



Mobile Marketing in a Digital Age: Application, Challenges & Opportunities

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Authors' contributions

This study is a joint work by both authors. Specifically author OJA originated the study and the methodology was outlined by author EES. The pattern of argument, challenges and opportunities was infused by author EES, who also wrote the abstract and suggested solutions. Author OJA engaged in literature review and this was streamlined, certified by both authors. Author EES read and corrected the final work for publication.

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ABSTRACT

Digitalization as a strong component of the globalization process is currently breaking barriers and throwing up opportunities in many professions. Marketing can be pinpointed as a foremost beneficiary. This study is objected towards x-raying the marketing activities to which digital technology, especially mobile devices, can be applied in the task of promotion and positioning products/services for customer adoption. The methodology employed to drive this study are observed and evolving phenomenon in mobile marketing for which mobile devices have served as effective channels for reaching prospective customers. Espo Facto evidences of mobile devices' efficacy are also used as a support technique to validate the study. Literatures reviewed are in the area of mobile devices, concepts and their applications as powered by ISP firms. Beneficial as mobile devices are for marketing and its extant capacity for fast and personalized transaction, they nonetheless throw up some challenges to African and LDCs economies. These challenges along with their limitations were clinically discussed. In the light of possible areas of application, the study reveals a rich spectrum of opportunities beckoning African entrepreneurs for exploitation. As

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recommendations, study advises African leaders to close the power deficit and adopt the ICT culture as a business orientation. Again, it suggests that application/software development that aid local and global participation in mobile advertising be encouraged. Lastly, we recommend that schools' curriculum be expanded to teach digital knowledge and evolving best practices in marketing communications to enable Africans integrate into the digital age and become major players in the use and application of mobile devices for business growth and sustainable socio-economic development.

Keywords: Mobile marketing; telecommunications; mobile devices / applications; customer-focused.

1. INTRODUCTION

The need to achieve set organizational goals and objectives compel companies to conceptualize, design, and implement various strategies in the fight for corporate survival. In this regard marketing strategies constitute one of such functional areas essential for enhancing performance. For some time now marketers have been suggesting that mobile devices would become the next generation of marketing communications channel as opposed to print, television, email, and web [1,2]. Now the vision is unfolding and rapidly too, with spending starting from a modicum of investment to millions of dollars in marketing campaigns [3,4].

Mobile advertising seems to have raised considerable interest as mobile technology has advanced and companies world-wide are starting to use not only text messages, but also multimedia messages in their mobile commercial communications. This interest is evident in current newspapers magazines published in electronic and hard copies [5,6,7]. Moreover, there is a wide research interest in mobile marketing [8,9] or mobile commerce/business [10,11] that touches on the issue of Mobile Marketing Communications.

Mobile marketing seems to have established its distinction in several industries due to its unique innovative technology and the significant magnitude of the wireless industry. Various national Mobile Marketing Associations have been established recently and the wireless industry has embraced the new concept of employing mobile devices to drive marketing functions and activities. Mobile phones appear to be fast dramatically spreading to the remote parts of the world [12]. According to Ogwo and Igwe [13], in World Telecommunications/ICT Development Report 2015, was projected as the year in which more than half of the world inhabitants are expected to be using mobile phones. Telecommunication in Nigeria received a boost in 2001 with the deregulation of the

sector, which allowed for private Global System of mobile communication (GSM) service providers to come into the country to support the existing national operator NITEL. Two private companies MTN of South Africa and ECONET of Zimbabwe were licensed by NCC to operate GSM in addition to NITEL. This led to explosion in the use of ICT and related devices across many professions and industries. The explosive adoption of mobile media is re-inventing and expanding customer interactions globally. Mobile marketing connect customers with each other and with the firm, creating an ever-changing landscape of influencers. Marketers understand the tremendous potentials of these Channels and are making major investments in their mobile marketing efforts.

Mobile marketing seems to be a fast growing industry and has gradually started to transform the marketing world – evolving new lexicon and constructs such as smart-phones, location-based services or mobile Internet, etc. Of the 4 billion mobile phones in use 1.08 billion are smart-phones and 3.05 billion are SMS enabled. Mobile Internet consumption compared to Computer-based Internet consumption will grow and, according to projections, it will outgrow PC Internet in 2013 (Microsoft Tag, 2011). About 91% of mobile Internet is used to access social platforms compared to 79% on desktops. The mobile telephones are most often used for gaming (61%), checking weather forecasts (55%), accessing search engines (50%), social networking (49%), as well as reading news (36%) (Microsoft Tag, 2011). These numbers demonstrate that the mobile marketing industry is growing and developing in leaps and bounds. No doubt this age can be succinctly tagged a 'digital age'.

The spread of mobile technology in this age has varied significantly between Countries with majority of Mobile subscribers in the developing countries, [14]. In 2013, statistics from the International Telecommunication Union (ITU) revealed that the penetration rate of mobile

phone subscribers is 96.2 per 100 inhabitants globally and the report also suggests that there are now more mobile phone users in the developing world than in the developed world [14]. Moreover, customers are becoming harder to please: they are smarter, more price conscious, more demanding, less forgiving, and they are approached by many more competitors with equal or better offer [15].

Mobile phone marketing refers to direct marketing to consumers via cell phones. Technologies such as SMS, MMS, Bluetooth and Infrared are used to distribute commercial content to mobile phones. This commercial content includes marketing a new product, information about a sale, information about products and services, sales promotion and other commercial activities. It is also important to note that mobile phones can also access the internet making them very versatile mediums. This study objects to explore the marketing application of mobile communications devices and their essence in a competitive and globalizing world. It x-rays possible challenges and opportunities that present themselves in the usage of these devices in business. As we gravitate deeper into the 21st century it would appear, anything is possible when we begin to *envision, think* and *deploy* digital acumen to drive enterprise goals.

2. LITERATURE REVIEW

The current mobile environment offers multiple channels to reach customers, ranging from simple messaging services such as SMS (short messaging Service), and MMS (multimedia messaging service), to the mobile Internet. These applications are operationalized in WAP, GPRS, EDGE, and 3G networks. SMS has been the most popular Mobile application [7,16]. The Nigerian mobile market has boomed in the past eight years, supported by a successful liberalization program as well as positive political and economic environment. Historically, the first set of GSM licenses was issued in 2001.

At present, there are five active GSM operators (MTN, Airtel, Glo, Mtel and new Etisalat) as well as a multitude of smaller CDMA operators. The top mobile GSM operators, MTN, Glo Mobile and Airtel, account for over 85% of mobile subscriptions in the country. The liberalization of Nigeria's telecommunications industry started in the early 1990s and accelerated in 2000, after the election of a democratic government. Since then there has been an influx of foreign direct

investment, especially in the mobile services segment. Growth in the fixed segment has been sluggish due to inadequate infrastructure and investment, prompting a significant fixed-mobile substitution effect and turning mobile technology into the dominant means of communication in Nigeria.

In order to stimulate growth in the fixed sector, the government initially stepped in by inviting bids to privatize the fixed incumbent, Nitel, but the sale of the incumbent has not been completed so far. The Internet segment has also posted growth, with mobile Internet user penetration increasing from 0% in 2001 to 40% in 2009. This is mainly due to growth in the number of Internet service providers and cyber cafes, mostly in urban areas. Given its size and rate of growth, Nigeria is one of the most attractive markets in Africa. In 2008, the country became the biggest mobile market in Africa in terms of subscriptions, which in 2008 exceeded 63 million, surpassing South Africa, and reached 73 million in 2009. However, given the country's lower purchasing power, Nigeria still lags behind South Africa as the second largest African market in terms of mobile service revenue, generating \$6.6bn in 2009.

2.1 Mobile Services

2.1.1 Conceptual expositions

Although a large amount of literature exists on Mobile Marketing, a common agreement on its definition is still lacking [17,18]. The Mobile Marketing Association (MMA, 2008) defines Mobile marketing as, a set of practices that enables organizations to communicate and engage with their audience in an interactive and relevant manner through any mobile device or network.

Some scholars, however, interpret its role more specifically. For example, (Scharl, Dickinger and Murphy [19]: 165) refer to mobile marketing as, "Using a wireless medium to provide consumers with time-and location-sensitive utilities in form of personalized information that promotes goods, services and ideas, thereby benefiting all stakeholders." Moreover, four different terms, namely mobile marketing, mobile advertising, wireless marketing, and wireless advertising, are interchangeably used to define the concept of marketing through mobile media.

According to Leppaniemi [20], mobile marketing is the use of mobile medium as a means of

marketing communications". This definition involves several characteristics of marketing communications: one-way or interactive communication; at least one party of the communication use mobile devices; at least one party benefits economically from the communication. (Carter [21]: 62) set another definition of mobile marketing and describes it as: "a systematic planning, implementing and control of a mix of business activities intended to bring together buyers and sellers for the mutually advantageous exchange or transfer of products where the primary point of contact with the consumer is via their mobile device".

The Mobile Marketing Association (MMA) (2006) avers that mobile marketing is the use of wireless media (primarily cellular phones and PDAs) as an integrated content delivery and direct response vehicle within a cross-media marketing communication program. This definition suggests a push and pulls strategies for Marketing Communication and has no evidence of customer participation and active engagement in dialogue between company and customer. Thus, MMA posited another definition, which explains Mobile marketing as a set of practices that enable organizations to communicate and engage with their audience in an interactive and relevant manner through any mobile device or network.

The use of "the set of practices" in this definition entails various activities such as: media, relationship management, industry standards and processes, as well as different forms of marketing. The verb "engage" can be understood also as to acquire and stimulate social interaction between company and consumers. Hence, this definition, in contrast to the one of 2006, illustrates a change in consumer culture and marketing communications from one way communication to collaboration and brand co-creation through interactive dialogue.

Mobile marketing is marketing on or with a mobile device, such as a cell phone. Mobile marketing can also be defined as the use of the mobile medium as a means of marketing communication, the distribution of any kind of promotional or advertising messages to customer through wireless networks. The concept of mobile marketing also entails using interactive wireless media to provide customers with time and location sensitive, personalized information that promotes goods, services and ideas, thereby generating value for all stakeholders". Mobile

marketing is commonly known as wireless marketing, although viewing Advertising on a computer connected to a Local Area Network (LAN) is not considered to be Mobile Marketing.

In terms of branding, there must be an alignment between brand, customer characteristics and the mobile proposition: the mobile communication should be consistent with company's overall strategy and communication (Friedrich et al. [12]). A study conducted by Karjaluoto [22] reveal the opinion of managers that a company has to respect people's free time and privacy, so messages should not be sent during weekends if it is not absolutely necessary. Nevertheless, Mirbagheri's [23] study shows that marketing communication messages in most cases come when people were relaxing, having their free time or on the weekends. These studies reveal opposing outcomes in areas of timing, privacy and convenience.

According to Mirbagheri [23] the most common objectives of mobile marketing communication are the creation of brand awareness, brand attitude (i.e. brand building and changing brand associations/brand image). The third objective is the generation of a purchase intention and gathering valuable information from users for research purposes. According to him, mobile websites and SMS are the most applied mobile communication tools; mobile applications, mobile video, MMS and Bluetooth file transfer channels have higher frequency of use than mobile TV and telephone calls.

2.2 Mobile Marketing

2.2.1 Functional uses

The unique character of mobile marketing and devices lies in its ubiquitous nature, abilities for personalization and private transaction, two-way communication enablement and logicalization. Functionally, mobile channels offer the marketer the ease of accomplishing defined tasks. These include:

2.2.2 Customer access

The mobile channel provides virtually continuous access to consumers via voice, messaging, or portal platforms. The Internet has an access advantage over other channels, but it is not exclusive or entirely transportable. Being mobile makes it exclusively available to the primary users, not just in fixed locations, but wherever they go.

2.2.3 Customer insight

The mobile channel gives companies access to a wide range of consumer data, including demographics, communication and social patterns, and with consumer consent - even geographic movement patterns, thanks to GPS or network cell information. Once mobile commerce gains attraction it is only a matter of time before it gains immense patronage. This can enable businesses to add shopping history, online store preferences, and spending patterns to their list.

2.2.4 Customer dialogue

Although mobile channels do not offer the multi-media the after-experience that many PCs provide (and mobile channels will obviously never match screen-size), their content-rich, real-time visual and acoustic platform can be uniquely tailored to an individual consumer. Families, co-workers, and friends share computer use. The mobile phone is a distinctly personal device that reflects the use and interests of its primary user. And like the Internet, the mobile phone is truly interactive, allowing consumers to respond by click, voice, text, or multi-media message.

2.2.5 Customer emotions

A consumer's choice of a mobile device often is a strong lifestyle statement. (Just ask the thousands of people who have stood in line to buy the next generation of i-phones.) Because of emotional statement, users are highly attached to their mobile devices as not only essential tools but familiar parts of their everyday lives. Because the mobile channel enjoys a universal always-on presence in people's lives, it is a powerful platform for advocates, believers, and supporters of a certain ideals, product, brand, or way of life. In short, people get excited about their mobile phones in a way they never think about their PC, or the TV set.

2.2.6 Customer transactions

There are few physical boundaries for mobile devices. And that mobility means that direct click-through, e-commerce applications, or mobile payment solutions are easily available to consumers no matter where they are. In markets such as Korea and Japan, customers can purchase goods from the windows of a store that was closed to foot traffic hours earlier. The same experience and practice may soon hold in

Europe and the United States. If travelers are late for a flight, they can make up time by checking in from a cab on the way to the airport. And merchants' can respond to consumer interest in an e-commerce venue by instantly updating prices or pushing new offers.

2.3 Mobile Social Media

2.3.1 Essence and applications

Social media applications used on mobile devices are called mobile social media. In comparison to traditional social media running on computers, mobile social media display a higher location-and time-sensitivity. Mobile social media can be defined as a group of mobile marketing applications that allow the creation and exchange of user-generated content (Kaplan and Haenlein, [24]). Companies engaging in mobile social media will often have some sort of knowledge about the consumers with whom they're dealing, such as current geographical position in time or space. Additionally, these users will nearly always agree to receiving information from the company, for example by 'checking-in' at certain locations. This makes mobile social media users some special form of patrons in our mobile marketing classification. Similar to mobile marketing in general, we differentiate between four types of mobile social media applications, depending on whether the message takes account of the specific location of the user (location-sensitivity) and whether it is received and processed by the user instantaneously or with a time delay (time-sensitivity).

Location-sensitivity in a broader sense is not new to marketing, and geographic factors have previously been considered in marketing decision making. Examples of this include retail location planning (Inman, Winner, and Ferraro, [25]; Ozimec, Natter, and Reutterer, [26]) and demand forecasting [27]. Today, however, technologies such as GPRS, GSM, Bluetooth, and RFID make it possible to identify the exact location of a specific mobile device at a particular moment. Similarly, time-sensitivity allows the creation and transmission of messages that are of relevance at a particular moment. A company can, for example, spontaneously decide to launch a sales promotion that is only valid for one to two hours and broadcast this information to all mobile devices within a certain range. We refer to applications that are neither locational nor time-sensitive as slow timers, and to applications that take account of time and place simultaneously as

space-timers. Applications that only reflect one of these two dimensions are referred to as either space-locators (location-sensitive but not time-sensitive) or quick-timers (time-sensitive but not locations sensitive).Based on this classification; it is evident that space-timers are the most sophisticated form of mobile social marketing applications.

3. THE TIME-LOCATION SENSITIVITY MODEL

The remainder of this study will focus on Mobile social media services and their mechanics. We present hereunder a model of mobile devices and their sensitivity implications – it exists in four (4) quadrants. The model attempts to reveal how decisions on device choice usage can be influenced by time and location sensitivity. Users of mobile devices can be guided along the dimensions of *quick-timers* devices to use for speed (twitter, facebook), *slow-timers* devices to deploy for specific business or social purposes (YouTube). Other dimension of the model include knowing which devices represents *space-timers* (facebook places, foursquare, Gowalla) and when and how to use them to achieve specified objectives; and lastly appreciating *space-locators* devices (Yelp, Qype) and their functional application with respect to what objective the user has in mind. This model has a lot of implications for device optimization across several functions.

Knowing that these resources are available can simply be an education for those not in the know. However, understanding the importance of being involved in the usage of these social networks for marketing purposes is crucial. These sites begin

to serve as hubs on the web where large groups of people, usually with similar niche interests, are gathered together. A visit to these sits can serve several useful purposes:

- Exposure to your target audience
- Interact with your target audience
- Share your business personality

This social marketing strategy speaks to the need for proper branding and customer service strategies. Another reason why it is good to be involved in social media in that content can be sent to those interested in receiving updates. Subscribers are often offered several methods to be updated. They can sign up and can unsubscribe with ease. Therefore the ones connected to you are the ones who are most interested in who you are and what you offer.

It is also important for subscribers to participate in online conversation about key brands of interest. These user-generated social media tools are where the conversations take place. It is easy for people to publish content, and talk about brands – for good or for bad. Being a part of conversation is valuable and important. Competitor’s customers can be won over when they show up, listening, and interacting. When a content-publishing rival becomes a fan, their voice becomes quite valuable in the network.

The benefits of social media and adoption of mobile devices have been documented in the studies of Seager (2000) The diagram below shows the researchers findings of a range of service benefits accruable to SMEs and enterprise creators when they deploy the acumen of mobile devices to marketing activities.

Table 1. The time-location sensitivity model

Time-sensitivity	Location-sensitivity	
	No	Yes
Yes	Quick-timers Transfer of traditional social media applications to mobile devices to increase immediacy (e.g., posting Twitter messages or Facebook status updates)	Space-timers Exchange of messages with relevance for one specific location at one specific point-in time (e.g., Facebook Places; Foursquare; Gowalla)
No	Slow-timers Transfer of traditional social media applications to mobile devices (e.g., watching a YouTube video or reading a Wikipedia entry)	Space-locators Exchange of messages, with relevance for one specific location, which are tagged to a certain place and read later by others (e.g., Yelp; Qype)

Source: Boundless marketing (2015) "Mobile consumer behavior." Retrieved 30 Jul. 2015 from <https://www.boundless.com/marketing/textbooks/boundless-marketing-textbook/social-media-marketing-15/social-media-and-technology-trends-99/mobile-consumer-behavior-488-842/>



Fig. 1. Benefits of social media marketing

Source: Seager Steve (2000)

www.stevesseager.com/10pointsummaryfreesocialmediamarketingindustryreportapri

The study outcome shows that the number-one benefit of social media marketing is gaining the all-important eyeball. It reveals that a significant 81% of all marketers indicated that their social media efforts have generated exposure for their businesses. Improving traffic and growing lists was the second major benefit, followed by building new partnerships.

An unexpected benefit was a rise in search engine rankings reported by more than half of participants in the survey. As the search engine rankings improve, so will business exposure, lead generation efforts and a reduction in overall marketing expenses. About one in two marketers found social media generated qualified leads. However, only slightly more than one in three said social media marketing helped close business.

4. MOBILE MEDIA APPLICATIONS & THE MARKETERS TASK

4.1 Facebook

Its main use is to establish and maintain relationships in work related situations, in political affiliations or just among friends and families (<http://www.facebook.com/press/info.php?statistics>). Facebook has become the most powerful tool for marketing today. In April 2011, the company launched a new service for marketers and interested creative agencies which is a form of online platform (Portal) that allows marketers and creative design agencies to build brand promotions on Facebook. Facebook is now a

direct competitor of Google in online advertising and this new service has made it possible for companies such as *Financial Times* and *ABC News* to create dynamic commercial graphics or advertisement

(<http://en.wikipedia.org/wiki/Facebook>, 2012).

4.2 Twitter

Twitter was created in March 2006 by Jack Dorsey and launched that same year in July. Unlike Facebook where one can have friends to share different things, with twitter one has to get connected to the latest information on what they find interesting. One has to find the public stream that interests them and follow in the conversations. Each tweet is 140 characters in length. One can still follow the tweets regardless of whether they do not tweet at all, and also there is no limit as to how many tweets one can send within a given day (<http://twitter.com/about>, 2011). Through Twitter businesses now share their information or news faster to a large audience online following the company, and from a strategic stand point. This has helped companies that use Twitter to position their brands and also gather business insight through feedback to boost their market intelligence in order to accurately target customers with relevant services and products or enhance business relationships. Twitter has helped lift brands, enhance customer relationship marketing and also improved direct sales by reaching out directly to the engaged audience on the platform (<http://twitter.com/about>, 2012).

4.3 YouTube

YouTube was created in February 2005 as a video sharing website on which users can upload, view and share videos as an informative and inspirational events/occurrences to others across the globe. The company uses *Adobe Flash Video* and *HTML5* technology to display a wide variety of user-generated video content. YouTube acts as a platform for distributing contents by creators and advertisers as well. Over 3 billion videos are viewed every day and there are more than 400 million views per day on mobile devices. It is estimated that more than 800 million people visit *YouTube* every month to watch and share contents. (Youtube.com, 2011). Just as the adage goes, a picture is worth a thousand words, pictures have an impact in creating an image in the mind of a person. This has given *YouTube* a competitive advantage in online marketing. All in all, more businesses are now using *YouTube* for their marketing advertising campaigns. Various companies with outstanding video campaigns have had their breakthroughs in this form of brand marketing, especially when the videos have gone viral. Most of these viral successes can be attributed to expertise and creativity of the brand marketer to entertain the audience hence making the public share the videos with others.

4.4 LinkedIn

LinkedIn started in 2002 but was officially launched on May 5, 2003. Many professionals have joined *LinkedIn* in recent years to share knowledge and insight in more than one million LinkedIn groups. The company operates the world's largest professional network on the internet with more than 135 million members in over 200 countries and territories. It is estimated that more than 2 million companies have LinkedIn Company Pages (as of November, 2011). There are 14 languages currently available including: French, German, Italian, Japanese, Korean, Portuguese, Romanian, Russian, Spanish, Swedish, English and Turkish (linkedin.com, 2011) In LinkedIn, companies have access to a wealth of information that are mostly user provided through their profile data i.e. company name, job title, size of the company. LinkedIn uses this information for advertising targeted towards members. Companies pay some fees to advertise their products and services to particular LinkedIn members or affiliation groups on LinkedIn (marketing.linkedin.com, 2012).

4.5 Flickr

This is a photo sharing and video hosting website that was created by Ludicorp in 2004 and acquired in 2005 by Yahoo! It is available in ten languages and unlike the above mentioned networking sites that offer only one type of account, Flickr offers two types of accounts, *Free* and *Pro*. Free and pro account differ in the number of photo upload allowance: With Free account, one is allowed to upload 300 MB of images and two videos per month, where as *Pro* account users can upload an unlimited number of images and videos every month and receive unlimited bandwidth and storage. This networking system is compounded by different groups. Any member of Flickr is permitted to start a group which he can monitor and set restrictions for (<http://en.wikipedia.org/wiki/Flickr>). It is against terms of service for businesses to use *Flickr* for the purpose of advertising, yet businesses can get indirect marketing exposure via *Flickr*. A company can use its website address as their *flickr* screen name, the screen name will then be attached to every photo upload and every message (this is an opportunity to mention business name and website address) posted to the group discussion. It is also possible to upload quality photos related to the business and writing appropriate text describing each photo but avoiding hard sell that is prohibited (<http://www.smallbusinesssem.com/articles/marketing-on-flickr/2012>).

5. MOBILE MARKETING: CHALLENGES IN AFRICA AND LDCS ECONOMIES

Certain challenges bedevil the operations of mobile marketing in Sub-Saharan Africa. Essentially, mobile marketers and advertisers are yet to explore and understand the limits and best methods for interacting with consumers through this medium. Unfortunately, too often these efforts are made in silos, unconnected to other traditional customer making activities and channels. Companies that make effort to connect mobile devices with other marketing channels, often limit these other channels to events or other mass marketing efforts; failing to coordinate mobile with the targeted, one-on-one marketing that is vital to creating improved brand performance.

Furthermore, mobile marketing seems to be increasingly challenging in the Telecommunications retailing environment because of its intrusive nature and the limited screen size of the

mobile device (Shankar and Hollinger, [6]. The effectiveness of any Advertising Campaign rests on a brand's ability to effectively deliver their message to a target audience. As advertisers look to follow consumers across screen, brand managers need to know how and on what devices target audience are consuming content. They need to track and measure a single individual's responses to adverts and campaigns across multiple screens and attribute any result such as conversions, hyper text, pictures etc., to the appropriate advert placement. The technical hurdles are formidable.

Managing a mobile marketing campaign can be a challenge since there are many different entities contributing to a successful Campaigns, in addition there are limited numbers of carriers, advertisers, and even consumers. But at the same time we have the Industry Organization like the Mobile Marketing Association, the CTIA wireless Association, and the Interactive Advertising Bureau, which provide resources and guidelines for setting the standards to help move the industry forward. In addition to this, trial and error period is required for Mobile Marketers to learn how to succeed in mobile marketing, which differs from the traditional web marketing. Advertisers are wary of consumers' privacy issues. Indeed mobile marketing is fragmented and complex because of many different handsets and carriers, including different types of functional and different pre-loaded apps (Google Maps on I-Phone). Currently, reach is low because consumption of mobile content is small.

Perhaps a more telling challenge in deployment of ICT and mobile devices to marketing functions lies in the revelations of studies of Ekakitie and Ogbor [28] where government investment on ICT (among other factors) were fingered as dire imperatives that are clearly lacking:

“Building capacity for ICT requires investments in physical infrastructure (such as fiber optic-cable), in the human capital necessary to operate these systems, and in government regulatory agencies. These investments are likely to yield economic growth and improve living standards. Unlike most parts of the global economy, African governments still face the challenge of how to make it easier for technologically-minded entrepreneurs and owners of small and medium-sized enterprises to capitalize on ICT and to build a foundation for long-term economic growth in Africa. Apulu and

Latham [29] have suggested that in developed countries, ICT has been used to change the way businesses are conducted in order to have a strategic advantage in their various operations. However, the investment returns of ICT in developing countries have fallen short of the potential. According to Apulu and Latham [29], researchers have attributed this problem to organizational factors, environmental factors and lack of technical skills, among others. It is also argued that the problems in introducing ICT in developing countries can be classified into three generic categories, namely: contextual, strategic and operational. According to Apulu and Latham [29], contextual problems are due to poor match of models of developed countries' design and applications to the developing countries context, semantic discrepancies in the wording and understanding of phenomena as well as references to different value systems and different concepts of rationality (Kunda and Brooks, 2000 cited in Apulu and Latham, 2009). Strategic problems relate to local, national and regional policy initiatives, as reflected in the institutional intervention mechanisms of influence, regulation and implementation (Kunda and Brooks, [30]), while technical and economic constraints and lack of skilled personnel are operational problems faced by developing countries”.

The above rendition has revealed far reaching challenges which constraint mobile digital devices' application and development as it pertains to deploying them to drive business growth and integration same into the global economy in a fastly globalizing digital age.

6. MOBILE MARKETING: OPPORTUNITIES BECKONING AFRICAN ENTREPRENEURS

Opinions and studies have revealed opportunities beckoning by which African enterprises can become effective participants and users of mobile marketing devices and techniques. The following are apt.

6.1 Geo-Targeted Push Notifications

Geo-targeted push notifications' for mobile that was once a vision for then-Google CEO Eric Schmidt in 2010 is now a reality that empowers mobile users with information about the world around them in a spontaneous way. This feature

in mobile apps help businesses to stay closely connected to customers intimating them with location-based information on offers, deals, events and even weather forecast.

6.2 Geo-Targeted Advertising

Geo-targeted advertising is the emerging in-thing in mobile apps development trend in 2013. Geographic and contextually optimized smart advert campaigns are strategically used to target users by their specific geographic location using this feature. The trend of advertising now is that through mapping, businesses can display coupons to potential users nearby.

6.3 Stop the Bounce, Deal with Shopping Cart Abandonment

One of the key challenges of online mobile shopping is dealing with the 'bounce' factor. Even though bounce is considered to be an inherent part of online shopping; in mobile shopping, the threat is even higher as mobile users are believed to be less patient, mostly on the move and likely to be distracted easily. One of the most prominent reasons that result in the highest number of shopping cart abandonment is *typing in of account information*, which is considered to be too tedious. The latest trend in mobile app development since 2013 addresses this issue through automatic address fill-in. Here, the transactional app will automatically detect a user's location using GPS and fill-in address data, saving valuable time.

6.4 Data Gathering

Tracking signals and data gathering from mobile devices is opening up a whole new world of analytics and marketing opportunities for retailers who operate their businesses online or through brick-and-mortar establishments. This fact proved to be crucial for taking businesses forward as it empowers enterprises to understand, what works and what doesn't work for businesses; and take steps accordingly so as to attract customers and increase business revenue.

6.5 Build NFC Mobile Application

Near Field Communication (NFC) mobile application must have been a privileged dream for mobile app developers a few years back. However, in 2013 it was considered as one of the most sought-after mobile app development trend

to have swiped across the industry. With NFC, just a swift tap against a sensor yields an instant result, which is even faster than a barcode scan. However, the technology now is in a fairly nascent stage, and it is important that mobile application development agencies understand the possibilities that emerge from developing a NFC app and learn when to go ahead with the app development. This is because; Near Field Communication is by far the only technology available on smart-phones that can secure a transaction.

6.6 Make Dynamic and Exclusive Offers

Businesses can effectively harness the power of technologies like Geo-targeted push notifications and advertising to use it to their advantage by using data collected through geo-tracking and ad campaigns so as to deliver 'time relevant' or 'seasonal offers' and boost revenue. Just like offering discount coupons to past customers who have not visited the firm lately or announce 'happy hours' for local customers at your neighborhood bar through dynamic mobile apps campaign.

6.7 Create Energy Efficient Mobile Apps That Won't Drain Your Battery

Do you think your smart-phone guzzles up the battery in no time? Perhaps that is the only time when you miss your good old mobile phone that could carry on without being recharged for 1-2 days. Well, most of us would consider the surface operations to be responsible for the same. However, studies have revealed that Android app ad-serving —the process that connects apps to digital advert networks —was responsible for up to 75 percent of app-related battery drain in Android phones. So concentrate your resources to create mobile apps that won't drain your battery.

7. CONCLUSION

This study has revealed mobile devices and the social media as effective tools of competition used by many enterprises across several industries in recent times. It is gradually becoming the opium that small businesses adopt to create awareness for their products/services and to reach customers quickly crunching time and space [29]. Its capacity to reach customers real-time makes it the most efficient channel in both targeting and reaching customers for profitable gains. Mobile devices operate to

enable the 4Ps of marketing more organic and systemic. With them the marketing task of product creation and testing is swifter, prices and price administration are better handled, awareness creation including product placement (distribution locations) are better communicated and more cost effectively executed [31,32].

With mobile devices, enterprises in the 21st century can manage their pot-pourri of clients better no matter how diverse and far they may be. Enterprises now stay in touch better with valued clients in their market segments evolving a dynamic one-on-one (individualized) business interaction over secured medium. The study reveals mobile devices as a fast enabler of mobile marketing especially when deployed to drive CRM programs. Thus, strategic issues of customer attraction and retention (as components of CRM) and building of customer databases are more systematic and fact based enabling measurement and profit projections over time [33,34].

Conclusively, the study x-rayed the challenges and limiting factors in the use of mobile devices in LDCs within the context of technical and infrastructure deficit especially on the African continent. These notwithstanding, mobile and social media devices have a tremendous range of opportunities for exploitation which African entrepreneurs should not allow to slip by. These include cost effectiveness of procuring, maintaining and using the devices, receiving and sharing valued business information, ability to reach clients real-time, product and image position, etc. These in all combine to offer SMEs in Africa the golden opportunity to be on the same competitive platform as big corporations anywhere in the world (Ekakitie and Ogbor, [28]).

8. RECOMMENDATIONS

In the light of all that has been appraised, the study makes the following brief recommendation:

- **Closing the power deficit:** Many countries on the African continent still struggle to provide electricity to citizens – there is no gain saying the fact that advanced nations of the world would not have reached their current heights without adequate power generation and supply. Only Ghana, South Africa and Egypt have been able to overcome electricity challenges on the continent. This deficit must be redressed if Africa hopes to effectively participate in global business

using digital technologies and mobile devices.

- **Promotion of ICT culture:** With global evolution of digitization and deploying of ICT application and all sorts of mobile devices to drive social and business operations, Africa and its peoples will need urgently to spread the 'digitization flu' – efforts should be made to apply and adapt African languages to popular applications and use them to drive marketing communications processes. This will have a holistic impact in creating originality, awareness and integrating African communities into the global and digital age.
- **Apps and software manufacture:** Africa cannot continue to rely on the West and Asia to manufacture ICT devices and mobile application packages. The time has come to get into the race. Government through enabling policies should support and sponsor talented individuals and entrepreneurs with proven competencies and innovative skills in application and software development via budgetary provisions. This will greatly enhance the growth and profitable usage of mobile application within the African business environment. It can also save the 'yahoo boys' from applying the talent in the negative direction.
- **Education and Job creation:** Managers of the education sector at secondary and tertiary levels must as a matter of urgency integrate ICT and internet education as generic courses (just like GST) into the curriculum of study. This in addition to the evolution of ICT and mobile devices growth in the environment will permit faster knowledge acquisition for personal, corporate and national development. Again, government must reconcile itself to the bare-faced fact that knowledge and skills acquired from ICT and usage of mobile digital devices has capacity to solve unemployment challenges as youths and SMEs specializing in mobile applications and internet platform creations can earn *respectable income* and be gainfully employed.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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