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Building Data Trails for Financial Inclusion

Strategies and Barriers in Egypt's Fintech Sector

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1 MASSIF enhances financial inclusion for micro-entrepreneurs and small- and medium-sized enterprises (MSMEs) that are disproportionately affected by a lack of access to financial services.

Summary

Access to reliable and comprehensive data is fundamental to achieving financial inclusion, as it enables financial institutions to assess creditworthiness, tailor financial products, and extend services to underserved populations. Robust data collection and analysis are essential for developing inclusive digital economies that reach marginalized communities. Data scarcity and inadequacy limit the ability of financial service providers to accurately evaluate risk and offer appropriate financial solutions, thereby perpetuating financial exclusion. Enhancing data availability and quality ensures that financial institutions can develop comprehensive profiles of previously "invisible" consumers, facilitating their inclusion into the formal financial system.

Fintechs in Egypt have played an important role in building data trails for marginalized consumers, supported by a substantial influx of venture capital investment. Egypt consistently ranks among the top regional recipients of venture capital in Africa, alongside Nigeria, Kenya, and South Africa. This significant investment drives fintechs to innovate in generating and utilizing data trails, targeting underserved customers who lack traditional financial data sources. Egypt's unique combination of a large informal economy, high mobile connectivity, and a dynamic fintech ecosystem makes it an ideal setting to investigate how fintechs can effectively build data trails and the challenges they encounter in fostering financial inclusion.

This study explores how Egyptian fintechs are addressing data gaps by focusing on data trails — the essential foundation for extending digital financial services and building inclusive digital economies. Fintechs are employing two primary strategies to produce data trails for consumers operating outside the digital economy: they either

target data scarcity by generating new data about their customers and digitizing analog records, or they address data dormancy by aggregating, exchanging, and enhancing existing data. These approaches create valuable data trails for underserved populations and unlock the potential of underutilized data, enabling fintechs to extend services to those traditionally excluded from the financial system.

However, fintechs alone cannot resolve structural gaps in the data economy. Despite their innovative efforts, fintechs face numerous barriers in accessing and creating data trails for underserved populations. The lack of a robust data exchange infrastructure has led to fragmented data silos, inconsistent data quality, and limited collaboration among providers, all of which hinder financial inclusion. Regulatory hurdles and outdated infrastructure within legacy institutions further complicate data utilization. Additionally, a shortage of skilled data professionals, inadequate data strategies, and the over-collection of data without clear purposes exacerbate these issues at the provider level. Addressing the problem of poor data trails requires a concerted ecosystem effort involving all stakeholders — including the government, industry associations, and investors — to overcome these structural and market-level challenges.

To address these systemic challenges, this paper identifies a series of recommendations that require coordinated action among all stakeholders in the ecosystem. The government can lead by continuing to develop a roadmap toward an open data economy, enhancing digital infrastructure, monitoring emerging threats to data protection, and incentivizing collaboration and innovation, including facilitating data exchange within regulatory sandboxes. Industry associations can foster industry-wide dialogue and ethical standards, facilitate knowledge sharing and best practices, identify key challenges for their members, and advocate for change, including promoting the use and generation of synthetic data. Investors are encouraged to require multi-year data strategies from investee companies, support data exchange agreements, insist on strong data protection and privacy measures, promote consumer risk minimization in all data practices, and engage with the government to drive responsible data policies and regulations. Fintechs and digital platforms should adopt data minimization techniques, enable data portability and develop interoperability, invest in Privacy by Design approaches, and utilize advanced analytics responsibly, paying special attention to avoiding biases. This coordinated effort is essential for extending financial services to underserved populations and achieving greater financial inclusion across Egypt.

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01 Introduction

Access to relevant and high-quality data about individuals and communities is essential for their participation in digital services and the broader digital economy.[1] In the context of financial inclusion, the absence of comprehensive data presents a significant barrier, as financial institutions rely on data trails to assess creditworthiness and tailor financial products. When individuals lack digital footprints or formal financial histories, they remain invisible to these institutions, thereby perpetuating financial exclusion. Addressing these data gaps is crucial for developing inclusive financial systems that can reach and serve marginalized populations.[2] Comprehensive data collection and analysis enable fintechs to create accurate and representative profiles of previously underserved consumers, facilitating their integration into the formal financial system and promoting broader economic inclusion.

CFI's foundational research on algorithmic governance argues that responsible artificial intelligence hinges on three critical dimensions: data inputs (or data trails), code, and adequate business processes.[3] Among these, data inputs make up the foundational layer that determines the quality and relevance of the algorithms and business processes on which they are built. This report primarily examines the first

1 World Bank. (2021). World Development Report 2021: Data for Development. https://www.worldbank.org/en/publication/wdr2021

2 Heeks, R., & Shekhar, S. (2019). Datafication, development and marginalised urban communities: an applied data justice framework. Information, Communication & Society, 22(7), 992-1011. https://www.tandfonline.com/doi/full/10.1080/1369118X.2019.1599039

3 Rizzi, A., Kessler, A., & Menajovsky, J. (2021). The Stories Algorithms Tell: Bias and Financial Inclusion at the Data Margins. Center for Financial Inclusion. https://www.centerforfinancialinclusion.org/the-stories-algorithms-tell-bias-and-financial-inclusion-at-the-data-margins/

dimension — data inputs — as they are crucial for creating accurate, reliable, and inclusive financial services.

By focusing on data inputs, fintechs can ensure that their models and algorithms are trained on comprehensive and representative datasets, leading to fairer and more effective business processes that serve marginalized communities. The strategies to create these data inputs are critical for making the "data-invisible" visible, and for elevating the visibility of those who have data trails that are not being effectively utilized. This enables fintechs to extend their services to underserved populations who have traditionally been excluded from the financial system.

1.1 RESEARCH OBJECTIVES AND METHODOLOGY

This study aims to explore how Egyptian fintechs are addressing data poverty to advance financial inclusion within the country's predominantly informal economy. By focusing on data inputs — the foundational layer necessary for extending digital financial services — we investigate the strategies fintechs employ to generate new data trails or enhance existing ones for consumers operating outside the digital economy. Specifically, we examine how fintechs are targeting data scarcity by creating new data and digitizing analog records, and how they are addressing data dormancy by aggregating, exchanging, and enhancing existing data.

Our research seeks to understand the effectiveness of these strategies in overcoming the barriers posed by data poverty, as well as the limitations fintechs face due to systemic challenges such as fragmented data silos, regulatory hurdles, and inadequate infrastructure. By analyzing the innovative efforts of fintechs alongside these structural obstacles, we aim to provide insights into how a coordinated ecosystem involving government, industry associations, investors, and fintechs can more effectively tackle data poverty.

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This study was conducted using a combination of literature review, policy document analysis, and key informant interviews to understand how Egyptian fintechs address data challenges for financial inclusion. Relevant academic and industry literature was reviewed to establish a foundational understanding of the topic. Policy documents from regulatory bodies were analyzed to gain insights into the current regulatory environment and initiatives supporting financial inclusion. Additionally, interviews were conducted with over 30 stakeholders, including representatives from fintech companies, regulatory agencies, and market experts. In our analysis of strategies being utilized by different fintechs, we have refrained from using company names in reference to specific practices that were identified during these interviews. We recognize that these strategies are not unique to the providers we spoke with, so we focus on candidly discussing the benefits and risks of each approach in general and not as implemented by individual companies. These conversations provided practical perspectives on the strategies being implemented, the barriers faced, and the collaborative efforts within the fintech ecosystem.

1.2 WHY EGYPT? MARKET CONDITIONS, INVESTMENT TRENDS, AND FINANCIAL INCLUSION POTENTIAL

Egypt is a key market for this study due to its unique blend of a large informal economy, scarce data trails from cash transactions, near-universal mobile connectivity, and substantial venture capital investment in fintech. The country's extensive underserved population presents both challenges and opportunities; while traditional financial data is limited, the widespread use of mobile phones and the internet provides alternative channels for data generation and financial service delivery. Additionally, recent venture capital inflows have spurred fintech innovations aimed at reaching these underserved segments. This combination of factors makes Egypt an ideal setting to explore how fintechs can create and leverage data trails to enhance financial inclusion.

1.2.1 High Informality, With Increased Digital Penetration

Egypt combines a vast informal economy — accounting for 30 to 50 percent of economic activity and encompassing 53 percent of business establishments[4] — yet boasts near-universal mobile connectivity, with over 108 million mobile subscribers (exceeding 100 percent penetration) and 82 million internet users (72 percent penetration).[5] This environment presents both significant challenges and opportunities for fintechs aiming to address data poverty and enhance financial inclusion.

Consumer behavior is also shifting toward greater digital engagement and acceptance of non-cash payment methods. Over 42 million Egyptians currently use mobile wallets, a figure expected to surpass 51 million by 2025.[6] The COVID-19 pandemic accelerated mobile wallet adoption, especially in peer-to-peer payments, as more people turned to digital payments during lockdowns. Additionally, Egypt Post is launching its own mobile wallet targeting underserved segments, expanding access to basic savings accounts and money transfer services for over 25 million Egyptians, primarily in rural and informal areas.

1.2.2 Influx of VC Investments in Fintech

Egypt stands out as a leading fintech market in Africa, consistently ranking among the top recipients of venture capital (VC) since 2019, alongside Nigeria, Kenya, and South Africa.[7] This significant influx of investment drives fintechs to target underserved customers who lack traditional data sources. To meet investor expectations for customer acquisition and profitability, these fintechs adopt innovative strategies to generate and leverage data trails, thereby enhancing financial inclusion and addressing data poverty. As shown in Figures 1 and 2, VC investment in Egypt saw a clear leveling off in 2022, reflecting a global and regional pattern with a significant decrease in both deal volume and values occurring in 2023.[8]

108 million
MOBILE SUBSCRIBERS

82 million
INTERNET USERS

42 million
EGYPTIANS CURRENTLY USE MOBILE WALLETS

4 OECD, ILO, & UNDP. (2024). Informality and Structural Transformation in Egypt, Iraq and Jordan. OECD. https://www.oecd.org/en/publications/informality-and-structural-transformation-in-egypt-iraq-and-jordan_efb16d0b-en/full-report.html
5 Ministry of Communications and Information Technology, Egypt. (n.d.). Indicators. Retrieved October 2024, from https://mcit.gov.eg/en/Indicators
6 Statista. (2024, May 29). Number of users of selected mobile wallets in Egypt in 2020, with forecasts from 2021 to 2025. https://www.statista.com/statistics/1271145/mobile-wallet-user-forecast-in-egypt/
7 AVCA. (2024). Venture Capital in Africa Report: 2023. avca234-19-vc-report_4.pdf
8 AVCA (2024)

FIGURE 1: VENTURE FUNDING AND DEAL VOLUME IN EGYPT, 2019–2023[9]

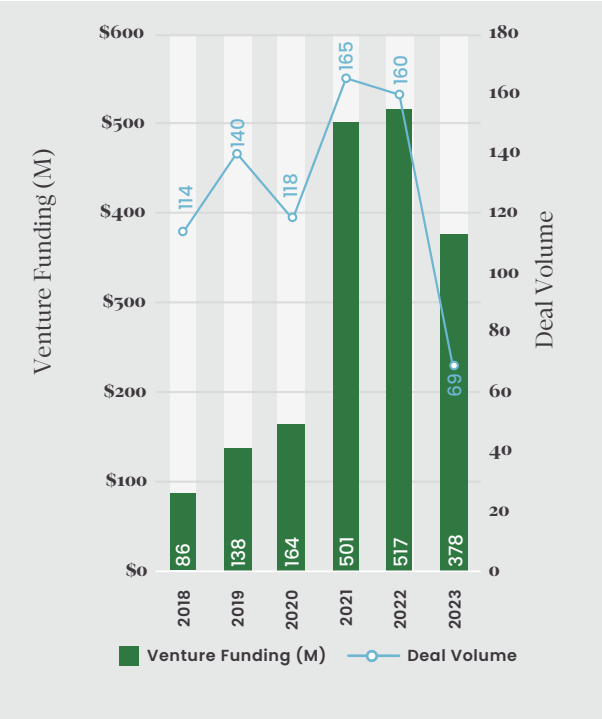
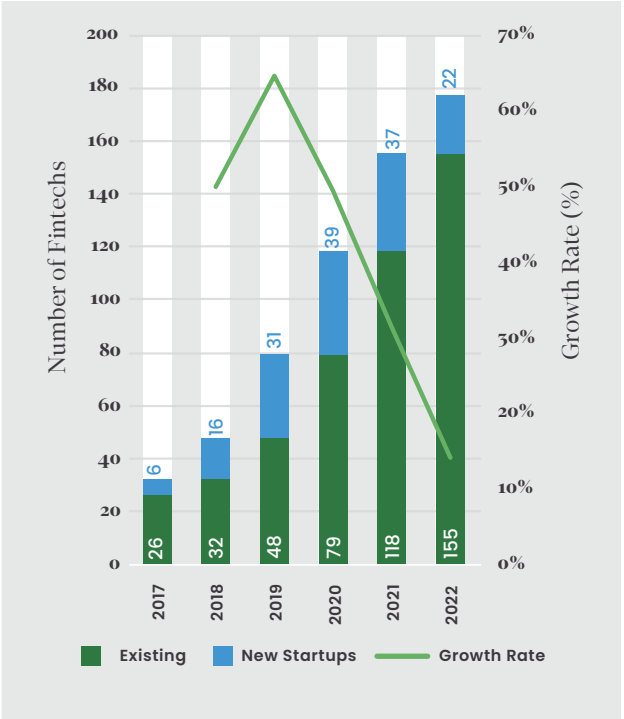


FIGURE 2: GROWTH OF FINTECH SECTOR IN EGYPT, 2017–2022[10]



During this period, fintechs and digital platforms (ecommerce) have consistently attracted the largest share of investments by sector. In 2022, fintechs received the largest amount of overall venture funding.[11] Even with the recent slowdown, investment activity in recent years has driven the introduction and expansion of a range of digital finance providers and services, though the growth has notably been concentrated among a few subsectors (see Table 1).

9 Magnitt. (2023). 2022 Egypt Venture Investment Report. https://magnitt.com/research/2022-egypt-venture-investment-report-50861
10 inTech Egypt. (2023). Egypt FinTech Landscape Report: 2023. Central Bank of Egypt. https://fintech-egypt.com/FinTechEgypt2023/Landscape-Report-2023-En-digital.pdf
11 Magnitt (2023)

TABLE 1: PROPORTION OF FINTECH STARTUPS BY SUBSECTOR, 2022[12]

SUBSECTOR	PROPORTION OF FINTECH STARTUPS
Payments and Remittances	36%
Lending and Alternative Finance	11%
B2B Marketplace Solution	10%
Data Analytics/AI	5%
Insurtech/Healthtech	5%
Agritech	5%

The dominance of payment service providers in the fintech market aligns with trends seen in other markets transitioning to digital financial services.[13] Payments are easy to understand for consumers and have broad appeal, serving all individuals and businesses, so can function as a key entry point to the digital economy and a way to build trust and comfort with digital services. Given that payment and transaction data offer valuable insights that can inform the development of further financial products, they are often the first step before expanding into services like credit or insurance, which require more data to assess customer needs and risks.

1.2.3 High Potential for Financial Inclusion Gains

Despite significant progress, a large percentage of Egypt's population remains financially excluded or underserved, presenting substantial opportunities for fintech innovation. According to the Central Bank of Egypt (CBE), ownership and usage of transaction accounts among citizens aged 16 and above surged from 33.8 percent in 2017 to 71.5 percent in June 2024.[14] However, the World Bank's Global Findex Database presents a different picture, reporting only a 27.4 percent ownership rate for similar accounts in 2021.

TABLE 2: 2017 FINANCIAL INCLUSION INDICATORS FROM CENTRAL BANK OF EGYPT[15] **AND FINDEX**[16]

	INDICATOR	FIGURE
CBE	Ownership and Usage of Transaction Accounts (age 16+)*	33.8%
	Women Transaction Accounts	24.5%
Findex	Accounts (age 15+)*	32.8%
	Women Accounts	27.0%

12 Ventures Africa. (2023, July 25). Here are some key takeaways from Egypt's tech ecosystem report. https://venturesafrica.com/here-are-some-key-takeaways-from-egypts-tech-ecosystem-report/

13 Committee on Payments and Market Infrastructures. (2020). Payment aspects of financial inclusion in the fintech era. World Bank Group, Bank for International Settlements. https://www.bis.org/cpmi/publ/d191.pdf

14 Central Bank of Egypt. (2024). Progress of Financial Inclusion Indicators. https://www.cbe.org.eg/-/media/project/cbe/page-content/rich-text/financial-inclusion/fi-infograph-english-6,-d-,2024.pdf

15 Central Bank of Egypt. (2023). Financial Inclusion and Payment Systems & Services Indicators. https://www.cbe.org.eg/-/media/project/cbe/page-content/rich-text/financial-inclusion/infograph_financial-inclusion-and-payment-systems-indicators-english-final---dec,-d-,2023.pdf

16 World Bank. (2022). The Little Data Book on Financial Inclusion 2022. https://hdl.handle.net/10986/38148

TABLE 3: 2021 FINANCIAL INCLUSION INDICATORS FROM CENTRAL BANK OF EGYPT[17] AND FINDEX[18]

	INDICATOR	FIGURE
CBE	Ownership and Usage of Transaction Accounts (age 16+)*	56.2%
	Mobile Wallets	38.5%
	Youth Transaction Accounts (age 16-35)	39.7%
	Women Transaction Accounts	50.2%
Findex	Accounts (age 15+)*	32.8%
	Mobile Money Accounts	2.9%
	Youth Accounts (age 15-24)	9.7%
	Women Accounts	24.5%

*One key difference here is the inclusion by CBE of prepaid cards as a "Transaction Account," which Findex does not include under "Accounts." CBE reports 26.1 million prepaid cards (but does not indicate how many prepaid holders do not have other types of accounts). The different sources also look at slightly different age ranges.

Despite these differing data points, the potential gains from expanding financial inclusion in Egypt are substantial, emphasizing the significant impact that fintech innovations can have in bridging these gaps. The variation noted above introduces some difficulty in assessing the true progress in the market on providing access to the previously excluded. Despite these discrepancies, experts agree that the potential gains from financial inclusion are substantial. A significant portion of the population remains underutilizing financial services and generating limited usable data trails, which fintechs can leverage to enhance financial inclusion.

The CBE has launched multiple initiatives to promote financial inclusion in the country, primarily through its Financial Inclusion Strategy (2022–2025).[19] To enhance digital financial services, the CBE revised its Mobile Wallet Regulations, launching initiatives to encourage e-payments and interoperability between bank accounts and mobile wallets, while allowing banks to verify new customers electronically to facilitate mobile wallet registration.[20] They have also launched a regulatory sandbox to promote innovation.[21] To increase access points, the CBE initiated a 2020 project to install 6,500 ATMs and 300,000 POS machines, with a particular focus on expanding POS terminals and QR codes for digital payments. The regulator also supports micro, small, and medium enterprises (MSMEs) by directing banks to target 25 percent of their loan portfolios to MSMEs, with a minimum required allocation of 10 percent.[22] It also emphasizes data collection and analysis, conducting studies to identify financial inclusion gaps while issuing guidelines for sex-disaggregated customer data reporting. Lastly, consumer protection is addressed with the mandatory establishment of specialized consumer protection units within licensed banks in Egypt, responsible for managing and resolving consumer complaints. [23]

17 Central Bank of Egypt (2023)
18 World Bank (2022)
19 Central Bank of Egypt. (n.d.-a). Financial Inclusion Strategy 2022–2025. https://www.cbe.org.eg/en/financial-inclusion/financial-inclusion-strategy
20 Alliance for Financial Inclusion, & Central Bank of Egypt. (2025). The Role Regulators Play In Closing The Financial Inclusion Gender Gap: A Case Study Of Egypt. https://www.cbe.org.eg/-/media/project/cbe/page-content/rich-text/financial-inclusion/reports/the-role-regulators-play-in-closing-the-financial-inclusion-gender-gap--case-study-of-egypt.pdf
21 Central Bank of Egypt. (2019). CBE's Regulatory Sandbox Framework. https://www.cbe.org.eg/-/media/project/cbe/page-content/media/cbe---regulatory-sandbox-may-en.pdf
22 Central Bank of Egypt. (n.d.-b). Facilitating Access to Finance. https://www.cbe.org.eg/en/msmes-entrepreneurship/msmes/facilitating-access-to-finance
25 Central Bank of Egypt. (n.d.-c). Know your Rights. https://www.cbe.org.eg/en/consumer-protection/know-your-rights

02 Building Data Trails: Fintech Strategies for Financial Inclusion

Our research suggests that fintechs in Egypt have adopted two main strategies to improve data trails: addressing data scarcity and tackling data dormancy. "Data scarcity" refers to the lack of relevant data for target segments, and many fintechs combat this gap through data generation and data digitization. Data generation involves creating or collecting new data not previously captured, and this approach is often seen in providers that target low-income and unbanked individuals. Data digitization transforms physical or analog records into digital formats, and is common among fintechs that serve MSMEs and provide services to digitize common business practices (such as inventory or payments) and build products off the insights gained.

Targeting "data dormancy" addresses the underutilization of existing data through two primary strategies: (i) data aggregation and exchange, and (ii) data repurposing and enhancement. One key difference in these strategies compared to those addressing data scarcity is the fact that they rely on extracting additional value from existing data, and thus have limited impact in providing access to individuals and businesses with a complete lack of data trials. Data aggregation and exchange involves accessing digitized data from external sources to compile comprehensive datasets, such as an earned wage access provider aggregating data to effectively serve gig workers and salaried employees. Data repurposing and enhancement utilizes internal data for new purposes beyond its original collection intent, as demonstrated by a leading telco company's credit engine and payment service providers that have built complementary product offerings, which leverage existing data to enhance services for MSMEs. This approach also includes increasing the value of currently accessible

data through advanced analytics, allowing fintechs to provide more personalized and effective financial products.

The approaches discussed below are not mutually exclusive, and providers often utilize a combination in order to meet their needs. For this analysis, we have focused on the primary strategies used by the various players that have the most relevance to enabling new and expanded access to products and services. These strategies collectively empower fintechs to bridge gaps in financial services for underserved populations by addressing both the scarcity and underutilization of data, thereby fostering greater financial inclusion.

The different approaches are summarized in Table 4 below.

TABLE 4: APPROACHES TO IMPROVE DATA TRAILS

APPROACH	DEFINITION	COMMON SEGMENTS	EXAMPLE
Targeting Data Scarcity			
Data Generation	Creation and collection of new data that a company has not previously had access to (in physical or digital forms)	Low-income and unbanked individuals, urban poor	Phone scraping
Data Digitization	Transformation of physical or analog records to a digital format (internal or external)	Rural populations and MSMEs	Digitized inventory and sales tracking for MSMEs
Targeting Data Dormancy			
Data Aggregation and Exchange	Accessing digitized data from external sources	Gig workers, salaried employees	Bilateral agreement to access employment and income data from a company
Data Repurposing and Enhancement	Utilization of internal data for purposes other than what it was originally created/collected for; enhancement of value of currently accessible data through advanced analytics	MSMEs, mobile phone users	Apply advanced analytics to current data to produce new insights

2.1 TARGETING DATA SCARCITY

2.1.1 Data Generation

Data generation focuses on creating new data from interactions and behaviors that were previously not captured. Techniques include phone scraping, geolocation tracking, and leveraging metadata. Fintechs collect data from users' mobile devices — such as SMS messages, app usage, and location data — to build comprehensive profiles. This approach is essential for understanding consumer behavior and assessing creditworthiness among marginalized communities. While this approach can lead to the creation of data trails where none previously existed, it can also raise concerns on the amount of data being collected and with the training methods used to extract value from this data.

This approach is utilized by various providers offering a range of services, and we examine here a few specific examples. The first is from a direct-to-consumer nano-lender that is focused on serving consumers who lack a formal credit history. To address their target customers' lack of available data, the company relies on extensive phone scraping to build insights about their consumer base. The number of photos stored on a consumer's phone, their total number of contacts, or which apps they have downloaded can help a fintech to infer if a phone is being used for fraud. Furthermore, the camera quality, geolocation, number of Uber rides requested, or the number of orders on a food delivery app can all be used to infer the income level of a given user. The founder underscored a remarkable and somewhat intrusive insight: The number of times a user communicates with their mother positively correlates with their debt repayment performance. While leveraging these insights to provide credit access to new customers can enhance financial inclusion, the variety of factors considered — many of which have no clear connection to creditworthiness — raises significant concerns. Customers may be unaware that seemingly unrelated data, such as the number of photos they store, could influence their credit access. Although providers may identify correlations between such data points and creditworthiness, the potential for embedded biases in these analyses remains unclear. Moreover, the extensive use of personal data heightens the risks associated with data protection and increases the potential for data breaches.

This approach of data generation is similarly being utilized by a provider that seeks to enable inclusion through point-of-sale financing by enabling its users to instantly receive credit within minutes to complete purchases at various merchants. In this case, the company also employs phone scraping, but combines this with information on national IDs, such as age, address, and profession. A core aspect of this provider's method is its reliance on a diverse range of data sources to assess creditworthiness. Using

The extensive use of personal data heightens the risks associated with data protection and increases the potential for data breaches.

metadata from user smartphones, geolocation data, and national ID information, they create a detailed profile of each user's financial behavior and potential risk. These data points are then used to predict income levels based on employment details, living conditions, and other socioeconomic factors. This data-centric strategy allows the company to offer tailored lending solutions that are responsive to the varied economic contexts within Egypt. In an interview with CFI, the founders explained how they prioritize avoiding intrusive data that could compromise user privacy, and how their automated underwriting system anonymizes personal details during the analytical process to protect individual identities.

While the insights companies can gain through data generation are certainly valuable, this practice also raises some concerns. It is positive to hear that the POS financing provider makes a dedicated effort to minimize collection of intrusive data and anonymize personal details, but not every company uses this approach as thoughtfully. When providers rely entirely on utilizing new types of data, it requires significant effort and analysis to identify correlations and predictive indicators. This is often implemented through a "test as you build" approach that uses initial customers as testing subjects to understand how these various data points may contribute to risk assessment. This inevitably leads to some of those first borrowers being provided with unsuitable products and terms, with the potential to lead

to overindebtedness, negative credit reports, or reduced trust from consumers. This approach is often associated with the practice of "data bingeing," or the collection of large amounts of data without a clear plan for how it will be used, which is discussed in more detail below in relation to how this can be addressed with the development of a responsible data strategy.

2.1.2 Data Digitization

Through the transformation of physical or analog records into digital formats, this strategy involves enabling the digitization of traditionally manual data management practices. For example, small retail stores that previously managed inventory and sales manually now use digital tools to track their sales activities. This digitized data can be used as an input for the provision of financial services, such as credit assessments and tailored financial products.

This has been the approach implemented by one of the leading fintechs in Egypt, which began as a payment service provider and has developed to enable vendors to provide buy now, pay later (BNPL) services. While this company provides services to businesses of all different sizes, their impact on data digitization in the market is most notable among micro and small vendors, as they are most likely to have limited existing data trails. A leading data science employee at the company shared how they can track sales, assess inventory, and gain insights into the behavior of merchants on their payments platform. This valuable information enables them to offer flexible access to BNPL providers with easy payment plans, which empowers merchants to cater to a broader customer base, including those with limited financial resources.

The provider uses a combination of internal and external data sources to underwrite and provide loans for merchants. For external data, the company uses "iscore", the single authorized credit bureau, to identify any outstanding legal or financial risk associated with a given merchant.

Internally, the company uses the transaction data to gauge the merchants' inventory and business traffic to identify if a merchant can repay the loan or qualify for the requested services.

This approach is also evident in providers that have been digitizing services that were previously only available through analog or physical channels. This includes traditional microfinance organizations that have since digitized their historical data and their application and loan assessment processes. This also includes the privatization and digitization of activities that were previously community-managed, such as traditional rotating savings and credit associations (ROSCAs) or village savings and loan associations (VSLAs).

A key example of this data digitization approach is seen among providers that have created a platform to facilitate digital ROSCAs. Historically, ROSCAs have been community-led and -managed activities, based on social capital and trust, that provide a basic saving and credit mechanism for participants. Recently, different companies have emerged to create a service to digitize this practice and to expand the scope for participants from a community level to a national level. Together, these companies currently serve over 300,000 active users and continue to grow, with one of the providers estimating that about 20 percent of their users come from marginalized communities that are unbanked or lacking credit history. By developing a product that facilitates the organization, management, and payments (available through multiple channels) of these previously analog activities, these providers can capture digitized data from the associated transactions, such as savings contributions and payouts. This allows participants to advance to ROSCA groups with higher savings requirements and higher payouts.

Due to the relatively lower risk of this model for the provider, participants can join with limited onboarding requirements and no credit or other financial data requirements. While initially there may be limits on new participants in receiving the early payouts from their group to ensure they are making regular contributions, consumers can demonstrate their reliability relatively quickly and progress to higher limit groups.

This, of course, raises the issue of how participants can utilize the data generated from engaging in these groups to access more varied and formal financial services. While the low barrier to entry and opportunities to increase contribution or payout amount are very valuable to financially excluded consumers, there is a ceiling to the potential that is effectively set by the products and services offered by that specific provider.

By developing a product that facilitates the organization, management, and payments of previously analog activities, providers can capture digitized data from the associated transactions.

It must also be acknowledged that ROSCAs that are digitally managed and involve geographically dispersed participants (as opposed to traditional community ROSCAs) make participants reliant on the provider to maintain this service and address disputes. The transfer of this reliance from neighbors to a distant provider introduces new potential risks to participants in the case of providers changing policies and offerings to ones less suitable for this population, or completely shutting down. The collapse of Synapse, a banking-as-a-service provider in the U.S., prevented many from accessing their funds and demonstrates the risks to consumers when they rely on increasingly complex and dispersed digital providers.[24] Particularly for consumers who are accustomed to analog services, providers must find ways to maintain and build consumers' trust when moving to digital channels.

2.2 TARGETING DATA DORMANCY

2.2.1 Data Aggregation and Exchange

This approach involves combining data from multiple sources through partnerships, such as with other providers, private employers, telco companies, ecommerce platforms, and utility companies. Data aggregation and exchange strategies can help fintechs create a unified view

24 Sweet, K. (2024, May 22). Abrupt shutdown of financial middleman Synapse has frozen thousands of Americans' deposits. AP News. https://apnews.com/article/synapse-evolve-bank-fintech-accounts-frozen-07ecb45f807a8114cac7438e7a66b512

of a consumer by integrating various data points and facilitating better credit assessments and more relevant financial services.

In the context of Egypt, embedded finance has shown promise in enhancing financial inclusion through data aggregation and exchange, though there have been limited applications to date that successfully reached scale. Embedded finance integrates financial services into non-financial platforms, making financial products more accessible to a broader audience. For instance, several Egyptian fintechs have collaborated with Fintech Galaxy's open finance platform to access and integrate data from various sectors, improving their service offerings and expanding their reach. The platform announced the initial onboarding of 10 Egyptian fintechs in mid-2023 with the expectation of further expansion.[25] Another example is seen in the partnership between a legacy bank with a digital insurance provider to offer free life insurance to customers of the bank's high-interest savings account. While the amount of coverage is tied to the account balance, and thus provides greater benefit to those who are more financially secure, it demonstrates the potential for data exchange with complementary providers to offer competitive products tailored to consumer needs.[26] Each company states that they aim to serve marginalized groups — defined by them as small and medium enterprises, individuals with special needs, and "segments of society that have low insurance penetration"[27]— but there is not current information of the reach and impact of this initiative.

A leading fintech's partnerships with large employers to provide services to their employees

25 Fintech Galaxy. (2023, July 17). Egyptian Fintechs Team Up With Fintech Galaxy's Open Finance Platform to Tap into Wider MENA Market. https://www.fintech-galaxy.com/media-center/news/egyptian-fintechs-team-up-with-fintech-galaxys-open-finance-platform-to-tap-into-wider-mena-market

26 EFG Holding. (2024, June 5). AiBANK launches a daily saving account with interest rates of up to 20% [Press release]. Zawya. https://www.zawya.com/en/press-release/companies-news/aibank-launches-a-daily-saving-account-with-interest-rates-of-up-to-20-e2umnu4s

27 EFG Holding (2024)

through earned wage access and complementary offerings are other key demonstrations of the potential of data exchange and aggregation. Through these partnerships, the provider gains access to verified employment and income data providers by employers, which enables them to perform effective risk assessments without the need to collect large amounts of varied data on individual customers. They are able to approach consumers with greater confidence of their risk levels, while other providers without these partnerships must collect greater amounts of unverified data and use this to estimate repayment ability. While this company is slowly expanding into direct-to-consumer unsecured lending, the insights and experience gained from their earned wage product has significantly enhanced their ability to enter this market. With unsecured lending, they initially offer shorter terms and lower limits, with the ability to increase based on repayment behavior. However, in assessing risk for these unsecured loans, they can use insights on typical income levels in different geographies and sectors to add confidence to their decisions.

While the exchange and aggregation of data through partnerships has been effectively used by some providers, the cost and technical challenges in data integration from external sources is a barrier that prevents many fintechs from pursuing this approach. Additionally, aligning incentives between those companies that need data (generally smaller and nascent fintechs) with those holding the data (generally larger and legacy institutions) can be difficult.

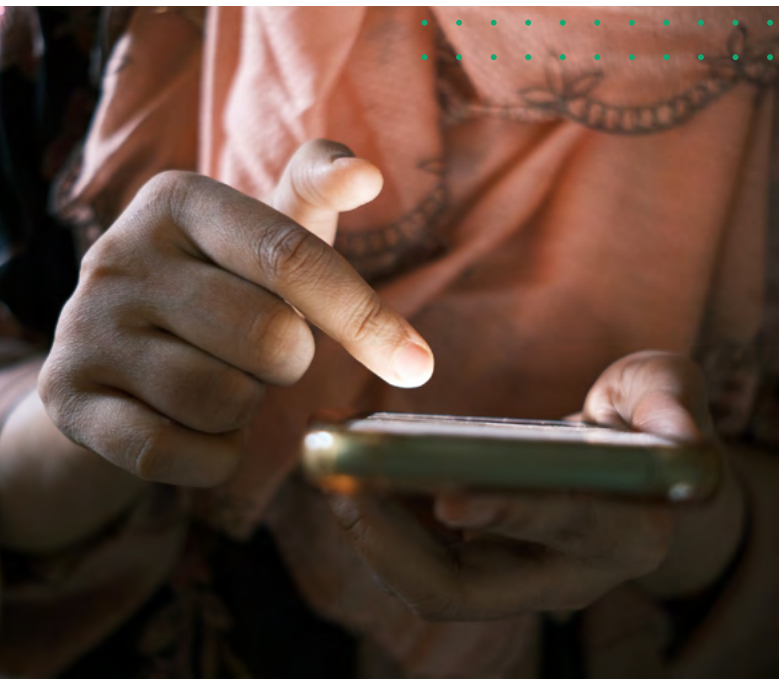
The exchange of data also raises concerns around consumer awareness and consent to how data is being utilized and who has access. CBE and the Financial Regulatory Authority (FRA) both have current regulations to manage data protection and privacy for personal and financial data collected by companies under their remit. However, the introduction and enforcement of a more broad and overarching data protection law that covers other sectors and sets national standards has been delayed. The Personal Data Protection Law was initially passed in 2020, but as of yet, the government has not issued the executive regulations that would explain and enable enforcement of the law. In this context, providers must ensure any sharing of data is aligned with the customer's best interest and expectations. These experiences highlight both the opportunities and the challenges of using data aggregation and exchange to enhance financial inclusion in Egypt.

Providers must ensure any sharing of data is aligned with the customer's best interest and expectations.

2.2.2 Data Repurposing and Enhancement

Data repurposing and enhancement involves enriching existing data with additional insights and analytics to improve its value and usability. "Repurposing" refers to usage of existing data for reasons other than what it was originally collected for. This is exemplified by a project to develop digital scorecards for traditional MFIs in Egypt using their existing data to develop new models for credit assessment, as well as to identify gaps in their available data. This process enabled new insights to be gained from data that was previously underutilized and drive improvements in future data collection.

Data enhancement involves the use of advanced analytics and AI to draw new value out of existing datasets. With these tools, fintechs can analyze user behavior, predict credit risk, and tailor financial products to individual needs. This deeper insight allows fintechs to offer more personalized



and effective financial services to marginalized populations. For example, a digital ROSCA provider utilizes iterative engagement models to build trust and gradually enhance data profiles, allowing them to better understand and meet the needs of their users.

In Egypt, several fintech companies are leveraging AI to enhance data and improve financial services. MerQ, for instance, has developed AI-powered virtual financial assistants named Sally, Sara, and Lara, which provide financial literacy education and guidance on banking and non-banking services. Kashier uses AI and machine learning to provide businesses with efficient tools to manage payments. Wfrley, a digital marketplace, uses AI and machine learning to create a seamless shopping experience for users across Egypt. While these companies are making significant strides, overall application of AI is still in the initial stages, and the integration and utilization of AI technologies are ongoing. The progress of these fintechs highlights the potential for AI to enhance financial inclusion even though progress remains in order to fully leverage these technologies.

While the potential to generate new value and insight from existing data is promising for expanding and improving access to underserved consumers, it does not enable the inclusion of the "data-invisible," who lack existing data trails and are most at risk of continued exclusion from financial services. Additionally, as with data aggregation and exchange, it raises concerns with data being used for purposes other than what a customer may have agreed to or understood when originally engaging with the provider. These techniques also require investment and development of specific skills and resources to enable advanced analytics, which can be prohibitive for small companies. A final point is to note the well-documented issue of discrimination and bias[28] that is inherent in historical data can lead to the perpetuation of historical exclusion without intentional and thorough efforts to de-bias algorithms and other advanced techniques.

28 Kessler, A., & Menajovsky, J. (2021). Reducing Bias in Algorithmic Decisions Cannot Rely on "Blind" Approaches. Center for Financial Inclusion. https://www.centerforfinancialinclusion.org/reducing-bias-in-algorithmic-decisions-cannot-rely-on-blind-approaches/

03 Roadblocks to an Effective Data Economy

3.1 MARKET-LEVEL

Despite the efforts and innovative approaches adopted by fintechs, gaps in Egypt's digital infrastructure — especially regarding the data exchange layer and the limited partnerships within the sector — have led to significant inefficiencies. This study identified several hurdles:

(a) Data Silos: The digitization of data trails in Egypt has been fragmented, with each fintech, financial service provider, and digital platform creating separate data trails for new consumers. The government has shown interest in developing open banking and has made progress with the introduction of a national instant payment scheme, as well as allowing digital know your customer (KYC) processes. However, development of the systems and infrastructure for large-scale data exchange has not yet occurred, and this function is currently provided by private sector actors such as Underlie, with limited reach among providers serving marginalized customers. Data from government and large service providers, such as telcos, is largely inaccessible, leading to the creation of numerous "mini-silos" across the market. This lack of effective data exchange prevents providers from leveraging the full value of data, resulting in duplicated efforts in data collection, verification, and storage. These disjointed efforts consume significant resources and hinder the development of comprehensive financial profiles.

This fragmentation, with each provider creating isolated data silos, has led to a situation where many previously "data-invisible" customers are now accessing financial services but not fully integrated into the financial system. As consumers

build data trails confined to a single provider, they become overly dependent on that provider for services, which can result in limited choices and potentially lower-quality or more expensive offerings. This issue illustrates the limits of focusing only on inclusion without consideration of consumer choice and control, and highlights the risks of an uncoordinated data ecosystem.

The Egyptian Credit Bureau, iscore (I-Score), is a prime example of an instance where the infrastructure and systems exist for data exchange but is still practically "siloed" by uncertainty and barriers to effective usage. At a high level, there is a lack of clarity in the market on the full scope and coverage of iscore. Through various interviews, we heard disparate explanations on which types of providers are required to report, the consistency and quality of reporting, and how extensive the coverage is.

While there has been continued growth in the number of individuals and businesses included in the database as well as expansion of data being reported, there are both legitimate limitations to the coverage of the iscore database as well as perceived issues. Currently, there is near-universal inclusion of commercial banks and microfinance institutions in the database, but participation of fintechs is voluntary and limited. Additionally, coverage is limited to individuals and SMEs that have relevant financial data trails to enable their inclusion, which means the most marginalized "data-invisible" groups are not captured. As of April 2021, iscore reported total coverage of 20 million individuals (about 25 percent of the population over the age of 15) and 450,000 SMEs.[29] This clearly limits the usability of this resource for providers that aim to target the currently unbanked, and is exacerbated by the perceptions of providers. One company interviewed for this report explained that when they explored the use of iscore, they found records for very few of their customers and estimated that coverage was only 10 percent of the population, showing a clear discrepancy between iscore's reports and provider awareness.

Through various interviews, we heard disparate explanations on which types of providers are required to report, the consistency and quality of reporting, and how extensive the coverage is.

Furthermore, a number of providers who were interviewed stated that the cost of accessing iscore credit reports was prohibitive for them at the loan sizes they were offering. This was exemplified by one provider explaining how the cost of obtaining a credit report to provide a microloan was the same as the cost of obtaining one to provide a mortgage.[30] While iscore has previously offered discounted rates, spurred by the FRA,[31] indicating awareness of this barrier, the perception from providers on the perceived value vs. the cost is still limiting usage by many emerging fintechs. This cost barrier was previously addressed for traditional microfinance organizations that were able to use their collective power to negotiate lower rates for members of their association, showing the power of industry associations in advocating for their members.

A final concern raised by providers is uncertainty with the methodology used by the credit bureau. While many expressed interest in the value of

29 Mohamed, A. (2021, May 30). I-Score reports EGP 147m growth in 2020 profits. Daily News Egypt. https://www.dailynewsegypt.com/2021/05/30/i-score-reports-egp-147m-growth-in-2020-profits/

30 One CEO of a consumer finance company stated the current cost to be LE 55, with an expected increase to LE 75 next year.

31 Stohy, A. (2021, May 25). Egypt's FRA cuts credit inquiry fees for consumer finance by up to 75%. Daily News Egypt. https://www.dailynewsegypt.com/2021/05/25/egypts-fra-cuts-credit-inquiry-fees-for-consumer-finance-by-up-to-75/

the raw data that iscore can provide, they also expressed uncertainty with relying on a single score and had questions on how to best use the information provided in a credit report. One bank shared that when they were first required to include the credit score in their credit assessment, they initially placed more weight on this indicator. After recognizing a lack of correlation between the score and actual credit risk (which was causing them to reduce lending to customers they would have previously accepted), they reduced reliance on this resource in their decision making.

(b) Inconsistent Data Quality: Systemic issues in data standardization and reliability, especially from informal economic activities, have hindered fintechs' ability to effectively use data for accurate financial assessments. The informal nature of many economic activities leads to non-standardized data that is difficult to interpret and integrate into financial models. In addition to informality, barriers to accessing many types of data from an original or reliable source lead fintechs to request or require user-inputted or user-uploaded data points. This can lead to errors and requests for additional data to reduce risk, and requires providers to implement further verification measures. A leading fintech providing earned wage access can offer this product based solely on income data from employers, but for their unsecured loans, they must compare user-inputted income to other consumers in the same industry or geography to confirm its validity. One of the largest legacy banks in Egypt also mentioned data quality to be one of their biggest challenges, showing this issue persists across the sector.

(c) Limited Capability and Incentives for Legacy Data Holders: Even if banks and other incumbent institutions hold rich consumer data sets, they may not have the technological capacity or business incentives to integrate new digital data sources or leverage their data assets to go down-market. Outdated technology and business models significantly impede the ability of financial institutions to harness these data trails effectively. Traditional banking systems often operate on legacy infrastructure and may lack the necessary integration capabilities to assimilate data from new sources. In a recent survey of banking executives, more than 70 percent worried that traditional banks lack data and analytics capabilities, and 78 percent fear that partnering with nimbler fintechs and platforms will cannibalize their products.[32] In open banking systems, incumbent banks often see very few incentives for sharing their customers' data with fintechs, challenger banks, and other market actors (unless they are forced to by the regulator). In Brazil, which has seen significant development of its open banking

32 Capgemini. (2024). World Retail Banking Report 2024. https://www.capgemini.com/insights/research-library/world-retail-banking-report/

ecosystem in recent years, the central bank sought to address this issue by requiring participation of banks over a certain size and implementing a variable cost structure so that larger players must contribute more to the operational costs of the infrastructure. While this showed initial success in driving broad participation and vibrancy, there has been increasing pushback from legacy banks to refine the cost structure and require more equal contributions for all participants.[33] Additionally, incumbents may view financially excluded consumers as too costly to reach, and would rather check the box of "financial inclusion" by on-lending to local microfinance institutions.

(d) Regulatory Challenges: Regulatory frameworks for data protection and privacy are evolving in the market, but current uncertainty has made it more difficult for the sector to build consumer trust, further complicating efforts to create a seamless and inclusive digital financial ecosystem. Without robust data governance laws, consumers may be reluctant to share their data, and fintechs may struggle with compliance and ethical use of data. The 2020 Data Protection Law was passed but is yet to be fully enacted as the government has yet to issue the executive regulations needed for enforcement of this law. While this has been sent back to parliament for changes, it has resulted in continued uncertainty in the market. Additional regulations, such as limits on banks' use of cloud computing from CBE, has presented additional barriers. The requirement for banks to store all financial data on-site leads to limitations in accessing the necessary storage and computing power to fully utilize their data.

3.2 PROVIDER-LEVEL

In addition to the market-level and structural challenges that fintechs face, there are some key internal factors that limit their ability to make the most efficient use of the data and gain the most benefit from the data that is accessible.

(a) Bottlenecks in Human Capital and Infrastructure: Advanced data analytics and machine learning techniques are essential for processing and extracting value from large and complex data sets. However, many financial institutions in emerging markets face a shortage of skilled data scientists and analysts. This skills gap limits their ability to develop and implement data analytics tools and models that could unlock the potential of digital data trails. Even with sufficiently trained staff on hand, cost and other barriers can prevent them from accessing available resources that could unlock additional value from their existing data.

(b) Lack of or Insufficient Data Strategy: Without a clear strategy that defines the justification for collecting different data points, as well as the management practices and usage of that data, providers are at risk of misdirecting their limited resources while also exposing their consumers to potential harms. There is inherent risk in sharing any data, from privacy concerns to data misusage, and these risks only increase in the absence of a responsible data strategy. In the early stages of developing a new product or service, it is understandable and expected that providers will experiment with different sources and types of data to refine their methodology. As they mature, however, the need to analyze the value of different data and justify its use becomes stronger. When providers do not seek to continually define and refine their data strategy, it can often result in the practice of "data bingeing" or data maximization, which is the collection of excessive amounts of data without immediate or clear plans for its use.

While the risks of this practice are exacerbated by the lack of a clear data strategy, the reasons it occurs are driven by other factors as well. One driver is the common perception of data as simply an asset to be obtained, even if the value is not immediately apparent, in hopes that the data will

33 Totolo, E., Mortimer-Schutts, I., Rizzi, A., Rice, C., & Chakraborty, A. (2024). Data Exchange Market Deep Dives: In-Depth Exploration of Data Exchange Models in Brazil, India, Singapore, and the European Union. Center for Financial Inclusion. https://www.centerforfinancialinclusion.org/wp-content/uploads/2024/09/Data-Exchange-Markets-Deep-Dives.pdf

be useful in the future. Additionally, the lack of efficient and regulated methods for data exchange, either bilateral or multilateral, has led many fintechs to collect as much data as possible from their customers (in the absence of other sources), often far more than necessary for the provision of services.

The situations that can emerge in this context are exemplified by the case of a nano-lender that launched its product with a data strategy that was essentially expressed as "collect as much as possible and see what has value." This mindset is not unique to this lender and as noted above, this general "learn as you go" approach is justifiable for new companies to build and refine their models, if approached with consumer risk minimization in mind (to avoid causing harm to early customers used as test subjects). This resulted in the lender collecting around 8,000 data points from each user's device, but ultimately only utilizing 500–600. This example is shared not to scrutinize (or define) an appropriate standard of data collection vs. utilization, but instead to demonstrate the scope of this issue and to illustrate the potential for many providers to review and refine their data strategies as they mature with an aim towards data minimization.

The collection of data in the absence of a clear strategy and justification results in risks for both the provider and their consumers. For the provider, they can experience "data overload," which can be a distraction and a drag on their resources. Even if the cost of collection and storage is not prohibitive, the analysis of data without a plan for use will require focus and effort that could be better used. For consumers, the sharing of unnecessary

personal data raises questions and concerns on how it will be used and who it may be shared with. It also fails to account for the shelf life of data, which in many cases can lose its value and usability over time, or in many cases was not valuable to begin with.

"Data shelf life" refers to the period during which collected data remains relevant and useful for decision making processes. In the context of fintechs, this concept is particularly critical as timely and accurate data is essential for providing financial services to underserved populations. While historical data can certainly be valuable for an extended time to track trends and test assumptions, when data is not utilized promptly, it can become outdated and lose its value, leading to inefficiencies and potentially erroneous decisions.

A provider can avoid the pitfalls and risks (for both them and consumers) of "data maximization" through the early development of a responsible data strategy. As explained in CFI's Privacy as Product Playbook: *Privacy by Design for Inclusive Finance*[34], a responsible data strategy requires a company to not only consider the role data plays in the development and deployment of their product offerings and business practices, but also the commitments they are making to consumers in terms of privacy and data protection. This approach inherently encourages a company to approach data collection with an aim towards "data minimization," or carefully considering each variable they collect and understanding how it will be used to add value, and how that data can be collected, stored, and used in a way that puts consumer privacy risks front and center. This not only allows a company to direct resources towards analyzing only relevant data, but also presents a new value proposition to consumers when a provider demonstrates their commitment to privacy and protection of consumer data.

34 Rizzi, A., & Johnson, M. (2023). Privacy as Product: Privacy by Design for Inclusive Finance. Center for Financial Inclusion. https://www.centerforfinancialinclusion.org/privacy-as-product-privacy-by-design-for-inclusive-finance/

04 Lessons for an Inclusive Data Economy

Although VC investments in the fintech sector have spurred fintechs to develop technologies and processes aimed at including "data-invisible" and "data-forgotten" customers in their business models, their success to date has been hampered due to inadequate digital infrastructure, limited consumer trust, and unclear regulations surrounding data protection and data exchange.

In the Egyptian market, the individual efforts and incentives of fintech firms to develop stronger data trails for marginalized segments have not translated into collective efforts, whether led by the private sector or the government, to enable the portability of consumer data and the development of APIs for efficient and standardized data exchange. Although some bilateral data exchanges have occurred through embedded finance business models, these initiatives have not achieved mass adoption, particularly among financially underserved or excluded segments. This lack of coordinated effort has further impeded the scalability and effectiveness of fintech solutions aimed at fostering financial inclusion.

CFI has identified recommendations directed at fintechs, industry associations, investors, and the government to enhance the digitization of data inputs and promote financial inclusion in Egypt, which are shared below. For fintechs, the findings and analysis of current strategies and challenges suggest investing in technologies that facilitate secure and efficient data collection and exchange while focusing on the privacy and responsible use of AI. Industry associations are encouraged to foster collaboration among fintech firms, standardize data protocols, and advocate for the

establishment of shared digital infrastructure. Regulators and policymakers are advised to create clear and supportive regulations that protect consumer data while enabling innovation, as well as to invest in improving the national digital infrastructure. Below are specific actionable steps that stakeholders can take to create a more inclusive data economy.

4.1 RECOMMENDATIONS FOR POLICYMAKERS AND REGULATORS

The government plays a critical role in shaping the environment in which fintechs operate. By setting regulatory frameworks, investing in infrastructure, and fostering innovation, the government can create a supportive ecosystem that promotes financial inclusion and the safe exchange of data. Effective government policies and initiatives can address systemic challenges, enhance consumer trust, and enable the scalability of fintech solutions. Through strategic investments and regulations, the government can ensure that the digital economy grows in a way that benefits all segments of society.

1. **Develop a roadmap towards an open data economy and enhance digital infrastructure:**

Support frameworks that enable the sharing of anonymized data between the public and private sectors to foster innovation and enhance financial inclusion. The government can also invest in digital public infrastructure, particularly in the context of data exchange within the financial sector and in the digital economy more broadly, and provide guidance on the use of APIs and in the context of bilateral data exchange.

2. **Monitor emerging threats to data protection:**

Continuously strengthen and enforce data protection and privacy laws to build consumer trust and ensure ethical data use by fintechs. As the data landscape evolves, it's important to actively monitor emerging threats and engage with both industry and consumers to adapt regulations as needed. Regular dialogue with fintechs and feedback from consumers can help identify potential risks early, ensuring that legal frameworks stay relevant and effective in protecting consumer data and promoting ethical practices.

Regulators and policymakers are advised to create clear and supportive regulations that protect consumer data while enabling innovation, as well as to invest in improving the national digital infrastructure.

3. **Incentivize collaboration and innovation:**

Provide incentives for fintechs to engage in data sharing collaborations and develop interoperable systems that benefit the broader financial ecosystem. It is of particular importance to determine appropriate incentives for participation by legacy institutions and others that hold significant amounts of data that would be of value to the market as a whole.

4. **Develop a special focus on data exchange in the CBE regulatory sandbox:**

Consider developing a special focus and cohort within the regulatory sandbox that promotes the

safe exchange of data between fintechs, financial institutions, and digital platforms. This initiative can help fintechs test new technologies and data sharing methods in a controlled and supportive environment, ensuring compliance with regulatory standards while fostering innovation.

4.2 RECOMMENDATIONS FOR INDUSTRY ASSOCIATIONS

Industry associations are key players in fostering a collaborative environment among fintech firms and other stakeholders. They play a crucial role in advocating for industry-wide standards and practices that ensure consistency and reliability across the sector. By promoting dialogue, facilitating knowledge sharing, and developing ethical guidelines, industry associations can drive the collective effort needed to overcome the challenges faced by individual fintech firms. Their influence and ability to convene diverse stakeholders make them essential in shaping a cohesive and inclusive financial ecosystem.

1. Promote industry-wide dialogue and ethical standards:

Advocate for the adoption of common standards for data collection, storage, and exchange to ensure consistency and interoperability. These should address data quality and consistency, as well as user privacy and data protection. Particularly in the absence of strong regulations on consumer privacy and protection, industry associations should lead members to build trust in the sector at large for the benefit of all stakeholders.

2. Facilitate knowledge sharing and best practices:

Organize forums and workshops to enable fintechs to share best practices, successful strategies, and lessons learned in data management and financial inclusion.

3. Identify key challenges for members and advocate for change:

Industry associations can capitalize on the collective influence of the sectors they represent to drive changes that benefit their industry. A key example is the success of a large microfinance association in negotiating lower rates for their members to access iscore reports for credit provision. This type of action shows the tangible benefits that associations can gain when they work to coordinate collective effort among their members.

4. Promote the use and generation of synthetic data:

Encourage the development and use of synthetic data for training algorithms. Synthetic data can provide a safe and privacy-preserving way to train machine learning models, allowing fintechs to innovate and improve their services without compromising real customer data. This approach also helps in overcoming data scarcity issues and can enhance the robustness and fairness of algorithms.

4.3 RECOMMENDATIONS FOR INVESTORS

Investors occupy a unique position in the landscape that enables them to promote and reward certain norms and best practices among their current and potential investees. This can be particularly significant in areas that are not addressed by governments through current policy or regulation. Investors' roles and resources provide them with significant influence on both individual providers and the market as a whole. At the firm level, investors can drive and support practices they see as beneficial or valuable within specific companies by introducing requirements or securing board representation that enables them to provide ongoing input on a company's goals and strategies. At the market level, recognition of the types of practices being rewarded with investment, and associated requirements, can drive broader trends in the market through provider adoption of approaches not previously considered.

1. **Require multi-year data strategies with continual updates:**

Ensure that investee companies have not only considered their initial approach to data collection and their strategy to extract value from that data, but how their needs will change over time. The justification for collecting different types of data needs to be clarified and strengthened over time. These strategies should be regularly reviewed and updated, with privacy and consumer protection risks central to the discussions.

2. **Encourage openness to, and exploration of, bilateral and multilateral data exchange agreements:**

While need, affordability, and competitive advantage will be key considerations here, investors should promote and encourage this possibility. Particularly for investors with broad portfolios, they should examine opportunities for mutual benefit that could be derived from data exchange among their investee companies (both within and across sectors).

3. **Insist on data protection and privacy:**

Regardless of regulatory guidelines and enforcement, investors must insist on strong data protection and privacy within investees. This is for the protection of consumers, as well as protection for the company of one of their core assets and their reputation.

4. **Promote consumer risk minimization in all data practices:**

There are clear barriers, particularly for early-stage companies, in terms of having the resources to access or purchase existing data and to effectively utilize data when available. While this understandably can lead to the testing of early approaches on initial customers (such as refining loan eligibility criteria), investors must push companies to approach this from a consumer risk minimization perspective. Increasing over-indebtedness among a target customer group in order to improve a lending algorithm is not an acceptable trade-off and can lead to reputational harm and increased risks for target customers.

5. **Engage with government to drive responsible and enabling data policies and regulations:**

Investors should use their influence on regulators and policymakers to encourage improving the quality and accessibility of government data, particularly for populations with limited data trails from other sources. They should also encourage governments to invest in the infrastructure, institutions, and guidelines to enable responsible data exchange within and across sectors.

4.4 RECOMMENDATIONS FOR FINTECHS AND DIGITAL PLATFORMS

Fintechs and digital platforms play a critical role in transforming the financial landscape by leveraging technology to reach underserved populations. They are uniquely positioned to innovate and implement solutions that address the barriers to financial inclusion. The recommendations for fintechs focus on enhancing data practices, building trust, and improving interoperability. Specific recommendations include:

1. **Promote data minimization techniques:**

Focus on collecting only the necessary data to provide services, thereby building customer trust and enhancing privacy.

2. **Allow for data portability and develop interoperability:**

Develop systems that enable consumers to easily transfer their data between service providers, enhancing customer control and

fostering a competitive market. Create and adopt standardized APIs to facilitate seamless data exchange and integration across different platforms.

3. Invest in Privacy by Design:

Develop a responsible data strategy to determine what data is needed and why, as well as to define commitments to consumers on the storage and use of data, and how those commitments will be enforced. Build privacy into products and services from the design phase.

4. Utilize advanced analytics responsibly:

Leverage AI and machine learning to gain insights from data while ensuring ethical use and minimizing bias in decision making. Pay particular attention to the inherent biases in the data and in the context it is being used to ensure use of these tools does not maintain exclusion.

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