

# MOBILE AND WIRELESS TECHNOLOGY: A CATALYST FOR GROWTH OF SMALL BUSINESSES

**IKOROMASOMA, Emmanuel**

Department of Office and Information Management  
Faculty of Management Sciences  
Rivers State University, Port Harcourt, Nigeria  
[ikoromasomaemmanuel@yahoo.com](mailto:ikoromasomaemmanuel@yahoo.com)

**AGWUMA, Precious Ogechi**

Department of Office and Information Management  
Faculty of Management Sciences  
Rivers State University, Port Harcourt, Nigeria  
[precioge@yahoo.co.uk](mailto:precioge@yahoo.co.uk)

## ABSTRACT

*This paper explored the role of mobile and wireless technology in growth of small businesses. The paper through extensive review of literature identify that mobile and wireless technology influences innovation and service quality, which are prime metrics of growth of small businesses. The paper concluded that, mobile and wireless technology enables, enhances, or promotes the growth of small businesses; and recommends that small businesses that crave growth through innovation and service quality should embrace the adoption of mobile and wireless technology in their operations.*

**Keywords:** Business growth, innovation, mobile and wireless technology, service quality

## INTRODUCTION

Mobile and wireless technology are portable, handheld communications device connected to a wireless network that allows users to make voice calls, send text messages and run applications without restrictions from peripheral wires. Mobile and wireless technology are currently reshaping society, communications, and enterprise growth. With smart phones and other handheld devices now outnumbering desktop computers, there has been rapid change in the way people access, use, and share information. Powerful mobile devices and sophisticated digital applications enable users to build businesses, records, communicate with public officials, and complete online transactions without restrictions. This technology has become affordable and has also led to the introduction of user friendly applications that support business operations and increase seamless communication (Varshney & Vetter, 2002).

Wireless technologies have advanced with great speed in the past few years. Not only have the capacity and performance of wireless communications systems improved exponentially, but so has the range of information and services that can now be accessed using mobile devices. Mobile phones and other handheld devices such as palm pilots allow great amounts of information to be retrieved, stored and transmitted in real time from any location within and outside a country. This includes text, audio and video data, as illustrated by the ease

with which mobile phone users are today able to converse by voice, email or SMS, take and transmit digital photographs, stream audio or videos, and upload/download a range of material directly via the internet. The information and communications technology (ICT) revolution continues as more users adopt wireless systems, both for personal uses and in business dealings.

The recent progress in the mobile and wireless technology has metamorphosed into creating value which has affected or influenced our lives, organizations and society at large. Despite its challenges, mobile and wireless technology have captured the interest of, and has received rapid attention from businesses. This technology has transformed over the years beyond what we know it to be; since the first radio signals waves transmitted by pioneers including Tesla and Marcom in the late 19<sup>th</sup> century. Today, many use mobile and wireless technologies to communicate or access information and transact business across the globe in real time. All these no longer depend on a wired system that has internet on it which conditions users or businesses to a given location. The power of wireless and mobile devices, such as smart phones, and tablets are becoming integral part of the overall business process as they are used to capture access and analyze business information in real-time (Begole, 2012).

Mobile and wireless technology users have increased drastically, and not just because it is cheap to use but also because there is no limit to the amount of information one can get. Additionally, it gives small businesses the ability to render quality services to the public. Mobile and wireless technology has really impacted our lives and businesses (Kang, 2005; with wireless networks anyone within a coverage area or a wireless access point, has the potential to access the network by turning in to the appropriate frequency. But this is not the case for a wired technology. Mobile and wireless technology have attracted considerable attention in the business world. Its introduction has really improved enterprise growth.

Growth is an important phenomenon for small enterprises. In fact, the survival of small enterprises essentially depends on their power to participate in the market with other big companies. Growth decreases the possibility of closing small businesses (Rauch & Rijkskik, 2013). Penrose (2006) posits that growth is the product of an internal process in the development of an enterprise and an increase in quality and/or expansion. Growth is defined as a change in size during a determined time span (Dobbs & Hamilton, 2007; Wickham, 2006). Pajarinen et al. (2006) stated that entrepreneurs with higher academic background are more innovative and will use modern techniques and models to do business; while Janssen (2009a) states that a company's growth is essentially the result of expansion of demands for products. It results in growth in sales and consequently in investments in additional production factors to adapt itself to new demands" (Janssen, 2009c).

Brush, Geru and Blackburn (2009) define growth as "geographical expansion, increase in the number of branches, inclusion of new markets and clients, increase in the number of products, fusions and acquisitions". According to these authors, growth is above all a consequence of certain dynamics built by the entrepreneurs to construct and reconstruct constantly, based on the assessment made on their internal and external environments.

Enterprise growth is a major challenge of traditional small business enterprises in Rivers State. Thus, the minute number of small businesses adopting as a critical means of carryout

these businesses to meet up societal trend, this has metamorphosed into limited profit making as a result of limited market, lack of innovative ways of doing business, poor communication within and outside the business, poor service and product delivery. These and many more have affected the growth of small business enterprises in Rivers State. Therefore, this study examined the relationship between mobile and wireless technology and how it influences enterprise growth in small businesses in Rivers State. This is the gap in literature which the present study sought to close; and the study variables, and relationships are laid in the conceptual frame work below.

### **LITERARY VIEWS ON MOBILE AND WIRELESS TECHNOLOGY**

Internet enabled wireless and mobile devices allows large companies to reach to huge consumer base with digital advertising through digital media channels and enable customers to buying and selling through devices like smart phones, tablets, wifi and wimax connected laptops (Alexa, 2012). Information Technology plays an important role in shaping the future of the learning environment in higher education institutions. The pervasive network offered ensure information is instantaneously available almost anywhere (Sorenson, 2010; Ng, 2010). The web has made internet service available en mass, while wireless technology is freeing users from the constraints of physical wires. The convergence of these technologies is creating new work spaces: wireless office, wireless home, wireless campus and wireless classroom (Williamson & Kamaluddeen 2002).

The information and communications technology (ICT) revolution continues as more users adopt wireless systems, both for personal and business use. Today, up to half of all broadband connected households in some countries have wireless access. Major cities are increasingly being serviced by multiple wireless providers and access points, so that wireless devices can be used from almost any urban location. Mobile commerce has attracted significant attention among users, service providers, vendors, content developers and researchers due to its potential impact (Varshney & Vetter, 2002). Transformation of existing business processed aligns with corporate strategy; and present customer centric trends require resources (Efraim, Ephraim & James, 2008; Gutierrez, 2006).

All major industries are becoming more and more wirelessly connected for sharing common platform and form strategic alliances to leverage the advantages of new market structures and business models (Chen & Skelton, 2005). As with previous advances in communications systems, there are many perspectives to wireless and mobile technologies. From business value perspective, this enables remote and instant collaboration among employees, supply chain partners, and customers regardless of the hardware devices they have (Gupta, 2009). Global business needs ways of collaborating more effectively with third party suppliers and partners. To do so, they need standardize information systems and communication processes through wireless and mobile devices for mobility of individuals, enterprises and organizations (Turban, Leinder & Mclean, 2008).

Wireless technology enables devices to communicate without physical or peripheral cabling. Mobile and wireless technology ranges from wireless local area networks (WLAN) and mobile phones including the new generation of 4G phones to simple devices such as headphones, microphones. They also include infrared devices such as remote controls, cordless computers keyboards and mouse. One of the best known examples of wireless

technology is the mobile phone, also known as cellular phones, with more than 4.6 billion mobile cellular subscriptions worldwide as of 2010. These phones use radio waves to enable users make calls from locations worldwide. Major types of mobile technology include:

**Cellular technology:** This is a mobile technology that allows the last link of communication to be wireless. Mobile signals travel from transmitting devices unto mobile base stations. To make phone calls or connect the internet with mobile devices, the devices connect to a base station first.

**5G. Networking:** This is the latest mobile technology and has been deployed in some parts of the world but due to the controversies surrounding it, as it relates to Corona virus pandemic, some countries are yet to adopt it. Its speed ranges from 50 mbps to 10mbps. This is a breakthrough in the mobile technology industry.

**WIFI:** This is a family of wireless network communication protocols based on the IEEE 802.11 Local Area Network (LAN).

**Bluetooth:** This is a telecommunications industry standard to connect computing devices over short distances. With this, users can quickly pair devices such as headsets and speakers etc.

While in the class of wireless technology, the commonest include:

**WWAN:** Wireless wide area network includes, GSM mobile phones, 3G to 5G mobile phones, it can cover up to 10km. wide area network also known as WAN is a large network of information that is not tied to a single location. WANS can facilitate communication, the sharing of information and much more between devices from around the world. It is a critical part of business as the internet happens to be the largest WWAN.

**WLAN:** Wireless local area network or Local area network can be placed on the floor of a building connecting all workstations and servers. It can cover up to 100m. It is a network of two or more connected computers usually within a small geographical area within a building.

**WPAN:** Wireless personal area network connects and controls various products. It can cover up to 1m. This is a network that allows interconnecting devices centered on an individual person's workspace in which the connections are wireless. Eg, Bluetooth, Infrared.

**WMAN:** Wireless metropolitan area network. This can cover a speed of 1km. This type of network spans multiple locations within a geographic area and it serves the range greater than 100 meters which makes it next to WWAN.

Mobile and Wireless technology have become a critical part of small business operations. A 2010 study by AT & T found that 65 per cent of small enterprises feels that it would be very difficult to survive without wireless technology. The following are the benefits of mobile and wireless technology to an enterprise;

**Seamless communication:** Because of the deployment of mobile and wireless technology in business enterprises, businesses can now communicate with ease between businesses and customers. People can communicate while on the move, the businesses is

rarely out of touch as businesses no longer need extra cables to be able to communicate with people or other businesses afar.

**Increased collaboration:** collaboration is one of the reason d'être of integrating mobile and wireless technology into your business. Because people can connect with the business from anywhere without being limited by cables, these connections has paved the part for businesses to work together without location being a barrier.

**Flexibility:** businesses can be networked without physical appearance and customers can order for products or services without going to a given location. Again it gives business higher coverage without limited with the inconveniences that comes with a wired system. Some other benefits includes, access to cloud, increased productivity, reduced cost etc.

### LITERARY VIEWS OF ENTERPRISE GROWTH

Most firms desire growth in order to prosper and not just to survive. Enterprise growth, however, means different things to different business owners. Though, there are many parameters a company can select to measure its growth, the most meaningful yardstick is one that shows progress with respect to an enterprise stated goals. The goal of most business enterprise is profit making, others might be innovativeness, rendering quality service, developing new markets and products, but some other business owners may use sales figures, number of employees, physical expansion, or other criteria to judge enterprise growth.

Many firms desire growth because it is seen generally as a sign of success, progress. According to Cole (2002) enterprise growth is, in fact, used as one indicator of effectiveness for small and large businesses and is a fundamental concern of many practicing managers. According to Penrose (2006), growth is the product of an internal process in the development of an enterprise and an increase in quality and/or expansion. Growth is also defined as a change in size during a determined time span (Dobbs & Hamilton, 2007)

An entrepreneurial venture is successful if it is growing. Growth has various connotations. It can be defined in terms of revenue generation, value addition, and expansion in terms of volume or scale of operation. It can also be measured in terms of qualitative features like market position, product quality, and customers' goodwill (Kruger 2004). It has been highlighted that growth is a function of the decisions an entrepreneur makes, like how to adopt mobile and wireless technology in doing business. To sustain in today's market and meet customers need, it has become important for business enterprises to deploy the use of mobile and wireless technologies; even as Penrose (2006) pointed out that deployment of mobile and wireless technology serves as a pointer for enterprise growth. The foregoing already identifies several indices of business growth. However, within the context of this paper, business growth is zeroed down to innovativeness and service quality.

#### Concept of Innovativeness

Innovation is the process of creating something new or improving an existing one to become better. Overtime, a sizeable body of research has focused on identifying antecedents to innovative work behaviours and developing ways to better support employees in their creative endeavors (Janssen, Van de Vliert & West, 2004). Innovation is essential to achieving competitive advantage; and innovative, employees, teams, firms and nations

achieve prosperity and sustainability (Disselkamp, 2005). Mobile and Wireless Technology facilitate enterprise innovativeness. Innovation that results in new product development includes improving existing products or developing totally new products (Larsen & Lewis, 2007). Innovation enhances the performance of organizations. CANTON (2006) affirms that organizational success depends largely on the abilities to make new products, thoughts and processes rapidly. In the view of Ahmed (1998), innovation is the engine of change and in today's competitive environment where it is harmful to resist change; not only because of risks and uncertainties associated with it, but also because of the opportunities it creates (Schumpeter, 1934). Denton (1999) is of the view that innovation has always been the pride and joy of competitiveness.

### Service Quality

Mobile and wireless technologies have improved how business enterprises render services; they have influenced customers' evaluation of service quality, customer satisfaction and are contributing to bottom line measures of enterprise growth (Lacobucci *et al.*, 1994). With respect to network quality, many telecommunications service providers are promising enhanced connectivity and better quality of service transmitted across networks (Fleck, 1999). A firm's capability to provide quality, customization, speed and the cost for available resources is determined by both the amount of work completed prior to demand and exactly how the firm take advantage of its resources (Chopra & Lariviere, 2005). Zeithaml and Bitner (2000) defined service quality as a global judgment or attitude relating to the superiority of a service. For business enterprise to grow, service quality and innovative products plays a huge role. The infiltration of mobile and wireless technology in business operations has the propensity to pave the path for enterprise growth. Service quality plays an important role in the customer-enterprise interaction because it leads to customer satisfaction, value and loyalty.

The foregoing positions, reports and views of scholars, governmental bodies and operators of small businesses provide evidence of the contribution of mobile and wireless technology to growth of businesses, especially small new businesses that compete with large established ones. These evidences as sourced from scholarly works, government sources, and the views of small business operators point to the fact that mobile and wireless technology enable, facilitate or promote growth of small businesses (Larsen & Lewis, 2007; Disselkamp, 2005; Janssen *et al.*, 2004; Ahmed, 1998). Based on the literatures reviewed the study findings revealed that, there is a significant relationship between mobile and wireless technology and enterprise growth. The study also revealed that, there is a relationship between mobile and wireless technology and innovativeness and quality service delivery of small businesses Rivers State.

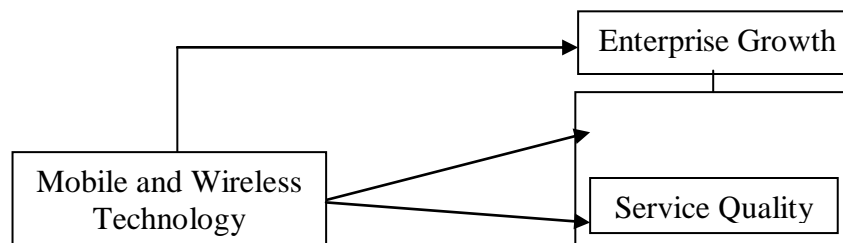


Fig. : Conceptual framework of mobile and wireless technology and enterprise growth

Source: Research Desk (2022)

## CONCLUSION AND RECOMMENDATIONS

The desire for every small business is to grow. This paper has revealed that mobile and wireless technologies are tools with which small enterprise can pursue their growth objectives. This is because mobile and wireless technologies offer better and more cost effective ways of rendering quality service to customers and also drive innovativeness. The paper, based on the positions, views and reports found in literature, conclude that the deployment of mobile and wireless technology lead to growth of small businesses through innovation and service quality; by providing flexible, collaborative and a seamless communication amongst businesses. The future of wireless and mobile networks will involve increasingly sophisticated product. Mobile and wireless technology adopted by businesses and other institutions have obvious advantages in terms of convenience and access; and provides wider variety of options to service providers and end users which in turn lead to enterprise growth. Based the findings and conclusion, the study recommends that, small business owners should embrace the adoption of mobile and wireless technology in their businesses; if they aspire to enterprise growth in terms of innovation and service quality.

## REFERENCES

- Alexa Internet (2012). *The web information company*. Retrieved from <http://www.alexa.com>
- Brush, C. G., Geru, D. J., & Blackburn, R. (2009). Pathways to entrepreneurial growth: the influence of management, marketing and money. *Business Horizons*, 52(5), 481-491.
- Begole (2012). *A tribute to Mark Weiser father of ubiquitous computing*. Retrieved from <http://bit.ly/ZR6K54>
- Chen, L. and G.W. Skelton (2005), *Mobile commerce application development*. Cybertech Publishing.
- Canton, (2006). The revolution of mobile and wireless technology on small businesses in Nigeria. *International Journal of Entrepreneurship*, 6(3), 245-356.
- Disselkamp, M. (2005). *Innovation management: instrumente und methodern zur umsetzung in unternehmen*. Gabller, Wiesbaden.
- Dobbs, M., & Hamilton, R. T. (2007). Small business growth: Recent evidence and new directions. *International Journal of Entrepreneurship Behavior and Research*, 13(8), 296-322. <http://dx.org/10.1108/1355255071070885>
- Efraim, T., Ephraim, R. M., & James, C. W. (2008). *Information technology for management*. John Wiley and Sons Inc.
- Fleck J. (1999). A Distributed Near Real-time Billing Environment. *Telecommunication Information Network Architecture*, 142-148.
- Gutierrez, J. (2006). *Business data communications and networking: A research perspective*. IGI Global.
- Gupta S.D.P., M.H. Engineer & Shepherd, V.A. (2009). *Remembering Sir J C Bose*. World Scientific Publishing Co. Pte. Ltd.
- Janssen, F. (2009b). Does the environment influence the employment growth of SMEs? *Journal of Small Business and Entrepreneurship*, 22(3), 311-326.
- Janssen, O., Van De Vliert, E. and West, M. (2004). The bright and dark side of individual and group innovation: a special issue introduction. *Journal of Organizational Behavior*, 25, 129-145.

- Kang, M-C (2005). Wireless network security: Yet another hurdle in fighting cybercrime. In P. Reich (Ed.). *Cybercrime & Security*.
- Kruger, M.E. (2004). *Entrepreneurial theory and creativity*. University of Pretoria. Retrieved from [Http://upetd.up.ac.za/thesis/available/etd-08242004-145802-unrestricted/02chapter](http://upetd.up.ac.za/thesis/available/etd-08242004-145802-unrestricted/02chapter).
- Larsen, P. & Lewis, A. (2007). How award winning SMEs manage the barriers to innovation. *Journal Creativity and Innovation Management*, 141-151.
- Ng, K. (2010). *Learning Beyond The Classroom*. Retrieved from [www.futuregov.asia](http://www.futuregov.asia)
- Pajarinen M, Rouvinen P, Yla-Anttila P.(2006). *Uusyriita jien kasvuhakuisuus*, KTN Julkaisuja. Helsinki: Ministry of Employment and the Economy.
- Penrose, E. (2006). *A teoria do crescimento da firma*. Compinas editora da unicamp.
- Prasad, D. (2016). *Wireless communication networks*. Random Publication.
- Reach, A., & Rijksik, S. A. (2013). The effects of general and specific human capital on long-term growth and failure of newly found business. *Entrepreneurship Theory and Practice*, 4(3), 923-941.
- Schumpeter, J. A. (1934). *The theory of economic development: an inquiry into profits, capital credit, interest, and the business cycle*. Harvard University Press.
- Sorenson, S. (2010). *Technology trends transforming higher education*. Retrieved from O'Reilly community: <http://broadcast.oreilly.com>.
- Turban, E. D., & Leinder, E. M. (2008). *Information technology for management*. John Wiley & Sons Inc.
- Varshney U., & Vetter, R. (2002). Mobile commerce: Framework, application and networking support. *Mobile Networks and Applications*, 7(3), 185-198.
- Wickham, P.A. (2006). *Strategic entrepreneurship*. Prentice Hall.
- Williamson, C., & Kamaluddeen, N. (2002). *Network measurement of a classroom network*. Retrieved from [whitepaper.zdnet.com](http://whitepaper.zdnet.com).
- Yu, S., Kai, H., & Yeung, H. (2003). City University of Hong Kong, China; Challenges in the migration to 4G mobile systems *Communications Magazine, IEEE*, 41(12), 0163-6804.
- 1(3).