



AirtelTigo Money
(AirtelTigo's Mobile Financial Services Network)
95-722 Digital Transformation

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AirtelTigo Money - AirtelTigo's Mobile Financial Services Network

Introduction

Follow the money

Africa is the world's leading Mobile Financial Services (MFS) ecosystem^[1]. This report discusses AirtelTigo Money as an infomediary in Ghana's fintech industry and highlights network-related challenges.

Mobile financial services in Africa: Winning the battle for the customer

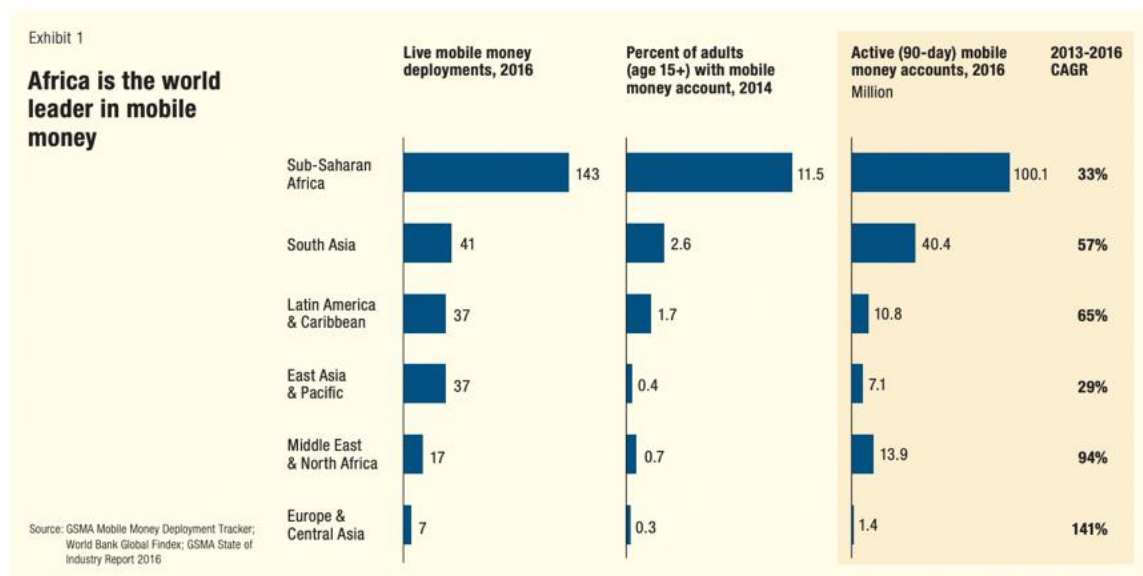


Figure 1 McKinsey reports Africa as the leading Mobile Financial Services Industry in the world ^[1]

AirtelTigo Money (Airtel Mobile Commerce Ghana Limited; an AirtelTigo subsidiary) leverages its strong network link with AirtelTigo's mobile subscriber base to create an e-commerce business.

Most of Ghana's money moves through mobile money networks: With a national population of 30 million Ghanaians, mobile money is the most accessible means of money transfer and deposit. Compared to 1.01 million active bank accounts in Ghana, the Bank of Ghana reported 17.1 million active mobile money accounts that performed over 2.85 billion transactions valued at about GHS 564.1 billion in 2020^[2]. However, AirtelTigo is a 'small fish' in this industry and is exploring technology and business solutions to expand its network.

Table 12: Mobile Money Statistics

Statistics	2017	2018	2019	2020
Registered e-money accounts (Cumulative)	23,947,437	32,554,346	32,470,793	38,473,734
Active e-money accounts*	11, 119,376	13,056,978	14,459,352	17,142,677
Registered Agents (Cumulative)	194,688	396,599	306,346	423,892
Active Agents**	151,745	180,664	226,298	328,329
Total volume transactions for the year	981,564,563	1,454,470,801	2,009,989,300	2,859,624,191
Total value of transactions for the year	155,844,843,012	223,207,202,406	309,352,254,970	564,155,900,015
Balance on Float (GH¢'million)	2,321,070,106	2,633,925,288	3,633,832,947	6,980,030,924

Figure 2 Bank of Ghana Annual Report - Mobile Money Statistics [\[2\]](#)**Why Mobile Money thrives in Ghana**

1. *Down-to-earth banking:* The average self-employed or semi-literate Ghanaian avoids the complexities of standard banking and, at times, does not have the documentation to create a bank account (e.g., utility bill, tax identification number etc.). Mobile money agents only need to tick a checkbox during a sim card registration to create a mobile money wallet; agents require only a national ID card: This makes Mobile Money a popular choice among the 72% of Ghana's population that is self-employed [\[3\]](#).
2. *Higher user retention:* Most mobile money accounts remain if the associated mobile phone number is active.
3. *Accessibility of funds:* Over 328,000 active mobile money agents serve customers across the country, creating high network propinquity between agents and customers.
4. *Low-value transactions:* Mobile money provides traders and farmers with the most feasible means of making small payments like daily wages for menial labour and small trades (aside from cash).
5. The extensive network of Merchants and Billers integrations increases the network's utility.
6. Telecommunication networks give Incentives (bonuses) for airtime and data purchased via mobile money.
7. GhiPSS allows for cross-platform (network) and bank to wallet transfers using mobile money services: The customer's phones become a bridge link to their e-money and cash [\[4\]](#).



Figure 3 Image of a customer at an AirtelTigo Mobile Money Agent cash-out kiosk [\[5\]](#)

The Business – Mobile Money Network

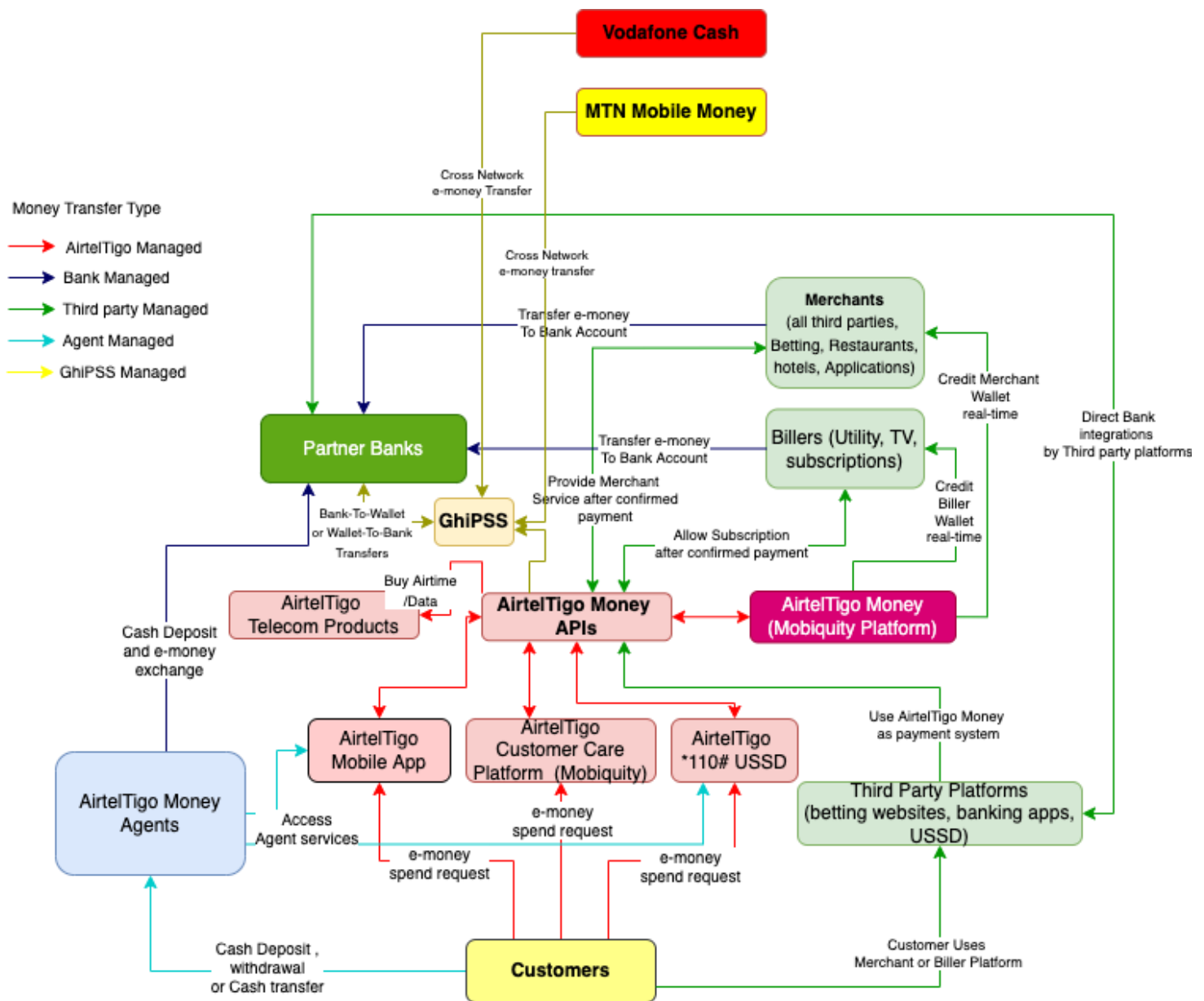


Figure 4 The AirtelTigo Money Network

The mobile money system consolidates and reconciles information on transactions and account balances. The entire network hinges on the reliability of the ledgers kept by all e-money issuers: This must always match the amount of physical cash (float) deposited to partner banks.

AirtelTigo Money agents sell e-money to customers for cash; they then deposit some money at banks. Agents restock on e-money at banks or AirtelTigo Shops to resell at vantage points near customers. Customers incur a service charge for 'cash-out' activities (physical cash-out, wallet-to-bank transfer etc.)^[6]. Merchants and Billers pay a commission to AirtelTigo for facilitating digital transactions between AirtelTigo customers and the merchants.

The Network Nodes: Mobile Money Industry

Competitors: MTN Mobile Money is a monopoly controlling approximately 41 to 60% of GhiPSS (interoperability) transactions^[7]: MTN naturally enjoys higher transactions since it has 60%, of mobile phone users. In 2017, The Telecom Chamber reported that 90% of the deposits via Mobile money were through the MTN network, while AirtelTigo handled 3.5% of deposits. Vodafone held 2.5%^[8].

MMI SENDING			MMI RECEIVING		
Institution	% Contribution	Rank	Institution	% Contribution	Rank
VODAFONE	41.74	1	MTN	59.70	1
MTN	41.43	2	VODAFONE	28.80	2
AIRTEL TIGO	9.83	3	AIRTEL TIGO	11.01	3
ZEEPAY	3.54	4	G-MONEY	0.47	4
G-MONEY	3.47	5	ZEEPAY	0.02	5

Figure 5 GhiPSS (transactions between Mobile Money Platforms - MMI) 2021 report ^[7]

Vodafone's sending contribution improved because it removed its fees^[9] on sending transactions as bait for network growth, resulting in reduced profits. However, since Vodafone's core subscriber base is significantly less than MTN, they are still no threat to the MTN mobile money network.

The impossible challenge for the budding fintech platforms is customer acquisition. Platforms like Expresspay, SlydePay, and Hubtel struggle to find users for their platforms. Nevertheless, they integrate with Mobile Money platforms (to benefit from the centrality of Telecom MFS platforms) to access many customers.

AirtelTigo Money Agents: This is the network link where physical cash exchanges hands. Agents exchange e-money for physical cash; this enables the deposit, transfer, and withdrawal network. Therefore, the Agents are very influential in the efficiency of the network (strong link).

Partner Banks: These receive cash from agents and transfer e-money stock to the agents for reselling. The money deposited in banks acts as an equivalent float/collateral against the e-money in circulation on the AirtelTigo Network.

Government Stakeholders: GhiPSS facilitates cross-platform e-money transfers. The Bank of Ghana regulates Ghana's e-money industry and has granted AirtelTigo the license to operate as an e-money issuer^[10]. National Security Agency also monitors transactions for money laundering and security purposes.

Billers and Merchants: Billers are large institutions with subscription or bill payment models (e., g. Utility service providers). Businesses that receive payment are merchants (e.g., uber, Betway, UTV, schools etc.).

AirtelTigo Telecommunication services: This node (and the AirtelTigo Money API) are the central nodes of the entire mobile money network because AirtelTigo Money derives its network centrality from its telecommunications network.

The Business challenge: MTN's monopoly Network effects:

MTN has the most mature mobile money network in Ghana, which has a significant impact on AirtelTigo Money:

1. Liquidity – Agents purchase less AirtelTigo e-money because of the opportunity cost (customers demand more MTN e-money). AirtelTigo customers are stranded when they need to withdraw money: This discourages deposits onto the AirtelTigo Money platform. Eventually, the amount of money in the system reduces, and fewer purchases from Merchants and Billers via AirtelTigo Money occur: This reduces the network's utility and pushes customers towards the more successful alternative.
2. Shrinking transactions result in smaller profits: This impacts AirtelTigo's Money's funding to expand and invest in the network.

Therefore, the rich (MTN) keep getting richer through the power of the network effect^[11].

Suggestions to Improve AirtelTigo Money

1. Analyse the network to identify the top 20% of agents/customers/vendors who give the 80% of revenue^[12] and expand those categories of products and customers.
2. Discover new customer networks and create targeted products for them, e.g. farmers unions, taxi unions, Universities etc
3. Tackle liquidity problems by:
 - pre-financing active mobile money agents with e-money (up to their commission for that month).
 - Allowing the public to invest cash in agents (for a commission).

The Technology: AirtelTigo Money (Mobiquity Platform)

The AirtelTigo Money platform is a customised instance of the Mobiquity^[13] mobile wallet platform Comviva Limited provides. Mobiquity supports the below functionalities:

1. Money movement (deposit, withdrawal, and transfer)
2. Telecom products purchase (airtime and data)
3. Bank Services integrations
4. Bill Payment and Merchant Payments
5. Self-Service support

All the functionalities are accessible over:

- USSD platform (*110#): This is popular in rural areas because it does not require data connectivity.
- AirtelTigo's website and mobile applications.

- Third-party platforms (through API integrations) as a payment method

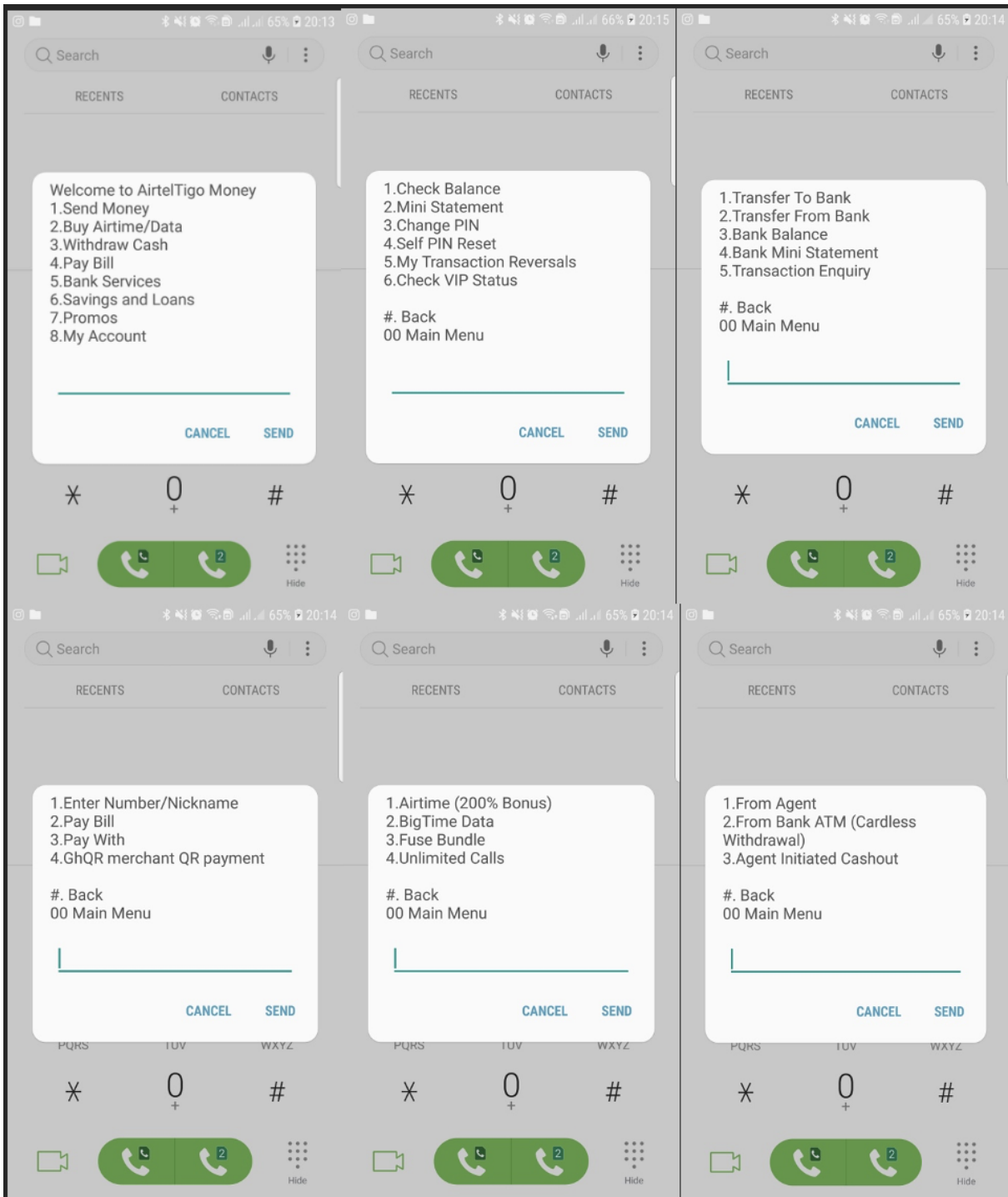


Figure 6 Screenshots of AirtelTigo USSD menu for AirtelTigo Money (Products and Services)

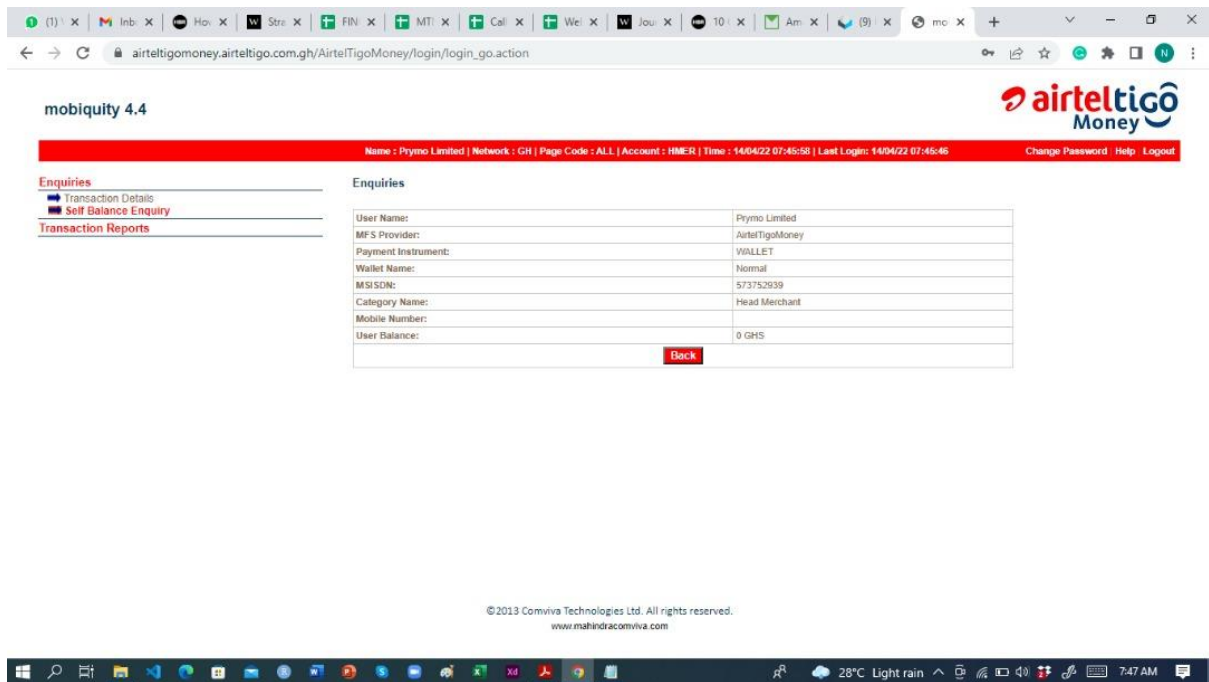


Figure 7 Customer Experience Mobiquity portal ^[13]

Technical Interventions – CIO driven improvements

1. High platform availability: The support team increased Mobiquity throughput (TPS^[14]) to avoid a bottleneck at the central node (Mobiquity APIs): Mobiquity has 99%+ availability due to 24/7 technical support.
2. Security
 - All major third parties connect over a secure private VPN connection
 - Transactions are protected/encrypted using HTTPS protocol and proxy APIs
 - All merchant-initiated deductions require Two-factor authentication
 - The AirtelTigo Money database is the most restricted in AirtelTigo.
3. Improved self-service options to improve customer experience (balance check, statement to email, reversals)
4. The agent onboarding process was made paperless and faster through the DMS application.

Regulations

The government has a keen interest in the growing e-money market:

1. E-Levy Tax^[15] – The government announced an e-levy of 1.75% on any electronic transaction above GHS 100.00 (\$13.30). Ghana's unbanked and untaxed citizens were the target of this new tax: This was very unpopular^[16] and resulted in GHS 10 billion value reduction in Mobile Money^[17]; AirtelTigo and MTN responded by reducing their commissions to reduce the impact on mobile money users^[18].
2. Anti-money laundering regulations: National Security Agencies mandate the use of national ID cards to register sim cards^[19a] ^[19b] for easy traceability of ownership. All wallets with alternative ID cards have transaction limits.
3. Bank of Ghana regulates churn: Any phone number that churns with mobile money funds has 12 months to redeem the money. Otherwise, AirtelTigo must transfer the funds to the bank of Ghana^[20].

Conclusion

AirtelTigo and other Mobile Money platform operators are significantly outsized by MTN due to its monopoly. As a result, MTN gains significant returns from commissions and service charges to improve, expand and incentivise people on its network.

The key to growing the AirtelTigo Money network is discovering new markets, integrating essential services, and gradually converting customer preferences to AirtelTigo Money through incentives and accessible services. A prerequisite is to grow the customer base organically. However, it's a long way till any telecommunication network or e-money alternative becomes a threat to MTN Ghana.

APPENDIX

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ABBREVIATIONS

CIO – Chief Information officer

DMS – Distribution Management system

E-Levy – Electronic Transaction Levy

GhiPSS – Ghana Interbank Payments and Settlement System Limited

HTTPS – HyperText Transfer Protocol Secure

MFS – Mobile Financial Services

MMI – Mobile Money Interoperability

SIM – Subscriber Identity Module

TPS – Transactions Per Second

USSD – Unstructured Supplementary Service Data

VAS – Value-Added Service

TERMINOLOGY

churn – customer attrition; sim cards are disabled due to inactivity

e-money – Digital/electronic money

Fintech – Financial Technology Company

Float – The amount of virtual cash backed by physical money in the bank

Liquidity – The amount of money or e-money an agent has available to service the network

Network effect – product or service gains additional value as more people join it.

Telecom – Telecommunications / Telecommunication Company

Telecom Chamber – Ghana Chamber of Telecommunications

Two-factor authentication – requires two steps to verify the identity

Digital Transformation Individual Project Evaluation Form		
Final Report:		
1	The Context	
	Is the introduction to the context clear and compelling?	
	Are the dynamics of the context well explained?	
	How is the context developing in the future?	
2	The CIO/CDO	
	Is the role of the CIO/CDO in the context well described?	
	What are the day-to-day aspects of the CIO/CDO role?	
	What are the strategic aspects of the CIO/CDO role?	
	How is role evolving as the context changes?	
3	Report Structure	
	Is there original thinking?	
	Flow and structure of the report	
	Is referencing done well	
4	Bonus points	
	Reason:	
Final Report Mark (off 10)		