

The Role of Regulators in Competition-Related Matters in Digital Financial Services

Evidence from developing world countries

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ABSTRACT²

The mobile phone has evolved from its basic telecommunications utility to take on a new enhanced role as a ubiquitous payment and value transfer instrument in the economies of developing countries. These facilities, now mostly known as Digital Financial Services (DFS), involve complex interplays of telecommunications, financial services and related components, necessitating reassessment by a range of affected national regulators on whether and how to apply or adapt their sector-specific regulatory precepts to DFS and its providers.

The purpose of this study is to provide a fresh perspective specifically on the role of regulators who have competition-related competencies over some or all of the components of DFS, for example the financial and telecommunications components. The study forms part of a series by the author on the role of the primary regulators in the DFS ecosystem, intended to systemize each of their roles.³

It is evidence-based, and enumerates competition-related issues in DFS such as the use of and access to critical technologies and human components of the ecosystem from the perspective of its stakeholders such as service providers, mobile network operators, banks, and regulators. It also highlights where and how a competition authority as a national competition regulator or sector regulatory authorities such as the central bank and the national telecommunications authority may use their competition-related competencies for DFS-related matters, if such powers exist. It outlines some competition-related examples in DFS that have been identified by the author based on publicly available and ventilated examples and studies of DFS ecosystems worldwide from January 2016 to July 2018.

As this study is more evidence-based in nature, it provides just a brief outline of competition law, policy and theory and rationale for competition-related interventions, and refers readers to more detailed sources for information.

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² This research was funded through a grant from the Bill and Melinda Gates Foundation, which facilitated the creation of the Digital Financial Services Observatory, a DFS policy and regulatory research project of the Columbia Institute for Tele-information at Columbia University in New York. See www.dfsobservatory.com

³ See thereto, Perlman, L (2018b) *The Role of the Telecommunications Regulator in DFS*, available at www.dfsobservatory.com; and Perlman, L (2018c) *The Role of the Central Bank in Digital Financial Services*, available at www.dfsobservatory.com; These studies all have common introductory sections.

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ABBREVIATIONS

2G	Second Generation Mobile
3G	Third Generation Mobile
4G	Fourth Generation Mobile
AML	Anti-Money Laundering
ATM	Automated Teller Machine
BIS	Bank for International Settlements
BMGF	Bill & Melinda Gates Foundation
BoP	Bottom of the Pyramid
BoT	Bank of Tanzania
BoU	Bank of Uganda
CA	Competition Authority
CAK	Competition Authority of Kenya
CB	Central Bank
CBK	Central Bank of Kenya
CDD	Customer Due Diligence
CFTC	Competition and Fair Trading Commission
CGAP	Consultative Group to Assist the Poor
CICO	Cash In / Cash Out
CPMI	Committee on Payment Market Infrastructure
DCB	Direct Carrier Billing
DFS	Digital Financial Services
DFSP	Digital Financial Services Provider
EC	European Commission
EMI	Electronic Money Issuer
ETSI	European Telecommunications Standards Institute
EU	European Union
FATF	Financial Action Task Force
FIU	Financial Intelligence Unit
FRAND	Fair, Reasonable and Non-Discriminatory
G20	Group of Twenty
G2P	Government To Person
GPFI	Global Partnership for Financial Inclusion
GSM	Global System for Mobile Communications
GSMA	GSM Association
ID	Identity
ITU	International Telecommunications Union
ITU FG DFS	International Telecommunications Union Focus Group on Digital Financial Services
IVR	Interactive Voice Response
KYC	Know Your Customer
LONO	Letter of No Objection
MFS	Mobile Financial Services
MM	Mobile Money
MMS	Multimedia Message Service
MNO	Mobile Network Operator
MoU	Memorandum of Understanding
MO-USSD	Mobile Originated USSD
MVNO	Mobile Virtual Network Operator
NCL	National Competition Law
NFC	Near Field Communication
NFIS	National Financial Inclusion Strategy
NI-USSD	Network Initiated USSD
NSDT	Near Sound Data Transfer
NTA	National Telecommunications Authority
OTT	Over the Top

P2P	Person to Person
PAFI	Payment Aspects of Financial Inclusion
POS	Point of Sale
PSP	Payment Service Provider
QOS	Quality of Service
RBA	Risk-Based Approach
RIVR	Remote IVR
RMF	Risk Management Framework
RURA	Rwanda Utilities Regulatory Authority
SDD	Simplified Customer Due Diligence
SIM	Subscriber Identity Module
SMP	Significant Market Power
SMS	Short Message Service
SOV	Store of Value
SP	Service Provider
SRA	Sector Regulatory Authority
SS7	Signaling System 7
SSNIP	Small but Significant, Non-transitory Increase in Price
STK	SIM Toolkit
SVA	Stored Value Account
TPVASP	Third-party Value Added Service Providers
TRAI	Telecom Regulatory Authority of India
TSP	Technical Service Provider
UCC	Uganda Communications Commission
UFA2020	Universal Access for All 2020
UI	User Interface
UNCTAD	United Nations Conference on Trade and Development
USAID	United States Agency for International Development
USSD	Unstructured Supplementary Service Data
UX	User Experience
VAS	Value Added Services
VAT/GST	Value Added Tax / Goods and Services Tax
WAP	Wireless Access Protocol

1. Introduction⁴

Digital Financial Services (DFS) has emerged in developing countries as a new, low-cost means of digital access to transactional financial services provided by banks and non-banks aimed at those at the Bottom of the Pyramid (BOP)⁵ in emerging and developing countries,⁶ with an aspirational goal of improving financial inclusion.⁷ The core access mechanism to services in these countries is via a mobile phone.⁸

⁴ **Important Study Scope Note for Readers:** The study uses an evidence-based approach to ventilate issues that have competition-related concern for entities and regulators in the DFS ecosystem around the world. It also explores how these issues have been addressed – or not, as the case may be – either through market dynamics and/or regulatory intervention.. Given then the evidence-based nature of this study, the study does not look beyond the ‘basics’ of competition law and related issues involving sector regulators and/or competition authorities as the case may be. Similarly, it will not address any analytical questions around competition law and policy. This extension would be beyond the scope of the evidence-focused nature of this study. The footnotes in this study though refer the reader to more comprehensive studies that provide a deeper understanding of competition law, competition policy, competition regulation and enforcement, and related issues.

⁵ The term BOP was introduced sometime in 1999 by Prahalad and Hart to describe what they observed were ‘Four Consumer Tiers.’ At the very top of the world economic pyramid, they said were 75 to 100 million affluent Tier 1 consumers from around the world, comprising a cosmopolitan group of middle- and upper-income people in developed countries and the few rich elites from the developing world. In the middle of the pyramid, in Tiers 2 and 3, are poor customers in developed nations and the rising middle classes in developing countries, the targets of past emerging-market strategies. Tier 4, they indicated, were the 4 billion people at the bottom of the pyramid who had an annual per capita income — based on purchasing power parity in US dollars — less than USD 1,500, the minimum considered necessary to sustain a decent life. For well over a billion people — roughly one-sixth of humanity — per capita income is less than USD 1 per day. See Prahalad, C & Hart, S (1999) *Strategies for the Bottom of the Pyramid: Creating Sustainable Development*, available at <https://bit.ly/2OdTYsV>. For an analysis of the BOP concept years later with revised figures, see Kolk, A, Rivera-Santos, M & Rufin, C (2012) *Reviewing a Decade of Research on the 'Base/Bottom of the Pyramid' (BOP) Concept*, available at <https://ssrn.com/abstract=2193938>

⁶ ‘Financial inclusion’ is often defined as the provision and use of formal accounts operated by regulated entities that cater to those at the Bottom of the Pyramid. National financial inclusion goals are aimed at lowering account costs, allowing for greater proximity to financial intermediaries, enforcing stronger legal rights, facilitating better management of financial risk to lead to more politically stable environments; and to drive development through access to more capital. See World Bank Group (2018) *The Global Findex Database 2017*, available at <https://globalfindex.worldbank.org>; and Franklin, A, Demircuc-Kunt, A, Klapper, L, et al. (2016) *The Foundations of Financial Inclusion: Understanding Ownership And Use Of Formal Accounts*, available at <https://bit.ly/2LTBLRr>. For an overview of national financial inclusion schemes and policies, see World Bank (2015) *Overview: National Financial Inclusion Strategies*, available at <https://bit.ly/2LXjB0m> The *Global Partnership for Financial Inclusion* (GPII) describes a generalized path approach to financial inclusion, based on the assumption that there is one path that describes a country’s journey toward full financial inclusion which is applicable to all countries. Each country follows the path – usually in its own financial inclusion strategy - but is at a different position on the path. See GPII (2010) *Financial Inclusion Targets and Goals: Landscape and GPII View*, available at <https://bit.ly/2ABa0co>. Many central banks signed what is now known as the ‘Maya Declaration,’ a statement of common principles regarding the development of financial inclusion policy made by a group of developing nation regulatory institutions during the Alliance for Financial Inclusion's 2011 Global Policy Forum held in Mexico. See AFI (2011) *Maya Declaration*, available at <http://www.afi-global.org/gpf/maya-declaration>

⁷ The GPII says that an appropriate range of quality financial services helps household’s smooth consumption, mitigate and manage risks, build assets, and create the peace of mind needed to make effective decisions about the future. Financial inclusion goals may include. Ibid. There are other international bodies that have developed financial inclusion principles for countries to follow. For example, the UN’s Sustainable Development Goals (SDGs) at <https://sustainabledevelopment.un.org/sdg16>, and the Better Than Cash Alliance (BTCA).

⁸ Much of the information in this study is drawn and used from companion and foundational studies by the author, including Perlman, L (2012) *LLD Thesis: Legal and Regulatory Aspects of Mobile financial Services*, available at <https://bit.ly/2KGfC8k>; Perlman, L (2017a) *Competition Aspects of Digital Financial Services*, available at <https://bit.ly/2xxLcma>; Perlman, L (2017b) *Technology Evolution and Innovation in DFS*, available <https://bit.ly/2CEufm>; Perlman, L (2017c) *Technology Inequality: Opportunities And Challenges For Mobile Financial Services*, available at <https://bit.ly/2r7nzny>; Perlman, L & Gurung, N (2018) *Focus Note: The Use of eIDs and eKYC for Customer Identity and Verification in Developing Countries: Progress and Challenges*, available at www.dfsobservatory.com; Perlman, L & Wechsler, M (2018) *The Role of Mobile Coverage on Digital Financial Services*, available at www.dfsobservatory.com; Perlman, L (2018a) *Digital Financial Services Primer 2018*, available at www.dfsobservatory.com; and Perlman, L (2018b) *The Role of The Telecommunications Regulator in Digital*

DFS often fills a gap left by banks who have been unable or unwilling to service those at the BOP, and features non-banks now providing the financially excluded with an alternative to reliance on cash as a means of payment and transfer.

It has required careful responses by sector regulatory authorities⁹ (SRAs) – such as central banks (CBs), national telecommunication authorities (NTAs) and financial intelligence units (FIUs) - as the regulators most proximate to the basic transactional-type implementations of DFS.¹⁰ DFS though creates a perfect storm in many markets around competition issues through intersection of two network industries that have scarce resources: telecommunications and national banking and payment services.

The telecommunications component of DFS in particular has an outsize involvement in competition-related issues, mostly because of the control by mobile network operators (MNOs) as the effective gatekeepers to the primary means of customer access to DFS services through mobile phone interfaces such as Unstructured Supplementary Service Data (USSD) and SIM Toolkit (STK).

From a banking and payments access perspective, financial integrity precepts may motivate the CB to hinder non-banks from access to all national systems it deems systemically important, or it may force non-banks to partner with banks for the same integrity reasons. Often self-preservation and regulatory capture may be the motivation of DFS-focused regulators. Balancing which regulator – the general Competition Authority (CA) or the SRA is usually a matter for competition law and policy.

Competition policy and regulation of network industries such as DFS is complex and may involve economics and law; definition of relevant markets; identification of dominance; problems where market power is leveraged into downstream or adjacent markets; margin squeezes and other abuses of dominance; feedback loops between telecommunications and DFS markets, and remedies such as price regulation, and functional and structural separation. Market imbalances may result from unequal policy frameworks or from market conduct. The former may be from regulatory bans on or restricted access to DFS ecosystems; disproportionate and unequal compliance and capital requirements; and inconsistent and disproportionate tax regimes. The latter could relate to a market participant's access to fair reasonable and non-discriminatory terms to technology; critical and scarce infrastructure, services used for channel or wholesale access, discriminatory pricing of services, cross-subsidization of services, quality of service, and respect for intellectual property rights and customer ownership. There is a lot of debate on many of these percolating issues, but for now they are far beyond the evidence-type scope of this study and thus best left for specialized studies on competition law and policy and related issues.

Much like a competition regulator and where it has remit, the NTA as a SRA may intervene in relation to level access to technology and services of scarce supply, especially if an entity has what is known as significant market power (SMP)¹¹ and then abuses that SMP. Action to reduce harm may relate to technical access channels to DFS services and short codes, pricing

Financial Services, available at www.dfsobservatory.com; Perlman, L (2018c) *The Role of The Central Bank in Digital Financial Services*, available at www.dfsobservatory.com. All studies by the author noted above on the role of specific regulators have almost identical introductory sections, as is the case here.

⁹ This study uses 'authority' and 'regulator' interchangeably.

¹⁰ For an overview of DFS-related regulators, see Perlman, L (2018a) *Digital Financial Services Primer 2018*, available at www.dfsobservatory.com; and Perlman, L (2018b) *The Role of The Telecommunications Regulator in Digital Financial Services*, available at www.dfsobservatory.com; and Perlman, L (2018c) *The Role of The Central Bank in Digital Financial Services*, available at www.dfsobservatory.com

¹¹ A European Commission (EC) commentary on competition policy refers to SMP being whether an entity 'enjoys a position of economic strength affording it the power to behave to an appreciable extent independently of its competitors, customers and ultimately consumers.' The power must relate to a relevant market, as the definition of the relevant market is of fundamental importance since effective competition can only be assessed by reference to the market thus defined. Usually – but not always - a SRA with competition powers or competition authority with similar or co-jurisdictional remit will undertake an assessment of that 'relevant market' before making a SMP determination. The EC also says that use of the term 'relevant market' implies the description of the products or services that make up the market and the assessment of the geographical scope of that market. See EC (2001) *Commission Working Document - on Proposed New Regulatory Framework for Electronic Communications*, available at <https://bit.ly/2EZwIVD>. A telecommunications entity designated as having SMP may be subject to specific obligations such as the requirement to have cost-oriented tariffs. It may also determine if this power is sustainable phenomenon and define market power with respect to the sectoral traits of this sector. See Welfensm, J (2004) *Significant Market Power in Telecommunications: Theoretical and Practical Aspects*, available at <https://bit.ly/2SzjnQW>

and national tariffs, zero rating and any anti-competitive practices that may arise within the marketplace. Regulatory concern may include matters of quality of service (QOS), pricing, access to services, and the promotion of fair competition in the marketplace. In developing countries in particular, fewer mobile network operators may exist resulting in greater potential for anti-competitive behavior.

The study also recognizes that where issues of dominance or SMP arise, this can usually only be determined by the relevant authorities on a case by case basis after a market review¹² and analysis. Indeed, market dominance with or without SMP and associated market conduct that invokes the ire of competitors, may or may not actually breach national competition law (NCL) and/or related competition provisions of sectoral legislation and require specific regulatory determinations. In some cases though, there may be insufficient capacity – funding, or personnel and specific domain expertise - by the SRAs and/or a CA to undertake market studies and enquiries.

The evidence-based country examples included below and the accompanying explanatory text reflect these issues, which defines the context, any technical or other components, and any related competition aspects that have been identified and actioned by a competition-focused regulator.

2. The DFS Ecosystem

2.1 Overview

Financial inclusion¹³ is the aspirational goal of national governments, supra-national bodies and philanthropists to facilitate and promote the provision and use of formal accounts operated by regulated entities that cater to those at the BOP in many markets. ‘Financial inclusion’ is often defined as the provision and use of formal accounts operated by regulated entities that cater to those at the BOP. There are however variations: Digital Financial Inclusion is the enabling component for financial inclusion, described by Consultative Group to Assist the Poor (CGAP) as ‘digital access to, and the use of, formal financial services by the excluded and underserved population.’¹⁴

The goal is to migrate the excluded at the BOP away from cash¹⁵ and paper-based payment instruments towards an integrated ‘formal’ digital financial ecosystem that facilitates sustainable, seamless and low-cost transactions. Some country-specific ‘National Financial Inclusion Strategies’¹⁶ include a broader suite of financial services to enable customers to pay, save, borrow, insure against risk, manage their financial life. In many cases these are coincident.

The need for alternative means of access to financial services in many parts of the developing world has its genesis in the challenges and constraints of predominantly cash-based economies using informal means of financial access that do not involve bank accounts.¹⁷ They are variously referred to as being ‘unbanked,’ ‘unserved’ or ‘underserved.’¹⁸

The early 2000’s saw the emergence of the first iterations of low-cost financial and transactional methods that allowed mobile phones to be used as general purpose payment instruments using value stored in a customer electronic wallet – known as a

¹² Defining the ‘market’ is key to the process.

¹³ Financial Inclusion where there is a ‘digital’ component to it – that is using inter alia DFS - also known to some as digital financial inclusion

¹⁴ Lauer, K & Lyman, T (2015) *Digital Financial Inclusion*, available at <https://bit.ly/2OceZiG>

¹⁵ Cash transactions present financial and personal risks for those unbanked, since individuals have no recourse if the funds are stolen. Gross, M, Hogarth, J & Schmeiser, M (2012) *Use Of Financial Services By The Unbanked And Underbanked And The Potential For Mobile Financial Services Adoption*, available at <https://bit.ly/2Ld5NOF>

¹⁶ See the collection of such strategies curated by the World Bank. World Bank (2018) *National Financial Inclusion Strategies Resource Center*, available at <https://goo.gl/xSgFsG>

¹⁷ Since banks have traditionally been the front-line for the provision of financial services such as savings accounts and for remittances, the financially excluded have also been referred to as being unbanked, unserved and underserved. Sahay, R, Čihák, M, N’Diaye, P, et. al (2015) *Rethinking Financial Deepening: Stability and Growth in Emerging Markets*, available at <https://bit.ly/1K4Gb3d>

¹⁸ For a discussion of these terms, see Lyman, T & Kate Lauer (2015) *What is Digital Financial Inclusion and Why Does it Matter?*, available at <https://bit.ly/1GX1xdJ>; and Evans, O (2016) *Determinants of Financial Inclusion in Africa: A Dynamic Panel Data Approach*, available at <https://bit.ly/2sEiD0V>; and Sahay, R, Čihák, M, N’Diaye, P, et al. (2015) *Rethinking Financial Deepening: Stability and Growth in Emerging Markets*, available at <https://bit.ly/1K4Gb3d>

stored value account (SVA) – provided operated by non-banks.¹⁹ Core to this nexus between mobile phones and access to financial services is that while 1.7 billion adults do not have a (formal) account with a financial institution, more than 1 billion²⁰ of them have a mobile²¹ phone.²² Similarly, while around 230 million ‘unbanked’ adults work for businesses and get paid in cash, 78% of them own a mobile phone.²³

Given its ubiquity, the mobile phone has evolved from its basic telecommunications utility to take on a new enhanced role as a ubiquitous payment and person-to-person (P2P) value transfer instrument in emerging economies. The first service to recognize the potential of this phone-finance nexus was ‘Smart Money,’ launched in 2001 in the Philippines by mobile network operator (MNO) Smart Communications. The official launch however, of Safaricom Kenya’s M-PESA system in 2007, is seen by many as igniting global initiatives towards ubiquitous financial access provision and introducing the term ‘mobile money’²⁴ into the developmental lexicon. DFS was initially known as ‘mobile money’ and ‘mobile financial services.’²⁵

2.2 The DFS Scheme

As this mobile-based financial ecosystem has evolved, so too has the terminology: it has been known as ‘mobile money’ and ‘mobile financial services,’ but is now more formally known as DFS with providers of DFS known as digital financial services providers (DFSPs).²⁶

Depending on when they were formulated, definitions of DFS vary throughout developing market sector role players. We see DFS as an ecosystem providing low-cost, national access to a broad range of financial and related services using primarily text and graphical based user interfaces, digital access devices such as mobile phones, and digital value transfer channels. DFS can be offered by banks and non-bank providers – known as DFSPs - who may be licensed or authorized by a range of regulators to provide these services, either on their own or in mandated partnerships. The GSMA-popularized term ‘mobile money’ is now considered one of the components of the DFS ecosystem, itself a far broader term beyond mobile-only and MNO-only provision and may often include DFSPs and bank offering basic accounts.

Some DFSPs may be classed as electronic money issuers (EMIs) and be allowed to issue e-money. Other DFSPs may only provide payment services and thus be licensed or authorized as payment service providers (PSPs). MNOs in most jurisdictions fulfil both roles as a DFSP. The central bank is usually the lead regulator in DFS, often seen to be providing an enabling regulatory environment lowering barriers to entry for new participants and novel services.

Exhibit 1: Conceptions of DFS

¹⁹ The first iteration in this transformation were ‘walled garden’ payment systems for digital value added services now known as Direct Carrier Billing (DCB) controlled by mobile network operators (MNOs) and using a SVA based on the MNO’s mobile airtime value. The value in the airtime SVA is non-redeemable.

²⁰ Gallup (2018) *Global Findex: Technology Can Bridge Financial Inclusion Gap*, available at <https://bit.ly/2IhCoVE>

²¹ The phones primarily use GSM (Global System for Mobile Communications) technology, a phone standard developed in the 1980s by the European Telecommunications Standards Institute (ETSI) to describe the protocols for second-generation (2G) digital cellular networks used by mobile phones. Originally Groupe Spécial Mobile, the first GSM implementation was in Finland in 1991 on a network built by Telenokia and Siemens and operated by Radiolinja. In 1992, the first Short Messaging Service (SMS) message was sent; Vodafone UK and Telecom Finland signed the first international GSM roaming agreement. See GSMA (2016a) *History*, available at <https://bit.ly/1sHjxSC>

²² Developed initially in the 1980s, these digital technologies have since evolved to include second generation (2G) mobile technologies that include technologies such as Unstructured Supplementary Service Data (USSD), Short Message Service (SMS) and various low data speed capabilities. Together, these technologies constitute the enabling infrastructure for DFS.

²³ Some 100 million ‘unbanked’ adults worldwide receive government social-grant or subsidy payments (known as G2P) in cash, including 67 million who have a mobile phone. Gallup (2018) *Global Findex: Technology Can Bridge Financial Inclusion Gap*, available at <https://bit.ly/2IhCoVE>

²⁴ ‘M’ is for money, and ‘Pesa’ is the Swahili word for money

²⁵ For a distinction between these terms and between ‘digital money’ and ‘e-money,’ see Reiss, D (2018) *Is money going digital? An alternative perspective on the current hype*, available at <https://doi.org/10.1186/s40854-018-0097-x>

²⁶ DFSPs may provide payment services and/or e-money services, both of which may fall under different regulatory regimes reflecting their relative risks.

DFS embraces themes of using low cost digital devices for low-cost access to financial services offered by banks and/or non-banks as DFSPs using prefunded Stores of Value (SOV) in SVAs holding electronic value under prudential supervision and operated and controlled by a DFSP.

As a proxy and replacement for bank accounts, the key transformative, differentiators of DFS versus traditional financial provision by banks include:

- Regulatory innovations
- Emergence of new actors
- Technological improvements and innovations
- Economic enablers

For DFS, the SOV is electronic money (e-money) which is created when sovereign²⁷ fiat²⁸ currency value is placed within an 'e-money' prudential regime.²⁹

E-money issuance and storage is highly regulated, requiring the DFSP to hold an 'e-money issuer' (EMI) license from the CB. Any funds collected from customers by DFSPs (acting as EMIs) to be used for e-money purposes must be placed ('pooled') in a prudentially supervised bank account, that is, that the account is often, but not always, subject to ring-fencing protections that prevent the pooled funds from being used for operational or other non-prudential purposes.. Often the CB insists that a special financial services entity must be formed for operating as an EMI or for providing DFS.³⁰ And to prevent potential inflationary and systemic effects of allowing more spending for value received, 'e-money' is only issued if it is backed by an equivalent amount of fiat money in the pooled account - the so-called 1:1 ratio.³¹

In most jurisdictions, value placed in a SVA by a customer is not seen by the CB as constituting a deposit, and correspondingly will not automatically earn interest, nor will it automatically attract deposit insurance.³² The 'pooled' customer funds placed by the DFSP as an EMI in a (trust) bank account is mostly - but not in all jurisdictions - seen as deposit, and may be eligible for deposit-related insurance. In jurisdictions where trust accounts are not available, EMIs must/may hold the pooled funds in the central bank or invest in other liquid assets such as government bonds/treasury bills.

Digital liquidity – the instantly accessible e-money value placed and stored in a SVA - within a DFS ecosystem is usually facilitated by electronic-human combinations of human 'agents' of DFSPs and banks. Agents provide what are known as 'cash-in/cash-out' (CICO) services, swapping cash for e-money and vice versa. Value in the SVA is redeemable on demand and on par at these agents.

Service bouquets for DFS have grown, in many cases resembling basic transactional features of a bank account but with primarily non-credit, transactional services at their core.³³ For example, the fiat-based DFS SVA can be used for paying for

²⁷ Compared to national fiat currency, as national does not apply to for example the Euro

²⁸ *Fiat* means, in essence, currency (money) issued by a central bank and backed as a SOV by the state. Compare this to virtual currencies such as mobile airtime value 'issued' by an MNO; or to crypto currencies - such as Bitcoin and Ether - which are mostly cryptographically secured and derived, tradable currencies created and issued mostly without a central issuer. Digital fiat currencies are cryptographically secured versions of fiat currencies, issued by a central bank.

²⁹ As noted above, e-money is a prudential construct usually derived from a regulatory process. Examples of the unit of account of a fiat currency may be for example the US Dollar, British Pound, Kenyan Shilling. In DFS context, any fiat value received by DFSP acting as an EMI from a customer directly or via an agent or super-agent must be placed in a ring-fenced current account at a licensed and approved bank, or series of banks. E-money is created from this placement.

³⁰ See Kumar, K & Raman, A (2015) *Did India's Central Bank get Payments Bank Approvals Right?*, available at <https://bit.ly/2stdae7>

³¹ This is a safeguarding measure that aims to ensure that the pool funds are available to meet customer claims, on demand or in the event that the EMI goes insolvent.

³² This strict interpretation is changing in some jurisdictions, with interest given and such DFSPs being allowed to provide credit in conjunction with a licensed bank.

³³ Unlike the value in most bank accounts, no interest is provided on SVA balances in most DFS implementations. ITU (2016) *Digital Financial Services: Regulating For Financial Inclusion – An ICT Perspective*, available at <https://bit.ly/2w8ryfT>

digital and physical goods and services as well as to undertake P2P value transfers between recipients of the same DFSP,³⁴ or where interoperability is present, between other DFSPs and banks.

The SVA is subject to AML regimes, requiring in most cases formal identity documents for signup to obtain a SVA and for undertaking transactions. Entry-level DFS accounts characteristic of DFS have reduced or minimal forms of Know Your Customer (KYC) requirements, often called Simplified Customer Due Diligence (SDD).

2.3 Emergence of New Actors

The ‘enabling’ innovations of regulatory policy have allowed new actors to emerge to provide DFS and related services, breaking the traditional hegemony of banks in provision of financial services. At the foundational level of DFS - which we term here ‘DFS 1.0’ - these new actors include DFSPs, agents, and super-agents, and master agents.³⁵

DFSPs: A DFSP may be a bank or, usually, a non-bank providing DFS within an ecosystem with or without authorization to issue and store a customer’s e-money in a SVA. The SVA is almost always prefunded, thus reducing any system risk due to non-payment of a counterparty. E-money can be created when the provider receives cash (a cash-in) from the customer - typically at an agent location - or when the provider receives a digital payment from another provider or bank. As noted above, issuers of e-money are often known as electronic money institutions (EMIs) operating under a separate authorization regime that features prudential safeguards and capital requirements. If an entity does not have authorization - as an EMI - to issue and store value as e-money, it is usually viewed through a regulatory lens as a payment service provider (PSP) offering services such as bill payment or remittances directly to customers. The PSP usually draws on an e-money SVA provided by an authorized EMI or from fiat bank money stored in a bank account as sources of value for a payment.³⁶ PSPs often fall under a different and lighter regulatory regime than EMIs, reflecting less risk that pose to a national financial ecosystem. Some DFSPs – such as MNOs or their financial subsidiaries – may act as both a PSP and an EMI either under one omnibus licenses, or under separate licenses if the regulatory regime reflects the different roles and risks.

Agents: DFSP agents may be informal vendors or small but formal businesses - versus bank branches in non-DFS environments - who provide frontline services to customers. Agents though may serve multiple principals, for example banks and MNOs. They may often fall under different regulatory regimes (and restrictions)³⁷ depending on the services they provide. Services in the DFS domain include signing up customers,³⁸ receiving (cash) value to be converted and then stored as e-money in customer transactional SVA; and then to convert customer e-money to cash. Others may undertake - where licensed and/or allowed OTC transactions such as remittance transfers and bill payments. Agents may also be able to receive and submit to the DFSP or bank a deposit account application; receive and submit to the institution a loan application; open a customer account following the institution’s policies; open a basic account; analyze and approve a loan following the institution’s policies and limits; receive deposits; and disburse loans.³⁹ Often they also sell mobile airtime vouchers⁴⁰ on behalf of MNOs. Thirty countries now have ten times more active agents than bank branches.⁴¹

Super and Master Agents: In many cases, there are additional layers of agent services provided by what have become known as ‘super agents’ and ‘master agents.’ Definitions vary across markets, but super agents usually facilitate liquidity management

³⁴ MNOs uniquely can simultaneously operate both – but separate - mobile airtime- SVAs and fiat-based SVAs. The former, in the form of DCB can only be used for purchasing digital goods and services and doing mobile airtime-based airtime transfers. The CB regulates the fiat-based SVA, while the NTA usually regulates the airtime-based SVA.

³⁵ Different terminology is used for similar actors in different countries and there may also be other actors depending on the country context. For example, they may be master-agents, sub-agents, cash merchants, wholesale cash merchants, retail agents, wholesale agents, agent network manager.

³⁶ The regulatory regime for DFS is often bifurcated to reflect payment-related activities that do not necessarily involve the provider accepting and storing value for an extended period, versus those undertaking such activities as well as storing customer value as ‘e-money.’

³⁷ For example bans on providing services to only one provider or their DFS role they may fall under the CB; any MNO-related roles may fall under the NTA.

³⁸ Agents and other third parties are usually permitted to verify the identity of customers.

³⁹ Staschen, S & Meagher, P (2018) *Basic Regulatory Enablers for Digital Financial Services*, available at <https://bit.ly/2s8b2YX>

⁴⁰ This valuable and entrepreneurial service was however banned in Uganda in July 2018, ostensibly for AML reasons. See Flash Uganda Media (2018) *UCC issue final deadline for selling airtime scratch cards*, available at <https://bit.ly/2ONXW0u>

⁴¹ GSM (2018) *2017 State of the Industry Report on Mobile Money*, available at <https://bit.ly/2sdS85g>

and may be banks or specialized entities. Master agents can do some or all of the following: recruit, train, monitor, or provide liquidity support to their agent network. At a prudential level, they may act as principal agents for DFS agents in certain geographical areas whilst facilitating and managing cash liquidity for these agents in rural areas.

2.4 Mobile Technology and User Interfaces

In countries where DFS is provided, the majority of phone usage in rural areas involve connections using low-speed (narrowband) second generation (2G) GSM technologies, with third (3G) or fourth generation (4G) technologies mostly only available in urban and peri-urban areas.⁴² Lack of high speed mobile coverage is seen as embedding the need for feature phones in DFS use.⁴³



Exhibit 2: Primary Phone User Interfaces for direct customer access to DFS. An exception – and perhaps a growing one⁴⁴ – to the 2G-text-based UI nexus is the growing use of Kaios⁴⁵ feature phone operating system designed as a hybrid between a smartphone and feature phone operating system.⁴⁶ This OS has had huge uptake in India where MNO Jio’s ‘JioPhone’ is given away virtually free. It has a feature phone form with the Kaios graphical UI. Feature phone penetration in India doubled in the first quarter of 2018 because of the release of the JioPhone in 2017.⁴⁷

In countries where DFS is provided, the majority of phone usage in rural areas involve connections using low-speed (narrowband) second generation (2G) GSM technologies, with third generation (3G) and fourth generation (4G) technologies mostly only available in urban and peri-urban areas. Similarly, while there has been significant growth in the smartphone penetration in developing countries, the GSMA report that majority of user access to DFS worldwide is still via ‘basic’ or ‘feature phones’⁴⁸ whose design – shown in **Exhibit 2** – in the most part limits access to DFS to primarily text-based types user

⁴² For a comprehensive overview on the role of mobile coverage in provision of DFS, see Perlman, L & Wechsler, M (2018) *The Role of Mobile Coverage on Digital Financial Services*, available at www.dfsobservatory.com

⁴³ *ibid*

⁴⁴ Media Nama (2018) *India’s feature phone shipments doubled in Q1 2018*, smartphone market stayed flat, available at <https://bit.ly/2CR2bRH>

⁴⁵ MediaNama (2018) *Facebook app now officially available on the Jio Phone*, available at <https://bit.ly/2JuCIP1>

⁴⁶ KaiOS is a Linux-based operating systems and derivative of the now shuttered Firefox OS. It powers a number of phones and brands, and supports video calls over 4G; mobile payments through NFC and dual-SIM support. It has its own app store and Google has invested in it. See Verge (2018) *Google invests \$22 million in the OS powering Nokia feature phones*, available at <https://bit.ly/2EWhtHu>

⁴⁷ Media Nama (2018) *India’s feature phone shipments doubled in Q1 2018*, smartphone market stayed flat, available at <https://bit.ly/2CR2bRH>

⁴⁸ GSMA (2018) *2017 State of the Industry Report on Mobile Money*, available at <https://bit.ly/2CKPLqF>. See data also from Perlman, L (2017a) *Technology evolution and innovation in DFS*, available <https://bit.ly/2CEufm>; and Perlman, L (2017b) *Technology Inequality: Opportunities and Challenges for Mobile Financial Services*, available at <https://bit.ly/2r7nzny>. Feature phones include the voice, SMS, interactive voice response (IVR), USSD and STK capabilities of basic phones,

interfaces (UI) such as Unstructured Supplementary Service Data (USSD) and SIM⁴⁹ Application Toolkit (STK). USSD transactions continue to be the choice for the vast majority of users.⁵⁰

The UIs have varying degrees of ease of access, ease of use, efficacy, cost, security, and reliability. USSD for example can be used for transmitting information and accessing standard services and Value Added Services (VAS). Because USSD can be used across all generations of phones, it has been termed ‘The Third Universal App.’⁵¹ USSD and STK though and in particular are sensitive to poor mobile coverage, affecting the ability of DFS customers to reliably access and use funds in their SVA.⁵² They are also competition-sensitive, with gateways required to provide USSD and STK controlled by MNOs who may compete with DFSPs.⁵³

Large DFS deployments that rely primarily on USSD as the UI include bKash in Bangladesh, WING in Cambodia, EasyPaisa in Pakistan, MTN Money and Airtel Mobile Money in Uganda, ZAAD in Somaliland, M-PESA and Tigo in Tanzania, and EcoCash in Zimbabwe.⁵⁴

3. Legal and Regulatory Environments

3.1 Overview

DFS implementations to date have highlighted the emergence of novel responses and innovations from regulators and lawmakers to facilitate the entry, and then supervision of, new non-bank market participants.⁵⁵

This evolving legal and regulatory environment usually include distinctions between the policy decisions, the legal frameworks to execute on these policy decisions, and a sector or market conduct regulator to issue specific regulatory instruments, and to enforce these instruments:

- Policy decisions by ministry, parliament or similar high decision-making body
- Laws that implement a decided policy framework
- Normative acts within the remit of particular regulators, such as regulations, circulars, and guidelines or inter-regulator MOUs to second powers.⁵⁶

augmented though by features such as Bluetooth, and data-dependent Multimedia Messaging Service (MMS) and wireless access protocol (WAP). A few feature phones have 3G and higher data capabilities but most lack built-in Near Field Communication (NFC)-support. Basic phones are characterized by the total absence of any mobile data capabilities.

⁴⁹ Subscriber Identity Module, a smart chip (card) issued and sold by MNOs directly or through agents. When placed in a phone, a SIM card facilitates the basic access to MNO and other services. SIM cards also house small applets used for STK-based access to DFS. For the role of the SIM card in DFS, see Perlman, L (2012) *LLD Thesis: Legal and Regulatory Aspects of Mobile Financial Services*, available at <https://bit.ly/2KGfC8k>

⁵⁰ GSMA (2018) *2017 State of the Industry Report on Mobile Money*, available at <https://bit.ly/2CKPLqF>

⁵¹ Perrier, T, DeRenzi, B & Anderson, R (2015) *USSD: The Third Universal App*, available at <https://bit.ly/2vA3Skc>

⁵² For a comprehensive overview on the role of mobile coverage in provision of DFS, see Perlman, L & Wechsler, M (2018) *The Role of Mobile Coverage on Digital Financial Services*, available at www.dfsobservatory.com

⁵³ See also Perlman, L (2017a) *Competition Aspects of Digital Financial Services*, available at <https://bit.ly/2xxLcma>

⁵⁴ Hanouch, M & Chen, G (2015) *Promoting Competition in Mobile Payments: The Role of USSD*, available at <https://goo.gl/po24bd>

⁵⁵ Often though the regulatory innovations have been incremental or perfunctory, leaving incumbent banks to provide financial services directly but (now) allowing non-banks or agents to provide frontline customer services sign as CICO and account sign-up.

⁵⁶ For an example of a model MOU between a NTA and CB, see Perlman, L (2018d) *Model MOU Between a central Bank and National Telecommunications Authority For Digital Financial Services Regulation*, available at www.dfsobservatory.com

- Methods to check on the market conduct of entities under the direct remit of the regulator, for example, using oversight,⁵⁷ supervision⁵⁸ and market-monitoring tools.⁵⁹
- Methods to monitor the market the market as a whole. These may include (new) regulatory technology (regtech) tools.⁶⁰

The extent to which a legislative framework exists for enabling DFS and its service and participatory components varies greatly around the world. The regulatory exigencies of regulators differ though between the developed and developing world, with the latter focused on laws and regulations that fit national inclusion strategies.⁶¹

Except for a few notable exceptions,⁶² in many of the early implementations of DFS (when also known as ‘mobile money’⁶³), laws, regulations, supervision and oversight fastening on the DFS ecosystem followed what is known as an *institutional* approach. Here specific sector regulators had supervisory oversight and rule-making capacity over institutions within their regulatory domain. The traditional *institutional*⁶⁴ approach to regulation of DFS that in effect only allowed licensed banks to provide financial services under a bank license regime. Thus, for example, banks were regulated by the national banking regulator and telecommunications-related entities by the NTA. If a new non-bank market participant wanted to provide even basic transactional financial services that emulated basic bank account functions, they would invariably not fit into the institutional categorization described in the laws and regulations and thus invariably would not be able to independently offer DFS services, with a banking partner often required. Banks though saw the low-cost model of DFS as cannibalizing their account base, and often limited their resources in partnering with non-bank DFSPs.

⁵⁷ *Regulation* is said to be prescriptive, often quantitative, and generally not very flexible. It may prohibit an activity or prevent it. Definition from Federal Reserve Bank Of New York (1997) *Patrikis: Supervision and Regulation*, available at <https://nyfed.org/2kAeozL>

⁵⁸ *Supervision* is more qualitative and involves the safety and soundness of specific institutions. It depends upon the judgment of an examiner or inspector, needing close, first-hand, observation and analysis. Definition drawn from Federal Reserve Bank Of New York (1997) *Patrikis: Supervision and Regulation*, available at <https://nyfed.org/2kAeozL>

⁵⁹ *Oversight* is considered much less intrusive than supervision and might be viewed as surveillance, normally conducted at a distance. Definition drawn from Federal Reserve Bank Of New York (1997) *Patrikis: Supervision and Regulation*, available at <https://nyfed.org/2kAeozL>

⁶⁰ On the role of regtech in financial inclusion, see Perlman, L & Gurung, N (2018a) *Use of Regtech by Central Banks and its Impact on Financial Inclusion*, available at www.dfsobservatory.com

⁶¹ Where the legal and regulatory framework for non-bank participation in DFS to catalyze financial inclusion goals does not directly exist however, this has often required a novel response from regulators, described below.

⁶² For example in Kenya, where MNO Safaricom was given a LONO by the central bank in the absence of jurisdiction of the banking law over the planned service.

⁶³ A term favored by the GSMA.

⁶⁴ The institutional and functional approaches are two broad approaches to the issue of regulation and which may also reflect variations in legal frameworks. The functional approach places the focus on the service received by the consumer regardless of the type of institution providing that service. This broad protection may be the remit of specific consumer protection agencies, competition authorities, or ministries of trade and industry. The issue however, is that while this ‘catch-all’ appears to provide recourse insofar as all institutional types are concerned, the reality is that these entities may ultimately lack the necessary institutional capacity and specialized knowledge to pronounce on, for example, complicated aspects of financial consumer protection. Thus, multiple regulators may have (ineffective) remit over the same entity for different reasons, and may result in consumer ambivalence, corporate intransigence and posturing, and thus the effective maintenance of the *status quo*. A SRA may be overwhelmed when obliged to address financial sector complaints in addition to other economy-wide consumer protection issues. In contrast, the institutional approach focuses not on the service per se, but on the institutions providing any financial service. It supposedly leaves the regulation in the hands of specialized bodies, for example, the central bank (CB), which may implement consumer protection provisions in relation to regulated financial institutions. However, this approach may distort market dynamics by fragmenting responsibilities amongst too many regulators to the extent that some entities like nonbanks are not captured. Implementation may also be challenging insofar as multiple regulators with varying levels of capacity may be required. There is often, however, no one-size-fits-all solution to the design of a legal framework for financial consumer protection, and for coherence and maintenance of the financial system generally. It should reflect the structure of the financial system and the nature of each economy’s overall legal framework. This may take the form of specific, single, dedicated agencies to deal with consumer protection issues relating to specific or general aspects of retail financial services.

As the dampening effects of the institutional approach to DFS enablement became evident,⁶⁵ a *functional*⁶⁶ approach to regulation has been embraced by regulators. Here regulation is focused on the service offered rather than the entity providing it. The effect was to allow non-bank entities such as MNOs and DFSPs to offer banking-like financial and transactional services through DFS, subject to a proportional regulatory regime that matched the perceived risk of these services to the degree of required regulation and supervision. In this new disruptive formulation, the evolving regulatory environment in relation to facilitating DFS provision by non-banks is said to be ‘enabling’ or ‘non-enabling,’⁶⁷ with the institutional approach restricting DFS to a ‘bank-centric’⁶⁸ approach seen as non-enabling.⁶⁹ Aspects of a foundational ‘enabling and proportional’ regulatory environment for DFS ignition and catalyzation are discussed below.

Many of the less or non-enabling rationales are rooted in combinations of the political economy in the country where traditional institutional thinking is engrained in political considerations,⁷⁰ regulatory capture where banks successfully lobby their regulators to restrict non-banks from providing bank-like (non-credit) services.⁷¹ Similarly, on the assumption that different providers do not necessarily entail the same risks.⁷²

Regulation here may refer to governmental actions to grant or place conditions upon the rights of firms to provide goods and services in particular areas of economic enterprise with the purpose of preventing decisions by private agents that would take insufficient account of the ‘public interest’.⁷³ Available regulatory tools and models that provide answers to these

⁶⁵ See the statistics within GSMA (2018) *2017 State of the Industry Report on Mobile Money*, available at <https://bit.ly/2CKPLqF>

⁶⁶ See on the ‘regulating by function’ rather than by the institution providing that function (service), Schwarcz, S (2014) *The Functional Regulation of Finance*, available at <https://bit.ly/2CTCDDq>; Cunningham, L & Zaring, D (2009) *The Three or Four Approaches to Financial Regulation: A Cautionary Analysis Against Exuberance in Crisis Response*, available at <https://bit.ly/2PD26rq>; G30 (2008) *The Structure of Financial Supervision Approaches and Challenges in a Global Marketplace*, available at <https://bit.ly/2QaQgSl>; and Perlman, L (2012) *LLD Thesis: Legal and Regulatory Aspects of Mobile Financial Services*, available at <https://bit.ly/2KGfC8k>, and also CDG (2016) *Financial Regulations for Improving Financial Inclusion*, available at <https://bit.ly/2shcPL9>. CDG define this approach as functional approach (to financial services regulation) where ‘services of the same nature are regulated in the same way, rather than, for example, according to the type of provider.’

⁶⁷ These were terms first used by the GSMA in relation to the impact of local regulatory regimes on provision of DFS. See di Castri, S (2013) *Mobile Money: Enabling Regulatory Solutions*, available at <https://bit.ly/2kGPgqX>. An ‘enabling’ regulatory environment is described in *inter alia* Gutierrez, E & Singh, S (2013) *What Regulatory Frameworks are More Conducive to Mobile Banking? Empirical Evidence from Findex Data*, available at <https://bit.ly/2JV1WsF>. See also Porteous, D (2006) *The enabling Environment for Mobile Banking in Africa*, available at <https://bit.ly/2JxtOzz>. For an assessment of how enabling environments have evolved and whether they have worked to enhance financial inclusion, see Staschen, S & Meagher, P (2018) *Basic Regulatory Enablers for Digital Financial Services*, available at <https://bit.ly/2s8b2YX>

⁶⁸ The notion of a licensed bank being the primary pivot (by regulation) in DFS provision – originally termed ‘bank-led’ - was introduced in CGAP’s 2008 study of what was then commonly known as ‘branchless banking.’ See Lyman, T, Pickens, M & Porteous, D (2008) *Regulating Transformational Branchless Banking*, available at <https://bit.ly/2LORgdn>

⁶⁹ See di Castri, S (2013) *Mobile Money: enabling Regulatory Solutions*, available at <https://bit.ly/2kGPgqX>. The non-bank DFSP may be restricted from providing any DFS services other than as a supportive agent network for a bank.

⁷⁰ For example in Moldova, where the author has seen very little political will to embrace DFS-type activities. Some politicians in Uganda have (unsuccessfully) to date, tried to foreclose on the ability of non-bank DFSPs to provide services. Daily Monitor (2017) *MPs pin BoU on unregulated mobile money transactions*, available at <https://bit.ly/2AvvuaA>; and Blizz Uganda (2018) *MP drags MTN, UCC and Bank of Uganda to Court, Seeks an Injunction against MTN License Renewal*, available at <https://go.shr.lc/2Smqr3x>

⁷¹ There is anecdotal evidence of this happening in developing and emerging economies. In Kenya soon after the launched of Safaricom’s M-PESA, major banks approached the Minister of Finance to shut down M-PESA, accusing it of being a Ponzi scheme. The minister reportedly approached the central bank on their behalf, but clearly the approach had no effect. On regulatory capture in banking in the US, see Igan, D & Lambert, T (2018) *Bank Lobbying: Regulatory Capture and Beyond*, available <https://ssrn.com/abstract=3128829>

⁷² See CDG (2016) *Financial Regulations for Improving Financial Inclusion*, available at <https://bit.ly/2shcPL9>

⁷³ Breyer, S & MacAvoy, PW (1987) *Regulation and Deregulation*, in Eatwell, J; Milgate, M and Newman, P (eds) *The New Palgrave: A Dictionary of Economics*. As Lee notes, government’s duty to safeguard the public interest can be traced to 1690 when John Locke said that governments are able impartially to distinguish between outcomes that are in the public interest and those that are not and, furthermore, are possessed of sufficient information and wisdom to determine the optimal form and level

regulatory challenges range from general principles to detailed rules.⁷⁴ Two theories of regulation of industry are widely held: positive theories of regulation and normative theories of regulation.⁷⁵ Positive theories of regulation examine why regulation occurs,⁷⁶ while normative theories of regulation are based on a theory of market failure.⁷⁷ Famed economist Stiglitz notes that regulation begins with a simple question: Why is regulation needed and followed, and why do markets by themselves not suffice?; and then, if there is to be government intervention, why does it take the form of regulations?⁷⁸ Some would see the need for regulation⁷⁹ as a response to market failure, others as the need to provide the groundwork for growth and consistency in rule-making and policy. The argument is not yet settled, and puts into relief what has been called the ‘regulator’s dilemma’⁸⁰ which exists where a balancing act is required whereby the regulator enables innovation whilst still having to mitigate any risks.⁸¹

These dilemmas arise because financial regulators are charged primarily with maintaining system stability as the price of systemic disruption is so high and the interdependencies great. Network externalities and the need for competition efficiency – which may be from market failure⁸² – may greatly influence policy.⁸³ The regulatory rationale could be placed under the

of regulation. See Locke, J (1690) *The Second Treatise Concerning Civil Government*, available at <http://goo.gl/uu0z>; and also Lee, B-C (2002) *Regulation in the New Economy*, available at <http://goo.gl/WJSkL>, and see also B-C Lee and O Longe-Akindemowo (1998) ‘Regulatory Issues in Electronic Money: A Legal-Economics Analysis’, available at <http://goo.gl/EwuNO>

⁷⁴ As a report by the Alliance for Financial Inclusion (AFI) indicates, a *principles-based approach* has a lighter touch and is a more market sensitive approach as it builds on the regulated industry’s greater knowledge of the market and encourages thoughtful solutions rather than ‘box-ticking’. However, it is more difficult for firms to know if they are in compliance and requires flexible supervision, which calls for greater capacity on the part of the supervisor and more maturity on the part of the industry. Further, they say, users may be confused with a principles-based approach, as each institution creates a unique system to comply with the principles. A *rules-based approach* has the advantages of being clear and uniform in application. See AFI (2010) *The AFI survey on financial inclusion policy in developing countries*, available at <https://bit.ly/2qogbe1>

⁷⁵ Hahn, RW (2006) *Theories of Regulation and Deregulation: A Critical Appraisal*, available at <http://goo.gl/smnWm>; Public Utility Research Center (2011) *Theories of Regulation*, available at <http://goo.gl/slr9b>; Stiglitz, J (2009) *Government Failure vs Market Failure: Principles of Regulation*, available at <http://goo.gl/TsVr9> p2; see den Hertog, J (1999) *General Theories of Regulation*, available at <http://goo.gl/8QjYD>.

⁷⁶ The positive theories attempt economic explanations of regulation and derive the consequences of regulation. They are said to include theories of market power, interest group theories that describe stakeholders’ interests in regulation, and theories of government opportunism that describe why restrictions on government discretion may be necessary for the sector to provide efficient services for customers. In general, the conclusions of these theories are that regulation occurs because the government is interested in overcoming information asymmetries with the operator and in aligning the operator’s interest with the government’s interest; customers desire protection from market power when competition is non-existent or ineffective; operator’s desire protection from rivals; or operators desire protection from government opportunism. *ibid*

⁷⁷ They are called normative because there is usually an implicit assumption that efficient regulation would also be desirable. These theories are said to generally conclude that regulators should encourage competition where feasible, minimize the costs of information asymmetries by obtaining information and providing operators with incentives to improve their performance, provide for price structures that improve economic efficiency, and establish regulatory processes that provide for regulation under the law and independence, transparency, predictability, legitimacy, and credibility for the regulatory system. *ibid*

⁷⁸ Similarly, the questions could be phrased as ‘how to fix it?’ and the form that the solution or ‘fix’ will take.

⁷⁹ Regulation can be taken to mean the employment of legal instruments for the implementation of social-economic policy objectives. See den Hertog, J (1999) *General Theories of Regulation*, available at <http://goo.gl/8QjYD>

⁸⁰ Porteous, D (2006) *The Enabling Environment for Mobile Banking in Africa*, available at <https://bit.ly/2JzNgMX>

⁸¹ The risk includes balancing the dual objectives of identification and traceability to allow financial integrity.

⁸² ‘Market failures’ are departures from the economists’ notion of a perfectly efficient market where first, consumers and producers take decisions that reflect all possible, relevant information; secondly, prices reflect all costs, including costs to third parties; and thirdly, firms cannot profitably charge prices in excess of ‘marginal’ cost, ie where their ‘market power’ is absent. See Financial Services Authority (FSA) (2006) *A Guide to Market Failure Analysis and High Level Cost Benefit Analysis*, available at <http://goo.gl/kFzus>.

⁸³ Economists and economic theory greatly affect this debate, to which Keynes caustically remarked that ‘Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some defunct economists’. See Keynes, J (1964) *The General Theory* at 383. Economists then especially see the debate of the varying functions of government regulation versus market regulation framed, *inter alia*, by Arthur Pigou who believed that government is assumed to be a neutral arbiter in providing regulation in response to the demand of the public for the correction of inefficient, fragile or inequitable market practices. This contrasts with the economist Ronald Coase who believed that efficient outcomes could be generated

heading of public interest⁸⁴ which allows the public or some subclass of the public to interact with financial institutions with a degree of safety by increasing consumer awareness and information.⁸⁵ Regulation is an instrument of social policy⁸⁶ intended to influence and control market and business behaviour, which may amount to strata of regulations, usually forms of self-regulation, co-regulation or pure statutory regulation.⁸⁷ The latter especially is informed by public policy goals, which may in turn be influenced by national, regional or international trends. The need for consumer protection is especially considered to be a public policy response to a market failure.⁸⁸ Regulators must however balance the need to protect consumers whilst avoiding over-regulation,⁸⁹ or for that matter, effectively impractical regulation that may have the opposite of what is intended.⁹⁰

Exhibit 3: Theories of regulation⁹¹

without government intervention when property rights are clearly defined. Coase, R (1960) *The Problem of Social Cost*, available at <https://www.jstor.org/stable/724810>. He is said to have invented the field of 'Law and Economics,' also known as the 'Economic Analysis of Law' which is said to differ from other forms of legal analysis in looking at efficiency and incentives. A component thereof is the 'Positive Theory' of legal efficiency which believes that the common law is efficient, while the Normative Theory says that the law should be efficient. Most economists accept both. Coase believed thereto that markets are more efficient than courts, but when possible, the legal system will force a transaction into the market. When this is impossible however, the legal system attempts to 'mimic a market' and guess at what the parties would have desired if markets had been feasible. See further Zingales, L (2004) *The Costs and Benefits of Financial Market Regulation*, available at <http://goo.gl/mgAlf>.

⁸⁴ Malan, F (1989) *Legal Aspects of the Regulation of Financial Institutions* 18(4) *Tydskrif vir die Suid-Afrikaanse Reg* at 555.

⁸⁵ The 'public interest' approach says that the notion of externalities serves to define the proper role of government, and emphasizes the government's role in correcting market imperfections that result from externalities. In this view, regulatory agencies may or may not be well informed, but they are well intentioned. See Woodward, S (1998) *Regulatory Capture at the U.S. Securities and Exchange Commission*, available at <http://goo.gl/um9Hh>. See also Winn who notes that political scientists and economists distinguish between 'economic regulation' aimed at supporting competition in markets and 'social regulation' aimed at protecting health and safety. Winn notes further that consumer protection laws are now treated as a form of economic regulation in the US insofar as government intervention is appropriate only when it is clear that competition is not doing an adequate job of meeting consumer needs. Winn, J and Webber, M (2006) *The Impact of EU Unfair Contract Terms Law on U.S. Business-to-Consumer Internet Merchants*, available at *The Business Lawyer*, available at <http://goo.gl/zqFRJ>.

⁸⁶ Rubin says that legal rules, especially those in the commercial area, are instruments of social policy rather than an autonomous body of doctrine reflecting general and apolitical principles of law. See Rubin, R (1991) *Efficiency, Equity and the Proposed Revision of Articles 3 and 4* 42 *Albany Law Review* 551 at 553-4, 560.

⁸⁷ Since network industries like payments can provide socially important or utility services to the public and the economy, they may need to address broad public policy agendas over and above supporting effective competition, such as financial stability and consumer protection. See Australian Payments Clearing Association (APCA) (2009) *Competition and Coordination in the Australian Card Payments System*, available at <http://goo.gl/fNzRI>

⁸⁸ Eisner, M; Worsham, J & Ringquist, E (2000) *Contemporary Regulatory Policy*, available at <https://bit.ly/2QbYLN3>

⁸⁹ Over-regulation may occur when the cost of ensuring equality of information for both provider and consumer reduces the availability of products and services in the market and/or drives prices higher. AFI (2010) *The AFI survey on financial inclusion policy in developing countries*, available at <https://bit.ly/2qogbe1>

⁹⁰ See Rubin who 'analyses market failure generated by the structure of the legal system' where he says consumers will never be able to enforce their rights against a bank because it is too expensive to do so. Consumers must initiate any legal action, but invariably the action – especially for smallish amounts – cannot be economically pursued. The only thing, he says, that is economically more inefficient than failing to bring an action is when the consumer has an unjustified loss and initiates an action to recover that loss at large expense to himself and possibly costing more to pursue to recover that loss than the initial monetary loss. This, he believes, is effectively a market failure.

⁹¹ Adapted from Perlman, L (2012) *LLD Thesis: Legal and Regulatory Aspects of Mobile Financial Services*, available at <https://bit.ly/2KGfC8k>.

3.2 The Regulators of DFS

DFS is an emerging and evolving ecosystem, with a dynamically evolving regulatory environment.⁹² Generally, the regulators may include prudential regulators, financial integrity regulators; sector regulators and market conduct regulators.⁹³

The core regulatory authorities required to provide a ‘foundational’ enabling environment for DFS include the country’s CB, its NTA, and its financial intelligence unit (FIU) on AML matters.⁹⁴ This ensemble reflects the primarily transactional iterations of a DFS ecosystem in its foundational DFS 1.0 stage. The number of impacted regulators will increase as service offerings evolve beyond.⁹⁵

There may be co-jurisdiction between regulators over a similar domain or issue, for example on AML and competition issues. In most jurisdictions however, the CB as the apex bank in the country is the lead regulator in DFS. It will, at a minimum, set licensing and authorization criteria for DFSPs and e-money issuance; establish consumer protection mechanisms; set safety and soundness guidelines including schemes for safeguarding of pooled funds and user accounts; set customer identification and verification (CIV) policies for SVA use; establish quality of service (QOS) and risk management guidelines for services; set agent standards; and set interoperability standards and policies. In some cases it may also act in a catalytic role of establishing or building a national interoperable platform or switch that integrates a DFS ecosystem with its e-money-based SVA and agent networks with ‘traditional’ financial ecosystems such as those involving ATM and card networks.

The NTA primarily acts in supporting role to the CB in DFS with its jurisdiction usually limited to issues related to the modalities surrounding access to primary DFS bearer channels such as USSD and STK. If the provider is a licensed MNO,⁹⁶ the NTA may be directly involved in regulating that DFSP through some type of authorization for provision of DFS-type services as a value added services (VAS) license, alongside a license or authorization from the CB for that entity to undertake financial services.⁹⁷ An NTA may also insert itself in discussions on interoperability between DFSPs and other participants.⁹⁸ And while it is usually the NTA or a technology ministry’s primary competency, the CB may include security and risk management requirements for use of bearer services such as USSD in its licensing requirements for DFSPs.

The FIU - also known as a financial intelligence authority or AML Unit - will usually specify minimum standards to be followed for CIV as well as for specifying DFS transaction tier limits. The FIU policies – sometimes granular, but more often than not principles-based - would then ‘trickle down’ to the other regulators to apply in more granular form any rules based on a risk-based approach (RBA) to their own supervised entities. A RBA is generally based on guidelines and principles – rather than rules - for addressing a particular risk so as to lead to a desired outcome.⁹⁹ Oversight over fraud/cybercrime may sit, as it does in Bangladesh, with the FIU.

⁹² Laws, regulations, supervision and oversight though have traditionally followed an institutional approach, whereby specific regulators have had supervisory oversight and rule-making capacity over institutions within their regulatory domain. Thus, for example, banks have traditionally been regulated by the national banking regulator and telecommunications entities by the NTA.

⁹³ Regulators may ‘extend’ their remits over DFS and its enabling components even and especially where there is no direct legal basis for doing so: this reach is usually achieved by using omnibus powers in that regulatory bodies’ establishment statute.

⁹⁴ There are of course other specialized laws and regulators who may have an omnibus remit over an entity, no matter the institution and service offered. For example competition regulators, tax authorities, financial services regulators, privacy and data protection regulators, trade and industry regulators, and consumer protection regulators.

⁹⁵ Service offerings and capabilities in DFS 2.0 and beyond may include bilateral interoperability between DFSP, G2P payments, and independent credit provision by DFSPs.

⁹⁶ It may also intervene if there are competition-related concerns on that licensee not providing access to scarce resources at FRAND terms.

⁹⁷ See on the role of the NTA, Perlman, L (2018b) *The Role of the Telecommunications Regulator in Digital Financial Services*, available at www.dfsobservatory.com

⁹⁸ The NTA in Kenya for example threatened to split up MNO Safaricom if it did not integrate its dominant M-Pesa DFSP subsidiary with other DFSPs in Kenya for interoperability purposes. Quartz (2018) *Kenya Won’t Force A Spin-Off Of The World’s Leading Mobile Money Service After All*, available at <https://qz.com/1212396>

⁹⁹ A feature of a RBA is that compared to a normative, rules-based approach, the supervisory entity does not specify the precise steps required to achieve the desired outcome, rather leaving it to the implementing entity to address the risks outlined in guidelines by implementing procedures and rules that are contextually relevant to it. The rules and procedure of each entity may thus differ, although the net effect of each variation is to address the risks outlined in the guidelines.

Remit/Authority	Competition	FIU	Data Protection	Consumer Protection	CB	NTA	Tax
Authorization To Operate Services	Yes				Yes	Yes	
Data Privacy	Yes		Yes	Yes	Yes	Yes	
Consumer Protection	Yes		Yes	Yes	Yes	Yes	
Quality of Service	Yes			Yes	Yes	Yes	
Competition	Yes		Yes	Yes	Yes	Yes	
CDD/KYC	-	Yes	Yes	Yes	Yes	Yes	
Security	-	Yes	Yes	Yes	Yes	Yes	
Taxation	-				Yes	Yes	Yes
Transaction Data Monitoring	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Exhibit 4: Cross-jurisdictional remits in DFS for DFS-impacted regulators and their direct and extended remits over DFS and its enabling components. Core foundational DFS -related regulators will include the Central Bank, the National Telecommunications Authority, and Financial Intelligence Unit.

The omnibus complexity of DFS and its components has also necessitated closer cooperation between implicated regulators, usually codified as bilateral or multilateral memoranda of understanding (MoUs).

As service offerings, competition-based complexities increase and the DFS ecosystem generally evolves, additional regulators and authorities – some outlined in **Exhibit 4** - will be impacted and become part of the regulatory ecosystem for DFS. These may include other prudential regulators, financial integrity regulators; sector regulators; and market conduct regulators.¹⁰⁰

A market conduct regulator such as the competition authority may for example set parameters for provision of access to scarce resources such as USSD and STK or at fair, reasonable and non-discriminatory (FRAND) terms. Other regulators, agencies, or government ministries may also be drawn by happenstance into regulation, oversight, and policy-making of other components of the DFS ecosystem.

There may however not be competition authority in a country, so some SRAs may undertake competition-related activities if their enabling laws allow this.

The need for and role of a national ID authority to issue a national identity and/or set policies for ID standards and use is becoming more important, as financial ecosystems grow and AML and derisking¹⁰¹ become prominent policy concerns. A number of developing countries have launched biometric ID systems.¹⁰²

3.3 Factors and Components in Regulatory Development

As noted above, an ‘enabling’ environment for DFS may relate to an activity of appropriate regulators to set down conditions for participation in a sector, but may also relate to the ability (enablement) of the regulator itself to produce any enabling laws for market participants to fairly participate. Here, organic growth in capacity, internal learnings, and an evolution of outlook/thinking by key policy makers within regulatory bodies has facilitated regulatory reforms and innovations that allow

¹⁰⁰ An often-heard concern at many DFS conferences is that many of these regulators are either non-existent or functionally deficient in many markets, for example those regulating data protection, consumer protection and competition. This despite laws authorizing their activities.

¹⁰¹ Perlman, L & Wechsler, M (2019, forthcoming) *Derisking and Its Impact on Financial Inclusion (draft title)*, available at www.dfsobservatory.com

¹⁰² On these biometric IDs and their use in AML, see Perlman, L & Gurung, N (2018) *Focus Note: The Use of eIDs and eKYC for Customer Identity and Verification in Developing Countries: Progress and Challenges*, available at www.dfsobservatory.com; and ITU FG DFS (2017) *Identity and Authentication*, available at <https://bit.ly/2KistMX>

DFS and new players to emerge and challenge the primacy of licensed banks as exclusive providers of financial account services.

Even and especially where there is no direct legal basis for doing so, some regulators may in effect ‘extend’ their remit to *indirectly* include DFS and its enabling components. This reach is usually achieved by using omnibus powers in that regulatory bodies’ establishment statute.¹⁰³ Often though the remit may extend further than allowed or intended. Without a *direct* legal basis for their regulations and enforcement, any such activity impacting the DFS ecosystem may precipitate regulatory arbitrage and even be subject to court review.¹⁰⁴

In many cases regulators have used regulatory forbearance – a regulatory device also known as ‘test and learn’¹⁰⁵ – to allow innovations to progress to operational commercial products, even if there was no (direct) regulatory basis for providing these approvals. A contemporaneous incarnation of this approach known as ‘regulatory sandboxing’¹⁰⁶ is however now an accepted regulatory practice in many jurisdictions. And in an even more direct approach, some regulators have themselves ‘become’ the third party, acting in catalytic role of financing and building the required financial infrastructure which is often then handed over to market participants to operate.¹⁰⁷

While many of the regulatory innovations that have emerged around DFS are mostly organic, internal initiatives, they often reflect impetus from (top-level) inputs, guidelines and strategies from banking and payment-oriented supranational standard setting bodies (SSB) such as the Bank for International Settlements (BIS), Committee for Payments and Market Infrastructure (CPMI) the Financial Action Task Force (FATF), and the World Bank Group.¹⁰⁸ Most CBs for example will in some form implement recommendations from these SSBs in national law, regulations or directives.

An overarching coordinating body – as a national financial inclusion secretariat, agency or ministry – may also be established.¹⁰⁹ Often the CB will have its own financial inclusion department.

Often overlooked though are the impact of policy makers, politicians and the Ministry of Finance who are equally and sometimes more important than the Central Bank in igniting and sustaining DFS. In Uganda for example delegated authority

¹⁰³ This may be the result of the lack of an enabling law (for that remit), or lack of regulations, even to provide a critical component in development of a national financial inclusion strategy. The Bank of Uganda (BoU) for example uses its establishment act as the basis for regulating DFS in the absence of a directly enabling national payment systems act to directly license DFSPs. The DFSPs are forced then to partner with licensed banks, who are given a LONO by BoU for the partnership. See the Bank of Uganda Act at <https://bit.ly/2J7dDZy>.

¹⁰⁴ A Ugandan member of parliament unsuccessfully challenged in court the legality of DFS services provided by MNO MTN Uganda based on this method of authorization. Balancing Act (2015) *Uganda: Court Dismisses Case Against MTN Mobile Money*, available at <https://bit.ly/2xvyE>. And Kenya’s high court struck down a legal amendment as part of the omnibus Statute Law (Miscellaneous) Amendment Act that required the NTA to consult the Competition Authority of Kenya before punishing any operator for abuse of dominance. The court ruling restored these powers to the NTA. See Tele Geography (2017) *Court Restores Market Dominance Powers to CA of Kenya*, available at <https://bit.ly/2ssQIkj>

¹⁰⁵ This was the approach of the Bank of Tanzania (BoT) in allowing non-banks to provide DFS in the absence of an enabling national payments law. A LONO was issued to them by the BoT and the NTA as an interim enabling measure.

¹⁰⁶ The first sandbox-like framework was set up by the US Consumer Financial Protection Bureau (CFPB) in 2012 as ‘Project Catalyst.’ For an overview of sandboxes in developing countries, see Wechsler, M (2018) *The State of Regulatory Sandboxes in Developing Countries*, available at www.dfsobservatory.com; and on their use for financial inclusion, see Jenik, I & Lauer, K (2017) *Regulatory Sandboxes and Financial Inclusion*, available at <https://bit.ly/2yDDGU0>

¹⁰⁷ The Central Bank of Jordan built and operated the IoMoPay interoperable switch for DFSPs in Jordan. It is now co-owned by the CBJ and the industry association in a vehicle called JoPAC.

¹⁰⁸ Other SSBs with impact on DFS include the Financial Stability Board (FSB), International Telecommunication Union (ITU), 3rd Generation Partnership Project (3GPP), and the International Organization for Standardization (ISO). See further below.

¹⁰⁹ See for example *Banca de las Oportunidades*, a program to enhance financial inclusion in Colombia run by the Bank for Foreign Trade, Bancoldex. See Banca de las Oportunidades (2018) *Who We Are*, available at <https://bit.ly/2ymk8Xy>. Nigeria’s National Financial Inclusion Strategy mandated the creation of a ‘Financial Inclusion Secretariat’ supervised by the Financial Services Regulation Coordinating Committee, which reports to the National Economic Council. See CBN (2018) *Financial Inclusion*, available at <https://www.cbn.gov.ng/devfin/fininc.asp>. See also World Bank (2018) *National Financial Inclusion Strategies Resource Center*, available at <https://bit.ly/2D2ur4l>; World Bank (2015) *Overview: National Financial Inclusion Strategies*, available at <https://bit.ly/2LXjB0m>

for regulating agent banking took years to be given by parliament, and there is still no national payment systems law to regularize the provision of DFS in Uganda.. As a result, DFS provision in Uganda has been the subject of legal challenges.¹¹⁰

3.4 Capacity of Regulators

Weak regulatory capacity for the implementation and enforcement of regulations are a current characteristic of regulatory oversight and supervision in DFS in a number of jurisdictions.¹¹¹ Skilling up personnel through capacity-building programs, as well as scaling up personnel to expertly handle disparate components making up each of these ecosystems and expanded remits, take time and money. This is often not adequately budgeted for by the SRA or not provided for by the national treasury.¹¹² Often their budgets are buffeted by unexpected and sustained legal clashes with licensees and/or other organizations. In some cases, given budget shortfalls and deficits in local expertise to undertake capacity building, it has been up to donors, such as the World Bank and its satellites,¹¹³ to provide the funding for ongoing capacity building as well as to source and provide the external expertise for technical assistance.¹¹⁴

4 Competition-focused Legal and Regulatory Regimes

4.1 Overview

Dynamic markets¹¹⁵ - usually take a life of their own, self-correcting as competition drives companies to be more efficient and encourages them to innovate. But with an increasing reliance on electronic communications, where access must often be funneled – or throttled - through those licensed to give access, these market dynamics may be skewed. Through force of market power, innovation or through exclusive licensing of services, some may effectively control these scarce resources, with downstream effect on consumers and growth of that industry.¹¹⁶

Ultimately, if a country wants its markets to function well, it needs to protect the competitive process.¹¹⁷ This may mean disciplining market power and implementing means to mitigate the effects of concentration and effective control of resources. This may be through competition policy and competition law, as well as the layers of enforcement mechanisms by a competition authority and/or an SRA with competition-related competencies..

4.2 Competition Policy and Competition Law

Competition policy and competition law are two of the most essential ingredients for a competition regime. Competition law and its enforcement is at the center of competition policy in many countries¹¹⁸ and encompasses a wide-ranging steps for

¹¹⁰ Some politicians in Uganda have (unsuccessfully) to date, tried to foreclose on the ability of non-bank DFSPs to provide services. Daily Monitor (2017) *MPs pin BoU on unregulated mobile money transactions*, available at <https://bit.ly/2AvvuaA> ; and Blizz Uganda (2018) *MP drags MTN, UCC and Bank of Uganda to Court, Seeks an Injunction against MTN License Renewal*, available at <https://go.shr.lc/2Smqr3x>

¹¹¹ Author observations in working in and interacting with DFS-related regulators in over 30 countries, as well as undertaking capacity-building exercises with many regulators.

¹¹² On schemes for undertaking capacity building for developing country NTAs, see Goulden, B (2005) *Building ICT Regulatory Capacity In Developing Economies: A Learning Framework For Regulators*, available at <https://bit.ly/2KpqBSW>

¹¹³ See for example, the International Bank for Reconstruction and Development who funded 'Telecommunications Regulatory Capacity Building' through a USD 492,300 grant from its Institutional Development Fund. The program was aimed at supporting the Telecommunications Regulatory Authority of Lebanon in the streamlining of its internal processes, strengthening transparency, and building technical capacity on regulatory issues. The World Bank held a capacity building event for the NTA RURA in Rwanda in May 2018 alongside regional competition regulators where DFS and telecommunications-related completion issues were highlighted.

¹¹⁴ See the GSMA's capacity-building activities at <https://bit.ly/2L5h5FB> , and <https://bit.ly/2InrkTQ>

¹¹⁵ This describes an economic system that balances a short term focus with a long term focus. See further Evenett, S (2005) *What is the Relationship between Competition Law and Policy and Economic Development?*, available at <https://www.alexandria.unisg.ch/22213/>; and Pruša, J (2012) *Dynamic Efficiency Analysis*, available at <https://bit.ly/2PC1JNX>

¹¹⁶ For comprehensive overviews on competition policies, see GSMA (2015) *Competition Policy in the Digital Age*, available at <https://goo.gl/Q2Ceyc>

¹¹⁷ Gamze ÖZ, G (2010) *The Role of Competition Authorities and Sectoral Regulators : Regional Experiences*, available at <https://bit.ly/2IDcNCE>

¹¹⁸ Hoekman, B & Holmes, P (1999) *Competition policy, Developing Countries and the WTO*, available at <https://bit.ly/2AI8pSr>

development of policy frameworks and legal instruments providing the basis for enforcement. Competition law and policy then involve adopting framework rules designed to ensure that markets are and remain as efficiently self-regulating as possible.¹¹⁹

To use the simplest terms to describe competition regimes around the world, the competition policy component is the *why*, the competition law (and regulation) the *how*; and the enforcement agencies – such as a CA or SRA – are the *who*. The *when* will be triggered if entities are found or alleged to have flouted these laws and regulations.

As to the *why*, the promotion of innovation or ‘dynamic efficiency’¹²⁰ in markets has become an important goal of competition policy. Application of competition law may explicitly take into account this objective. Competition regimes are not always (only) about economic efficiencies though: the competition commission of South Africa – one of the layers of competition policy enforcement in South Africa – says that a fundamental principle of competition policy and law in South Africa is the need to balance economic efficiency *with socio-economic equity and development*.¹²¹ In another context, this may relate to national financial inclusion imperatives.

Competition-related jurisdiction and power is generally founded through *sectoral regulations* and where available, a National Competition Law (NCL).¹²² National competition law has been defined ‘as the set of rules and disciplines maintained by governments relating either to agreements between firms that restrict competition or to the abuse of a dominant position (including attempts to create a dominant position through mergers)’.¹²³ ‘Competition law’ then is the bundled competition-related competencies that may be provided to regulators.

A NCL is usually termed *ex post*, meaning that the CA or SRA with competition competency for a sector will have set rules in place to prevent and deal with anti-competitive behavior *after or when* it takes place.¹²⁴ That is, the regulatory activity applies *after* an infringement. It may involve detecting, investigating and prosecuting offenders, possibly leading to a fine and remedies imposed on the infringers.¹²⁵

A NCL may include the establishment of a dedicated national CA with a wide remit over any competition-related issues in the country, no matter the sector. It may also give specific competition competencies to a SRA such as a NTA or a CB if that SRA’s establishment law does not provide it with such competencies. Or, if the SRA’s establishment law does do so, it may specify the extent of the remit of the CA and the SRA on that SRA’s sector. In some cases though, the NCL may specifically exclude a SRA from pursuing some competition-related competencies in its sector, for example relating to mergers and acquisitions where a CA may have exclusive remit. The SRA though may be allowed to provide technical assistance to the CA in these matters.

Mostly though, competition powers will be found in sectoral regulation, such that each of the SRAs may have mandates that allow them to intervene in their sector if there is a competition-related concern.¹²⁶ Sector regulation by an SRA usually applies *ex ante* and is continuous.¹²⁷ Here sectoral regulations contain competition provisions which apply *prior* to the occurrence of

¹¹⁹ From Zambia Competition Commission (2006) *The Relationship Between Competition Authorities And Sector Regulators, Particularly With Respect To Abuse Of Dominant Positions: The Case Of Zambia*, available at <https://bit.ly/2tRmkB3>. This entails preventing entities from, *inter alia*, making anticompetitive agreements, abusing dominant positions (having significant market power, SMP) and carrying out anti-competitive mergers.

¹²⁰ Pruša, J (2012) *Dynamic Efficiency Analysis*, available at <https://bit.ly/2PC1JNX>

¹²¹ Competition Commission of South Africa (2018) *About*, available at <http://www.compcom.co.za/about/>

¹²² UNCTAD (2015/2018) *The Model Law on Competition*, available at <https://bit.ly/2yW1cPP>. The United Nations Conference on Trade and Development (UNCTAD) ‘Model Law’ is made up of two parts: Part 1 is a permanent guide and is not subject to revision [Excerpt] whereas Part 2 is revised regularly, chapter by chapter.

¹²³ Hoekman, B & Holmes, P (1999) *Competition policy, Developing Countries and the WTO*, available at <https://bit.ly/2AI8pSr>

¹²⁴ Although in regards mergers and/or acquisition that create entities with large overlapping market share, the CA may need to be notified prior to being implemented. That it, it applies *ex post*.

¹²⁵ Irvine, H & Granville, L (2009) *Who to Call?: Concurrent Competition Jurisdiction in the South African Electronic Communications Sector*, available at <https://bit.ly/2MBoYST>

¹²⁶ In the cases of Uganda and Kenya for example, both those country’s NRAs have been provided competition-related oversight powers by the legislature, while in the case of India, the NRA has *ipso facto* assumed competition powers over a narrow band of technology issues affecting the DFS sector. Much of the competition-related concerns in DFS relate to USSD and STK-based access to services.

¹²⁷ UNCTAD (2015/2018) *The Model Law on Competition*, available at <https://bit.ly/2yW1cPP>

actions that require intervention to ensure a fair and level playing field.¹²⁸ It may also act as precondition for entering the market or undertaking an action. For example, price increases in regulated industries may be subject to prior approval by the specific regulator.¹²⁹ Sector regulation is typically viewed as aiming to alleviate market imperfections by substituting regulatory measures for the working of market forces. In addition, sector specific regulation may serve a number of additional legitimate objectives such as environmental safety or income redistribution goals, which may seem as lying outside the field of competition policy.

4.3 Competition Enforcement Schemes

The objectives of policy can be distinguished from the instruments that a government has at its disposal to secure those objectives. These instruments include measures that a state, court, or their delegated representatives are empowered to take if needed. In the competition arena, competition law *enforcement* is done by a CA¹³⁰ or SRA with competition competencies, or potentially both if they have co-jurisdiction. Determinants of this balancing are whether general competition rules always ‘override’ sector-specific rules, and/or whether the CA or SRA has ultimate responsibility for enforcing competition law in a sector.

Lawmakers ultimately decide on how to balance allocation of competition competencies. This could entail enacting sector-specific legislation only, where SRAs are only empowered in regard to competition matters *ex post* and *ex ante*. Or they may allocate coincident and complementary omnibus competition rules where the CA (or others) may have remit or co-jurisdiction. Determinants of this balancing then are whether general competition rules always ‘override’ sector-specific rules, and/or whether the CA or SRA has ultimate responsibility for enforcing competition law in a sector.

SRAs are typically assigned a considerably broader range of goals than a CA may be asked to pursue. This may make SRAs more adept at trading off conflicting goals.¹³¹ SRAs can respond though in technical ways a ‘generalist’ CA may not be able to do specific activities that may amount to anti-competitive behavior. SRAs may, and often are subject to regulatory capture, and thus may distort decisions in ways that are more favorable to the preservation of their own activities and that of select market participants than to pro-competitive deregulation.¹³² Often – and especially in the developing world - this may result from the SRA not having sufficient funds to fight off purely furtive and opportunistic legal challenges to the SRA’s authority or specific regulatory proposals.

General regulation though may be suited to areas of convergent industries, which may include DFS - and permit a single forum for assessing behaviors or obtaining consent for an activity or merger. In DFS for example, the omnibus nature of its financial, telecommunication and ancillary service¹³³ layers may invoke multiple regulators. A single regulator in relation to competition matters may expedite decision making. In Rwanda for example, network industries are all regulated by one regulator, the Rwanda Utilities Regulatory Authority (RURA).¹³⁴ In Malawi, the Competition and Fair Trading Commission (CFTC) regulates, monitors, controls and prevent acts or behaviour which would adversely affect competition and fair trading in Malawi.¹³⁵

Exhibit 5: Factors in Allocating Competition-related Competencies

¹²⁸ *Ex ante* regulation is used when a regulatory or other relevant authority establishes that absent such *ex ante* intervention, the abuse of a dominant position some or other market failure will occur. See Bourreau, M & Valletti, T (2015) *Enabling Digital Financial Inclusion through Improvements in Competition and Interoperability: What Works and What Doesn’t?*, available at <https://goo.gl/jAcViG>

¹²⁹ For example regulators have intervened to provide access to a USSD channel at FRAND terms.

¹³⁰ In South Africa, three institutions were created in terms of the Competition Act of 1998: The Competition Commission; The Competition Tribunal; and the Competition Appeal Court. See Competition Commission of South Africa (2018) *About*, available at <http://www.compcom.co.za/about/>

¹³¹ Zambia Competition Commission (2006) *The Relationship Between Competition Authorities And Sector Regulators, Particularly With Respect To Abuse Of Dominant Positions: The Case Of Zambia*, available at <https://bit.ly/2tRmkB3>

¹³² Hope, E (2000) *Competition Policy Analysis*, available at <https://bit.ly/2tEq6Oy>

¹³³ For example credit provision, which may involve a credit regulator.

¹³⁴ In January 2018, for example, RURA approved the acquisition of MNO Tigo Rwanda ltd by its competitor MNO, Airtel Rwanda. See Airtel (2018) *The Board Of Rwanda Utilities Regulatory Authority (RURA) Approves The Acquisition Of Tigo Rwanda Ltd By Airtel Rwanda Ltd*, available at <https://bit.ly/2Kiv7qt>

¹³⁵ For more on CFTC, see <http://www.cftc.mw/>

4.4 Focus of Competition Interventions In Networked Industries

4.4.1 Overview

Industries subject to sector regulation are often characterized by natural monopolies and market failure.¹³⁶ Competition regulation can play an important role in introducing and stimulating competition in specific industry sectors and in some natural monopolies.¹³⁷ It may even replace competition.¹³⁸ Intervention by CAs or SRAs is often needed in sectors where there is a huge and legacy-based barriers to entry, for example in telecommunications infrastructure provision where there is a large startup cost vase for agents, platforms, collateral, mobile base stations and spectrum.¹³⁹ These high barriers to entry are why these sectors are subject to *ex ante* regulation, complemented where available by a CA for *ex post* competition enforcement.¹⁴⁰ Regulations that provide synthetic competition may include ensuring regulation of pricing, or regulation of access to resources by downstream operators is not distorted and is provided to them at FRAND terms.¹⁴¹

The UN Model law¹⁴² on competition in relation to these relatively closed industries addresses how this could be achieved. It categorizes interventions as focusing on the following:

- **Technical Regulation:** The setting and monitoring of standards so as to assure compatibility and to address privacy, safety, and environmental protection concerns. This may also include allocation of publicly owned resources such as spectrum.¹⁴³
- **Access Regulation:** Ensuring non-discriminatory access to necessary inputs, especially network infrastructures;
- **Economic Regulation:** Adopting cost based measures to control monopoly pricing;¹⁴⁴ and
- **Competition protection:** Controlling anti-competitive conduct and mergers.¹⁴⁵

The effects of regulation on competition – both positive and negative¹⁴⁶ - are outlined below.

4.4.2 Issues That May Raise Regulatory Concern¹⁴⁷

Problematic behavior that may raise the attention of competition-focused regulators include but not limited to:

- Discriminatory pricing¹⁴⁸
- Exclusive dealing agreements¹⁴⁹

¹³⁶ UNCTAD (2015/2018) *The Model Law on Competition*, available at <https://bit.ly/2yW1cPP>

¹³⁷ Gamze ÖZ, G (2010) *The Role of Competition Authorities and Sectoral Regulators : Regional Experiences*, available at <https://bit.ly/2IDcNCE>

¹³⁸ UNCTAD (2015/2018) *The Model Law on Competition*, available at <https://bit.ly/2yW1cPP>

¹³⁹ These infrastructure sectors may be said to suffer from a lack of competition or from market failure.

¹⁴⁰ Typical *ex ante* interventions in the telecommunications sector include regulating interconnection fees, facilities leasing where incumbents will provide access to their infrastructure, and wholesale price regulation.

¹⁴¹ Irvine, H & Granville, L (2009) *Who to Call?: Concurrent Competition Jurisdiction in the South African Electronic Communications Sector*, available at <https://bit.ly/2yY8jHo>

¹⁴² UNCTAD (2015/2018) *The Model Law on Competition*, available at <https://bit.ly/2yW1cPP>

¹⁴³ Irvine, H & Granville, L (2009) *Who to Call?: Concurrent Competition Jurisdiction in the South African Electronic Communications Sector*, available at <https://bit.ly/2yY8jHo>

¹⁴⁴ Economic regulation and competition policy step in where markets fail in order to restore economic (allocative) efficiency such as where there are barriers to entry, including natural monopoly, or historical protections

¹⁴⁵ For example, preventing firms making anti-competitive agreements, abusing dominant positions and carrying out anti-competitive mergers. Irvine, H & Granville, L (2009) *Who to Call?: Concurrent Competition Jurisdiction in the South African Electronic Communications Sector*, available at <https://bit.ly/2MBoYST>

¹⁴⁶ Including where regulatory overreach may stifle competition.

¹⁴⁷ Portions of this Section are based on work by Ariadne Plaitakis of Bankable Frontiers Associates as an Annex to Perlman, L (2017a) *Competition Aspects of Digital Financial Services*, available at <https://bit.ly/2xxLcma>

¹⁴⁸ Where the entity controlling critical access charges its own subsidiary far less than a competitor for the same service.

¹⁴⁹ Buying all from one supplier.

- Loyalty rebates¹⁵⁰
- Margin squeeze¹⁵¹
- Predatory pricing¹⁵²
- Refusal to deal¹⁵³
- Refusal to supply
- Tying of products/services: contractual tying, refusal to supply, withdrawal of guarantee, & technical tying¹⁵⁴

Horizontal cartels: Defined as collusion between entities on the same level of the value chain. Examples include horizontal price fixing, agreements relating to terms and conditions, exchanges of information, advertising restrictions, and anti-competitive horizontal restraints. Some jurisdictions require that the collusion has an effect on the market, while others require only that there was an intention to collude.¹⁵⁵ Such behavior, if it fits the required constitutive elements of the offence, is always considered anti-competitive.

Vertical restrictions: Defined as restrictions imposed in vertical relationships in the value chain. Examples include single branding; limited distribution,¹⁵⁶ resale price maintenance, market partitioning, territorial and customer restraints on buyer's rights. These may or may not be considered anti competitive; these restrictions will only have an effect on competition when the entity imposing restraint has some market power, although this does not have to be dominant/SMP. Even if the restrictions have an effect on competition, whether or not there is an actual offence is very dependent on national legislation.¹⁵⁷

Many of these types of behavior are only anticompetitive if undertaken by a dominant/SMP firm, otherwise the behavior is not problematic in itself. To prove dominance/SMP, not only must the market share(s) of the entity or entities and its competitors on the relevant market under review be investigated,¹⁵⁸ but also other factors, such as:

- Barriers to entry such as legal barriers¹⁵⁹
- Economic advantages¹⁶⁰
- Cost and network effects and
- Countervailing buying power

¹⁵⁰ Volume rebates are allowed under EU law.

¹⁵¹ Here a dominant firm leaves insufficient margin between upstream and downstream products, squeezing competitors downstream.

¹⁵² Predatory pricing, where a dominant operator charges prices below a normal cost standard, and there is evidence that this is not sporadic or reactive price cutting. See Welfensm, J (2004) Significant Market Power in Telecommunications: Theoretical and Practical Aspects, available at <https://bit.ly/2SzjnQW>

¹⁵³ This may be refusal to allow access to an essential facility, that is a facility required by competitors and cannot reasonably be duplicated by competitors for economic/technical reasons. See Ezee Money Uganda, a DFSP competing on DFS with MNO MTN Uganda, sued MTN Uganda for unfair restriction of competition under the Uganda Communications Act after the MNO required a third-party aggregator and agency service provider to deny service. The East African (2015) *Ugandan Court Penalises MTN for Malicious Business Conduct*, available at <http://bit.ly/2JnS4Uj>

¹⁵⁴ Service 1 sold only if others services are also bought. This is anti-competitive if firm has a dominant position in one of these markets. See Welfensm, J (2004) Significant Market Power in Telecommunications: Theoretical and Practical Aspects, available at <https://bit.ly/2SzjnQW>

¹⁵⁵ As in the EU.

¹⁵⁶ Includes exclusive distribution, exclusive customer allocation, selective distribution, franchising, and exclusive supply tying agreements.

¹⁵⁷ The US is much more lenient on these types of restraints than EU.

¹⁵⁸ Under EU law, there is a presumption of dominance if the entity has more than 50% market share; such presumptions vary between jurisdictions.

¹⁵⁹ Intellectual Property Rights, regulatory monopoly, and licensing of scarce resources.

¹⁶⁰ Access to economies of scale.

Bundling products, tying and predatory pricing may not necessarily trigger competition concerns for market participants who do not have SMP, but may be considered as an abuse of a dominant position for SMP participants.¹⁶¹ An in-depth market analysis should always be taken before any allegations of abuse of dominance are made.

4.5 Coordination Between Regulators

Three potential models have been characterized¹⁶² to allocate regulatory authority over these domains:

- Granting exclusive jurisdiction to the CA over competition issues, no matter the sector
- Allow the CA to regulate competition in a sector, unless specific regulation is justified
- Confer concurrent powers on the CA and SRA to regulate competition in a sector

‘Technical regulation’ will almost always fasten on a SRA, while regulators in ‘economic’ and ‘competition’ roles will depend on the jurisdiction. ‘Competition protection’ is mostly responsibility of the CA where such exists, but the economic role(s) may be and often is split between the CA and SRA. Often here, competition enforcement and sector regulations will be complementary instruments, aimed at allowing the SRA and CA to work together to achieve competitive markets.¹⁶³ To facilitate this, coordination is needed between the CA and the SRA to create a consistent framework and policy application.¹⁶⁴

Because of jurisdictional conflicts, coordination on competition issues has been found to be useful in preventing regulatory arbitrage and is usually facilitated through a memorandum of understanding between the regulators which outlines who has jurisdiction over a specific issue or sets of issues and the remedies available, if any.¹⁶⁵ Or, the legislature may intervene to specifically carve out competition-related roles.¹⁶⁶

A regulator, with regard to mobile coverage for example, often regulates access to technology and services which are usually limited and in scarce supply. This includes USSD, STK, SMS short codes, pricing and national tariffs, zero rating and any anti-competitive practices that may arise within the marketplace. They may also regulate competition in the marketplace to ensure equal access to USSD, fair pricing, reasonably comparable QOS, exclusivity agreements within agent network (which may also fall within central bank) and STK.

¹⁶¹ These SMP market participants have a special responsibility *vis à vis* the market due to their market size and influence. Thus the determination of SMP status by the regulator is key in determining if concretely there has been any anti-competitive conduct.

¹⁶² See Almunia, J (2010) *Competition V Regulation: Where Do The Roles Of Sector Specific And Competition Regulators Begin And End?*, available at <https://bit.ly/2tH7L3G>; and UNCTAD (2015/2018) *The Model Law on Competition*, available at <https://bit.ly/2yW1cPP>

¹⁶³ At least in the EU, telecoms sector regulation is being progressively phased out as competition in the market develops. That is, electronic communications will be governed by competition law only. Under the current EU Regulatory framework for electronic communications, the EC alongside NTAs, has a role to play in ensuring that regulation is only imposed where it is necessary. That is, regulation will be the exception rather than the rule. From Almunia, J (2010) *Competition V Regulation: Where Do The Roles Of Sector Specific And Competition Regulators Begin And End?*, available at <https://bit.ly/2tH7L3G>. See also EC (2015) *Regulatory Framework For Electronic Communications*, available at <https://bit.ly/2tE2wBS>

¹⁶⁴ OECD (2008) *Policy Round Tables: Relationship between Regulators and Competition Authorities*, available at <https://bit.ly/2yYBkCW>. If competition protection is separated from access and economic regulation, cooperation and coordination are vital to avoid inconsistent, investment-d discouraging application of the two sets of policies. Irvine, H & Granville, L (2009) *Who to Call?: Concurrent Competition Jurisdiction in the South African Electronic Communications Sector*, available at <https://bit.ly/2MBoYST>. See also Gamze ÖZ, G (2010) *The Role of Competition Authorities and Sectoral Regulators : Regional Experiences*, available at <https://bit.ly/2IDcNCE>

¹⁶⁵ In Malawi, for example, there are MOUs between the CFTC and other DFS regulators outlining their respective jurisdictions.

¹⁶⁶ For example, the NTA in Kenya, lost its competition powers to independently monitor dominance and act against its abuse, leaving it with a narrow mandate of licensing new players and allocating frequencies. Under the new legal regime, the NTA must consult the CAK when assessing critical industry factors, such as SMP, before making a declaration of dominance. See Asoko Insight (2016) *Communications Authority Of Kenya Loses Power To Regulate Dominant Telcos*, available at <https://goo.gl/OR5D14>. In some jurisdictions such as India, consultations between sector regulator and CA are not mandatory but at the discretion of regulator in charge of the issue.

4.6 Application of Competition Powers

Competition powers are found in sectoral regulation, such that each of the SRAs may have mandates that allow them to intervene in their sector if there is a competition-related concern. This approach also allows for market investigations and inquiries to determine if an entity has what is termed dominance or has SMP based on its market size and other market factors. Even if the SRA or CA determines that a certain entity does have SMP, the question is whether the entity is abusing this SMP to the detriment of other smaller entities, and what remedies and/or punishments are then necessary or appropriate. If there are no barriers to entry though, the market is contestable¹⁶⁷ such that market share does not imply market power.

While it is possible that competition law and policy and regulation co-exist without the latter having any bearing on competition, there are also situations where regulation produces effects on competition – in positive as well as in negative ways.

4.7 Methods To Determine Anti-competitive Behaviour

As part of an investigation into potential anti-competitive behaviour, the CA/SRA may need to undertake market studies to define markets.¹⁶⁸ The market study may indicate the need for *ex-ante* intervention by helping the CA/SRA to:

- Clarify whether and where there are bottlenecks to competition,
- Understand the nature of competitive rivalry
- Understand the likely impact of a potential merger, and
- Understand the actual impact that conduct has had on competition such on high prices, lower QOS, and less innovation and investment.

Tools the CA/SRA may use to understand the market include a theory underpinning how that market operates, as well as data and evidence revealing the inner workings of that market. They may also use as a straw man, the hypothetical monopolist in what is called the SSNIP (Small but Significant, Non-transitory Increase in Price) test¹⁶⁹ using a product group and geographic area such that a hypothetical monopolist could profitably and permanently raise prices by a small amount.

4.8 Regulatory-derived barriers to competition

While competition regulation activities are mostly focused on remedying market failures and imbalances, there may be concomitant activities by regulators that create imbalances and distort the competitive dynamics. The imbalances may have a similar effect to the downstream effects of anti-competitive behaviour of market participants. The effect, although possibly unintended, may amount to a constructive barrier for new entrants. In the DFS domain, these may be said to be non-enabling and affect market entry, market exit and market operation. Examples of the non-enabling environment – at least from the market participant’s perspective - include:¹⁷⁰

- Creating complex and lengthy authorization procedures for the establishment of new market participants
- Bans on licensing of specific types of institutions, or restrictions on institutions with a similar focus to licensed institutions

¹⁶⁷ Developed in part by William Baumol, the ‘Theory of Contestable Markets’ says that when barriers to entry into a market are weak or low or in some cases non-existent, and assuming that all entrants have equal access to technology, there is a constant threat of potential entry. This increases competition in that market since there is no cost to enter or exit the market. A (theoretically) perfectly contestable market has no entry or exit barriers, no sunk costs, and allows market participants access to the same level of technology. See Baumol, W, Panzar, J & Willig, R (1982) *Contestable Markets and the Theory of Industry Structure*, available at <https://goo.gl/CGbVMA>; and Martin, S (2000) *The Theory of Contestable Markets*, available at <https://bit.ly/2yVlvwy>

¹⁶⁸ As noted above, an in-depth market analysis should always be taken before any allegations of abuse of dominance are made.

¹⁶⁹ There are various approaches to defining a market, the methods of which are beyond the scope of this paper. Briefly, a market definition is a tool used by regulators to identify and define the boundaries of competition between entities so as to establish the framework within which competition policy principles can be applied. This may identify in a systematic way competitive constraints that market participants face. For example, some regulators employ the ‘Hypothetical Monopolist Test,’ also known as the SSNIP test. See further Concurrences (2016) *Glossary*, available at <https://goo.gl/nR9pPK>; GSMA (2016b) *Resetting Competition Policy Frameworks For The Digital Ecosystem*, available at <https://goo.gl/YHBMxv>

¹⁷⁰ UNCTAD (2015/2018) *The Model Law on Competition*, available at <https://bit.ly/2yW1cPP>; Perlman, L (2017a) *Competition Aspects of Digital Financial Services*, available at <https://bit.ly/2xxLcma>

- Requiring compliance with uncommon norms and standards
- Inconsistency in the licensing of institutions
- Preventing foreign firms from competing in national markets
- Privileging certain market participants
- Arbitrary public procurement and state-aid decisions which distort competition.
- Inconsistency in the application of related rules, leading to one market participant being advantaged versus others without justification
- Inconsistent tax regimes
- Inconsistent capital requirements
- Setting of inconsistent pricing without justification

Regulatory mandates often fail to conduct *ex ante* impact assessment on different stakeholders.¹⁷¹ These activities may run counter to a key guiding principle for regulation: that the remedy for harmful conduct should be the least restrictive available to achieve the intended objective and should be proportionate to the extent of risk.¹⁷² The intervention should therefore be justified by the risk to market evolution of anti-competitive behavior, and the higher the risk, and the stricter the rules that comprise the intervention.

Some of these competitive barriers may not be a result of any purposive competition-related precepts though, but may from the political economy favoring one set of groups – for example those with state shareholding, or who have provided exclusive services to the state – or from ostensible safety and soundness concerns. Similarly, a CA and/or SRA may insist that an entity with access to scarce resources – such as for USSD – must provide it to competitors at below the entity’s cost.¹⁷³ Such determinations may – in the DFS realm – be made by the CB and the NTA, the former to prevent those seen as posing potential systemic risk were they to be part of a national payment system core; and the latter, if there is a quid quo pro for favoring one participant versus another for a scarce resource.¹⁷⁴

5 Competition Issues in Digital Financial Services

5.1 Overview

While discussions of competition issues can often amount to a dystopic characterization of an ecosystem, this may not necessarily be the norm in DFS ecosystems. There are, of course, a number of examples where market forces in the ecosystem have sufficed to provide an equilibrium of service provision and access between market participants, and which then have obviated the need for a SRA or CA intervention in relation to access to technology, services, and pricing thereof. Stifling competition may affect financial inclusion goals.

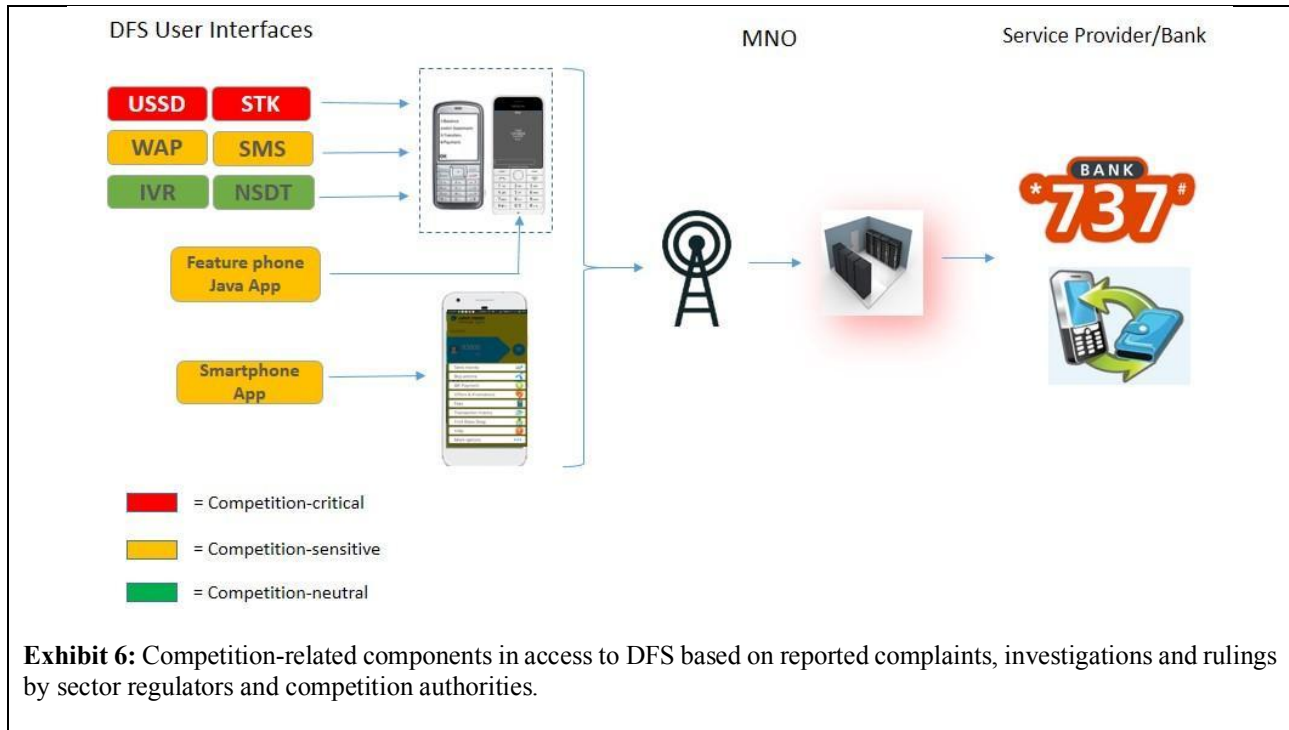
But, as shown in **Exhibit 6** and in the country examples below, the issues in areas such as market access; access to technology; data and services; and use of agents are manifest and may be of concern to a number of SRAs, CAs, market participants, and consumers in a number of countries. In some cases, MNOs may feel disadvantaged by having to provide services to competitors below their cost.

¹⁷¹ Kulkarni, A (2018) *(Not) the Way to Promote Digital Payments*, available at <https://bit.ly/2Mzdf05>

¹⁷² CGAP (2014) *Mobile Payments Infrastructure Access and Its Regulation: USSD*, available at <https://goo.gl/IBu4sJ>. In the context of sharing USSD, a least restrictive rule, notes CGAP, will be one that minimizes risk of anti-competitive behavior without putting unnecessary restrictions on MNOs. For example, banning MNOs from the mobile payments market is more restrictive than a regulation mandating USSD access. Other examples may include setting price caps or floor prices for bearer access.

¹⁷³ See for example USSD provision by MNOs to DFSPs in Bangladesh.

¹⁷⁴ In Kenya for example, incumbent Safaricom was provided exclusive rights to 4G spectrum in exchange for building a mobile network for security forces. Some parts of the spectrum were relinquished after complaints by competitors Airtel and Telkom Kenya. See The Star Kenya (2015) *Safaricom To Give Up Part Of 4G Frequency*, available at <https://bit.ly/2tHTHH1>



For example, while pricing is usually a commercial negotiation that satisfies all parties, sometimes disputes are escalated to a SRA or the courts. To make a determination on whether pricing is anti-competitive, regulators would look at regulating prices in relation to (theories of) market power, and abuse of dominance in excessive, discriminatory and exclusionary pricing. Price regulation generally can be burdensome if it requires cost modelling, or uses benchmarks and may take many years to accomplish, especially if market participants stonewall on providing necessary data to undertake a cost analysis.¹⁷⁵ This may also include market definition reports, detailed proposals for market definitions, an analysis of whether an entity has SMP, effective competition analysis, and principles for pro-competitive intervention as may be required. A conclusion of ineffective competition may be to find that pricing is inefficient because it has not driven down to cost through competition.

A Telecommunications-& Payment Infrastructure related

5.2 Bearer Channels Access and Use

Access to core DFS facilities and channels is often characterized by a competitive hue. That is because the gatekeepers for access to the primary channels for DFS by third party SPs and consumers alike is controlled by entities who are often in direct competition with them. The gatekeeping may relate to the technical access methods for DFS such as for USSD and the SMS-based STK, the primary bearer services for DFS.¹⁷⁶ The regulatory, commercial and technical steps needed to obtain access to USSD gateway by a third party DFSP could include:¹⁷⁷

- Obtain consent to integrate into the USSD or STK gateway of the MNO
- Obtain access to USSD or STK shortcodes
- Negotiate FRAND-based rates for USSD and STK access
- Obtain Quality Of Service assurances from the MNO

¹⁷⁵ See for example attempts by the NTA in South Africa to undertake a market-related study on telecommunications pricing. Business Tech SA (2014) *MTN and Vodacom termination costs a “dark secret”*, available at <https://bit.ly/2Ojwoek>

¹⁷⁶ See **Section 2** on USSD and STK.

¹⁷⁷ The sequence and requirements for getting access to USSD short codes and a USSD gateway as described here are stylized, and will invariably differ in various jurisdictions.

An inability to secure one or more of these components could render the third party's access to a USSD or STK gateway unobtainable and/or untenable. In particular, even if access is made available to the necessary STK components for example, variable and often caustic wholesale access costs can make the transaction and continued business case unfeasible.

Because USSD and STK access to DFS can mostly only be offered by aggregators and licensed MNOs through their own USSD gateways, they are scarce technology resources. If the MNO is in competition with the DFSP over a DFS-related service, it could potentially block that service, either by denying the SP access to the gateway, or by not supplying it with short codes required for customer access. This refusal to supply service is not necessarily the norm as there are many instances of sound commercial arrangements between MNOs and entities that may compete with it in relation to DFS. Robust competition between MNOs in Tanzania, Malawi and South Africa, for example, has made USSD access a very profitable revenue source for MNOs, even where provided to SPs who may compete with the MNO on some services. However, the vertical integration between the MNOs infrastructure business and its DFS business has in some markets raised competition issues where there has been, objectively, a denial of service. These instances are outlined below.

5.3 Access-related Issues

Access to USSD: Access to USSD is crucial to the business plans of SPs. Loss of this access may irrevocably damage their business.¹⁷⁸ Usually the access given by MNOs to SPs is the Mobile Originated USSD (MO-USSD) accessible via short codes. Inability to (and delays in provision of) access the gateway is fatal to a business predicated on USSD access given the scarcity of USSD. SPs denied access by the MNO could, however, approach aggregators, who have access to the MNO gateway, for access, but potentially at a higher price as the aggregator will charge a fee. In some countries, the provision of Network Initiated (NI)-USSD can provide a competitive advantage for SPs. For example, if there is a dropped USSD session and the transaction is not completed, the customer may not want to re-initiate the transaction so as to avoid potential double billing. NI-USSD will allow re-initiation of a dropped USSD-based transaction so that customers can complete their unfinished transaction.¹⁷⁹ However, even if NI-USSD is provisioned on the MNOs USSD gateway, the MNO may decide not to make it available to third parties.¹⁸⁰

Pricing of USSD Gateway Access and Use: Pricing of USSD access to a USSD gateway is an issue in some markets. This may relate to wholesale and/or retail pricing for USSD. Usage on a wholesale basis may be charged by a MNO on a revenue-share, or usage per hop or per session basis. There may be conflict between the NTA – who may look at access pricing with a commercial-type, cost-recovery plus basis – and the CB who may have a financial inclusion lens and want a simple cost-recovery pricing regime used for the MNO's USSD pricing.¹⁸¹

Time Allowed For a USSD Session: The length of a USSD session may be restricted by the MNO for third party providers, such that there is not enough time for customers to input long account numbers when prompted. Similarly, MNOs may restrict the time allowed for the input or for the customer to provide input to advance to the next tree on the menu. MNOs may cite the so-called 'opportunity cost' inherent in providing USSD to third parties, since they argue that the GSM system design may mean that use of USSD (signaling) channel may block revenue-generating incoming and outgoing voice calls for the duration of the live USSD session.¹⁸² Further, they believe that a commercially and technically viable arrangement would allow for a price and length/stages of sessions that are commensurate since increased time increases the use of the USSD resource. MNOs

¹⁷⁸ MNOs though may have legitimate reasons for denying a SPs access to their USSD gateway, for example a history of fraudulent use of USSD-based services with other MNOs or bad credit history. See also CGAP (2014) *Mobile Payments Infrastructure Access and Its Regulation: USSD*, available at <https://goo.gl/IBu4sJ>

¹⁷⁹ TRAI (2016a) *Consultation Paper On The Review Of Regulatory Framework For The Use Of USSD For Mobile Financial Services*, available at <https://goo.gl/dSSPLN>

¹⁸⁰ *ibid*

¹⁸¹ Daily Sun (2018) *Session-based USSD price to raise mobile banking cost*, available at <https://bit.ly/2z7uGHm>

¹⁸² See for example the responses the TRAI received when canvassing local MNOs on use of USSD. The MNOs indicated that any move to increase the number of stages in a USSD menu would put a load on their signaling infrastructure and, therefore, that there should be a commensurate increase in the ceiling tariff for USSD session from the present level if the number of menus available were increased. Other MNOs were agreeable to increasing the number of stages provided such USSD sessions were restricted to transactions related to financial inclusion only and not for any other additional financial services such as mobile banking. TRAI (2016a) *Consultation Paper On The Review Of Regulatory Framework For The Use Of USSD For Mobile Financial Services*, available at <https://goo.gl/dSSPLN>

have discouraged sessions lengths being increased whereas in India, it is implemented in tandem with a cap on the pricing per session.

USSD Menu Tree Length: USSD menu trees may be restricted by MNOs to a maximum number of stages. As noted earlier, MNOs cite the ‘opportunity cost’ inherent in providing USSD to third parties, since the GSM system design may mean that use of the USSD (signaling) channel may block revenue-generating incoming and outgoing voice calls for the duration of the live USSD session. MNOs indicate that increasing the number of menu stages would put a load on their signaling infrastructure and any increase in the number of stages contemplated is either practically impossible or should be accompanied by a commensurate increase in the ceiling tariff for USSD sessions.¹⁸³

SIM Toolkit Access: Key to providing STK-based services is that the MNO provides access to its STK gateway; allows the SPs menu to be placed on the MNO SIM; allows Over The Air (OTA) updating of the SIM menus as needed; and that the MNO provides the DFSP with short codes the SP’s customers will use to access the SPs DFS service.¹⁸⁴

Access to STK Gateway: For third party SPs to provide STK-based services to their customers, the MNO must provide these third parties access to their STK gateway. If this is refused, the third party may need to use another access bearer such as USSD, Near Sound Data Transfer (NSDT), Java applets, WAP-based access, or OTT smartphone apps. Some of these alternate access mechanisms, however, may not have the same relative mass-market discovery potential as STK-based access.

Pricing of STK access: Pricing of STK access has an issue in some markets. This may relate to the charges for a transaction, which may be per transaction no matter how many SMS are used, or per SMS. The MNO may also charge for OTA updates to a SPs STK-based SIM menu.

Net Neutrality: An emerging issue in the provision of services is what has been termed ‘net neutrality,’ describing non-discriminatory provision of services over bearer channels. The issue crystalizes in the OTT mobile app domain in multiple ways: whether apps by third parties can install on MNO-locked mobile phones; whether the apps themselves with operate with the same degree of fidelity over the MNO bearers as would (possibly completing) MNO apps; and whether there is any price disparity in access to any bearer.

Even if the MNO does not directly compete with the third party, favoring a particular entity over another access, QOS or price could trigger net neutrality – and anti-competitive behavior - concerns.¹⁸⁵ For example, in April 2015, Airtel India launched its zero-rated platform Airtel Zero, which allowed customers to access certain apps for free. Facebook itself launched its free but limited internet in August 2013 available only to Reliance Communications customers. In response to complaints on net neutrality, TRAI held public consultations on the issue and released regulations in 2016 that banned the practice.¹⁸⁶ It is not clear if TRAI’s decision – highlighting ‘discriminatory’ tariffs - was a direct competition issue in so far as there was (or was not) an abuse of dominance determination by TRAI, it still telegraphs the potential for abuse of dominance in pricing (and access) to scarce resources where one of the parties is indeed dominant.

Access to Payment Infrastructure: MNOs and other non-banks may also have their own competition-related concerns, particularly with regards to market access and licensing, access to national payment systems, and proportionality of regulations that may affect them. In particular, incumbent banks and payment switches required for the integration of Point of Sale (POS) systems and for interoperability have often been accused of restricting access to critical financial and banking infrastructure to potential DFS competitors such as MNOs and non-banks.

¹⁸³ TRAI (2016a) *Consultation Paper On The Review Of Regulatory Framework For The Use Of USSD For Mobile Financial Services*, available at <https://goo.gl/dSSPLN>

¹⁸⁴ Since MNOs own the SIM card and thus control anything on it, this includes controlling the ability of third parties to load and use their own applications and encryption keys for use by their own customers. And as only the MNO can provision the SIM, the ability of a SP to receive or gain access to the required mobile encryption keys independently of the MNO is usually a complicated and expensive negotiation.

¹⁸⁵ This could include the MNO sharing in advertising revenue on service access with a favored third party.

¹⁸⁶ TRAI (2016b) *Prohibition of Discriminatory Tariffs for Data Services Regulations*, 2016, available at https://traai.gov.in/sites/default/files/Regulation_Data_Service.pdf

B Access to Agents

5.4 Agents

Regulation of DFS agents may also fall under the CB, the CA, and/or NTA, especially with regard to agent exclusivity and the potential for non-competitive behavior. This exclusivity may relate to DFS-only or mobile airtime-only agents, or agents that act in both capacities. But as other entrants appear and require access to agents, policies on agent exclusivity may be strained.¹⁸⁷

Regulators may then struggle to balance the convenience of ubiquitous agents, with investments by market participants and with competition policy. With the growth of agent networks, there are also increased risks, requiring proper risk management frameworks for agents as well as shared agent blacklists.

But as the networks grow, there are often challenges in balancing policy and business goals, exemplified by growing KYC criteria as well as whether or not to allow (continued) agent exclusivity.¹⁸⁸

C Examples

5.5 Country Examples

Bangladesh: MNOs in Bangladesh are mostly only permitted to act as bearers - usually via USSD - for banks and other DFSPs. Currently, access to USSD is provided on a revenue sharing basis. That is, instead of a unit or time-based charge, the MNOs are compensated only for those USSD sessions where the DFSPs earn revenue. USSD usage charges vary from MNO to MNO for DFSPs.¹⁸⁹ According to the MNOs, this revenue sharing model is unsustainable for them as the transactions which exhaustively use the USSD channel are extensively misused and mostly free of cost as 86% of USSD traffic and 100% of SMS are being provided for free. The MNOs indicate that they are not incentivized to provide access and sustainability depends on a justified return for the consumption of the used resource. Universal access is even more important to MNOs and overall QOS, they indicate, is being affected because of 'free' usage of telecom resources/spectrum, which also reduces the value of spectrum if this is forced through. The Bangladeshi MNOs have been lobbying for a change in the USSD charging model, which could result in large increases in USSD charges for SPs and customers if implemented.¹⁹⁰ Even so, there are complaints from SPs and banks that wholesale USSD prices are too high.¹⁹¹ The NTA and CB have different views on whether to increase USSD pricing for DFS, with the NTA siding with MNOs, while the CB says pricing should reflect financial inclusion priorities. The NTA pricing proposal submitted to government is four times higher than the proposal of the central bank.¹⁹²

Colombia: After negotiations between banks and MNOs failed to resolve bank complaints over USSD pricing and access from MNOs, the Colombian telecommunications regulator, the Comisión de Regulación de Comunicaciones, mandated access to USSD and introduced a case-by-case resolution of complaints about price and quality.¹⁹³ And in relation to STK, Daviplata – a low-cost mobile banking platform used primarily for Government to Person G2P payments offered by Banco Davivienda - implemented a dynamic menu via STK designed to simplify the UI and make it more understandable by the target segments. As services increased, the number of SMS per update increased to 20 SMS per update. The MNOs, however, increased the

¹⁸⁷ Any company needing to distribute its goods or services through appointment of distributors/agents are required to seek authorization from the CFTC in terms of the CFTA. The CFTC assesses the likely effect of the arrangement on competition and consumer to decide whether to authorize or not.

¹⁸⁸ In some cases, like Kenya, it appears that agent exclusivity assisted in growing the market for DFS. See Matibe, E (2014) *The Status of Agents in Kenya: Proliferation, Dominance, Evolution & Impact*, available at <https://bit.ly/29Nq2AV>

¹⁸⁹ Grameenphone, the largest MNO, charges all DFS providers - except bKash - up to 0.25% of the cost of the cash out value. Other MNOs charge 1.8 to 1.85% for cash out, of which the MNOs take 7% to 15%. For example, for a BDT 1000 cash out, the PSP charge to the customer is BDT 18.5. An MNO will get 7% of the BDT 18.5 amount.

¹⁹⁰ The Association of Mobile Telecom Operators of Bangladesh recently submitted its proposal to the Bangladesh Telecommunication Regulatory Commission to increase USSD fees. Daily Star (2016) *Telcos Propose To Hike Charge For Mobile Wallet Users*, available at <https://goo.gl/TSrPLP>

¹⁹¹ Hanouch, M & Chen, G (2015) *Promoting Competition in Mobile Payments: The Role of USSD*, available at <https://goo.gl/po24bd>

¹⁹² Daily Sun (2018) *Session-based USSD price to raise mobile banking cost*, available at <https://bit.ly/2z7uGHm>

¹⁹³ Hanouch, M & Chen, G (2015) *Promoting Competition in Mobile Payments: The Role of USSD*, available at <https://goo.gl/po24bd>

cost to Daviplata from being a per-transaction charge to a per-SMS charge. This meant that the cost of over a month's usage of the mobile channel consumed the entire commission that the bank received for managing the payments. Even simple balance enquiries with no transactional revenue value cost the bank substantially in profits. The issue was referred to the telecommunications regulator for review.¹⁹⁴

Indonesia: Indonesia has the most exclusive agent network in the world, as per its regulatory prescriptions. Although the agent numbers are high, the market is dominated by a few players. Also, the geographical reach of the agent networks is limited to areas around bank branches. It has been suggested that regulators should consider allowing non-banks to recruit individual agents so that non-banks (with significant distribution networks) can support financial inclusion efforts and innovate on their digital financial services initiatives. Due to low demand and inability to serve multiple providers, Indonesian agents make limited profits. Permitting non-exclusivity of agents is expected to result in ensuring greater sustainability for individual agents and promote network consolidation.¹⁹⁵

India: The telecommunications regulator, TRAI, slashed USSD access prices by two thirds to INR. 0.50 per USSD session in November 2016 after complaints about the service ensuing from a public consultation on pricing.¹⁹⁶ TRAI has also pushed back against linking the number of menu trees to an increase in USSD access costs, citing evidence that MNOs may, for their own customers, have more menus than they allow DFSPs to have.¹⁹⁷ In November 2016, TRAI mandated an increase in the ceiling on number of menu stages from five to eight per USSD session and also reduced USSD pricing.¹⁹⁸ The outcome followed a consultation process initiated in August 2016.¹⁹⁹

Despite regulations allowing agent interoperability, it has been reported that several banks do not allow interoperable transactions. Concerns related to transaction failure and longer transaction time inhibit agent interoperability.²⁰⁰

Kenya: Equity Bank complained about high STK access charges from market leader MNO Safaricom – who contribute 6% to Kenya's GDP²⁰¹ - that made access to its mobile banking products uneconomical. It built a Mobile Virtual Network Operator (MVNO) called Equitel and used thin SIM technology²⁰² to bypass Safaricom, using instead cheaper STK from Safaricom competitor Airtel.²⁰³ The Competition Authority of Kenya (CAK) in 2016 ordered financial institutions and MNOs providing

¹⁹⁴ Consultores, M (2015) *Going Mobile with Conditional Cash Transfers Insights and Lessons from the payment of Familias en Accion through DaviPlata Wallets in Colombia*, available at <https://goo.gl/fsvyfZ>

¹⁹⁵ Microsave Helix Institute of Digital Finance (2017) *Agent Network Accelerator Research, Pakistan Country Report*, available at <https://bit.ly/2Agg0mX>

¹⁹⁶ TRAI (2016c) *The Telecommunication Tariff (Sixty First Amendment) Order, 2016 No. – 1 Of 2016*, available at <https://goo.gl/7kHo45>. These moves coincided with a sudden demonetization program in November 2016 by the government of India aimed at ridding the country of high value cash notes thought to be used for money laundering. DFS access surged in the wake of the demonetization announcement.

¹⁹⁷ First Post (2016) *TRAI Lowers Tariff For USSD Based Mobile Banking To A Maximum Of 50 Paise Per Transaction*, available at <https://goo.gl/zF9ggZ>

¹⁹⁸ TRAI (2016c) *The Telecommunication Tariff (Sixty First Amendment) Order, 2016 No. – 1 Of 2016*, available at <https://goo.gl/7kHo45>

¹⁹⁹ First Post (2016) *TRAI Lowers Tariff For USSD Based Mobile Banking To A Maximum Of 50 Paise Per Transaction*, available at <https://goo.gl/zF9ggZ>

²⁰⁰ Microsave Helix Institute of Digital Finance (2018) *State of Agent Network, India 2017, India Country Report*, available at <https://bit.ly/2Nc62eX>

²⁰¹ See Citizen TV (2018) *Safaricom fined over Ksh.200M for poor services*, available at <https://bit.ly/2yGPExm>

²⁰² One method of compensation for restricted or unfavorable access to STK and USSD is to use what is known as 'Thin SIMs,' also known as 'Sticky SIMs.' Technically a SIM overlay technology, a Thin SIM is a paper-thin plastic sheet embedded with a number of contact points and a chip on top of a standard SIM card. Despite its form factor, it is a full-featured SIM: once placed over a larger SIM, the Thin SIM essentially converts any handset into a dual-SIM phone. A CGAP report identified only a few instances where Thin SIMs were being used because of competition-based issues with access to USSD and STK bearer channels. See Hanouch, M & Chen, G (2015) *Promoting Competition in Mobile Payments: The Role of USSD*, available at <https://bit.ly/1RFMIVY>

²⁰³ In the case of Equitel in Kenya, use of the shortcode *247# will divert the session to use the Airtel network. See Equitel (2016) *Get Activated*, available at <http://www.equitel.com/my-phone/get-activated>

DFS to begin disclosing in real time any fees associated with such services to customers.²⁰⁴ Customers are now informed of any transaction fees via an SMS or a pop-up USSD message.

A study on competition in the telecommunications and DFS market in Kenya commissioned by the Kenyan NTA, the Communications Authority, was published in early 2018. The study perceived each MNO as having a monopoly of control over its resources and inherently a significant market power over access on its own network.²⁰⁵ Since smartphones are expected to account for only 30% mobile subscribers in the next five years,²⁰⁶ all Tier 1 mobile operators would be required to provide USSD access upon request to licensed SPs, on a non-discriminatory basis and subject to regulated pricing.²⁰⁷

The report also says that issues concerning Safaricom's substantially high market share are exacerbated by the difficulty of interoperability between M-Pesa and other DFS platforms. Since the report was published, and probably because of it, SVA-to-SVA interoperability has been launched in Kenya. The study though recommends full interoperability for both SVA-to-SVA and agent-to-agent transactions. Safaricom, it says, should charge the same amounts for transfers to unregistered users²⁰⁸ as it does its own subscribers. Cross-platform surcharges and additional fees should be prohibited other than the cost of cash-out fees at Safaricom agents.²⁰⁹ As it may directly impact upon the ability of consumers to access DFS services,²¹⁰ the study also recommended national roaming in seven counties for 2G, 3G and 4G services, to be provided to other Tier 1 MNOs at regulated rates for a period of five years.²¹¹ The relationship between Safaricom and the NTA – acting in relating to telecommunications and associated competition issues - continues to be fractious.²¹²

Peru: The NTA in Peru, Osiptel, issued standards to ensure fair and equal access of electronic money issuers to telecommunications services in 2014, including non-discriminatory pricing for access to USSD.²¹³ While these regulations were set by Osiptel, the central bank played a significant role in creating the regulatory framework around pricing for access.²¹⁴

Philippines: Philippines has recently issued a circular allowing agent level interoperability.²¹⁵ In order to promote asset light DFS delivery model, several regulators have done away with the stringent physical presence/ brick and mortar branch model to facilitate greater access to efficient and competitive financial products and services.

²⁰⁴ Nairobi News (2017) *Safaricom to Reveal M-Pesa Transaction Costs*, available at <https://bit.ly/2KxmF68>. To discover transaction fees before the CAK directive, customers reportedly had to rely on posters at agency shops and through calculating backwards based on their post-transaction DFS account balances.

²⁰⁵ Accordingly, market dominance issues reflecting anti-competitive behavior would theoretically include problems related to refusal of access, high USSD and SMS short code costs, discriminatory practices and lacking transparency. Macmillan Keck & Acacia Economics (2016) *Telecommunication Competition Market Study in Kenya (Abridged version)*, available at <https://bit.ly/2J48g0m>

²⁰⁶ Macmillan Keck & Acacia Economics (2016) *Telecommunication Competition Market Study in Kenya (Abridged version)*, available at <https://bit.ly/2J48g0m>

²⁰⁷ The study proposes pricing based upon 'long-run incremental cost' defined as the 'avoidable long-run cost of the traffic of a given service considered as the last increment on the network'. Macmillan Keck & Acacia Economics (2016) *Telecommunication Competition Market Study in Kenya (Abridged version)*, available at <https://bit.ly/2J48g0m>

²⁰⁸ Users of platforms other than M-Pesa.

²⁰⁹ Macmillan Keck & Acacia Economics (2016) *Telecommunication Competition Market Study in Kenya (Abridged version)*, available at <https://bit.ly/2J48g0m>

²¹⁰ This specific remedy concerning national roaming is one among other recommended remedies to be provided generally in the retail mobile communications market.

²¹¹ Macmillan Keck & Acacia Economics (2016) *Telecommunication Competition Market Study in Kenya (Abridged version)*, available at <https://bit.ly/2J48g0m>

²¹² In August 2018, the CA fined Safaricom USD 4.5 million after it found it culpable of blocking calls from the smaller telcos, Elige Communications Ltd and Geonet Communications. Safaricom obtained an injunction against the CA pending a review of the case.

²¹³ Mas, I (2014) *Shifting Branchless Banking Regulation from Enabling to Fostering Competition*, available at <https://goo.gl/1Fb48a>

²¹⁴ CGAP (2014) *Mobile Payments Infrastructure Access and Its Regulation: USSD*, available at <https://goo.gl/IBu4sJ>

²¹⁵ Bangko Sentral ng Pilipinas (2017) *Circular no 940*, available at <https://bit.ly/2KIN0ov>

Uganda: A study on the wholesale USSD market as part of a broader Market Power Assessment by the Uganda Communications Commission (UCC) found evidence of dominance by the MNOs with a potential to abuse.²¹⁶ Some technical service providers (TSPs) and PSPs indicated that their customers experienced QOS issues with USSD sessions, but the TSP/PSP is unable to ‘fix’ the issue because some MNOs refuse to provide a QOS guarantee to them in their service contracts.²¹⁷ SP also alleged to the UCC that they may not have visibility of some failed USSD transactions.²¹⁸ The length, duration, quality and wholesale charges of USSD sessions used in DFS are the subject of an ongoing exploratory investigation by the UCC.²¹⁹ DFS SPs have complained about ‘unjustifiably high’ or unfair revenue share structures for USSD session fees.²²⁰ These, in the view of the UCC, may be designed to foreclose independent DFSPs from the downstream DFS market segment.²²¹

A report by the UCC published in early 2018 confirmed many of these allegations, and added additional issues of anti-competitive behaviour including incumbents requiring and potentially misusing proprietary information which they required submitted by what the UCC term Third-party Value Added Service Providers (TPVASPs) during the application process detailing usage of SMS shortcodes and USSD service. Subsequently, there were accusations of MNOs delaying access to SMS and USSD to create time internally to replicate new competitive ideas internally. Incumbents were accused of creating arbitrary and inconsistent revenue sharing agreements, sometimes making unilateral changes of contract terms as well as underpayments and non-payments in terms of these revenue sharing agreements. MNOs Airtel and MTN were accused of implementing ‘Do Not Disturb’ messages in a manner which places TPVASPs at a substantial disadvantage in the ability to adequately provide DFS, having a limited ability to send SMS transaction confirmations.²²²

And Ezee Money Uganda, a DFSP competing on DFS with MNO MTN Uganda, sued MTN Uganda for unfair restriction of competition under the Uganda Communications Act after the MNO required a third-party aggregator and agency service provider to deny service to Ezee Money. Ezee Money was awarded substantial and punitive damages for malicious conduct.²²³

Zimbabwe: In January 2017, Zimbabwe NTA POTRAZ set floor prices on access to MNO services. It had used a study of a bottom-up costing model²²⁴ to determine pricing. Implementation of the new pricing, however, led to market confusion and massive retail price increases in mobile data, USSD, SMS, and voice call costs. This led to recriminations between POTARZ, the MNOs and consumers. Ultimately the retail price increases were suspended by the MNOs a few days after initial implementation.²²⁵

²¹⁶ See Cartesian (2015) *Mobile Platform Access for USSD-based Applications (MPA-USSD)*, available at <https://goo.gl/8RrIq4>

²¹⁷ In Uganda, service providers reported limited scope for negotiation of service level agreements with MNOs, that it was not possible to negotiate the level of service availability. See Cartesian (2015) *Mobile Platform Access for USSD-based Applications (MPA-USSD)*, available at <https://goo.gl/8RrIq4>; Macmillan Keck & Attorneys & Solicitors (2017) *Draft Non-Confidential Summary Of Final Report. Public Consultation Document. Support to the Uganda Communications Commission on USSD and SMS Services*, available at <https://bit.ly/2KbRXg3>

²¹⁸ *ibid*

²¹⁹ *ibid*

²²⁰ *ibid*

²²¹ *ibid*

²²² *ibid*

²²³ The East African (2015) *Ugandan Court Penalises MTN for Malicious Business Conduct*, available at <http://bit.ly/2JnS4Uj>. Okwii, D (2015) *What Ezee Money Vs. MTN Uganda Court Case Teaches Us about Competition in Uganda*, available at <http://bit.ly/2vI6OLF>. See also MacMillan Keck & Acacia Economics (2017) *Support to the Uganda Communications Commission on USSD and SMS services*, available at <https://bit.ly/2KbRXg3>

²²⁴ There are two approaches to estimating unit costs: top-down, bottom-up. These can be combined to form a ‘mixed approach’. A bottom-up approach is used to estimate the costs of service usage and involves identifying all resources used to provide a service, and then assigning a value to each of those resources. These values are summed and linked to a unit of activity to derive a total unit cost. Top-down costing is more amenable to estimating the society level costs which are often intangible and where data is scarce. See UK Cabinet Office (2017) *Top Down And Bottom-Up Unit Cost Estimation*, available at <https://goo.gl/nZWX3M>

²²⁵ Techzim (2017) *New Tariffs - POTRAZ Says It Consulted The Mobile Operators, They Actually Wanted Even Higher Prices*, available at <http://bit.ly/2isSXNz>

6 Conclusions

As we note above, competition policy is complex and may involve economics and law; definition of relevant markets; identification of dominance; problems where market power is leveraged into downstream or adjacent markets; margin squeezes and other abuses of dominance; feedback loops between telecommunications and DFS markets, and remedies such as price regulation, and functional and structural separation. There is a lot of debate on many of these issues, but for now these issues though are far beyond the scope of this study and best left for specialized studies.

Competition-related exigencies though are manifest in an emerging, networked industry such as DFS. Market imbalances may result from unequal policy frameworks or from market conduct. The former may be from regulatory bans on or restricted access to DFS ecosystems; disproportionate and unequal compliance and capital requirements; and inconsistent and disproportionate tax regimes. The latter could relate to market participant's access in FRAND terms to technology, critical and scarce infrastructure, and services used for channel or wholesale access, discriminatory pricing of services, cross-subsidization of services, quality of service, and access to big data.

While there are a number of market participants in the DFS ecosystem, it is trite to say that much of the competition-related focus has revolved around the activity of regulators with respect to MNOs and the access they provide to critical and scarce bearer infrastructure such as USSD and STK.

Indeed, just through sheer weight of public examples, and their prominent role in the DFS ecosystem, there is often an outsize focus on MNOs when looking at competition issues in DFS-focused literature. It may reflect the MNO's critical role in DFS infrastructure provision and their noted foundational 'first mover' role in building DFS ecosystems in some markets which, not only allowed them to build significant market presences, but also to potentially be in a position to restrict access to critical and scarce mobile infrastructure to direct DFS competitors. The focus on bearer access and pricing has also come from a relatively small number of 'hotspots,' coupled with a belief that *ex ante* 'regulatory activism' is a quick fix in any market, but without recognizing the radically different market competition and context for DFS. Similarly, the competition issues outlined may be representative of market dynamics in a particular country, and may not necessarily be a global trend.

Importantly too, the market conduct and competition issues raised in a particular jurisdiction may or may not actually breach national competition law and/or related competition provisions of sectoral legislation. This ultimately must be decided by the relevant SRA or CA on a case-by-case basis after a full market review and analysis. It is the responsibility, however, of SRA or CA (independently, or in concert if the law requires it) to make such a determination, if required.

MNOs and other non-banks may also have their own competition-related concerns, particularly with regards to market access and licensing, access to national payment systems, and proportionality of regulations that may affect them. In particular, incumbent banks and payment switches required for the integration of POS systems and for interoperability have often been accused of restricting access to critical financial and banking infrastructure to potential DFS competitors such as MNOs and non-banks.

There may however be cases of regulatory overreach in relation to market imbalances. The remedy for harmful conduct should be the least restrictive available to achieve the intended objective and should be proportionate to the extent of risk. There is also anecdotal evidence that some regulators may have applied regulatory forbearance over universal USSD access and pricing is based on a narrative that OTT and 3G (and 4G) will overtake USSD and other narrow band technologies. Feature phones however are likely to continue dominating DFS access for the foreseeable future, using USSD, encrypted SMS, and WAP. This has implications for regulators to continue to develop and maintain policies on access to USSD and STK gateways at FRAND terms.

What is important to note for this study though is that often competition powers are found in sectoral regulation, such that each of the SRAs may have mandates that allow them to intervene in their sector if there is a competition-related concern. The approach of NTAs for example to development of mobile infrastructure critical to DFS access is usually mediated by enquiries into market structure, investment and competition issues. The design of policies is further complicated by trade-offs between short-term and long-term policy objectives. Licensing is about structuring market entry and conduct to achieve desired competitive outcomes at each relevant layer of the market while protecting against certain technical risks such as technical interference. This may also include considerations of non-discriminatory interconnection between telecommunications providers as well as wholesale infrastructure/service access.

Competition issues and focus though should be overarching, with SRAs and CA needing to have a watching brief over the ecosystem and not seen merely as an enabling component of DFS regulation. Coordination and sharing of resources and data where allowed by law is key.