FIGI FINANCIAL INCLUSION GLOBAL INITIATIVE

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MTN Security Practices for Digital Financial Services

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Organized by

Committee on Payments and Market Infrastructures | BIS

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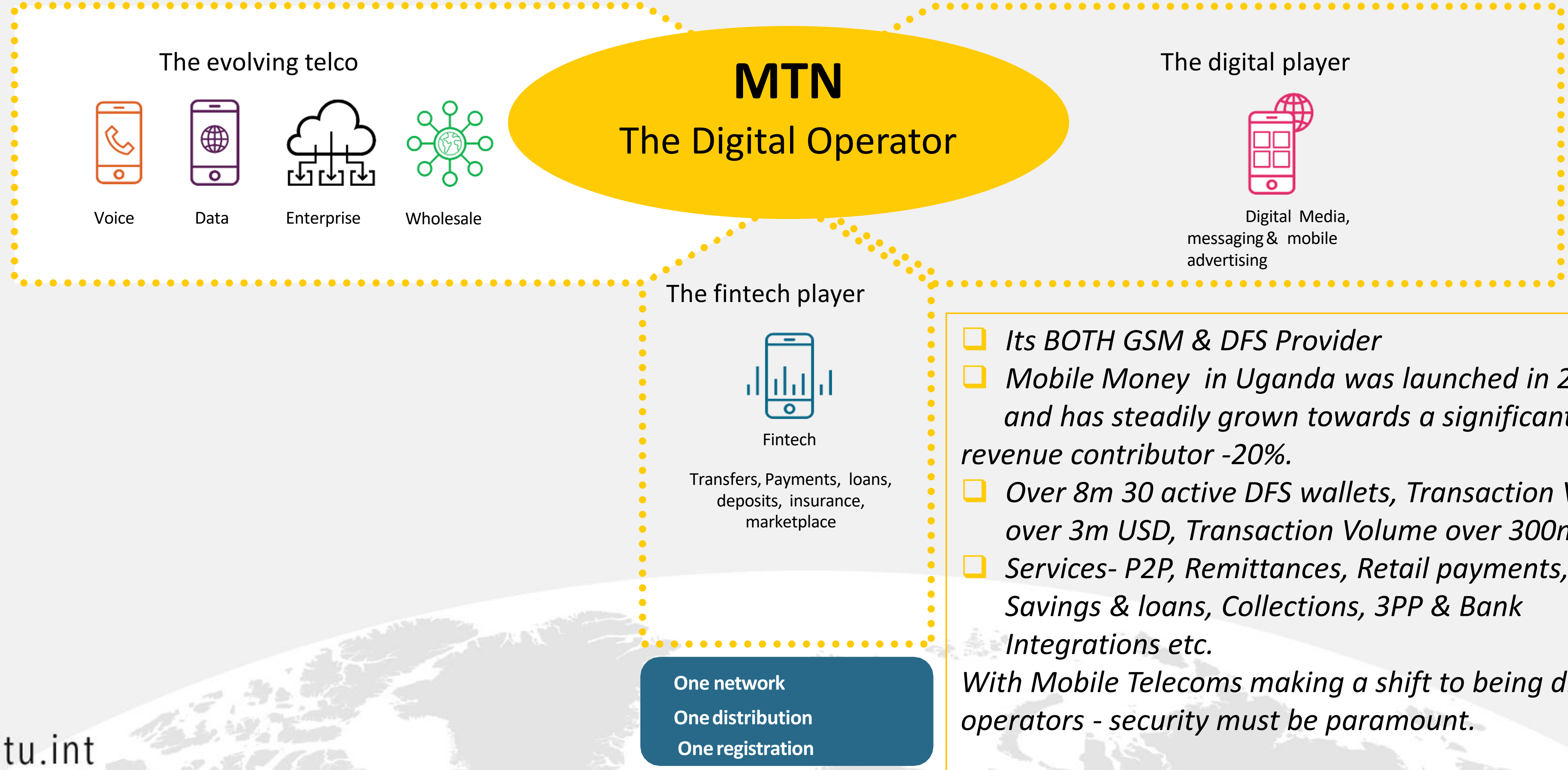
Building the Digital Operator –MTN Journey



□ *Its BOTH GSM & DFS Provider*

□ *Mobile Money in Uganda was launched in 2009, and has steadily grown towards a significant revenue contributor -20%.*

□ *Over 8m 30 active DFS wallets, Transaction Value over 3m USD, Transaction Volume over 300m*

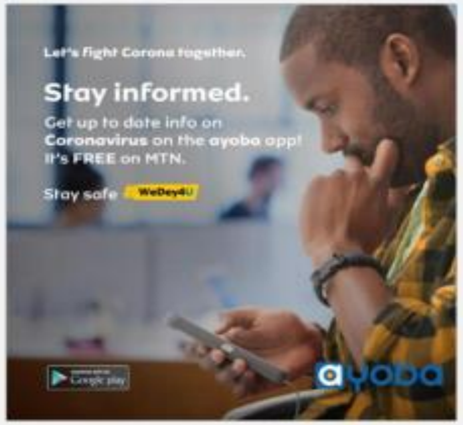
□ *Services- P2P, Remittances, Retail payments, Savings & loans, Collections, 3PP & Bank Integrations etc.*

With Mobile Telecoms making a shift to being digital operators - security must be paramount.

Return to growth in DIGITAL, rapidly scaling FINTECH

Digital revenue

+24,6%* to R1,5 billion


Let's fight Corona together.
Stay informed.
Get up to date info on Coronavirus on the ayoba app! It's FREE on MTN.
Stay safe
WeDey4U
Google play
ayoba

ayoba

Active in **16** MTN markets & OTT

2m monthly active users

Daily **life-line data** & **access** to COVID-19 channels

MoMo integration 2 markets

MusicTime

Launched in **7** markets

CVM and **no funds** campaigns

Free section launched in June

MusicTime
Let the music bring you closer
Make every day you spend indoors count with MusicTime!
Download now and get FREE 120 minutes of the best tunes every week for 6 months.
#KeepingZambiaConnected
#OnYourSide
everywhere you go
MTN

Fintech revenue

+18,0%* to R6,1 billion

MoMo users grew by **3,6m** to 38,3m active users

Increased activity with **$61,2bn** transaction value and **11 752** transactions per minute

8,6m registered insurance policies

Zero-rated/reduced transaction fees in **support** of customers during COVID-19

Let's fight Corona together.
Do more with MoMo.
Enjoy zero charges on MoMo transactions up to GHS 100.
WeDey4U
T&C's Apply

Discussion in Summary ………….

Enhancing security of DFS applications in emerging economies

- Security controls on USSD to safeguard our customers I will discuss the threats & mitigations as regards the transport layer between USSD/SMS & the MM platforms.
- Third Party Partners Integration threats & mitigation –these handle high value/volumes of transactions which exposes MTNU to significant Counterparty, Reputational and Regulatory risks
- COVID-19 Security threats experienced & lessons learnt – this led to a 'new normal' of working and learning from home; there was need to roll out VPNs to get onto the bigger MTN network.
- QR Codes in Mobile Money & Related Security Issues

Threats to Digital Financial Services

- Social Engineering –Common in Uganda. Socialize & trick you
- SMiShing and Vishing Attacks - Common in Uganda
- Denial of service attacks
- The ability to manipulate Subscribers -USSD Unstructured Supplementary Service Data
- DFS account Hijack & Sim swaps
- Man in the middle attacks
- Zero-day attacks

Impact – (These threats if exploited can compromise digital finance/mobile money services resulting in Revenue loss, Fraud, Regulatory Scrutiny and impact Company Damage & reputation)

Implemented Controls for Customers- CIA Model

For customers

Security controls on Access Interfaces i.e., USSD

Mitigations as regards the transport layer between USSD/SMS & the MM platforms

- Implemented SS7 firewall
- Two Factor Authentication for Apps and portals
- Environment Isolation-Ensuring unshared Mobile Money access platforms from other services
- Transport layer security enforced amongst systems, internally communicating and externally communication with mTLS and Cipher management among others
- User management improvement & Continuous Patch Management

- **KYC Controls**
- Sim Swap & PIN reset controls -require biometric
- No Sim swaps on all channels after 8pm
- MOMO wallet suspension on identification of an IMSI change/ Simswap – for 24hrs
- One Simswap a day per National ID Number
- Sim Registration Controls by the Regulator like – Biometric based subscriber Identity for New, sim swaps & Pin resets
- OTP before a new SIM is added to the Customer’s profile/family of existing SIM cards.
- Security by design- for all DFS products implementation

Implemented/ Proposed Controls for 3PP's

3PP's Integration

For 3PPs

Increase the security posture of MTN's application and third-party integrations

- Setting up Site 2 Site VPNs
- Ensuring that 3PP supports mTLS as well as latest TLS protocols/ciphers.
- Provider and Application security whitelisting on the perimeter Firewall and our platform- i.e., Environment Isolation
- Rigorous vulnerability assessments
- Standardized API management through a stricter single channel
- Implement Standards which include; minimum contractual requirements like Insurance, Cyber Security controls etc.

COVID-19 Security threats experienced & Lessons learnt

Increased roll out of VPN to support the Work From Home esp. to access Company resources/ apps- security needed to be emphasized.

Threats:

- Phishing attacks
- Malicious domain registrations- Picked up from Intrusion Detection alerts
- WFH arrangement has limitations to end point patching especially when users are not always online/VPN
- Video/audio conferencing hacks- Restricted to Microsoft teams

Mitigations/Lessons Learnt

- Continued security user awareness
- Rigorous remote patching of Endpoints
- Identity & access management
- Zero Trust Network Implementation

Towards a secure Workplace

QR Codes in Mobile Money & Related Security Issues

Quick Response (QR) codes are a type of bar code with encoded Information. (Offer Contactless payment alternatives)
QR code merchant payments is a potential adjacent opportunity to expand our products and services and target potential incremental revenue streams.

QR codes have inherent threats because they are not easily readable by the human eye. Attackers could easily replace a merchants QR code with evil codes that could be embedded with Malicious content.

Our own environment is still in infancy for QR and so far, there is plan to apply them on the below;

- MOMO Pay/Merchant payments- Merchants accept payments from customers for goods or services, by scanning a QR code into a payment application.
- Open API Collection Widgets - receive & approve MM payments on your website by scanning a QR code

Related Security Issues Include;

- Lost or stolen Phone **-**Unauthorized use can occur if a smartphone with a QR code payment app and the password were stolen.
- Scanning a QR code tagged to a malware site/application
- Fake QR codes -Attacker replaces original QR code and the fake QR code leads the user to malicious internet content.

Thank **you**

everywhere you go