

The image features three communication towers of varying heights and complexity, silhouetted against a dramatic sky at sunset or sunrise. The sky transitions from a deep blue at the top to a bright orange and yellow glow near the horizon, with scattered white clouds. The towers are constructed from metal lattice and are equipped with various antennas and satellite dishes. The background shows a distant horizon line over a body of water or a valley.

# Implemented controls for Digital Financial Services

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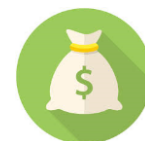
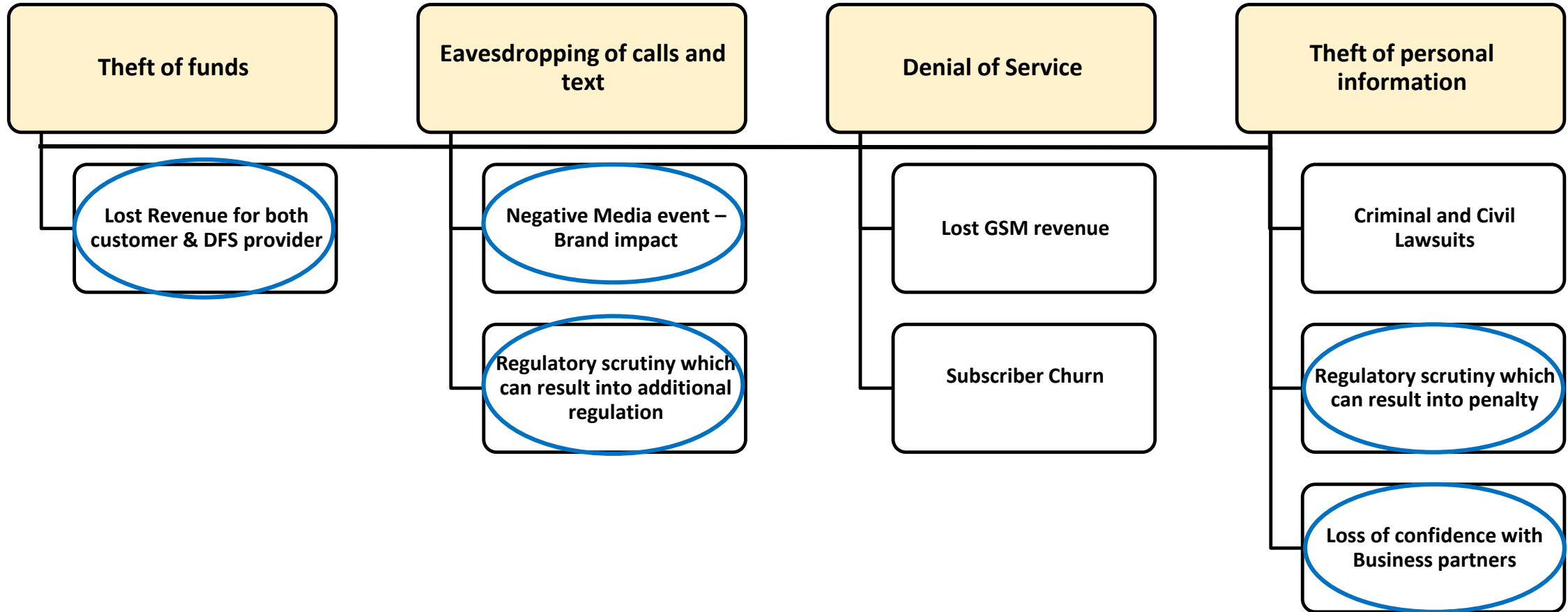
# About MTN Uganda

1. MTN Uganda – both a GSM & DFS provider
2. Mobile Money Launched in 2009
3. Services: GSM-Voice, SMS, Data; DFS-P2P, Remittances, Payments
4. DFS Channels: USSD, API
5. Over 13M GSM subscribers; Over 7M 30-day active DFS wallets (>40M for MTN group)



Avoid touching  
cash, use MoMo.

# Threat Universe – GSM & DFS



# Implemented mitigating controls

## 1. Firewalls deployment

### Defence

#### Signaling firewall

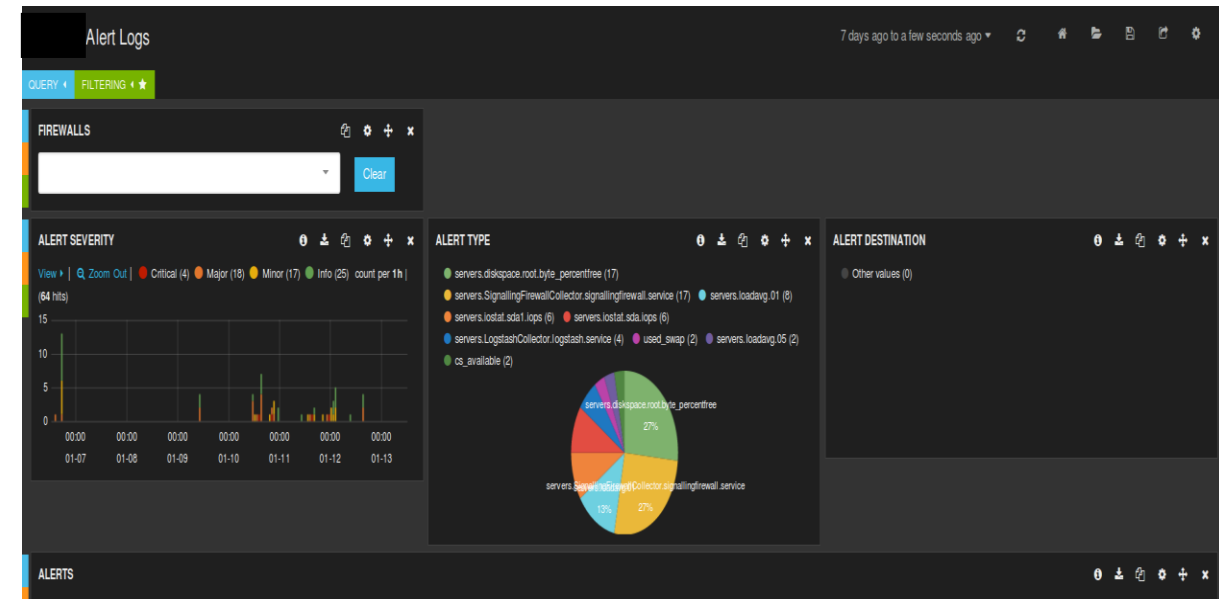
- Block all unauthorized signaling messages
- Roam verify
- Travel Plausibility
- Prevents leakage of subscriber IMSI – SMS router

#### SMS firewall

- Spam control
- Anti-spoofing
- Pattern detection
- Content Filtering

### Monitoring & event Analysis

#### Analysis of data & Threat Intelligence



#### Other realized benefits from SMS firewall implementation

- Realized A2P revenues
- Customer confidence

# Implemented mitigating controls

## 2. SIM Swap & PIN reset controls

- I. Restricted SIM Swap reversal – few internal teams
- II. Limit SIM Swap window
- III. Restricted Pin reset
- IV. SIM Swap & Pin reset cannot be done at the same time

## 3. IMSI transaction lookup & authentication

- I. IMSI Update only done through restricted channels
- II. MoMo wallet suspension on identification of an IMSI change

## 4. New registration controls - Implemented regulation

- I. Biometric based subscriber identity
- II. One New MSISDN per subscriber identity *e.g. National ID, Passport etc.* per 24hrs

## 5. Security by design

- I. For every DFS product – secure call flow

## 6. SIM Agent selling controls

- I. SSO biometric authentication
- II. More Robust Back office approval process

- III. BI used to identify anomalies among SSOs activity





Thanks