Regulatory Intervention or Disruptive Competition?

Lessons from East Africa
on the End of International
Mobile Roaming Charges

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Executive Summary

While policy makers and regulators elsewhere in Africa emulate European "best practice" regulation - despite the difficulties mature and resourced regulators in the European Union face in instituting legally binding maximum tariffs for roaming - in East Africa operators have strategically dropped roaming charges in their competitive struggle for customers. Although this has been hailed as the result of market competition and indeed it is, an underlying necessary condition was the creation of an enabling policy and regulatory environment. This allowed operators to integrate historically separate national networks into cross-border operations, undermining roaming markets in the region and ending roaming charges in East Africa forever. This paper examines the dramatic impact of the disruptive competition on the termination of roaming charges in East Africa.

It develops a case study on the dropping of roaming charges in East Africa through the initiative of One Network – a product launched by Zain in East Africa that eliminated roaming charges for cross border traffic on its contiguous network in the region. The study finds that while Europe is struggling with the regulation of high roaming charges and several African jurisdictions struggling to follow suit, in East Africa high tariffs and roaming charges were far more effectively addressed through disruptive competition in mobile markets.

With the decision in September 2006 by Celtel, now Zain, to exploit its only competitive advantage – licences in the contiguous countries of Kenya, Tanzania and Uganda – and crack open the regional market by dropping all roaming charges between its networks, it set in motion a competitive struggle for roaming customers from which there was no return. Zain – itself a marginal operator in all three original East African community jurisdictions prior to its disruption of the market – achieved, with regard to roaming, in weeks what most African regulators had barely contemplated and European regulators had struggled with for nearly a decade.

The case examines the particular factors that contributed to this outcome in East Africa. Mobile phone users in this region are largely pre-paid and adept at using multiple SIM cards. There was little stopping them from churning, *en masse*, to a network that offered them home package rates as they moved across East Africa's porous borders. With the high price of communications in East Africa and the premium charges placed on international mobile roaming, the effect of this move was to compel other regional operators to follow suit, and further, to institute various other pricing strategies in an attempt to retain or recover their dominant positions. As a result, not only did roaming charges disappear across all networks, but the prices of various other mobile services also fell as subscriber numbers soared.

The paper draws on the theory of disruptive competition and innovation pioneered by Clayton Christensen. The theory is developed to explain how and when a business model is likely to succeed through innovation and disruption of the market. Although Zain is ultimately unable to dominate its competitors, the theory is used to explain this and is adapted to examine not just the success of the business model but to explain the sustaining disruptive effects on the entire market. This provides a theoretical lens through which to view the empirical evidence acquired through in-depth interviews and market analysis.

The case presents an empirical assessment of traffic, prices and subscriber numbers in East African countries in the initial One Network, which now stretches across Africa and the Middle East. The research question it poses is whether more has have been achieved through the actions of a disruptive competitor than through complex regulation on roaming as in the European Union. This question is particularly pertinent in the context of exaggerated asymmetries of information that make African regulation ineffective or impossible. It assesses what conditions existed to produce these outcomes (and what the necessary conditions are for this to be replicated elsewhere) and what the implications of this for policy and regulatory theory and practice in developing countries are more generally.

In East Africa operators have strategically dropped roaming charges in their competitive struggle for customers.

Table of Contents

Introduction

This paper draws on a study by the authors done for Research ICT Africa, which sought to understand what triggered the dropping of roaming charges by the mobile operators in East Africa despite any regulatory requirement to do so. The timing of this was particularly interesting from a comparative point of view as it coincided with the decade long struggle in Europe to regulate roaming tariffs. This had finally resulted in the challenged December 2008 European Union order regulating roaming tariffs. Progressive African regulators had started to speak about the need to emulate the regulation of exorbitant roaming charges from their jurisdictions. The rapid end to roaming charges in East Africa challenged the conventional wisdom that the only way to reduce roaming charges was through complex and resource intensive regulation, monitoring and enforcement.

The operator who pioneered the elimination of roaming charges was Celtel, but in 2004, long before its plan was fully implemented, it was bought by Zain – an mobile company with operations in Middle East and Africa. Celtel itself was a result of a rebranding exercise by MSI Cellular in 2002. Thus, Zain entered the market with an opportunity to exploit the experiences of Celtel and MSI. (www.zain.com)

The timing of Zain's One Network was particularly interesting from a comparative point of view as it coincided with the decade long struggle in Europe to regulate roaming tariffs

Conceptual framework of disruptive competition

The literature survey included an assessment of European roaming regulation. Theoretically this paper draws on the work of Christiansen and Raynor on disruptive competition and innovation. Although this theory was developed to identify the likely success of innovation through disruptive competition, it has been used in explaining the disruption of the market that occurred, despite Zain ultimately not having been able to undermine the dominant players in any of the markets. The theory is as useful in explaining the reasons for this as it might have been to describe a case in which Zain had gained the dominant share of the market. Referring back to the original theory presented in Christensen's book The Innovator's Dilemma, Christiansen and Raynor identify two distinct categories of competition based on the circumstances of innovation. In sustaining circumstances, competition entails making better products that can be sold for more money to attractive competitors. In disruptive circumstances, the challenge is to commercialize a simpler more conventional product that sells for less and appeals to a new or unattractive customer set. This is exactly what Zain did. It took the roaming service, which was long-established but not affordable for everyone, and offered it at the cost of an ordinary domestic voice service.

Sustaining innovations target demanding, high-end customers with better performance. It is precisely this that motivated the competitive networks to emulate One Network. Dominant players understood that while the revenues from roaming were relatively low, it could not afford to lose its top-end customers, who were its primary roamers, to another network. By comparison, disruptive innovations such as Zain's One Network generally introduce simpler, more convenient, or less expensive services for less demanding customers. Once they have a foothold in a market, improvement begins until they meet the needs of the more demanding customers that dominant players had tended to service.

Christensen and Raynor describe how innovation and disruption occur by locating applications and customers within a plane of competition and consumption which, in The Innovator's Dilemma, is referred to as a 'value network'. Time and performance define particular applications in which customers purchase and use a product or services. This provides the context within which a firm establishes a cost structure and operating process and works with supplier and channel partners in order to respond profitably to the common needs of a class of customers. Each firm works within a value network which determines its competitive strategy and particularly its cost structure and choices of markets and customers to serve. It also determines its perception of the economic value of an innovation (2003:44). Innovation represents a new context of consumption and competition, which produces new value networks. These constitute either new customers who previously lacked the money or skills to buy and use the products, or situations in which a produce can now be used as a result of increased simplicity and portability and reduced product cost (2003:44-45).

They further identify two different types of disruption – low-end and new market disruptions (2003:45). Many disruptions are hybrids, combining new market and low-end approaches as in the case of One Network (2003:47). One Network, as a low-end disruption, sought to attack the least profitable and most over-served customers at the low end of the original value network, high-end customers not caring as much about the cost of roaming.

New market disruptions compete with 'non-consumption' because new market disruptive produce are so much more affordable to own and simple to use

As in the case of Zain, new market disruptions compete with 'non-consumption' because new market disruptive produce are so much more affordable to own and simple to use that they enable a whole new population of people to own and use the product, and do so in a more convenient setting (2003:45). The disruptive innovation does not invade the mainstream market – instead it pulls customers out of the mainstream value network into the new one since these customers now find it more convenient to use the new product. (2003:45-46)

Because new market disruptions compete against non-consumption, the incumbent leaders feel no threat until the disruption is in its final stages. At first content to lose these customers because they move up market in their own network, replacing low margin revenues with higher margin revenue from sustaining innovations, their competitors soon realised that they would have to emulate the services costing in order to retain their high-end roaming customers, as in the case of Zain's competitors.

Christensen and Raynor suggest a three point litmus test to determine whether an idea has disruptive potential as a new market disruption or and a low-end disruption which we consider retrospectively in the context of One Network (2003:49).

For new market disruptions:

- Does a new market disruption have a large enough population of people who historically have not had the money, equipment or skills to do this for themselves and as result have gone without or paid someone with expertise to do it for them?
- To use the product or services, do customers need to go to an inconvenient, centralised location? (2003:49)

"If the technology can be developed so that a large population of less skilled or less affluent people can use it in a more convenient way, something that was historically available only to more skilled or affluent people in a centralized inconvenient location, then there is potential for shaping the idea into a new market disruption." (2003: 49-50)

For low-end disruption:

- Are there customers at the low end of the market who would be happy to purchase a product with less performance if they could get it at a lower price?
- Can we create a business model that enables us to earn attractive profits at the discount prices required to win the business of these over-served customers at the low end?
- Is the innovation disruptive to all of the significant incumbent firms in the industry? If it appears to be sustaining to one or more significant players in the industry, then the odds will be stacked in the incumbent firm's favour and the new entrant is unlikely to win.

This explains why One Network's disruptive strategy could not be successfully sustained. One Network represents a hybrid of low-end and new market disruption. For its competitors, Zain's disruptive innovation was sustaining to the dominant players in all three national markets, who were able to mobilise their resources to create a competing, regionally integrated, seamless network that would allow them to drop roaming charges in line with Zain.

Christensen and Raynor explain that there is a reason for disruption usually being caused by the new entrant or underdog. As incumbents focus on sustaining innovation, since their processes are geared to going up-market, they seldom defend the new or low-end markets that the disruptors find attractive (2003: 35). They argue that a disruptive business model can generate attractive profits at the discount prices required to win business at the low end and create an extraordinarily valuable growth asset if it targets products and markets that the established companies are motivated to ignore or flee from (2003:42).

As we see below, unfortunately for Zain its competitors in the East African markets, in which it originally had the only integrated network that allowed them to provide the service uniquely, did not ignore their innovation nor flee from it. Instead they emulated what had been Zain's distinctive competitive advantage. It prompted them to counter Zain's competitive advantage innovatively by rapidly creating a virtual seamless network between their different national networks.

In the context of explaining when disruption might cause incumbents to flee rather than fight them, Christensen and Raynor explain that when innovation is incremental, established firms are likely to reinforce their dominance but are less likely to exploit breakthrough innovation (2003: 31-32).

Not all innovative ideas can be shaped into disruptive strategies, because the preconditions that initially make that possible may either not exist, or may not be sustained.

Background

Like consumers across the globe, in 2008 African mobile subscribers were paying extortionately high charges to make and receive calls when travelling outside of their country of origin. Mobile operators had years to charge each other's customers monopoly prices to terminate their cross border calls. This is despite the so-called "death of distance" that modern digital technologies such as GSM promise. Even when countries were contiguous, and the cost of calls could not be very different from the costs of local termination, roaming charges were extracted. So vexing was this in the European Union that after ten years of endeavouring to do so, the European Commission finally, in July 2006, adopted a legislative proposal for a regulation on international mobile roaming under Article 95 of the EC Treaty (EU 2007). "The effect would be to reduce wholesale prices and to impose a cap on retail margins for international mobile roaming calls made within the European Union in December 2007." (Sutherland 2006)

In the East African community, where markets had historically been integrated and more formally harmonised through the activities of East African Regulators of Postal & Telecommunications Organisation (EARPTO), telecommunications markets were amongst the earliest in Africa to open. Prices for domestic calls were being driven down by competition but roaming charges remained high. The regulatory association had responded positively to international trends and local pressures to open up international gateways. Kenya, the last to open up its international gateway, finally gave into regional pressures in 2004. (Personal interview, Masambu 2009).

The high cost of roaming had already become an issue within the region, characterised by its progressive regulation and with political pressures on the regional regulators' association, EARPTO, to explore ways of accommodating proposals by then Celtel to offer a roaming charge-free, integrated service with the region (Personal telephone interview, Masambu 28 February 2009).

In Uganda, Celtel, which had lost almost its entire share of the market, was also marginal in all its East African markets. However, it was the only operator to operate across all three East African countries. This made it possible for them to treat their three networks as one and bill their customers across all three networks as on-net customers rather than as roamers. They saw the removal of roaming charges as an opportunity to distinguish themselves from other operators and attract customers to their marginal networks.

Celtel, through its operations in East Africa, launched One Network by removing roaming charges and allowing customers to move seamlessly across its networks in Kenya, Tanzania and Uganda. The initiative changed the dynamics in the region and strengthened its market position in each country. In Uganda, in which it was weakest, it moved from fourth to second position within a year.

This action sent the dominant players in each of these markets scrambling for a response. Shortly thereafter, Vodacom in Tanzania, Safaricom in Kenya, MTN & UTL in Uganda and MTN Rwanda announced a service offering cross border services at the price of the country of origin. Within months roaming charges had disappeared across all networks in East Africa.

By removing roaming charges and allowing customers to move seamlessly across its networks in Kenya, Tanzania and Uganda One Network changed the dynamics in the region and strengthened its market position in each country

Innovation of ONE Network

One Network was designed as a strategy to achieve two goals – firstly it was intended to provide a tool for customer retention and loyalty, and secondly to give Zain a competitive advantage for customer acquisition in a competitive market. According to the company, this is a strategy for the long term and it does not see itself going back on it. To undergird the commercial features, the company is building an IP-based virtual network to reduce the cost of roaming customer management. Business relations among the national operations are based on the sender-keeps-all (SKA) principle, whereby the operators meet periodically to settle accounts. This feature can best be exploited by a corporate entity with full control over the operations.

According to Safaricom when interviewed for this paper, roaming revenue is not very significant as a revenue stream but has significant impact on the customer acquisition and retention. Roaming revenue constitutes only about 5% of total revenues (Personal interview, Lewela Ganson 24 February 2009).

ONE Network features

The key feature of the ONE network is that a customer roaming in another country is treated like the local customer in all respects as illustrated by the following:

- The customer uses the same telephone number and SIM card across participating countries.
- The incoming calls are free and the outgoing calls and SMSs are charged at local rates.
- Prepaid customers are automatically charged in their home currency. Post-paid customers are charged at local rates converted to their home currency upon billing.
- Prepaid customers travelling into participating countries can recharge their phone with local top-up cards or with cards bought from the local Zain network. (www.ke.zain.com)

With these features, a customer avoids paying incoming call charges and is treated like a local customer for all calls originated in the visited country.

Enablers of the evolution of ONE network

Experiences elsewhere with ending international calling charges

Although One Network has been presented in the popular and industry press as an entirely novel concept, its evolution goes back several years to the experience of Celtel elsewhere in Africa. Its origin can be traced to the innovation by MSI – a cellular operator that had operations in both Democratic Republic of Congo (DRC) and Republic of Congo (Congo Brazzaville). MSI had operations in both capitals, namely Kinshasa and Brazzaville, which together form a conurbation separated by the seven kilometre wide Congo River. For a long time, and in line with the ITU tariff structures, calls intended for the neighbouring capital city had to be routed through Europe at great cost by the fixed-line operators. MSI was concerned that the high cost was unnecessary and consequently approached the regulators of both countries for authorisation to construct a microwave link across the river. This was eventually accepted and the direct link was established in 2002. The impact was significant, with international tariffs between the two capitals becoming local calls overnight and tariffs falling by 80%. In 2002, only post-paid traffic was permitted, but this was reviewed and the policy reversed to include prepaid calls in 2004 (Balancing Act 2004).

This arrangement to interconnect border towns was replicated in other parts of the continent in which MSI operated, resulting in significant gains for consumers in border towns. When Celtel took over MSI in 2004 it drew on these experiences, later inspiring Zain to improve Celtel's weak market position through the creation of the One Network in East Africa.

Infrastructure legacy in East African region

Prior to 1997, the three East African countries, Kenya, Uganda and Tanzania, were a political community and a number of services operated jointly in the region. One such service was telecommunications, which operated as a single network then known as East African Posts and Telecommunications Corporation. Being one network, the backbone infrastructure was common to all and in fact there was a dedicated sequential code among the three countries – 005, 006 and 007. This network legacy is still evident, especially among the incumbent fixed-line operators.

These historically close working relations have been enhanced with the revival of the East African Community. Under the East African Community, the telecommunication operators have established a forum to address cross border issues. One such decision taken by the East African Postal & Telecom Operators was to encourage operators to provide services across border towns. Within the neighbouring border towns of Busia Uganda and Busia Kenya for example, calls are treated as local instead of international. Of course, with the entry of the cellular operators, who could transmit the cellular signal across the border, this is no longer a technical issue. On entry into the East African market through the takeover of Celtel, Zain found considerable precedent for the integrated treatment of the activities in the region.

East African local realities

A critical factor to the success of this initiative was its location in East Africa. From the historical perspective of the East African Community, the trade and social relations across the border are high and therefore cross border human traffic is high. One Network was a proactive response to long-standing travel patterns in the region. Additionally, the national boundaries in the region cut across communities with the same language, which prompted political and regulatory pressure in the region to reduce cross border tariffs.

Valuable cross border customers

There appear to be no studies in the public domain on the characteristics of roamers in the region; nevertheless experiences in other countries highlight some characteristics for roamers. As described by Bermudez (2003):

- the Average Revenue Per User (ARPU) for typical roamers is higher than average customers and they tend to churn less often;
- the contribution by visitors is higher than the average local customer; and
- roaming is an important service to retain high-end customers.

According to Bermudez (2003): "International roaming should be a good revenue-generating value added service for operators, but many customers leave their phones at home when going abroad because they think the service is unaffordable (or unavailable) … It's only when the pricing and marketing are right that operators can hope to ramp up ARPU."

With much lower market share in the region and especially in Uganda, Zain had to explore ways to capture new customers, and cross border consumers are attractive as demonstrated above.

Dampened calling levels due to lack of transparency in roaming

In a study published by TNS Technology UK in 2008, it was reported that conventional roaming service charge plans were confusing, which, in addition to the price of calls, dampened international roaming growth. The study indicated that a fifth of mobile users cited confusion over roaming pricing as their primary reason for using their phone less when abroad. Surprisingly, this is especially true of younger consumers, where nearly a quarter (24%) of those aged 16-34 years were still baffled by the costs of using their mobiles abroad.

While no study was available on East Africa prior to the One Network, anecdotal evidence indicates that similar challenges were prevalent in the region and dampened roaming traffic. Visitors instead chose to buy SIM cards in the country they visited. One Network sought to exploit this and attract new customers who had not previously used roaming due to the pricing confusion or simply the high price.

One Network was a proactive response to long-standing travel and trade patterns in the region

Implications of European regulatory action

High charges have a ripple effect in Africa and operators keenly watch trends in Europe. Roaming charges have been amongst the top issues on the European regulatory agenda. In 2005, The European Consumer Organisation noted that "International roaming charges in the EU are excessively high and cause significant damage to consumers. The lack of transparent tariff information and the lack of real consumer choice mean that consumers are not given an opportunity to put competitive pressure on providers to reduce their charges" (The European Consumers' Organisation 2005).

European Parliament noted the unwillingness of the operators to take voluntary action to reduce tariffs and in May 2007 took action. In its decision, the European parliament introduced a "Euro tariff at retail level (excluding VAT) not exceeding EUR 0.49 per minute for any call made and EUR 0.24 per minute for any call received for the first year. The price ceiling for calls made will automatically be reduced to EUR 0.46 and EUR 0.43, and for calls received to EUR 0.22 and EUR 0.19, in the second and third year respectively." (European Parliament adopted on 23 May 2007)

Pressure from high tariffs on roaming charges did not exist in the East African region, but European regulators tend to set the agenda for African regulators. The operators cannot fail to take notice of

the decision of European Parliament and the precedent set can make the regulators in Africa adopt a similar position, particularly among the region trading blocks.
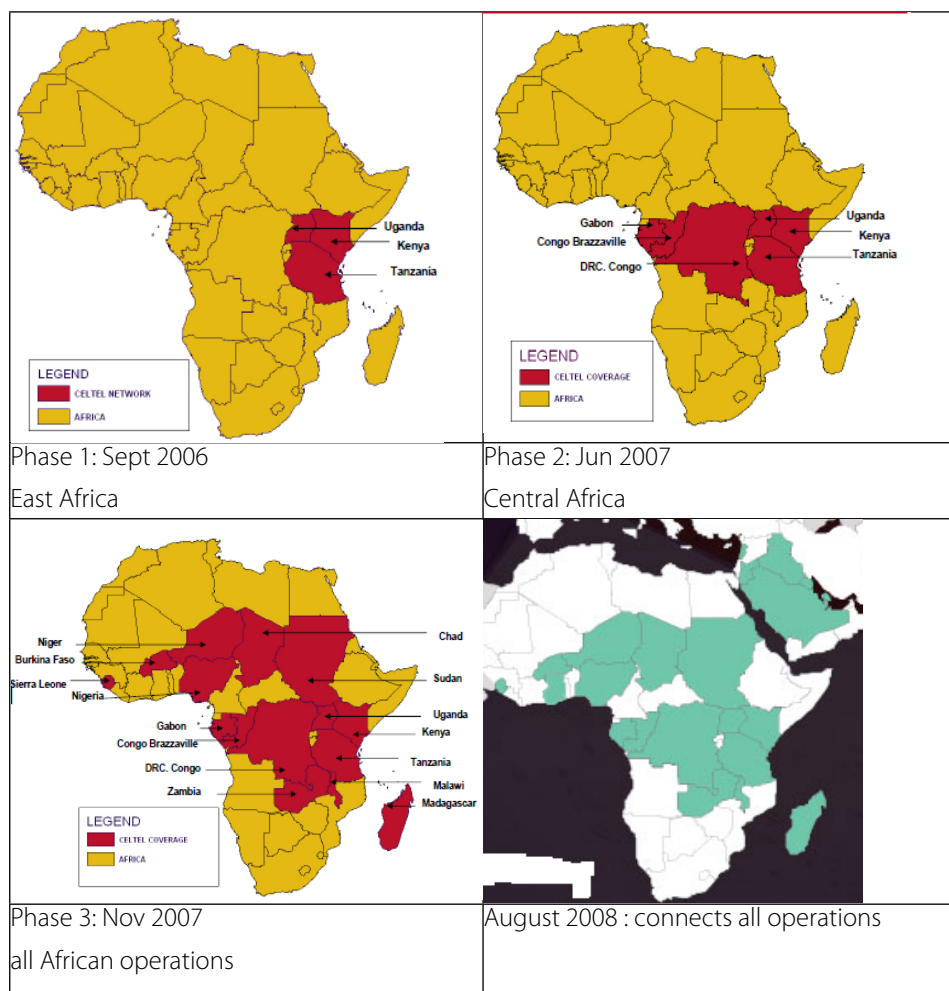
Enabling regulatory framework

Apart from the contiguous nature of Zain's network in East Africa, a critical factor was the fact that liberalisation of the market had not only allowed it to enter as a competitor to the incumbents there, but also to gain access to its own international gateways and not have to connect through the incumbents. Zain had cellular operations in Kenya, Tanzania and Uganda. Liberalisation on the international gateway was initially slow, starting with Tanzania, which was the first to grant an international gateway, followed by Uganda. In 2004, Kenya took a decision to liberalise international gateway and awarded Zain an international gateway licence in 2005. This provided an opportunity for a regional network and in September 2006 Zain took advantage of the liberalised regulatory environment and launched the One Network.

Evolution of ONE Network

The combination of these factors enabled Zain to launch One Network first in East Africa. This was later to be expanded across the Zain network as illustrated in the figure below.

A critical factor was the fact that liberalisation of the market had not only allowed Zain to compete to incumbents but also to gain access to its own international gateways and not have to connect through the incumbents

Phase 1: Sept 2006
East Africa

Phase 2: Jun 2007
Central Africa

Phase 3: Nov 2007
all African operations

August 2008 : connects all operations

Figure 1: Evolution of ONE network[1]

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[1] Source: Murray (2007) http://www.itu.int/ITU-D/partners/Events/2007/Nairobi_4-5June07/Presentations/2-2_CELTEL-Kenya.pdf

In April 2008, Zain launched One Network for the Middle East and connected all the Zain operations in Africa and the Middle East in August 2008. By connecting all its operations in August 2008, One Network connected 46 million Zain Group customers in 16 countries in Africa and the Middle East; a pioneering feat.

Market outcomes

Competitive response in East Africa

Shortly after the launch of One Network in September 2006, the competing networks in the three East African countries of Kenya, Tanzania and Uganda responded by creating their own competing seamless service. The service, branded Kama Kawaida (as usual), brought together partner networks in four countries, namely Safaricom in Kenya, MTN and UTL in Uganda, Vodacom in Tanzania and MTN Rwanda. These networks individually have the largest market share in each country as illustrated in Figures 2- 4.

In Kenya, Safaricom dominated the market and Zain had to explore ways to increase its market share. Exploiting its contiguous network to increase its market share was an opportunity that it exploited. As demonstrated in the Figure 2 the customer numbers grew, but not as fast as for Safaricom, which had responded swiftly to counter Zain's competitive advantage. By December 2008, Zain customers had increased to three million and a market share of 17%. Thus One Network helped retain customers in its network, especially in the face of two new players that entered the market in the last quarter of 2008, namely Orange and Econet Wireless.
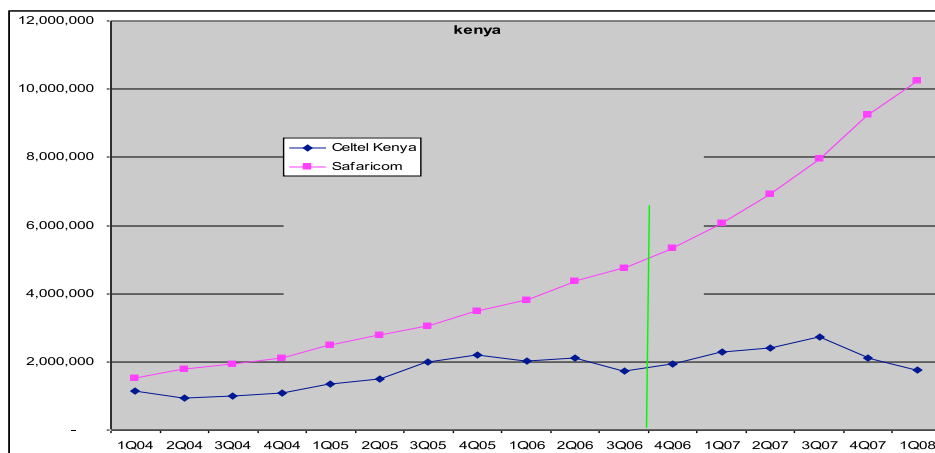

Figure 2: Kenya cellular subscriber trends[2]

In the Ugandan market, Zain customers increased, rapidly overtaking UTL, and grew at a faster rate than the market leader MTN as illustrated in Figure 3. Zain's market share increased to 25% against MTN's 42% by the third quarter of 2008. A respondent indicated that the One Network was a key product to facilitate publicity for the acquisition of new customers.

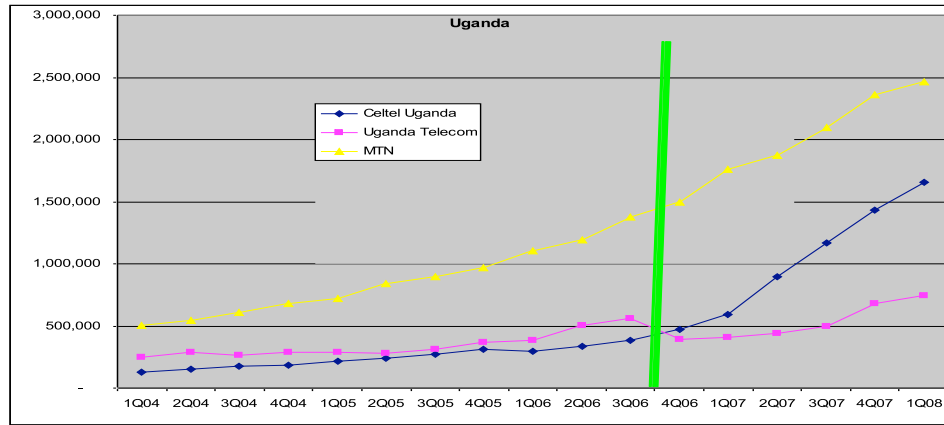[2] Source: Informa Telecoms and media (www.informatm.com)

Figure 3: Uganda cellular subscriber trends[3]

In Tanzania, Zain is the clear challenger, with a 28% market share against Vodacom's 42% by the third quarter of 2008 as illustrated in Figure 4.
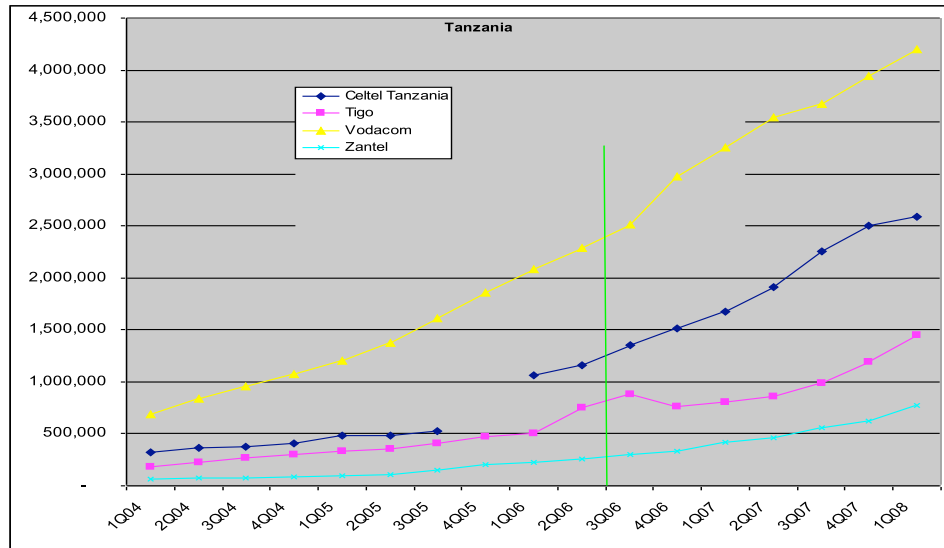
Figure 4: Tanzania cellular subscriber trends[4]

This is the scenario One Network had to contend with. With the launch of Kama Kawaida, the East African region had two seamless networks with similar features. This trend is continuing and more operators are exploring how to establish a similar network. Orange, with operations in Kenya, indicated that it would establish a similar network in Uganda once its network was up and running. This suggests that no entrant could hope to charge for roaming any longer.

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[3] Source: Informa Telecoms and Media (www.informatm.com)

[4] Source: Informa Telecoms and media (www.informatm.com)

Shepherding traffic flow

Operators without cross border partners are disadvantaged because the operators with a seamless network will hem them in. Additionally, an operator with contiguous operations can create barriers to ensure traffic is retained in its network. This was noted in the case of Kenya, where in one tariff plan calls to the competitor are highly priced to a factor of 3.4 times as illustrated in Figure 5.
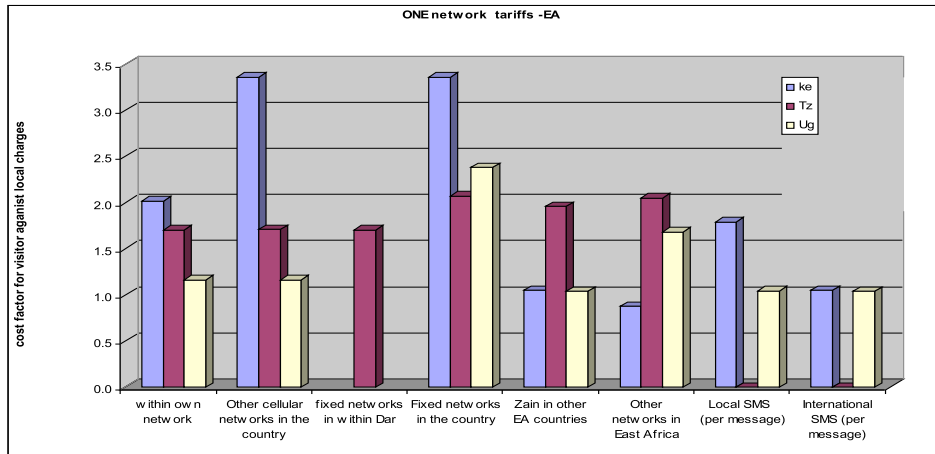

Figure 5: Comparison of One Network tariffs (Source: www.zain.com)

Implication on tax revenue to governments

No tax is levied for roaming traffic for the time being, pending a promulgation of a long-term framework. By not charging incoming calls, the tax revenue for the country is reduced and operators indicated that they were under pressure from governments. Operators argue that roaming traffic is actually an export service as described in WTO Mode 2 exports. Being an export roaming services justifies tax waiver like other export products and services. In Kenya, all exported services and goods are zero rated for VAT. Others have argued that the benefits of treating calls as local calls and therefore not incurring import or export taxes should be weighed against the benefits for the economy of potentially increased trade and directly increased taxes from increased profits of operators.

Africa and beyond

Following the successful launch of One Network in East Africa, Zain expanded the network to cover all its African operations and later the Middle East. This was a challenge to the other operators with a large footprint in the region. The MTN Group operating out of South Africa was the first network to respond. In November 2008, MTN Group announced plans to launch MTN Seamless to all countries in which it had operations. By the end of 2008, the MTN Group had tested Cameroon, Nigeria and Ghana, found the service successful, and took the decision to link all the countries within its operation by mid-2009 as illustrated in Figure 6, extending the One Network ideas further across the continent.

Operators without cross border partners are disadvantaged because the operators with a seamless network will hem them in with potentially anti-competitive outcomes

Figure 6: MTN Group footprint (Source: MTN Group)

This phenomenon caught the interest of regulators in the region. The Economic Community for West African States (ECOWAS) and the West African Telecommunications Regulators' Association have launched an initiative to link up all the countries in the West African region to end roaming in the region, and a similar initiative has been launched by the Communications Regulatory Association of Southern Africa (CRASA). As part of its adoption of a road map for regulatory harmonisation, ECOWAS included a component on regional mobile roaming (ITU, 2006). The West African Telecommunication Regulators Assembly (WATRA) has been particularly concerned by the absence of roaming agreements amongst West African operators, who roam via European operators, and continues to explore ways, through harmonization measures, of reducing high roaming charges, especially for pre-paid customers, by West African operators (Aiho 2007). The 'Home and Away Roaming' initiative being implemented by CRASA within SADC appears to be looking to resource intensive European regulatory models rather than learning any lesson from its neighbouring region. (www.crasa.org.bt)

Analysis

Christensen and Raynor's theory of disruptive innovation is useful in understanding what happened with One Network and why ultimately it did not become the dominant player in any of the national markets, though its position improved in all of them. As was argued above, One Network appears to be a hybrid of new market and low-end disruption. By reducing the cost of the service it did make available to consumers services that were not affordable to a large target population of people who historically have not had the money, and in some instances the understanding, to do this for themselves, and as result had paid someone with expertise to operate it for them or else gone without. It did provide a product that less affluent or skilled people could use in a more convenient way and which historically was available only to more skilled or affluent people. In this regard it certainly had potential for shaping the idea into a new market disruption.

Certainly customers at the low end of the market were happy to purchase a product with less performance if they could get it at a lower price, which may not have been bundled with associated high-end services, especially pre-paid customers who formed the bulk of roamers. It did create a business model that enabled it to earn attractive profits at the discount prices required to win the business of these customers at the low end, and in this way definitely competed with non-consumption that had existed in the roaming market before.

However Zain's disruptive innovation was sustaining to one or more significant players in the industry, who were able to mobilize their resource to creating a competing virtually integrated seamless network that would allow them to drop roaming charges in line with Zain.

So, a product or strategy that appears disruptive to some established companies might be a sustaining improvement to others, such as One Network's competitors who understood the importance of not losing the top-end clients who were their primary roamers. They argue that to be successful, a competitor needs something disruptive to all the established players in the targeted market or it should not invest in the idea. "If it is a sustaining innovation relative to the business model of a significant incumbent, you are picking a fight you are very unlikely to win." (2003:41) While Zain appeared to be on the right track with the only integrated service across the three countries, their disruptive pricing prompted innovation in their competitors who responded by rapidly establishing a seamless network that had simply not been envisioned before.

Enabling regulations opens the door for innovation

Conclusions & Recommendations

One Network became feasible due to the liberalisation of the international gateways in Tanzania and Uganda and finally Kenya, thus providing an opportunity for innovation by Zain. The outcome now supports the goal of regional integration at reduced costs.

Liberalisation therefore unleashed real market competition that drove innovation. As more players came into the market, One Network itself is a response to competition in the market that in turn created a competitive reaction from incumbents who had to find a competitive solution. The outcome was to drive cross border traffic up across all networks and drive down prices.

It would seem that a combination of this enabling environment and the weak position of new entrants in a competitive environment is what catalysed this innovation. Zambia, for example, is not part of the One Network due to policy restrictions on international gateways for competitors. This means that Zain is required to use Zambia Telecom for international traffic, which makes their local calls charges for cross boarder traffic unfeasible as they have to pay a premium to Zambia Telecom to use the monopoly international gateway. This denies both Zambians and international travellers the benefit of the One Network. In this market however, Zain is the dominant operator and although it has lobbied for permission to operate an international gateway the imperative to offer no cost cross border services is not as great as in those markets where it had a diminishing market share.

Market forces are good for the consumer

The overriding lesson is that creating the policy and regulatory conditions for competition can be more effective in enabling price innovation than seeking to enforce resource intensive regulation, as has been pursued by the European Commission.

While One Network did not result in a permanent disruption of the market or Zain becoming dominant in any of the East African markets in which it was operating, it did improve its market share substantially initially and ultimately its position in all three markets. The dominant operators responded to One Network by seeking to consolidate their positions with their own low-cost roaming solutions – Kama Kawaida and MTN Seamless Network. Consumers have certainly been the beneficiaries of this competitive innovation and the response to it.

One Network was able to break out of the mind-set of operators happy to mutually exploit each other's customers at premium charges totally unrelated to cost. Ending roaming charges across their networks, for which revenues were not very significant, exploited long known information that most traffic for roamers is destined for the home network and is best served from their home networks. According to Safaricom, 80-90% of the traffic generated by a roamer is destined for the home network or is traffic from the home network (Lewela Ganson, personal interview 24th Feb 2009, Zain Interviewee 1, 27th Feb 2009). While traffic generated and terminating in the visited country is insignificant and revenues associated with roaming were relatively low, it was an essential service for higher-end users, which all networks aspire to attract and retain.

The regulatory challenge posed by the developments relate to those of fair competition and exclusion. While the initiative arose from an underdog in all the three markets, it was able to create through its exclusive use of its international gateway, a service with which other operators could not initially compete. The combined resources of the dominant players in each market allowed them to respond by providing dedicated reciprocal access to each other's networks to emulate One Network. Other small players in these markets however were not able to do so and forced to continue paying international termination charges to their clients, preventing them from offering competitive services.

To expand the opportunities for innovation, a number of actions are necessary as detailed below:

- Review regulations with a view to enhancing liberalisation to enable business innovation.
- Remove taxes on roaming, as on other ICT services and equipment, to reduce costs by accepting Mode 2 supply for roaming traffic under WTO rules. This is an export service and should not be taxed twice.
- Create an enabling environment for single operation networks that cannot compete and are hemmed by multiple country operators.

To serve public interest objectives, these initiatives need to be linked to regional blocks and countries where interregional trade is highest. The private sector operates where they have licences, not where regional travel is significant. Thus the removal of roaming charges between Rwanda and Afghanistan made possible by MTN Seamless may not have the same economic multipliers as the linking of Uganda and Kenya, for example .

The end of roaming charges should be part of wider efforts and commitments to cost-based pricing (interconnection and retail) by African leaders.

Requirements to allow all operators to terminate calls on each other networks without incurring international terminate rates charges will need to be investigated to ensure that small operators outside of One Network or the rival integrated network of the dominant players are able to compete fairly.

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Zain Kenya (2009) at www.ke.zain.com viewed 18 February 2009

List of interviews

Country	Interviewees	Position	Institution
KENYA	Charles Njoroge	Director General,	Communications Commission of Kenya
	James Njeru	Manager, Policy & Regulation	Communications Commission of Kenya
	Ganson Lewela	International marketing,	Safaricom Ltd
	anonymous	International services	Safaricom Ltd
	anonymous		Zain Kenya
TANZANIA	Prof John Nkomo	Director General	Tanzanian Communications Regulatory Authority
	Dr Ray Mfungahema	Head Market Competition and Analysis	Tanzanian Communications Regulatory Authority
	anonymous		Vodacom
Uganda	Patrick Masambu	Executive Director UCC Chairperson of (EARPTO)	Uganda Communications Commission East African Regulators of Postal & Telecommunications Organization
	David Ongon	Head of Competition and Market Analysis	Uganda Communications Commission
	Abdul Musoke	Market Analysis	Uganda Communications Commission
	Jonas Bautulaki,		Uganda Communications Commission
	anonymous	Regulatory Affairs	Zain
	anonymous	Regulatory Affairs	MTN