

State of the Digital Financial Services Market in Sierra Leone, 2017

Results from the UNCDF Annual Provider Survey

UNCDF MM4P | Sierra Leone



About the Bank of Sierra Leone

The Bank of Sierra Leone is the central bank of the Republic of Sierra Leone and is charged with developing the country's financial sector. It led the development of the *National Strategy for Financial Inclusion 2017–2020* and provides leadership and coordination support to the Digital Financial Services Working Group.



About the UN Capital Development Fund

The UN Capital Development Fund (UNCDF) makes public and private finance work for the poor in the world's 47 least developed countries. With its capital mandate and instruments, UNCDF offers 'last mile' finance models that unlock public and private resources, especially at the domestic level, to reduce poverty and support local economic development. UNCDF's financing models work through two channels: financial inclusion that expands the opportunities for individuals, households and small businesses to participate in the local economy, providing them with the tools they need to climb out of poverty and manage their financial lives; and localized investments that show how fiscal decentralization, innovative municipal finance and structured project finance can drive public and private funding that underpins local economic expansion and sustainable development.



About the UNCDF MM4P programme

UNCDF developed the MM4P programme to ensure that the opportunities and benefits of digital finance would reach low-income people in difficult markets. UNCDF provides a mix of technical, financial and policy support to policymakers, regulators, providers, distributors and users of digital finance in order to expand access to and usage of services that contribute to achieving the Sustainable Development Goals.

In Sierra Leone, UNCDF and the Better Than Cash Alliance have been providing technical assistance and investment grants for digital services since December 2014, when UNCDF was asked to implement the Payments Programme for Ebola Response Workers with the National Ebola Response Centre. The efforts with the Ebola Response Workers successfully demonstrated the usage of digital payments, which led to an overall savings of US\$10 million for the Government of Sierra Leone. Since June 2017, UNCDF has supported opening up the regulatory space for fintechs to experiment in the Regulatory Sandbox Pilot Programme, which was recently launched by the Bank of Sierra Leone and was the first in the region. UNCDF supports fintechs with design and investment grants to solve key challenges identified in the *National Strategy for Financial Inclusion 2017–2020*.



Project team

The process to develop the Annual Provider Survey included gathering data, assessing the incentives of providers in the Sierra Leonean digital finance context and surveying the insights of local stakeholders. The content of this report is based on information gathered during the month of April 2018 and represents data for the period from December 2016 to December 2017. The following project team members authored the report:



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Acronyms

Acronym	Definition
APS	Annual Provider Survey
BSL	Bank of Sierra Leone
DFS	digital financial services
Le	leones*
MNO	mobile network operator
P2P	person-to-person
UNCDF	UN Capital Development Fund
US\$	United States dollars*

*Conversion rate: US\$1 = Le 7800 (Source: <https://treasury.un.org/operationalrates/OperationalRates.php>, 1 October 2018). Note: This rate is used wherever United States dollar (US\$) equivalents are provided for Sierra Leone leones (Le) in this report.

Glossary^a

Term	Definition
Active customer account	An active customer account is an account with which at least one transaction was conducted in the last 90 days. A transaction includes cash-in, person-to-person transfer, cash-out, bill payment and/or airtime top-up. Conducting a balance inquiry, resetting a personal identification number or completing another transaction that does not involve the movement of value DOES NOT qualify for a customer account to be considered active.
Agent, Agent outlet, Active agent outlet	<p>An agent may be a proprietary agent (an agent who is managed by and operates under the exclusive branding of a particular provider) or a third-party agent, either of whom handles more than 30 transactions per month, including cash-in and cash-out. In many instances, an agent registers new customers too.</p> <p>"In the case of mobile money, an agent outlet is a location where one or several provider-issued tills are used to conduct transactions for clients... Agent tills are provider-issued 'lines,' which can be SIM cards or POS [point-of-sale] machines, authorized and used to facilitate mobile money transactions... An agent outlet may operate tills issued by several providers; these are generally referred to as shared or nonexclusive outlets."</p> <p>"An active agent outlet is an agent outlet where any of the tills were used to facilitate at least one transaction within the last 30 days... The most important of these [transactions] are cash-in and cash-out (i.e., loading value into the mobile money system and then converting it back out again)."</p>
Airtime top-ups	Airtime top-ups are funded from a customer account.
Automated (or Automatic) teller machine (ATM)	An ATM is "an electronic telecommunications device that enables the clients of a financial institution to perform financial transactions without the need for a cashier, human clerk or bank teller." ^b ATMs may be operated either offline or online with real-time access to an authorization database.
Bank account to mobile money account transfers	These transactions involve "a direct transfer of funds made from a customer bank account to a mobile money account. This transaction typically requires a commercial agreement and technical integration between the bank and the mobile money provider to allow direct transfers."
Bill payments	These transactions involve the payment of bills using digital financial services, "regardless of whether they originate from an account or are made over the counter." ^c
Bulk payments	These transactions are conducted from one account to many accounts, or from many accounts into one account. The former, such as salary payments or government transfers, may terminate in an account or over the counter. They are referred to as 'one to many.' The latter, such as several customers paying for utilities, comprise collections by an organization from multiple payers. They are referred to as 'many to one.'
Cash-in transactions	These transactions include deposits of any value from a customer into a wallet through an agent. They also represent "the process by which a customer credits [his/her] mobile money account with cash. This [process] is usually via an agent who takes the cash and credits the customer's mobile money account with the same amount of e-money."
Cash-out transactions	These transactions include transfers of any value from an agent to a customer. They also represent "the process by which a customer deducts cash from [his/her] mobile money account. This [process] is usually via an agent who gives the customer cash in exchange for a transfer of e-money from the customer's mobile money account."
(Agent) Commissions	Commissions are the revenues paid by the digital financial service provider to its agents. Generally, agents earn commissions by conducting transactions and onboarding new customers.
Customer activity rate	Customer activity rate is the share of actively used registered accounts (i.e., at least one transaction conducted in the past 90 days).
Debit card	A debit card is an electronic card issued by a bank that provides the bank client with access to his/her account to withdraw cash or pay for goods and services. It eliminates the need for the client to go to the bank to remove cash from his/her account as he/she can just go to an ATM or pay electronically at merchant locations. This type of card, as a form of payment, also eliminates the need for cheques, as the debit card immediately transfers money from the client account to the business account.
Digital financial services (DFS)	The term DFS refers to a range of formal financial services accessible via digital channels, such as mobile money, agency banking, ATMs and debit cards, as opposed to traditional financial services accessed through physical visits to a provider's outlet.

^a As much as possible, standard industry definitions are applied. In particular, GSMA, a trade body representing the interests of mobile network operators globally, is the source of a number of definitions provided here. Unless otherwise noted, the source of all quoted text in the definitions is the latest report from GSMA: GSMA, 2017 State of the Industry Report on Mobile Money, Appendix 3: Glossary (London, 2018).

^b Nair Vinu Uthaman and others, 'MAASC (Multiple Account Access using Single ATM Card),' *International Journal of Science, Engineering and Technology Research (IJSETR)*, vol. 3, No. 6 (June 2014), p.1790.

^c Nika Naghavi and others, 'Success factors for mobile money services: A quantitative assessment of success factors' (London, GSMA, November 2016), p. 21.

Financial inclusion	Financial inclusion is the end state of the goal of all eligible citizens having access to and using a range of affordable, convenient and appropriate financial services. These services could be formal financial products/services that are provided by formal financial institutions (banks and/or non-bank financial institutions bound by legally recognized rules) or informal financial products/services that are unregulated and operate without recognized legal governance (e.g., village banks or village development funds).
Fintech	This entity is a financial technology company.
First-generation products	These products comprise basic DFS, such as person-to-person transfers, airtime purchases, bill (utility) payments, and cash-in and cash-out transactions.
Float	Float is “the balance of e-money, physical cash, or money in a bank account that an agent can immediately access to meet customer demands to purchase (cash-in) or sell (cash-out) electronic money.”
Informal over-the-counter (OTC) transactions	These transactions occur when a customer provides cash to an agent who performs a transaction via an agent account to send funds to the wallet of a registered customer.
International remittances	International remittances can refer to the total number of cross-border fund transfers for inbound or outbound remittances. International remittances may also refer to the “cross-border fund transfer from one person to another person. This transaction can be a direct mobile money remittance or can be completed through use of an intermediary organization such as Western Union.” “Financial institutions and regulated financial services providers are obligated by regulation to perform due diligence to identify their customers.” The KYC term refers to these requirements and/or to “the regulation which governs these activities. The FATF (Financial Action Task Force) recommends a risk-based approach to due diligence for AML/CFT (anti-money-laundering and counter-financing of terrorism) controls. Due to the lack of formal identity documents in some markets, solutions such as [establishing] tiered KYC [requirements] and adjusting acceptable KYC documentation can help mobile money providers facilitate customer adoption and increase financial inclusion, especially in rural areas.”
Know-your-customer (KYC)	
Liquidity management	Liquidity management is “the balance of cash and e-money held by a mobile money agent to meet customers’ demands to purchase (cash-in) or sell (cash-out) e-money. The key metric used to measure the liquidity of an agent is the sum of [his/her] e-money and cash balances (also known as [his/her] float balance).”
Merchant payments	These transactions are movements of value from a customer to a merchant to pay for goods or services at the point of sale.
Mobile microcredit (also microloans)	Mobile microcredit is a solution that enables mobile money customers to access small amounts of credit instantly via their mobile phone.
Mobile microinsurance	Mobile microinsurance is an option by which insurance premiums are paid from a mobile wallet through a mobile money platform.
Mobile money operator	A mobile money operator is “a company that has a government-issued licence to provide telecommunication services through mobile devices.”
Over-the-counter transactions (OTC)	These transactions include money transfers or bill payments that are conducted without a registered account. “Some mobile money services [e.g., bill payments] are being offered primarily OTC. In such cases, a mobile money agent performs the transaction on behalf of the customer, who does not need to have a mobile money account to use the service.”
Pay-as-you-go	Pay-as-you-go is an option by which an end customer makes a deposit for a product with the end goal of owning the device through a series of usage payments paid through a DFS channel.
Person-to-person transfers	These transactions originate from a customer DFS account and terminate in another customer DFS account.
Registered customers	Registered customers are the cumulative number of customers who have registered for a service, regardless of whether they are active.
(Agent) Revenue	Revenue comprises the total commissions earned by agents for all the transactions they conduct through their agent accounts.
Second-generation products	These products are more advanced DFS, such as microcredit and microinsurance products, loan repayments, merchant payments, push (to bank)/pull (from bank) transfers and international remittances.
Third-party operators	Third-party operators are DFS providers that leverage existing infrastructure of mobile network operators (MNOs). They are usually MNO agnostic and, in some cases, could be master agents or others acting on behalf of a DFS provider or an MNO, whether pursuant to a service agreement, a joint venture agreement or another contractual arrangement.
Transaction	A transaction could involve cash-in, person-to-person transfer, cash-out, bill payment and/or airtime top-up. A transaction does not include any other type of activity that does not involve the movement of value (e.g., balance inquiry).

Foreword

The year 2017 saw tangible indications of regulatory change in Sierra Leone, demonstrated by thoughtful engagement in the local financial ecosystem and linkages with international communities of practice in order to share and benefit from lessons learned. In the same year, the Bank of Sierra Leone launched the inaugural Fintech Challenge as a platform to engage with and coordinate support for fintechs through design and investment grants in order to solve challenges identified in the *National Strategy for Financial Inclusion 2017–2020*.

Sierra Leone is a fragile State that is still, in some ways, recovering from an Ebola outbreak in 2014 and a decade-long civil war. According to the 2017 Global Findex, fewer than 20% of adults in the country have a financial account—less than half the average for sub-Saharan Africa.¹ However, the tides are turning.

Sierra Leone is seeing a wave of new opportunities. Rapid mobile phone and network penetration across the country is opening the door to new services, making it easier than ever for people to use digital payments in their everyday lives. Adoption of digital financial services (DFS) in Sierra Leone continues to grow, with the percentage of active adult users increasing from 6% in 2016 to 10% in 2017.

The UN Capital Development Fund, which has been active in Sierra Leone since December 2014, has developed an Annual Provider Survey that provides industry participants with a comprehensive view of the state of the DFS market in the country. The survey aims to deliver relevant information to DFS stakeholders so that they can make informed decisions to harness the opportunities made possible by an increasingly digital economy. According to the results of the survey, at least US\$23 million from the cash economy are being digitized at mobile money agent locations, which is just the tip of the iceberg.

The DFS Working Group, a forum for public-private dialogue and collaboration on DFS, has expanded to include new stakeholders, such as the National Civil Registration Authority (the entity that handles the national ID) and the National Revenue Authority, that are critical to developing the architecture necessary to realize the potential of digital services. A DFS Task Force for Smallholder Farmers has been established by the Government to mainstream DFS

and to help deliver important services to smallholders. A government salary digitization project has started building the business case for DFS to expand access points and availability of financial services to underserved communities. And, in an effort to streamline and coordinate digital initiatives in the country, the Government has established a directorate in charge of these efforts. Considerable work in the DFS space has begun.

The commitment of Sierra Leone to learning and engaging with local entrepreneurial communities reflects positively on the future of financial inclusion in the country. We at the UN Capital Development Fund are very encouraged and remain committed to providing support to our Sierra Leonean partners. In particular, we remain inspired by the leadership of the Bank of Sierra Leone and are hopeful that all the work started in 2017 will bear fruit in the years to come.



Wycliffe Ngwabe

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¹ Asli Demirgüç-Kunt and others, *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution* (Washington, DC, World Bank, 2018). doi: 10.1596/978-1-4648-1259-0. Licence: Creative Commons Attribution CC BY 3.0 IGO.



Introduction

Central to the objectives of the *National Strategy for Financial Inclusion 2017–2020* for Sierra Leone is ensuring that the regulator, the Bank of Sierra Leone (BSL), is responsive to emerging opportunities in new areas such as digital financial inclusion. Market-level data are vital to understanding a country's market for digital financial services (DFS), level of development and trends. While the recently launched Global Findex database tracks useful national-level indicators, the availability of high-quality, market-level data on the Sierra Leonean DFS market has been limited to date.

The UN Capital Development Fund (UNCDF) developed the Annual Provider Survey (APS) to provide industry participants with a comprehensive view of the state of the DFS market in the country. Encompassing customer adoption, usage and trends of DFS, the APS aims to equip regulatory bodies with the know-how to better monitor, manage and guide the various DFS providers in the country, while simultaneously sharing valuable insights with the DFS providers regarding the performance of their products and services relative to the market.

1. Methodology

This report provides key insights into the state of the DFS market in Sierra Leone, drawing on data collected through the APS. The survey was developed and conducted by UNCDF, in partnership with BSL.

The survey was shared electronically by BSL with all DFS providers and was followed by in-person interviews conducted by UNCDF. BSL successfully secured the participation of all DFS providers, including eight banks and two mobile network operators (MNOs). In addition, BSL obtained the participation of three banks and four fintechs that do not currently offer DFS but that were able to share useful insights on the challenges faced by the market.

The APS included both quantitative and qualitative questions. Quantitative data were collected on the following indicators:

- Total number of customers, registered and active (30 and 90 days)
- Number of unique active customers by service type
- Volume and value of transactions by service type
- Number of agents, registered and active (30 days)
- Volume and value of transactions with agents
- Commissions paid to agents
- Number of registered and active merchants accepting DFS payments

Qualitative information was collected on the performance of the institutions interviewed, along with key challenges encountered and level of engagement with UNCDF.

All participants were guaranteed that their submissions would remain confidential per the United Nations standard policy on handling proprietary information supplied by its members. UNCDF also signed non-disclosure agreements wherever it was required by the providers.

All data presented in this report were aggregated and anonymized. DFS providers that participated in the APS receive a benchmarking report that allows them to gauge their performance relative to the rest of the market.

2. State of the global market for digital financial services

Globally, DFS have become the leading payment channel for digital economies in emerging markets. There are DFS deployments in more than 90 countries. Of all low- and lower-middle income countries in the world, three quarters of them have DFS deployments.

Results from the 2017 Global Findex survey by the World Bank reveal an increase in overall financial inclusion.² Worldwide, 69% of the adult population had access to an account at a financial institution or a mobile money provider in 2017, compared to 62% in 2014.³ Results also suggest that mobile money is a key driver of the increase in account ownership. Globally, 52% of adults made or received payments digitally at least once in the past 12 months in 2017, compared to 41% in 2014. In sub-Saharan Africa, 34% of the adult population made or received payments digitally in 2017, compared to 27% in 2014. Yet, 1.7 billion adults remain unbanked worldwide. Two thirds of these adults own a mobile phone, which offers new opportunities to bring the unbanked into the financial system.

² Asli Demirgüç-Kunt and others, *The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution* (Washington, DC, World Bank, 2018). doi: 10.1596/978-1-4648-1259-0. Licence: Creative Commons Attribution CC BY 3.0 IGO. Note: All statistics cited in this paragraph are from this source.

³ Note: This figure includes anyone with an account that was used at least once in the past 12 months.

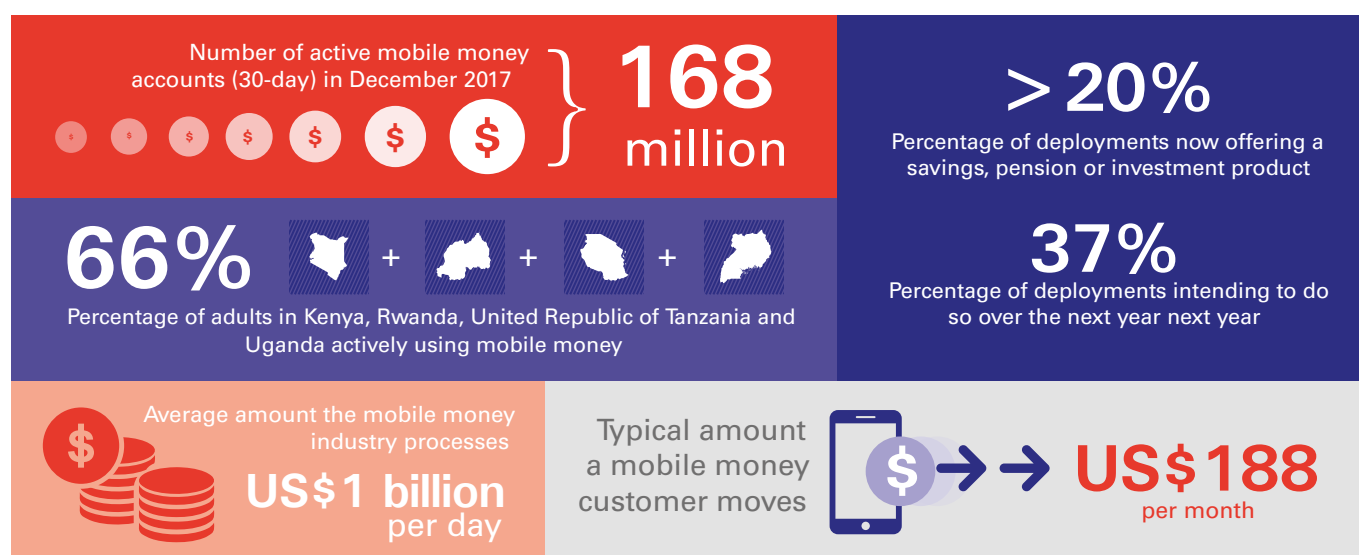
Findings of the *2017 State of the Industry Report on Mobile Money* by the GSM Association show similar trends.⁴ In terms of usage, the total value of transactions conducted through mobile money providers grew by 23% from US\$26 billion in December 2016 to US\$32 billion in December 2017. Of mobile money providers, 22% now offer DFS-enabled savings, which suggests DFS can serve as a tool for saving money and earning interest.

While feature phones and Unstructured Supplementary Service Data (USSD) transactions continue to be the most widely used interface for DFS users, 73% of providers delivered DFS through smartphones in 2017, compared to 56% in 2015. Agents remain the backbone of the DFS industry. Between 2015 and 2017, the number of registered agents increased by 17%. In 2017, there were 5.3 million registered agents, of whom 55% were active.

Seeing DFS contribute more than US\$2.4 billion in direct revenue and support revenue growth of 34% year-on-year, more providers, particularly MNOs, are starting to recognize DFS as a source of direct revenue for their businesses. Important trends include the increased adoption of smartphones and the participation of fintechs, with a focus on the digitization of new sectors of the economy. Renewed efforts by companies and governments to reach the most vulnerable have led them to continue exploring the option of using mobile money providers as a payment platform.

Figure 1 highlights additional key facts and figures that capture the state of the global DFS industry.

Figure 1
State of the global digital financial service industry (2017)



Source: Figure based on one found in the following: GSM Association, *2017 State of the Industry Report on Mobile Money* (London, 2018), p. 8.

3. Sierra Leone at a glance

Access to financial services plays a critical role in sustainable development and poverty reduction. According to the 2017 Global Findex, 20% of adults in Sierra Leone have access to formal financial services and the remaining 80% complete their transactions with cash.⁵ A lack of savings facilities and investment opportunities, limited access to credit and financial illiteracy form major barriers to growth and national resilience. DFS offer an alternative, complimentary model to the traditional 'brick-and-mortar' model prevalent in the Sierra Leonean financial sector. Furthermore, DFS can potentially advance financial inclusion, particularly for low-income and rural population segments.

The DFS market in Sierra Leone is at a relatively early stage of development. In 2014, the country had the opportunity to see the potential of digital solutions when 27,000 Ebola response workers were paid digitally, resulting in an overall savings of US\$10 million for the Government.⁶ Yet, as of December 2017, with 2 MNOs and 8 out of 14 banks offering DFS, only 9% of adults had an active DFS account. Basic services such as person-to-person (P2P) transfers, cash-in/cash-out transactions and airtime purchases are prevalent, while more advanced DFS are nascent, which demonstrates that use cases are a huge constraint to the usage and

⁴ GSM Association, *2017 State of the Industry Report on Mobile Money* (London, 2018). Note: All statistics cited in this and the following two paragraphs are from this source.

⁵ Demirgüç-Kunt and others, *The Global Findex Database 2017*.

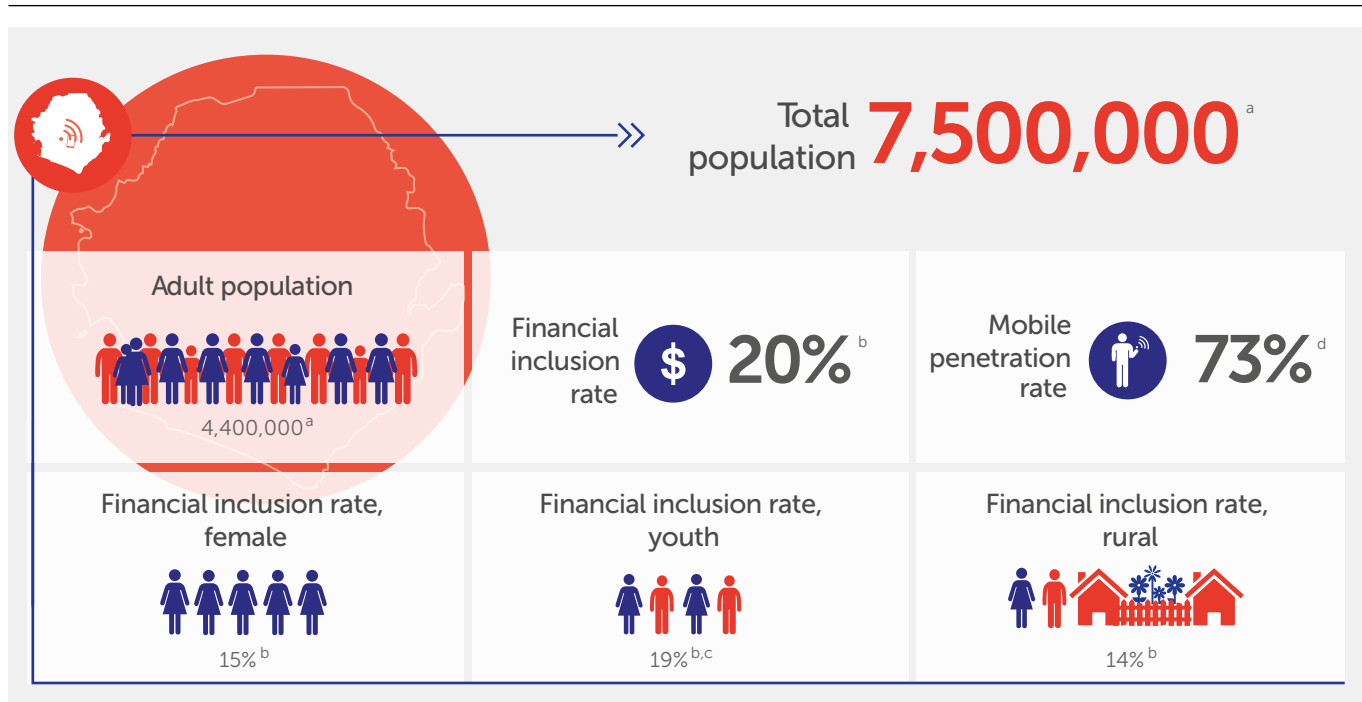
⁶ Joe Abass Bangura, 'Saving Money, Saving Lives: A Case Study on the Benefits of Digitizing Payments to Ebola Response Workers in Sierra Leone' (New York, Better Than Cash Alliance, 2016).

adoption of DFS in the market. Of 4,214,866 registered DFS accounts, only 384,534 are actively used, which demonstrates that low product usage is one of the key challenges the market faces.

Leveraging innovations in fintech is a priority of BSL in order to address current market failures in the financial sector and to expand financial services to a larger share of the population.⁷

Figures 2 and 3 provide an overview of Sierra Leone and the state of its DFS market as of 2017.

Figure 2
General statistics about Sierra Leone (2017)



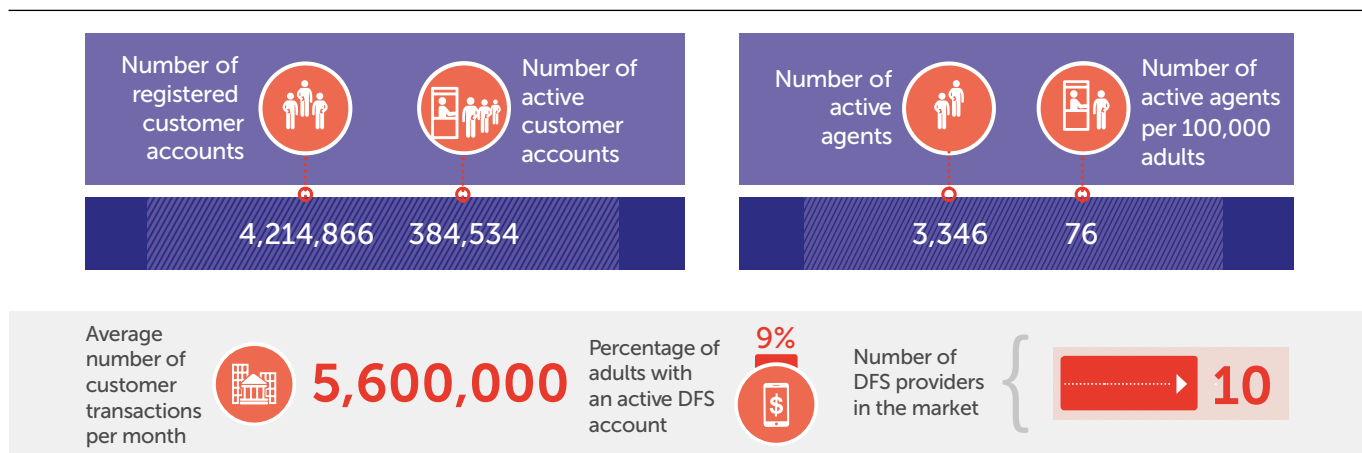
^a UN World Population Prospects, 2017

^b Global Findex, 2017

^c The definition of youth by the Global Findex is anyone in the age group of 15–24 years old.

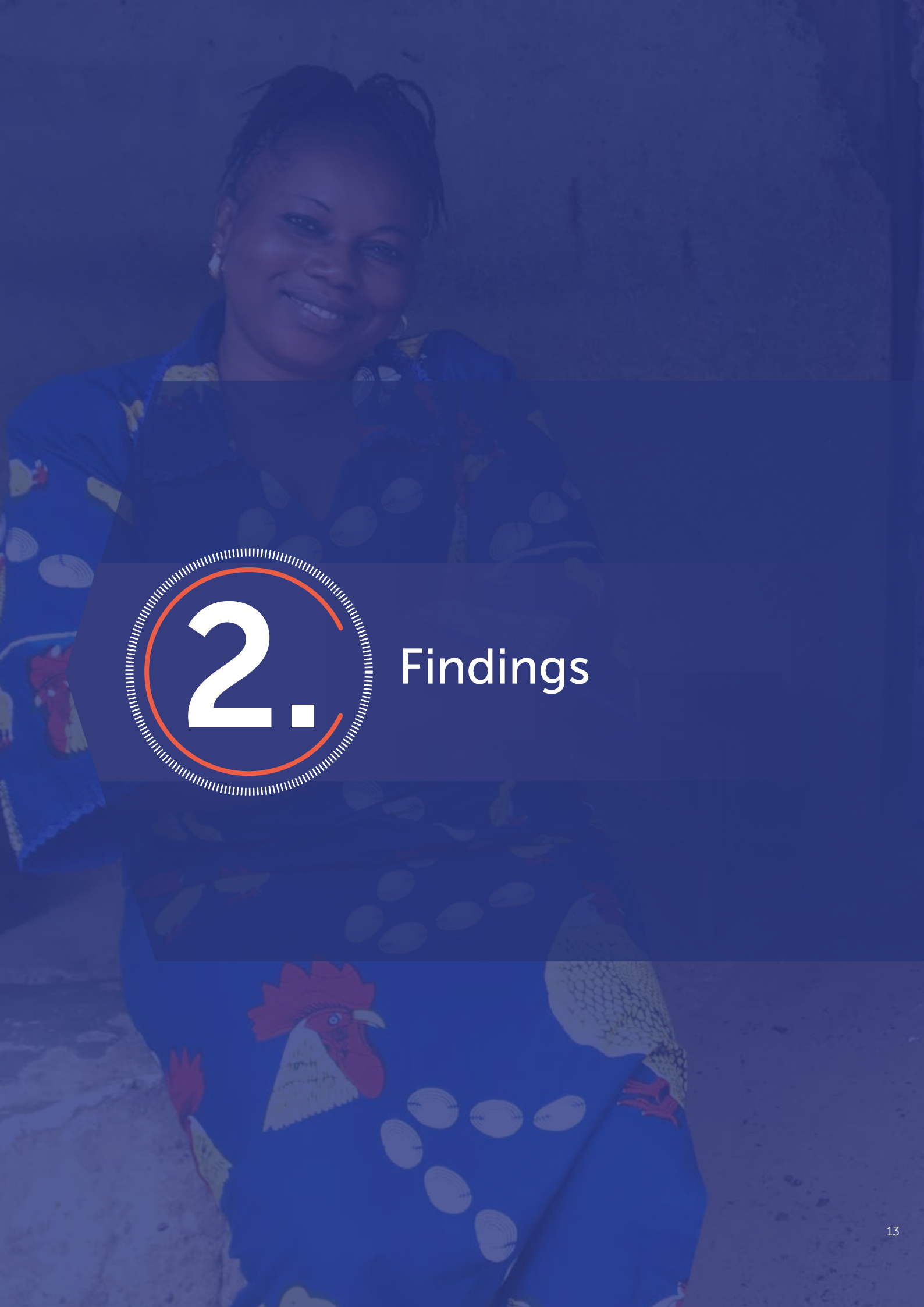
^d GSM Association, 2017

Figure 3
State of the Sierra Leonean digital financial service market (2017)^a



^a UNCDF APS, 2017

⁷ Bank of Sierra Leone, *National Strategy for Financial Inclusion 2017–2020* (Freetown, 2017).



2.

Findings

1. Providers

As of December 2017, there were 10 DFS providers in Sierra Leone:

- **MNOs:** AfriMobile and Orange Money
- **Banks:** Access Bank, Ecobank, Guaranty Trust Bank, Keystone Bank, Sierra Leone Commercial Bank, Standard Chartered Bank, United Bank for Africa and Zenith Bank

The two MNOs are undoubtedly dominant players within the DFS sector. In December 2017, 92% of customer DFS accounts were held by MNOs, compared to 97% in December 2016 (see figure 4). The active customer base of MNOs grew by 33% in 2017 and reached a total of 354,260 active customer accounts by the end of the year, compared to 30,274 active DFS accounts at banks.

Figure 4
Percentage of customer accounts by provider type

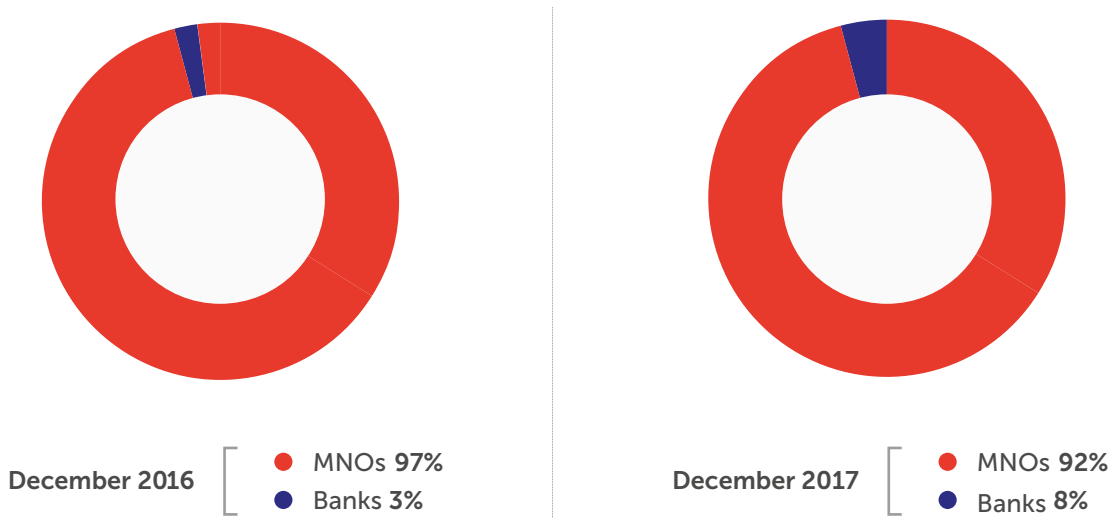


Table 1 lists the DFS products currently offered in the Sierra Leonean market, concentrated mostly in urban areas (i.e., the Western Area and district capitals). MNOs show a more diverse portfolio of services. It is also notable that, with the exception of merchant payments and international remittances, second-generation services are still nascent in the nation’s market.

Table 1
Types of digital financial services offered by provider type (2017)

Provider type	MNOs	Banks
Digital financial services	<ul style="list-style-type: none"> • Person-to-person transfers • Cash-in transactions • Cash-out transactions • Airtime purchases • Bulk payments • Merchant payments • Bill payments • Wallet-to-bank account transfers • Bank account-to-wallet transfers 	<ul style="list-style-type: none"> • Person-to-person transfers • Cash-in transactions • Cash-out transactions • International remittances • Merchant payments • Wallet-to-bank account transfers • Bank account-to-wallet transfers

2. Customers

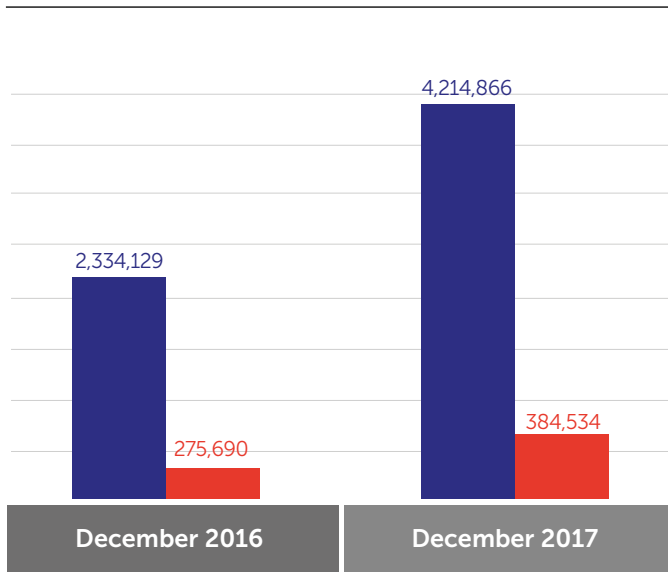
Number of registered and active customer accounts: In December 2016, there were some 2,334,129 registered customer accounts, of which 275,690 were actively used.⁸ In December 2017, there were an estimated 4,214,866 customer accounts and 384,534 active accounts (see figure 5). In other words, during 2017, the number of registered customer accounts increased by 81% while the number of active accounts increased by 39%.⁹

The **customer activity rate** represents the percentage of registered customer accounts that are actively used. The customer activity rate was 9% in December 2017, compared to 12% in December 2016. Figure 6 shows that the customer activity rate gradually decreased over the course of 2017.

The customer activity rate of banks is considerably higher than that of MNOs: 96% of registered DFS accounts at banks were actively used in December 2016 and 67% were actively used in December 2017. However, banks only represent a small fraction of the DFS market in terms of the number of customer accounts. Thus, the market average provided in the preceding paragraph mostly reflects the low customer activity rate of MNOs.

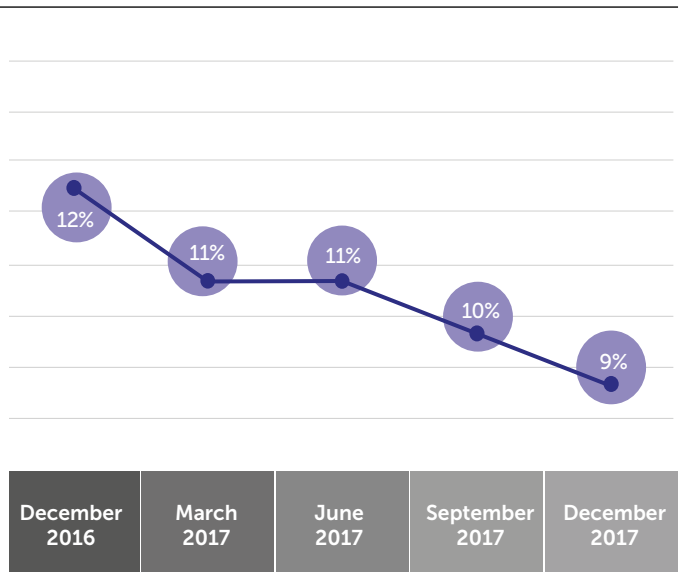
The figure of 4.2 million registered accounts mentioned above corresponds to 95% of the adult population. Combined with the decreasing customer activity rate, these data suggest that the market faces particular challenges when it comes to increasing product usage. The problem may be the result of the lack of relevant DFS use cases for customers.

Figure 5
Number of registered and active customer accounts



- Number of registered accounts
- Number of active accounts

Figure 6
Customer activity rate



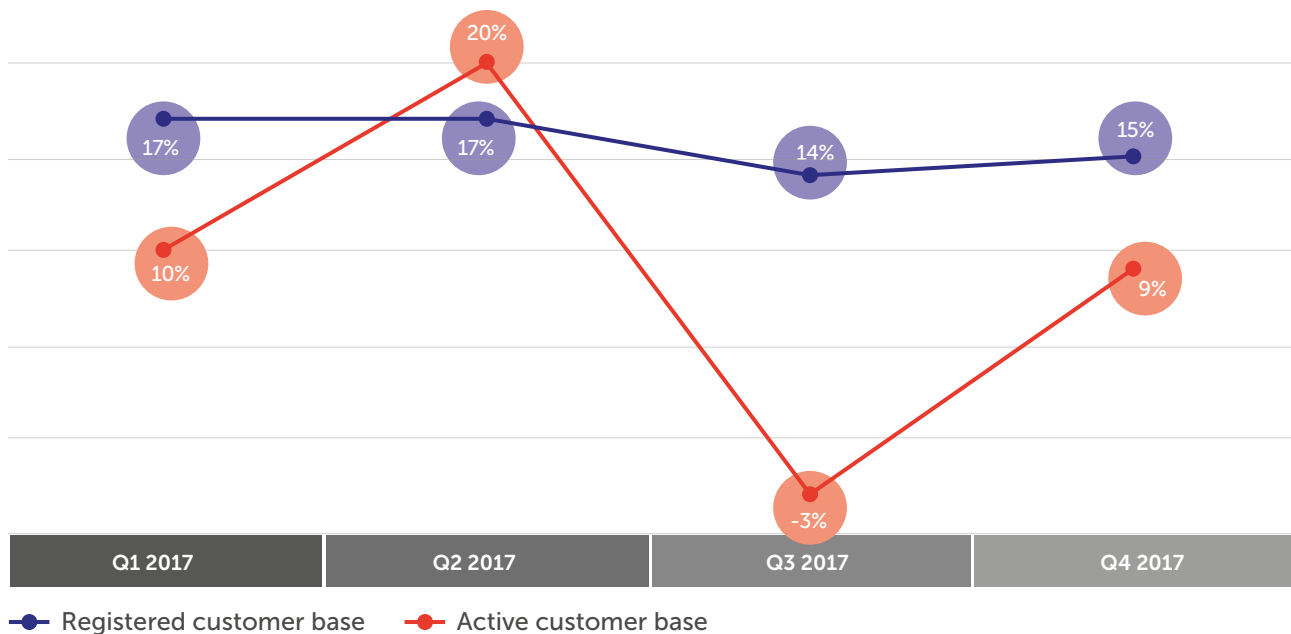
⁸ An active customer is one who has conducted at least one transaction in the past 90 days.

⁹ The comparison of the number of registered accounts at 4.2 million with the adult population at 4.4 million strongly suggests a large degree of 'double accounts' in the market (i.e., customers have multiple registered DFS accounts). This situation may be due in part to the fact that some providers automatically register a customer with mobile money whenever a SIM card is registered.

Figure 7 presents the **quarterly growth rates of registered and active customers** in 2017. With an increase of 14%–17% each quarter, the growth rate of the registered customer base was relatively stable. The growth rate of the active customer base showed more volatility, with a peak (20%) in Q2 followed by negative growth in Q3 (-3%).

Figure 7

Quarterly growth rates of registered and active customers of digital financial services (2017)



Number of transactions: The number of transactions per month averaged 5.6 million in 2017. The monthly number of transactions steadily increased over the course of the year: 5 million transactions were conducted in December 2016 while just over 6 million were conducted in December 2017.

In terms of the number of transactions completed per month per customer, figure 8 shows that the average decreased in 2017: the average number of transactions per customer was 24 in December 2017, compared to 28 in December 2016. When one looks at the monthly number of transactions per customer by provider type, figure 9 shows that the number is considerably higher for an MNO customer compared to a bank customer.

Value of transactions: In December 2017, customers conducted transactions for a total value of Le 310 billion (US\$40 million), whereas in December 2016 they conducted transactions that totalled Le 186 billion (US\$24 million). The average value per transaction increased from Le 126,072 (US\$16) in December 2016 to Le 168,185 (US\$22) in December 2017. In other words, on average, customers conducted fewer transactions per month but the transactions were larger.¹⁰

¹⁰ The APS captures the total number of transactions and the number of transactions by service type. It captures the value of transactions only by service type. Note that the aggregate number of transactions by service type is considerably lower than the total number of transactions reported. The average value per transaction is calculated using the aggregate value and the number of transactions by service type.

Figure 8

Average number of transactions per month per active customer

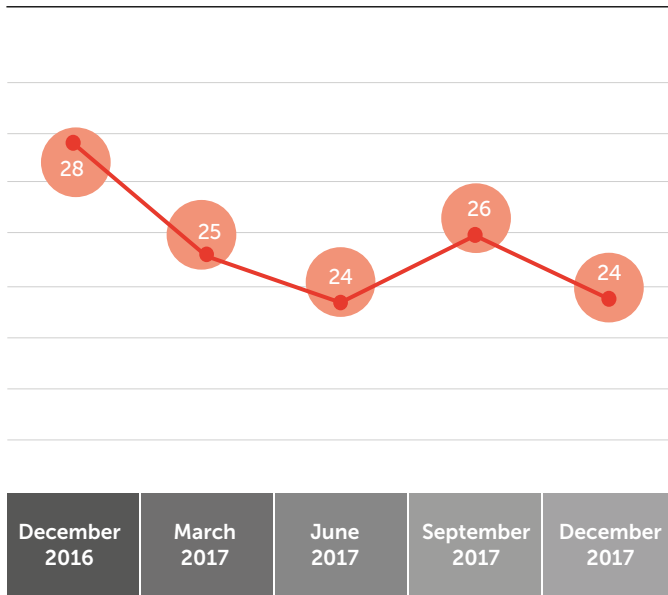
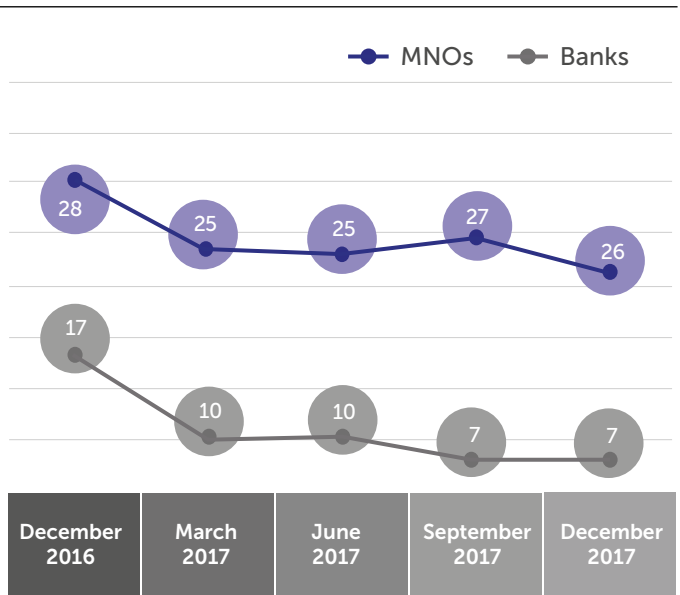


Figure 9

Average number of transactions per month per active customer by provider type



The APS also aims to provide insights into how customers use DFS. Figure 10 shows the number of **unique active users by service type** in December 2016 and December 2017. Though not consistent across service types, there was a general growth trend in the adoption of DFS in 2017. Annual growth was as low as 7% for airtime purchases and as high as 203% for bulk payments. No service showed a decline in the number of unique active users.

Figure 10

Number of unique active users by service type (x1000)

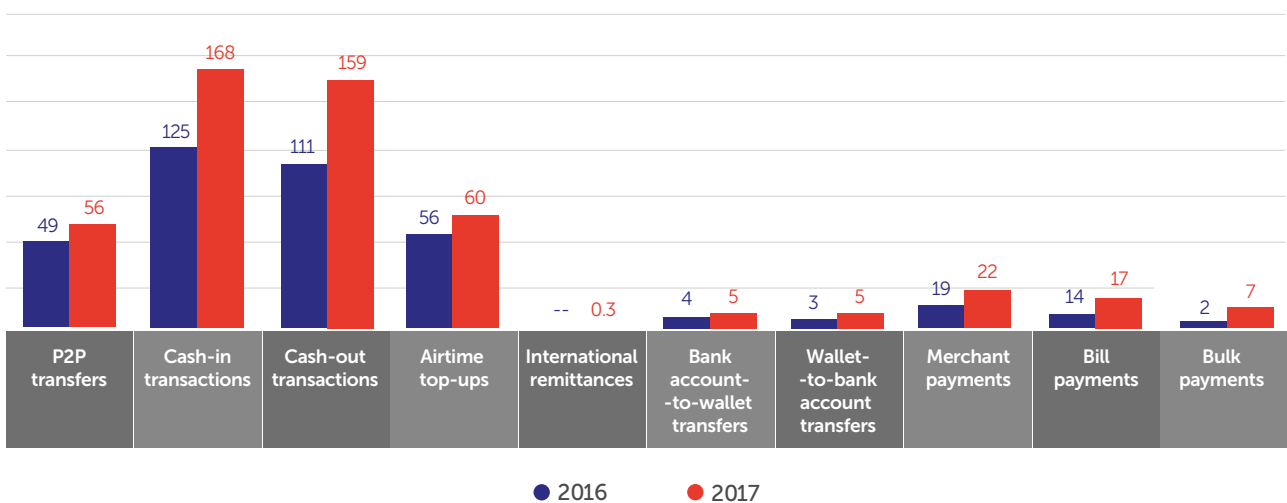


Figure 10 reveals that, in terms of the number of active customers, P2P transfers, cash-in/cash-out transactions and airtime top-ups are the most commonly used services. In turn, figures 11 and 12 highlight the share of the different service types in terms of total volume and value of transactions. P2P transfers, cash-in/cash-out transactions and airtime top-ups together account for 93% of the total volume and 96% of the total value of DFS transactions in December 2017. The share of airtime is much smaller for the value of transactions than it is for the volume of transactions, while the share of cash-in is larger for the value of transactions. In other words, airtime top-ups are frequent but small, while cash-in transactions are less frequent but relatively large.

Figure 11
Share of transaction volume by service type
(December 2017)

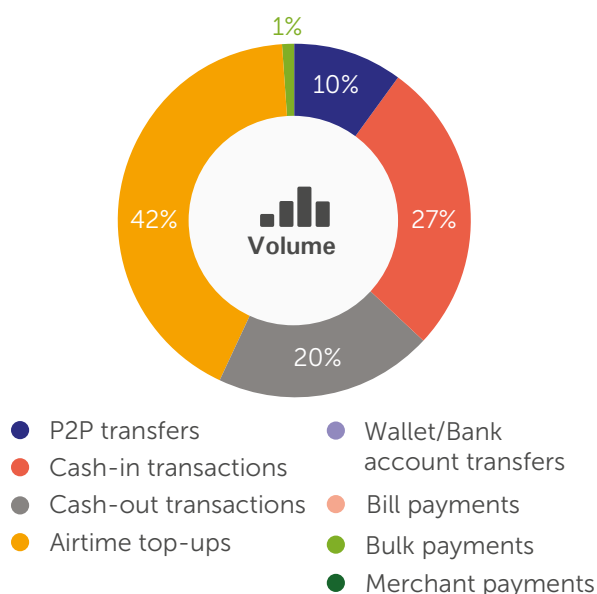
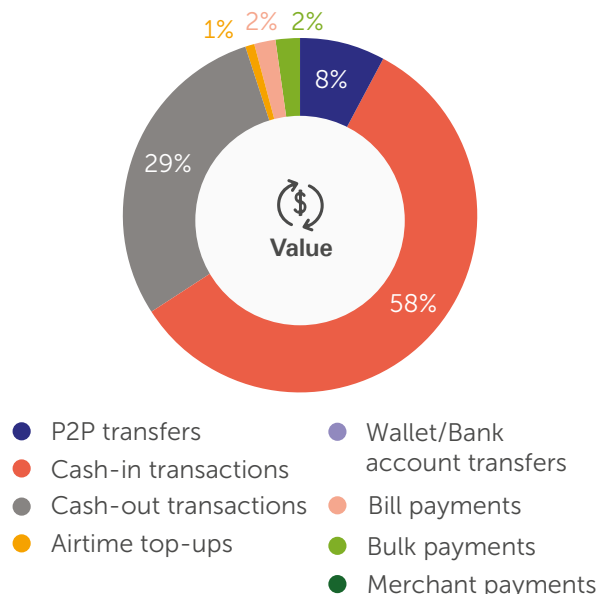


Figure 12
Share of transaction value by service type
(December 2017)



The number of unique customers conducting **P2P transfers** increased by 14% between December 2016 and December 2017. In December 2017, P2P transfers constituted 8% of all DFS transactions, both in terms of volume and value. The average value of a P2P transfer was Le 182,456 (US\$23).

In 2017, the number of unique customers conducting **cash-in/cash-out transactions** increased by 35% and 43%, respectively. In December 2017, 29% of DFS were cash-in transactions, representing 58% of the total value of transactions conducted in that month. In the same month, 26% of DFS were cash-out transactions, corresponding to 29% of the total value. The average cash-in transaction was Le 330,628 (US\$42) while the average cash-out transaction was Le 192,698 (US\$25).

The number of customers using DFS for **airtime top-ups** was 7% higher in December 2017 than in December 2016, which was the smallest shift among the service types. With 30% of transactions, airtime top-ups comprised the largest share in terms of transaction volume in December 2017. However, these transactions corresponded to only 1% of the total value of DFS transactions in the same month. At Le 5,768 (US\$0.74), airtime had the lowest average transaction value across the different services.

Wallet/Bank account transfers include push-and-pull services between mobile money wallets and bank accounts. While the absolute number of customers using these services is still relatively low, the number of customers conducting wallet-to-bank account and bank account-to-wallet transactions did increase by 48% and 43%, respectively, in 2017. This trend was reflected in an increase in the monthly number of wallet-to-bank transfers from 4,814 in December 2016 to 84,080 in December 2017. The latter represented nearly 5% of all DFS transactions. In December 2017, the average transaction value for a bank account-to-wallet transfer was Le 2,756 (US\$0.35), compared to an average Le 4,630 (US\$0.59) for a wallet-to-bank account transfer.

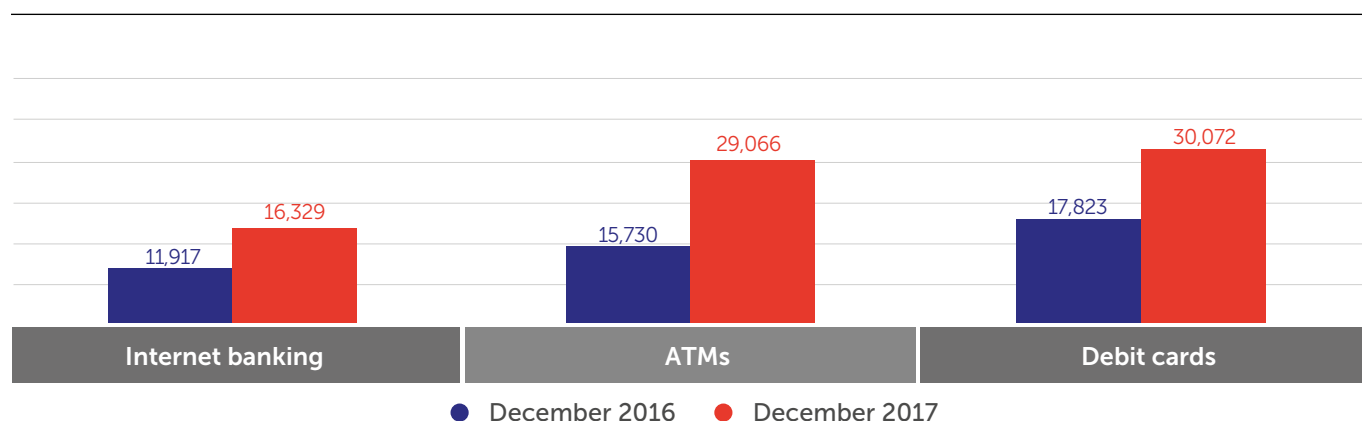
The number of unique customers conducting **bill payments** increased by 16% between December 2016 and December 2017. In December 2017, they constituted 2% of all DFS transactions, both in terms of volume and value. The average bill payment was Le 159,592 (US\$20).

The number of customers using **bulk payments** more than tripled in 2017, but the actual number remained small at 6,560 active users reported. In December 2017, only 1% of DFS transactions involved bulk payments, corresponding to 2% of the total value of DFS transactions. The average value of a bulk payment increased from Le 268,560 (US\$34) in December 2016 to Le 369,169 (US\$47) in December 2017. Note that bulk payments include many-to-one transactions (i.e., government-to-person, business-to-person, donor-to-person, government-to-business and business-to-business) and one-to-many transactions (i.e., person-to-government and business-to-government). In Sierra Leone, 98% of bulk payments are one-to-many transactions.

Merchant payments are discussed in the 'Merchants' section below.

Banks in Sierra Leone offer DFS through Internet banking as well as ATM and debit cards and mostly target salaried employees and businesses in the formal sector. Figure 13 illustrates the increase in the number of active customers using these services between December 2016 and December 2017.

Figure 13
Number of active bank customers using the Internet as well as ATM and debit cards



DFS can be categorized as first- or second-generation services. First-generation services include P2P transfers, cash-in/cash-out transactions, airtime top-ups and bill payments. Second-generation services are more advanced and include digital savings, loans, insurance and merchant payments. Second-generation services currently offered in Sierra Leone include international remittances and merchant payments.

Figures 14 and 15 show the volume and value of transactions conducted using first- and second-generation services in December 2016 and December 2017. Although second-generation services show a more pronounced increase, they still represent a very small portion of total transactions conducted in terms of volume and value. In December 2017, just 0.04% of the total number of transactions conducted were second-generation services.

Figure 14
First-generation digital financial services:
Transaction volume and value (Le)

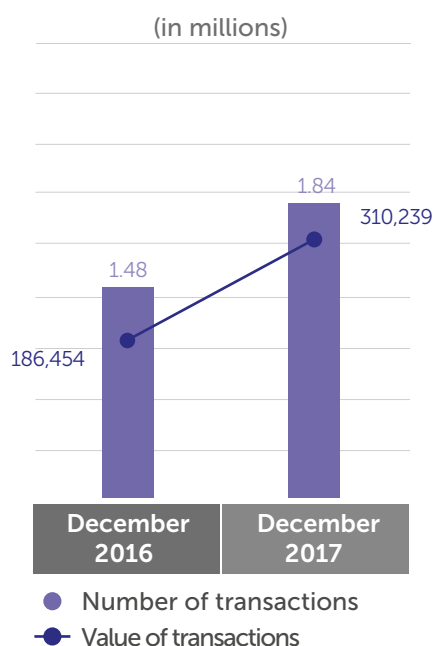
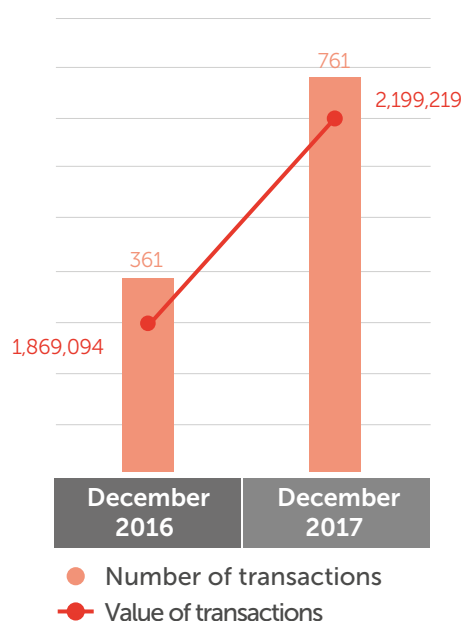


Figure 15
Second-generation digital financial services:
Transaction volume and value (Le)



Customer profiles: The APS data did not allow for an analysis of the customer base in terms of gender or rural/urban location because DFS providers did not provide disaggregated data (with the exception of one bank).

3. Agents

Working on the front lines, agents are often the first, and sometimes the only, interface customers have with DFS. They perform a range of functions, including registering new customers, conducting cash-in/cash-out transactions, resolving customers' queries, and combating money laundering and the financing of terrorism by enforcing 'know-your-customer' regulations. In Sierra Leone, MNOs are the only DFS providers with agent networks. Banks that offer DFS rely on the agent networks of MNOs.

Registered and active agents: As figure 16 demonstrates, in December 2016, there were 4,749 registered agents, of whom 2,239 were active.¹¹ In December 2017, there were 6,077 registered agents, of whom 3,346 were active. In other words, in 2017, the number of registered agents increased by 28% and the number of active agents increased by 49%. This finding corresponds to an increase from 53 to 76 active agents per 100,000 adults. As figure 17 shows, the increase in the number of active agents was gradual over the course of 2017.

The **agent activity rate** is the percentage of registered agents who are active. Figure 18 reveals that the agent activity rate increased from 47% in December 2016 to 55% by December 2017.

Figure 16
Number of registered and active agents

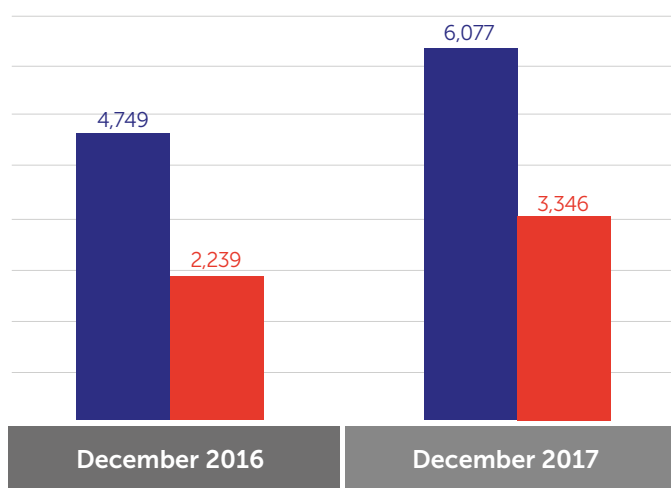
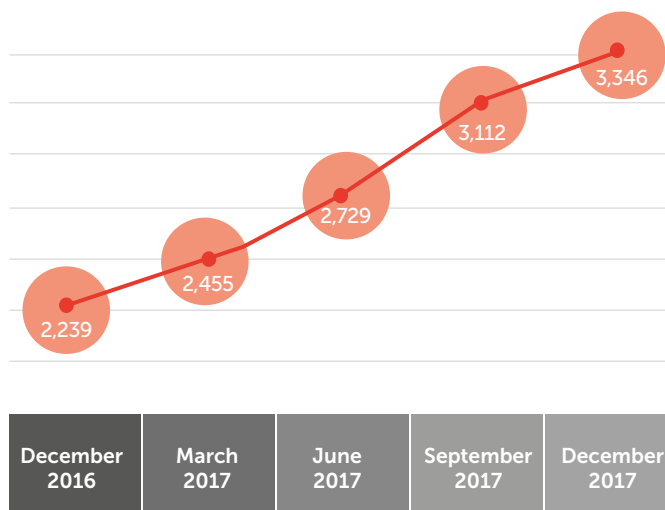


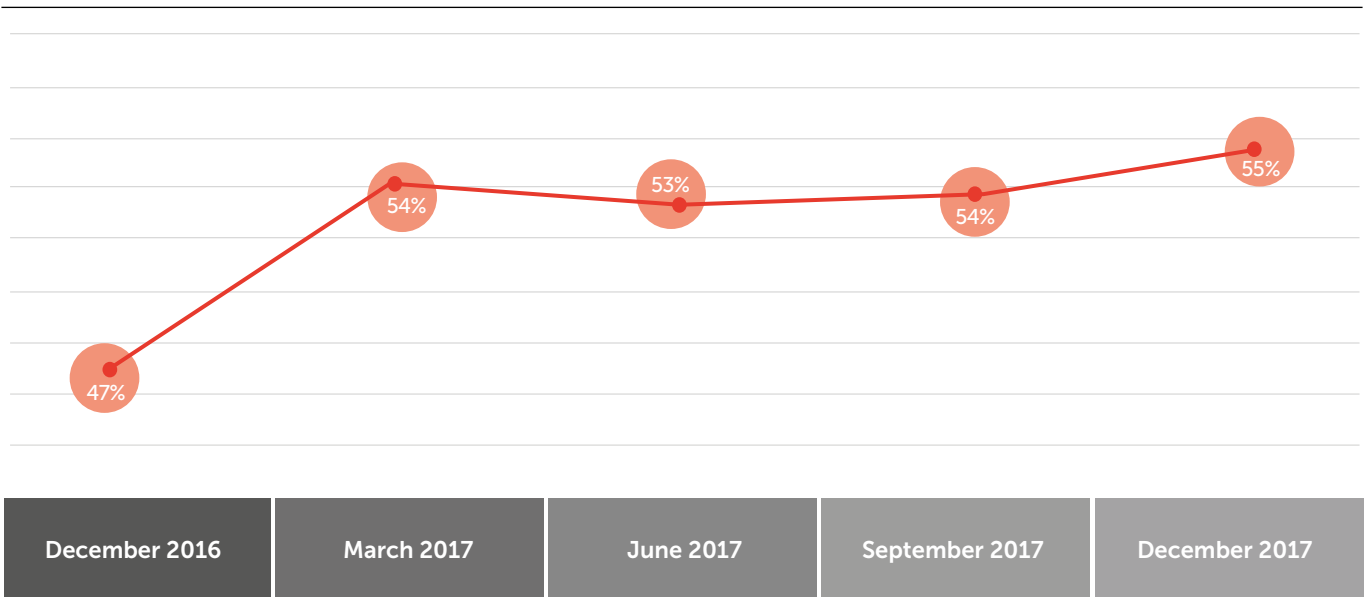
Figure 17
Number of active agents (30 days)



- Number of registered agents
- Number of active agents (30 days)

¹¹ Active agents are considered those who have conducted at least one transaction in the past 30 days.

Figure 18
Agent activity rate



Transactions with agents: Figure 19 focuses on the volume and value of transactions conducted with agents. The monthly volume of such transactions steadily increased from 693,165 in December 2016 to 2,848,189 by December 2017. The total monthly value of these transactions showed a similar trend. Consequently, the average value of a transaction conducted with an agent was relatively constant in 2017 and averaged Le 233,454 (US\$30) per transaction over the course of the year.

In December 2017, each agent conducted an average of 851 transactions, for an aggregate value of Le 216 million (US\$27,692). These amounts were up from December 2016 when agents only averaged 310 transactions, for an aggregate value of Le 68 million (US\$8,718). Figure 20 shows that there was a significant increase between December 2016 and March 2017, while the number and value of transactions per agent were relatively constant between March 2017 and December 2017.

Figure 19
Volume and value (billion Le) of transactions at agent locations per month

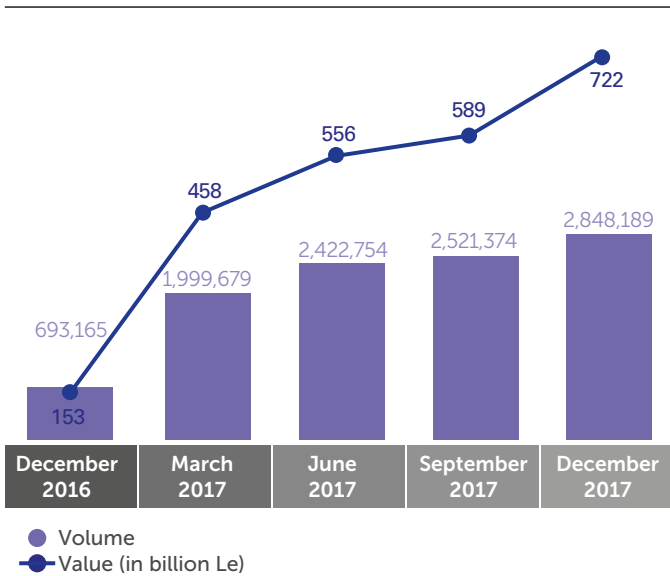
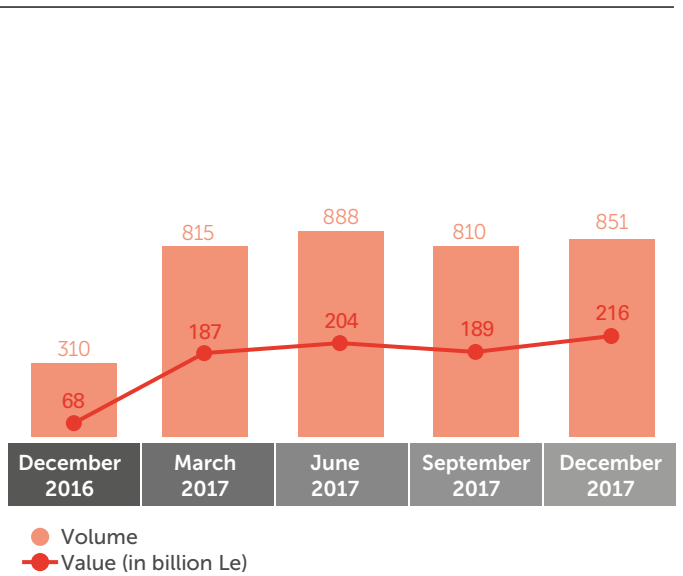


Figure 20
Volume and value (million Le) of transactions per agent per month



In theory, growth in the total number of transactions could be the result of an increase in the number of active customers and/or an increase in the number of transactions conducted by active customers. In 2017, the number of active agents grew by 49% while the number of active customers increased by 39%. In other words, the active agent base grew faster than the active customer base, suggesting that the increase in the total number of transactions conducted by agents was predominantly the result of existing customers conducting more transactions.

Figure 21 supports that argument. The average number of transactions conducted with an agent per active customer each month increased from 4 transactions in December 2016 to 12 transactions in December 2017. Similarly, the average value of transactions conducted with an agent per active customer each month increased from Le 885,901 (US\$114) in December 2016 to Le 3,100,000 (US\$397) in December 2017.

Agent commissions: The growth in the number and value of transactions conducted with agents is also reflected in the commissions paid to agents. The total value of commissions increased by 84%, from Le 1.9 billion (US\$243,590) in December 2016 to Le 3.6 billion (US\$461,538) in December 2017 (see figure 22). The average commissions earned per agent per month also increased from Le 865,750 (US\$111) in December 2016 to Le 1,064,448 (US\$136) in December 2017.

Agent profiles: Due to limited availability of data disaggregated by gender and rural/urban location, further analysis of agent profiles could not be completed.

Figure 21
Volume and value (million Le) of transactions conducted with an agent per active customer per month

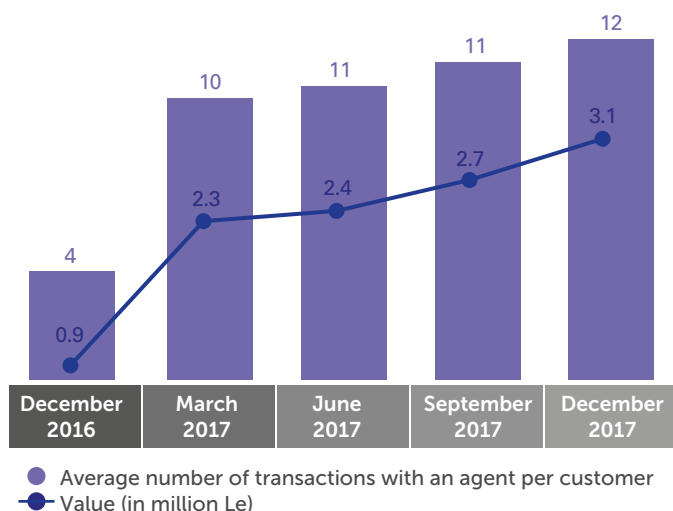
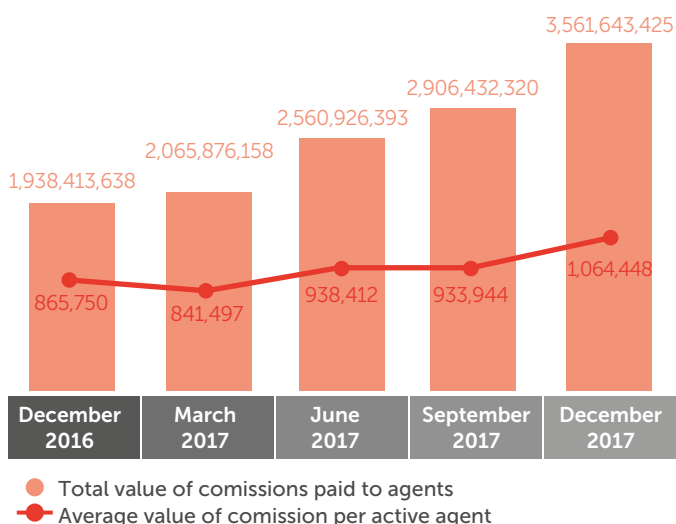


Figure 22
Total and average value of monthly agent commissions (Le)



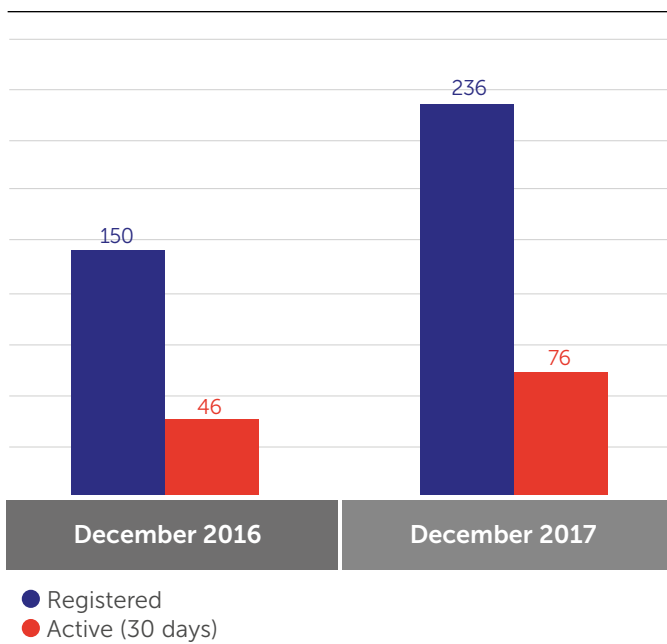
4. Merchants

DFS merchants are merchants that accept DFS for the payment of goods and services at the point of sale. Merchant payments are key to developing the DFS ecosystem and strengthening the value proposition for customers to adopt and use DFS.

In Sierra Leone, merchant payments are offered but only on a small scale. Three providers offer merchant payments, including one MNO and two banks. As figure 23 illustrates, the number of registered merchants increased from 150 in December 2016 to 236 in December 2017. As of December 2017, there were 76 active merchants in the country.¹²

Figure 23

Number of registered and active merchants



Although the number of customers using merchant payments increased by 18% in 2017, they still represented less than 1% of all DFS transactions both by volume and value. In December 2017, the total value of merchant payments was just Le 2.2 million (US\$282), with an average transaction value of Le 2,889 (US\$0.37).

¹² Active merchants are those that have conducted at least one transaction in the past 30 days.

5. Providers' performance and challenges

The APS also aims to capture qualitative insights of the overall performance of the DFS providers. The following points are key insights garnered from the providers' responses:

- More than half of the providers interviewed consider DFS to be a commercially sustainable business (i.e., the institution generates sufficient revenues from DFS to cover operating costs). All providers reported an increase in their commercial sustainability in 2017.
- Similarly, more than half of the providers invested more in DFS during 2017 than in 2016, and they plan to invest up to 50% more in 2018. Greater investment was seen both in terms of finances and staffing. There were 50% more full-time employees dedicated to DFS in 2017 than in 2016.
- Only 1 out of 10 providers reported sex-disaggregated data on its customer and agent base.

DFS providers plan on increasing access to DFS in Sierra Leone by focusing on a few key priorities. Increasing customers' level of engagement and building a broader network of agents who work with DFS are at the top of the list. Moreover, DFS providers wish to expand extensively into rural areas to reach untapped markets and to roll out new services in 2018. However, these strategic goals will only be achieved if providers successfully overcome these challenges:

- **Low levels of literacy within the target population** hinder the expansion and the improvement of DFS by many providers, particularly those providers that target vulnerable population segments.
- **Low levels of product awareness** slow the outreach of products. Unsurprisingly, solving this challenge is critical to successfully engaging with traditionally underserved population segments.
- **Low customer activity rates** are a direct result of the two previous challenges. The lower the activity rate, the harder it is for providers to be profitable and thus the less they can invest in expansion.
- **Low levels of trust in DFS** seem to be an issue in the case of underserved population segments, based on the results of the APS. Working on product awareness and customer education around DFS can help improve trust in digital finance.
- **Agent liquidity management** is a final challenge worth mentioning, as it is one factor that slows DFS expansion. It hinders both the expansion of the agent network and the growth of capacity among existing agents, particularly in rural areas. Despite the increase in agent earnings, agent profitability remains a key challenge that providers need to overcome.



3.

Opportunities and the way forward

The analysis and insights resulting from the 2017 APS reveal that, despite challenges and limited development funding, there are positive trends for DFS in Sierra Leone seen, for example, with the 80% increase in registered DFS customer accounts between December 2016 and December 2017. The leadership provided by BSL as well as the active participation of stakeholders in the DFS Working Group have contributed significantly to the creation of an enabling environment for fintech to positively disrupt the provision of financial services. However, as a sector that only really started in 2014 with the digitized Payments Programme for Ebola Response Workers, DFS players have just scratched the surface.

Leveraging advances in technology, the next phase of DFS in Sierra Leone will be about testing and building the right business models and partnerships for digital infrastructure at the community level to shift from informal cash-based transactions to DFS that can address Sierra Leoneans' latent needs around health, education and agriculture and can help them save and plan.

In the next phase, UNCDF expects to see regulators and providers collaborating on consumer research and incorporating experimental and behavioural economics into policy design and service delivery to improve consumer protection outcomes. This focus will lead to more effective and consumer-centric approaches in areas such as financial capability and pricing disclosure and, most importantly, will help cultivate the trust that is necessary for DFS to succeed.

With the announcement of the first cohort of fintechs participating in the Regulatory Sandbox Pilot Programme by BSL, UNCDF is confident that the number of DFS providers will increase, thereby driving usage, lowering costs and connecting providers. These changes will ultimately transform the DFS landscape in a fundamental way to become a more competitive and collaborative space.

In summary, the future of DFS depends upon partnership and incentive models for the private sector. With an equal focus on profitability and impact, DFS can serve as a pathway out of poverty for many and help achieve the Sustainable Development Goals. Government and development partners will play important roles in creating the enabling environment for partnerships and incentives.

Acknowledgements



The UNCDF team would like to thank the following for championing responses to the APS:



Disclaimer

This report is based on data collected through the 2017 Annual Provider Survey of Digital Financial Services and internal analysis by the UNCDF team.

Survey data

Survey data are self-reported and have not been verified independently by UNCDF; however, data are thoroughly checked and crosschecked against other benchmarks and data sources.

Confidentiality

Data published in this report have been presented in a way to protect the confidentiality of each provider. Any specific references or highlights in this report have only been presented with the approval of the provider to disclose key performance information.

Limitations

All data in this report are self-reported. In some cases, providers submitted partial data. Only a few of the providers that participated in the survey had data that were disaggregated by gender and/or rural/urban split, which limited the level of analysis that could be completed with the data. While this report is based only on data submitted by 10 DFS providers, UNCDF expects a larger number of providers to be represented in the 2018 report.

January 2019
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