

An orange hourglass is the central focus, resting on a stack of Euro banknotes. In the background, a spreadsheet with numerical data is visible. The entire scene is set against a light grey background with rounded corners.

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Review

Sustainable marketing at Safaricom Limited: The power of a good strategy

Paul Mpuga

Economic Commission for Africa, Ethiopia.

Received 2 April, 2017; Accepted 12 June, 2017

The study uses data and information from Safaricom Limited, a mobile telecommunications company listed on the Nairobi Stock Exchange as a case study to shed light on the marketing strategies that can work in Africa, a continent considered risky for potential investors. Given Africa's abundance of natural resources, good climate and large tourism potential and sustained high growth rates over the last one and a half decades, the continent offers strong potential for both domestic and foreign investment. But the marketing of the potential of the continent has not been successful, calling for increased attention to this area. The traditional marketing approaches used in the developed world may not apply on continent with a myriad of bottlenecks including weak poor infrastructure, civil strife, etc. Innovative approaches and marketing support services are required in order to tap into this potential. The paper argues that consistent application of strategic marketing approaches impacts profits and sustainability positively. Safaricom has built a strong brand that is based on high quality services and customer satisfaction. Controlling over 65% of Kenya's mobile telephone market, Safaricom has mastered its market through the use of differentiation, sustained investment in innovation and better understanding of its customers, and the brand reverberates across the country. The M-PESA mobile money payments and transfer platform, is one of such innovation by Safaricom that is transforming banking in the country, and supporting financial inclusion. Safaricom is a responsible corporate citizen that invests in communities and staff to advance livelihoods. Companies seeking to invest in Africa need to note that the continent is not one homogeneous basket of failure – there are successes in different parts of the continent and large potential to be reaped. The potential for good returns on investment exists in the services sector and others such as agriculture, etc., well beyond the natural resources sector. Sustained engagement in the market and clear understanding of clients' needs, segmenting the market and reaching out to the clients are important for success.

Key words: Brand, competitive advantage, differentiation, marketing strategy, sustainability.

INTRODUCTION

With the abundance of natural resources, good climate and large tourism potential, sub-Saharan Africa's growth and poverty alleviation programmes can benefit greatly

from increased investment (both domestic and foreign) as well as from good marketing of not only the available products but also the large potential.

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Over the past decade, Africa economic growth has been phenomenal and the continent is among the fastest-expanding economic regions today: on average Africa's gross domestic product (GDP) grew by 4.7% in the decade to 2011 (Chironga et al., 2011) and 3.7% during 2011 to 2015 (ECA, 2017), one of the continents that sustained growth during the recent global recession. However, marketing in Africa remains a daunting challenge. For example, formal retail distribution infrastructure and marketing support services are weak, implying that the conventional solutions for market analysis cannot work effectively.

Estimating the purchasing power of market segments or the impact of conventional value propositions require careful review. Large proportions of African economies are informal, with about 48% of non-agricultural employment in North Africa and 72% in the rest of Africa occurring in the informal sector (ILO, 2009), making it difficult to account for retail sales, for example, to estimate market size or to value opportunities and accurately target audiences or market segments (Chironga et al., 2011). Africa's market is not fully explored by many Western firms, and yet has strong potential.

Motivation of the study

Widespread poverty and inequality in Africa (Beegle et al., 2016; Chironga et al., 2011; ECA, 2017, 2016), coupled with civil strife and political instability in many parts, poor infrastructure, low levels of education and skills, and weak purchasing power (Agyenim-Boateng et al., 2015) make marketing in Africa, and marketing Africa as an investment destination a challenging job. Some of the most promising countries in Africa present the highest risk to business (Chironga et al., 2011).

Investors and marketers need information on success stories of businesses in Africa, and what is required to build and sustain strong brands. The emerging brand-conscious consumers in sub-Saharan Africa are as connected to the rest of the world and as demanding as those in the Western world; and as African economies grow and businesses expand, there is potential for marketers to tap into the expanding markets through new approaches (Bhan, 2014). Almost everyone in Africa is an entrepreneur (Law, 2016) and the potential for marketing of consumer and industrial products, electronics, equity investment opportunities, healthcare, etc. is large.

However, the knowledge and practices used by marketers elsewhere, for example, brand knowledge, consumer valuation of products and how to best to reach them, may not apply to the fragmented African markets. In addition, there is a dearth in literature on the mobile telephone network marketing, especially in Africa.

This study helps to shed some light on the marketing strategies that have worked for Safaricom Limited, and

that could be applied by other investors in Africa. Safaricom's transformation from a state-owned enterprise to a leading telecommunications company in Kenya and the East African region shows that good branding and focusing on quality and customer satisfaction are important for success. High-return investment opportunities in Africa beyond the natural resources sector exist, and can be reaped with sustained market engagement, clear understanding of clients' needs and reaching out to them as well as appropriate market segmentation. Innovations such as the M-PESA money transfer platform and investing in corporate social responsibility as part of the company strategy are also critical.

About Safaricom limited

Company

Safaricom Limited¹ is a public company established in April 1997 and the leading mobile network and communications company in Kenya and the Central and Eastern African Region. It started as a department in the formerly state-owned enterprise, the Kenya Post and Telecommunication Corporation. By virtue of the 60% shares held by the Government of Kenya at inception, Safaricom initially operated as a state corporation, as defined in the State Corporations Act (Chapter 446) Laws of Kenya, until May 2002 when its shares were floated on the stock exchange.

To-date, Safaricom accounts for 65.2% of Kenya's mobile telephone subscribers, and 42% of the enterprise solutions market (Safaricom, 2016a). The other three mobile telecommunications companies in Kenya are: Airtel Limited, controlling 16.6% of the market share, Orange Telecom Limited (13.2%) and Equitel Limited (5.1%). Among the many products and services, Safaricom provides mobile telephone network services: voice; short messaging service (sms); data; mobile money (M-PESA²); handsets as well as financial services and enterprise solutions to individuals, businesses and government (Safaricom, 2014a). Listed on the Nairobi Stock Exchange, Safaricom's leading shareholders are Vodafone Group Plc of the United Kingdom (40%) and the Kenya Government (35%); the rest of the shares are traded on the stock exchange, as indicated in Figure 1 (Appendix 1).

In 2016, Safaricom's total revenue amounted to US\$1.96 billion, a 20% growth over the 2015 level (Safaricom, 2016a).³ A good brand, high quality, wide range of products offered and excellent marketing approaches, within a conducive business environment:

¹ Referred to as Safaricom onwards.

² Pesa means money in Swahili, with M standing for mobile.

³ Financial year is April to March.

sustained economic growth and stable exchange rate underscore Safaricom's impressive performance (Safaricom, 2016a; 2016b; 2015b). Kenya's devolved governance system that was introduced in 2013 has expanded Safaricom's enterprise solutions offerings to the 47 counties (Safaricom, 2014a).

The Four Cs of good marketing: Company, Customers, Competitors, Community that take into account a broad view of the company, its key stakeholders and sustainability (Korngold and Little, 2012; Nager, 2009) are well underscored in Safaricom's business strategy.

Safaricom is a well-managed company with good understanding of and interaction with its internal stakeholders—the executives, major investors as well as all shareholders and employees. As a public company, Safaricom values and practices good corporate governance as being essential to sustainable stakeholder value. It complies with the Capital Markets Authority Code of Corporate Governance Practices for issuers of securities to the public (Safaricom, 2016a). Safaricom's marketing and sustainability strategies fit its competencies, interests and values. The company undertakes regular and open communication with shareholders, producing timely half-year and annual reports, responding to queries, investor briefing sessions and roadshows.

Customers

Safaricom has over 25 million registered subscribers and about 24 million M-PESA clients. It offers over 100 different products in its portfolio and has over 200,000 touch points to serve its customers efficiently (Safaricom, 2016a; 2015b). Customers include individual end-users (B2C), businesses, government institutions, and civil society organisations (B2B). Safaricom maintains its core customers through promotions of concessional offerings, especially on data and voice packages.

Competitors

The most direct competition for Safaricom services is from the other suppliers of mobile telephone and mobile money services. These include Airtel, Equitel and Orange network providers which together control about 34% of the market share (Figure 2, Appendix 1). Commercial banks and online payments systems such as VISA are competing with M-PESA for a share of the mobile money payments market. Local fibre operators providing internet and other on-demand entertainment, over-the-top players offering internet-based voice calls for example, WhatsApp and mobile virtual network operators for mobile money services are emerging as direct competitors (Safaricom, 2015a). Other consumer needs such as school fees, taxi fares, food and beverages, etc. constitute indirect competition. Emergent competitors

could arise in Safaricom's way, for example, new and cheaper sources of data, sms and voice interchange. Safaricom practices healthy competition as it is core to business ethical conduct, and brings higher value to clients (Safaricom, 2016a).

Community

Including civil society and government which can weigh great influence on business. Safaricom's maintains healthy engagement with its community including the Communications Authority of Kenya, government authorities; environmentalists; labor unions; media; celebrities; suppliers and vendors; people living near transmission masts; other people and organizations outside of your company (Safaricom, 2014a). For example, environmentalists and people living near the Safaricom masts and booster stations have often complained about possible health hazards and consumers complain about dropped calls. Safaricom embraces its community through continuous engagement, information sharing and undertaking corporate social responsibility (Safaricom, 2016a, 2016c). Existence of electricity, especially in the rural areas is a major complement to Safaricom services. Thus, investing in solar power provision in rural areas as part of its corporate social responsibility would make business sense. Collaborators include all businesses using M-PESA to make/receive payments. Almost everywhere one goes across Kenya (airports, kiosks, supermarkets, shopping centres, etc.) he/she finds a sign for M-PESA and Safaricom, helping to expand awareness of the Safaricom brand.

METHODOLOGY

The study uses data and information from Safaricom Limited as a case study to assess how strategic marketing approaches impact the company's brand, market share and profitability. The paper uses a desk review of literature on marketing and Safaricom's annual and sustainability reports as well as site visits to assess the company's marketing strategies, and how it applies the key principles of marketing: branding, competitive advantage, differentiation, commoditization and segmentation. Recent company financial returns, investments in corporate social responsibility (CSR) and literature on strategic marketing are reviewed to underscore the company approaches to marketing and understanding of its clients. The findings show that Safaricom has mastered its market and continues to invest to better understand its customers and what they want. The company applies the strategy of differentiation, with continuous innovation and engagement of its customers to remain a market leader in Kenya and beyond. M-PESA, a mobile money payments and transfer platform and now a household name, is one of such innovation by Safaricom that is transforming banking in the country. Companies seeking to invest in Africa need to note that the continent is not one homogeneous basket of failure – there are successes in different parts of the continent and large potential to be reaped. The potential for good returns on investment is not only in the natural resources sectors but also in the services sector, agriculture, etc. Second, sustained

engagement in the market and clear understanding of client's needs, segmenting the market and reaching out to the clients are important for success.

Conceptualisation

Marketing plays a critical role in a company's bottom-line of profits and sustainability. The marketing strategy and how it is implemented provides the interface between the company, its customers and key stakeholders. The company's approach to marketing should be part and parcel of its overall strategy. A good brand, differentiation, innovation and sustaining customer satisfaction are key to success. Applied well, good branding and differentiation create strong competitive advantage, which underscores the existence and long-term survival of organization (Porter, 1990, 1985). Firms succeed in competitive environments by doing things that differentiate them from the crowd in ways that are recognized and appreciated by current and potential customers, for example by focusing on the equality of products or service, customer care, etc. This helps to pull away and maintain a dedicated section of customers. In this digital age, with rapid technological advancements, the mobile telecommunications sector provides a good opportunity to explore how a company can thrive through differentiation as it has to constantly adopt competitive strategies.

Description of findings

As a telecoms company, branding is critical to Safaricom. Since its inception, the company has strived to create a strong brand as a mobile telecommunication service provider with a difference. Safaricom is a purpose-driven company with the vision "To transform lives" above profits (Mutingi, 2016). Brand includes a company's or product trademarks and the meanings invested in those trademarks by its stakeholders; it is a product of communication, and increasingly, relevant communication comes from customers, critics and marketers (Martin and Schouten, 2012). The most important element in branding is that it is what the people feel about the product, service or organization; the image of what consumers and stakeholders perceive a business, product or serve to be (Neumeier, 2003). Therefore, companies aiming to develop brands for or to sell brands in Africa need to understand the unique features of the continent and to design approaches that help to reach different segments of the markets. And as a trusted and valued household name, this is true of Safaricom and its innovative M-PESA mobile money platform. Thus, authenticity, ethics, integrity, transparency and trust are key in building and sustaining a brand. In today's digital world, consumers remain engaged with a brand through social media long after a purchase (Edelman, 2010), and satisfied consumers spread the word by mouth (Edelman, 2010) and by

mouse (Chouinard, 2005).

Competitive advantage

Safaricom's three-pronged strategy: customer first; relevant products; and operational excellence drives its advantage. Safaricom's services cover the entire country and the company prides in innovative and unique products. The innovative M-PESA mobile money service, for example, is a phenomenon in Kenya with almost all individual subscribers, businesses and other institutions using it to make/receive payments. Spearheaded by Safaricom, Kenya is a global market leader in mobile money usage, with a penetration rate of 985 registered mobile money accounts per 1,000 people (Twinpine Network, 2016). In 2013, Kenya's mobile-payments platforms led by M-PESA, handled more than US\$2 billion per month in transactions (Aye-baoteng et al., 2015). Competitive advantage is achieved through providing comparable buyer value more efficiently than the competitors, or through differentiation, that is, producing at comparable cost but in unique ways that create more buyer value than competitors (Porter, 1985). Competitive advantage persuades executives to undertake internal reflection of the company (The Economist, 2008), which Safaricom does annually (Safaricom, 2016a).

Commoditisation

Commoditization where goods with economic value become 'simple commodities' due to creative destruction (Giachetti, 2013) has not yet permeated the mobile telephone service, Safaricom's core products. Compared to the other providers, Safaricom give more to their customers for its products. For example, in 2016 the M-PESA accounted for almost 84% of all registered users and 91% of value of mobile money transactions in the country (Twinpine Network, 2016).

Safaricom also sells hand-sets including smartphones, tablets and other accessories, with some handsets selling for as low as US\$25. Consistent with the fact that many people in Africa have their first experience with a screen via a mobile phone (Twinpine Network, 2016) most of the Safaricom customers have their first internet experience through a mobile phone, which increases smart phone sales (Safaricom, 2016a).⁴

While mobile phone network services in Kenya are still growing and have not yet matured like in Europe or the United States where they have reached commoditization level (Kuzmic and Bowen, 2014), the emerging competition from commercial banks and other online

⁴ However, handsets constitute a very small proportion of Safaricom's total revenues (averaging 4.4 percent during 2014-2016).

payment mechanisms and money transfer services such as VISA risk the commoditization of M-PESA in the medium term. The company understands this risk and is thus continuously investing in innovation, quality improvements and new offering to guard against it.

Differentiation

Safaricom' main strategy is differentiation focusing on innovative and high-quality products as well excellent consumer experience. Market segmentation and pricing strategies, along with business plans and policies to minimise costs are also implemented (Safaricom, 2016a).

Given its market dominance, the company is also a price leader (Njuguna, 2012), and able to offer large discounts, ranging from 0 to 90 percent (Oloko et al., 2014) as well as bonus airtime for extended use. The company has reduced call rates from the equivalent of around US\$0.08 per minute in 2009 to about US\$0.03 per minute currently. The minimum charge for sending money has also been reduced to US\$0.01, and transactions below the equivalent of US\$1 are not charged (Safaricom, 2016b).

Safaricom aims to be the best mobile network and high-speed data provider in Kenya (Mutingi, 2016), with the mission to "*Transform the lives of our customers ... as they interact with us, our products and our services. We focus on need-driven, relevant solutions that offer unrivalled value*" (Safaricom, 2016a, 2016b).

Safaricom was the first mobile telephone company in Kenya and in the region to introduce mobile money services, M-PESA (an affordable, convenient and fast platform for transferring money and effecting paying) is now a business in its own right, generating over 20% of revenue (Safaricom, 2016b). M-PESA is the largest cashless payment system in East Africa, in terms of number of users and value of transactions. Safaricom partners with commercial banks to link customer accounts to M-PESA, making seamless transfers between the bank and M-PESA transactions.

The Safaricom marketing strategy goes beyond brand-driven approach of segmentation, targeting, and positioning. Customer equity, retention, and add-on selling as well as continuous awareness marketing (Blattberg et al., 2006) are applied. While the Safaricom brand awareness is right in the hands of the customer through the mobile phone or tablet and exists in basically all shops and supermarkets, the company continuously advertises to attract new customers and retain existing ones with relevant products, quality improvements, security and solution features.

The company also experiments with auditory marketing, new product creation, animation, place, content localization, brand alliances, use of celebrities and constant promotions to keep its brand alive among its customers. Some of Safaricom's marketing campaigns have received national marketing awards (Njuguna, 2012).

Indeed, the Four Ps of good marketing: Products, Price, Place and Promotion (Ehmke et al., 2007) are well underscored in Safaricom's marketing strategy.

Products

Safaricom offers quality and relevant products and services, including voice, sms, data, M-PESA and enterprise business solutions for corporate clients. Add-on applications offer customers more value to Safaricom products (Safaricom, 2016a); the Appstar' and Appwiz innovation challenges provide innovative clients the opportunity to experiment with local mobile applications and content development (Safaricom, 2014a).

To improve network quality, Safaricom invested US\$321 million in infrastructure upgrades and increased the number of base stations in 2016 to almost 7,000, as indicated in Table 1 (Appendix 2). Proprietary fibre is harnessed to build a dedicated enterprise business infrastructure to support for quality IT services to corporate clients (Safaricom, 2016a).

In 2007, Safaricom pioneered commercial mobile money transfer, M-PESA, the most successful service of its kind (Safaricom, 2016a). There are over 100,000 agent outlets countrywide. During April to September 2016, M-PESA revenue grew by 33.7% to US\$259 million (Safaricom, 2016b). Users can link M-PESA accounts to their bank accounts making shopping and payments for products and services an easy experience.

Price

Safaricom products are appropriately priced to attract and maintain customers; and Safaricom has the most call tariffs and internet bundle offerings compared to other mobile phone service providers (ref. Table 2; Appendix II; Safaricom (2016a); SoftKenya (2017); Airtel (2017); Orange (2017) and Sudi (2017) for a comparison of calling and internet tariffs). Pricing takes into account the different interests of customers, with base prices for airtime, data, sms and appropriate bundles to meet customer needs. The price elasticity of Safaricom products is relatively low⁵, because of low quantity consumed and low share in customers' total consumption budgets. Other factors including level of competition, business strategy, seasonality, nature of goods--luxurious goods or perishable vs. non-perishable have implications on pricing (Martin and Shouten, 2012), which is not lost on Safaricom. These qualities make products price inelastic to demand, helping Safaricom to be a price maker on most of its offerings.

⁵ A unit change in price leads to less than a unit change in the quantity demanded.

Place

Safaricom services are available across the country and service points are strategically located in major cities and urban centres. In 2016, Safaricom had 44 service centres and 3,800 sites, in addition to over 100,000 M-PESA agents (Safaricom, 2016a). In its services points, customers are attended to in a timely manner: on entry customers pick a number with identification of the service required. Staffs are polite and show mastery of customer concerns. Display in the service points is elegant, with the Safaricom green colour and logo providing a warm welcome.

Promotion

Safaricom promotes its brand through adverts in the media, billboards, the mobile phone through SMS and social media; discounts and special offers are made, customer days and special events are arranged to keep the Safaricom brand alive and offer solutions. Its well-designed, with easy navigation website promotes the Safaricom brand and products. For success, it is important to understand what consumers want (Mugica, 2004); promotions should reach the right customers and attract attention without annoying the viewer, which requires a combination of science (targeting) and art (compelling messages) (Nager, 2014).

Segmentation

In 2016, Safaricom made a major shift in focus from products to customers with a view to offer high-value services to different segments and sub-segments of its market (Safaricom, 2016a).

Indeed, for a mobile network company with internet connectivity, dynamism in market segmentation and seeking to continuously understand and address customer needs is key. As underscored by Yankelovich and Meer (2008), effective segmentation is dynamic, focusing on adaptable consumer needs, attitudes and behavior, rather than on longer-lasting personality traits. Traditional demographic traits: age, sex, education and income are less important in today's marketing strategies; non-demographic traits for example; values, tastes and preferences influence consumers' purchases more (Yankelovich, 1964). Thus, understanding actual purchasing behavior and updating consumer segments as buying patterns change is very important for a company (Nunes and Cespedes, 2003).

Segmentation helps to discover customers whose behavior can be changed or those whose needs are not being met and developing messages that speak to different consumer groups (Yankelovich and Meer, 2008). Safaricom has identified five market segments:

(1) Mass segment: includes the bulk of its pre-paid customers who account for 96 percent and general users of voice, data, sms and M-PESA.

(2) Hustler segment: artisans, taxi drivers and owners, small-scale commercial farmers and traders who use their phones to transact business and seek market information. For this category, a minimum balance of airtime for voice calls and M-PESA is key.

(3) Discerning professional: mid- to top level employees in corporations, civil society and government. These are clients who require mainly voice, data and M-PESA and occasionally sms.

(4) Youth: the young and dynamic segment. For a longtime, Safaricom has focused on this group—they require the whole package of voice, data, M-PESA and sms. They are on the internet and social media (facebook, twitter, whatsapp, etc.) all the time.

(5) Corporates and government institutions. These require bulk voice and data plans for their staff as well as enterprise solutions.

Further segmentation is achieved through the pre-paid and post-paid voice clients and pricing plans, e.g. basic short messaging services (SMS) and discounted SMS bundles for the different clients.

Solutions approach and quality assurance

A solutions approach is fully integrated in Safaricom's operational and marketing strategies, with product packages and service centres that meet customer expectations. All Safaricom service centres are staffed with technical personal to respond to customer needs, in a friendly and timely manner. The company invests in online applications and self-paced solutions to address customer concerns. By seeking and responding to feedback, Safaricom provides informed solutions to customer needs and concerns.

Continued innovations and solutions for different market segments are critical in the evolving mobile telephone service market. Long-term market dominance based on position and resources is possible in a stable environment; rapid changes in technology, demand, demographics and lifestyles call for rapid adaptation in order to sustain competitive advantage (Reeves and Deimler, 2011). These issues are alive in the mobile telephone service industry. Safaricom responds to signals of change through continuous innovation with its products and services, business models and marketing strategies. An innovative culture is promoted within the organisation and with external innovators to promote new and exciting innovations that meet and exceed stakeholder and customer expectations; and partners with relevant bodies to increase awareness on intellectual property rights and to safeguard against copyright infringement (Safaricom 2015a). A time line of key innovations since 2013 is provided in Table 3 (Appendix

2). As noted in Box 1, quality of products and wowing consumer experience are at the heart of Safaricom's strategy.

Box 1: Safaricom Service Quality Management

Network is the lifeblood of Safaricom business; network availability and quality are therefore critical to running and growth of the business since all the services are delivered through the network platform. The network allows for differentiation in a highly competitive market. It is the medium through which Safaricom transforms lives. Thus quality management and regular upgrades are key. In 2015, Safaricom was the first Kenyan network operator to deploy 4G, which offers between 5-10 times faster speeds than 3G (Safaricom, 2015b).

In 2015 average dropped call rate* was maintained at 0.3 percent of all calls made. This was thanks to proactive capacity development, investments in fibre network, new sites, modernising network equipment and acquiring competitor spectrum. However, Safaricom remained in second place in terms of 'dropped call ratio' and 'speech quality' during 2015 and 2014.

A key constraint to network quality is the fact that spectrum is allocated evenly among all network providers in Kenya, regardless of the number of customers and volume of traffic. With the increasing number of customers, adequacy and network coverage are strained. Safaricom's responds through the Best Network in Kenya programme (Best Network for You) and the corresponding regulatory Quality of Service targets.

Network availability, which depends on reliable power supply, is key to the quality of services. Network power failures remained high during 2014 and 2015 at 77 percent and 49 percent, respectively, above the 40 percent target. Strategies to minimize energy failure/outages at sites include use of grid supply, generators and alternative sources. Energy use and consumption targets are managed through deploying more energy-efficient technologies and alternative energy solutions. Solar water heating systems in buildings, energy efficient, intelligent Building Management Systems and LED lights in all facilities and shops are deployed. These approaches also contribute to reducing carbon footprint.

Source: Safaricom, 2015b. Safaricom Sustainability Report, 2015, pp. 28-34.

*This is calculated as a ratio of calls terminated while callers are talking and none has hang-up to all calls on the network. Reasons include: inadequate coverage; low signal quality due to poor radio coverage; interference between different subscribers; network congestion; and imperfections in network functioning. Dropped-call rate is a key indicator used by network operators and regulators to assess network performance (TRAI undated).

Risks and response

Key risks include; complex and dynamic regulatory framework, overall economic performance, exchange rate instability, information and cyber security, fraud and misappropriation of company assets and funds. Rigorous internal audits, continuous fraud monitoring, investigations—internally and working with law enforcement authorities, subscriber protection through secure products and safeguard policies and rising awareness with customers through cell and sms broadcasts are employed to curb fraud. As indicated in Figure 3 (Appendix 1), these measures have helped to reduce cases of fraud since 2014. Overall, cases of fraud investigated declined by 67 percent and 6.9 percent in 2015 and 2016, respectively.

Sustainability

Safaricom is one of the few companies in Kenya that has embraced the concept of sustainability and is committed to the triple bottom-line of people, planet and profits. It invests in innovation, its staff and society. Safaricom's annual sustainability reports, informed by the Global Reporting Initiative, measure and report its carbon footprint and recommend mechanisms to limit harm (Safaricom, 2016c, 2015b).

Based on its vision of transforming lives and material matters, Safaricom has identified nine sustainability objectives that balance its short-term position and long-term goals: the best network quality; minimal business disruption; continuous innovation and transformational products; inclusive financial and wealth growth; client data security; positive customer experience; valuing staff and supportive work environment; environmental protection and sustainable practices; and compliance with regulations (Safaricom, 2016a).

In 2016, Safaricom identified nine out of the 17 Sustainable Development Goals (SDGs), the global framework for sustainable development (United Nations, 2016b) against which to benchmark its sustainability interventions (Safaricom, 2016b), as summarized in Table 4 (Appendix 2).

Customer satisfaction and quality products

As indicated in Figure 4 (Appendix 1), the customer base increased by 11% in 2016 to over 25 million, attracted by a superior network, convenient airtime distribution and attractive consumer propositions and promotions (Safaricom, 2016a). Safaricom boasts of the best network in terms of quality and coverage across the county. Continuous engagement with clients through the customer special days, cell broadcasts and feedback portal is important to Safaricom. Innovation ensures product offerings meet customer needs helping to sustain loyalty.

Staff

Safaricom invests in a dynamic, motivated and technically competent staff and continuously builds their capacity through training. As indicated in Figure 4, Safaricom employed 4,258 permanent staff in 2016, 49% of them women; and over 86 percent in the age range 25 to 40 years (Safaricom, 2015a), which is key to sustaining a growing number of customers.

Environment

Safaricom takes seriously its responsibility to mitigate any negative environmental impacts of its activities. Since 2011, Safaricom publishes an annual Sustainability Report, underscoring the impacts of its activities on mother earth. The 2016 and 2015 reports, for example, consider Safaricom's material economic, environmental and social impacts and opportunities while exploring ways its technological footprint contributes to transforming lives and sustainable living (Safaricom, 2015a; 2016c). Total carbon footprint, e-waste collected, alternative energy solutions, environmental impact assessments and environmental audits are quantified. During 2014 and 2015, for example, Safaricom reported a reduction in carbon dioxide (tonnes equivalent) footprint from 72,362 tCO₂e to 61,452 tCO₂e (18%) and the cumulative e-waste collected increased from 50 tonnes to 220 tonnes (340 percent) (Safaricom, 2015b, 2014b). However, the carbon-dioxide emissions increased to 67,760 tCO₂e in 2016 (Safaricom 2016a).

Innovation

Investment in innovations is key in a continuously changing environment and customers demanding the right products and excellence (Safaricom, 2016). Innovations in healthcare provision, the mobile broadband access for schools and simplified platforms for application developers are important for sustainability.

Financial sustainability and profitability

As indicated in Figure 5, Safaricom has recorded a steady growth in its financials: net profits reached US\$380 million in 2016 (18.8 percent increase on the 2015 level); dividends paid out amounted to US\$304 million (an increase of 15.4%). In 2016, Safaricom paid almost US\$177 million in taxes to the government, an increase of 24 percent on the 2015 taxes (Safaricom, 2016a).

Social responsibility is key to Safaricom's strategy, with engagement and investments in various areas in this regard. Safaricom is among the few Kenyan companies partnering with United Nations Children's Fund (UNICEF) to advance the Child Rights and Business Principles, part

of the United Nations Global Compact (United Nations, 2016a). Safaricom has child development spaces within its offices and mobilises other businesses on the same (Safaricom, 2016a, 2016c; UNICEF, 2014).

The Safaricom marathon started as an idea to save endangered species in the Lewa Conservancy and has transformed many lives. Communities benefit from health, water and community projects with funds from the marathon collections. In 2015, the marathon raised US\$600,000 and had 1,400 participants, up from 180 in 2000 (Safaricom, 2016a).

The Safaricom foundation was established in 2003 to make meaningful and sustainable investments in and for Kenyan communities. The foundation increased access to health, education and water as well as economic empowerment, environmental conservation, disaster response, technology for good, arts and culture development. Since 2003 a cumulative US\$290 million has been invested to implement over 1,100 projects across the country (Safaricom, 2016a). Its strategic plan for 2014 to 17 aims to strengthen support for social, economic and environmental transformation among communities.

Established in 2010, the M-PESA Foundation uses mobile money technology in social investments focused on the most vulnerable communities and people for maximum impact. The foundation partners with the government and other organisations like Accenture, the African Medical Relief and Emergency Fund (AMREF), Kenya Red Cross Society and local societies to make lasting impact in health and education. The M-PESA Foundation Academy, a state-of-the-art mixed boarding high school, serves talented but economically challenged students and those with disabilities (Safaricom, 2016a; 2016c; 2015b). It promotes innovation and leadership. Currently, total investments in the M-PESA Foundation amount to almost US\$4.7 million in five projects: Rebuilding Kinango dam; Conserving our environment; Samburu maternal, neonatal and child health impact project; Health enablement and learning platform; and the Eburu Forest-Lake Naivasha Wildlife Corridor Initiative (Table 5).

In pursuing such objectives, credibility and protection of reputation is key; the worldwide cultural shift in consumer attitudes towards the environmental and social sustainability drive branding today (Martin and Schouten, 2012). Sustainability brings more value to firms through increased customer confidence and loyalty, competitive advantage, increased sales, lower costs, higher profits and long-term growth (Martin and Schouten, 2012; Chouinard, 2005). And these principles are not lost on Safaricom; the company is transparent and trusted.

CONCLUSIONS

This study highlights the major marketing principles

employed by Safaricom to become a national and regional leader in the mobile telecommunications and money services. Delivering relevant products, customer-focus, accurate reporting, integrity and transparency of company activities and impact on the environment and society are important in Safaricom's marketing strategy and for sustainability.

Aligning brand practice with the brand promise and engaging stakeholders in a company's offerings as done by Safaricom through platforms for innovation, supports sustainability. Engaged customers, employees, regulatory authorities and communities have stories to tell, which stories say much more than advertising (Martin and Schouten, 2012). Because marketing allows the company both to communicate its difference and to change consumers' attitudes, it is key to delivering business commitments on sustainability and embedding such goals into product development and business models (UNEP and Utopies, 2005). These principles are important in Safaricom's sustained competitive advantage and impressive progress—the Safaricom brand and M-PESA are flourishing across the country, appreciated and used by individuals and businesses, big or small, formal or informal alike.

RECOMMENDATIONS

Address staff concerns and strengthen controls: Safaricom annual reports and online commentaries highlight staff concerns that require attention. For examples, during 2015, 106 accidents were reported, four of which were fatal (Safaricom, 2015a). During 2012 to 2014, Safaricom sacked 126 employees on allegations of fraud. Promises of permanent contracts to some staff are unmet and staffs wait too long before final decisions.

(1) Continue to address quality and limit waste: In 2013, Safaricom paid US\$5,000 in fines to regulators due to a high number of dropped calls reported by clients (The Star, 2014). During 2016, dropped calls remained a concern (Mutingi, 2016). Investigating the causes of dropped calls and establishing measures to address them is needed. Limiting the quantities of materials used in packaging and deploy e-coupons for all airtime sales will help to reduce Safaricom's carbon footprint. As much as possible, materials should be sourced from within Kenya, to benefit the local economy, reduce costs and currency risk effects on Safaricom (Mugica, 2004).

(2) Loyalty Programme: Safaricom should consider a loyalty community programme to which members can sign-up to share experiences and ideas. A loyal community programme, such as Legofan.org can do much talking for a business, promoting sustainability and reaching out to vulnerable populations (Martin and Schouten, 2012).

(3) Support mass social causes: Through its wide network, Safaricom can be a force for good in support of social causes for example, vaccination campaigns, relief

emergencies, etc. by appealing to big populations through sms and email. Messages delivered through the 'big-seed' and 'viral' marketing approaches (Watts and Peretti, 2007) can reach the millions of Safaricom subscribers at once and then be spread to others in a few screen-touches and word-of-mouth.

(4) Implications for policy and other companies: As noted earlier, Africa is a continent on the rise, with large prospects for increased demand for consumer goods, telecommunications, etc. and thus investors and marketers need to pay attention to it. Africa's rate of urbanization is the highest in the world and the majority of consumers are young and willing to spend: 53% of income earners in Africa are between 16 and 34 years old. If Africa maintains its current growth and consumption trajectory, demand for consumer goods services will raise to US\$1.4 trillion in 2020 (Agyenim-Boateng et al., 2015).

This study shows that attention to strategic marketing pays large dividends to companies. Strategic marketing has been critical in Safaricom's transformation as a leading mobile telephone service provider, from a little-known state-owned enterprise. Safaricom innovated the M-PESA and today Kenya is a global market leader in the mobile money usage. The telecommunication companies in Africa continue to expand at phenomenal rates. Owing to low cost of labour, land and limited competition, Africa offers the highest returns compared other emerging markets. To succeed investors and marketers need to carefully study the market and growth poles and learn from the failures and successes others (Agyenim-Boateng et al, 2015). Companies need to plan and take stakes on the ground, with appropriate distribution channels. Consumer markets in African can provide the perfect laboratory for new solutions to the global disruption of traditional marketing (Bhan, 2014). And for investors seeking opportunities in Africa, Leke et al. (2016) identify six sectors of "white space" characterized by high growth, high profitability, and low consolidation: wholesale and retail; food and agri-processing; health care; financial services; light manufacturing; and construction. With manufacturing output expected to double to US\$930 billion in 2025 (Leke et al., 2016), Africa's growth and potential for investment will continue to attract interest.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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Appendix 1: Figures

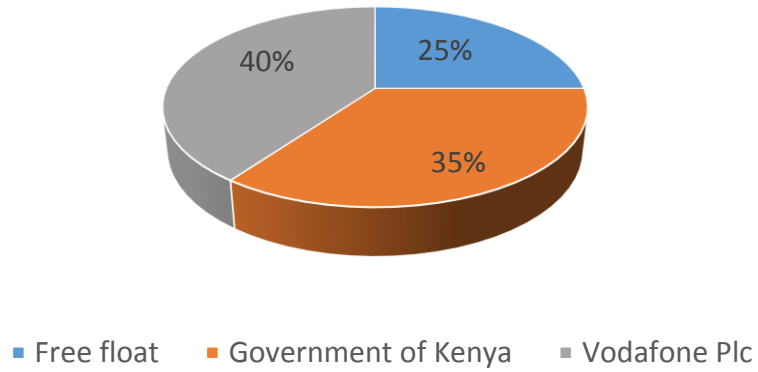


Figure 1. Safaricom shareholding (2015) (Data Source: Safaricom (2015b)).

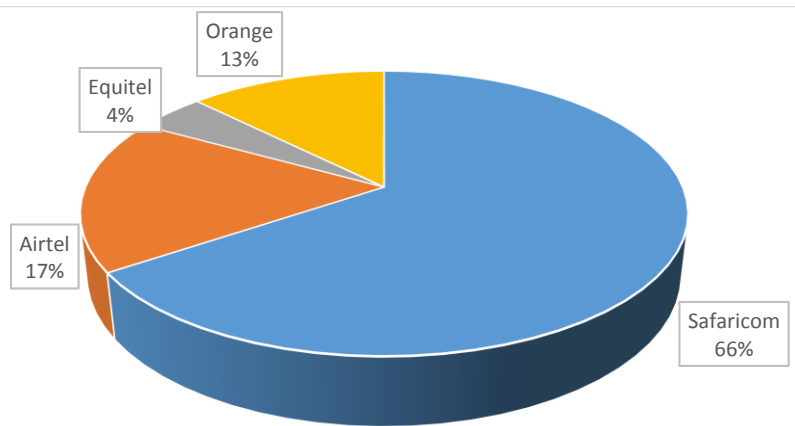


Figure 2. Mobile phone market share in Kenya 2016.

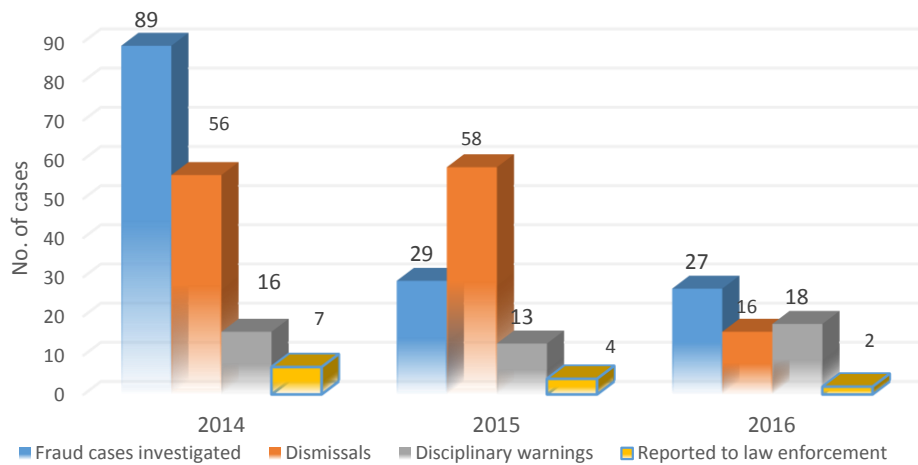


Figure 3. Anticorruption measures (Data source: Safaricom 2016a).

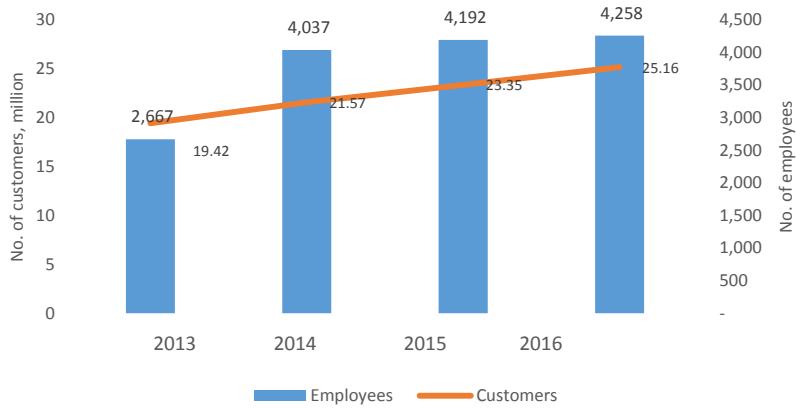
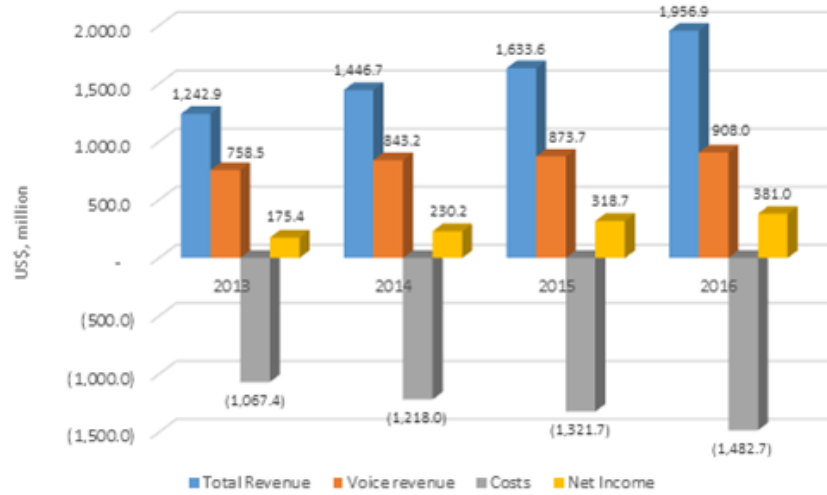
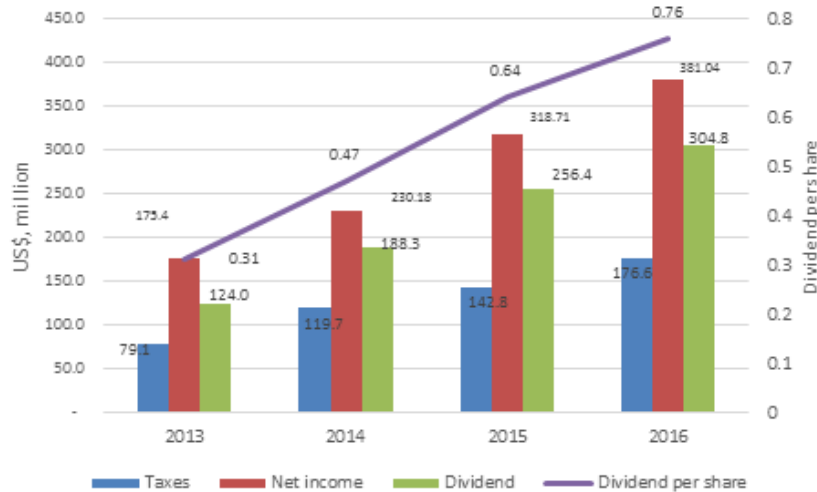


Figure 4. Steady growth in customers and staff (Data source: Safaricom (2016a)).



A



B

Figure 5. Safaricom financials for 2013 to 2016; A: Total revenue and costs. Voice is the biggest single source of revenue, but as a share of total revenue it is declining as revenue from data and M-PESA grows faster: in the first half of Financial Year 2016 (March-Sept, 2015), voice revenues accounted for 53% of total revenue, but it declined to 47% in the corresponding period in 2016 (Safaricom 2016b). Revenue growth is much higher than the growth of costs. During 2013-2016, revenue grew by about 16.4% per year while costs grew by about 11.6% per year; B: Net income and dividends/ taxes paid. About 80% of net income is paid out as dividends. Dividends per share have been growing, from 0.31 in 2013 to 0.76 in 2016 (Data source: Safaricom (2016a)).

Appendix 2: Tables

Table 1. Safaricom base stations.

Variable	2015	2016
2G+3G	3.382	3.800
3G	1.943	2.517
4G	236	467
WiMAX	195	193
Total	5.756	6.977

Data source: Safaricom (2016b).

Table 2. Kenya mobile phone service tariffs.

Internet charges	Daily bundles					Weekly					Monthly						
Airtel Kenya																	
Bundles – no time definition	6MB	15MB	20MB	50 MB	125 MB	350MB	750MB	5 GB	3GB	8GB	20GB	-	-	-	-	-	-
Cost, US\$	0.05	0.10	0.20	1.00	1.00	2.50	5.00	10.00	19.90	39.90	79.90	-	-	-	-	-	-
Unlimited offer, US\$	2.50	-	-	-	-	-	12.99	-	-	-	34.99	-	-	-	-	-	-
UnlimiNet	-	-	-	-	-	-	5.00	-	-	-	20.00	-	-	-	-	-	-
Orange Kenya																	
Bundles	20MB	50MB	100MB	-	-	-	-	-	50MB	-	100MB	-	500MB	1GB	-	5GB	-
Cost, US\$	0.20	0.50	1.00	-	-	-	-	-	0.50	-	1.00	-	5.00	7.50	-	27.50	-
Unlimited	Daily	Weekly	Monthly	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cost, US\$	0.50	2.49	9.90	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Safaricom																	
Package	5MB + 5SMS	15MB + 15SMS	35MB + 35SMS	60MB + 60SMS	150MB + 150 SMS	5MB	10MB	30MB	65MB	130MB	100MB	300MB	1GB	3GB	7.5GB	12GB	-
Cost, US\$	0.05	0.10	0.20	0.30	0.50	0.05	0.10	0.30	0.30	0.50	1.00	2.50	5.00	10.00	20.00	30.00	-
Calling rates																	
Domestic call rates																	
Airtel	Peak time: 08h00 – 22h00		Off Peak: 22h00 – 08h00		Airtel	Canada, China, India, USA, UK-fixed line	East Africa Uganda, Rwanda, South Sudan	South Africa, UAE & UK-Mobile	All other Africa except Madagascar	Madagascar, N. Korea, Western Samoa	-	-	-	-	-	-	-
US\$, /minute	0.04		0.02			0.04	0.10	0.18	0.30	0.50	-	-	-	-	-	-	-
Orange	Orange to other net works		Orange-to-Orange all time		Orange	-	-	South Africa, UAE & UK-Mobile	Madagascar	North Korea	-	-	-	-	-	-	-
US\$, /minute	0.03		0.02			0.05	0.10	0.18	0.85	2.00	-	-	-	-	-	-	-
Safaricom ¹	Peak time: 08h00 – 22h00		Off Peak: 22h00 – 08h00		Safaricom	-	Uganda, Rwanda	Burundi, Tanzania	-	-	SA, UK	Rest of Africa	Rest of World	-	-	-	-
US\$, /minute	0.04		0.02			0.05	0.10	0.25	0.50	1.00	0.18	0.30	0.40	-	-	-	-

Data sources: Safaricom (2016a); SoftKenya (2017); Airtel (2017); Orange (2017); Sudi, D., (2017). ¹ In addition, Safaricom offers calling bundles, with cascaded per minute cost at different rates for Safaricom to Safaricom and Safaricom to other networks. For example, a US\$5.00 bundle allows for a calling rate of US\$0.30 on Safaricom to Safaricom or US\$0.035 per minute on Safaricom to other networks; and a US\$30.00 bundle permits calling at US\$0.0125 and 0.025 for Safaricom-to-Safaricom and Safaricom-to-Other Networks, respectively. The maximum bundle is US\$100, which allows for calls a cost of US\$0.01 and 0.02 per minute for Safaricom-to-Safaricom and Safaricom-to-Other Networks, respectively.

Table 3. Safaricom innovations timeline 2013 to 2016.

Year	Innovation	Objective	Key features/ outcomes
	My Safaricom App	Aimed at improving customer experience; App mirrors the user's account and incorporates key shortcuts; Empowers users with self-care features to resolve most issues on their own	Airtime top-ups; request for M-PESA statement; view, redeem and transfer <i>Bonga</i> points; purchase data and SMS bundles; talk to customer care agent via Live Chat and Facebook; SMS management
	Sendy, a technology enabled courier service	Supports strategy of transforming lives; Allows customers to send packages motorcycles (<i>bodabodas</i>) and small trucks and track them in real time; Offers 24/7 delivery service accessible by customers via mobile and web	Riders can be tracked via GPS until delivery of the goods; Financed through the Safaricom Spark Venture Fund
2015-2016	M-tiba mobile centric medical management platform	Provide better coordination between sponsors, patients and providers in the health sector; Fast and affordable internet connection located in the various buildings that are connected onto Safaricom fibre	Diversifying solutions offering to cater for the needs of enterprise customers to suit their different business requirements
	The e-Citizen platform and M-PESA payments	Increased access to government services; Stronger collaboration with national and devolved governments to develop relevant/tailored solutions; The portal allows people access to government services via mobile phone.	Saves time and implements the digitalisation agenda of government services
	<i>Eneza</i> Education partnership e-learning startup	Low-cost study tool offering learners lessons and tests via SMS, web and mobile app platforms; Includes "ask-a-teacher" feature, for learners to ask questions virtually to a teacher	Teachers and parents and guardians can review performance reports of learners and school performance via SMS
	Safaricom M-ledger	M-Ledger is an M-PESA financial journal that provides Android phone users with statements on their M-PESA accounts, search for Paybill, Bank to M-PESA and Lipa Na M-PESA merchants; It is a partnership with Dynamic Data Systems, a start-up from Safaricom Appwiz 2013	Launched in November 2014, the application closed the year with over 120,000 users
	Spark venture fund	US\$900,000 venture capital fund to support development of high potential mobile technology start-ups; Building and nurturing innovative entrepreneurs; Support in form of capital investment and technical assistance	Start-ups to receive funding of between US\$60,000-220,000
2014-2015	Zindua Cafe	Innovation portal targeting external innovators, replaced submission of ideas via email. Launch was themed "How to protect it and monetise it"; Partners Kenya Industrial Property Institute (KIPI) and the Kenya Copyright Board (KECOBO)	Supports innovators' property rights
	<i>Okoa Stima</i> (Light up)	A partnership with Kenya Power (national electricity distributor) to provide micro-credit to retail consumers allowing them to continue using electricity services	-
	Safaricom Appstore	Strengthened partnerships with local developers and organisations to promote applications; Partnerships with OLX, Hello Food and Easy Taxi promoting relevant applications; increased downloads from Safaricom Appstore	Led to increased uptake of local applications. Over one million downloads over the last financial year
	<i>Vuma</i> online	Establish 3G Wi-Fi hot spots in public transport vehicles, ' <i>matatus</i> '; Enable the youth to conduct academic research on the go	Some 24.5 GB worth of data is used in the <i>matatus</i> daily; Helped business owners on the programme differentiate themselves.
	Safaricom Mymarket	Online merchandising platform offers free auction services through mobile phones. Includes jobs, classifieds, automobiles, property, mobile phones and electronics	Can be accessed via USSD
	Google Free Zones	60-day Google campaign gave Safaricom mobile users free access to Google+, Gmail and Google Search; Customers warned about data charges for links outside the Free Zone	100,000 customers became users over the two month period
2013-2014	Cashless FMCG distribution using M-PESA	Safaricom partnered with Fast Moving Consumer Goods (FMCG) companies in Kenya to introduce cashless payments via M-PESA	Benefited distributors and M-PESA agents with FMCG companies to cut their cash handling costs
	Chattitude and 10+10 for 10	Offered subscribers daily 20MB data bundle at US\$0.10 per day to browse and communicate via social media channels such as Facebook, Whatsapp and Twitter	Created excitement around the Safaricom brand, especially among youth
	<i>Bonga</i> part payment and tablet	Gives option of using part cash and part loyalty points to purchase internet capable devices	Contributed to sales of over 1 million devices
	Safaricom Appstore In collaboration with Vodafone	Aimed at availing data to everyone; Allows customers to download apps on their phones. Safaricom subscribers can browse Safaricom Media store (www.safaricom.com), view information and reviews, download and install them on their devices	Applications developers can upload and monetise their apps
	The Safaricom Appstar competition	Promote local content; Joint effort of Safaricom and Vodafone; Open to local developers and students	Winning apps are hosted on the Safaricom appstore and available to Vodafone customers

Innovation is fundamental to Safaricom's differentiation strategy. Many of the products and services are industry firsts, setting benchmarks for telecommunication innovation in Africa and beyond. Safaricom introduced the ground-breaking mobile banking solution, M-PESA, in 2007, which has transformed the lives of millions of Kenyans and beyond. Innovations in education, healthcare, on airtime sharing, micro savings and credit service, etc. are helping communities (Sources: Safaricom, (2016a, 2015a, 2014a).

Table 4. Safaricom sustainability benchmarking against the SDGs.

Goal	Short name
3	Good health and well-being
4	Quality education
7	Affordable and clean energy
8	Decent work and economic growth
9	Industry, innovation and infrastructure
10	Reduced inequality
12	Responsible consumption and production
16	Peace, justice strong institutions
17	Partnerships for the goals

Data source: Safaricom (2016a); United Nations (2016b).

Table 5. M-PESA foundation projects 2016.

Project	Objective	Sector	Investment, US\$, million
Rebuilding Kinango dam: integrated food security project	Improve the living conditions of at least 2,500 people directly and 10,000 others indirectly. The community donated 105 acres as part of their ownership of the food security scheme	Environment	2.07
Conserving our environment	Achieve the Nairobi Greenline ambition through establishment of a green buffer zone	Environment	0.43
Saving our mothers - Samburu maternal, neonatal and child health impact project	Provide health care services to the most vulnerable communities, focusing on improving maternal health care and reducing under-five mortality. At least 300,000 community members reached and 3,360 community health volunteers trained	Health	Not indicated
Health enablement and learning platform: improving community health	Ensuring the most vulnerable and marginalised people get access to health care services	Community health	0.54
The Eburu Forest-Lake Naivasha Wildlife Corridor Initiative	Support the conservation of the Eburu ecosystem. 55,000 community members reached; over 200 of endangered animal species protected from poaching; 22 threatened tree species protected from destruction; 8,715 hectares of wildlife habitats protected from poaching and water tower host protected from encroachment	Environment	1.65
Total investment			4.69

Source: M-PESA Foundation (2017); Safaricom (2016a).

Full Length Research Paper

The determining factors of broadband use in Africa: inhibitors and enablers of the use of mobile broadband

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This study extends Technology Acceptance Model (TAM) to study inhibitors and enablers of the use of mobile broadband in Africa. The conceptual model tested incorporates two key constructs into TAM: Perceived price and energy —are also analyzed. Results from online survey, of 114 mobile internet consumers supported the model. The study identified the factors that can influence their decision-making and the various obstacles they face in the use of mobile-broadband. The theoretical and managerial implications of these results are discussed.

Key words: Mobile-broadband usage, TAM, Sub-Saharan Africa, structural equation.

INTRODUCTION

According to the International Telecommunication Union (ITU), there were more than seven billion four mobile subscribers globally in 2016. This figure is expected to reach one billion additional mobile subscribers in 2020 which 90% of them will come from developing markets. The resounding success of mobile telephony could be explained on one hand, due to the advancement in technology coupled with economic changes and on the other, the liberalization of the telecommunications sector and the growing need to connect to the Internet.

Presently, the rate of penetration is 94.1% for the developing countries. However, by the end of 2017 this penetration rate would have reached 100% and for the developed countries, it would reach more than 127%. Thus, by the end of 2014, the penetration rate of mobile

broadband will reach 32%; in developed countries, it will be 84%, four times what it is in developing countries (21%).

Moreover, with the growing need to connect to the Internet, the mobile phone will become the primary means for connectivity (Cheneau-Loquay, 2010) and would represent 80% of all connections in 2015. While the upheaval in the world of telecommunications and the use of the internet started some fifteen years ago throughout Africa (Cheneau-Loquay, 2011), it has been found out that there is a rapid increase in the use of the internet via the mobile phone.

According to the Agency Ecofin, the growth of mobile internet services in Africa is at an exponential rate. More than 500 million people, today, have access to

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broadband (3G and 4G). This figure estimated by ITU, will increase, according to the same source, to 3.4 billion by 2016.

In sub-Saharan Africa, broadband technology was launched in 2004 and there are now 21% Active mobile-broadband subscriptions. This is due to the increased speed for the exit traffic internationally, following the interconnection to the submarine cable.

Given the huge potential of the mobile-broadband on the sub-Saharan Africa market despite the low coverage of the 3G and 4G networks, socio-economic difficulties, the repetitive power failures, and faced with the absence of studies in this area, in Africa and particularly in sub-Saharan Africa this paper could be a contribution to stimulate the growth in mobile-broadband in sub-Saharan Africa, and act as a bench-mark for other researchers and enable practitioners to build their strategies for deployment of broadband in these countries.

What are the factors affecting or influencing the use of mobile-broadband services in the sub-Saharan Africa?

To answer this question, we must recall at first the background literatures justifying consumer behavior and theories relating to the appropriation of information technology and communication (ICT). This literature review will lead to the study research model that will be tested with a hypothetical-deductive approach. In a second step, we will present the methodology used for this research, which takes into account the context of the research, sampling, and measurement instrument for the implementation of the constructs. Finally, we will present the results which will then be discussed before conclusion.

LITERATURE REVIEW

Overview of the evolution of mobile-broadband (3G, 4G)

According to Chong et al. (2010), 3G is known as mobile communications of third generation. The 3G technology is defined as "the new generation of telephone communication system allowing the fusion of terrestrial and satellite components. It supports up to 2 Mbps transmission speed".

Globally speaking, 3G is a technology that has reached its maturity as it is deployed in virtually every country in the world. As a technology, 4G continues to develop. Operators are already making considerable amount of progress in increasing the data speeds of their existing networks by adopting 4G, which can theoretical achieve downlink speeds of up to 300 Mbps.

The development of smartphones "low Cost that is, with a value of less than USD 50, as Orange Kliff or Elikia (first African smartphone VMK created by the Congolese manufacturer) boosted the use of mobile broadband in

countries where 3G / 4G networks are installed (Table 1).

Factors of adoption of mobile-broadband

Three main models are the basis of most studies on the diffusion and adoption of innovations: the Bass model (1969), the Rogers model (1962, 1971, 1986, 2003) and TAM model (Davis, 1989).

This study will focus on the Technology Acceptance Model (TAM) based on the adaptation of the Theory of Reasoned Action (TRA) (Fishbein and Ajzen, 1975). Introduced by Davis (1986), TAM is used to model the user acceptance of information systems. Its aim is to provide an explanation of the determinants of acceptance and use of technologies.

The literature shows that the TAM was made to trace the impact of external factors on the beliefs, attitudes and intentions by identifying a limited number of variables suggested by previous researches. The TAM is based on two beliefs, in particular, "perceived usefulness" and "perceived ease of use" to explain the attitude of the user; its intentions and behavior adoption of a technology based on computer. In a precise way, Davis defined perceived usefulness as "the degree to which a person believes that using a particular system enhances work performance." "As for the perceived ease of use, Davis shows that it is" the degree to which a person believes that using a system requires no effort".

TAM may explain the success or failure in the adoption of new technologies (Straub et al., 1997). According to Taylor and Todd (1995), the TAM can predict the determinants of acceptance of a system and guide changes required before users can develop experience in the use of the system studied (Figure 1). Like with any human representation, perception is more or less part of subjectivity. In fact, in his model, Davis (1989) connects the perceived usefulness and perceived ease of use with the attitudes of usage which in turn produces the actual usage of technologies.

Thus, the TAM's objective is to explain and predict based on a diagnostic, the eventual inhibitors of usage that can possibly influence the behavior of the user based on his initial experience with the technology (Deng et al., 2005).

Research model and hypotheses development

The study research model will rely especially on the TAM (Davis, 1986). The choice of this model focuses on the possibility and the ability to contain the more constructs as possible that preoccupy us in order to explain the individual decision of use of mobile-broadband in the Sub-Saharan Africa.

The TAM uses two determinants of attitude toward use: perceived usefulness and perceived ease of use. Figure 2 presents our conceptual model that derives from the

Table 1. Evolution of 3G and 4G technology.

Generation	Primary services	Key differentiator	Launching
3G	Phone calls, messaging, data	Better internet experience	2000
3.5G	Phone calls, messaging, broadband data	Broadband internet, applications	-
4G	All-IP services (including voice, messaging)	Faster broadband internet, lower latency	2010

Source: GSMA intelligence.

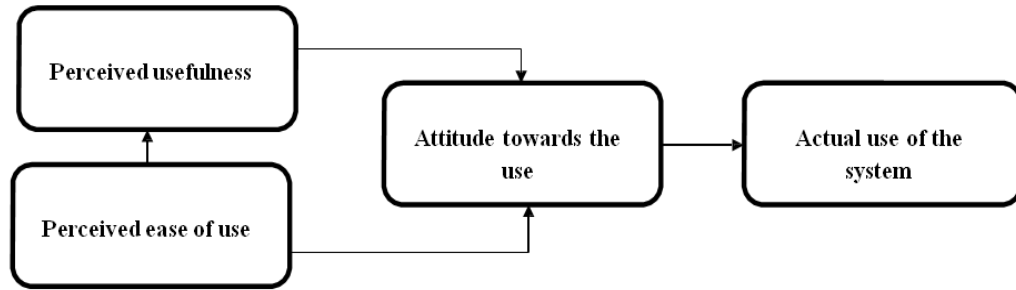


Figure 1. Diagram of the original version of TAM (Davis, 1986).

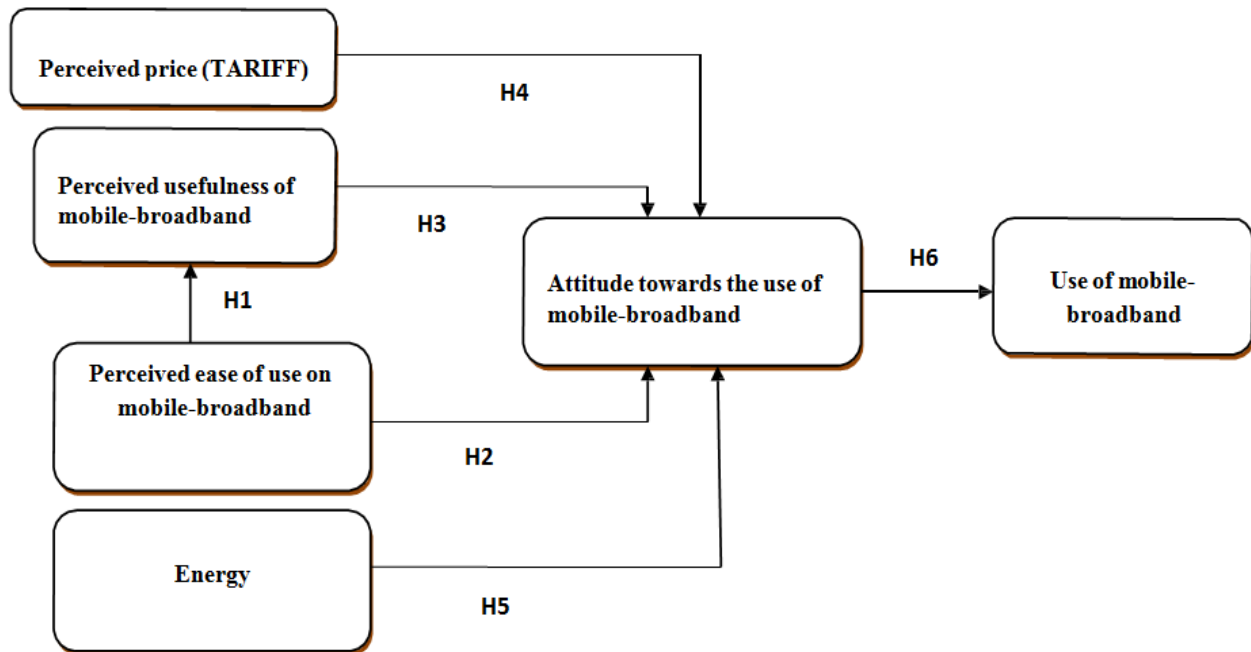


Figure 2. The conceptual model of the research (Source: author).

TAM which adapts to the realities of the Sub-Saharan Africa. We included into the TAM other variables such as cost and energy. The constructs of the conceptual model as well as the assumptions of the research will be explained in the remainder of this section.

Perceived ease of use

Perceived ease of use refers to the degree of belief that technology will be used effortlessly by the user. Davis (1989) defines it as the degree to which the user finds

that the use of the system does not require a large effort. This model refers to the one of Rogers (1995), which expresses the degree to which the innovation is perceived difficult to be used.

In the study research, the ease of use is reflected in the degree of non-complexity. It shows how the use of mobile-broadband is seen free of effort. We connect in the study constructs, the perceived ease of use to perceived usefulness and attitude towards the use of mobile-broadband. The relationship between perceived ease of use and perceived usefulness has been studied in several researches on information systems.

Most of these researches have shown that perceived ease of use is an antecedent of perceived usefulness (Davis, 1989; Mathieson, 1991; Taylor and Todd, 1995; Szajna, 1996). In this research, we assume, based on his theoretical contributions that even for mobile-broadband technology, perceived usefulness is influenced by perceived ease of use.

We then enunciate the hypothesis

H1: The perceived ease of use positively influences perceived usefulness of mobile-broadband technology.

In the literature, the feeling of being for or against the use depends on the attitude towards use. Katz (1997) shows that the barriers to the adoption of the internet are represented by the inability to use the internet, the difficulty of access, the complexity of the technology and discomfort with the use of computer. Childers et al. (2001) showed that the perceived ease of use is a determinant of attitudes toward interactive storage.

Some research in information systems, have empirically verified that the user is a direct determinant of attitude (Mathieson, 1991; Taylor and Todd, 1995; Agarwal and Prasad, 1997). We rely on the existing literature to suggest a relationship between the perceived ease of use of mobile-broadband and attitude towards its use. We think that users, who find mobile-broadband technology easy to use, will have a favorable attitude toward its usage. Thus, we state:

H2: The perceived ease of use of mobile-broadband positively influences the attitude towards using mobile-broadband.

Perceived usefulness

The perceived usefulness is defined by Davis (1989) as; the extent to which a person believes that using a particular system would enhance his job performances. It reflects the perceptions of performance gains to be achieved by the use of technology.

Thus, the perceived usefulness depends on the degree of belief that technology will help increase the

performance of the user in his work. This joins the definition of "useful" that means according to Davis (1989) "capable" of being used advantageously and profitably.

In the study research, perceived usefulness shows the advantages that he/she can derive from the use of mobile-broadband, such as saving time, money and convenience. We propose, in this research, to link the perceived usefulness with the attitude.

Relationship between perceived usefulness and attitude towards the use of mobile-broadband

The notion of utility refers to the perceived benefit (Au and Enderwick, 2000) and positive consequences of behavior (Davis et al., 1989). We then propose the following hypothesis:

H3: Perceived usefulness of mobile-broadband positively influences the attitude towards the use of mobile-broadband.

The price is generally defined as an internal standard that allows consumers to evaluate a product or service offering (Shirai, 2003). In fact, the price involves in all purchasing decisions and the consumer is always looking for the "best price" (Urbany, 1986). The effect of price on the act of purchasing has been highlighted by several authors (Kopalle et al., 1999; Paap and Franses, 2000; Pauwels et al., 2002; Van Heerde et al., 2000). Other researchers suggest that consumers perceive the price as an indicator of the quality of a product, also perceive the price as a positive indication of the level of prestige of a brand (Lichtenstein et al., 1993).

Following this logic, Vigneron and Johnson (1999) suggest that consumers seeking prestige by ostentation attach particular attraction to price as an indicator of prestige, since their main purpose is to impress others. The Veblen effect "higher the price of a good, the greater the good is claimed to the extent where it becomes a socially distinctive sign" illustrates this phenomenon. Lambrecht and Skiera (2006) are interested in the choices made by customers of an Internet Service Provider (ISP). Their conclusion states that the choice of a tariff depends on the degree of uncertainty in terms of future consumption.

Zollinger (1995) argues that buyers consider or evaluate prices comparatively, that is to say, they perceive price differences and use them in decision making. In this context, according to this author, the price can have both a driving force and / or brake.

Relationship between perceived price and users' attitudes towards the use of mobile-broadband

Financial resources (Mathieson et al., 2001) that must

engage the consumer to access the internet and then to the navigation can be seen as more or less severe. This could lead to a negative attitude and a barrier to the adoption of mobile-broadband. Also, previous studies of Ong et al. (2008), Xin (2004) and Agarwal et al. (2007) showed that price is one of the main obstacles for users to adopt mobile-broadband.

According to Xin (2004), one of the factors explaining the acceptance of SMS by users is its low cost that allows users to communicate. However, recent studies led by Chong et al. (2010) showed results that contradict with those of Ong et al. (2008), Xin and Pagani (2004) and Agarwal et al. (2007).

The results of the studies show that the cost is not a determining factor in users' intentions to adopt mobile-broadband. Indeed, it would then be interesting to study whether the Sub-Saharan Africa consumers are willing to spend on mobile-broadband services, given the tariff plan in force. Hence the following hypothesis:

H4: The perceived price has a positive influence on the attitude of users towards the use of 3 G.

Energy

It occupies a privileged position as a key sector to reviving the economy. This is a factor of wealth production and a driving force for socio-economic development of the country. Energy has played a major role in human and economic development as well as in the well-being of society (Diandy, 2007).

Of work in 17 sub-Saharan African countries, it is shown that electricity is an access factor without which ICT adoption will not be possible (Diagne and Ly, 2009). According to the same authors, households with electricity are more likely to adopt technologies such as fixed and mobile phones and the Internet than households that do not have it.

While energy is essential for the deployment of a telecommunications network, the deficiencies of the electricity supply in Africa hinder the growth of the African telecommunications industry (Kibora, 2009). The report on ICT and sustainable development carried out in France in 2008, showed that "for a fleet of more than 60 million mobile devices for electronic communications assets (2G, 3G and similar ...) corresponding to a rate of equipment of 85%, EDF provides a consumption of 130 GWh".

According to another report on ICT in rural areas, modern technologies are subject to a *sine qua non* condition, the need for energy. The use of ICT is dependent on the availability of electricity. As evidenced by Diagne and Ly (2009), electricity is an essential ICT appropriation access factor. According to Cheneau-Loquay (2010), the problems of access to electricity explain the "mobile fracture" in Africa.

Thus, access to electricity decreases the probability of

being digitally excluded and pushed into extreme digital poverty and increases the likelihood of use of mobile phones and landline phones and the use of the Internet.

Relationship between energy and attitude towards the use of mobile-broadband

Access to energy is distributed very unevenly across the globe: ¼ of the population consumes three quarters of the energy and over a third of the world population has no access to electricity. Yet technology especially in the field of ICT that requires energy for development continues to grow.

Today more than ever, with the increasing development of mobile telephony and the continued need for the individual to communicate, energy has become a major concern. The lack of access to energy, affordable and reliable, hinders Africa's social and economic Development Goals.

We connect in the study construct energy to the attitude towards the use of mobile-broadband. Hence the following hypothesis:

H5: Energy failure has a negative influence on the attitude of the user towards the use of mobile-broadband due to its unavailability.

Attitude towards the use of mobile-broadband

According to Ajzen and Fishbein (1980) and Davis (1989), the attitude is defined by the positive or negative evaluation to emit a behavior. It refers to the feeling of joy, pleasure, disgust, discontent or hatred that associates the individual at a given behavior (Triandis, 1979). The existing behavioral theories such as the theory of reasoned action (1975), the theory of planned behavior (Ajzen, 1985) or the model of Triandis (1979) have proposed the attitude as a determinant of use. Fishbein and Ajzen (1975) model is based on the assumption that beliefs influence behavior through attitude (Triandis, 1979) and believes that attitudes and beliefs are co-determinants of use.

Relationship between attitude and usage of mobile-broadband

In this research, we assume a positive attitude positively influences the use of mobile-broadband. Thus, we state the following hypothesis:

H6: Attitude positively influences the use of mobile-broadband.

METHODOLOGY

Using a convenience sample may be allowed (Calder et al.,

Table 2. Profiles of respondents.

Population		Total	Percentage (%)
Gender	Male	78	68.4
	Female	36	31.6
Age	15-25	34	29.8
	26-35	60	52.6
	36-45	15	13.2
	45 and plus	5	4.4
Socio-professional category	Student	35	30.7
	Employee	56	49.1
	Jobless	23	20.2
	Retired	0	0

1981, 1982) for exploratory studies such as the one of this study. Convenience samples and purposive samples were used. The data were obtained using a questionnaire administered online among a sample of 114 mobile broadband users living in the Sub-Saharan Africa distributed as follows; Western (25%), Central (25%), Eastern (25%) and Southern African (25%) countries.

Sample size

The formula below calculates the sample size:

$$N = \frac{t^2 \times p \times (1-p)}{m^2}$$

N = required sampling size

T = confidence level at 1.96 for a confidence level of 95%

P = estimated proportion of the population with the characteristic studied

M = margin of error at 5% (standard value of 0.005)

Our p proportion is 93% because we admit that the population has a 3G mobile phone.

$$N = \frac{(1.96)^2 \times 0.93 \times (1-0.93)}{0.05^2}$$

N = 100 people.

All the time, since the survey was administered online, we had 114 individuals, 14 more respondents than expected.

RESULTS

Data analysis and results of the study

Data analysis was carried out in several stages. After a statistical analysis of sample data (Appendix 1), we checked the reliability and convergent validity of the variables and validate the conceptual model and hypotheses of the study. Data analysis was performed using statistical package for social sciences (SPSS) 20.0 software for descriptive statistics and supplemented by SmartPLS M3 2.0 software for the validation of the measurement instrument and hypothesis testing.

Description of the sample

The sample consists of 31.6% women and 68.4% men

from west, central, east and south African countries. The age of respondents ranged from under 25 to over 45 years. The class of young people between 15 and 25 years is shown on the threshold of 29.8%. Those with 26-35 years represent 52.6%. Moreover, the class of employees is represented on the threshold of 49.1%, while that of the students 30.7%. We also note that 86.8% of respondents have a mobile-broadband and live in Sub-Saharan Africa. Indeed, the composition of the study convenience sample in terms of gender, age and socio-professional category are presented in Table 2. Gender, age and socio-professional category are variables that are analyzed using SPSS software. Latent variables are measured on a Likert scale of five items ranging from 1 (disagree) to 5 (strongly agree).

The results of the measurement models of the reliability and validity analysis

The results from the analysis are presented in Tables 3, 4 and 5. The reliability of Items shall be considered by the value of Cronbach's alpha, all above 0.7 (Nunnally, 1978). Convergent validity was analyzed by two criteria: the AVE greater than 0.5 (Bagozzi, 1998) for all dimensions and T-value greater than 1.96 (Table 3).

All items have good reliability, the Cronbach's alpha coefficients ranging from 0.7 to 0.9. The results from Table 3 confirm a good convergent validity since not only the AVE is greater than 0.5 for all dimensions but also the T-value is greater than 1.96 for all items. Convergent validity is checked (Table 4).

The results in Table 4 show a correlation for each of the variables in the model. Correlations must be less than or equal to the values of square roots of AVE worn diagonally (Gefen et al., 2000). Indeed, the discriminant validity well within the threshold selected by the authors: square root of the AVE is greater than the correlations between variables.

Table 3. Evaluation of the reliability and convergent validity of the measurement model.

Dimensions	Composite reliability	Alpha Cronbach	AVE
Perceived ease of use	0.836	0.712	0.631
Perceived usefulness	0.913	0.809	0.839
Attitude	0.864	0.686	0.761
Price	0.921	0.872	0.796
Energy	0.899	0.776	0.816
Use of mobile-broadband	0.854	0.784	0.664

Source: Output from the software SmartPLS.

Table 4. Correlation between the constructs and assessment of discriminant validity.

Constructs	Attitude	Energy	Perceived ease of use	Price	Use of mobile-broadband	Perceived usefulness
Attitude	0.872	-	-	-	-	-
Energy	0.3773	0.904	-	-	-	-
Perceived of easefulness	0.4954	0.2658	0.794	-	-	-
Price	0.5028	0.4702	0.5634	0.892	-	-
Use of mobile-broadband	0.616	0.3697	0.4544	0.4253	0.815	-
Perceived ease of use	0.2121	0.3123	0.5894	0.4681	0.2062	0.916

Source: Output from the software SmartPLS.

Table 5. Level of adjustment indexGoF.

Niveau	Valeur	Auteurs
Weak	0.10	Wetzel et al. (2009); Henseler et al. (2009); Fernandes (2012)
Average	0.25	
Better	0.36	

Source: What social drivers for entrepreneurial success (Omrane, 2014).

The results from the smartPLS allow us to conclude that the criteria for validation of the measurement model are checked. For the composite reliability coefficients to assess the internal consistency of the scales are all above 0.80. Convergent validity and discriminant honor the thresholds used by researchers (AVE > 0.5).

In essence, the analysis of the psychometric properties (reliability, convergent validity, discriminant validity) shows that we have in this study measures acceptable to proceed to test the structural model.

Evaluation of the structural model

The evaluation of the structural model is based on the predictive relevance of latent variables (Wold, 1975; Jöreskog and Wold, 1982; Wold, 1985), that is to say their nomological validity. We will analyze the coefficient of determination R^2 , the coefficient Q^2 of Stone

Geisser and the adjustment index GOF (Goodness-of-fit).

According to Fernandes (2012) "if Q^2 is positive, then the model has predictive validity. If it is negative, the constant lack of predictive validity." Croutshe (2009) also states that the coefficient Q^2 is acceptable if it is greater than 0. The level of adjustment index GoF boils is presented in Table 5.

Table 6 shows the validity of the structural model. It shows the values of coefficients of determination (R^2) and the AVE for each variable in the model. The mean value of R^2 (0.38) is greater than 0.1. The results therefore indicate a good model fit. Similarly, the average value AVE is positive. The model has indeed predictive validity. GoF index is calculated based on the geometric mean of the average R^2 and AVE:

$GoF = \sqrt{(0.751) \times (0.368)} = 0.53$. This index is very satisfactory and confirms the quality of our model. Figure 3 shows the structural model derived from SmartPLS

Table 6. Validity of structural model.

Dimensions	AVE	RSquare (R2)
Attitude	0.761	0.377
Energy	0.816	0
Perceived ease of use	0.631	0
Price	0.796	0
Use of mobile-broadband	0.664	0.380
Perceived usefulness	0.839	0.347

Source: Output from PLS.

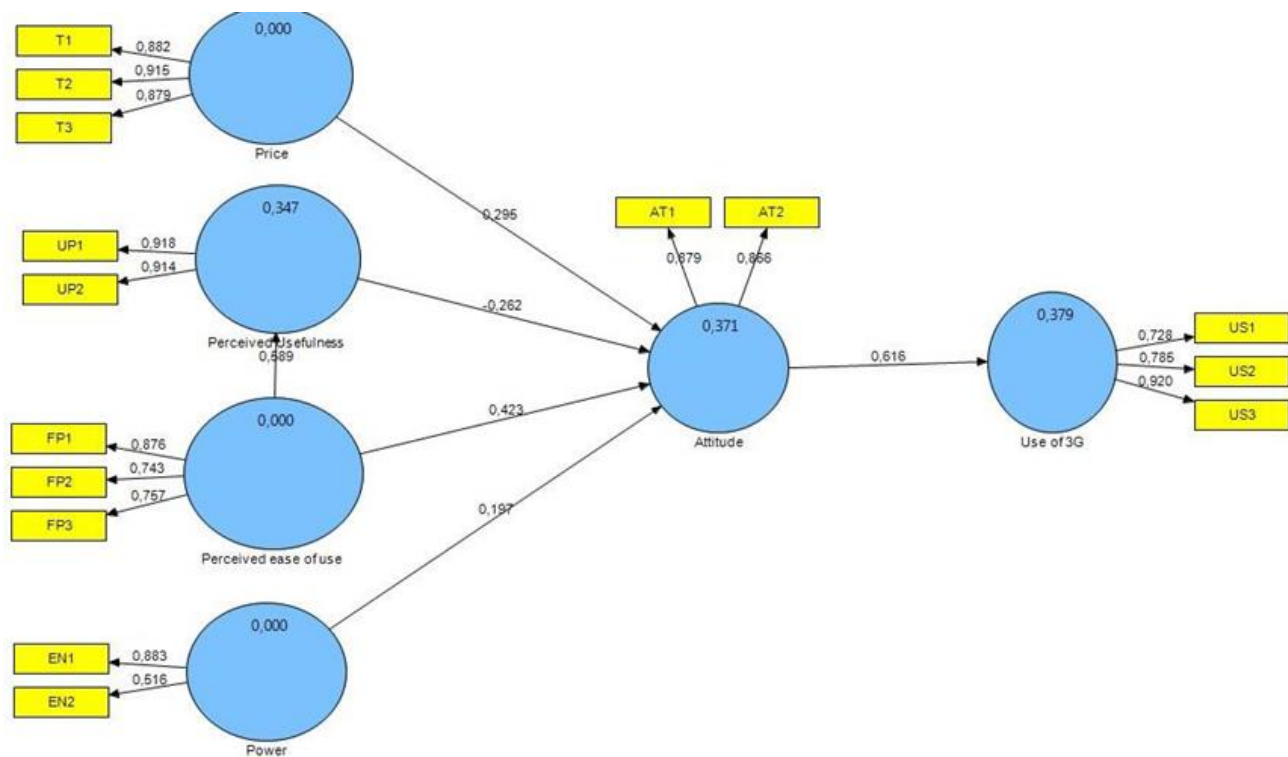


Figure 3. Summary of the hypotheses with its known variables.

(Figure 3). Following the results from the SmartPLS software, we can conclude that the validation criteria of the measurement model are checked.

Checking of the Hypothesis of the study

We will present the results of this study in terms of structural relationship between the latent variables using the technique Bootstrap. Critical reports of structural coefficients corresponding to test T and must be greater than 1.96. The value of T and the level of significance for each link are calculated by a method of resampling called Bootstrap. To be meaningful:

(1) 5% risk of error is 0.05, T must have a value greater

than or equal to 1.96.

(2) 1% or 0.01 to greater than or equal to 2.75.

(3) 10 or 0.1% greater than or equal to 1.64.

(4) 0.1% or 0.001 a value greater than 3.29 (Table 7).

The model assumptions H1, H2, H4 and H6 are checked except the third hypothesis (H3: The perceived usefulness of mobile-broadband positively influences the attitude towards the use of mobile-broadband). Perceived ease of use to perceived usefulness of mobile-broadband technology (H1) has a similar effect ($p < 0.001$) with the perceived ease of attitude towards the (H2) usage and attitude towards the use of mobile-broadband (H6).

We also note that the perceived ease greatly influences the value (0.589; $t = 11.171$) with respect to the perceived ease of use to attitude (0.420; $t = 5.464$). This leads us to conclude that some features of mobile-

Table 7. Estimates of the causal model parameters by the bootstrap method.

Relationships	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T- statistics	P-value ¹
Perceived ease of use--->Utility	0.589	0.595	0.053	11.171	0.000***
Perceived ease of use--->Attitude	0.420	0.415	0.077	5.464	0.000***
Perceived usefulness--> Attitude	-0.230	-0.224	0;073	3.142	0.002**
Price---> Attitude	0.276	0.275	0.102	2.710	0.007**
Energy--->Attitude	0.208	0.220	0.110	1.896	0.058*
Attitude--->use of mobile-Broadband	0.616	0.618	0.071	8.717	0.000***

Source: Output from SmartPLS

Table 8. Summary of results of hypothesis.

Assumptions	Results
H1: Perceived ease of use positively influences perceived usefulness of mobile-broadband technology.	Confirmed
H2 : Perceived ease of use of mobile-broadband positively influences the attitude towards the use of mobile-broadband	Confirmed
H3 : The perceived usefulness of mobile-broadband positively influences the attitude towards the use of mobile-broadband	Not confirmed
H4 : The price received a positive influence on the attitude of the users towards the use of mobile-broadband	Confirmed
H5 : Energy has a negative influence on attitudes towards the use of mobile-broadband	Not confirmed
H6: The attitude positively influences the use of mobile-broadband	Confirmed

broadband services are easy to use and the user proves the usefulness of mobile-broadband. This result confirms that the one obtained by Pagani (2004) and Oueslati (2007), which reveals that the variable value is the most significant factor of adoption.

As for the attitude, positive influence on the variable use of mobile-broadband is much stronger with a coefficient of 0.616. In addition, the attitude has a significant effect (p value of 0.000) on the level of use. This can be explained not only by a favorable attitude of Sub-Saharan Africa consumer on mobile-broadband but also by the level of acceptance of service.

We note at the end, on the assumption (H4) that the price received has a positive influence on the attitude of users towards the use of mobile-broadband ($p < 0.01$). This justifies the study by Chong et al. (2010) and Sawadogo (2013) showing that the cost is not a factor limiting users' intentions to adopt mobile-broadband. Hypotheses H1, H2, H4 and H6 are confirmed.

In the case of hypothesis (H3), "the perceived usefulness of mobile-broadband positively influences the attitude towards the use of mobile-broadband", we find that the latent variable, perceived usefulness negatively affect the attitude of use (-0.230 , $p < 0.05$). The perceived usefulness in the case of our sample does not appear to be significant. This may show that perceived usefulness has no impact to the attitude of Sub-Saharan Africa users of mobile-broadband services.

¹* $P < 0.1$; ** $p < 0.05$; *** $p < 0.01$; **** $p < 0.001$

Some authors, argue that personal factors, physical factors, psychosocial factors and socio-cultural factors are the four main factors that influence consumer behavior. What characterizes the denial of the hypothesis H3? The hypothesis H5 "energy has a negative influence on the attitude towards the use of mobile-broadband" is not accepted. Indeed, energy (load shedding) has no impact on attitude. These results can be explained by the nature of the study sample of people who all have relatively easy access to energy (Table 8).

DISCUSSION AND CONCLUSION

The study focused on the factors that motivate or inhibit the use of mobile-broadband in the Sub-Saharan Africa. Based on the TAM (Davis, 1986), the study conceptual model includes variable cost energy and considering the socio-economic situation at the moment in the Sub-Saharan Africa relatively high unemployment rate and shedding of electricity became commonplace. TAM model is one of many models used to understand users' decisions to adopt ICT. This research mainly focuses on the determinants of consumer attitudes towards the use of mobile-broadband.

In sum, the model from empirical tests rejects the

Hypothesis "The perceived usefulness of mobile-broadband positively influences the attitude towards the use of mobile-broadband." This hypothesis has prevailed since the work of Davis (1989) could not be verified in the context of Sub-Saharan Africa. The hypothesis "energy has a negative influence on the attitude towards the use of mobile-broadband" is also rejected.

The results could be explained by the nature itself of the sample which comprises people who have relatively easy access to energy eg solar, electricity wind, etc. Indeed, the outages of electricity do not discourage consumers in the use of mobile broadband services. This is especially true as a result of shortcomings in the supply of electricity, some Sub-Saharan Africa countries (Nigeria, Ghana and Kenya) have developed alternatives such as generators, battery backup, etc.

The empirical validation of the model on this study with a sample of 114 individuals responding to the questionnaire, we identified the factors that can influence their decision-making and the various obstacles they face in the use of mobile-broadband. These barriers could be inherent in the tariff plan that is elevated and the untimely cuts or almost total absence of electricity.

Thereby resulting in this study analysis, it appears that the attitude towards the use of mobile-broadband Sub-Saharan Africa is influenced by the perceived ease of use and perceived price. It is also clear that the perceived ease of use has a positive influence on perceived usefulness. Also, the rate plan and energy have no direct negative impact on the attitude towards the use of mobile-broadband. This is possible because high tariffs and power cuts do not deter consumers in the use of this service.

CONFLICT OF INTERESTS

The author has not declared any conflict of interests.

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Appendix1. Distribution of respondents according to the provision of mobile-broadband, Do you have a mobile-broadband?

Variable		Numbers	Percentage (%)	Validated percentage (%)	Accrued percentage (%)
Valid	Yes	99	86.8	86.8	86.8
	No	15	13.2	13.2	100.0
Total		114	100.0	100.0	-

Source: Results from the study survey by the author using the software SPSS.

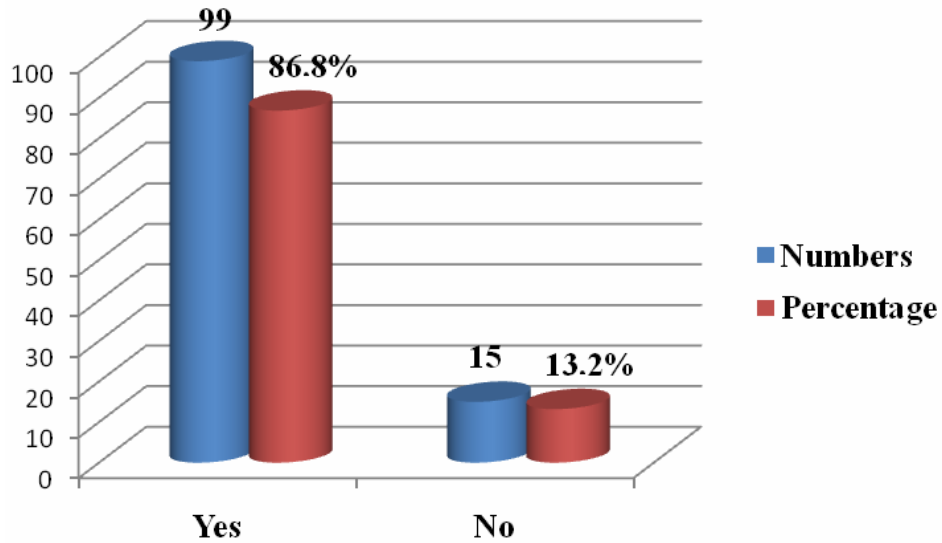


Chart1. Distribution of respondents according to the provision of mobile-broadband.

The study sample consists of 114 respondents in four (04) age groups:

- (1) 34 respondents, 29.8% were aged between 15 to 25 years
- (2) 60 respondents, 52.6% were between 2 to 35 years
- (3) 15 respondents, 13.2% were aged between 36 to 45 years
- (4) 5 respondents, 4.4% were aged between 45 years and older

Chart 2: Distribution by age

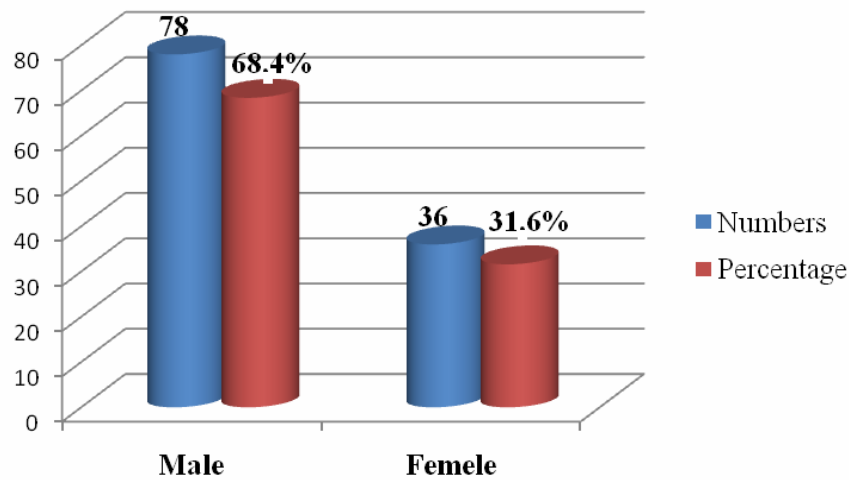


Chart 2. Distribution of respondents by gender

An orange hourglass is the central focus, resting on a desk. In the background, there is a calculator and some papers, suggesting a business or academic setting. The hourglass is partially filled with orange sand.

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