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

How do clients use digital finance in daily life and daily practice?

Caribou Digital

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NOTES

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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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Introduction

The digital finance industry is doing a good job of tracking access to, and adoption of, digital financial services across the developing world—especially from a mobile money perspective.[1] While there are still many barriers to adoption (see **Snapshot 1** and **Snapshot 2**), low-income individuals are continuing to sign up, year-on-year, for the variety of services on offer.

This Snapshot focuses on use. Adoption is a necessary but insufficient condition for the spread of digital finance and reaching the ultimate goal of meaningful financial inclusion. To advance this goal, the digital finance community must focus on driving registered customers to become active users, and active users to use the services on offer in an *effective* way. We draw the term "effective use" from the field of Community Informatics (CI): *"The challenge with ICTs is not simply to provide passive 'access' to the technology but rather to provide the means by which individuals in their communities can find ways of making 'effective use' of these technologies for productive, wealth creating, and transactional as well as other processes."*[2]

"Effective use" of DFS will help answer a range of financial needs and solve a variety of problems. As highlighted in our "**Learning Advances in Digital Finance 2017**" report, *"Meaningful financial inclusion is not achieved simply through 'access to' or 'the ability to use' these services. It is achieved through the effective use of these services, that is, to make people and households—especially those at the base of the economic pyramid—healthier, happier, and more prosperous."*

This Snapshot will therefore discuss the use of digital—and non-digital—financial services in the daily life of low-income individuals, and how we can use these insights to drive the effective use of DFS.

1 Pénicaud, "State of the Industry 2012: Results from the 2012 Global Mobile Money Adoption Survey"; Pénicaud and Katakam, "State of the Industry 2013: Mobile Financial Services for the Unbanked"; Scharwatt et al., "State of the Industry 2014: Mobile Financial Services for the Unbanked"; GSMA, "State of the Industry 2015: Mobile Financial Services for the Unbanked"; GSMA, "2015: Mobile Insurance, Savings & Credit Report."; GSMA, "State of the Industry Report on Mobile Money: Decade Edition: 2006–2016."

2 Gurstein, "Effective Use: A Community Informatics Strategy beyond the Digital Divide."

What we know

We know a significant amount about adoption

To understand the rate of mobile money adoption across developing markets, GSMA's "State of the Industry" reports provide one of the best evidence bases.[3] It is important to note, however, that the industry still lacks the equivalent for bank, third-party led, or FinTech models.

Looking at GSMA's datasets, the increase in active mobile money users over time has been impressive with 118 million counted globally in 2016,[4] compared to 30 million in 2012.[5] Growth has been especially notable in Kenya, where a recent impact study found 96% of households had at least one mobile money user.[6] Other markets are slowly catching up. In 2016, 40% of all new registered mobile money accounts were from South Asia.[7] In Latin America and the Caribbean, active accounts grew from less than a million in 2011, to more than 10 million by the end of 2016.[8]

Unpacking digital finance use is a more complex matter

While the data on adoption is encouraging, less is known about how clients use digital finance in everyday life. Ten years ago, Donner and Tellez argued that more scholarly research and analysis was needed to unpack the use of digital finance, in addition to and separate from adoption and impact research studies.[9] This need continues. While demand side studies such as "Portfolios of the Poor,"[10] have helped build our understanding of how the poor manage their money, we have more to learn about how digital money fits into their daily financial lives and practices.

While adoption studies explain or analyze the uptake of a digital finance system, and impact studies analyze how these services affect various sectors of society, use studies *"try to understand the use of such systems in social, economic and cultural contexts."*[11] Better appreciation of the various dynamics of digital finance use will help inform policy and lead to the design and development of more relevant products and services that the poor will want to use on a regular basis.

Unpacking the use of digital finance constitutes a number of different elements. The following sections look at the *breadth of use*, *frequency of use*, and perhaps most importantly the *rituals of use*.

3 Pénicaud, "State of the Industry 2012: Results from the 2012 Global Mobile Money Adoption Survey"; Pénicaud and Katakam, "State of the Industry 2013: Mobile Financial Services for the Unbanked"; Scharwatt et al., "State of the Industry 2014: Mobile Financial Services for the Unbanked"; GSMA, "State of the Industry 2015: Mobile Financial Services for the Unbanked"; GSMA, "2015: Mobile Insurance, Savings & Credit Report.", GSMA, "State of the Industry Report on Mobile Money: Decade Edition: 2006-2016."

4 GSMA, "State of the Industry Report on Mobile Money: Decade Edition: 2006-2016."

5 Pénicaud, "State of the Industry 2012: Results from the 2012 Global Mobile Money Adoption Survey."

6 Suri and Jack, "The Long-Run Poverty and Gender Impacts of Mobile Money."

7 GSMA, "State of the Industry Report on Mobile Money: Decade Edition: 2006-2016."

8 Ibid.

9 Donner and Tellez, "Mobile Banking and Economic Development."

10 Collins et al., Portfolios of the Poor: How the World's Poor Live on $2 a Day.

11 Donner and Tellez, "Mobile Banking and Economic Development," 5.

— *Breadth of use*

Despite impressive registration figures, the industry has been slow to drive use of a wide range of digital financial services. Data on the volume and value of transactions shows that use is limited beyond airtime top-ups and person-to-person (P2P) transactions. Although pioneering solutions to more nuanced financial needs are being rolled out, progress has been slower than expected.

In 2011, 61% of transactions by volume were airtime top-ups.[12] The same percentage was recorded in 2016.[13] A transaction using mobile money seems just as likely to be an airtime top-up today as it was four years ago. Looking at transaction values, 82% of the value of mobile money transactions were represented by P2P transfers in 2011.[14] In 2016, P2P represented 69% of the value of mobile money transactions, with 31% coming from more advanced use cases such as savings, credit, and insurance.[15] Despite seeing gains of around 11% in the use of products that might drive greater ecosystem development,[16] it is nevertheless a slower gain than many anticipated over a 5-year window.

Driving use of digital merchant payments—such as small, day-to-day transactions—is still a challenge. In 2016 merchant payments represented 4.7% of the global volume of transactions.[17] Failure to capture these multiple, daily transactions over digital platforms is the most significant contributing factor to the limited breadth of DFS use. Over-the-counter (OTC) transactions and direct deposits are also prevalent in many markets, and skew the numbers when analyzing usage of DFS. Although globally the number of OTC customers is decreasing, more than 44.3 million unregistered customers performed an OTC transaction in June 2016, up from 37.4 million in June 2015.[18] OTC use will be discussed in more detail in Snapshot 7.

Despite large demand-side studies suggesting a higher likelihood for mobile money users to adopt sophisticated digital financial services[19]—which we define as credit, savings, and insurance—their level of adoption and use still lags behind basic digital payment and transfer services.[20] While 277 mobile money services have been counted across 92 markets,[21] as of June 2016, GSMA data shows only 26 dedicated savings services in 16 countries, and 52 live credit services.[22] In summary, despite a growing ecosystem of product offerings, use of digital financial services appears limited to a select few products and services.

— *Frequency of use*

Given that remote, infrequent payments tend to be the leading use cases, irregular use and inactivity plague many digital finance networks. Among the 556 million registered mobile money accounts worldwide, only 118 million (21%) are active on a 30-day basis.[23] Clients, therefore, tend to use digital finance not so much in "daily life" as on a weekly or monthly basis.

Women in rural areas of Kenya report receiving money via M-PESA on an irregular basis often tied to specific times of the year, such as in January when school fees are due.[24] Similar trends are seen in Côte d'Ivoire where the service is viewed as a mechanism for receiving infrequent funds,[25] and in Tanzania where only 26% of registered smallholder households had made a mobile money transaction in the last 30 days.[26] As mentioned, the failure of digital finance to replace cash in daily merchant payments contributes heavily to this lack of daily use.

— *Rituals of use*

While data provided on the breadth and frequency of digital finance use is helpful, it tells us little about the motivation behind the use (or non-use) of certain digital financial services. Looking at the rituals of DFS use provides interesting insights into how digital finance is used in daily life. We have highlighted a number of these insights below.

12 GSMA, "State of the Industry Report on Mobile Money: Decade Edition: 2006–2016."
13 Ibid.
14 Ibid.
15 Ibid.
16 Such as the use of merchant payments to drive the storage, and saving, of digital value
17 GSMA, "State of the Industry Report on Mobile Money: Decade Edition: 2006–2016."
18 Ibid.
19 Mirzoyants, "Mobile Money in Uganda The Financial Inclusion Tracker Surveys Project – Use, Barriers and Opportunities."
20 Matul et al., "Why People Do Not Buy Microinsurance and What We Can Do about It."
21 GSMA, "State of the Industry Report on Mobile Money: Decade Edition: 2006–2016."
22 Ibid.
23 Ibid.
24 Wyche, Simiyu, and Othieno, "Mobile Phones as Amplifiers of Social Inequality among Rural Kenyan Women," 9.
25 Lonie et al., "The Mobile Banking Customer That Isn't: Drivers of Digital Financial Services Inactivity in CÔTE D'IVOIRE."
26 Anderson, Musiime, and Marita, "National Survey and Segmentation of Smallholder Households in Tanzania."

Often individuals or social groups repurpose existing digital financial services for their own needs, putting them to use in ways that were never intended. One prime example is the initial redesign of M-PESA in Kenya. Originally intended as a microfinance loan repayment tool, the service was soon repurposed into a P2P transfer service due to remittance activity noted across the network. When looking at a large sample of transactional data from Tigo Tanzania, one paper found that 13% of transactions did not involve a transfer at all and were characterized by less than one day between cash-in and cash-out, with a median distance of 8.7km between the two.[27] This suggests that the service was being used to "self-transport" cash, rather than send it on to another party. Since these transactions incurred a relatively high average fee (7.3%), they also provide an interesting quantified proxy for the risk of walking these distances with cash.[28]

In another example looking at digital savings and credit, an analysis of M-PESA and CBA's M-Shwari savings and loan product found that the most popular reason for depositing in an M-Shwari savings account was to increase loan limits and prepare for borrowing.[29] Rather than being used for the purpose of saving, the savings component of the service was often being used to "play the algorithm" and increase loan size limits. Borrowing to save, while counterintuitive at first glance, can be understood from a behavioral perspective.[30] Saving is difficult because it means forgoing a purchase today to reach a goal in the future. Borrowing, however, is easier and can incentivize saving. Having a high interest loan to repay is a perfect incentive to save to make the repayments. The concept of "borrowing to save" is a noted behavior among low-income individuals, and a regular feature in the "Portfolios of the Poor" financial diaries.[31]

A single product can serve a variety of use cases. Person-to-person transfers, for example, are used to fulfill a number of needs from sending cost-effective remittances, to serving as an insurance mechanism or a tool to contribute to a community event. Research on mobile money use in Western Kenya revealed three major incentives behind the use of digital remittances—to fulfill an emergency need; to fulfill an anticipated need (e.g., sending a child to school or buying inputs for farming); or to request a donation for a public ceremony.[32] The fluidity of use mimics the ways in which many poor households manage their assets and finances. For example, the purchase of a motorcycle could serve as an investment, a cost-saving mechanism, and an income generating tool if used for productive purposes.

Understanding how money is used in the analog world can also help unveil the barriers to digital finance use. From Ignacio Mas's analysis of informal savings behaviors[33] to Mesfin's review of traditional monetary practices in rural communities in Ethiopia,[34] insights into how the poor manage their money shape our understanding of potential barriers to use. As mentioned in **Snapshot 1**, although there are many contributing factors, limited use of DFS is often associated with the challenge of replicating informal financial strategies across digital platforms. A failure to replicate—or provide superior alternatives to—these analog practices often obstructs the uptake and use of DFS. The good news is that we are beginning to see product innovation informed by an understanding of how clients use, or want to use, financial services in their daily life. From pay-as-you-go energy solutions[35] to digitized agricultural value chains[36] and the redesign of crowdfunding solutions[37], client driven innovation is taking place in the field of digital finance.

Digital finance is not always used for productive purposes. While this is discussed in **other Snapshots**, it is important to highlight the ineffective, negative use of digital finance by certain customer segments. From risky credit behavior[38] to gambling,[39] digital finance is not always used for its intended purposes. Various reports, covering anti-money laundering (AML) and combating the financing of terrorism (CFT) in digital finance, highlight further concerns around the misuse

27 Economides and Jeziorski, "Mobile Money in Tanzania."
28 Ibid.
29 Tamara Cook and Claudia McKay, "How M-Shwari Works: The Story So Far."
30 McCaffrey and Schiff, "Finclusion to Fintech: Fintech Product Development or Low-Income Markets," 34.
31 Collins et al., Portfolios of the Poor: How the World's Poor Live on $2 a Day.
32 Kusimba et al., "Social Networks of Mobile Money in Kenya."
33 Mas, "'Can We Make Savings a Little Bit More Interesting for People, Please?'"
34 Mesfin et al., "Monetary Practices of Traditional Rural Communities in Ethiopia."
35 Waldron, Faz, and Muench, "Access to Energy and Finance: An Integrated Approach"; Waldron, "Financial Inclusion and Off-Grid Solar: Three Takeaways"; Waldron and Wolvers, "Daily Energy Payments Powering Digital Finance in Ghana"; Braniff and Pleming, "Delivering on Education for All: The Role of Mobile Money."
36 Putigny and Danel-Fedou, "Cocoa Producers in Côte d'Ivoire: Cash vs. Digital"; Buruku, "Digitizing Agricultural Value Chains: How Buyers Drive Uptake."
37 FSD Africa and AlliedCrowds, "East Africa Crowdfunding Landscape Study."
38 Wright et al., "Where Credit Is Due – Customer Experience of Digital Credit in Kenya."
39 Kuo, "Smartphones Are Making Kenya's Gambling Problem Even Worse"; Herbling and Mwaniki, "Betting Craze Powers Mobile Money to 20 per Cent Growth."

of DFS.[40] To design for the poor, and drive regular use, providers need to understand both the effective and ineffective ways that low-income clients repurpose DFS to meet their needs.

How cash is experienced in a digital age

Looking at the breadth, frequency, and rituals of use it is clear that while we are making great progress with digital finance, there is much more to be done to drive regular, effective use. Even in the "digital age" the majority of transactions in less developed markets are still conducted in cash. While users continue to conduct more digital transactions, from 6.5 transactions per month in 2012[41] to 11 per month in 2016,[42] we still see strong "cash-out" cultures even in advanced mobile money markets. The "deposit-transfer-withdraw" transaction journey, described by Mbiti and Weil in their early analysis of M-PESA in Kenya,[43] continues to be the dominant trend.

Data from Tigo Tanzania between 2013 and 2014 showed that 90% of e-money leaves the network within 5 days of being cashed-in, and less than 1% of users keep their money in the network for longer than a month.[44] The analysis of digital social payments also demonstrates the "mailbox" nature of mobile money accounts. A study revealed that on average 100% of digital social payments are immediately withdrawn as cash and accounts are not touched again until the next payment.[45] CGAP research in India similarly found that 99% of accounts used for G2P disbursements were showing a single, monthly withdrawal transaction.[46] These mailbox accounts demonstrate the obstacles to converting digital payments into greater financial inclusion. In the digital age, cash is nonetheless king. The challenges of incentivizing customers to save or store money in their digital wallets will be discussed further in Snapshot 6.

The evolution of DFS use

So, the journey to cash-lite is still unknown. There is no doubt that use of digital finance has matured—evidence from Afghanistan shows the evolution of DFS use from deposits and withdrawals to digital salary payments.[47] In Kenya we are seeing more and more sophisticated digital financial services adopted by M-PESA users, such as credit and savings services.[48] However, questions remain around the duration, trajectory, or even evidence of the journey towards a cash-lite society. While a number of studies have outlined different routes to digital financial inclusion,[49] even the digital economy in Kenya is far from inclusive digital economy. As new FinTech providers enter the scene, and more of our daily interactions shift to "full digital," it will be interesting to see new paths being worn as we work our way to cash-lite societies.

40 Solin and Zerzan, "Mobile Money: Methodology for Assessing Money Laundering and Terrorist Financing Risks."

41 Pénicaud, "State of the Industry 2012: Results from the 2012 Global Mobile Money Adoption Survey."

42 GSMA, "State of the Industry Report on Mobile Money: Decade Edition: 2006-2016."

43 Mbiti and Weil, "Mobile Banking," 5.

44 Economides and Jeziorski, "Mobile Money in Tanzania."

45 Zimmerman and Baur, "Understanding How Consumer Risks in Digital Social Payments Can Erode Their Financial Inclusion Potential."yet often overlooked,\ndigital financial services (DFS

46 Baur, "Accessible, Robust, Integrated: Identifying Good Payment Programs."

47 Blumenstock et al., "Promises and Pitfalls of Mobile Money in Afghanistan."

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

49 Zollmann and Cojocaru, "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.", Radcliffe and Voorhies, "A Digital Pathway to Financial Inclusion."

Notable new learning

China taps into analog rituals to drive use

While many factors contribute to the success of digital finance in China, client centricity has played an important role. Providers have tapped into analog rituals in order to drive use of digital financial services. The rise of Tencent's money transfer service provides a counterpoint, both culturally and technically, to the mobile-money P2P dominated literature focusing on East Africa. It provides an interesting alternative example of digital finance use.

Tencent's initial success came from the development of "Red Envelopes," launched in 2014. "Red Envelopes" are based on a Chinese tradition in which money is placed in red envelopes and given to family and friends as gifts. By digitizing this ritual across their WeChat platform, Tencent drove significant numbers to use their digital financial service. During Chinese Valentine's Day, WeChat reported 9 million Red Envelopes, worth $640 million sent, with many couples exchanging packets containing 5.20 yuan (less than $1), due to the fact that the numbers 5-2-0 are Chinese slang for "I love you." These behaviors indicate that "money can be a message" and digital group dynamics can serve as different structural rails on which mobile money transfer use can evolve. Such digital group dynamics potentially have further, more potent viral upsides.

PAYG understands financial life and practice

Over the past couple of years, a number of PAYG (pay-as-you-go) mobile-money enabled solar solutions have sprung up across developing markets.[50] Not only have DFS providers developed innovative financing mechanisms to help accelerate access to energy, these solutions have helped drive the adoption and use of digital finance. Recent CGAP research in Ghana, carried out in partnership with the affordable solar provider PEG Africa and Tigo Cash, demonstrated that PAYG customers are more active mobile money customers.[51] The survey results showed PEG customers generating 122% more revenue per active user for Tigo Cash than non-PEG customers in their sample.

The success of PAYG is based around not only answering vital needs, but a deep understanding of how the poor wish to manage their money and assets. The affordability of periodic payments, the applicability of flexible payments to volatile cash flows, and the lack of pre-investment needed to reap the services' benefits all demonstrate how the PAYG model understands financial practices.

50 Waldron, Faz, and Muench, "Access to Energy and Finance: An Integrated Approach."
51 Waldron and Wolvers, "Daily Energy Payments Powering Digital Finance in Ghana."

Implications

To drive use, digital and analog financial behaviors need to be understood

To design an array of relevant digital financial services beyond payments, providers must deepen their understanding of the rituals of analog and digital financial use. From *Portfolios of the Poor*,[52] published in 2009, to *Money, Decisions, Control,*[53] released in 2017, demand-side studies have done great work informing our understanding of financial service use. However, we need more research on use, and more people need to read these studies, to crack the code of daily financial practices, digital or not.

Nuanced rituals of digital finance can inform product design

In the *Rituals of use* section above, we highlight examples of how digital finance users repurpose DFS to fulfill their own specific needs. A common misconception is that the poor have rudimentary means of managing their finances. Research tells us otherwise.

The Kenya Financial Diaries highlight how the poor employ a myriad of tools and techniques to manage their money.[54] Bearing in mind the sophisticated financial strategies employed by the poor, providers should consider giving clients more scope to shape their financial tools in the ways that best meet their clients' needs and goals. Financial products that give users flexibility in their financial decision making have proven to be successful. In Uganda, a study tested a school-based commitment savings device for educational expenses. The study compared an account fully-committed to educational expenses to an account in which savings were available for cash withdrawal but intended for educational expenses. The latter soft commitment savings account proved more successful and generated increased savings.[55]

Investigating the nuances of digital finance use offers interesting insights into how digital money is used in daily life and practice. These insights should inform future product design and development. As Maurer argues, *"The burgeoning mobile money industry is moving forward often without acknowledging the everyday innovation of people on the ground whose practices provide inspiration for the development of new systems."*[56]

While adoption is still an issue, driving use and effective use is the bigger challenge

Many low-income clients have sophisticated means of saving, investing, and borrowing, and it is important to take note of their innovative use of digital (and non-digital) financial services. We must remain aware of the risks and challenges of driving effective use of DFS. While we have seen digital finance drive down the cost and inconvenience of accessing financial services, we have concurrently witnessed the negative impact that improved access to credit across digital platforms can have on low-income individuals. Providers must remain cognizant of the risks associated with increased access to financial services, and how these risks can be mitigated while focusing on efforts to drive effective use of DFS.

52 Collins et al., Portfolios of the Poor: How the World's Poor Live on $2 a Day.
53 Mas and Murthy, "Money, Decisions, and Control."
54 Zollmann, "Kenya Financial Diaries: Shilingi Kwa Shilingi, the Financial Lives of the Poor."
55 Karlan and Linden, "Loose Knots."
56 Maurer, "Monetary Ecologies and Repertoires: Research from the Institute for Money, Technology and Financial Inclusion First Annual Report Design Principles."

CONCLUSION

While we know how many people have registered for digital finance accounts, we know little about what they do with the digital financial services at their disposal once they have signed up for a particular service. Unpacking use to look at breadth of use, frequency of use, and rituals of use has yielded interesting insights into these financial behaviors. However, there is much more to learn. Specifically, the digital finance community will benefit from a better understanding of the nuanced means by which low-income individuals use various digital financial services to fulfil their financial needs and desires. Understanding both digital and non-digital financial management practices will inspire and inform the design of appropriate, tailored products for low-income clients and reduce the likelihood of these services being used for ineffective or risky purposes.

1 Collins, Daryl, Jonathan Morduch, Stuart Rutherford, and Orlanda Ruthven.
Portfolios of the Poor: How the World's Poor Live on $2 a Day.
Princeton University Press, 2009.

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Asian Journal of Communication 18, no. 4 (December 1, 2008): 318–32.

9 Karlan, Dean, and Leigh L. Linden.
"**Loose Knots: Strong versus Weak Commitments to Save for Education in Uganda.**"
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10 Must Reads in this space

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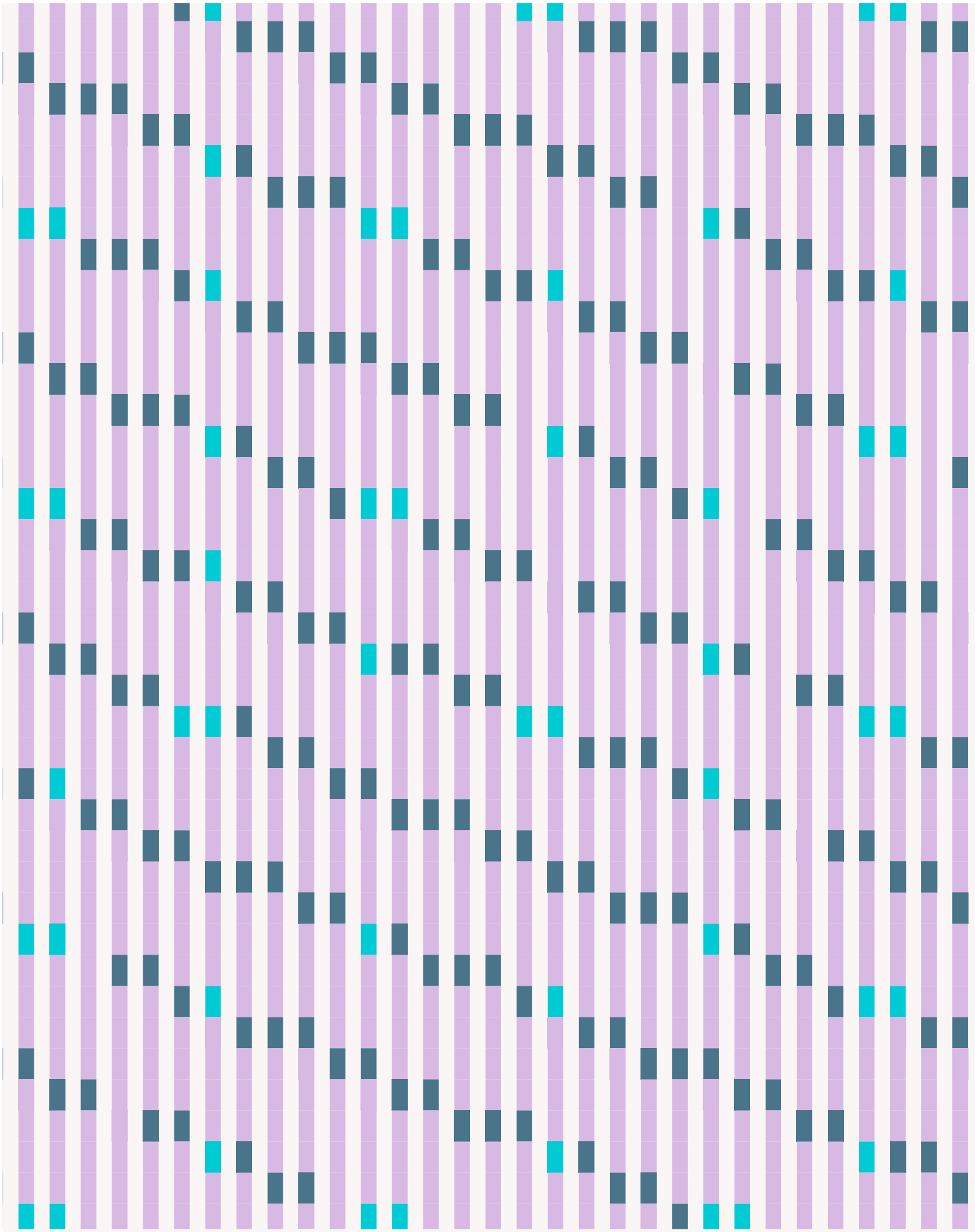

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