



# ➤ EXECUTIVE SUMMARY OF ITU FOCUS GROUP DIGITAL FINANCIAL SERVICES OUTPUTS

ITU-T FOCUS GROUP ON DIGITAL FINANCIAL SERVICES



I n t e r n a t i o n a l T e l e c o m m u n i c a t i o n U n i o n

**ITU-T**

TELECOMMUNICATION  
STANDARDIZATION SECTOR  
OF ITU

**FG-DFS**

(03/2017)

ITU-T Focus Group Digital Financial Services

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**Executive Summary of ITU Focus Group  
Digital Financial Services Outputs**

Focus Group Technical Report

ITU-T



## FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The procedures for establishment of focus groups are defined in Recommendation ITU-T A.7. TSAG set up the ITU-T Focus Group Digital Financial Services (ITU FG DFS) at its meeting in June 2014. TSAG is the parent group of ITU FG DFS.

Deliverables of focus groups can take the form of technical reports, specifications, etc., and aim to provide material for consideration by the parent group in its standardization activities. Deliverables of focus groups are not ITU-T Recommendations.

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# **Executive Summary of ITU Focus Group Digital Financial Services Outputs**

## **About this Report**

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## Preface

### Why a Focus Group on Digital Financial Services (DFS)?

**Access to safe, high-quality financial services is very important, especially for poor and unbanked consumers around the world.** Research has demonstrated that poor people value convenient, cost-effective financial services that enable them to manage irregular income streams to smooth consumption, save small lump sums to cover larger periodic expenses (e.g., education, health, housing, life events), address income shocks (such as the loss of a job or death of a breadwinner), and borrow for consumption or business purposes.<sup>1</sup>

**DFS offer great potential to meet the financial needs of poor and unbanked consumers.** Using agents and digital channels for financial transactions can lower costs by as much as 90 per cent compared to similar transactions conducted in physical branches of financial service providers (SPs).<sup>2</sup> As a result, DFS providers (both banks and nonbanks) can offer financial services profitably in areas where bank branches and automated teller machines (ATMs) are not viable to consumers who have historically been unprofitable to serve.

**As technology continues to develop, so do the opportunities to harness innovation for financial inclusion.** Today, DFS providers are employing data analytics to develop alternative credit profiles using records of clients' electronic transaction behavior.<sup>3</sup> Meanwhile, financial technology (FinTech) firms are digitizing paper-based transaction data to identify potential demand for financial services such as credit, savings, and insurance.<sup>4</sup>

**Financial authorities are seeking to leverage DFS for financial inclusion.** In some markets, the adoption of DFS has resulted in a dramatic increase in financial inclusion. For example, eMoney pioneer Kenya saw the percentage of the population using formal financial services increase from 27.4 per cent in 2006 (when M-PESA was first launched) to 75.3 per cent by 2015.<sup>5</sup> Today, many financial authorities are increasingly viewing digital finance as a cornerstone of financial inclusion strategies.<sup>6</sup>

**At the same time, authorities are grappling with how to effectively regulate and supervise DFS.** DFS regulation is complex. In many cases, service development and delivery is being driven by non-traditional providers of financial services, such as mobile network operators (MNOs), FinTech firms, and other non-bank payment service providers (PSPs). New business models also raise new issues to address and consider, such as how to regulate the use of agents, ensure that customer funds are protected from loss, and protect consumers' data privacy, particularly when services are being delivered by agents and non-traditional financial SPs. These changes have led to an urgent need for financial authorities to effectively consult and collaborate with other public-sector stakeholders (particularly telecommunications authorities but also others such as competition, consumer protection,

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<sup>1</sup> See, e.g., Collins et al. (2009), *Portfolios of the Poor: How the World's Poor Live on \$2 a Day* <http://www.portfoliosofthepoor.com/book.asp>

<sup>2</sup> Bill & Melinda Gates Foundation (2013), *Fighting Poverty, Profitably: Transforming the Economics of Payments to build Sustainable, Inclusive Financial Systems*, <https://docs.gatesfoundation.org/Documents/Fighting%20Poverty%20Profitably%20Full%20Report.pdf>

<sup>3</sup> E.g., Costa et al. (2016), *Big Data, Small Credit: The Digital Revolution and Its Impact on Emerging Market Consumers*, <https://docs.gatesfoundation.org/Documents/Fighting%20Poverty%20Profitably%20Full%20Report.pdf>; Cook & McKay (2015), *How M-Shwari Works: The Story So Far* <https://www.cgap.org/sites/default/files/Forum-How-M-Shwari-Works-Apr-2015.pdf>.

<sup>4</sup> See, e.g., <http://www.fibrproject.org/>.

<sup>5</sup> FSD Kenya (2016), *FinAccess National Survey 2016*, <http://fsdkenya.org/publication/finaccess2016/>

<sup>6</sup> See, e.g., Tanzania National Council for Financial Inclusion (2013), *National Financial Inclusion Framework: A Public-Private Stakeholders' Initiative (2014-2016)*, <http://www.afi-global.org/sites/default/files/publications/tanzania-national-financial-inclusion-framework-2014-2016.pdf>

and data protection authorities) and private-sector stakeholders to develop a safe and enabling ecosystem for the development of digital financial services.

## ITU Focus Group on Digital Financial Services (FG DFS) for Financial Inclusion

**The ITU FG DFS was established to facilitate effective consultation and collaboration on key DFS issues.** For the first time at the global level, the **ITU FG DFS** assembled financial and telecommunications authorities, DFS providers, consumer advocates, DFS technical experts, development partners, and other key DFS stakeholders to:

1. **Increase and formalize** the collaboration between financial and telecommunications authorities with respect to digital financial services;
2. **Identify** key issues limiting the development of safe, efficient, and enabling DFS ecosystems;
3. **Analyze** how these issues have been addressed in practice and exchange information on best practices; and
4. **Develop** policy recommendations for public- and private-sector stakeholders on how to approach these issues.

**The specific objectives of the ITU FG-DFS were to:**<sup>7</sup>

1. *Identify the **technology trends** in digital financial services over the coming years and **how the role of various stakeholders in this ecosystem will evolve**. This will include identifying underlying frameworks, new business models and public private partnership arrangements necessary for digital financial services.*
2. *Establish **liaisons and relationships with other organizations which could contribute to the standardization activities** of digital financial services.*
3. *Describe the **ecosystem** for digital financial services in developed and developing countries and the **respective roles and responsibilities of the stakeholders** in the ecosystem.*
4. *Identify **successful use cases for implementation of secure digital financial services** including developing countries with a particular focus on the benefits for women.*
5. ***Suggest future ITU-T study items and related actions** for various ITU-T study groups for example on:
  - a. *Concepts, coverage, vision and use cases of digital financial services.*
  - b. *Characteristics and requirements for digital financial services.*
  - c. *Architectural framework for digital financial services including security of mobile transactions.**
6. *In collaboration with ITU-D study the **best practices related to policies, regulatory frameworks, consumer and fraud protection, business models and ecosystems** for digital financial services in developed and developing countries.*
7. *Work towards the **creation of an enabling framework for digital financial services** which could be submitted, through TSAG, for endorsement at the ITU Global Regulators Symposium.*

## Relation to other relevant work

**The work of the ITU FG DFS builds on prior and ongoing work by key international stakeholders.** In analyzing DFS solutions and identifying best practices for facilitating the implementation of safe and enabling DFS on a global scale, the ITU FG DFS benefited from and expanded upon the work of various other international stakeholders, including:

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<sup>7</sup> International Telecommunication Union (2014), [Terms of Reference of the Focus Group Digital Financial Services](#).



- The Committee on Payments and Market Infrastructures (CPMI) of the Bank for International Settlements (BIS) and World Bank Group's (WBG) Report on Payment Aspects of Financial Inclusion (PAFI)<sup>8</sup>;
- The G20 High-Level Principles for Digital Financial Inclusion<sup>9</sup>;
- The G20 High-Level Principles on Financial Consumer Protection<sup>10</sup>;
- The Bill & Melinda Gates Foundation's (BMGF) Level One Project Guide (L1P)<sup>11</sup>;
- A variety of reports developed by CGAP<sup>12</sup>, GSMA<sup>13</sup>, and the Alliance for Financial Inclusion (AFI)<sup>14</sup>, a network of financial regulatory institutions from developing countries.

## Next steps

**To build upon the momentum developed through the Focus Group, the BMGF, the CPMI, the ITU, and the WBG – in collaboration with other public- and private-sector stakeholders – are seeking to launch a global initiative on financial inclusion.** This multiparty initiative expects to work with several countries to strengthen the enabling environment for DFS through implementation of the recommendations and principles developed by the ITU, CPMI, WBG, and the BMGF.<sup>15</sup>

We welcome your input and support as we continue our collaborative work to develop safe, enabling DFS ecosystems that provide valuable services to poor and underserved consumers in a commercially sustainable manner.

Sacha Polverini  
Chair, ITU FG-DFS

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<sup>8</sup> Payment Aspects of Financial Inclusion (PAFI), April 2016, <https://www.bis.org/cpmi/publ/d144.htm>

<sup>9</sup> The G20 High-Level Principles for Digital Financial Inclusion  
<https://www.gpfi.org/sites/default/files/G20%20High%20Level%20Principles%20for%20Digital%20Financial%20Inclusion.pdf>

<sup>10</sup> The G20 High-Level Principles on Financial Consumer Protection, <https://www.oecd.org/g20/topics/financial-sector-reform/48892010.pdf>

<sup>11</sup> Bill and Melinda Gates Foundation, Sept. 2015, The Level One Project Guide-Designing a New System for Financial Inclusion, <https://www.betterthancash.org/tools-research/resources/the-level-one-project-guide-designing-a-new-system-for-financial-inclusion>

<sup>12</sup> CGAP, <http://www.cgap.org/publications>

<sup>13</sup> GSMA, [http://www.gsma.com/mobilefordevelopment/resources-2?utm\\_source=Nav](http://www.gsma.com/mobilefordevelopment/resources-2?utm_source=Nav).

<sup>14</sup> Alliance for Financial Inclusion, <http://www.afi-global.org/publications/>

<sup>15</sup> See Sacha Polverini (2016), ITU to Join New Global Initiative to Expand Digital Financial Inclusion, <http://www.afi-global.org/publications/>

## **Acronyms**

3G	Third Generation Mobile
AML	Anti-Money Laundering
API	Application Programming Interface
ATM	Automated Teller Machine
DLT	Distributed Ledger Technology
DFS	Digital Financial Services
EDGE	Enhanced Data for Global Evolution
GPR	General Purpose Reloadable
GPRS	General Packet Radio Service
IVR	Interactive Voice Response
KYC	Know Your Customer
MNO	Mobile Network Operator
OTA	Over the Air
P2P	Person-to-Person
PIN	Personal Identification Number
PoS	Point of Sale
PSP	Payment Service Provider
QoS	Quality of Service
SIM	Subscriber Identity Module
SMS	Short Message Service
SOV	Store of Value
SP	Service Provider
UI	User Interface
USSD	Unstructured Supplementary Service Data
UX	User Experience
WAP	Wireless Application Protocol

## 1 Creating an Enabling DFS Ecosystem

**The ITU Focus Group on DFS (hereinafter, “ITU FG DFS” or “Focus Group”) was established as a multiparty consultative body for fostering the development of safe, enabling DFS ecosystems.** The overall objectives of the Focus Group were to: (i) increase and formalize the collaboration between financial and telecommunications authorities with respect to DFS; (ii) identify key issues limiting the development of safe, enabling DFS ecosystems; (iii) analyse how these issues have been addressed in practice and exchange information on best practices; and (iv) develop policy recommendations for authorities and other stakeholders on how to approach these issues in their countries. The Focus Group brought together financial and telecommunications authorities, private-sector stakeholders, consumer advocates, DFS technical experts, development partners, and other key DFS stakeholders to collaboratively explore these issues and develop consensus recommendations.

**To achieve these objectives, the Focus Group established four working groups to study the DFS environment.** The four working groups addressed the following sub-topics: (i) The DFS Ecosystem (see Figure 1); (ii) Consumer Experience and Protection; (iii) Technology, Innovation and Competition; and (iv) Interoperability. Each working group produced a [series of reports](#) and developed a set of recommendations (see Annex 1), all of which were approved by the broader focus group.

**Research focused on understanding the roles, priorities, and challenges key stakeholders are facing in the DFS ecosystem.** Key stakeholders discussed in the reports and recommendations include public-sector stakeholders (enabling environment), consumers (demand side), and DFS providers (supply side). For each stakeholder group, the Focus Group: (i) identified relevant actors; (ii) discussed key needs and/or challenges faced by the group; and (iii) offered solutions for meeting these needs and addressing these challenges.

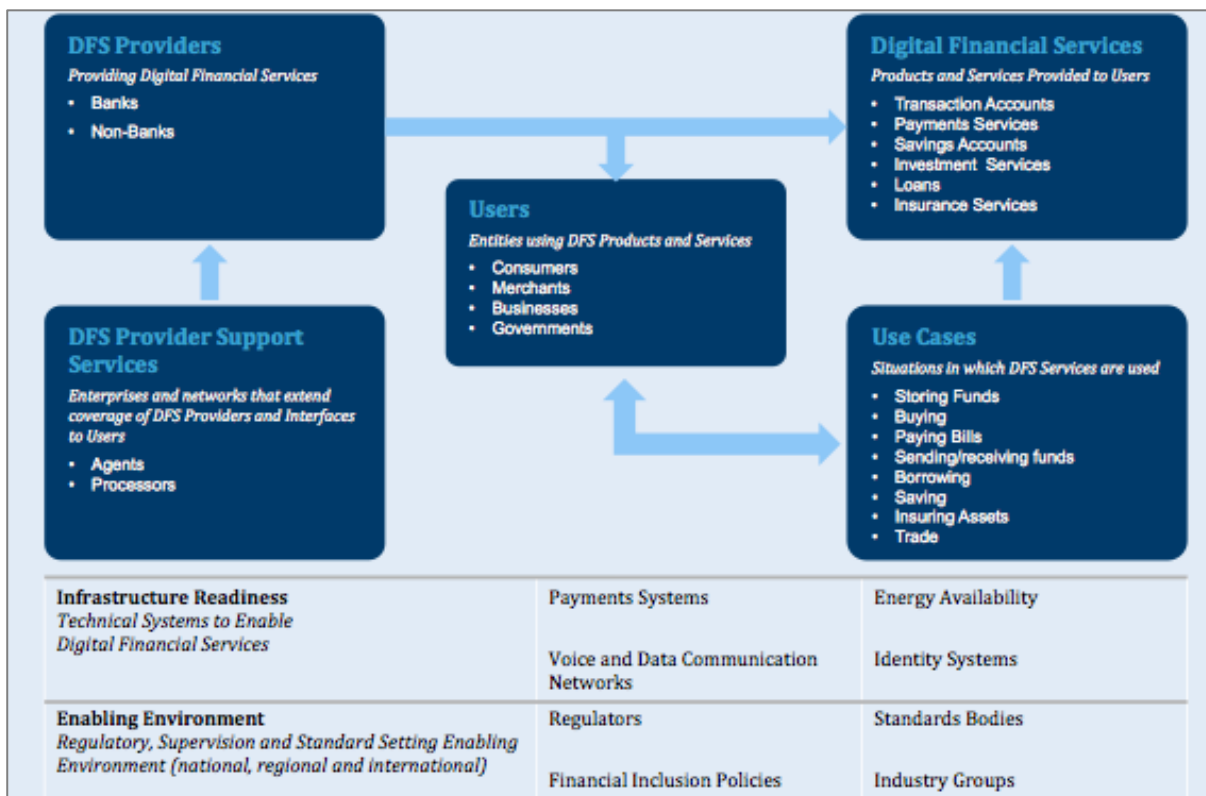


Figure 1 – The DFS ecosystem

## 2 Understanding the DFS enabling environment (regulators and policymakers)

### 2.1 Which actors are responsible for DFS policy, regulation, and supervision?

**Financial regulators and policymakers (hereinafter, “authorities”)** assume **primary responsibility for DFS policy development, regulation, and supervision.** In most countries, the central bank is primarily responsible for regulation and supervision, though some countries have established a separate entity for financial supervision. Financial authorities also typically assume primary responsibility for developing financial inclusion policies and strategies in coordination with other public- and private-sector stakeholders.

**Telecommunications authorities are playing an increasingly prominent role in DFS policy development.** As the role of mobile network operators (MNOs) and their subsidiaries in driving DFS development has grown, there has been increasing recognition of the need for financial authorities to engage with telecommunications authorities. The mandate of telecommunications authorities is particularly relevant with respect to issues such as quality of service (QoS), data privacy and security, consumer protection, interoperability, and access to telecommunications bearer channels such as Unstructured Supplementary Service Data (USSD).

**Other relevant regulatory actors include competition, data privacy, consumer protection, and tax authorities.** In some countries, competition authorities are asked to weigh in on issues such as access to agent networks or business-critical technology such as the USSD channel. For example, in 2014, the Competition Authority of Kenya ordered Safaricom to eliminate exclusivity agreements with their eMoney agents.<sup>16</sup> With respect to data privacy, developing countries are increasingly adopting laws governing data privacy and protection and establishing data privacy regulatory bodies that regulate DFS providers. In Ghana, for example, the Data Protection Act requires all “*data controllers*” (which are defined to include DFS providers) to register with the Data Protection Commission.<sup>17</sup> Some countries have national consumer protection authorities with broad mandates that cover DFS and other financial services. In Perú, for example, the National Institute for the Defense of Competition and Intellectual Property (INDECOPI) assumes primary responsibility for resolution of disputes between financial institutions and consumers.<sup>18</sup> Tax authorities also play an important role; tax incentives can promote adoption of electronic payments,<sup>19</sup> while taxes on DFS and/or mobile devices (sometimes considered luxury goods) could impact the achievement of national financial inclusion objectives.<sup>20</sup>

**The cross-cutting nature of DFS regulation and supervision can create uncertainty.** In particular, many financial and telecommunications authorities highlighted the challenges of delineating responsibilities with respect to DFS regulation and supervision. Therefore, one of the objectives of the Focus Group was to develop tools to help authorities clarify the roles and responsibilities of the various regulatory actors.

<sup>16</sup> Mazer et al. (2014), Agents for Everyone: Removing Agent Exclusivity in Kenya & Uganda, <http://www.cgap.org/blog/agents-everyone-removing-agent-exclusivity-kenya-uganda>.

<sup>17</sup> See <https://www.dataprotection.org.gh/registration>.

<sup>18</sup> See SBS & CGAP (2010), Financial Inclusion and Consumer Protection in Peru: The Branchless Banking Business, Art. 2.1.

<sup>19</sup> E.g., Sung et al. (2017), Can Tax Incentives for Electronic Payment Reduce the Shadow Economy? <http://documents.worldbank.org/curated/en/105841483990962599/pdf/WPS7936.pdf>.

<sup>20</sup> See, e.g., The Economist (2005), Making the Connection, <http://www.economist.com/node/4465936>.

## 2.2 Challenges and solutions

**DFS authorities need to create an enabling DFS environment for financial inclusion.** To do so, they need to develop policies and regulations that foster innovation, promote competitive markets, and enable the efficient and sustainable provision of high-quality financial services.<sup>21</sup>

**At the same time, authorities need to effectively mitigate risk.** They need to ensure that consumers – particularly those who are poor and economically vulnerable – are protected from unfair or deceptive practices or the loss of their funds.<sup>22</sup> In addition, authorities need to ensure that the risks introduced by new providers and business models are effectively managed to maintain financial sector stability.

**For DFS authorities, the key challenges relate to striking the right balance that fosters the development of a safe and enabling DFS ecosystem.** Authorities need to enable innovation and promote competition. At the same time, they need to mitigate risk, protect consumers, and maintain financial sector stability and integrity. To effectively strike this balance, DFS authorities should: (i) take steps to promote competition and a level DFS playing field; (ii) collaborate and coordinate with public- and private-sector stakeholders when developing policy and regulation;<sup>23</sup> and (iii) ensure that DFS providers are effectively supervised.

### 2.2.1 Competition<sup>24</sup> and level playing field

**DFS authorities can adopt a variety of measures to promote a competitive DFS environment.** These include permitting both banks and nonbanks to offer DFS, facilitating consumer switching from one DFS provider to another, and fostering the development of a more open DFS architecture, including through open application programming interfaces (APIs), among others. In addition, they should ensure that operators of payment infrastructures develop risk-based, objective access criteria and that authorized payment service providers (PSPs) can access payment infrastructures – whether via direct or indirect access – under fair and transparent conditions.

**In addition, authorities should take steps to level the playing field for DFS provision.** Recommended measures include: (i) adopting a service-based rather than institution-based approach to DFS regulation to ensure that different providers offering the same services have similar rights and are subject to similar obligations; (ii) ensuring that consumer protection regulations apply to all financial products provided digitally and that DFS consumers have comparable consumer protection to consumers of traditional banking services; (iii) providing comparable treatment of bank agents and nonbank agents with respect to market conduct regulation; and (iv) ensuring that MNOs are not restricting other DFS providers' access to the telecommunications infrastructure in order to limit competition or abuse a dominant market position.

**Authorities should also take steps to develop and strengthen the application of competition law principles to the DFS ecosystem.** They should: (i) use memoranda of understanding (MoUs) to delineate and coordinate the competition-related competencies and responsibilities of different authorities/institutions and should (ii) support efforts to build the capacity of new and existing institutions responsible for compliance with competition law, both with respect to DFS, and in general. In addition, authorities should strengthen the investigative and enforcement powers of these

<sup>21</sup> Cf. Committee on Payments and Market Infrastructures & World Bank Group (2016), Payment Aspects of Financial Inclusion, Guiding Principle 2, <http://www.bis.org/cpmi/publ/d144.pdf>.

<sup>22</sup> Consumer protection is important not only for prevention of harm to consumers but also to promote adoption and continued use of DFS. See [Section 4. Understanding the DFS Demand Side \(Consumers\)](#): Challenges and solutions, *infra*.

<sup>23</sup> Specific recommendations with respect to DFS risk mitigation and consumer protection are discussed below in the demand-side and supply-side sections.

<sup>24</sup> For an in-depth discussion of DFS competition issues, see ITU FG DFS Report (2017), [Competition aspects of DFS](#).

institutions, which should be able to: (i) detect, investigate, sanction, and eliminate anti-competitive behavior; and (ii) preempt future market distortions through merger control.

**Looking to the future, DFS authorities should create a safe, enabling environment that fosters technological innovation.** Authorities should build their capacity to understand DLT and its potential impact on DFS markets. When regulating DFS providers, instruments, and services that rely upon DLT or other FinTech, authorities should adopt a functional approach that regulates according to the type of service (and its concomitant risks) rather than the type of provider. In addition, DFS authorities should create space for DLT and other FinTech innovation by developing regulatory “sandboxes” and embracing a “test and learn” regulatory approach.

### 2.2.2 Collaboration and coordination<sup>25</sup>

**Effective collaboration and coordination is critical to the development of a safe and enabling DFS ecosystem.** Financial authorities should regularly engage with other public-sector actors (e.g., authorities responsible for telecommunications, competition, data protection, and taxation), DFS providers, consumer advocates, DFS technical experts, development partners, and other DFS stakeholders. Whether the topic of concern is interoperability, third generation mobile (3G) coverage, service quality, fraud mitigation, data privacy, or digital credit, effective collaboration can help to ensure that policy and regulatory decisions contribute to healthy DFS ecosystem development.

**DFS authorities should establish formal mechanisms for coordination.** Mechanisms such as a national payments council can facilitate a collaborative approach to DFS regulation. Financial and telecommunications authorities should also consider signing a memorandum of understanding (MoU) or similar agreement to guide their collaboration to foster the development of a safe and enabling DFS ecosystem.<sup>26</sup>

### 2.2.3 Effective oversight and supervision

**DFS authorities should ensure that adequate attention is devoted to DFS oversight and supervision.** Providers should be required to submit regular electronic reports on a variety of DFS-related indicators, such as QoS, agent activity, transaction volumes, complaints, and fraud. DFS authorities should also use consumer research methods such as mystery shopping and short message service (SMS)/interactive voice response (IVR) surveys to complement DFS provider reporting. In addition, central banks in DFS markets with interoperability arrangements should address interoperability in payment system oversight frameworks.

## 3 Understanding the DFS demand side (consumers)

### 3.1 How can DFS benefit poor and unbanked consumers?

**Poor and unbanked consumers could benefit from a wide variety of formal financial services.** Research demonstrates that they would welcome affordable, convenient, well-designed and secure services that help them to smooth consumption, save small sums to cover larger periodic expenses, address income and other shocks, and borrow for consumption or business purposes.<sup>27</sup>

**Basic DFS transaction accounts can help poor and unbanked people to address many of these needs.** A typical DFS transaction account can help **smooth consumption** by enabling consumers to save their low, irregular income streams without paying monthly maintenance fees and by facilitating

<sup>25</sup> Cf. Committee on Payments and Market Infrastructures & World Bank Group (2016), Payment Aspects of Financial Inclusion, Guiding Principle 1, <http://www.bis.org/cpmi/publ/d144.pdf>.

<sup>26</sup> See ITU FG DFS Report (2016), [Regulation in the Digital Financial Services Ecosystem](#), for an MoU template.

<sup>27</sup> See, e.g., Collins et al. (2009), Portfolios of the Poor: How the World’s Poor Live on \$2 a Day, <http://www.portfoliosofthepoor.com/book.asp>.

receipt of a money transfer from a distant friend or family member in cases of financial shortfalls. These accounts can also be used to **build small lump sums** to cover larger periodic expenses such as school fees, hospital fees, weddings, or funerals.

**In addition, basic DFS transaction accounts can facilitate access to other financial services.** As noted earlier, DFS infrastructures and improved data analytics are enabling providers to cost-effectively offer credit, savings, insurance, and investment services to poor and unbanked consumers. Customers who want to **save** beyond the maximum balance limit of their eMoney account can link their account to a deposit account held by a bank or similar financial institution. **Income shocks**, such as loss of a job or death of a breadwinner, can be addressed through life or disability microinsurance that is delivered through linkages with DFS transaction accounts. Customers can also use DFS-enabled credit services to **borrow** for consumption or business purposes.<sup>28</sup>

**To promote DFS uptake by poor and unbanked consumers, the following elements need to be properly addressed:**

- **Design and value proposition:** As noted earlier, poor and unbanked consumers seek services that help them to address their needs, including consumption smoothing, saving small lump sums, addressing income shocks, and borrowing for consumption or business purposes.
- **Convenience:** Services should be accessible locally (and remotely, if possible). In addition, consumers should be able to conduct transactions and access stored funds outside of traditional banking business hours, and providers should ensure adequate liquidity management infrastructure so that funds are accessible upon demand.<sup>29</sup>
- **Safety:** Consumers need to have confidence that funds entrusted to a DFS provider will be available for reimbursement upon demand.
- **Affordability:** Services should be affordable, and fees should be designed in a manner that makes sense for low-income consumers. Monthly account maintenance fees are particularly unsuitable for DFS transaction accounts, as most customers maintain very low balances on these accounts.<sup>30</sup>

### 3.2 Challenges and solutions

**Many poor and unbanked consumers share certain characteristics that impact their ability and propensity to adopt DFS.** Some of the characteristics that should be carefully considered by DFS providers and authorities include: (i) low education and literacy levels (including digital literacy); (ii) gender-related disparities in access to and familiarity with formal financial services and mobile phones; and (iii) prevalence in remote areas.

#### *Education and literacy*

**Most poor and unbanked consumers have low levels of formal education.** Some are included in the 17 per cent of the world's adult population that is illiterate,<sup>31</sup> while many others have little or no formal education, which impacts literacy, numeracy, and digital literacy.

<sup>28</sup> For more information on mobile savings, insurance, and credit services, see GSMA (2015), 2015 Mobile Insurance, Savings & Credit Report, <http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/08/Mobile-Insurance-Savings-Credit-Report-2015.pdf>.

<sup>29</sup> Cf. Committee on Payments and Market Infrastructures & World Bank Group (2016), Payment Aspects of Financial Inclusion, Guiding Principle 5, <http://www.bis.org/cpmi/publ/d144.pdf>.

<sup>30</sup> As of June 2015, the median balance of a mobile money account was USD 4.70. GSMA (2015), 2015 Mobile Insurance, Savings & Credit Report, <http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/08/Mobile-Insurance-Savings-Credit-Report-2015.pdf>.

<sup>31</sup> United Nations Educational, Scientific and Cultural Organization (UNESCO), Statistics on Literacy, <http://www.unesco.org/new/en/education/themes/education-building-blocks/literacy/resources/statistics>.

## ***Gender-related disparities***

**Poor women face particular challenges accessing DFS.**<sup>32</sup> In the developing world, women are less likely to be financially included, with 59 per cent of men and only 50 per cent of women owning an account as of 2014.<sup>33</sup> DFS adoption may actually be extending this gap, as respondents to a 2015 GSMA survey on mobile money adoption indicated that women constituted only 37 per cent of their registered customers.<sup>34</sup> Women are also twice as likely as men to be illiterate, constituting 2/3 of the world's illiterate adult population.<sup>35</sup>

### ***Prevalence in remote areas***

**Many poor and unbanked consumers reside in remote areas where mobile network availability and access to agents is limited.** Of these, many rely on farming for some or all of their income. There are over 475 million small farms worldwide,<sup>36</sup> and approximately 1.5 billion people in low-income countries live in smallholder households.<sup>37</sup> With their low, irregular incomes and high exposure to income shocks, smallholder farmer families could benefit from access to safe, convenient, and affordable services that would enable them to smooth consumption, save small lump sums, address income shocks, and borrow for consumption or business purposes. In practice, however, limited mobile and agent network coverage, poor service quality, and literacy challenges discourage poor and unbanked consumers living in remote areas from adopting DFS.

**These literacy, gender, and geographic accessibility issues exacerbate the challenges faced by poor and unbanked consumers with respect to adoption and usage of DFS.** These challenges include: (i) limited account functionality; (ii) difficulty navigating complicated DFS menus and user interfaces (UIs); (iii) problems with DFS reliability and safety; (iv) poor disclosure of pricing, fees, and terms and conditions; and (v) data privacy and protection.

### **3.2.1 Account functionality**

**Account functionality is a significant barrier to greater DFS uptake by poor and unbanked consumers.** Today, most low-income consumers consider DFS transaction account functionality to be inadequate for such accounts to serve as their primary financial tool. For low-income consumers to increase DFS adoption and usage, they will need to be able to: (i) send funds seamlessly and cost-effectively across different DFS providers (interoperability); (ii) receive social benefits and other government-to-person (G2P) payments; and (iii) spend funds digitally without cashing out (merchant payment acceptance).

#### **3.2.1.1 Interoperability**

**DFS authorities and providers should collaborate to achieve safe and commercially viable DFS interoperability.** Authorities can promote interoperability through engagement with DFS providers and other key stakeholders.<sup>38</sup> Financial authorities should take the lead on DFS interoperability

<sup>32</sup> See generally Leora Klapper (2015), Digital Financial Solutions to Advance Women's Economic Participation, [http://www.uncdf.org/sites/default/files/documents/womens\\_economic\\_participation\\_report\\_16\\_november\\_2015.pdf](http://www.uncdf.org/sites/default/files/documents/womens_economic_participation_report_16_november_2015.pdf).

<sup>33</sup> World Bank, Global Findex Infographic, [http://datatopics.worldbank.org/financialinclusion/Infographics/WB\\_GlobalFindex\\_GlobalInfographic\\_0406\\_final.pdf](http://datatopics.worldbank.org/financialinclusion/Infographics/WB_GlobalFindex_GlobalInfographic_0406_final.pdf).

<sup>34</sup> GSMA (2016), 2015 State of the Industry Report: Mobile Money, [http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/04/SOTIR\\_2015.pdf](http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/04/SOTIR_2015.pdf). Note that only 39 per cent of survey respondents reported gender data.

<sup>35</sup> UNESCO, Statistics on Literacy, <http://www.unesco.org/new/en/education/themes/education-building-blocks/literacy/resources/statistics>.

<sup>36</sup> Lowder et al. (2014), The Global Distribution of Smallholder and Family Farms, [http://datatopics.worldbank.org/financialinclusion/Infographics/WB\\_GlobalFindex\\_GlobalInfographic\\_0406\\_final.pdf](http://datatopics.worldbank.org/financialinclusion/Infographics/WB_GlobalFindex_GlobalInfographic_0406_final.pdf).

<sup>37</sup> FAO (2012), Smallholders and Family Farmers, [http://www.fao.org/fileadmin/templates/nr/sustainability\\_pathways/docs/Factsheet\\_SMALLHOLDERS.pdf](http://www.fao.org/fileadmin/templates/nr/sustainability_pathways/docs/Factsheet_SMALLHOLDERS.pdf).

<sup>38</sup> Issues such as the timing of DFS interoperability, the technical and commercial models used, and the role that authorities should take in encouraging or mandating DFS interoperability depend heavily upon the country context.



strategies and policies, working with other authorities as required and engaging with providers and other key stakeholders. When working to implement interoperability, financial authorities should clarify the roles of various public- and private-sector stakeholders, include all relevant stakeholders in the process, and leverage existing coordination structures where possible. For their part, DFS providers should bear primary responsibility for interoperability risk management. They should identify and effectively mitigate relevant risks and ensure that accountability for risk mitigation is properly addressed in the scheme rules.

### 3.2.1.2 G2P payments

**In addition to working closely with other stakeholders to create a safe and enabling DFS regulatory and supervisory environment, governments can foster DFS ecosystem growth as users and promoters.** Public-sector entities can strengthen the value proposition for providers and agents by disbursing salaries and social payments through DFS channels. In addition, government entities and DFS providers can collaborate to educate consumers and promote adoption of digital services. Governments can also address challenges related to customer identification and agent liquidity. Customer identification can be facilitated by developing a national identity system and using national ID numbers to address payments, while agent liquidity challenges can be ameliorated by ensuring that DFS providers are appropriately compensated for facilitating G2P payments and by encouraging merchant acceptance of digital payments.

### 3.2.1.3 Merchant payment acceptance

**Many stakeholders also see merchant payment acceptance as a key driver of DFS adoption and usage.** In the absence of a wide network of merchants that accept digital payments, most recipients of digital money cash out most or all of their funds, while others lack a strong incentive to open an account in the first place. Authorities should promote acceptance of electronic payments by small merchants and other payment acceptors, such as billers, government entities, and actors in the agricultural value chain. They should encourage digitization and analysis of transaction data to facilitate access to credit and other financial services, while protecting consumers' data privacy and security and implementing safeguards to mitigate the risk of over-indebtedness. At the same time, authorities should consider the implications of DFS taxation on merchant acceptance, particularly for small or informal merchants, and consult with taxation authorities as required. For their part, DFS providers should cooperate with other stakeholders to educate merchants on the benefits of digital merchant payments. In addition, DFS providers should consider cross-selling additional services to merchants (such as credit) to build a business case for serving very small merchants that are unlikely to pay to accept electronic payments.

## 3.2.2 Navigating complicated DFS menus and UIs<sup>39</sup>

**Many poor and unbanked consumers find navigating DFS menus and UIs – which are often complex, poorly designed, and developed for a more technology-savvy and literate consumer base – difficult.**<sup>40</sup> The challenge of adopting new technology is heightened for those with low literacy levels and/or little experience with technology and formal financial services. Difficulty navigating menus (particularly due to session timeouts and use of non-vernacular language) and poor numeracy often result in funds being sent to the wrong recipient, which are then difficult to retrieve. These challenges are exacerbated in many DFS markets where basic handsets and feature phones remain commonplace and a rapid transition to smartphone-based DFS is unrealistic due to poor smartphone

<sup>39</sup> For a discussion of the various mobile phone UIs used in DFS, see ITU FG DFS Technical Report (2017), [Technology Evolution and Innovation in Digital Financial Services](#).

<sup>40</sup> McKee et al. (2015), *Doing Digital Finance Right: The Case for Stronger Mitigation of Customer Risks*, <https://www.cgap.org/sites/default/files/Focus-Note-Doing-Digital-Finance-Right-Jun-2015.pdf>.

quality, limited 3G access, and consumer unfamiliarity with new functionalities.<sup>41</sup> In response, poor and unbanked consumers may rely heavily upon the assistance of family, friends, or agents, exposing them to additional sources of risk (such as misuse of their personal credentials and/or fraud). They may also be more likely to use over-the-counter (OTC) services rather than a DFS transaction account.

**In some markets,<sup>42</sup> OTC transactions may be useful for facilitating a transition from purely cash to digital payments between transaction accounts.** Authorities should permit OTC transactions to continue in markets where they currently exist, provided that risk-based measures are implemented to identify senders and recipients. At the same time, public- and private-sector stakeholders in markets with high levels of OTC transactions should cooperate to develop a path towards account-based DFS.

### 3.2.3 Problems with DFS reliability and safety

**Poor network quality and reliability, particularly in rural areas, leave many poor and unbanked customers concerned about the reliability and safety of DFS.** Customers may fear losing their funds in the event of network downtime or system error. They may experience dishonest agents and question the safety of their funds when agents lack sufficient liquidity to facilitate cash-out transactions. Even if they trust their local agent(s), network downtime and agent liquidity problems may prevent them from accessing their funds when needed. In addition, poor literacy may leave them more susceptible to fraud. The lack of high-speed mobile data access in rural areas also leaves those with data-hungry smartphones with a poor DFS user experience.

**Efforts by authorities in many markets to combat the proliferation of fake or fraudulently registered phones also impact the reliability and safety of DFS for low-income customers.** The trend by authorities to switch off mobile phones with fraudulent or stolen international mobile equipment identity (IMEI) numbers could deprive users of access to their DFS funds until they purchase a phone with valid IMEI numbers.<sup>43</sup> In addition, phones lacking proper IMEI numbers may prevent MNOs from performing over the air (OTA) remote setup of phones for DFS use, which can impact DFS access via bearer channels and UIs such as wireless application protocol (WAP), general packet radio service (GPRS), and enhanced data for global evolution (EDGE).

**When customers face these issues, they may be unsure of where to turn for redress.** For example, M-Shwari is a DFS account that is branded and marketed by an MNO (Safaricom) but formally issued by a bank (Commercial Bank of Africa, CBA). In cases like these, customers may be unaware of who formally issues the product and to whom they should complain in the event of a problem.<sup>44</sup>

**One way for authorities to improve consumer confidence in DFS reliability and safety is to clearly assign liability and responsibility among providers and consumers.** For example, authorities should clarify that DFS providers are liable to customers with respect to: (i) harm caused by acts or omissions of their agents, employees, and third-party SPs; and (ii) loss/harm due to network issues such as network downtime. They should hold DFS providers liable for fraud related to issues with DFS systems, platforms, staff, and agents, while holding consumers liable for fraud due to their own negligence, such as sharing personal identification numbers (PINs). In addition, they should regularly review provider-customer contracts to ensure compliance with relevant laws and to identify and prohibit the use of unconscionable or unfair terms.

<sup>41</sup> See ITU FG DFS Technical Report (2017), [Mobile handsets use in DFS](#).

<sup>42</sup> While some DFS markets have seen high rates of OTC usage, others have moved directly from cash to use of DFS accounts.

<sup>43</sup> Perlman, Leon (2017), Access at the Frontline (forthcoming).

<sup>44</sup> In the case of M-Shwari, the terms and conditions state that customers should address complaints to CBA but should use Safaricom's retail shops to do so. See Commercial Bank of Africa, Terms and Conditions for the Opening and Use of the M-Shwari Account, [https://www.safaricom.co.ke/images/Downloads/Terms\\_and\\_Conditions/M-SHWARI\\_TERMS\\_AND\\_CONDITIONS.pdf](https://www.safaricom.co.ke/images/Downloads/Terms_and_Conditions/M-SHWARI_TERMS_AND_CONDITIONS.pdf).

**Consumer trust can be further strengthened through the development of effective recourse mechanisms that are properly disclosed to consumers.** Authorities should ensure that DFS providers establish free, effective internal complaints handling mechanisms that are available in all commonly spoken languages in the jurisdiction and accessible via multiple channels. They should also require that DFS providers use multiple channels to inform consumers of: (i) their right to file a complaint; and (ii) the internal and external recourse mechanisms available to them.

**Authorities can also require DFS providers to take steps to improve the reliability and ensure the safety of DFS.** Telecommunications authorities should establish QoS standards for DFS networks, platforms, and other technical elements in consultation with financial authorities and with the input of DFS providers and other stakeholders. They should also monitor telecommunications infrastructure to identify vulnerabilities, particularly in markets with high DFS uptake and usage. Financial authorities should ensure that DFS providers: (i) have robust system security and policies and processes in place for fraud detection, management, and mitigation; (ii) properly train and monitor agents; (iii) take steps to safeguard customer funds, including full liquidity backing, isolating and ring-fencing funds, and protection against loss in the event of bank failure; (iv) implement transaction verification measures to mitigate the risk of loss of funds due to mistaken transactions; (v) maintain secure vendor infrastructures, payments infrastructures, and user application interfaces; and (vi) establish and implement effective security risk management frameworks. Furthermore, authorities should establish bilateral or multilateral MoUs to ensure proper coordination in preventing and responding to security incidents and breaches.

### 3.2.4 Poor disclosure of pricing, fees, and terms and conditions

**Poor disclosure of pricing, fees, and other terms and conditions leaves many customers unsure of the actual cost of DFS and exposes them to fraudulent practices by agents and others.**<sup>45</sup> Information on pricing and fees may be poorly disclosed and may be unavailable prior to executing a transaction. Key terms and conditions may be hidden or phrased using complex language, and disclosure of terms and conditions is particularly challenging on basic handsets or feature phones. For digital credit in particular, misunderstanding interest rates and other charges, repayment requirements, and consequences of late or non-repayment can be costly.

**Authorities should adopt measures to provide for meaningful disclosure of prices and terms and conditions.** They should: (i) require disclosure of fees prior to transaction completion; (ii) develop standard definitions for costs and fees; and (iii) require providers to clearly disclose fees, charges, and other key terms and conditions using simple language.

### 3.2.5 Data privacy and protection

**Poor and unbanked consumers are typically unaware of how their personal data are used and protected.**<sup>46</sup> Provisions governing data privacy and protection are often buried in terms and conditions that are only comprehensible to lawyers.

**Authorities should take steps to strengthen DFS consumer data privacy and protection.** They should require clear and informed consent from consumers regarding the collection and use of their personal data, along with specific consent for any data use and sharing that does not fall within the scope of the original consent. Authorities may also wish to establish specific requirements with respect to: (i) data security; (ii) notification of customers in the event of a data breach; (iii) provider liability for failure to adopt reasonable security measures; and (iv) retention limits for customers'

<sup>45</sup> See, e.g., ITU Mystery Shopping Study; McKee et al. (2015), *Doing Digital Finance Right: The Case for Stronger Mitigation of Customer Risks*, <https://www.cgap.org/sites/default/files/Focus-Note-Doing-Digital-Finance-Right-Jun-2015.pdf>.

<sup>46</sup> For a discussion of how DFS transactional data, call data records, and other data are used to assess creditworthiness, see ITU FGDFS Report (2017), [Competition aspects of DFS](#).

personal data. In addition, authorities may consider requiring DFS providers to enable customers to: (i) access, verify, and correct their personal data; and (ii) transfer their data to another provider upon request.

## 4 Understanding the DFS supply side (providers)

### 4.1 Which actors are involved in the delivery of DFS to poor and unbanked consumers?

**Banks are key actors in the supply of DFS.** In some countries, DFS provision is dominated by banks or their subsidiaries. Even in markets where DFS provision is dominated by nonbank providers, banks play important roles. For example, most countries require nonbank DFS providers to deposit customer funds in banks for safekeeping, and some require nonbank DFS providers to select a bank to serve as the trustee responsible for management of these funds. In addition, banks often facilitate access to agent liquidity, either informally or through formal agreements. Furthermore, banks are increasingly partnering with nonbank DFS providers in markets with high levels of DFS adoption to offer credit and savings services to DFS account holders.

**In many markets, MNOs and their subsidiaries have taken a leading role in DFS delivery.** In most developing-country markets with high DFS uptake and usage,<sup>47</sup> MNOs or their subsidiaries are directly licensed to issue electronic money (eMoney)<sup>48</sup> or offer DFS.<sup>49</sup> In addition, mobile channels are predominantly used to reach poor and unbanked consumers even in markets where MNOs are not directly providing DFS.

**The role of FinTech firms<sup>50</sup> continues to grow.** FinTech firms play many roles in the DFS ecosystem. Some compete with banks and MNOs to directly offer e-Money or other DFS,<sup>51</sup> while others develop DFS platforms for them to use.<sup>52</sup> Others serve as aggregators and technology SPs that enable DFS providers to integrate with other entities that wish to send money to and/or receive money from other users.<sup>53</sup> FinTechs engaged in data analytics use algorithms to analyze user data for purposes such as assessing creditworthiness.<sup>54</sup> eMoney hubs are aggregators that connect DFS providers, financial institutions, and other stakeholders to facilitate eMoney transfer globally.<sup>55</sup> FinTechs are also experimenting with DLT to improve the safety and efficiency of customer identification and payments.<sup>56</sup>

<sup>47</sup> See, e.g., Simone di Castri (2015), *Is Regulation Holding Back Financial Inclusion? A Look at the Evidence*, <http://www.gsma.com/mobilefordevelopment/programme/mobile-money/is-regulation-holding-back-financial-inclusion-a-look-at-the-evidence>.

<sup>48</sup> The [ITU DFS Glossary](#) defines eMoney as “A record of funds or value available to a consumer stored on a payment device such as chip, prepaid cards, mobile phones or on computer systems as a nontraditional account with a banking or non-banking entity.”

<sup>49</sup> Depending upon the country, authorization may be granted for provision of e-money, mobile money, mobile financial services, mobile payment, or other digital financial services.

<sup>50</sup> FinTech firms use software and modern technology to provide or facilitate access to financial services. See ITU FG DFS Technical Report (2017), [DFS Glossary](#). See also FinTech Weekly, *FinTech Definition*, <https://www.fintechweekly.com/fintech-definition>.

<sup>51</sup> E.g., Zoono, <http://www.ilovezoono.com/>.

<sup>52</sup> For a detailed discussion of DFS platforms, see ITU FGDFS Technical Report (2017), [DFS Vendor Platform Features](#)

<sup>53</sup> See McKay & Pillai (2016), *Aggregators: The Secret Sauce to Digital Financial Expansion*, <http://www.cgap.org/blog/aggregators-secret-sauce-digital-financial-expansion>.

<sup>54</sup> See, e.g., Costa et al. (2016), *Big Data, Small Credit: The Digital Revolution and Its Impact on Emerging Market Consumers*, [http://www.mitpressjournals.org/doi/pdf/10.1162/inov\\_a\\_00240](http://www.mitpressjournals.org/doi/pdf/10.1162/inov_a_00240).

<sup>55</sup> See generally Nika Naghavi (2016), *Sending and Receiving Remittances with Mobile Money: Customer Benefits and the Potential to Drive Down Cost*, <http://www.gsma.com/mobilefordevelopment/programme/mobile-money/sending-receiving-remittances-mobile-money-customer-benefits-potential-drive-cost>.

<sup>56</sup> See, e.g., de Koker & Watts (2016), *Protecting Digital Financial Data: What Standard-Setters Can Do*, <http://www.cgap.org/blog/protecting-digital-financial-data-what-standard-setters-can-do>.

**Other regulated financial providers are increasingly engaging with DFS providers.** Payment switches are facilitating DFS interoperability.<sup>57</sup> Microfinance institutions (MFIs) are using DFS platforms and agents to facilitate deposits, withdrawals, and loan disbursement and repayment.<sup>58</sup> Insurance companies are partnering with DFS providers and FinTech firms to deliver microinsurance services to previously uninsurable clients.<sup>59</sup>

## 4.2 Services offered

**Most DFS models offer users the ability to conduct a variety of basic payment-related transaction services.** In most cases, this includes person-to-person (P2P) payments, bill payments, and airtime top-up.<sup>60</sup> Many providers offer additional functionality, including: (i) disbursement of salaries or social benefit payments, and (ii) business-to-business payments. To facilitate payment-related transactions, most DFS providers offer users the ability to cash-in (add funds to the DFS account), cash-out (withdraw funds), and store small sums on the DFS account.

**As DFS ecosystems mature, providers are offering more sophisticated financial services.** These services include loans, savings, insurance, investments, point of sale (PoS) integration, and linked general purpose reloadable (GPR) cards. This functionality is enabled by vendors that provide APIs to enable other parties to access the vendor platform.<sup>61</sup>

**DFS-enabled credit and savings models are proliferating.** In Kenya, DFS provider Safaricom, which provides the M-Pesa service, partnered with Commercial Bank of Africa (CBA) to offer M-Pesa customers low-value credit and formal savings via the M-Shwari service. M-Pesa customers can register using their mobile phone, open a CBA electronic savings account, and then request a loan from CBA. Data gathered by Safaricom regarding the customer's use of airtime, airtime credit, e-Money, and other variables is then analysed using a credit-scoring algorithm, after which CBA decides whether to grant a loan and sets the limit for approved applications.<sup>62</sup> In response to rapid uptake of DFS-enabled credit and savings in Kenya, this model is being replicated in other countries, such as Tanzania<sup>63</sup> and Uganda.<sup>64</sup> As of 2015, the GSMA had identified 36 live mobile savings services in 18 countries and 45 live mobile credit services in 16 countries.<sup>65</sup>

**DFS transaction accounts are facilitating access to microinsurance.** DFS infrastructure enables a dramatic reduction in the cost of providing insurance to poor and unbanked consumers. In most cases, customers can apply over the phone and pay premiums directly from their DFS accounts. These and other innovations (such as the use of index-based agricultural insurance and loyalty-based insurance

<sup>57</sup> E.g., Bindo & Hasnain (2015), Choosing a Technical Model for A2A Interoperability: Lessons from Tanzania and Pakistan, [http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/01/2015\\_GSMA\\_Choosing-a-technical-model-for-A2A-interoperability\\_Lessons-from-Tanzania-and-Pakistan.pdf](http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/01/2015_GSMA_Choosing-a-technical-model-for-A2A-interoperability_Lessons-from-Tanzania-and-Pakistan.pdf).

<sup>58</sup> See Hanouch & Rotman (2013), Microfinance and Mobile Banking: Blurring the Lines?, <http://www.cgap.org/sites/default/files/Focus-Note-Microfinance-and-Mobile-Banking-August-2013.pdf>.

<sup>59</sup> See GSMA (2016), 2015 Mobile Insurance, Savings & Credit Report, <http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/08/Mobile-Insurance-Savings-Credit-Report-2015.pdf>.

<sup>60</sup> For a discussion of the evolution of stored value accounts, particularly with respect to redeemable and non-redeemable accounts held on mobile phones, see ITU (2017), Technology Evolution & Innovation in Digital Financial Services (forthcoming).

<sup>61</sup> See ITU (2017), [DFS Vendor Platform Features](#).

<sup>62</sup> Cook & McKay (2015), How M-Shwari Works: The Story So Far, <https://www.cgap.org/sites/default/files/Forum-How-M-Shwari-Works-Apr-2015.pdf>. For a discussion of anti-competitive digital credit reporting practices in Kenya, see ITU (2017), DFS Competition Compendium (forthcoming).

<sup>63</sup> See, e.g., Vodacom Tanzania, Welcome to M-Pawa!, <https://vodacom.co.tz/mpesa/mpawa/welcome>.

<sup>64</sup> See, e.g., MTN Uganda, Mo-Kash – My Saving, My Loans, <https://www.mtn.co.ug/Mobile%20Money/Banking/Pages/MoKash.aspx>.

<sup>65</sup> “Mobile savings” refers to (i) dedicated savings accounts at a licensed deposit-taking institution that (ii) are linked to a mobile money account and (iii) are available on basic mobile devices. “Mobile credit” refers to services that (i) are available on basic mobile devices, (ii) facilitate access to unsecured loans, and (iii) are disbursed and repaid using mobile money. GSMA (2016), 2015 Mobile Insurance, Savings & Credit Report, <http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/08/Mobile-Insurance-Savings-Credit-Report-2015.pdf>.

models) have for the first time enabled millions of poor and unbanked consumers to access insurance services. As of 2015, the GSMA had identified 120 live mobile insurance services in 33 emerging markets that had issued 31 million policies. Of these, 51 per cent were life insurance products, 22 per cent health insurance, 13 per cent accident insurance, 7 per cent agricultural insurance, and 7 per cent other insurance.<sup>66</sup>

**DFS transaction accounts are also facilitating access to pension and investment services.** In Kenya, DFS users can fund a pension even if they lack a formal job using Mbao, a private pension scheme run by Kenya Commercial Bank and funded using Safaricom and Airtel's e-Money services.<sup>67</sup> And in Ghana, DFS users can now use eMoney accounts to invest in government securities via Ecobank TBill4All, a partnership between Ecobank and MTN Mobile Money.<sup>68</sup>

### 4.3 Challenges and solutions

**Even if the general legal and regulatory framework is enabling, DFS providers face a number of challenges that need to be addressed in order to successfully deliver DFS to poor and unbanked consumers.** Challenges include: (i) profitably reaching poor and unbanked consumers (particularly in remote areas); (ii) creating compelling use cases for DFS adoption by poor and unbanked consumers; (iii) ensuring service reliability; and (iv) complying with anti-money laundering and countering the financing of terrorism (AML/CFT) requirements.

#### 4.3.1 Profitable service provision

**To sustainably serve poor and unbanked consumers, DFS providers need to develop a viable business model.** Historically, most for-profit formal financial SPs have avoided poor and unbanked customers because they have not been profitable to serve. As noted earlier, using agents and digital channels can lower transaction costs by as much as 90 per cent compared to similar transactions conducted in branches.<sup>69</sup> Nevertheless, it is challenging to develop profitable services aimed at poor and unbanked consumers. As of 2015, the average mobile money P2P transfer was valued at the equivalent of only USD 38, the average cash-in transaction value was USD 29, and the average cash-out transaction value was USD 33.<sup>70</sup>

**Reaching poor and unbanked customers profitably is particularly challenging.** While average DFS transaction values are already quite low, transactions conducted by poor and unbanked consumers are typically even lower in value. Regulatory requirements or restrictions that increase the cost of doing business or place restrictions on fees or other charges can be expected to reduce profitability and discourage investment, particularly in remote areas. On the other hand, high fees and charges can also hinder uptake by poor and unbanked consumers, so DFS providers need to strike a balance that delivers profitable yet affordable services.

**Authorities can help drive down costs by creating an enabling environment for provision of DFS.** To promote competition and establish a level playing field for DFS provision, authorities should allow both banks and nonbanks to offer DFS, either directly, or in partnership. In addition, they should

<sup>66</sup> "Mobile insurance" refers to insurance services that (i) are available on basic mobile devices and (ii) allow underserved people to easily access these services without requiring previous access to insurance. GSMA (2016), 2015 Mobile Insurance, Savings & Credit Report, <http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/08/Mobile-Insurance-Savings-Credit-Report-2015.pdf>.

<sup>67</sup> See Retirement Benefits Authority, Mbao Pension Plan FAQs, <http://www.rba.go.ke/index.php/en/component/content/article?id=56>.

<sup>68</sup> See Ghana Business News, Ecobank Launches Mobile Money Treasury Bill Product, <https://www.ghanabusinessnews.com/2016/10/01/ecobank-launches-mobile-money-treasury-bill-product/>.

<sup>69</sup> See Footnote 2.

<sup>70</sup> GSMA (2016), 2015 State of the Industry Report: Mobile Money, [http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/04/SOTIR\\_2015.pdf](http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2016/04/SOTIR_2015.pdf).

adopt a service-based rather than institution-based approach to DFS regulation. This will help to ensure that different providers offering the same services have similar rights and are subject to similar obligations. Furthermore, DFS providers should be permitted to use third-party agents to lower the cost of reaching customers.

**At the same time, authorities should monitor service costs to ensure that prices are not preventing poor and unbanked consumers from accessing DFS.** Authorities should use a combination of transparency, moral suasion, and monitoring to ensure that consumer prices are reasonable. They should require equal pricing of comparable on-net and off-net transactions and should regularly monitor interchange fees and evaluate whether they remain necessary (and, if so, at what level). Authorities should also strive to ensure that pricing for bulk payments strikes a balance that incentivizes providers while remaining affordable for consumers.

#### 4.3.2 Compelling use cases and service reliability

**DFS providers need to identify compelling use cases for poor and unbanked consumers to adopt DFS.** As noted earlier, the value proposition for poor and unbanked consumers to use DFS is not always clear, particularly for services beyond basic payments and P2P transfers. To encourage adoption by poor and unbanked consumers, DFS providers should collaborate to achieve interoperability, promote and facilitate G2P payments, and develop merchant payment acceptance networks. Implementing the recommendations for authorities and DFS providers discussed above in the demand-side section should support efforts by DFS providers to encourage uptake by poor and unbanked consumers.

**Similarly, service reliability should be viewed as a high priority from the perspective of DFS providers.** Given that consumer research in 16 markets identified inability to transact due to network downtime as a top consumer concern,<sup>71</sup> ensuring reliable service delivery and availability should be a priority for DFS providers. QoS requirements should be appropriate to the nature of digital delivery of financial services and should evolve over time, taking into account new services, technologies, risks, and other relevant developments. Therefore, as discussed above, telecommunications authorities developing QoS standards in consultation with financial authorities should ensure that DFS providers have the opportunity to share their perspective.

#### 4.3.3 AML/CFT compliance

**AML/CFT requirements can also serve as a barrier to reaching poor and unbanked consumers.** In some countries, many low-income consumers lack formal identity documents, proof of residential address, or other required proof of identity for access to formal financial services. In these countries, DFS providers may be prohibited from offering services to customers who cannot meet the requirements. In other countries, regulations may be unclear regarding the acceptability of alternate proof of identity, and providers may adopt a conservative approach to avoid the risk of penalties for AML/CFT noncompliance.

**National identity systems can help to ensure that poor and unbanked consumers can meet know your customer (KYC) requirements.** Financial authorities in countries with well-developed systems can cooperate with national identity authorities and DFS providers to ensure that providers have access to these systems at a reasonable cost. Authorities can also explore how these systems can reduce barriers to account opening, such as by linking account opening to a national identity number,

<sup>71</sup> McKee et al. (2015), Doing Digital Finance Right: The Case for Stronger Mitigation of Customer Risks, <https://www.cgap.org/sites/default/files/Focus-Note-Doing-Digital-Finance-Right-Jun-2015.pdf>.

leveraging the credentials provided during subscriber identity module (SIM) registration, and/or using biometric data to reduce fraud risk.<sup>72</sup>

**Authorities in countries that lack a universal national identity system should embrace a risk-based AML/CFT approach.**<sup>73</sup> Authorities should permit providers to use simplified KYC measures for accounts with low transaction and balance limits and limited functionality, including remote account opening when appropriate. Authorities may also wish to consider establishing a “zero KYC” tier to enable customers to use low-value transaction accounts without proof of identity.

## 5 Further considerations

**The reports and recommendations that follow discuss challenges faced by DFS stakeholders and offer recommendations for addressing these challenges.** When contemplating how to implement these recommendations, DFS authorities and other stakeholders should consider the following:

- **Stage of market development:** While some recommendations are highly relevant during all stages of market development, others become more important once a DFS market has emerged. For example, creating a level playing field is often an important prerequisite for market development and remains relevant as the market matures, while certain issues related to service quality may come into focus only once DFS adoption rates are higher.
- **Country context:** The recommendations and conclusions included in the Focus Group reports are intended to apply globally, but it is impossible to anticipate all of the unique circumstances and challenges faced in a particular country. For example, recommendations around tiered KYC frameworks need to be applied in countries with varying degrees of money laundering or terrorist financing risk, while recommendations around expansion of 3G network coverage need to be applied in countries with unique geographic and demographic characteristics. DFS authorities should seek to apply the recommendations and implement the principles in a manner that makes sense in their specific country context. Effective consultation with private-sector stakeholders, consumer advocates, DFS technical experts, development partners, and other DFS stakeholders will be key to ensuring that the recommendations and principles are implemented in a manner that fosters the development of a safe and enabling DFS ecosystem.
- **Tradeoffs:** In theory, implementation of the recommendations and principles can facilitate the development of a DFS ecosystem that: (i) delivers high-quality, transparent services to poor consumers at low cost; (ii) offers sufficient pecuniary incentives to both established players and new entrants to promote DFS market development and foster innovation; and (iii) effectively mitigates risk to consumers (demand side) and the formal financial sector (supply side). In practice, there are often significant tradeoffs with respect to innovation and risk, competition and stability, and service quality and cost. For example, while innovative services can reach previously excluded customers, the risks of such services are typically less well-understood than the risks of traditional services. Similarly, highly competitive DFS markets can drive down costs but can also encourage risky behavior (such as poor loan underwriting practices) that can threaten market stability. With respect to service quality, national high-speed mobile network coverage requirements may improve user experience (UX) but raise costs. Authorities should recognize

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<sup>72</sup> For a discussion of the use of biometric identity verification systems for DFS registration and transactions, see ITU FG DFS Technical Report (2017), [Technology Evolution and Innovation in Digital Financial Services](#).

<sup>73</sup> A risk-based approach is also appropriate in countries with well-developed national identity systems. For a list of relevant publications discussing the risk-based approach to AML/CFT, see FATF, Risk-Based Approach, [http://www.fatf-gafi.org/documents/riskbasedapproach/?hf=10&b=0&s=desc\(fatf\\_releasedate\)](http://www.fatf-gafi.org/documents/riskbasedapproach/?hf=10&b=0&s=desc(fatf_releasedate)).



these tradeoffs and work with industry and consumer advocates and other stakeholders to strike a balance that makes sense in their country context.

## **Annex 1: Reports of Focus Group Digital Financial Services**

### **1. FG DFS recommendations**

#### **2. DFS Ecosystem Technical Reports**

- [The Digital Financial Services Ecosystem](#)
- [Regulation in the Digital Financial Services Ecosystem](#)
- [Review of National Identity Programs](#)
- [Enabling Merchant Payments Acceptance in the Digital Financial Ecosystems](#)
- [Merchant Data and Lending](#)
- [Impact of Agricultural Value Chains on Digital Liquidity](#)
- [Impact of social networks on digital liquidity](#)
- [The Role of Postal Networks in Digital Financial Services](#)
- [B2B and the DFS Ecosystem](#)
- [Bulk Payments and the DFS Ecosystem](#)
- [Over the counter transactions: A threat to or a facilitator for digital finance ecosystems?](#)
- [DFS Glossary](#)

#### **3. Interoperability Technical Reports**

- [Cooperation frameworks between Authorities, Users and Providers for the development of the National Payments System](#)
- [Payment System Oversight and Interoperability](#)
- [Payment System Interoperability and Oversight: The International Dimension](#)
- [Access to payment infrastructures](#)
- [The Regulator's Perspective on the Right Timing for Inducing Interoperability](#)

#### **4. Consumer Experience and Protection Technical Reports**

- [Commonly identified Consumer Protection themes for Digital Financial Services](#)
- [QoS and QoE Aspects of Digital Financial Services](#)
- [Review of DFS User Agreements in Africa: A Consumer Protection Perspective](#)

#### **5. Technology, Innovation and Competition Technical Reports**

- [Security Aspects of Digital Financial Services \(DFS\)](#)
- [Identity and Authentication](#)
- [DFS Vendor Platform Features](#)
- [Distributed Ledger Technologies and Financial Inclusion](#)
- [Technology evolution and innovation in DFS](#)
- [Competition Aspects of Digital Financial Services](#)
- [Mobile Handset Use in DFS](#)