

DRAFT NON-CONFIDENTIAL SUMMARY OF FINAL REPORT

PUBLIC CONSULTATION DOCUMENT

Support to the Uganda Communications Commission
on USSD and SMS services



MACMILLAN KECK
ATTORNEYS & SOLICITORS

4 Boulevard Helvétique (1st Floor)
1205 Geneva Switzerland
Att'n: Rory Macmillan

T: +41 22 322 2231

F: +41 22 322 2239

rory@macmillankeck.pro



and

Shop F11, Zone Phase II
177 Oxford Road, Rosebank, 2196
Johannesburg, South Africa
Att'n: Simon Roberts

T: +27 11 880 1673

simon@acaciaeconomics.co.za

Draft – 13 December 2017

Table of Contents

A. Introduction	1
A.1 Public consultation	1
A.2 Scope of the Study	1
A.3 Sources of information and confidential treatment	1
B. Market background	2
B.1 Mobile telecommunications	2
B.1.1 Mobile telecommunications market shares and trends	2
B.2 Aggregators	3
B.3 Mobile financial services	3
B.3.1 Third-party mobile financial services providers	4
C. Current USSD and SMS frameworks and practices	4
C.1 Regulation of access to USSD and SMS gateways	4
C.2 USSD and SMS activation practices	5
C.2.1 Activation of SMS and USSD short codes	5
C.2.2 Issues identified with SMS and USSD activation process	7
C.3 Commercial frameworks for SMS and USSD	8
C.3.1 Introduction	8
C.3.2 Commercial framework for SMS access	9
C.3.3 Commercial framework for USSD access	11
D. Assessment of possible anticompetitive market conduct	13
D.1 Introduction to market structure, dominance and indicators of market power 13	
D.2 Dominance	13
D.2.1 Introduction	13
D.2.2 Market shares	13
D.2.3 Relationship with mobile money markets	15
D.2.4 Barriers to entry	15
D.2.5 Signs of use of market power	16
D.2.6 Strong likelihood of dominance	17
D.3 Excessive pricing	18
D.3.1 Background	18
D.3.2 International benchmarking	18
D.3.3 Evaluation of costs of USSD and SMS services	19
D.3.4 Summary	20
D.4 Exclusionary behaviour	21
D.5 Constructive refusal to supply	21
D.5.1 Background	21
D.5.2 Lack of zero-rating	21
D.5.3 Issues with activation of short codes	22
D.5.4 Delays in payment	22
D.5.5 Implementation of the DND Directive by MNOs	23
D.6 Conclusion	25
E. Competition enforcement and market regulation	26
E.1 Introduction	26
E.2 Investigating abuse of dominance and other market conduct	26

E.3	Establishing <i>ex ante</i> obligations	27
E.3.1	Price regulation	27
E.3.2	Terms and conditions of wholesale SMS and USSD wholesale access	28
E.4	Developing the regulatory framework	29
E.4.1	Effective dispute resolution procedures for VAS providers	29
E.4.2	Licensing of VAS providers.....	30
F.	Quality of service of USSD and SMS.....	30
F.1	Assessment of quality of service of USSD and SMS services	30
F.1.1	What is quality of service?	30
F.1.2	Ability to monitor and assess quality of service	31
F.1.3	Quantitative assessment of QoS.....	31
F.1.4	QoS and QoE monitoring by the UCC	31
F.1.5	Metrics for SMS and USSD services	32
F.2	Quality of service recommendations	34
F.2.1	Collection, monitoring and sharing of QoS information	34
F.2.2	Recommended metrics for SMS and USSD quality of service.....	35
F.2.3	Limiting unintended effects of DND on quality of service	35
G.	Capacity to regulate markets for mobile financial services	36
G.1	Sufficiency of the UCC's legal powers.....	37
G.2	Ensuring sufficient access to expertise	38
G.3	Access to information.....	39

A. Introduction

A.1 Public consultation

This document has been prepared for the purposes of public consultation by the Uganda Communications Commission (UCC). It comprises a non-confidential summary of a fuller confidential report from a study (we will refer to it as the “Study”) by the economics firm Acacia Economics and the law firm Macmillan Keck Attorneys & Solicitors of the wholesale access markets for Short Message Service (SMS) and Unstructured Supplementary Service Data (USSD) services carried out for the UCC. These markets are critical to the provision of mobile financial services in Uganda but are also utilized by other value-added service (VAS) providers.

Readers are invited to review this report and submit comments and information to the UCC and rorry@macmillankeck.pro.

A.2 Scope of the Study

The Study focused on the provision of wholesale USSD and SMS access services by mobile network operators (MNOs) to third-party mobile financial service providers and other VAS providers.¹ The Study examined how current commercial, legal and regulatory policies and practices relating to the SMS and USSD channels affect and are likely to affect the development of mobile financial services in Uganda.

Despite the increasing availability of smartphone apps used over mobile internet connections, SMS and USSD are expected to continue to be used extensively. This will be the case in particular for lower income consumers (who cannot afford smartphones), inhabitants of rural areas (where there is inadequate internet coverage), and less digitally literate members of the population (who may be unable to navigate apps).

A.3 Sources of information and confidential treatment

The Study gathered information from several sources. Information gathering began with a review of the existing legal and regulatory frameworks and frameworks of other jurisdictions. The Study also carried out in-person interviews in Kampala, Uganda in October 2016 with four MNOs (plus a subsequent conference call interview with a fifth MNO), three banks, seven VAS providers and aggregators, the Uganda Bankers Association and the Bank of Uganda (BoU) as well as multiple interviews and ongoing information exchange with the UCC.

In December 2016, the Study issued information requests to all of the MNOs, banks and VAS providers and aggregators interviewed. The Study ultimately received written submissions from four MNOs and two VAS providers and aggregators. Where the information received was insufficient to enable definitive conclusions, this is noted in this report. Some of the information will have been subject to subsequent developments. Information is presented for the dates or periods referred to and is not represented as being accurate as of the date of this report.

Some sources of information requested confidential treatment of the information provided and, after considering justification for such requests, some commercially sensitive information has been omitted from this non-confidential document. None of the information included in this report was the subject of a request for confidential treatment.

¹ This Study considers third-party mobile financial services as one type of VAS, albeit the most important one in Uganda.

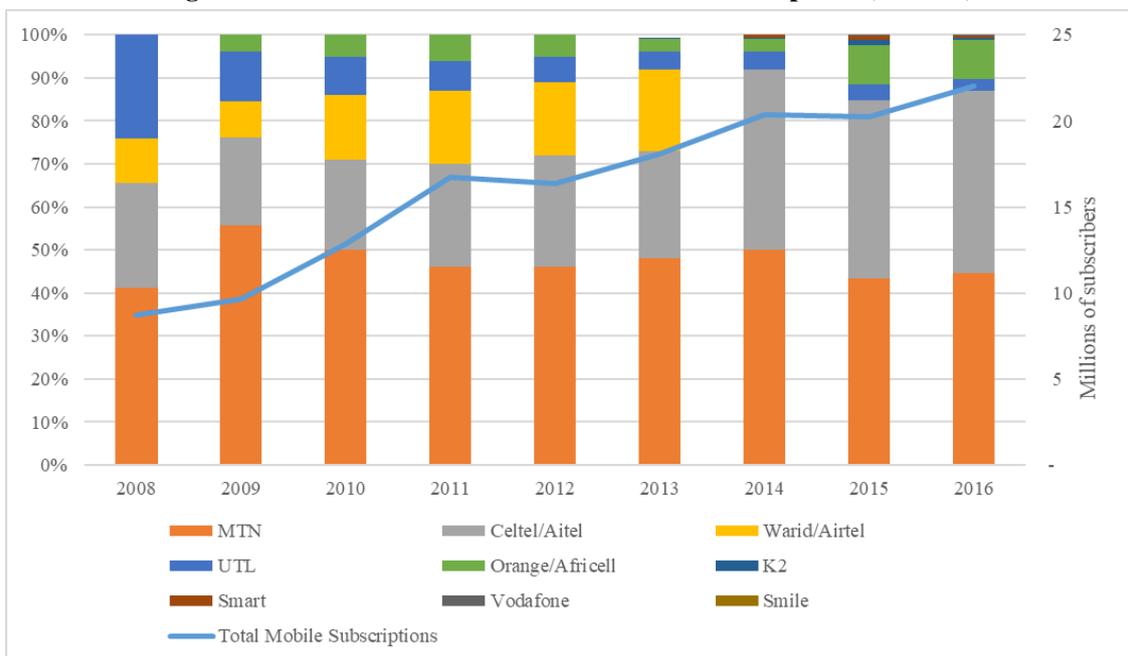
B. Market background

B.1 Mobile telecommunications

B.1.1 Mobile telecommunications market shares and trends

At present, there are eight MNOs operating in Uganda, although not all are full service MNOs. MTN Uganda (MTN) has maintained a share of total mobile subscribers in excess of 40% since at least 2008.² MTN's position built up in its early years has been attributed to its lower-priced products and a more extensive network for fixed and mobile services,³ a position it has maintained. Airtel Uganda (Airtel), on the other hand, increased its market share through consolidation, notably in 2014, after it had acquired Warid the year before (see Figure 1).

Figure 1: MNO market shares and total mobile subscriptions (2008-16)⁴



Source: Derived from UCC data

A few trends have emerged in the market for mobile telecommunications in recent years which can be seen in Figure 1:

- While the number of overall mobile subscriptions has risen strongly, the market has become substantially more concentrated over time due to consolidation. The two largest providers, MTN and Airtel, have a market share of over 40% each, effectively making the market a duopoly.

² UCC data, Copy of Telecom Market Statistics Request, June 2016.

³ Econ One Research. (2002). 'Uganda Telecommunications. A Case Study in the Private Provision of Rural Infrastructure,' available [here](#). Shirley, M.M., Tsubira, F.F. Gebreab, F. Haggarty, L. (2002). Telecommunications Reform in Uganda. Policy Research Working Paper No. 2864, available [here](#).

⁴ Data for the years 2008 to 2015 is as of December while data for 2016 is as of June.

- Uganda Telecommunications Limited (UTL) has not imposed significant competitive constraints, with a diminishing market share over time.
- Except for Africell Uganda (Africell), newer entrants have increased market share very slowly. While Africell has made gains in recent years, its market share in 2016 was still less than a quarter of that of Airtel or MTN.

B.2 Aggregators

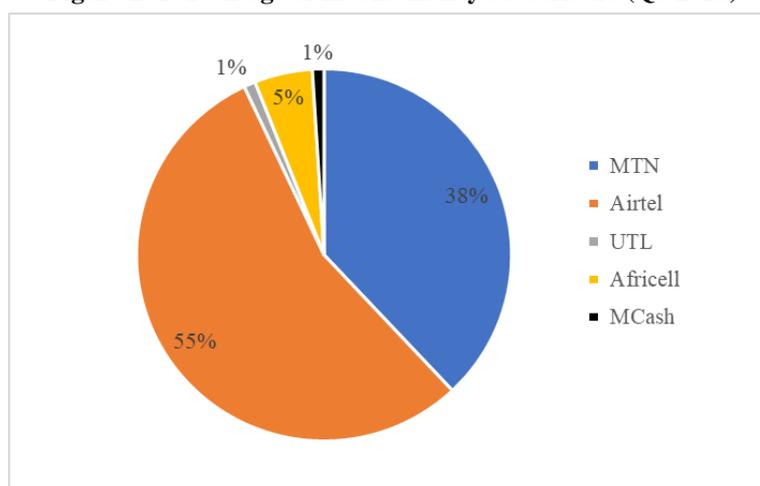
The main aggregators in Uganda include Yo! Uganda, Craft Silicon, Cellulant, True African, D-Mark Mobile, Pegasus, MCash, Beyonic, EzeeMoney, Remit, Payway and Jpesa.⁵ The role and functions of aggregators has expanded significantly in recent years, as the range of financial services offered has developed. The market for aggregators also appears to be quite concentrated.

Aggregators serve several functions in Uganda. First, aggregators can act as intermediaries between MNOs and third-party VAS providers which require access to an MNO's USSD and/or SMS platforms. Second, because aggregators act as the 'go-between' between MNOs and third parties, they may develop their own APIs and otherwise provide the technical know-how to integrate the systems of MNOs and third parties.⁶ Third, aggregators may themselves decide to provide their own VAS, including mobile financial services rather than simply link MNOs to third parties.

B.3 Mobile financial services

The development of mobile financial services in Uganda has been led by the MNOs and, to an even greater extent than in mobile telecommunications, by MTN and Airtel in particular. A number of non-MNO mobile payments providers such as MCash, EzeeMoney, Micro Pay and Smart Money have also entered the mobile financial services space. However, these services are still very small.

Figure 2: Percentage of mobile money subscribers (Q3 2016)



Source: UCC data

⁵ Okwii, D. (2015). '5 companies changing mobile money transfer and payment systems in Uganda'. Dignited. Available [here](#).

⁶ Paolo, A. (2016). 'The role of Aggregators in the Mobile Money Industry and related Competition Issue'. *CCRED Quarterly Review*, February Issue, available [here](#).

Despite there being several mobile money providers in Uganda, the market is effectively a duopoly, led by MTN with Airtel in second place. While Airtel technically has the largest number of registered mobile money subscribers (see Figure 2), this overstates its market share because Airtel mobile subscribers are automatically registered for Airtel Money accounts.

MTN has 60% of the total number of transactions. In terms of the balances on customers' accounts (an indication of whether the mobile money accounts are active), MTN's share is even larger with 76% of account balances.

B.3.1 Third-party mobile financial services providers

Many third-party mobile financial service providers utilize the USSD channels of MNOs to provide a variety of mobile financial services. For example, most major banks in Uganda have mobile banking offerings that rely on USSD.

C. Current USSD and SMS frameworks and practices

C.1 Regulation of access to USSD and SMS gateways

Currently, the UCC's role in regulating access to USSD and SMS gateways by third-party VAS providers is limited to the allocation of SMS and USSD short codes. VAS providers are not licensed by the UCC and the requirement to obtain and maintain an SMS or USSD short code is limited to the payment of an annual authorization fee. The application fee for a short code is USD 250, the annual authorization fee for a USSD short code is USD 10,000, and the annual authorization fee for an SMS code is USD 2,000, in each case excluding applicable VAT.⁷ While a full benchmarking of short code fees is beyond the scope of this Study, we did compare these to corresponding fees in two of Uganda's geographic neighbours, Rwanda and Tanzania,⁸ as well as Bangladesh.

C.1.1.1 Short code allocation fees in other jurisdictions

In Rwanda, the Rwanda Utilities Regulatory Authority (RURA) requires a RWF 25,000 (~USD 30) application fee when applying for a short code.⁹ Allocated USSD codes are subject to a USD 1,000 annual maintenance fee.¹⁰ The annual maintenance fee for SMS codes range from USD 200 to USD 1,000.

In Tanzania, the Tanzania Communications Regulatory Authority (TCRA) charges a one-time USD 2,000 "registration fee" for allocation of "ordinary" USSD and SMS short codes and a USD 3,000 "annual maintenance fee" thereafter.¹¹ "Ordinary" codes are assigned serially by the TCRA, but other categories of codes, which are assigned based on customer preference and

⁷ Meeting with the UCC, 17 October 2016. *UCC Processing of Applications for Short Codes*, available [here](#).

⁸ In Kenya, VAS providers obtain short codes through a secondary assignment by the individual MNOs rather than from the telecommunications regulator.

⁹ RURA online application system for short code, Home, <http://www.rura.rw/onlinesca/index.php>

¹⁰ RURA online application system for short code, Categories of Short Codes, http://www.rura.rw/onlinesca/Shortcodes_categories.php.

¹¹ TCRA, *Application Guidelines and Fees for Numbering Resources*, Fifth Issue: December 2015, p. 7, available [here](#).

range from BRONZE to GOLD as they become increasingly more “memorable,” have a higher registration fee but with the same USD 3,000 annual maintenance fee.¹²

In Bangladesh, the Bangladesh Telecommunication Regulatory Commission charges a short code allocation fee of BDT 100,000 (~USD 1,230) and an annual fee of BDT 50,000 (~USD 615) for short codes used for “commercial purposes” including general information, banking information, customer care service, helpline, news, e-business and other similar services.¹³ The short code allocation procedures do not distinguish between SMS and USSD short codes.

C.1.1.2 Market perceptions of short code allocation fees

In the course of the Study, the high annual fees for the short codes, particularly USSD short codes, were nearly universally criticized by VAS providers and aggregators. Some MNOs were also critical of the high fees.

C.1.1.3 Reducing USSD code allocation prices

Our review of allocation fees in several countries indicate that the UCC’s annual SMS short code allocation fee (USD 2,000) is in line with those charged in other jurisdictions while the UCC’s annual USSD short code allocation fee (USD 10,000) is comparatively high. In addition, VAS providers as well as MNOs claimed that the high costs of obtaining a USSD code are a barrier to entry into VAS markets. The recurring nature of the payment further hampers the ability of some VAS providers to maintain profitability.

Determining an optimal allocation fee requires an analysis of the UCC’s administrative costs and its policy objectives with respect to code allocation. Such an analysis is beyond the scope of this Study. However, we do recommend that the UCC consider reducing its USSD short code allocation fees substantially to levels in line with those charged by telecommunications regulators in other jurisdictions.

C.2 USSD and SMS activation practices

C.2.1 Activation of SMS and USSD short codes

After receiving a short code allocation from the UCC, third-party VAS providers must activate the short code on the network of an MNO to access the MNO’s subscribers. The activation processes for each MNO varies in its specifics, but we set out the general activation process below. The total timeframe for the activation process also varies significantly by MNO and there are substantial discrepancies between the time frames reported by some MNOs and the experiences of VAS providers and aggregators in the market.

Step 1: Acquire regulatory allocation of a short code

A third-party VAS provider generally has two alternatives available in acquiring use of a short code from the UCC. First, the provider can directly receive a short code allocation from the UCC by paying the short code authorization fees. Alternatively, the provider can acquire allocation of a short code through an aggregator which applies to the UCC for a code in the aggregator’s own name. The process time for contract signing with an aggregator is usually around a week. Because VAS providers typically utilize aggregators to acquire short codes (and to engage with MNOs), in subsequent steps of the activation process set out below we assume

¹² TCRA, National Numbering Plan, Version 10, June 2017, p. 14, available [here](#). TCRA, *Application Guidelines and Fees for Numbering Resources*, Fifth Issue: December 2015, p. 7.

¹³ BRTC, *Short Code Allocation Procedure*, 28 January 2010, available [here](#).

an aggregator is operating on behalf of the VAS provider. However, the same steps would apply if a VAS provider were engaging with the UCC and the MNOs directly

In the case of USSD, the VAS provider may have the option to share a short code with other clients of an aggregator. Shared short codes are distinguished by adding a ‘*’ and additional numbers to the end of a short code. Sharing codes allows VAS providers to share the annual fees, but shared codes are generally seen as less desirable because of the weaker brand association and inconvenience of the extra digits.

Once the fees are paid and the UCC allocates a short code, the aggregator usually receives a letter confirming the short code allocation. This process generally takes about 3 weeks.

Step 2: Approach one or more MNOs

Upon receiving confirmation from the UCC, the aggregator approaches each MNO with a network that the VAS provider wishes to access and requests activation of the allocated short code. Each MNO has slightly different requirements, but generally the aggregator must present the letter from the UCC confirming allocation of the short code. Some MNOs also require detailed information on the intended use of the short code.

Step 3: Contract negotiation and administrative procedures

After requesting activation of a short code, the aggregator and MNO commence contract negotiations. The time to complete this step will vary. A contract detailing the short codes and the terms and conditions of the VAS is usually prepared by the MNO. The contracts tend to be uniform and fixed, and actual negotiation is generally very limited. The MNOs may also require non-disclosure agreements.

The MNO also engages in a range of administrative procedures to review and vet the aggregator (and potentially the underlying VAS provider). This can include verifying tax registration, trading licences, company registration, financial documentation and details of the proposed VAS offerings.

For at least one MNO, this step can reportedly take as long as 3 to 4 months. For others it is reportedly much quicker. At the completion of this step the MNO generates an approval document allowing its technical team to continue with the activation process subject to payment.

Step 4: Payment of activation fees

The aggregator next makes payment of the short code activation fee to the MNO and receives evidence of payment.

Step 5: Technical implementation

Upon contract approval and receipt of payment, the MNO sends a technical request to its technical team. The MNO and the aggregator then exchange technical specifications to enable the short code to be activated. The VAS provider creates an API account on the aggregator’s platform and the aggregator provides the embedded API configurations onto the gateway to enable a communication link. The interface is provided by the aggregator and enables the aggregator to monitor message delivery status and reports. Next, a short on-boarding code is shared by the aggregator with the technical team of the MNO (providing IP addresses and URLs required).

The entire technical implementation process takes about 3-4 days of engagement with the aggregator’s technical team and often some back and forth if there are technical issues. Any

lack of technical competence in the technical team of the aggregator can delay the technical implementation. Aspects of the technical implementation can be outsourced by the MNO.

Once the technical issues have been resolved, the gateway is opened and the technical implementation is complete. For USSD, the aggregator sends the URLs to the MNO's technical team and for SMS and USSD the MNO activates a new short code.

Step 6: Technical testing

Finally, the MNO and aggregator perform technical tests to confirm the activation of the new short code. This testing process takes approximately 3 business days for SMS and 10 business days for USSD.

C.2.2 Issues identified with SMS and USSD activation process

C.2.2.1 Excessive activation time

The MNOs report a range of fairly short time frames for the short code activation process. These assessments do not align with the perception of VAS providers and aggregators who believe that there are long delays for activation on MTN's and Airtel's networks.

Some of the delays in short code activation can be attributed to inefficiencies in the MNOs systems. MNOs have also suggested that some of the delays in activation of short codes are attributed to the limited capacity of VAS providers and aggregators. Some parties have recommended regulatory action to limit the length of the timeframe for activation.

We discuss in Section D.5 how delays in activation may form part of a pattern of denial of service or anticompetitive practice, and in Section E how these may be remedied through *ex post* investigation and *ex ante* obligations, as well as enforcement and dispute resolution procedures.

C.2.2.2 MNOs' perceived right to refuse to activate short codes

Some MNOs have indicated a belief that that MNOs have no obligation to activate the short codes of VAS providers and aggregators on their networks.

Airtel stated that there may be valid reasons not to connect a customer, including potential technical barriers, such as a lack of physical infrastructure on the part of the MNO (e.g., if they want to connect to the USSD gateway but they have run out of ports). Airtel also cited lack of resources, conflict of interest and lack of profitability,¹⁴ the second and third of which are potentially both anticompetitive rationales.¹⁵ Airtel considered that it had no legal or regulatory obligation to grant requests to activate short codes from VAS providers or aggregators. However, it stated that in practice it had always done so in the past.¹⁶

MTN has in the past denied services to mobile money provider EzeeMoney, which MTN described as "in direct competition with MTN in the provision of mobile money related

¹⁴ Meeting with Airtel, 20 October 2016.

¹⁵ Meeting with Airtel, 20 October 2016.

¹⁶ Meeting with Airtel, 20 October 2016.

services,” by requiring aggregator Yo! Uganda to cancel its contract with EzeeMoney.¹⁷ These actions, among others, led to the civil court judgment granting an award of UGX 800,000 in general damages and UGX 1.5 billion in punitive damages to EzeeMoney for MTN’s engagement in anticompetitive practices.

We suggest that the UCC should be proactive in addressing the view that the MNOs are at liberty not to offer the service. In particular, we recommend the UCC pursue vigorous enforcement of sections 55 and 56 of the Uganda Communications Act, 2013¹⁸ (UC Act) relating to anticompetitive practices and denial of service, as discussed in Sections D and E.

C.2.2.3 Alleged misuse of information provided to MNOs

Some VAS provider and aggregators have expressed concern that, as part of the short code activation process, the MNOs obtain and misuse business information of VAS providers. MNOs typically require detailed information on the intended use of the short code. One party alleges that one MNO goes so far as to require VAS providers to submit their business models for approval and that MNOs have in the past delayed activation of short codes and used the time and information supplied to develop similar, competing products. Another party suggested that MNOs slowed down entry of innovative VAS in order to replicate them. It also recommended that there should be Chinese walls between business development and the divisions involved in providing USSD and SMS platforms. We provide recommendations in Section E about how the UCC might approach such problematic activities.

C.3 Commercial frameworks for SMS and USSD

C.3.1 Introduction

MNOs in Uganda have a variety of potential commercial relationships with VAS providers and aggregators relating to SMS and USSD access. These include:

- *Subscriber pays MNO for SMS or USSD access to VAS provider:* A VAS provider may use the MNO’s platform to connect to its subscribers on the basis that the subscriber pays directly for the service. The MNO connects the VAS provider to the subscriber and deducts the subscriber’s airtime for the basic USSD or SMS service.
- *VAS provider pays for subscriber’s USSD access to VAS provider on a zero-rated (sometimes called ‘post-paid’) basis:* Under this arrangement, the MNO connects the VAS provider to the subscriber for USSD access, but the VAS provider bears the full cost of access and the subscriber pays nothing.
- *Subscriber pays MNO for SMS or USSD access to VAS provider but revenue is shared with VAS provider:* In this arrangement, revenue from retail SMS and USSD charges to the subscriber is shared between the MNO and VAS provider, with a minimum level below which the MNO takes the full amount.
- *VAS provider pays MNO for bulk SMS services:* The VAS provider pays the MNO to deliver content, notifications (including for mobile financial services) and other information to subscribers. This may work on the basis of volume discounts.

¹⁷ *EzeeMoney (U) Limited v. MTN Uganda Limited* at p. 11.

¹⁸ Acts Supplements No. 1 to the Uganda Gazette No. 4 Volume CVI, dated 18 January 2013, Printed by UPPC, Entebbe, by Order of the Government.

None of these commercial relationships is unusual – all exist in other countries’ wholesale SMS and USSD markets.

We discuss each of these relationships in the sub-sections below which address the commercial frameworks for SMS and USSD access. For the sake of simplicity, we describe these in terms of direct commercial relationships between MNOs and third-party VAS providers. However, typically third-party VAS providers engage aggregators as intermediaries. Aggregators will typically pass along charges from MNOs to their VAS provider clients with a mark-up or with additional charges.

The discussion of charges and costs below also focuses heavily on MTN and Airtel as they make up the bulk of the upstream market and their charges for wholesale inputs are relevant when assessing effects on downstream competition.

C.3.2 Commercial framework for SMS access

There are various one-time and recurring charges that a VAS provider must pay to an MNO in order to provide a VAS to an MNO’s subscribers via SMS on the MNO’s network. In addition, there is the actual price of SMS delivery, some or all of which may be borne by the retail customer. We discuss each of these in turn.

C.3.2.1 Set-up and activation charges

MTN, Airtel, UTL and Africell each charge VAS providers a one-time SMS activation charge of UGX 250,000 per short code activated. MTN also has a range of set-up and activation charges for SMS services, including an account set-up charge of UGX 12 million.

C.3.2.2 Monthly recurring charges

MTN charges a monthly recurring charge of UGX 5 million for wholesale SMS access (introduced in 2014). MTN also charges UGX 250,000 per sender ID per month. By contrast, Airtel does not impose a monthly recurring charge for SMS.

C.3.2.3 SMS per message charges to VAS providers

In some cases, MNOs charge third-party VAS providers per SMS message, including for:

- messages sent by the customer to the VAS provider’s short code (i.e., mobile originated or ‘MO’), and
- messages sent by the VAS provider to the customer (i.e., mobile terminated or ‘MT’).

This can take two forms: bulk SMS purchases (for MT) and zero-rating (for MO).

C.3.2.4 SMS per message charges to retail subscribers, including revenue share

In some cases, retail subscribers are charged by the MNO for VAS SMS messages. In general, the VAS providers set the retail price of these SMS messages, i.e., the retail SMS charge is the means by which the VAS generates revenue from the subscriber for the service. The revenue from these charges may then be subject to a revenue share arrangement between the MNO and VAS provider.

Table 1 sets out the revenue share percentages for the four main MNOs. MTN retains the lowest share at 60% while Airtel retains the highest at 75%. UTL’s revenue share depends on customer usage.

Table 1: MNO revenue shares with VAS providers

MNO	MNO share	VAS provider share
MTN	68%	32%
Airtel	75%	25%
Africell	70%	30%
UTL	Based on customer usage	

Source: Stakeholder meetings and submissions

MTN and Airtel have different practices when implementing the revenue share, each of which is described below.

MTN’s revenue share practices

MTN requires VAS providers to set the retail price for MO and MT SMS messages at a minimum of UGX 150 in order to benefit from revenue sharing. If a VAS provider sets the rate below UGX 150, the revenue charge to the retail customer is retained entirely by MTN. This effectively creates a floor on the retail prices of third-party VAS as VAS providers do not want to forego a share of the revenue.

Before the revenue from retail charges to customers for SMS messages is shared with VAS providers or aggregators, MTN first deducts VAT and excise taxes. From the remainder, MTN next retains a 20% “deemed cost.” Only the revenue that remains is subject to the revenue share. In respect of the latter, the revenue share is 60% in favour of MTN and 40% to the VAS provider. This amounts to an effective revenue share of 68% in favour of MTN (20% + 60% x 80%) and 32% in favour of the VAS provider (40% x 80%).

Airtel’s revenue share practices

Airtel requires that services are provided above the base rate specified by Airtel, which in the case of SMS is based on bulk SMS prices. Airtel’s revenue share is 75-25 in favour of Airtel. However, the 25% payable to the VAS provider is further split so that 10% is allocated to the ‘Airtel platform’ and 15% is allocated to the content (which the VAS provider has supplied). If Airtel uses an independent contractor to provide the platform, the VAS provider forfeits the 10% part and so would only receive the 15% part as payment for the content. However, exactly how, why and under what circumstances this 10% share is forfeited was not clear from the submissions of and interview with Airtel.

C.3.2.5 Trends in wholesale pricing over time

VAS providers and aggregators consistently described a gradual reduction over time in the revenue shares they received, particularly in the case of arrangements with MTN. However, it was suggested that Airtel often followed MTN’s reductions within 6 months. For example:

- One VAS provider stated that its revenue share with MTN has been reduced from 50-50 revenue share with MTN to 60-40 in favour of MTN. Furthermore, the 20% for “deemed costs” described above was added on, over and above the revenue share, at a later stage.
- A second VAS provider stated that its revenue share with MTN was originally 60-40 in its favour, without the 20% reduction for “deemed costs,” but that this has been reduced over time.
- A third VAS provider stated that it had started with a revenue share of 60-40 in its favour but that this had migrated to 60-40 in favour of MTN.

In addition, the introduction of the UGX 5 million monthly recurring charge for SMS and the wholesale price of UGX 12 per SMS (the latter in 2014) reduced margins further.

C.3.2.6 Retail prices for P2P SMS messages

The prices charged to MNO subscribers for P2P SMS messages vary to some extent based on whether they are pre-paid, post-paid and/or across networks (see Table 2).

Table 2: SMS P2P retail prices

	MTN pre-paid	MTN post-paid	Airtel	UTL
On-net SMS	60	40-80	100	38-69
Off net SMS	90	80	130	69

Source: MTN and Airtel websites

Furthermore, SMS messages may form a part of a bulk bundle in which case they are discounted further. On-net SMS messages on the Airtel and MTN networks are available in retail bundles to retail customers for as little as UGX 1.25, well below the lowest wholesale bulk SMS charges charged to aggregators (UGX 12 on the MTN network and UGX 20 on the Airtel network).

Table 3: Charges for SMS bundles (UGX)

MTN				Airtel (30-day validity)			
	Bundle charge	Charge per message	Validity		Bundle charge	Charge per message	
100 SMS on-net	200	2	24-hours	100 SMS on-net	250	2.5	
200 SMS on-net	300	1.5					
400 SMS on-net	500	1.25			320 SMS on-net	500	1.56
700 SMS on-net	1,000	1.4	7-days		1,000	1.4	
25 SMS off-net	1,000	40	30-days	25 SMS off-net	1,000	41	
65 SMS off-net	2,000	31			50 SMS off-net	2,000	40
200 SMS off-net	5,000	25			125 SMS off-net	5,000	40
Unlimited SMS to MTN Numbers	5,000				4,000 SMS on-net	5,000	1.25

Source: MTN and Airtel websites

C.3.3 Commercial framework for USSD access

C.3.3.1 Set-up and activation charges

Each of Airtel, Africell, MTN and UTL charge UGX 250,000 for USSD activation (the same rate as for SMS). MTN charges VAS providers and aggregators UGX 1 million to set up a new USSD account (substantially less than the UGX 12 million to set up an SMS account).

C.3.3.2 Monthly recurring charges

MTN wholesale customers pay a monthly recurring charge of UGX 2 million for USSD (significantly less than the UGX 5 million monthly recurring charge for SMS), while Airtel does not have a monthly recurring charge for USSD services.

C.3.3.3 Per session charges

In general, USSD sessions are priced either on a per session basis (i.e., one price for a session of a given length of time, regardless of how many screens or menus are accessed in that time) or a per hop basis (i.e., charges based on the number of new screens or menus accessed in a given session). In Uganda, the norm is per session pricing.

There are generally three ways in which a USSD session used for VAS can be charged:

- **Base retail pricing.** The retail subscriber pays the MNO's base rate.
- **Zero-rating.** The retail subscriber incurs no charge. Rather the VAS provider incurs the full charge and is billed by the MNO.
- **Revenue share.** The retail subscriber pays the MNO at a rate set by the VAS providers and the MNO's revenues are shared with the VAS provider.

Base retail pricing

MTN charges its subscribers UGX 35 per 20-second session (UGX 105 per 60-second session),¹⁹ while Airtel charges UGX 110 for a 60-second session.²⁰

Zero-rating

Zero-rating is a billing model that is of particular interest to third-party mobile financial services providers. Currently, retail customers are not charged for the USSD sessions that enable the mobile money services provided by MNOs, such as MTN Mobile Money or Airtel Money. However, without zero-rating, the customers of third-party mobile financial service providers are charged for USSD sessions, potentially placing these third-party providers at a competitive disadvantage. Zero-rating is one way of attracting customers and encouraging use. It eliminates a potential barrier to adoption of or switching to these third-party services. However, third-party mobile financial services providers have reported difficulties in obtaining zero-rated pricing.

As of October 2016, MTN had permitted zero-rating of USSD sessions for three banks. MTN's charge for zero-rated USSD sessions is UGX 35 per 20-second session (UGX 105 per 60-second session), the same as the base retail rate.²¹ However, other banks have been refused the ability to zero rate. For example, one aggregator has noted that MTN refuses to zero rate for its digital financial clients.

Airtel has stated that it has moved away from zero-rating because it was having difficulty collecting zero-rated charges from VAS providers and aggregators, i.e., it was a credit concern.²² However, a few VAS providers are still able to benefit from zero-rating. Zero-rating USSD sessions is not available in the standard agreements that Airtel supplied to this Study, and it therefore appears that Airtel does not offer zero-rating as a standard practice.

Revenue share

Similar to the SMS case, MNOs offer a revenue share model in their pricing to VAS providers and aggregators.

MTN's minimum charge for a USSD session on a revenue sharing model is UGX 50 per 20 second-session (UGX 150 per 60-second session).²³ As is the case for SMS (see section D.3.1.4), MTN's effective revenue share is 68% MTN, and 32% wholesale customer.

Airtel has a minimum revenue share for USSD of UGX 200 for a 60-second session.²⁴ The revenue share arrangement is the same as that for SMS, being 75% Airtel and 25% for the

¹⁹ Submission of MTN, 22 February 2017.

²⁰ Meeting with Airtel, 20 October 2016

²¹ Submission of MTN, 22 February 2017.

²² Meeting with Airtel, 20 October 2016

²³ Submission of MTN, 22 February 2017.

²⁴ Submission of Airtel, received 11 July 2017

wholesale customer (with the same caveat for SMS (described in Section C.3.2.4) that if Airtel uses a sub-contractor, then the wholesale customer receives only 15%.

D. Assessment of possible anticompetitive market conduct

D.1 Introduction to market structure, dominance and indicators of market power

Market power is evident in the ability of a firm to unilaterally set prices and terms for the provision of services. Such circumstances exist when customers do not have good alternatives to which they can turn.

In competition law, market power is often inferred indirectly from market share data. Market share thresholds are widely used as a test for or presumption of dominance. A high market share and thus absence of good alternative typically justifies viewing the firm as dominant. In concentrated markets, where there are very few alternatives to which consumers can turn, it is possible that more than one firm will be dominant.

Dominance itself is not a violation of competition law, but it typically has a ‘special responsibility’ (in the formulation in the EU and many other jurisdictions) not to abuse its position (i.e., exercise its market power) such as by refusing to supply a good or service when it is feasible to do so.²⁵ In sector regulation, exercise of market power is often regulated with the intention of preventing abuse of a dominant position.

In a competitive market, these restraints on market conduct are generally not necessary as customers are not reliant on any single supplier. Instead, unless there is collusion (e.g., price fixing), the process of competing to attract and retain customers will mean suppliers will be highly responsive to customers and seek to provide access to services as quickly as possible in order to secure the business.

D.2 Dominance

D.2.1 Introduction

One threshold question for an analysis of market conduct under Ugandan law is whether the MNOs are likely to hold ‘dominant positions’ in the wholesale markets for SMS and/or USSD access. A determination that an MNO holds a dominant position in market is not an indication of any improper conduct or a violation of any law. It is a determination that the MNO has achieved such a level of market power in a market as to become subject to potential additional regulatory constraints, and a greater degree of responsibility for its conduct, including a prohibition on abusing its market power. Below, we review the evidence of dominance and assess the plausibility of such a determination based on the limited market and other data made available to this Study.

D.2.2 Market shares

The Guidelines for Determining Breach of Fair Competition (FC Guidelines) which is annexed to the Communications (Fair Competition) Regulations, 2005,²⁶ (Fair Competition Regulations) provide for a presumption of dominance where a firm’s market share exceeds 35%.

²⁵ See EC (2009) Guidance on its enforcement priorities in applying Article 82 of the EC Treaty to abusive exclusionary conduct by dominant undertakings’, OJ C 45, 24.2.2009

²⁶ Statutory Instruments, 2005 No. 24.

Although we requested it, this Study was not provided information enabling us to determine the market shares of MNOs in the markets for wholesale SMS and USSD services. However, the retail customers to whom the MNOs' wholesale SMS and USSD customers provide their downstream VAS are the same retail customers to whom the MNOs provide their mobile telecommunications services. These retail customers rely on the MNOs' retail SMS and USSD services for their use of the downstream VAS provided by third-party VAS providers. Thus, the MNOs' market shares in retail mobile telecommunications offer a useful reference point for the MNOs' market shares in the overall markets for wholesale SMS and USSD services.

MTN and Airtel each has a market share of over 40% in the market for mobile telecommunications services in terms of total mobile subscriptions. Accordingly, it is reasonable to conclude that each of MTN and Airtel likely surpasses the 35% threshold for presumption of dominance in terms of their own mobile telecommunication services market shares. While there may be divergences between demand for wholesale SMS and USSD services on one hand and mobile telecommunications services on the other, it is also likely that they also each surpass the 35% threshold in each of the overall wholesale markets for SMS and USSD services.

Thus, if one considers that the relevant markets are the overall wholesale market for all SMS and the overall wholesale market for all USSD services provided by all MNOs (with each MNO competing with one another), both MTN and Airtel would likely be presumed to be dominant under the FC Guidelines. One might instead find, as did a 2015 market review carried out for the UCC by the telecommunications consulting firm Cartesian,²⁷ that the relevant markets are the wholesale market for SMS and the wholesale market for USSD provided by an MNO on its own network. On this basis, Cartesian found that each MNO (and MTN and Airtel in particular) has significant market power in the respective markets for access to their SMS and USSD platforms, which it defined as:

- Mobile Platform Access for SMS-Based Applications (MPA-SMS), and
- Mobile Platform Access for USSD-Based Applications (MPA-USSD).

While we do not necessarily endorse Cartesian's view of the relevant market, under such an approach each MNO would be presumed to have a 'dominant position' for each of these markets.

Looking beyond the presumption of dominance based on 35% market share, to the substantive economic test in section 2 of the UC Act and the Fair Competition Regulations, this Study finds strong reasons to consider MTN and Airtel as having a dominant position which are not present in the case of the other MNOs. Both appear to have "a position of market power enjoyed by an [MNO], which enables the [MNO] to prevent effective competition being maintained in the relevant market by giving it the power to behave, to an appreciable extent, independently of its competitors and customers." This is the case when exploring the nature of the constraints relevant to their ability to behave independently, including constraints identified in the FC Guidelines: existing competitors' market strength per their market shares, potential competitors and barriers to market entry, and customer buyer-power.

²⁷ Cartesian, Market definition and market power assessment summary report, April 2015, page 17.

D.2.3 Relationship with mobile money markets

MTN and Airtel have close to an effective duopoly in markets in which SMS and USSD are important, such as mobile money. They are integrated into a number of related services for which USSD and SMS access, pricing and terms are critical.

The broader markets for mobile telecommunications and mobile financial services in Uganda are both strongly duopolistic, especially after the acquisition of Warid by Airtel in 2014. In the provision of mobile money services, MTN had been the overwhelming market leader and a quasi-monopoly, with a market share measured in terms of the value and volume of transactions of close to 80% at the beginning of 2015. However, Airtel's growth over 2015 and 2016 has seen the MTN market share fall to around 60% and the Airtel share increase to close to 40% in value and volume terms. The other providers remain with only negligible shares. This means that the duopolistic structure in mobile money services echoes the duopoly in the primary mobile telecommunications market.

The position of MTN and Airtel in relation to the other rivals indicates that they each likely have substantial market power in these two markets of mobile telecommunications and mobile money services. With just two large firms dominating these markets, they will not necessarily compete vigorously against each other. Economic theory suggests that they are likely to recognize the mutual benefit in not competing strongly against each other, and in arrangements which raise barriers to smaller firms challenging their position. These can be simply tacit understandings of pricing and terms of provision of services, and not necessarily agreements between the firms which are evidently anticompetitive. Instead, the tight duopoly market structure may mean they each have substantial market power and the firms can be understood as being jointly dominant.

There are therefore reasons to doubt that the duopoly in the market for mobile telecommunications, and the related market for mobile money services, is sufficient to ensure competitive outcomes generally.²⁸

MTN and Airtel, as MNOs, have by far the largest group of members in their networks, in the form of subscribers, of any commercial provider of economic services. This means the MNOs are very influential in terms of the customer base that a VAS provider needs to access if they are to be commercially successful. In addition, the networks of telecommunications subscribers have been a key factor enabling the rapid growth of mobile money transfer, which has evolved into mobile credit and payments in which there are additional network effects that can reinforce the effects at the level of mobile telecommunications.

D.2.4 Barriers to entry

Barriers to entry into the market for retail mobile telecommunications services, the provision of which is necessary to be a provider of wholesale SMS and USSD access, are inherently high, requiring significant investments in network infrastructure as well as licensing requirements. We did not find any evidence of such potential competitors, or that entry into the market of additional competitors would serve as a meaningful constraint on MTN and Airtel.

The difficulty that the other MNOs face in mounting a successful challenge to MTN's and Airtel's market positions appears to arise at least in part through the operation of network

²⁸ Hawthorne, R., Mondliwa, P., Paremoer, T. and Robb, G. (2016) 'Competition, barriers to entry and inclusive growth: telecommunications sector study,' CCRED Working Paper 2016/2.

effects. Whether a mobile financial services provider or other VAS provider purchased wholesale SMS or USSD from another MNO, it would remain unable to reach the vast majority of end-users who are not connected to its host mobile network.

Thus, a mobile financial services provider or other VAS provider has little option but to sign up with MTN and/or Airtel in order to deliver its services to the large majority of the Ugandan end-user market. In negotiating with these MNOs, a mobile financial services provider effectively has little and in many cases no countervailing bargaining power.

D.2.5 Signs of use of market power

This Study has found direct indications of market power in terms of the ability and tendency of MTN and Airtel to unilaterally set prices and terms of provision of services, with little regard to their wholesale customers' ability to turn to alternatives. This is seen in the ways in which wholesale SMS and USSD prices and charges have been set by MTN and Airtel in Section C.3, including making unilateral changes to the revenue sharing percentages in their own favour.

Further, MTN and Airtel are both the suppliers of network access to, and competitors of, providers of VAS, including mobile financial services such as mobile money, and have the ability to undermine or degrade competition in downstream and adjacent markets. It is not clear that the other MNOs have this power. Having each a relatively small customer base, they have less leverage in face of the VAS providers, as may be seen by their prices and lack of complaints about the sort of conduct arising in respect of MTN and Airtel. MTN's and Airtel's wholesale SMS and USSD customers do not appear to exert significant bargaining power in dealing with MTN or Airtel. They consistently reported to this Study MTN's and Airtel's practices of making unilateral changes to pricing models and prices on a take it or leave it basis. These concerns were not voiced in relation to the other MNOs.

Market power is also indicated in the issues surrounding short code activation (Section C.2.2) and in the limited provision of access to reverse-billing and zero-rating of USSD (Section C.3.3.3). The apparent reasons given by MTN and Airtel for deciding on the provision of services, such as whether the customer is also going to compete with them or have a 'conflict of interest' (see Section C.2.2.2), is consistent with their market power by virtue of their position and the incentives which exist for them to undermine competition. These concerns were not voiced in relation to the other MNOs.

Throughout our interviews with VAS providers and aggregators we were told of a perceived power imbalance between these entities and the two larger MNOs. Some of the roots of this perception have already been discussed above:

- high prices for wholesale SMS and USSD access, including lack of zero-rating for wholesale USSD access (see Sections C.3, D.3 and D.4)
- issues surrounding activation of short codes (see Section C.2.2);
- perceived unfair treatment in several facets of the implementation of the DND Directive (see Section D.5.5);
- issues with revenue payments by MNOs (see Section D.5.4).

One aggregator and VAS provider stated that making formal complaints to the UCC regarding the behaviour of MNOs was not an option because the UCC would inform the MNO and the MNO would retaliate. It believes that because Airtel and MTN are providing their own content-based SMS messages, they are in competition with the VAS providers and aggregators which

creates incentives for such behaviour. Fearing being “switched off” by one of the major MNOs and losing access to customer if it is vocal in its complaints, this party has instead adopted a strategy to “be quiet and deal.” Another VAS provider stated that it felt as though it was being pushed to the side by the major MNOs. A third VAS provider noted a “power disparity” between the MNOs and VAS providers.

These perceptions are exacerbated by the “take it or leave it” nature of the contracts offered to VAS providers by the larger MNOs, which have over time become more and more favourable to these MNOs (see Section C.3.2.5). This perception is somewhat bolstered by Airtel’s opinion that it is free to deny access to its network to VAS provider based solely on its own commercial interests (see Section C.2.2.2).

In addition, several of the VAS providers and aggregators we interviewed were unwilling to respond to our information requests or, when they did respond, omitted information relating to commercial relationships with MNOs. Many of these providers had also initially cited fear of retaliation during interviews. While they initially said they were comfortable providing this information on a confidential basis, they later declined to do so.

In face of MTN’s and Airtel’s respective market shares of above 40%, their competitors have collectively less than 15%. The lack of price competition on SMS and USSD prices, which MTN and Airtel maintain at similarly high levels and well above those of the other MNOs, suggests that their competitors exert little if any competitive discipline over MTN and Airtel. The strength of competitors is not a meaningful constraint on the ability of MTN and Airtel to behave independently. The history of excessive pricing and exclusionary behaviour described in Sections D.3 and D.4 also suggest that MTN and Airtel have the power to act independently of competitors and customers, and indeed use such power to their own advantage.

D.2.6 Strong likelihood of dominance

In effect, this Study has not uncovered any significant countervailing consideration that would overcome the presumption of dominance with respect to MTN and Airtel. Indeed, all of the indicators firmly reinforce the view that each of MTN and Airtel has the power to behave, to an appreciable extent, independently of their competitors and customers, and that they do so.

The similarity of their high prices suggests that each of MTN and Airtel also imposes little or no competitive pressure on the other’s pricing of wholesale SMS and USSD services. Indeed, other studies have found significant parallel pricing between MTN and Airtel at the retail level in other markets, such as mobile financial services, that is suggestive of coordination.²⁹ To the extent that there is such coordination, they may even have joint dominance (and 90% share of the overall markets in wholesale SMS and USSD) as contemplated under section 5(8) of the FC Guidelines.

Based on the mobile telecommunications services market share information available to this Study, and applying the tests for dominance under the UC Act and the FC Guidelines, Airtel and MTN appear to be dominant in each of the wholesale markets for SMS and USSD services – whether one considers the overall SMS and USSD markets or only markets in SMS and USSD services used to communicate with their own retail customers.

²⁹ Macmillan, R., Paelo, A. and Paremoer, T. (2016). The “Evolution” of Regulation in Uganda’s Mobile Money Sector, *The African Journal of Information and Communication*, 17 (1), available [here](#).

D.3 Excessive pricing

D.3.1 Background

Market participants have expressed concerns that the prices of wholesale access to the SMS and USSD platforms have been relatively high. Section 6(1)(b) of the Fair Competition Regulations defines as an abuse of a dominant position “any conduct which exploits customers or suppliers through excessively high prices.” In this Section D.3, we assess pricing of wholesale SMS and USSD services by MTN and Airtel using international benchmarks and an evaluation of the underlying costs of these services. We conclude that prices are set at excessive rather than competitive levels and appear likely to violate section 6(1)(b) of the Fair Competition Regulations and constitute an abuse of dominance.

High prices resulting from the exertion of market power may reflect returns above reasonable profit margins from consumers, i.e., as excessive pricing. The evaluation of the prices to determine whether they are excessive requires an assessment of them against benchmarks of fair prices, including prices in other countries as well as against costs, where possible, as a proxy for economic value.

In the circumstances evaluated in this Study, the prices for USSD access, and the lack of zero-rating, may also disadvantage VAS competitors in downstream markets that compete with MNOs in providing mobile financial services and content services. This is particularly so in the case of USSD access to mobile financial services.

D.3.2 International benchmarking

D.3.2.1 SMS

This Study utilizes SMS interconnect charges as an international benchmark in assessing wholesale SMS charges in Uganda. SMS interconnect charges reflect the rate that one MNO charges a second MNO to terminate SMS traffic on its network. This rate thus sets a floor for off-net retail charges.³⁰ Indeed, this is the same underlying reason why telecommunications regulators in many jurisdictions concern themselves with voice interconnection rates when addressing retail voice rates.³¹ These interconnection rates form the lowest price at which one MNO can charge for voice calls to another MNO’s networks.

Wholesale SMS charges charged by MTN (UGX 12) and Airtel (UGX 20) in Uganda, even before account access charges and set-up charges are considered, together with their SMS interconnect charge (UGX 26), are substantially above cost-reflective benchmarks in a variety of countries. In countries where SMS interconnect is regulated at cost (the charge to which wholesale SMS rates tend towards), SMS interconnect rates have been set at between UGX 1 (or even less, in the case of Australia) and UGX 2.

D.3.2.2 USSD

MTN’s charge of UGX 35 for a 20-second session (UGX 105 for 60 seconds), and Airtel’s minimum charge of UGX 110 for a 60-session session (though it should be noted that others

³⁰ ‘Off-net’ refers to a retail customer or aggregator sending an SMS message from one MNO network to a retail customer or aggregator on another MNO network. ‘On-net’ refers to a retail customer or aggregator sending an SMS message from one MNO network to a retail customer or aggregator on the same MNO network. MNO’s often charge different rates for on-net and off-net SMS messages.

³¹ See, for example, Spulber, D. & Yoo, C. (2009). *Networks in telecommunications: Economics and law*. Cambridge University Press.

pay UGX 150 per 60-second session) for the same service, are higher (and for shorter durations) than in other countries. This is so particularly when compared to countries with more competitive markets in the rest of Africa (where USSD usage charges are in fact not charged, and rather a low flat monthly fee is charged) and compared to markets where USSD charges are set by a regulator, as in India (UGX 28) or after some form of review by a regulator, as in Kenya (UGX 35). Not only are USSD charges higher in Uganda but they are for a shorter session (60 seconds) compared to other countries, where sessions are for up to 180 seconds (as in Kenya) or 8 hops (India). Based on equivalent 180 second durations, MTN's and Airtel's prices are approximately 10 times the rate now charged by Safaricom next door in Kenya. Even for 60 second sessions, their prices are more than triple those in Kenya.

D.3.3 Evaluation of costs of USSD and SMS services

While development of a costing model is not within our scope of work for this assignment, we requested information on costs of SMS and USSD services from several MNOs, including access to existing cost studies for other services that may shed some light on network costs more generally. However, relatively little useful information on costs was provided.

Nonetheless, a number of regulatory decisions together with information supplied by stakeholders on the costs of USSD and SMS provide some indication of the likely costs of USSD and SMS. We describe each of these below.

D.3.3.1 Cost principles and regulatory decisions

The UCC undertook a costing study into various telecommunications services during the course of 2008 and 2009, and subsequently published reference prices, including for SMS interconnection.³² The reference prices published (UGX per message) for SMS interconnection were 15 (2012), 11 (2013) and 9 (2014). These proposed charges are considerably lower than the SMS interconnection charges between Airtel and MTN, for example, of UGX 26 (discussed in Section D.3.2).

Uganda's SMS prices can be compared with the costs of SMS services in Kenya, where the Communications Authority (CA) undertook a costing study of voice and SMS interconnection. The CA found that the Long Run Incremental Cost (LRIC) of an SMS in Kenya is less than Ksh 0.015 (UGX 0.52).³³ Based on this costing study, the CA ultimately set a maximum SMS termination rate of KES 0.05 (UGX 1.74).³⁴ Again, these costs are substantially below current SMS termination charges in Uganda (UGX 26) and A2P SMS charges (UGX 12-20).

Many more SMS messages can be sent using the same network capacity used for voice, and therefore the costs of SMS are substantially lower than the costs of voice calls. The Australian Competition and Consumer Commission (ACCC), for example, reports that "*At a minimum, several hundred SMS can be sent in the same network capacity required for a minute of voice calls.*"³⁵ This assessment was based on submissions from MNOs and from a costing model developed for them. The ACCC concluded that the costs of SMS are likely to be substantially

³² Report prepared by PriceWaterhouseCoopers for the Uganda Communications Commission. (2008). Consultation Document on Interconnection, Cost model, Dominance, and Retail Price Regulation, available [here](#).

³³ See Short Message Service (SMS) Interconnection Termination Rates: "Addendum to interconnection determination no. 2 of 2010."

³⁴ See Communications Authority of Kenya. (2010). 'Short Message Services (SMS) interconnection termination rates, Addendum to Interconnection determination no. 2 of 2010'.

³⁵ See ACCC (2014), cited above.

lower than the costs of voice calls, and set a regulated rate for SMS at AUD 0.0003 (0.87 UGX), based on a cost estimate of AUD 0.00026 (UGX 0.75).

While there are a number of costing studies and decisions on wholesale SMS, the capital and operating costs of USSD services have not been publicly assessed in any decision of which we are aware. Nonetheless, according to industry experts, USSD services are less costly both in terms of capital expenditure and operating expenditure than SMS because SMS depends on a short message service centre (SMSC), an expensive switch, as well as an SMS Gateway, while USSD requires only a USSD gateway.³⁶ This is notwithstanding the fact that a USSD session uses capacity continuously over a period of time.

D.3.3.2 Cost information provided in stakeholder submissions

Next, we assess the cost information provided by stakeholders to the UCC. Based on the information we received, the costs directly attributable to USSD and SMS services could be estimated at between UGX 0.15 and 2 per transaction.

In addition to this, an SMS message has been estimated to use 0.121% of the transmission capacity used by a one-minute voice call³⁷, currently charged at between 0 and 200 UGX, depending on the MNO. The transmission cost of an SMS message is therefore well below 0.5 UGX (at most, 0.25 UGX, and likely well below this). The costs of an SMS are therefore likely to be significantly less than UGX 2, and for large MNOs (MTN and Airtel), less than UGX 0.5.

As discussed above, the costs of USSD are likely below the costs of SMS. However, we are not aware of any cost study on USSD that has derived the set of principles used for SMS transmission costs. We are therefore unable to arrive at a definitive conclusion on the costs of USSD services in Uganda. It is unlikely, however, that the costs of USSD services exceed UGX 30 for a full 180 second session, which is approximately the regulated USSD rate in India and Kenya. This is more than fifteen times the upper bound of our estimates of the costs of SMS in Uganda, and is also substantially higher than the directly attributable costs of USSD in Uganda.

D.3.4 Summary

The costs of wholesale SMS messages are likely no more UGX 2, and are likely substantially less than this. MTN and Airtel offer on-net prices to high-use customers for as little as UGX 1.4 per SMS. Other countries that have set cost-based regulated tariffs for SMS have set rates that are typically lower than UGX 2 (including in Australia, India, Kenya and New Zealand).

Current USSD session prices also appear to be substantially above costs. While we are not aware of any countries that have set cost-based wholesale USSD rates, regulated USSD rates are typically in the region of UGX 30, for relatively long sessions (of up to 180 seconds in Kenya).

This suggests that, using costs as a comparator, prices for wholesale SMS and USSD sessions are set at excessive rather than competitive levels in Uganda.

³⁶ E.g., see Aricent, *USSD: A Communication Technology to Potentially Ouster SMS Dependency*, p9 and p11, available [here](#): “...because the USSD platform sends messages directly without using SMSC, it is less expensive than SMS.” “Because the USSD technology uses the existing SS7 protocols, significantly less investment is needed in the network. The USSD Gateway uses the same application programming interface as the SMSC, making it easier to port services based on SMS to utilize USSD as the bearer. In practice, only USSD specific modifications are needed for external applications. Hence, the capital expenditure (CAPEX) and operation expenditure (OPEX) are few.”

³⁷ See WIK-Consult, 2015, ‘Benchmarks for the Cost of the Mobile Termination Access Service in Australia’.

D.4 Exclusionary behaviour

Section 6(1)(a) of the Fair Competition Regulations defines as an abuse of a dominant position “price abuses or anti-competitive pricing through . . . price squeezes, cross-subsidisations . . . or any form of direct or indirect imposition of unfair purchasing or selling prices.”

To reach the vast majority of consumers who do not have smartphones, USSD and SMS services are essential inputs into mobile money transactions, and access to them is therefore critical for mobile money and payments providers. As a result, a common concern is that MNOs are able to use their charges for USSD and SMS services to raise the costs of their competitors’ mobile financial services. A related concern is that MNOs are using cross-service discounts (i.e., cross-subsidising) to zero rate the USSD and SMS charges for MNO mobile money transactions.

An MNO may charge its mobile financial services competitor a wholesale price for USSD and SMS services that, when compared to the retail price for money transfers and payments, does not leave enough margin to make the supply of such downstream retail services commercially viable. This is known as a ‘margin squeeze’ and may be part of a strategy of raising rivals’ costs. In effect, the resulting margin squeeze may amount to a constructive refusal to supply, in that the pricing effectively prevents actual and potential rivals from using the wholesale input at the wholesale price at which it is offered.

An analysis of MTN and Airtel’s retail prices for a reasonable stream of mobile money transactions based on actual usage behaviour, airtime commissions and evidence of airtime top-up behaviour, together with another MNO’s agent commissions (this was the only information on agent commissions available to us), suggests that MTN and Airtel’s USSD and SMS charges raise rivals’ costs significantly.

It is difficult to separate out the effects on competition of MTN’s and Airtel’s conduct in respect of USSD and SMS charges from the other means by which they can exclude their rivals, including delays in activation and payment, the lack of zero-rating and enforcing blanket opt-outs of third party services (discussed below in Section D.5). MTN’s and Airtel’s competitors have been relegated to the margins of markets for mobile money services, evidenced by MTN and Airtel’s substantial market share in markets for mobile money services. This is consistent with MTN’s and Airtel’s conduct having had anticompetitive effects. Even if we cannot conclusively show a margin squeeze, the signs do strongly suggest that MTN and Airtel’s USSD and SMS charges are exclusionary.

D.5 Constructive refusal to supply

D.5.1 Background

Section 6(1)(b) of the Fair Competition Regulations defines as an abuse of a dominant position “any conduct which exploits customers or suppliers through . . . refusal to supply existing or potential competitors.” Similarly, Section 6(1)(g) defines as an abuse of a dominant position “refusal to supply or grant access to facilities.” In this Section D.5, we set out four examples of MTN’s and Airtel’s alleged market conduct which may amount to a constructive refusal to supply access to wholesale SMS and USSD service to VAS providers, many of which compete with MTN and Airtel in the markets for VAS.

D.5.2 Lack of zero-rating

Even if VAS providers wish to cover the costs of SMS or USSD themselves on behalf of their customers, MTN and Airtel appear to be preventing many of them from engaging in zero-rating

or have required payment for zero-rating at high retail rates. The MNOs have suggested this is due to fears of non-payment by providers. However, it is not clear that concerns over collection of payments from VAS providers is valid given they are generally large corporates and banks. If there is concern over payment from an aggregator which serves as an intermediary between banks and MNOs, then tripartite agreements between the bank/provider, aggregator and MNO should be able to create a suitable commercial framework. In addition, there should be other commercial means of ensuring payment such as deposits or the payment of a security. It therefore seems possible that this practice is being used as a means to maintain a competitive advantage in their adjacent market (mobile financial services) as a result of their dominance in the platform.

D.5.3 Issues with activation of short codes

The issues identified in Section C.2.2 relating to activation of short codes may constitute a form of exclusionary behaviour. Third-party VAS providers and aggregators report significant delays in activating allocated short codes on some MNO networks and have alleged that information provided to MNOs during that process is misused. Some MNOs take the position that they have no legal or regulatory obligation to provide access to the SMS or USSD channels to third-party VAS providers.

As gatekeepers over the customers, the delays and other allegations suggest that MTN and Airtel may be using their market power in the market for mobile telecommunication to prevent competitors from gaining entry into mobile financial services that compete with their own downstream offerings. The MNOs with market power (MTN and Airtel) have both the ability to delay and prevent entry, as well as the incentive to do so.

D.5.4 Delays in payment

In our interviews with VAS providers and aggregators, there were repeated allegations that revenue share payments from MNOs had been delayed, calculated incorrectly, or had not been made at all.

Some of the content providers allege that UTL for instance has not made any payments in at least four years. Airtel is accused of taking one to two years to share revenue with the content providers. At least one content provider also accused MTN of underpaying content providers by claiming that less SMS messages were sent to the content provider's subscriber list. Large variances were discovered between what the content provider recorded and what MTN recorded.

One VAS provider alleges that due to a system failure, MTN never paid its share of revenues from content-based SMS messages delivered during several months in 2015 due to an MTN system error, UTL has not made payments since 2010, and that in the past Airtel had taken one to two years to make its payments. Another VAS provider similarly stated that it never received its share of the revenue from the content-based SMS messages delivered on MTN's network during several months in 2015 and that the amounts MTN has declared in its reconciliations have been a fraction of the amounts actually owed. A third VAS provider stated that it had not received payments from UTL for 4 years. A fourth VAS provider stated that receiving payments from MTN can take up to six months and that UTL's reconciliation of revenue shares took three years.

A number of these accusations are difficult to prove especially since the content providers seemed to be afraid to report the MNOs and MTN in particular for any misconduct in case they should be singled out and completely blocked from access to the platform as with what happened

with EzeeMoney. However, there appears to be an imbalance in power with the MNOs able to use their control over infrastructure to disadvantage content providers, potentially with the view to driving them out of the market.

An investigation into the veracity of these claims is outside the scope of our work and that they are only unsupported allegations. However, it is notable that similar claims were pervasive in our interviews with numerous VAS providers and aggregators. At the very least we can conclude that there is a widespread perception that there are serious anomalies with reconciliations and payments made by the MNOs to VAS providers and aggregators.

D.5.5 Implementation of the DND Directive by MNOs

The implementation of the UCC's DND directive by the MNOs has effectively resulted in the exclusion of a substantial number of VAS providers and aggregators, which play an important role in the development of mobile financial services ecosystems, not least by assisting the banks in developing their mobile financial services products.

On 3 October 2014, the UCC issued the DND Directive to six mobile MNOs instructing them to "effectively activate the 'DO NOT DISTURB' register in relation to SMS and MMS messages that may be sent from and through [the MNOs'] networks." The Directive required the MNOs to send a single unsolicited message to their subscribers informing them "of the availability of the 'DO NOT DISTURB' feature and instructing them on its usage." This feature was already required by the Text and Multi-Media Messaging in Uganda, Guidelines on Content, Services and Applications (SMS Guidelines), but apparently not been widely implemented at the time.

The UCC's DND Directive has been criticized by market participants as vague and lacking clear instructions on implementation. Not surprisingly, the MNOs implemented the Directive in a variety of ways.

Airtel reacted to the DND Directive by suspending all subscription content-based SMS services, with the exception of some specific services such as those provided by utilities, banks and those related to emergency services.³⁸ Airtel continued to permit content-based SMS messages to be sent from its own "Airtel Live" service which is provided by a third party service that has contracted with Airtel MNOs in countries across Africa.³⁹ Airtel Live provided content that was similar to the type of content which was suspended. According to Airtel, it held a meeting in December 2014 with the major providers of content-based SMS services to inform them of the suspension and additionally provided formal notice.⁴⁰ Although we requested a copy of this notice from Airtel, it was not supplied. According to Airtel, it had the right to implement this suspension under its contracts with the VAS providers.⁴¹ Airtel stated that while it originally

³⁸ Meeting with Airtel, 20 October 2016.

³⁹ Meeting with Airtel, 20 October 2016.

⁴⁰ Meeting with Airtel, 20 October 2016.

⁴¹ Meeting with Airtel, 20 October 2016.

allowed users to opt out of specific services, it now only permits customers to opt out of all subscriptions.⁴²

On 21 November 2014, MTN issued a letter regarding “Migration of MT Billing Subscription Services” to “content and bulk SMS providers” (MTN Migration Letter), referencing a meeting on the same subject between MTN and the same providers three days earlier.⁴³ The Letter described migration to a new billing platform to “change the way we have been billing subscription services.” A new “subscription management platform” would be embedded with a do-not-disturb solution. The Letter sets out the following key features of the new subscription management platform applicable to subscription services:

- a. *You will be required to share your current subscription data bases indicating the customers’ numbers and the services they are subscribed to.*
- b. *MTN will maintain and manage your subscription databases including updating the databases with every subscription/un-subscription request that is sent to you to you.*
- c. *For MT Billing purposes the following will apply: -*
 - *You will be required to send us the Billing request that includes the content and the content message and the Content Sender ID as well as the customer’s number to be billed.*
 - *A validation will be performed by the solution to confirm whether the customer is subscribed to the content defined by the Sender ID and if the customer has not activated DND on the content/Sender ID.*
 - *Upon successful validation, the customer will be charged and it will be MTN’s responsibility to deliver the content to the customer.*
 - *MTN will send an appropriate notification to the service provider in case of successful or failed delivery.*

On 18 December 2014, MTN issued a letter regarding “Management of Subscription Services” to the same addressees (MTN Database Expiry Letter).⁴⁴ The MTN Database Expiry Letter referenced the DND Directive and MTN efforts to migrate databases to the new subscription management platform which was “aimed at affording the customers an opportunity to confirm subscriptions as the regulator had initiated this process due to overwhelming customer complaints of false subscriptions.” The MTN Database Expiry Letter states that there were two parts of the process “verification of subscriptions *as well as the expiry of long standing subscription* [sic]” (emphasis added).

There is some ambiguity about the meaning of this letter, and MTN did not provide any explanation in its submission. A literal reading indicates that in addition to efforts to verify subscriptions, and presumably remove those subscribers who did not verify, some “long standing” subscription services had their entire databases “expired.” The MTN Database Expiry Letter further states that “expiry of all subscriptions has taken effect today” and would continue

⁴² Meeting with Airtel, 20 October 2016.

⁴³ Submission of MTN, 22 February 2017.

⁴⁴ Submission of MTN, 22 February 2017.

on a monthly basis going forward. MTN continued to provide its own content-based services from third-party provider IMImobile which provides such services to MTN Group MNOs branded as “MTN Play” in markets across the Middle East and Africa.⁴⁵

Many content-based SMS providers interviewed for this Study complained about the manner in which Airtel and MTN implemented the DND directive. In particular, because at the time MTN had the most customers, operating on its network was considered essential for the viability of these providers. Several major providers confirmed that their subscription databases were expired entirely by MTN, meaning that they could no longer send content (or receive their portion of the revenue share from such content).

Many providers felt that it was unfair that third-party services that provided the same types of content but had special arrangements with the MNOs’ parent companies, such as MTN Play and Airtel Live, were not subject to the same negative impacts of implementation of the DND Directive and were permitted to continue operating without any real competition. Airtel responded to these criticisms by stating that it had no regulatory obligation to deal with VAS providers as they were not licensees.⁴⁶

As mentioned above, Airtel only permits customers to opt out of all subscriptions rather than allowing service-specific opt-outs.⁴⁷ We understand that MTN only permits blanket opt-outs, but this has not been confirmed.

This blanket opt-out is problematic for VAS providers because often customers will exercise the blanket opt-out (which they may not understand applies to all SMS subscription messages) and then be unable to receive messages they would have wanted. For example, this could prevent bank customer from receiving valuable alerts about their accounts or “one-time pins” sent via SMS that are necessary to complete certain transactions. One aggregator stated that its bank clients frequently report customers complaining that they are not receiving SMS messages from the bank and this is often the result of having engaged the blanket opt-out.

VAS providers also do not know which of their customers have exercised the blanket opt-out. One VAS provider stated that this results in customer not receiving content they requested and SMS Media being charged by the MNO for sending the SMS even though it is never delivered.

One effect of the blanket opt-out approach is that providers of services that rival those of MTN and Airtel downstream, including providers of mobile financial services, will not be able to compete. While MTN and Airtel will continue to send SMS transaction confirmations, for example, for their own mobile financial products, third party mobile financial service providers are not able to do so in the face of a blanket opt-out by a consumer. This significantly inhibits the development of an ecosystem of third-party financial service providers.

D.6 Conclusion

The information available to this Study strongly suggests that MTN and Airtel each holds a dominant position in the wholesale markets for SMS and USSD services, whether considering

⁴⁵ Meeting with SMS Empire, 17 October 2016. IMI Mobile Press Release. (2012). *IMImobile wins ‘Multimedia Content Management Solution of the Year’ at Cloud Africa Awards*. Available here <https://imimobile.com/imimobile-wins-multimedia-content-management-solution-of-the-year-at-cloud-africa-awards/>

⁴⁶ Meeting with Airtel, 20 October 2016.

⁴⁷ Meeting with Airtel, 20 October 2016.

the market as a whole or each separate market for provision of such services to its own customers.

Whether or not MTN and/or Airtel are found to hold a dominant position, individually or collectively, in one or both markets for wholesale SMS and USSD services, and to have abused that position or positions, the excessive pricing and exclusionary behaviour identified in Sections D.3 and D.4 may also constitute violations of the general prohibitions on anticompetitive behaviour under section 53(1) of the UC Act and sections 5(1)(d), 5(2) and 5(3) of the Fair Competition Regulations applicable to all MNOs.

The apparent exclusionary behaviour described in Section D.4, and the possible constructive refusal to supply described in Section D.5, may also constitute a violation of the prohibition on denial of access or service to a customer in section 56 of the UC Act.

E. Competition enforcement and market regulation

E.1 Introduction

In this Section E, we consider the most important regulatory steps that should be explored with a view to improving competition in the wholesale markets for SMS and USSD services. In some cases, the existing laws and regulations appear to be sufficient and only need to be applied in practice. In other cases, the existing laws and regulations are insufficient and we recommend potential improvements.

The UCC can use its powers to:

- commence an investigation as to past and continuing conduct (*ex post*) under Section 55 of the UC Act, in particular potential abuses of dominance and other anticompetitive conduct identified in Section D and apply enforcement measures and remedies for violations found; and/or
- establish obligations to apply in the future (*ex ante*) to the MNOs concerned as to how they will price and offer wholesale access to SMS and USSD services to third party VAS providers, whether by imposed by regulation or stop order, or introduced by voluntary undertaking of the MNOs.

These are not mutually exclusive, and indeed may be mutually reinforcing. The UCC might both discipline past and continuing anticompetitive conduct by carrying out an investigation as well as imposing regulations applicable in the future. Alternatively, it might prepare or initiate an investigation and then obtain voluntary undertakings from the MNOs concerned as to their future conduct.

E.2 Investigating abuse of dominance and other market conduct

If not quickly settled, the problematic conduct this report has identified merits, and we recommend, formal investigation under Section 55 of the UC Act into the potential abuses of dominance and other anticompetitive identified in Section D. If an investigation concluded that indeed the abuses of dominance and other anticompetitive conduct have occurred, this might result in fines and/or stop orders.

Section 55 of the UC Act mandates the UCC to investigate breaches of fair competition under the UC Act by any MNO upon the UCC's own motion. Such breaches would include the potential abuses of dominance and other anticompetitive conduct identified in Section D. Remedies for such breaches include:

- fines of up to 10% of an MNO's annual turnover, and
- issuance of an order to stop the unfair competition.

Section 11 of the Fair Competition Regulations also addresses investigations of such breaches. Remedies for breaches are set out in section 11(2)(k). Section 11(2)(k)(iii) mirrors the language on fines found in the UC Act. However, sections 11(2)(k)(i) & (ii) seem to provide more detail on the nature of a potential order to stop unfair competition:

- Section 11(2)(k)(i) permits the UCC to “direct the operator to cease engaging in the conduct by issuing a cease and desist order.”
- Section 11(2)(k)(ii) permits the UCC to “direct the operator to take specific remedial action.”

The effect of a stop order can thus be quite broad. For example, an order could not only instruct the MNO to cease the excessive or exclusionary pricing, but could include prescriptions on pricing, terms and condition and negotiation of access to wholesale SMS and USSD service agreements, as discussed next.

The ability to carry out an investigation and impose meaningful fines is crucial to the UCC's credibility as a regulator. A decision not to initiate such an investigation in this context would only be justifiable if satisfactory binding undertakings were given and implemented by a specified date in the near future.

E.3 Establishing *ex ante* obligations

The evidence of abuse of dominance and anticompetitive conduct found in this Study, while not conclusive, is strong enough to ensure that these firms are subject to firm regulatory obligations going forward. We believe that it is necessary for the UCC to ensure that MNOs, particularly MTN and Airtel, be subject to obligations as to pricing, terms and conditions, and negotiation of access to wholesale SMS and USSD services to VAS providers. Such obligations might be established voluntarily in lieu of an investigation or as additional regulatory orders of the UCC.

We set out below our recommendations for such obligations and, in case they are introduced by regulation (as opposed to voluntary undertakings of the MNOs), the basis of the UCC's regulatory intervention.

E.3.1 Price regulation

Section 5(e) of the UC Act states that one of the functions of the UCC is “*to regulate rates and charges for communications services with a view to protecting consumers from excessive tariffs and to prevent unfair competitive practices*” (emphasis added). The UCC's authority under this section is sufficient for it to regulate wholesale SMS and USSD service prices, particularly under the circumstances. This would be consistent with the UCC's prior regulation of SMS interconnection rates, another form of wholesale pricing.

Based on the cost and benchmarking evidence available to this Study, we propose that the maximum P2P SMS interconnection charge should be set at UGX 3 (i.e., above costs and above the rate set in other jurisdictions), while the A2P wholesale SMS charge (charged to aggregators, for example) should be no higher than UGX 9 (in line with the differentiation between A2P and P2P in India and in France, and in line with the UCC's reference rate for SMS in 2014).

The costs of wholesale USSD services should be set at no higher than UGX 30 for a 180-second USSD session, in line with the regulated prices of USSD services in Kenya and in India, or a commensurate price (e.g., UGX 15) for 60 second sessions taking into account average session durations.

Lower prices will not only result in substantially lower charges to consumers but will likely remove barriers to rival mobile financial services providers expanding in the market, ultimately increasing innovation and variety of services, and driving down retail mobile financial services charges in Uganda.

In the longer term, we recommend that the UCC pursue the adoption of regulations that clearly describe how it should review and regulate wholesale prices, including cost-oriented pricing by MNOs holding a dominant position in relevant markets.

E.3.2 Terms and conditions of wholesale SMS and USSD wholesale access

Given the apparent considerable problems facing VAS providers in obtaining wholesale access to SMS and USSD services (see Section D.5), we also recommend that the UCC ensure that the MNOs are required to adhere to certain terms and conditions of agreements between MNOs and third-party VAS providers.

There are a variety of potential approaches to such intervention. For example, the UCC could require such agreements to be approved before they enter into effect, or it could prescribe the contents of such agreements in advance of negotiations.

When it comes to prescribing the content of such agreements, there is also a range of potential interventions. At one end of the spectrum, detailed model agreements could be developed setting out specific terms relating to pricing and other aspects and MNOs might be required to use these agreements when contracting with third parties. These are commonly referred to as ‘reference offers’ and are widely used in interconnection regulation, and sometimes in regulation of access to wholesale services. At the other end of the spectrum, one might simply publish non-binding principles of ‘good practice’ as to what agreements should cover and principles they should embody. In either case, the purpose would be to ensure that access is fair, reasonable and non-discriminatory.

We do not recommend that the UCC require approval of wholesale SMS and USSD service agreements before they take effect. This is likely simply introduce a bureaucratic bottleneck delay in the negotiation of such agreements. We also do not recommend requiring that MNOs publish a full reference offer. This would, we believe, produce a heavy handed regulatory approach to what requires a more targeted set of interventions.

We believe it would be sufficient and proportionate for the UCC to require certain key principles to be respected in all wholesale SMS and USSD service agreements in order to address the specific problems we have identified in this Study. MNOs and third parties would be free to use their own forms and negotiate terms, so long as they meet these requirements. Failures to reach agreement would be resolved by the UCC pursuant to a dispute resolution process. The key principles we recommend are the following:

- ***Timely negotiation of agreements.*** MNOs must, upon written request, offer wholesale SMS and USSD services to third party VAS providers and negotiate agreements in good faith in accordance with these principles.
- ***Pricing of services.*** The MNOs must offer wholesale SMS and USSD services at prices no higher than the pricing recommendations set out in Section E.3.1.

- **Requirement to offer zero-rating.** Except where the MNO can substantiate concerns as to the creditworthiness of the wholesale VAS provider, it must offer zero-rating of the wholesale SMS and USSD services.
- **Speedy activation of SMS and USSD short codes on the MNO's network.** So long as the VAS provider fulfils its own obligations, the MNO must complete activation of short codes within a reasonable period of time, and in any case not more than two weeks after requested.
- **Service level agreements.** MNOs must adhere to QoS standards relating to the provision of SMS and USSD services (see Section F.2.2).
- **Access to quality of service information.** The MNOs must grant the third-party VAS providers access to their own data relating to delivery of SMS messages and completion of USSD sessions (see Section F.2.1).
- **Prohibition on punitive implementation of the UCC's DND Directive.** The MNOs must implement the DND Directive in a manner that is not anticompetitive. This would require developing alternatives to the current practice by some MNOs of only offering retail customers blanket opt-outs. (see the discussion relating to QoS in Section F.2.3).

Such obligations could be established in three ways: voluntary undertakings, guidelines for application of section 56 of the UC Act, or a stop order pursuant to an investigation. In each of these cases, a failure by an MNO to comply with the obligations and conditions set out could be enforced through the complaint procedures of the UC Act. A VAS provider would initiate a complaint under section 55 (competition) and/or section 56 (denial of service) of the UC Act. The UCC would carry out an investigation under section 45 of the UC Act into noncompliance with section 55 or 56 of the UC Act. The UCC would have the power to appoint inspectors under sections 49 and 50 of the UC Act. If the UCC found that the MNO was indeed in violation of section 55 or 56, it would issue directions to remedy under section 48 of the UC Act.

E.4 Developing the regulatory framework

E.4.1 Effective dispute resolution procedures for VAS providers

Over the longer term, the UCC could aim to address the conduct concerns by revising the regulatory framework applicable to MNOs provision of services to VAS providers. Currently, the Telecommunications (Interconnection) Regulations, 2005⁴⁸ (Interconnection Regulations) do not govern access to MNO networks by mobile financial services or other VAS providers. VAS providers are not licensed operators under the UC Act, while the Interconnection Regulations apply only to interconnection and access between licensed MNOs.

We recommend making it a priority to set in place a dispute resolution process for VAS providers, in particular mobile financial service providers, when dealing with MNOs. We believe that a dispute resolution role for the UCC in adjudicating disputes between MNOs and VAS providers would go a long way in addressing the concerns of VAS providers over conduct by the MNOs and the perceived power imbalance.

⁴⁸ Statutory Instruments 2005 No. 25. Statutory Instruments Supplement No. 10 to the Uganda Gazette No. 14, Volume XCVIII, 11 March 2005.

E.4.2 Licensing of VAS providers

The lack of a licensing requirement for VAS providers was cited as problematic by several VAS providers we interviewed in this Study, particularly in the case of content-based SMS message providers. These considered that, because they are not licensees, they lack direct access to the regulator to resolve disputes, which has the effect of entrenching MTN and Airtel's market power.

A number of objectives could be achieved through a licensing requirement, including vetting of potential VAS providers, monitoring and regulation of content and investigations of VAS provider conduct. Most of these are largely outside the scope of this Study. We are solely concerned here with evaluating the potential of a licensing requirement on VAS providers as a tool to address the market conduct of MNOs identified in Section D. We are reluctant to promote licensing of VAS services unless the UCC has strong separate grounds for doing so.

A licensing regime for VAS providers might strengthen the UCC's resolve to address the sorts of problems between VAS providers and other licensees identified in this report. However, if the UCC is resolved to address them, it does not appear to be necessary to introduce VAS licensing in order to do so. Section 5(v) of the UC Act expressly clarifies the UCC's mandate to include regulation of "value added services provided by communications operators." The UCC should not need VAS providers to be licensees in order to resolve problems they encounter with the MNOs. The provisions in the Draft VAS Regulations could be modified to apply to any VAS provider without necessarily requiring the VAS provider to be licensed.

Thus the UC Act and modified regulations should be sufficient to allow the UCC to establish procedures for unlicensed VAS providers, including mobile financial service providers, to bring problems in the negotiation or implementation of wholesale SMS and USSD agreements to the UCC for mediation and arbitration in a manner similar to that described in the Interconnection Regulations. In the meantime, if the UCC is proactive and attentive to the problems identified in this report, it can encourage VAS providers to use the complaints procedures discussed in Section Part VIII of the Act

Indeed, more than anything this is a question of the UCC's determination and capacity to address the problems rather than a lack of legal powers in the UC Act and regulations. If the UCC devotes the necessary resources to solve the problems identified in this report, it ought to be able to get a long way in addressing them using existing legal powers. We discuss its capacity to do so in Section G.

F. Quality of service of USSD and SMS

F.1 Assessment of quality of service of USSD and SMS services

F.1.1 What is quality of service?

'Quality of service' (QoS) in the network environment is a technical concept that aims to take objective measurements of the quality and performance metrics of network elements across the entire network, from the call initiator side to the recipient side, throughout the life of such a network session.⁴⁹ The evaluation of QoS involves, primarily, the assessment of the network performance, which is quantified through measurable key performance indicators (KPIs)

⁴⁹ ITU (2016). QoS and QoE Aspects of Digital Financial Services. ITU-T Focus Group on Digital Financial Services. Available [here](#).

derived from statistics that are constantly collected through passive and active network monitoring through the network management systems at network operation centre facilities.

By contrast, ‘quality of experience’ (QoE) is a measure of the value offering perceived by customers, and are related to their actual experience of the service offered by the MNO. Data, information and statistics are derived through interaction with customers who provide feedback by way of complaints and positive feedback to the networks and the regulatory authorities. An assessment of QoE metrics is outside the scope of this Study, however, we do comment on QoE where it provides additional context and information.

F.1.2 Ability to monitor and assess quality of service

The interviews with and submissions from MNOs indicate that they have a robust ability to monitor the quality of service of USSD session and SMS messages, including delivery of SMS messages and completion of SMS sessions:

Africell, Airtel and Suretelcom (Smart Telecom) all acknowledged that they make some information on QoS of SMS and USSD available to VAS and aggregator clients. Both Africell and Smart Telecom allow these entities to access call delivery report (CDR) data using APIs to monitor SMS delivery and USSD requests.⁵⁰ Airtel says it sends CDRs to aggregators and VAS providers to monitor SMS delivery, and can also provide URL access to these through a portal.⁵¹

However, VAS providers and aggregators provided a different account, with some saying that CDRs are not provided and other stating that more detailed CDR information is required, especially with respect to MTN and Airtel’s networks.

None of the stakeholders interviewed indicated or suspected that SMS or USSD service was being selectively or even intentionally degraded and we did not encounter any other evidence that would support such a conclusion.

F.1.3 Quantitative assessment of QoS

We have requested information from the MNOs and aggregators on QoS. However, we have been provided with extremely sparse data. As such, we have had a limited ability to analyse quality of service on a quantitative basis.

F.1.4 QoS and QoE monitoring by the UCC

The UCC has engaged in analysis of QoS and QoE largely covering other as areas of service, such as voice. For example, UCC Quality of Service Reports provided to this Study covering periods in 2013 and 2014, assess a range of indicators in the form of Technical Drive-Test Reports that measured voice indicators (e.g., in terms of dropped calls, blocked and successful calls) and an analysis of consumer complaints.⁵² In addition, consumer reports were generated through an analysis of complaints reported to and investigated by the UCC which provides measures for QoE experienced by MNO customers. In terms of consumer complaints, the

⁵⁰ Submission of Smart Telecom, 14 January 2017. Submission of Africell, 17 July 2017. Meeting with Africell, 19 October 2016.

⁵¹ Submission of Airtel, received 11 July 2017.

⁵² UCC, Quality of Service Report May to June 2013. UCC, Quality of Service report February to June 2014.

highest number of complaints (in 2013 and 2014) related to unsolicited SMS messages. Furthermore, there were a range of complaints related to mobile money. QoS in terms of network availability did not feature.⁵³ It is not clear, however, if issues related to degradation in network quality are embedded in complaints relating to VAS and mobile money as the information provided was aggregated.

F.1.5 Metrics for SMS and USSD services

In considering appropriate metrics for SMS and USSD service in Uganda, this Study was guided by:

- The UCC’s proposed metrics in an August 2015 draft of the Uganda Communications (Quality of Service) Regulations, 2015 (Draft Quality of Service Regulations) provided to us by the UCC
- The ITU’s recommended metrics
- International examples of appropriate metrics
- Stakeholder input

We summarize each briefly in turn. Our recommendations for enhancement of QoS, including recommended metrics for SMS and USSD services, are set out in Section F.2

F.1.5.1 The UCC’s proposed metrics

Schedule 2 of the Draft Quality of Service Regulations set out minimum standards of service for MNOs in Uganda, including setting reporting requirements on performance with reference to these standards. Specifically, the Regulations include an “SMS Completion rate” which is defined as “the ratio of received and send [sic] Test SMS from one mobile to another mobile part.” The target values indicated are:

98% of all SMS messages sent should have been received within 60 seconds.

100% of all SMS messages should have been received within 75 seconds.

F.1.5.1 The ITU’s recommended metrics

In May 2016, the ITU-T Focus Group on Digital Financial Services published a technical report on quality of service and quality of experience aspects of digital financial services (ITU-T Report).⁵⁴ While the ITU-T Report addresses a range of technical aspects impacting mobile financial services, many of which are beyond the scope of this study, the KPIs set out for SMS and USSD services are useful for our purposes.

The four SMS KPIs that are recommended to be monitored and the corresponding definitions set out in section 4.3 of the ITU-T Report and the tentative targets proposed for each KPI are set out below:

- **SMS service non-accessibility [%]**. The probability that the end-user cannot access the Short Message Service when requested while it is offered by display indicator on the user’s equipment. Target: 2% - 1% - 0.5%

⁵³ UCC, Quality of Service Report May to June 2013

⁵⁴ ITU. (2016). ITU-T Focus Group Digital Financial Services, *QoS and QoE Aspects of Digital Financial Services, Focus Group Technical Report*, available here https://www.itu.int/en/ITU-T/focusgroups/dfs/Documents/09_2016/FGDFSQoSReport.pdf.

- **SMS completion failure ratio [%].** The ratio of unsuccessfully received and sent messages from one user's equipment to another user's equipment, excluding duplicate received and corrupted messages. A corrupted SMS is an SMS with at least one bit error in its message part. Target: 1% - 0.5% - 0.1%
- **SMS end-to-end delivery time[s].** The time period between sending a short message to the network and receiving the very same short message at another user's equipment. Targets:
 - 60 seconds for 90%, 120 seconds for 100%
 - 30 seconds for 95%, 90 seconds for 100%
 - 10 seconds for 98%, 30 seconds for 100%
- **SMS receive the confirmation failure ratio [%].** The probability that the receive confirmation for a sent attempt is not received by the originating user's equipment although requested. Target: 1% - 0.5% - 0.1%

The ITU-T Report states that USSD KPIs are "under study," though it does set out four KPIs for USSD and tentative targets in section 4.3:

- **USSD service non-accessibility [%].** The probability that the end-user cannot access the Unstructured Supplementary Service Data when requested while it is offered by display indicator on the user's equipment. Target: 2% - 1% - 0.5%
- **USSD completion failure ratio [%].** The definition is noted as "under study." Target: 1% - 0.5% - 0.1% - 0%
- **USSD end-to-end delivery time [s].** The definition is noted as "under study." Targets:
 - 60 seconds for 90%, 120 seconds for 100%
 - 30 seconds for 95%, 90 seconds for 100%
 - 10 seconds for 98%, 30 seconds for 100%
- **USSD receive the confirmation failure ratio [%].** The definition is noted as "under study." Target: 1% - 0.5% - 0.1%

It is clear that the ITU's proposed KPIs are still in draft form and the USSD KPIs in particular are simply a copy of the SMS KPIs which are more fleshed out. It may make more sense to develop USSD-specific KPI's around, for example, the number of sessions timed out and the number of complaints received. It is likely that these will be developed further in future, and the UCC should monitor the ITU's progress in developing the KPIs further.

F.1.5.2 International examples of metrics

The Study considered relevant QoS and QoE metrics utilized by telecommunications regulators in Rwanda, Nigeria, India and Tanzania.

F.1.5.3 Stakeholder input on potential metrics

Although the Study's information requests asked all MNOs, VAS providers and aggregators we interviewed to suggest useful metrics for measurement, we received only four responses:

- Airtel suggested a “success rate based content provider response time.”⁵⁵ This means that success is measured based allowing a certain amount of time between a service request to and from the content provider or aggregator. For example, a 95% SMS success rate within 60 seconds and 100% success within 75 seconds
- Africell suggested that for USSD, “a switch report that indicates number of failures in accessing the platform [and] number of timeouts. For SMS, some helpful indicators include “delivery rate for connected users, number of trials to deliver, [and] percentage of SMS [messages] delivered.”⁵⁶
- Smart Telecom suggested measurements against SMS Service Requests and USSD Sessions generated and those that were successful, processing time (lag between the period of delivery and success) and the transactions per second that the USSD can handle compared to current traffic.⁵⁷
- A VAS provider suggested that MNOs ensure about 75-80% of delivery and completions for SMS and USSD, respectively.

F.2 Quality of service recommendations

F.2.1 Collection, monitoring and sharing of QoS information

The UCC has in the past primarily monitored QoE, which offers an assessment of mobile subscriber satisfaction with the services offered by the MNO, as well as some independent evaluation of QoS monitoring of the networks including studies that provide technical drive-testing for voice services. However, we believe there is scope for improved QoS monitoring.

First, the UCC should collect standardised QoS data on key USSD and SMS metrics on a quarterly basis as discussed below.

Second, these metrics should be (i) published for each MNO overall and (ii) made available to aggregators in respect of their usage of the MNO’s network so that there is a level of transparency and so that aggregators are able to compare their service standards with benchmarked standards to guard against selective degradation

Third, the UCC should explore independent monitoring solutions. Independent monitoring is offered by a range of firms offering quality measurement.⁵⁸ Independent monitoring will allow the UCC to verify the accuracy of the MNO reports on QoS, where the MNO’s QoS reports are not prepared by independent monitoring companies. Independent monitoring is especially important where an aggregator complains of selective quality degradation by an individual MNO.

Finally, MNOs have a robust ability to monitor the quality of service of USSD session and SMS messages, including delivery of SMS messages and completion of SMS sessions. This data is valuable to VAS providers in determining whether customers are receiving content and able to access their services. Accordingly, we recommend that all MNOs be required share such data with VAS providers and aggregators. The UCC should further study the most appropriate way

⁵⁵ Submission of Airtel, received 11 July 2017.

⁵⁶ Submission of Africell, 17 July 2017.

⁵⁷ Submission of Smart Telecom, 14 January 2017.

⁵⁸ For one example among many, the quality of service measurement provider SGS has in the last few years introduced quality of service monitoring in Tanzania and Mozambique. See press releases on these topics [here](#) and [here](#).

for MNOs to make such data available, looking first at the models currently used by Africell and Smart Telecom.

F.2.2 Recommended metrics for SMS and USSD quality of service

While there are clear QoS metrics for SMS messages recommended by the ITU and in use in a number of countries, the standards for USSD sessions are still largely under development. Drawing on the considerations discussed in Section F.1.5, we have developed a recommended set of QoS metrics for provision SMS and USSD provision by MNOs. These are set out in Table 4. These metrics are in line with ITU recommendations, best practice in a variety of countries, and some of the network statistics provided to this Study.

Table 4: Recommendations for network statistics to be reported on for USSD and SMS

Type of Service	KPI	Definition
SMS	SMS completion failure ratio [%]	The ratio of unsuccessfully received and sent messages from one user's equipment to another user's equipment, excluding duplicate received and corrupted messages. A corrupted SMS is an SMS with at least one bit error in its message part. This should be provided for MO and MT messages separately.
	SMS end-to-end delivery time[s]	The time period between sending a short message to the network and receiving the very same short message at another user's equipment. The data to be provided is as follows: - % of all SMS messages sent within 60 seconds. - % of all SMS messages received within 75 seconds.
	SMS receive the confirmation failure ratio [%]	The probability that the receive confirmation for a sent attempt is not received by the originating user's equipment although requested.
	SMSC uptime	- % of time in reporting period that SMS switching centre(s) were available
USSD	USSD response time [%]	- % of USSD responses within 2 seconds.
	USSD service non-accessibility [%]	The probability that the end-user cannot access the Unstructured Supplementary Service Data when requested while it is offered by display indicator on the user's equipment.
	USSD uptime	- % of time in reporting period that USSD network elements were available

We do not at this stage suggest threshold targets for the MNOs to meet with respect to these metrics. Rather, we recommend that the UCC collect and publish network statistics (in line with our recommendation in Section F.2.1) for 12-24 months in order to determine appropriate targets for the Ugandan market. In addition, due to the considerable differences in metropolitan and rural areas, many regulatory authorities break down QoS reporting into regions or provinces. This approach assists in monitoring the effects of QoS to the closest regional environment. QoS monitoring services such as drive-testing are also handled at local level. The QoS draft regulations propose a demarcation along regional or provincial boundaries. We encourage this approach.

F.2.3 Limiting unintended effects of DND on quality of service

In Section D.5.5, we discuss the implementation of the UCC's DND Directive, including the exclusive use of blanket, rather than service-specific, opt-outs by Airtel and possibly by MTN.⁵⁹

⁵⁹ As mentioned in Section D.5.5, we were not able to confirm that MTN only allows for blanket opt-outs.

This discussion is in the context of exclusionary market conduct and sets out, among other things, how the over-inclusive nature of blanket opt-outs prevents retail customers from receiving SMS messages relating to VAS that the customer wishes to receive.

While these inadvertent failures to receive desired SMS messages due to blanket opt-outs is not strictly a reflection of the QoS of MNO networks, they do create such a perception of poor quality with consumers and with VAS providers. This perception could be alleviated by limiting the over inclusive effects. While a recommendation on the precise means of regulating such opt-outs is outside the scope of this Study, we provide some possibilities for the UCC to consider:

- MNOs could be required to offer service-specific opt-outs so that retail customers have the option of only opting out of a particular VAS rather than all VAS.
- MNOs could be required to offer one or more blanket opt-out options that excludes certain categories of services, such as mobile financial services. This would allow retail customers to block, for example, all content services without blocking messages relating to “one-time pins” or financial transaction confirmations.
- MNOs could be required to provide an easy path for retail customers who have exercised a blanket opt-out to opt-in to specific services. This could be accomplished in a number of ways. For example, when a customer registers for a VAS subsequent to exercising a blanket opt-out, that service could be automatically excluded from the opt-out. Alternatively, MNOs could notify VAS providers when customers to whom they have sent SMS messages had those messages blocked due to a blanket opt-out. The VAS provider could then be permitted to send a single SMS message to the customer with instructions on how to opt-in to that specific service.

G. Capacity to regulate markets for mobile financial services

This Study was mandated to review the UCC’s capacity to regulate markets for mobile financial services. Clearly the UCC is not expected to take up the role of the BoU regulating financial services themselves, mobile or otherwise. Uganda’s regulatory approach to mobile financial services is consistent with the approaches taken in other jurisdictions that have bifurcated regulatory responsibility between telecommunications and financial services regulators, such as Kenya and Tanzania.

We believe that the current bifurcation of regulatory responsibility over mobile financial services between the UCC and the BoU is appropriate and prudent. We support the notion that, in general, a telecommunications regulator should focus its regulation of mobile financial services on the networks and channels used to provide mobile financial services, and the wholesale markets involved, leaving prudential regulation to a financial services regulator that has the appropriate expertise and regulatory tools to address those issues.

The UCC’s role must be to ensure the proper platforms are in place for such financial services is vital, as well as to ensure the financial services market is not distorted as a result of problems in markets for communications services. A key focus area for the UCC must be the terms and pricing of access of competing mobile money providers to the MNOs’ SMS and USSD channels. There is significant evidence of discriminatory and excessive pricing, margin squeezes and refusal of service that appears to have the effect and possibly intent of restricting competition.

For a regulatory body to succeed, it needs:

- strong legal powers;
- sufficient in-house and external economic, technical and legal expertise; and
- access to necessary information.

G.1 Sufficiency of the UCC's legal powers

The BoU has taken the lead on substantive regulation of mobile financial services in terms of market conduct and prudential regulation. The BoU's Mobile Money Guidelines, 2013 are the only regulations that specifically address mobile financial services, providing guidance on the substantive nature of these services.

Under the Guidelines, the UCC's role is largely limited to "licensing and supervision of mobile network operators" and ensuring "that telecommunications networks, over which mobile money platforms ride on are effective." This is consistent with the UCC's role in under the current telecommunications regulatory framework.

The Guidelines do permit the UCC to "further take measures to strengthen a competitive market environment" but nothing suggests that this grants the UCC any additional powers beyond regulation of the channels used to provide mobile financial services. This interpretation is also consistent with the absence of any identified mobile financial services markets in the 2015 Cartesian market review.

The UCC has considerable means of regulating some aspects of markets relevant to mobile financial services. These are mostly limited to regulation of the channels used to deliver these services, and the related wholesale markets, rather than the activities of mobile financial services providers.

- **Regulating competition in telecommunications markets.** The UCC has broad authority to regulate competition in telecommunications markets under the UC Act and the Competition Regulations. This includes regulating the wholesale markets for SMS and USSD access. Broadly, the UCC's powers should suffice.
- **Regulating third-party mobile financial services provider access to MNO networks.** The UCC also has broadly sufficient powers to address access by third party mobile financial service providers to MNO networks. These could be improved, as discussed in Section E.4.
- **Regulating quality of service.** The UCC has a clear mandate to regulate the SMS and USSD channels used to deliver mobile financial services and other VAS. The UCC merely needs to adopt and enforce standards relevant to these channels. It also has sufficient powers to regulate quality of service of internet access, which will be increasingly important in provision of mobile financial services.
- **Allocation of short codes.** The UCC allocates SMS and USSD short codes to VAS providers, including mobile financial service providers. While the current process is limited to collection of fees, the UCC could potentially use this process to impose requirements on mobile financial service providers.

In short, other than access to information (see Section G.3 below) and improvements that can be made in other areas, the UCC's current mandate is fairly strong when it comes to addressing competition, pricing, access, quality of service and codes for telecommunications services used for mobile financial services.

The UCC currently follows a light touch approach to regulation of VAS providers, including mobile financial service providers. Some countries, such as Kenya, require content providers that use telecommunications networks to distribute their services to hold a content service provider licence. The equivalent in Uganda would be a VAS provider licence as discussed in Section E.4.2. While licensing and greater regulatory scrutiny of VAS providers might give the UCC a stronger role in ensuring competitive mobile financial services, it seems unlikely to be appropriate for the UCC to intervene in the provision of financial services. In addition, the UCC has limited resources which would be better directed at regulating markets that are squarely within its regulatory purview, such as the wholesale markets for SMS and USSD service addressed in this Study.

What is missing in Uganda’s legal framework is a solid competition mandate for the BoU, and indeed a competition authority with a competition law to press competition matters from outside the realm of prudential financial regulation. Also important are deeply entrenched institutional procedures and links at multiple levels between the BoU and UCC that would provide deep information sharing.

G.2 Ensuring sufficient access to expertise

Minimal competition rules apply to mobile financial services themselves. Only in the UC Act and the Fair Competition Regulations are there substantial competition provisions. Furthermore, these are broad, covering not merely telecommunications markets but “any business activity relating to communications services” (section 53 of the UC Act). This was applied to competition in provision of mobile financial services in the Ezeemoney v MTN case.

Being the only entity with substantial competition powers, responsible for ensuring a properly functioning market in telecommunications networks and services (which are crucial for mobile financial services and directly affected by the dynamics of the mobile financial services markets), the UCC bears a considerable burden for contributing to the success of mobile financial services markets. Its capacity to use its powers well are crucial.

The UCC requires to have, then, deep expertise in technical, economic and legal issues both in telecommunications and financial services. These might be in-house and to some extent might be outsourced.

In-house, the UCC has some of the highest qualified regulatory personnel of any communications regulator in Africa. However, these resources are under considerable pressure on their time, and spread thin, with the result that it is challenging to carry out the full responsibilities of a regulatory authority.

In order to effectively regulate the aspects of mobile financial services under its regulatory purview, the UCC will require:

- **Technical capabilities.** The UCC will need to monitor quality of service of SMS and USSD channels utilized by VAS providers engaged in mobile financial services as provide by MNOs. This requires obtaining sufficient staff capable of developing the appropriate KPIs, as well as monitoring and analysing MNO reports on relevant KPIs and assessing any deficiencies. It will also require periodically assessing the relevant KPIs to ensure that they are still appropriate in light of technological and market evolution.
- **Economic and legal capabilities.** The UCC will need to periodically assess and investigate complaints with respect to competition in the markets for access to SMS and

USSD, as well as broader telecommunications markets, to identify and potentially remedy barriers to competition. This will include interpreting legislation and regulation, applying economic tests, and considering changes to the existing regulatory framework. Accordingly, the UCC will need to build up its staff, or access external advisers deeply trained in competition law and economics. The UCC should maintain at least one in-house competition economist and legal expert in competition and telecommunications matters, in each case with sufficient time dedicated to data gathering and analysis (i.e., not management roles). The UCC should also ensure that it has access to international economists and lawyers who can support it as needed in studies, enforcement and rule-making processes.

The UCC should maintain also a contingency budget, or engage support from institutions able to provide support, to enable it to engage on a rapid basis strong technical, economic and legal expertise.

G.3 Access to information

The weakest point facing the UCC is access to information. Information is the oxygen of any regulator. The UCC does compile substantial data on the telecommunications market, but it is insufficient in many respects to enable the UCC to regulate effectively in support of mobile financial services. In conducting this Study and mentioned at relevant points, many basic data points were not available.

The information reporting provisions of the UC Act chiefly relate to enforcement contexts and inquiry proceedings (under Part VIII of the UC Act). UCC licences do include provisions requiring provision of information to the UCC (see Schedule 6 of the UC Act), and the UCC could make more use of the inquiry processes to gather more information. However, the UC Act could be strengthened further to provide for regulator reporting and robust powers of the UCC to require information and discipline withholding of it. It was when the Competition Authority of Kenya was authorised to impose major fines of up to 10% of revenues, that market participants suddenly became far more compliant with its information requests.

Even more importantly will be for the UCC to develop reporting systems useful for data analysis. This requires identifying the sorts of disaggregated technical, market and financial data it needs to receive, and establish electronic systems for information delivery. These should be designed to minimise demand on resources both of reporting entities and the UCC's staff. They should be automated as much as possible, even providing where possible for automatic transfer of data from within market participants' own systems.

There is a constant need to update and rethink the categories of data needed, and for this the expertise discussed in Section G.2 is vital. Just as crucial as identifying the information needed is to weed out reporting requirements that are no longer needed, as otherwise these will result in a disproportionate burden on market participants.

MACMILLAN KECK
ATTORNEYS & SOLICITORS

4 Boulevard Helvétique (1st Floor)
1205 Geneva Switzerland
Att'n: Rory Macmillan

T: +41 22 322 2231

F: +41 22 322 2239

rory@macmillankeck.pro

and



Shop F11, Zone Phase II
177 Oxford Road, Rosebank, 2196
Johannesburg, South Africa
Att'n: Simon Roberts

T: +27 11 880 1673

simon@acaciaeconomics.co.za