



Kenya Towards Mobile Virtue Network Operator: Opportunities and Challenges

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Abstract: This paper points to the necessity to conduct research on Kenya towards Mobile Virtue Network Operator in regard to Opportunities and challenges. The telecommunication and financial business model is shifting away from full vertical integration of the operator's value chain towards a higher level of specialization. Thus the threshold of becoming a mobile operator is dramatically reduced with the introduction of the MVNO's concept. It is possible to be an operator without having to invest in frequency spectrum license or in wireless network infrastructure and without having to build up competence in wireless technologies. The regulators have applauded the new players because they want to enhance competition for the benefit of the customers. MNOs use underutilized spectrum in various service provisions bringing in specialization in areas such as data and mobile money. Business competition makes the consumers enjoy benefits from low fees in mobile money, text and voice services. Kenya lack of legal provision for infrastructure sharing, leaving the operators to consent to autonomous agreements with interested parties. Issues raised by MNO include Cannibalization of the MNOs market share by MVNOs, Hostile response from poor MVNO performance, unfriendly choice of MVNOs for partnering purpose. The purpose of the regulator should be increased competition in the mobile communications market, financial and quickening the improvement and the development of new services and technical innovations. Therefore, the entry of MVNOs into the market should be seen as an opportunity that will increase the uptake of mobile services in key segments such as mobile commerce, finance, voice and data.

Keywords: Equitel, MNO, MVNO, Regulator, Telecommunication

1. Introduction

Apparently saturated markets, increasing competition and higher end-client expectations on quality-of-service and innovation alongside more network technological advancement and heterogeneity/differing qualities in terms of end-client service and content demand are the present business sector challenges facing today's network operators. While encountering cost pressures, ever-increasing technological complexity and deficiency of skills and resources, they need to identify new approaches of real differentiation and unique value proposition, outperforming

their competitors on time-to-market [5].

Currently, The telecommunication and financial business model is moving away from full vertical integration of the operator's value chain to a higher level of specialism. "Specialists", turning away from mere coverage and capacity provision and focusing solely on end-user service development, content, branding, marketing and sales, are emerging [23]. The latter are often establishments with a strong brand and consumer emphasis against a media or content background. The limitation of becoming a mobile operator was dramatically reduced with the introduction of the MVNOs concept. It is potential to be an operator without having to invest in in wireless network infrastructure,

frequency spectrum license or and without having to build up competence in wireless technologies [1].

The MVNO concept is a very attractive option for such a “specialist”, aiming at significantly reducing the required resources and permitting the new entrant to concentrate on the really critical, market- side success factors. Since there is no necessity for a spectrum licence, complex and expensive radio network roll-out, or ongoing maintenance of the latter, market entry barriers are lower than for a full MNO [5].

With the solid and fast growth in the mobile communications market reflected in the explosion of the number of mobile phones subscriptions, companies both inside and outside the telecommunication branch have been attracted to the mobile sector [6]. Each nation or state has a limited numbers of accessible frequencies, and, therefore, can only award a limited number of licenses. Due to the large number of players applying to be mobile operators and only a few of them are able to get a license, both because of the limited number of licenses and the huge cost of building a mobile network, new types of players, MVNOs, have emerged. The regulators Communication Authority of Kenya (CAK) have applauded the new players since they want to enhance competition for the advantage of the users [1].

2. Understanding Mobile Virtual Network Operator

The MVNOs provides mobile services to end-users without possessing its own frequency spectrum, a radio access network and backhaul network, as it buys such capacity from a host MNO [5]. These MVNOs firms make business engagements with one or more licensed MNOs by leasing from them the access to mobile network and capacities. Such business concept enables the MVNOs to take part in the mobile communications market, in this manner expanding the value chain and providing innovative mobile communication services specifically adapted to target segments [3].

Generally, MVNO is well-defined as an operator that offers mobile services to end-users but does not have a governmental licence to use its own radio frequency [31]. MVNO has right to use to one, or in principle, perhaps more, of the radio elements of a mobile operator and is able to offer services to subscribers using such elements [1, 3, 8].

MNOs controls the whole chain of values needed to yield mobile telecom services. It holds a radio spectrum license, issues its own SIM cards, owns and operates the infrastructure together with the base stations, switches and the gateway with the home location register (HLR) [1, 3, 8]. MNOs is in full control of marketing, branding and pricing, as long as it stays within the regulatory framework. However, the MVNO issues its own SIM cards, has its own switch, home location register and service platforms, and has a full customer-care and billing system [8, 2].

The two main types of operators are: mobile network operators (MNOs) that provides mobile network for the

purposes of transmitting, distributing, or providing messages and mobile service operators (MSOs) transmitting messages over a mobile network obtained for use from a mobile network operator [8]. MVNOs make available mobile voice and data services without owning the access rights to the spectrum they use [2]. Consequently, MVNOs can be termed as a subgroup of MSOs and the radio capacity used to provide these services is gained through commercial agreements with licensed mobile network operators. For an MVNO having no background in telecommunications to succeed it should have a strong brand that is known from its other operations an example of such in Kenya include Equity bank of Kenya, Nakumat, Kenya Airways etc.

3. MVNO in Kenya

Kenya lately opened up the market by legislature to MVNOs, basically signifying a mobile carrier can come in and lease infrastructure and go straight into business. New mobile carriers utilize excess capacity on the existing 3G and 2G sites of mobile carriers. In Kenya's instance Airtel is one of the bus providing capacity to the MVNOs which include Equitel owned by Equity Bank's and Kenya airways. There is a total of 5 MVNOs with intent to play in the Kenyan space, these include Zioncell, Equitel, Kenya Airways, Tangaza Money and Nakumatt [15].

The Equitel MVNO accords the Bank an opportunity to proceed with its main goal of assisting furthering financial inclusion and innovative services offerings for all Kenyans by presenting their financial services offering on to a single platform which will make banking services more accessible, flexible convenient and more affordable [14, 32]. As the host and partner operator for Equitel, Airtel is the mobile operator that is pioneering this innovation in the Kenyan Telecoms Industry. The company MVNO services will run on the excess capacity on its network, ensuring that it maintains seamless quality experience to its consumers both Airtel and Equity bank of Kenya [14, 11].

Equity MVNO will simply mirror all its banking services into the cellphone. By integrating the bank account to the mobile phone, customers can apply for loans, transfer money into and from their bank accounts and pay bills. In addition, through Equity banks' multi-channel connectivity, customers will be able to carry out cross border transactions from their cell phones. They will receive international remittances onto their accounts and access through their mobile phone numbers, Equity Agents, ATMs or branches [14, 11]

4. Opportunities of MVNO Technologies

4.1. Opportunities for MNO

MVNO's help MNOs use underutilized capacity in various service provisions bringing in speciality in areas such as data and mobile money which could help end monopolies by reducing market dominance [21]. MNOs gain benefits such as incomes generated by MVNOs for the use of the

infrastructure, reduction on operational cost, sharing of risk, improvement of the network effectiveness, economies of scale, and extension of their market to particular unexplored niches [25]. [21] Noted that, MVNOs are an avenue for MNO to generate income in various services but are not good at by providing excess capacity for the new operators to customize attractive services. This excess network capacity can therefore be made accessible to MVNOs who are often smaller but innovative enterprises with the ability to attract subscribers by targeting niche market segments to address client specific needs.

[30] cited that there can be significant benefits to MNOs that offer MVNOs wholesale access to their mobile networks. The benefit arises primarily in the form of Extending mobile services to market segments with which MNOs have not had much achievement before; they will be Market growth by reaching entirely new or previously unserved market segment and geographical area; they will achieve Better network utilization, realization of economies of scale and Lower operational cost due to wholesale access by MVNOs; The MNOs will Effectively achieve product bundling and cross selling utilise low operational cost of MVNO to expand into low margin and niche area [24, 17].

4.2. Opportunities for MVNO

In Kenya MNOs like Safaricom Ltd has been bound by the CAK to share its mobile money infrastructure with its competitors, a boost for new entrants who will not have to invest resources MVNOs' major objective is to utilize the unused broad infrastructure and resources of telecom companies [34]. Another avenue through which MVNO's can engage the current Kenya market and make a difference according to [10] is the Premium SMS/USSD Services. MVNO's can focus on implementing company and business communication to their consumers (B2C) including the usage of bulk SMS services at a cheaper price. Such services, include SMS invoices, and corporate messages at a lower price than that of the current mobile telecommunications offer.

[2] Noted that Better use of network capacity by MVNO includes capacity on 3G networks that would otherwise have remained idle thus enabling network operators to spread network costs and reduce the average costs of service provision, [10] concluded that MVNOs need to develop innovative product and customer service offerings. MVNOs will need to offer customers attractive pricing packages, greater incentives for competition more generally between network operators to supply network capacity to the MVNOs.

New MVNOs could exploit Online Payment Services and ensure that products and services being offered online can be paid through their service. This services would allow mobile phone users in Kenya to make online payments that cut across the major platforms, such as credit card requirements, and get SMS authorization and confirmation. This implies that via the mobile phone, the MVNO will be the association between the buyer and the internet outlet [10].

MVNOs, as new players in this business sector, could act as a assertive force for competition, explore niche segments and offer of new mobile services unfeasible, or merely uninteresting, to established operators [36]. The MVNO will venture into new market niche that the MNOs were not able to and provide value added new services and products to their customers. Due to absence of competition, the establishment of MVNOs is a growing industry and even if major telecommunication try to suffocate their existence, the likes of the operators are countable in Africa which is why this is a great opportunity currently in Kenya [11].

With the new Equitel MVNO service, Equity bank will provide the most protected banking platform delivered via the mobile phone. Pricing strategies will reduce the middlemen layers of fee associated with mobile money transactions saving money for each Kenyan and the Kenyan economy as a whole [14].

4.3. Opportunities for Consumers

The telecom company is aiming to improve their mobile money services and collaborate with more banks and merchant outlets. Safaricom Ltd is planning to have 600 tier one and tier two Supermarkets to use its merchant checkout system. Such positive business and market competition makes the consumers enjoy benefits that could include lower rates in mobile money, text and voice services [10].

One of the purposes and key benefits to consumers that MVNOs would bring include the following as highlighted by [16] and supported by other scholars: The MVNOs is anticipated by the customers to provide expanded choices of value added products and services, the customer would have a wider range of organisations offering them a complete mobile service, vertical financial services and an expanded range of service providers from which 3G customers can choose [2].

It is observed by [30] that the entry of MVNO in the mobile market raises the level of competition by providing consumers with a wider choice of service providers, a wider range of innovative value added services and more competitive pricing plans. In Regards to pricing, most MNVOs are always cheaper than the networks they ride on. Almost all MVNO plans are prepaid, and consequently, run on extremely low margins. Customers pay slightly above the wholesale rates at which network access is bought by the MVNO [35, 36]. [35] Further noted that customers of the big carriers pay more than the price paid by customers of MVNO's in most cases.

[18] Noticed that the entry of Zioncell, Mobile Pay and Equity Bank through Finserve is already being felt in the market, with consumers already anticipating benefits that would accrue from reduced costs of transfer, convenience as well as more platforms and providers to choose from. Safaricom, the industry market pioneers, is already feeling the heat from MVNOs, a factor which must have leading to its recent downward revision of MPESA transfer rates.

MVNOs are also promising to improve availability, and in a greater sense promote financial inclusion, providing

common people with financial services from the convenience of their handsets. Equity Bank's Finserve will not only offer mobile banking services but also cheaper data and voice call rates [18]. This reduction of transaction cost by Safaricom could set the stage for a price war bound to see the cost of money transfer reduce significantly, with consumers standing to be the biggest winners [35, 36].

4.4. Opportunities for Regulator

Regulators around the world including Communication authority of Kenya (CAK) in general agreed that the market itself through commercial negotiations and legal enforcement is best positioned to regulate the provision and growth of MVNO services in Kenya.

In most nation and states, regulators have refrained from mandating the MNOs grant MVNOs open access to their networks. However, regulators in some countries and regions, such as Kenya, Spain, Hong Kong, Japan, and Slovenia, do not believe the marketplace will allow MVNOs to succeed without legislative help and have opted to introduce regulation that forces MNOs to open their networks to MVNOs and that regulates at least some aspects of the wholesale agreement between MVNOs and MNOs [38, 21].

The regulator CAK In support of their decisions have often cited welfare-enhancing objectives, such as improved competition, consumer choice, lower retail prices, innovation, service diversity, and more efficient use of scarce spectrum resources [39, 38, 21]. This new license category in Kenya is among the benefits accrued from CAK adoption of the unified licensing framework (ULF) in 2008. The ULF collapsed all the technology specific licenses into three categories: Network Facilities provider, Application service provider and content service provider with the aim to harness the technological opportunities presented by convergence [9].

The Kenyan regulator CAK facilitates the MVNOs since they offer consumers a wider choice of services and applications at lower prices, and therefore result in a more efficient and effectively use of the limited spectrum [21]. The CAK will enable Promote competition by enabling operators who do not have resources to obtain radio spectrum right to participate in the 3G business market which include Equitel, Nakumat, Kenya airways Tangaza money and any other that will be engaged in future.

5. Challenges for MVNO Technologies

5.1. Challenges for MNO

Though MVNOs Technologies have been implemented in Kenya still there limited and unclears regulations by exhibited by the MNOs and other stakeholders. According to [19] The CAK has developed guidelines that will in general act as safeguards to the end users in terms of quality of service, billing and customer care. Under the Obligations the MVNOs are obligated to provide services within the set Quality of Service parameters and targets as set by the MNOs. The Kenya CAK plans to come up with new

regulations that will push the current four mobile operators including Safaricom, Airtel and Orange Telkom to share their infrastructure, since spectrum for more mobile operators is limited.

Kenya has not had a legal provision for telecommunication infrastructure sharing, leaving the operators to sign independent partnership settlements with interested parties. According to [22] the regulator demanded that the MNO especially Safaricom accept hosting the MVNOs signalling the regulator's intention to make infrastructure sharing mandatory. According to the CAK all MVNO must submit to the authority, for approval, a framework of hosting MVNOs, indicating the numbers to be hosted and timelines.

The MVNO will ride on the prevailing infrastructure of the MNO at a fee to offer their services, saving them the heavy capital expenditure associated with rolling out telecommunication networks and which the regulator pronounces will promote competition. This concept was met with a lot of confrontation with a number of concerns that they do not allow the MVNOs on their network to offer voice or data services because this would compromise the quality of services. They argued that they were ready to work with them if they are coming on board to add value to the prevailing services [22].

MVNO licences in Kenya fall under the Application Service Provider (ASP) category, which comes with a fee and enables an entity to offer services such as customer registration, SIM card issuance, billing and customer care to end users without holding a spectrum licence which the MNO noted that to be very low inconsideration on how much they invested in the infrastructure [33].

[33] Observed that there is the fear of permitting MVNO advantage in the provision of lucrative data services will mean the Host Operator will become a "dumb pipe" starved of these additional revenues. MVNOs, as a largely unregulated area of the market, will have all the benefits of being an operator without any balancing licensing obligations. Also according to [24] It is a critical prerequisite to success that the MNO is convinced that the selling power of the MVNO brand can be used to increase the number of customers on the Host Operator's network by attracting new subscribers that they would not have been likely to attract.

MNOs have a major concern that they run the threat of competing with MVNOs in the same market, but from a dependent position respect to the MVNOs [26, 27]. In summary [30] noted that the concern for MNO could be the aspect of Cannibalization of the MNOs market share by MVNOs, Repercussion from poor MVNO performance, adverse selection of MVNOs for partnering purpose and Greater client agitates.

5.2. Challenges for MVNOs

MVNOs are often perceived as small players or start-up companies, so they need a really effective and efficient marketing plan in order to raise awareness of the uniqueness of their offer, and why consumers should choose to go with

them rather than one of the major MNOs [13]. High interconnection cost has been noted to significantly prevent MVNOs from offering competitive off-net calling since call volumes are unpredictable.

For MVNOs price instability is another big issue as they do not have the financial means to engage in price wars. To ensure the long term success of MVNO some level of price stability is required. When negotiating with MNOs a MVNO can protect themselves by having wholesale prices linked to retail prices or by building re-negotiation and exit clauses into the contract [12].

The Resistance by MNOs who are the industry giants apply strategic priorities in fear of competition from the upcoming MVNOs. [28] stated that the competition has been analysed to understand the consequences of a possible bad conduct displayed by the MNO. Bad conduct on the part of an MNO towards MVNOs consists of fraudulent or unauthorised use by roaming subscribers; a unilateral rise of economic conditions and an unanticipated drop in quality of service.

Rigid regulations are also perceived to be holding back the emergence of MVNOs. [12] Observed that the concept hasn't been embraced by all mobile regulators or MNOs. In markets with operator centric regulations the emergence of MVNOs brings another dynamic to the table that regulators find difficult to understand how to promote healthy competition and guarantee fair and equal terms to smaller players.

[12] Observed that Network quality and lack of Network capacity is an issue that plagues many of the MNOs in emerging markets around the world and poses the same problems for MVNOs. Without the proper support of the operators' network infrastructure MVNOs will struggle to provide a high quality service and take advantage of data technologies to increase their long term profitability. Regulators in the communications sector need to step in and put pressure on operators to meet standards for quality service so that MVNOs can do the same [12, 13].

5.3. Challenges for Regulator

The CAK main objective is to increase competition in the mobile communications market and hence hasten the innovation of new services and technical innovations. Thus support MVNOs because they promote this objective. To make the mobile communications market easier to access, CAK the country regulator in Kenya can impose incumbent operators to lower the entry barriers to the market. [8] suggested some of these market entry strategy include mobile number portability and price regulation of interconnection and termination fees and the regulation of these fees is essential to enter into telecommunication.

The directive by CAK has not been supported well with a number of players already protesting the directive to share infrastructure and the cost of the MVNO license. The MNOs has protested sharing of its infrastructure inconsideration they have invested heavily on the same license fee is too low and unfair as the MVNO will be competing against other players who have already invested in infrastructure and client

base [20].

The MNOs are protesting because the licensees to MVNO will be able to provide all services currently being provided by MNOs including customer registration, SIM card issuance, billing and customer care services to end users. At the same time, the cost of building a mobile cellular network is high and few entities have the capacity to invest in such infrastructure [19]. According to the regulator the MVNOs will however not own any spectrum license and will not also put up any infrastructure but utilize excess capacity from MNOs with which they have signed contracts. The MVNOs will however be assigned their own numbering range where they request and provide services as bona fide entities [21, 19].

Despite the optimistic features outlined [24] noted that, there are a number of regulatory recurring issues which have led many to conclude that this MVNO has significant flaws and discourage MNOs. The most significant problem is the basic conflict which MNOs face, that by authorizing access to their network they are permitting the creation of a competitor which will lead to a reduction in their client base. There are also clear and understandable security concerns regarding giving an outsider access to the MNOs most important and expensive asset, its core network. [17] Observed on the level of price discount is regulatory critical factor: too low a discount and the MVNO remains a niche and too high and the MVNO can start price wars and cannibalise the parent MNO's services. Conversely, opening up the market to some commercially negotiated deals could stop any further regulatory intervention.

6. Conclusion

The Kenyan market could see the entry of an array of MVNO services through partnerships between telecommunication, finance and other service industry organisations spurring innovation and improving customer experiences, increased competition and price wars, and partnerships between Telecommunication and companies in other verticals [29]. CAK should ease the operations of MVNOs since they offer consumers a wider choice of services and applications at lower rate. This has resulted in a more efficient use of the limited spectrum. Regulators around the world are in consensus that the market itself through commercial negotiations and legal enforcement is best situated to regulate the establishment and growth of MVNO services [38, 14].

MVNOs in Kenya also endeavour to enhance accessibility, and in a greater sense promote financial inclusion, providing Kenyans with financial services from the convenience of their Mobile Phones. Therefore, the entry of MVNOs into the market should be seen as an opportunity that will increase the uptake of mobile services in key segments such as mobile commerce, finance, voice and data. This is in Consideration that 96 per cent of transactions in Kenya are still done in cash, meaning that there's still a huge untapped opportunity for other modes of transaction in MNOs.

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