoped. Although there are a number contributing factors, research suggests that product design plays an important role.

8 Zollmann, “Kenya Financial Diaries: Shilingi Kwa Shilingi, the Financial Lives of the Poor.”

9 Farooq, Naghavi, and Scharwatt, “Driving a Price Revolution Mobile Money in International Remittances.”

10 Shulist, “Government Payments via Mobile Money.”

11 Intermedia, “Kenya: Wave 3 Report FII Tracker Survey.”

12 Suri, Jack, and Stoker, “Documenting the Birth of a Financial Economy.”; Morawczynski, “Exploring the Usage and Impact of ‘transformational’ Mobile Financial Services.”; Blumenstock, Eagle, and Fafchamps, “Charity and Reciprocity in Mobile Phone-Based Giving.”; Blumenstock, Eagle, and Fafchamps, “Airtime Transfers and Mobile Communications,” 167. InterMedia, “Mobile Money in Tanzania: Use, Barriers and Opportunities.”; Jack and Suri, “Risk Sharing and Transactions Costs.”; Jack, Ray, and Suri, “Transaction Networks.”; Zollmann, “Kenya Financial Diaries: Shilingi Kwa Shilingi, the Financial Lives of the Poor.”; Gash and Gray, “The Role of Financial Services in Building Household Resilience.”

13 Morawczynski, “Exploring the Usage and Impact of ‘transformational’ Mobile Financial Services.”; Suri, Jack, and Stoker, “Documenting the Birth of a Financial Economy.”

14 Davidson and Pénicaut, “State of the Industry: Results from the 2011 Global Mobile Money Adoption Survey.”

15 Almazán, “Spotlight on Central America.”

16 Scharwatt et al., “State of the Industry 2014: Mobile Financial Services for the Unbanked.”

17 McCaffrey, Wright, and Singh, “OTC: A Digital Stepping Stone, or a Dead End Path?”

18 Nautiyal and Pasti, “Merchant Payments.”

Many of these traditional, “sophisticated” financial services were originally designed to be generic products for higher-income salaried workers with predictable incomes and expenditures. While low-income people juggle volatile financial inflows and outflows, these services have struggled to meet their variable and complex financial needs. Although digital savings, credit, and insurance services have been growing annually,<sup>19</sup> many financial needs remain unmet due to the limitations of these traditional products.<sup>20</sup>

Numerous research studies have been conducted to tackle this issue and address informal financial needs appropriately. These studies aim to understand the financial lives of the poor and the ways in which they manage their money. One of the most important findings from this research is that rather than having rudimentary means of managing their finances, the poor save, invest, and borrow using a myriad of different tools and techniques.<sup>21</sup> Research by *MicroSave* and Mas revealed the complex financial management strategies of Indian households by mapping income sources to expenditure goals as well as identifying the financial tools that sit in-between them.<sup>22</sup> To manage diverse needs, the researchers found that various financial instruments used, each with their own unique characteristics and functions. While one financial saving tool offered a greater level of liquidity, the other delivered more self-imposed discipline. Similarly, while investment in one asset simply served as a tool for the appreciation of value, investment in another asset focused more on productivity and return.

The generic offerings of traditional digital saving, credit, and investment products often struggle to serve these multifaceted financial needs. In her Kenyan Financial Diaries work, Zollmann highlights how the poor like to keep productive, “working” assets that, unlike a stagnant saving account, simultaneously provide various financial benefits and returns.<sup>23</sup> Take a cow as an example. A cow is an investment, an insurance (as it can be sold in moments of need); it helps manage liquidity (selling/using milk), provides long and short-term returns, and it could provide a return on investment (a calf). This one animal represents and delivers the benefits of a myriad of different financial services, all rolled into one. It is

therefore a much richer and more complex financial device compared to a traditional savings account.<sup>24</sup> It is hoped that this foundational understanding of the financial lives of the poor will lead to the design and development of more appropriate and relevant financial products.

### — Some notable product innovation has taken place

There have, however, been some noteworthy attempts to address these complex financial needs. Influenced by the informal practice of accessing credit via social networks, a number of providers have developed digital crowdfunding solutions based on the informal ROSCA or ASCA models (e.g., Safaricom’s Chama account and PezaZetu<sup>25</sup>). In Chad, a savings product, “Tigo Paaré”, was launched to replicate the existing savings structures in the region and Safaricom launched a locked savings account (M-Tiba) in partnership with CarePay and PharmAccess to help households save and pay for future health expenditures. In Pakistan, Easypaisa partnered with ARY Digital to launch a Gold committee product that allowed customers to invest gold in small amounts over time.<sup>26</sup> However, many questions still have to be answered and numerous challenges have to be addressed regarding these digital solutions. In most cases, we are yet to see their long-term social and commercial benefits.

## Unintended consequences of digitalizing financial needs

While the DFS ecosystem slowly expands, it is worth noting that despite the industry’s best intentions, some unanticipated and negative consequences are beginning to emerge. These are important to highlight and track.

While numerous studies have reported the benefits of a mobile money wallet in terms of acting as a safe place to store money,<sup>27</sup> others have highlighted its unintended effect. Research has shown that those with higher, more regular incomes felt that money saved in mobile wallets was too easy to spend, particularly on

19 GSM, “2015: Mobile Insurance, Savings & Credit Report.”

20 McCaffrey and Schiff, “Finclusion to FinTech: FinTech Product Development or Low-Income Markets.”

21 Zollmann, “Kenya Financial Diaries: Shilingi Kwa Shilingi, the Financial Lives of the Poor,” Mas and MicroSave, “Musings on Money: The Household Money Management Model of Mass Market,” FSD Kenya; Central Bank of Kenya (CBK); Kenya National Bureau of Statistics (KNBS), “FinAccess Household Survey 2013.”

22 Mas and MicroSave, “Musings on Money: The Household Money Management Model of Mass Market.”

23 Zollmann, “Kenya Financial Diaries: Shilingi Kwa Shilingi, the Financial Lives of the Poor,” 19.

24 Mas, “Digitizing the Kaleidoscope of Informal Financial Practices.”

25 Noor, Gupta, and Rai, “Should Your Friend Be Your Banker? Digital Models Test the Waters.”

26 GSM, “2015: Mobile Insurance, Savings & Credit Report.”

27 Porteous, “The Enabling Environment for Mobile Banking in Africa,” Vong, Fang, and Insu, “Delivering Financial Services through Mobile Phone Technology,” Plyler, Haas, and Nagarajan, “Community-Level Economic Effects of M-PESA in Kenya.”



careless topping up of airtime.<sup>28</sup> To stop themselves from overspending on airtime, some respondents decided to leave their M-PESA SIM card at home or never store any unspent balance.<sup>29</sup>

The new ease with which some DFS users can send and receive money has also unearthed some unexpected repercussions. Morawczynski's research in Kenya showed that urban users complain of the increased demands on their money due to M-PESA.<sup>30</sup> Some users claimed that they could not afford to use the service, with one user reporting that it had made her "broke."<sup>31</sup> These disincentives to store money in a digital wallet or use the service for even simple transactions will have an inevitable indirect effect on the long-term goal of digital financial inclusion. The challenge of saving and storing money is discussed further in Snapshot 6.

Regarding borrowing, concerns about the design of digital credit solutions and the expansion of real-time credit offerings are growing,<sup>32</sup> raising questions about consumer protection. Interviews in Kenya revealed that either little attention was paid to the cost of credit<sup>33</sup> or the cost was misunderstood.<sup>34</sup> A report on Safaricom and CBA's "M-Shwari" savings and loan product revealed that although most respondents praised the low cost of loans, the 7.5% facilitation fee converts to an APR of around 90%,<sup>35</sup> which is double the average Kenyan MFI APR. Not only are interest rates typically very high, but a growing number of clients are being blacklisted for outstanding loans. Since the launch of M-Shwari, close to 10% of the Kenyan population (2.7 million people) have been blacklisted by the credit bureau.<sup>36</sup> This means that 2.7 million people have essentially been financially excluded. Concerns are also growing around the use of mobile money to finance the growth of gambling in many African markets.<sup>37</sup> In the beginning half of 2016, a 20% growth in cash moving through mobile money platforms in Kenya was attributed to mobile-based sports gambling.<sup>38</sup> Research by Mozilla Foundation found that one third of smartphone users in Kenya use their phones for betting.<sup>39</sup>

28 Zollmann and Collins, "Financial Capability and the Poor: Are We Missing the Mark?"

29 Ibid.

30 Morawczynski, "Exploring the Usage and Impact of 'transformational' Mobile Financial Services," 518.

31 Ibid.

32 Wright et al., "Where Credit Is Due – Customer Experience of Digital Credit in Kenya."

33 Zollmann and Collins, "Financial Capability and the Poor: Are We Missing the Mark?"

34 Tamara Cook and Claudia McKay, "How M-Shwari Works: The Story So Far."

35 Ibid.

36 Wright, "Key New Year Resolutions for the Success of Digital Financial Services."

37 Kuo, "Smartphones Are Making Kenya's Gambling Problem Even Worse."

38 Herbling and Mwaniki, "Betting Craze Powers Mobile Money to 20 per Cent Growth."

39 de Reynal and Richter, "Stepping into Digital Life."

# Notable new learning

## Providers are beginning to use “big data” to address tailored financial needs

As more transactions are being digitalized, providers are using this data to address complex financial inclusion gaps or deliver a range of more tailored financial services to their customers. Accion Venture Labs released a recent report on “Bridging the Small Business Credit Gap through Innovative Lending.”<sup>40</sup> Venture Labs have invested in more than a dozen lenders who use new business models that leverage access to alternative data to help close the credit gap among MSMEs. One of their lenders, Konfio, provides microbusinesses in Mexico with working capital loans, using the data from 5,000 points (including alternative sources, such as social networks and biographical data) to access customers’ credit worthiness. Another lender in Nigeria, Lidya, provides an invoice discount solution to small businesses based on the transactional data that comes through their electronic invoicing platform.

Providers are also beginning to use the data captured from solar repayments to expand their product offerings beyond energy.<sup>41</sup> M-Kopa in Kenya now offers a range of additional micro-credit services from televisions and cookstoves to cash-back into customers’ M-PESA account.<sup>42</sup> In Uganda, Fenix International is exploring offering education loans to customers,<sup>43</sup> and CGAP is currently looking at how DFS can help the 663 million people who still lack access to a secure source of drinking water.<sup>44</sup> “Big data” can help

providers by delivering individualized insights about their customers, leading to the possibility of tailoring products to specific needs rather than developing a “single mass-market offering.”<sup>45</sup>

## Understanding deepens around the nuanced financial needs of smallholder farmers (SHF)

The digital finance community continues to investigate the complex financial needs of SHFs in a bid to build appropriate digital financial products and services for this large and varied segment. SHFs make up one of the most excluded (and largest) populations in low-income markets. In Uganda, 85% of the population is based in rural areas.<sup>46</sup> Research by Mercy Corps AgriFin Accelerate (AFA) program has revealed the financial needs of farmers in various underserved markets.<sup>47</sup> Similarly, CGAP has conducted a national survey of smallholder households in Tanzania, Mozambique, and Pakistan to understand how best to support their financial needs.<sup>48</sup> Answering the financial needs of SHFs who manage cyclical incomes and expenses, and have limited digital footprints against which to offer credit, is a continuing challenge. Perhaps as evidence of this challenge, Mercy Corps found that a sharp increase in respondents living at or below \$2.50 a day in 2016 in Kenya.<sup>49</sup> An analysis of income sources and remittances were analyzed,

40 Accion Venture Lab, “Bridging the Small Business Credit Gap through Innovative Lending.”

41 Waldron, Faz, and Muench, “Access to Energy and Finance: An Integrated Approach.”

42 M-Kopa Solar, “Digital Insights Build Trust and Enable Growth.”

43 Braniff et al., “Meeting Education Finance Needs in Rural Uganda.”

44 Waldron and Sotiriou, “Digital Finance and Sustainable Water Service for All.”

45 Chen and Faz, “Hype or Hope? Implications of Big Data for Financial Inclusion.”

46 MM4P, “When Stakeholders Work Together, We Make Progress.”

47 Mercy Corps, “Agrifin Accelerate – Second Benchmark Study of Smallholder Farmers of Kenya, 2016: Insights on Baseline Changes from 2015”; Mercy Corps, “A 2016 Zambia Ecosystem Review & Strategic Perspective on Digital Financial Services for Smallholder Farmers.”

48 Anderson and Ahmed, “Smallholder Diaries: Building the Evidence Base with Farming Families in Mozambique, Tanzania, and Pakistan”; Anderson, Musime, and Marita, “National Survey and Segmentation of Smallholder Households in Tanzania.”

49 Mercy Corps, “Agrifin Accelerate – Second Benchmark Study of Smallholder Farmers of Kenya, 2016: Insights on Baseline Changes from 2015.”

showing fewer sources and smaller values, which could be a contributing factor to the increase in those living below the poverty line.<sup>50</sup> A deeper understanding of these unique needs will hopefully lead to more appropriate product innovation.

## China shows the world how to build a digital ecosystem of offerings

Notable developments in digital finance can be observed beyond the less developed markets that are the focus of our work. Innovative solutions from FinTech start-ups are emerging across the world. Attention should be paid to exponential growth and adoption of digital finance in China. Ant Financial, is progressively building out their digital finance ecosystem. From payments to wealth management, financing, insurance, and credit referencing, they are increasingly able to answer an array of customers' financial needs through their platform. Their payments services cover *"almost all aspects of daily life,"* including travel, supermarkets, restaurants, entertainment, and utility bills.<sup>51</sup> The popularity of Alibaba's Yu'e Bao wealth management product was quickly evident when it reached 700 billion RMB AuM within two years of launch.<sup>52</sup> While the Chinese market has many unique characteristics, lessons can be learned around how it identified client needs, built trust, and drove adoption and usage of an array of digital financial services. The Digital Frontier Institute runs an [introductory course on the digital finance market](#) in China for anyone wishing to learn more about the success of digital finance in this market.

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<sup>50</sup> Mercy Corps.

<sup>51</sup> Zhou, Qu, and Luc Ngai, "What's next for China's Booming Fintech Sector?"

<sup>52</sup> Ibid.



# Implications

## Innovate beyond payments

While payment and transfer services have proved successful in many markets and have paved the way for financial inclusion, it is time to support low-income customers to do more with DFS. To guide providers to develop client-centric services, organizations are continuing to invest in understanding the complex financial lives of low-income people. Lessons from recent organizational research, such as CGAP's "Money, Decisions, and Control"<sup>53</sup> and Helix's "Finclusion to Fintech,"<sup>54</sup> matched with advancements in digital technologies<sup>55</sup> can help providers develop products to address a more advanced range of needs, from day-to-day money management to long-term financial decision-making. Lessons from this research are salient for both existing digital finance providers as well as new Fintech organization eager to enter developing markets and will help contribute to an expanding digital finance ecosystem.

## Learn from developed market FinTechs

Blending lessons from developed market FinTechs, with a deeper understanding of the money management strategies of the poor, could help drive forward more sophisticated product development. Accion Venture Labs, while researching the potential of digital saving groups for the bottom of the pyramid, have invested in similar fintech ventures in developed markets.<sup>56</sup> In 2014, the company invested in eMoneyPool, which is an online, automated savings circles platform in the United States. It has also highlighted additional models of interest, such as MoneyFellows, which allows people in the UK, Egypt, and UAE to leverage loans from within their social networks. Lessons from these FinTech models could be leveraged to help develop or further harness the existing digital savings and loans groups in less developed markets. Other lessons from product design within developed market FinTechs, such as ledgers to manage the money<sup>57</sup> or products that blur the lines between purchasing and saving,<sup>58</sup> could similarly be leveraged into developing market contexts.

53 Mas and Murthy, "Money, Decisions, and Control."

54 McCaffrey and Schiff, "Finclusion to Fintech: Fintech Product Development or Low-Income Markets."

55 CGAP, "The Global Landscape of Digital Finance Innovations."

56 Patel, Plaisted, and Widjaja, "Digital Savings Circles: Challenges and the Road Ahead."

57 Examples include Cleo ([www.meetcleo.com](http://www.meetcleo.com)) and Squirrel ([www.hello.squirrel.me](http://www.hello.squirrel.me))

58 Examples include Bank of America's Keep the Change saving program in which daily purchases are rounded up with difference transferred into a savings accounts. Acorns ([www.acorns.com](http://www.acorns.com)) and MoneyBox ([www.moneyboxapp.com](http://www.moneyboxapp.com)) have similar models with rounded up money invested rather than saved.

## Look beyond traditional digital finance offerings to answer a holistic range of needs

Recent research by GSMA showed the effect of a bundle of “scalable, engaging mobile solutions for agriculture” on farmers.<sup>59</sup> Working with six MNOS, it launched and scaled bundled value-added services (VAS), reaching over 5 million registered farmers in two years. Using an “iterative and user-centric approach to product design,” power users (active repeat service users) who reported positive on-farm changes and even increases in income proved the potential for these bundled services to drive behavior change. The uptake of VAS presents potential “bundled” opportunities in which DFS and VAS could be merged to deliver more appropriate, varied solutions for farmers. Mercy Corps’ AfriFin Accelerate program is working with Safaricom in Kenya to offer a bundled service for farmers called ‘DigiFarm’. Offered over the Safaricom network in collaboration with iProcure and Arifu, the DigiFarm<sup>60</sup> product includes discounted inputs paid via M-Pesa, an adaptive learning platform, and a farm management tool. While these examples are specific to farmers, providers may be able to learn lessons from this bundled approach to drive usage within other customer segments.

## Push forward the debate on how to do financial literacy

Improved financial literacy plays a key role in ensuring that customers are suitably equipped to leverage the increasing array of digital financial services on offer. The most efficient way to ensure improved financial literacy is still open to debate. Some research suggests that training and education are overstated<sup>61</sup> (and in some cases may lead to worse decision-making<sup>62</sup>), and tangible experiences with products may be more valuable. Others have experimented with interactive, story-based financial literacy podcasts via phone calls.<sup>63</sup> Alternative, digital financial literacy training techniques through interactive SMS are also being explored.<sup>64</sup> It will be interesting to see how chatbots

may be able to fill some of the important education and knowledge gaps around navigating complex formal financial systems.<sup>65</sup> More exploration is needed in this area to define the most suitable methods to deliver financial education to varying demographics and markets. As more digital products and services enter the market, and more skills and knowledge are needed to leverage the offerings available, the topic of financial literacy must remain a central part of the conversation around financial needs in general. As the industry shifts to use more sophisticated digital modes of engagement (such as smartphones), questions around digital literacy are also increasingly on the agenda for players in the DFS space.<sup>66</sup> These issues are discussed further in Snapshot 4.

## Conclusion

While many organizations have successfully answered payment and transfer needs through DFS, many providers are still grappling with how to digitally replicate the complexity with which poor households manage their finances. This challenge is embodied through the gap between access and regular use of a wider array of digital financial services. Critical research is building up a solid understanding of how the poor manage their money.<sup>67</sup> The use of digital attributes, from big data to chatbots, and lessons from developed market FinTechs, are helping providers experiment with how to best replicate these financial management strategies digitally. Based on this increased understanding and technological development, more tailored products are entering the market to respond to a wider range of more nuanced financial needs. To avoid the emergence of any unintended consequences, advances in consumer capability and protection must develop in tandem with this product innovation.

59 GSMA, “Creating Scalable, Engaging Mobile Solutions for Agriculture—A Study of Six Content Services in the mNutrition Initiative Portfolio.”  
60 Georgetown University Initiative on Innovation, Development and Evaluation, “DigiFarm: Increasing Access to Mobile Money for Farmers in Kenya.”  
61 Zollmann and Collins, “Financial Capability and the Poor: Are We Missing the Mark?”; Salima Fazal Karim and Alexandra Tyers, “Case Study Swadhaar, Accion and Airtel Money: Mobile Money for Female Customer in India”; Innovations for Poverty Action and CGAP, “Financial Inclusion for the Rural Poor Using Agent Networks in Peru”; IFC, “Mobile Money Product Adoption Life Cycle.”  
62 Willis, “Against Financial Literacy Education.”  
63 Awaaz.De, “Financial Data Collection Through Interactive Mobile Phone Podcasts.”  
64 Mazer, “Interactive SMS Drives Digital Savings and Borrowing in Tanzania.”  
65 DFS Lab, “Chatbot Challenge: Creating Digital Advocates for the Poor.”  
66 “Reducing the Divide of Digital Literacy and Innovators in East Africa.”  
67 CGAP, “Insights into Action: What Human Centered Design Means for Financial Inclusion.”; Mas and MicroSave, “Musings on Money: The Household Money Management Model of Mass Market.”; Zollmann and Cojocar, “Cash Lite: Are We There yet? Rethinking the Evolution of Electronic Payments in Kenya Based on Evidence in the Kenyan and South African Financial Diaries.”; Anderson, Musiime, and Marita, “National Survey and Segmentation of Smallholder Households in Tanzania.”; Mas and Mayer, “Savings as Forward Payments.”; Mas and Murthy, “Money, Decisions, and Control.”; McCaffrey and Schiff, “Inclusion to Fintech—Fintech Product Development or Low-Income Markets?”

- 1 Mas, Ignacio, and Gayatri Murthy.  
“[Money, Decisions, and Control.](#)”  
CGAP, August 2017.
- 2 Mas, Ignacio, and MicroSave.  
“[Musings on Money: The Household Money Management Model of Mass Market,](#)”  
May 2013.
- 3 Mas, Ignacio.  
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*SSRN Electronic Journal*, 2013. doi:10.2139/ssrn.2359942.
- 4 Gash, Megan, and Bobbi Gray.  
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- 7 McCaffrey, Mike, and Annabel Schiff.  
“[Finclusion to FinTech: FinTech Product Development or Low-Income Markets.](#)”  
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- 8 Zollmann, Julie, and Daryl Collins.  
“[Financial Capability and the Poor: Are We Missing the Mark?](#)”  
*FSD Insights*, no. 2 (December 2010).
- 9 Hughes, Nick.  
“[Technology Must Solve Real Problems for Low-Income Customers.](#)”  
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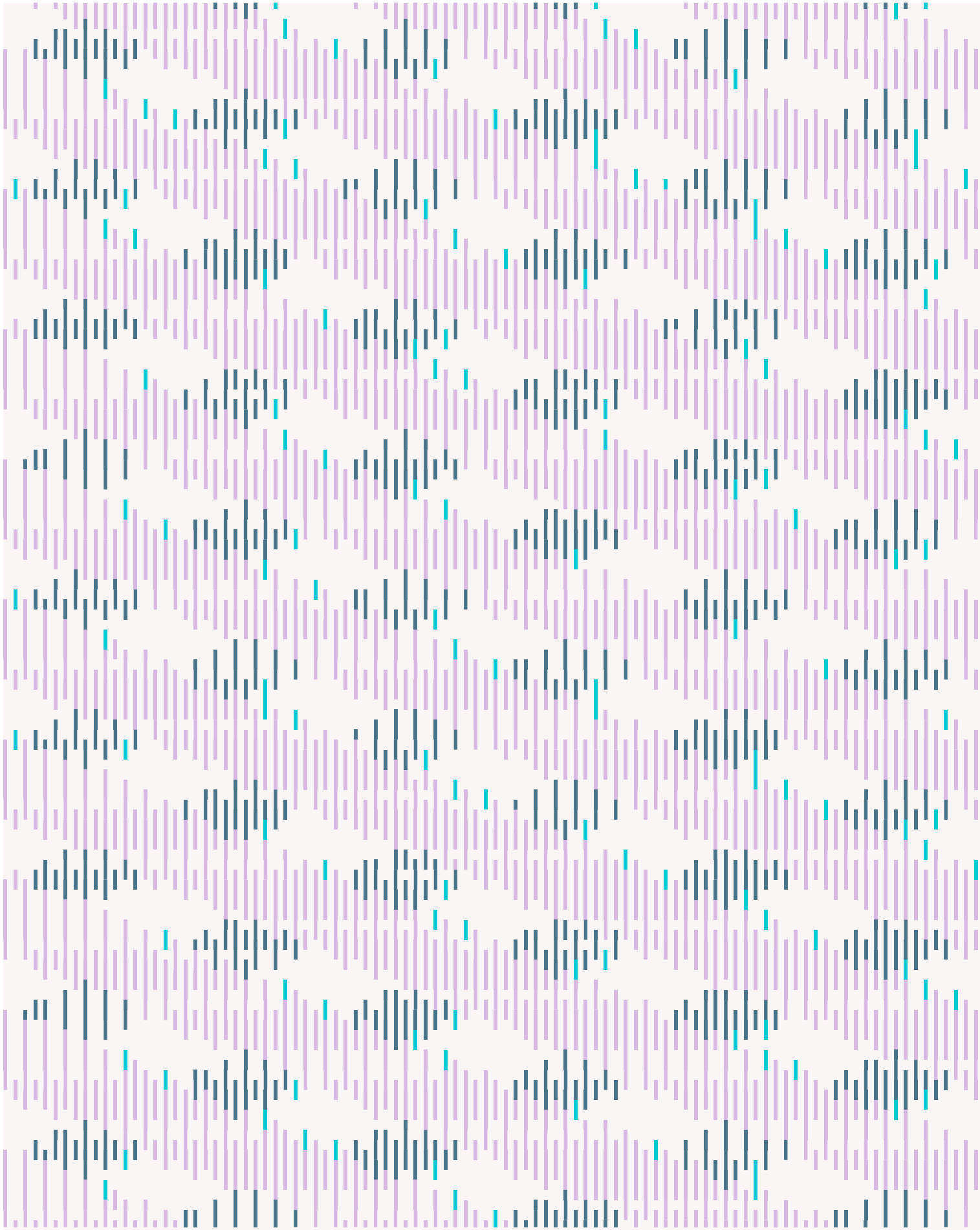
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