

**T**ECHNOLOGICAL INNOVATION AND GROWTH OF SMALL AND MEDIUM ENTERPRISES IN ABEOKUTA, NIGERIA.

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**ABSTRACT**

**T**his research aims to analyze the impact played by technological innovation on SMEs growth in Abeokuta North Local Government Area by investigating various types of SMEs (service provider, manufacturing and distributors/suppliers). A well-structured questionnaire was used to collate data from the respondents. The method of analysis that was adopted test statistic for the hypothesis was multiple regression and correlation analysis. Hypothesis one shows  $F_{cal} 14.016$  at 0.000 significance level, hypothesis two reveals online marketing has a positive significant relationship on sales volume i.e. since our  $P$  value (0.000) is less than 0.05, hypothesis three tells us that there exist a positive and significant relationship between Social media and Customer base with  $r$  value = 0.109 (10.9%) finally, hypothesis three showed that there exist a positive and significant relationship between E-customer relationship management and Retaining customers with  $r$  value = 0.461 (46.1%). The

**Introduction:**

Over some last few years an outstanding important socio-economic occurrence has changed the world we live in because our immediate environment keeps changing day in day out i.e. our environment is highly dynamic. The current dynamic environment demands all businesses to change – both radically and incrementally. Technology has exerted many significant influences on the ability to innovate and is viewed both as a major source of competitive advantage over rivals in the market environment and of new product innovation (Gunasekaran et al., 1996). Small and Medium Enterprises (SMEs) play a bubbly role in economic development as they have been the major source of employment generation and

*result of the analysis showed that technological innovation has a direct (positive) relationship with SMEs growth. The study shows that there is a significant relationship between technological innovation and SMEs growth and also reveals some recommendations on how to improve the growth of SMEs.*

**Keywords:** *Service providers, Growth of SMEs, Distributors/Suppliers, Online Marketing, Technological innovation.*

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They have contributed immensely the overall output growth, both in developing as well as in developed countries (Love and Roper, 2013). There hasn't been any business in the world that has played a tremendous role especially in employment generation other than SMEs in the world, it helps in the provision of goods and services that are needed to satisfy the need and want of people, creating a better standard of living, as well as contributing immensely to the Gross Domestic Products (GDP) of many countries (OECD, 2000). The ability of a business to add little value to their product gives them a competitive advantage over others in the market environment because they can be well distinguished from other existing similar product. (Wood, 2008) opines that creativity of an organization is mainly concerned with the establishment of valuable and useful new product, service or idea and the methods by which individuals work together in a complicated social system. Innovation is basically concerned and defined with the adoption of a product, service and methods that are new for organizations and adopted by the management. It is important to link technology to innovation in sustaining competitiveness, therefore it is a key factor in a firm's competitiveness. Both technology and innovation are intertwined because innovation is the value added to an existing technology; it is finding a new way of creating or assembling things that are in existence initially. Technological innovation is unavoidable for firms which want to develop and maintain a competitive advantage and gain entry in to new markets (Becheikh et al., 2006). Among various existing firms of different sizes, SMEs are generally more flexible, adapt themselves better and are better placed to develop and implement new designs. According to (Alstrup, 2000), he said most SMEs lack little or no capital and inadequate expertise to be able to adopt and maximize this technological innovation into their business in order to enhance their growth. Therefore, the roles played by SMEs in any country's economy (Nigeria) cannot be over emphasized; these SMEs face punitive conditions leading some of them

failing to survive in the harsh and dynamic business environment and as well to grow or expand to large corporate entities. One of the ways which is very key for any SMEs that want to overcome these harsh conditions and as well remain in this dynamic environment is by being technologically and innovatively inclined whether in their production of goods and services, marketing of their goods and services, relating to their customer and in their daily operations. Most SMEs has failed and still failing not because lack of enough resources needed for them to foster their growth and survival in the market but most business has failed or responded lately to imbibe new ideas, methods, process and product into their business.

Innovation has an important tools creating new marker as well as generating opportunities to assist in new innovation (Kuhn and Marisck, 2010). The boosting of performance and growth of SMEs as being the influence of technological innovation that has been adopted into the business by assisting in saving of the business's resources, time, reducing number of employees and increasing the firm's sales revenue, increase the business customer base to mention a few. The rapid growth of business can be said to be directly depended on the amount of the technological being adopted by the SMEs and how long the business keep abreast of it. Product and services produced by SMEs can reach the world through the adoption modern technological innovation because this world has been interwoven, through this there is no limit to the amount of customers they will possess with the little available firm's resources and this will help the business to increase their revenue and customer base at the same time. There exist some congenital deficiencies in SMEs especially in their production scale, marketing, investment business risk, financial management, financing and many other issues, it very key for the SMEs to be constantly conscious of the vital role which the adoption of technological innovation play in the business by strengthen their technological innovation capability in order to put the business in a prominent position in the development of the enterprises.

Technological innovation is a major driving force and source of strength for inexhaustible healthy growth of SMEs; their core competencies also have been entirely reflected through technological innovation. SMEs must therefore recognize the need to enhance the technological innovation, continue to study and develop new technology, and always maintain a strong technical innovation ability, and only in this way can stand out in the fierce competition in the market and remain invincible.

### Statement of Problems

Poor finance management has been known as the main cause of failure of SMEs (Longeneter et al., 2006). There exist a stronger relationship between business growth and the level of training in the business management especially in business finance record keeping. Business management necessitates keeping of proper records of all business transactions. Knowledge and skills in bookkeeping is especially one foremost factor that impacts positively on sustainability and growth of SMEs. There is assurance that SMEs might collapse if it fails to record its business financial transactions (bookkeeping) daily business within its few months of establishment (Germain, 2009). In quintessence, recordkeeping is one major knowledge or skills that an entrepreneur cannot afford to acquire. This help in managing the financial resources adequately. Research has shown that in any business, recordkeeping is the first step of the accounting process, which also includes classifying, reporting and analyzing the business financial data. (Butler, 2009) also averred that without accurate and complete records of business transactions the business is doomed to fail at its onset., most SMEs are still being skeptical in using accounting software for computerized record keeping because of the cost attached to it (Chong, 2012). (Beke, 2010) quoted that “all business documents and related documents which are filed or kept in a computerized manner ensures more quality decision making through an easy access to the business information. Computerized record proposes that SME growth can be improved if SME implement computerized record in business operations.

One the major problems encounter by the SMEs is the ability to market their products and services to their customers, most businesses are unable to reach or locate their customers. Marketing of outputs (products and services) of the organization is a crucial part to determine the profitability rate of business. Finding customers who are in need of your products or services and supplying goods and services to meet their needs is the sole aim of the business. Marketing brings total revenue to the business after which the profit will be ascertained. In the modern days, most businesses experiences retarded growth because they have failed to adopt new technology of marketing their products or services through the internet. Most businesses embarked on local (traditional) marketing which only attract few consumers to be aware of their products and services. The amount of revenue of the business dropped when the product has saturated the market and no platform to attract new customer to patronize their products and services. Business must concentrate their effort on reaching out to new

customers daily because there lies the reason for business existence. The world has been interwoven, so the ability of the business to penetrate the market to find and meet customers' need is very vital. This study will help to probe into the problem and proffer a sustainable solution.

Most SMEs are being skeptical in adopting social media as a means to reach the world rather keep using their primitive methods. The power of the social media in the 21st century in transforming the social system cannot be over-emphasized. The social media has been described as one of the most effective sources of social change in recent times due to the major role it has played in the market environment. The use of social media by small businesses is very vital but it is often an under-researched area. It has been credited with the ability to increase social contacts, fasten business operations, improved customer's relationship with the business and an advantageous recruitment of highly competent staff (Beke, 2010). (Baird and Parasnis, 2011) added that "With the global outpouring of social media usage, many businesses are experiencing tremendous pressure to extend to where their customers are paying attention and the heart of customer activity is progressively becoming virtual, situated inside a social media. In fact, the proper understanding of social media tools are yet to be fully understood and achieved its aims in the business. Any organization that does not utilize the power of the social media in this time could be regarded as an unprogressive business because research has shown that many people are always on social media more than 12hours per day either chatting with friends and family or doing transaction. It will be of great benefit if business can tap into this huge opportunity of creating awareness and as well selling of their goods and service It is against this that this study hope to establish the impact of social media on the growth of SMES in Abeokuta North.

Customer relationship management in any organization focuses on integrating people and technology into their daily business activities in order to maximize the value of exchange. Many organizations do not understand why customers patronise them; possible reasons may include word of mouth referrals, provision of good and quality products or services, competitive pricing and introduction of latest technologies. Dwindling customer patronage and low return on investment has led many organisations in the developed countries to adopt technological based customer relationship management in order to have a competitive advantage over their major competitors but reverse is the case in developing countries like Nigeria, SMEs in Nigeria are yet to adopt this new technological

innovation fully and hence the need to probe the challenges customer relationship management technology and small and medium enterprises in Abeokuta North, Ogun State, Nigeria.

### Research Questions

1. To what extent does computerized record affect effective financial decision and policy?
2. To what extent does online (digital) marketing influences sales volume?
3. What relationship exists between social media and customer base?
4. What role does e-customer relationship management play in retaining customer?

### Literature Review

#### Technological Innovation

Innovation is derived from the Latin word “novus”, meaning “new”. It is defined as “introduction of something new” or a new idea, method or device (Tornatzky and Fleischer, 1990). (Schumpeter, 1934) described different types of innovation as new product, new methods of production, new sources of supply, the exploitation of new markets and new ways to organize business. (Butler, 2009) defined innovation as the process of equipping in new improved capabilities or increased utility (Lalkaka, 2002) defined technological innovation as the process that drives a concept towards a marketable product or service. This holds true as it contributes towards raising productivity and competitiveness. In this regard, technological adoption and advancement act as channel to expand and accelerate the growth of the business as well. It will enable the business to expand themselves to compete in this borderless world at the same time create, and add value to their business in order to achieve sustainability in the market environment. Technological Innovation can be said to mean the process of developing new ideas, products, services, and processes which exploit technology. It is the application of knowledge to the practical aims of human life or to changing and manipulating the human environment. Technology includes the use of materials, tools, techniques, and sources of power to make life bearable or more pleasant and work more productive. Technological innovation is considered as a process which is science, technology and system based.

### **Promoting Technology Innovation for the SMES**

There exist various suggestions on how to promote the adoption of technological innovation for the SMEs by various scholars. In research study we will examine the suggestions which were stated by (Crossan and Apaydin, 2010). They highlighted that innovation is creation or acceptance, adaptation and utilization of a value added novelty in trade and industry spheres, regeneration and expansion of product, services and markets, making of new ways of product development and establishing new. There are many perspectives through which these can be promoted. Some of these perspectives are listed below:

1. From the perspective of Government policy
2. From the perspective of business managers(Entrepreneur)
3. From the perspective of social and public services

### **Perspective of Government Policy**

As technological innovation is the strategic support to improve the social productive forces and the comprehensive national strength, and it must be placed at the national overall development. At the same time, the report also clearly pointed out that deepening reform of technological system, accelerating the construction of the national innovation system and construction of enterprise as the main body, the market as the guidance, the combination of technological innovation system. However, the ability and innovative capacity of SMEs varies significantly, depending on their sector, size, focus, resources, and the business environment in which they operate (Burrone and Jaiya, 2005).

1. The government must continue to implement the relevant country policies which have issued to promote SMEs in technological innovation, and actively promote the relevant supporting policies and implementations, further strengthen the role of the government in coordination, improve relevant coordination mechanisms, organize and mobilize all social forces to promote sustainable development of SMEs in the present and in the future for a long period of time. (Yan and Yu, 2013) suggest that appropriate policy initiatives such as tax incentives may effectively help SMEs to become active participants in technology innovation.
2. The government in their capacity should establish the scientific research system of technological innovation for SMEs nationwide, actively build "research" collaboration technology platform to promote the

industrialization of high-tech SMEs in the process of transformation. Following the development of technological innovation to their own unique rules, establishing and improving the SME technology innovation intermediary service agencies to provide technical support for SMEs and information services and other integrated services to the greatest extent possible to adapt to changes in the impact of the market economy.

3. The government should improve the protection of intellectual property and the whole society to grasp the concept of policies and regulations as the starting point to further improve the protection of intellectual property and the rules and regulations for the sustainable development of SMEs, especially to increase the protection of intellectual property rights of small and medium-sized industrial enterprises, while strengthening the protection and enforcement of intellectual property rights related to the behavior of the SMEs oversight and supervision, to effectively solve crimes related to the violation of intellectual property rights SMEs timely, in order to maximize the protection of the health and sustainable development of SMEs

### **Perspective of Business Managers**

Faced with ferocious competition, SMEs managers must truly realize that they must enhance awareness of technological innovation of enterprises, rather than the future development of enterprises in the hands of government policies to stimulate and lead, must be done in the aspects of technology and management marketing etc. through technological innovation to improve the value chain of the enterprise products, to increase the added value of products, to win the sustainable development of enterprises by improving the product quality and efficiency.

Enterprise managers should actively take the initiative to understand the central and local preferential policies to support the development of SMEs and specialized organizations that are responsible for corporate R & D. Managers must fix their schedule in a way that they will be able to participate in the policy propaganda meetings held by government departments, to keep abreast of government policy towards SMEs and communicate conference spirit and the essence of the internal staff in order to encourage all employees of enterprises to participate in the process and practice of technology innovation



The small and medium-sized enterprise managers should attach great importance to technological innovation and external environment, effective use of the important roles to improve the economic efficiency of enterprises and to promote the sustainable development of enterprises, and actively cooperate with relevant external agencies to understand government policies, financial support information, information technology service information to enhance the enterprise's own technology innovation ability, enhance external support for more effective power. (Spithovenetal., 2013) in his research concluded that launching products and services can be enhance when SMEs collaborate with external agencies increases their chances of survival and market share of the environment.

### **Perspective of Social and Public Services**

Due to the economic strength of SMEs is relatively weak, the ability to withstand market risks is relatively poor, lacking of the government macro management and regulation, as well as SMEs face unfair treatment of macroeconomic policy, harsh competitive environment, technology innovation capacity of poor and other related issues. It is necessary to provide a good environment of social and public services which will enable SMEs to display their talents in a favorable environment to adapt to the requirements of the market economy.

1. Increasing support to SMEs intermediary organizations to assist the SMEs by making full use of advisory services for SMEs, maintaining good communication with them from startup till maturity stage, providing technical advice to SMEs relating to innovation activities and guidance. For all kinds of specific problems of SMEs manifested through careful study of countermeasures, and gradually developed a new type of intermediary services. While encouraging local governments establishing technological consulting institutions and the establishment and perfection of the science and technology intermediary service network system, so as to promote the sound development of technology innovation of SMEs.
2. Public service organizations should actively build a service platform for dialogue between SMEs and government, the interpretation of various preferential policies issued by the government for SMEs to maintain close communication and contact between the government and enterprises. Collaboration of SMEs goes beyond science and technology and includes

value chain partnerships that bring new knowledge bases which they can absorb easily (Spithoven et al., 2013). Technological innovation for SMEs in the decision reference and interpret the relevant policy is provided through activities. It should also be arrangements for the exchange of hotline, by the relevant technical advisory team of experts dedicated to the development of SMEs operating in emerging technical issues to provide professional guidance to SMEs to promote health and sustainable development.

## Factors Influencing Technological Innovation in SMEs

### 1. Size and Age of the Organization

Size, age and flatter hierarchies were found to have effects on company innovativeness. The size of an organization really determine the kind of technological innovation as well as the age of its existence, a business cannot adopt an innovation that is bigger than the structure of the business. According to (White et al., 1988) for instance, suggested that the smallest firms (20 employees) had the benefit of individualism, the larger firms (50 employees) had the benefit of more resources and systems, while the intermediate group (20-49 employees) lacked the best of either world. They went on to clarify that larger size have a key enabling condition because of access to key resources and addressing these key issues. In support of the above, (Tödtling and Kaufmann, 2001), postulated that SMEs had fewer resources, such as R&D expenditure, and generally face more uncertainties and barriers to innovation than large companies. (Tidd et al., 2002) also asserted that although heavily dependent on innovation, SMEs were less capable of making use only of external inputs than larger companies. The study of World Bank in 2009 also showed that firm size had a strong positive effect while competition had a strong negative effect, on organizational innovations.

### 2. Manager's Characteristics

Manager is a key decision-maker in a business. He can decide to adopt the technological innovation or not. Some managers respond swift and late to the current technological innovation in trend and this really determine the rate of the competitive advantage edge they possess over their rivals in the market environment. In Perry et al. (1993) research, they found that the role of managers is very paramount in deciding to adopt an innovation.

(Jordan et al., 2004) in support of the above said managers need to be technically competent and able to orchestrate new ideas through the organization. He went on to say managers should take advantage of different methods for staff encouragement in order for them to innovative while carrying their daily activities because it helps to encourage the growth of the business.

### 3. Firm Characteristics

Every business or firm has their organizational culture, policies and lay down principle. Firm plan must not be too rigid to the extent that it won't be able to adopt new technological innovation. The firm's structure must be flexible enough in order to responds to the dynamic changes in the technological innovation.

### 4. Technological Factors

(Jordan et al., 2004) said that there are several technological characteristics of an innovation that would affect its adoption, which include complexity, compatibility, relative advantage, ease of use, perceived usefulness, information intensity and uncertainty but (Lin and Ho, 2011) summarized the technological factors mainly on 3 characteristics which include:

- i. Complexity
- ii. Compatibility
- iii. Relative Advantage

#### i. Complexity

It is said to be the degree to which a technical innovation is perceived to be relatively difficult to understand and use according to (Rogers, 2003). (Tornatzky and Fleischer, 1990) stated that a technology with high complexity contained a lot of tacit knowledge that required laborious efforts to learn and diffuse .The difficulty in learning and sharing tacit technological knowledge would make the complex technology difficult to adopt. But according to (Lin and Ho, 2011) stated that an organization would be opted to advance technical innovation when knowledge was shared easily within the organization.

#### ii. Compatibility

(Rogers, 2003) defined compatibility as the degree to which an innovation is perceived as being consistent with the existing values,

experiences and needs of the firm because these three characteristics were consistently been found to be more important in influencing adoption behaviour than the other characteristics. (Jordan et al, 2004) stated that a company will be more likely to adopt the new technology that is more compatible with the company current operational knowledge. Also (Tidd, 2006) as well supported that compatibility was a factor which influenced innovation. He stated that the extent to which the innovation fitted the existing skills, equipment, procedures and performance criteria of the potential adopter was important, and relatively easy to assess.

**iii. Relative Advantage**

This can be said to be the perception that an innovation is more advantageous than its substitute idea according to (Rogers, 2003). (Tidd, 2006) observed that, in theory, the greater the perceived advantage, the faster the rate of adoption. Technological innovation can be adopted when SMEs owner compare the gain & loose (cost-benefit) of the new technology compare to the existing one.

### **Models of Technological Innovation**

The early innovation models were the linear models of innovation before it was replaced by the iterative model of technology push and market pull and finally replaced by the value build up model by Jolly in 1997. The models of innovation can be classified using the two classifying variables:

1. Iteration in
2. Adoption of the innovation

#### **1. Iterative models**

Iterative models look at the interactions of the people involved in the innovation process

#### **2. Adoptive Models**

Adoptive models examine the feedback after the innovation has been adopted (Drazin and Schoonhoven, 1996).

Innovation is viewed as an outcome of numerous organizational iterations in the technology push-market pull model and the value build up model.

Two kinds of adoptive models are discussed in literature: static and

dynamic models, based on feedback after the innovation diffusion. In static models there is no feedback after the user has adopted the innovation

### **SMEs Growth**

Growth is an important phenomenon in small enterprises. In fact, their survival essentially depends on their supremacy to participate in the market with other big businesses. Growth decreases the possibility of closing small businesses (Tidd et al, 2002). One objective of business is ensuring its growth in the industry. 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 defined as a change in size during a determined time span" (Beke, 2010).

However, (Love and Roper, 2013) researched entrepreneurs' ideas on growth and listed the following:

1. Increase in sales
2. Increase in the number of employees
3. Increase in profit
4. Increase in assets
5. Increase in the firm's value and
6. Internal development

### **Growth Determinant of SMEs**

Growth is the result of a good administration of resources and capacities which the businesses use to promote growth. They comprise capacities, acquired information, financial counselling and resources (Law et al., 2003). The establishment of growth depends on the identification of the origin of resources, capacities and learning on accumulation methods and the generation of sustainable profits, coupled to the examination of how and when the resources of industry and financing are accessed and how the external investors may be informed on the subject. (Kuhn and Marisck, 2010) enhance that, from the strategic perspective, it is important to trust people with cognitive capacities for growth since the holders are not the sole protagonists of growth. Further, the entrepreneurs' competence to get involved in networks is highly important (Becheikh et al., 2006).

### **Computerized Record**

Computerization is the act of converting manual function into automated system. Computerization is based on the concept of database. A database is a management system which is define by a set of computerized program that manage and organizes data effectively and provide access to the stored data. (Linda, 2004) noted that there are two functions in record keeping, namely: to provide entrepreneurs business operation and a complete and easy set to record the business activity by providing income tax information which is widely available and verifiable. A good accounting system should give an accurate and comprehensive results of operations, which allow quick comparison between current and previous years' data, offers the financial statements to be used by prospective creditors, bankers and management, facilitate filing reports and tax returns to government regulatory agencies and tax-collecting, and disclosing record keeping error, waste, theft, and employee misconduct.

### **Challenges SMEs Face in Their Ability to Computerize Their Records**

In spite of the various government programs (training, seminar and workshop) and incentives (grants, aids and subsidy) including technology acquisition and skill-building programs, the adoption and effectiveness of technology adoption among SMEs is still an issue of great concern to the government, because most SMEs still prefer their traditional method of recording their daily transactions and the percentage is fairly low compared to the CAS (Computer Accounting System) adoption among SMEs in the country. One possible explanation for the low adoption level is that most of SMEs owners are hesitant of CAS (Peter, 1999) due to their unfamiliarity with the technology (Soon, 1990). In this regard, (Chong, 2012) argued that the lack of a coherent national IT plan and disintegration of IT training at various levels of agencies might have contributed to the slow adoption rate of CAS among SMEs.

### **Online (Digital) Marketing**

Electronic Marketing (E-Marketing) can be viewed as a new philosophy and a modern business practice involved with the marketing of goods, services, information and ideas via the Internet. For that, (Smith and MChaffey, 2005) defines it as: Achieving marketing objectives through applying digital technologies. The Internet also allows the marketers interact with the customers on one-to-one basis and to build the loyal brand relationship (Soon, 1990). Thus,

the interaction via the Internet within customers able to improve the marketing performance (Furash et al., 1999). The findings from (UNCTAD, 2011) from the business perspective supported that the use of the Internet affects the productivity in both large and small enterprises a lot because the world is privilege to see their product which might enhance patronage. Also, the effect of online marketing is more powerful and diverse due to its ability to reach customers regardless of geographical locations.

### **E-Customer Relationship Management**

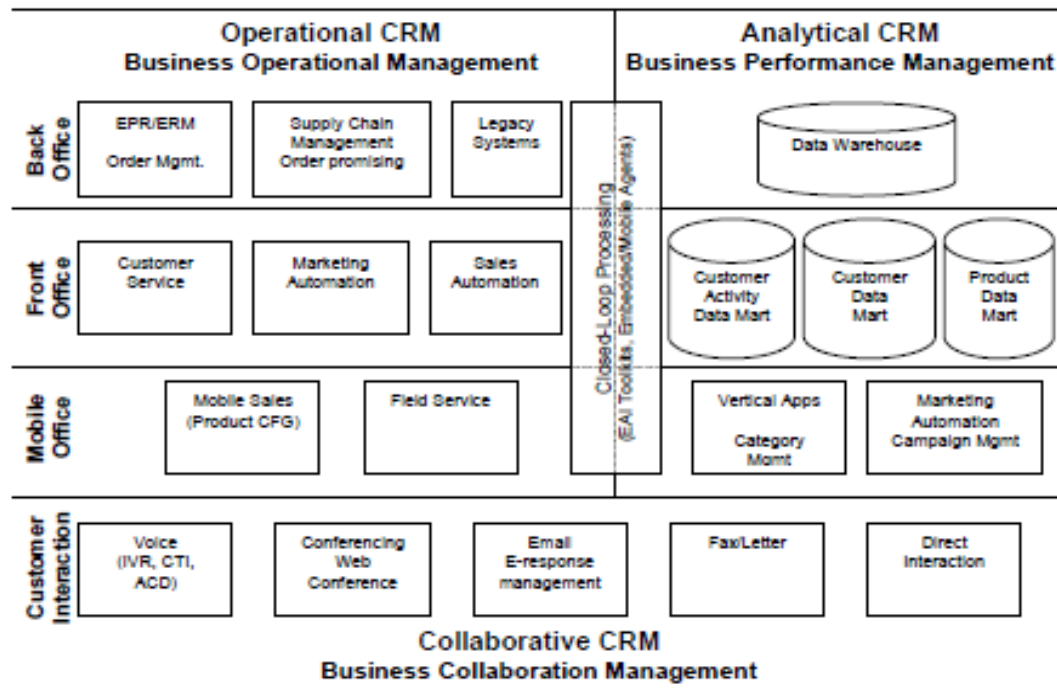
CRM can be defined as an organisational approach that seeks to understand and influence customer behaviour through meaningful communications in order to improve customer acquisition, retention, loyalty and profitability (Yan and Yu, 2013). Customer Relationship Management is a comprehensive strategy and process of acquiring, retaining, and partnering with selective customers to create superior value for the company and the customer. It involves the integration of marketing, sales, customer service, and the supply-chain functions of the organization to achieve greater efficiencies and effectiveness in delivering customer value.

A technology-related perspective of CRM can be defined as the process of storing and analysing of large amounts of data that provides insight into customer behaviour. This in turn enables the organisation to treat their customers differently based on the exhibited behaviour. (Law et al., 2003). The importance of technology and its use in CRM is in the increased use of these technologies to establish relationships and develop loyalty and retention among existing customers. The effective use of CRM systems can assist in the organisation's relationship-building activities while also contributing to the profitability of the organisation.

### **Technology and CRM- The CRM Ecosystem**

Building relationships with customers requires data on the customer. If data is to be used, it has to be clean and timely, and the impression is gained that organisations have extensive data on their customers (Anon, 2002; Abbott, 2001). Technological developments continue to affect the organisation and the marketing of its products and services. These technological applications include the computer (specifically the World Wide Web) and mobile telephone technology. In using technology, a number of technology applications can be

identified that are used in the development of CRM strategy (Xu & Walton, 2005; Abbott, 2001; Chen and Popovich, 2003; META Group, 1999). Three main components of CRM systems can be identified, using the diagram below:  
Figure 1: Technology Application of Customer Relationship Management



Source: Adapted from Shahnam, 2000

### Operational CRM

This includes customer-facing applications such as sales force automation, enterprise marketing automation and customer service and support (Chen and Popovich, 2003). Customer call centres are also a component of operational CRM, and have been identified as the dominant aspect in CRM systems (Xu and Walton, 2005; Anon, 2000). All interactions with the customer are recorded, enabling the organisation to gather data on the customer and thus track the customer (Xu and Walton, 2005).

### Analytical CRM

It analyses the data that has been created through operational CRM to build a picture of the customer. Analytical CRM includes the capturing, storage,

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extraction; processing, interpretation and reporting of customer data stored in data warehouses (Xu and Walton, 2005). This enables the organisation to examine customer behavioural patterns in order to develop marketing and promotional strategies (Xu and Walton, 2005). This would appear to indicate that the primary use of CRM systems is operational in nature (Xu and Walton, 2005).

### **Collaborative CRM**

This uses new and traditional communication technologies to enable customers to interact with the organisation (Meta Group, 1999). Collaborative CRM allows a better level of response to customer needs by involving all the members of the supply chain such as suppliers or other partners (Xu and Walton, 2005). It also involves channel strategies or any function that provides a point of interaction (or touch point) between the customer and the channel (Shahnam, 2000).

A further category of CRM systems identified by (Chen and Popovich, 2003) in (Xu and Walton, 2005) is that of e-CRM. E-CRM makes it possible for the organisation to have as much contact as possible through all communication channels, notably through the Internet and Intranet. E-CRM is thus a web-centric approach to customer contact (Xu & Walton, 2005). The Internet makes it possible to have frequent contact with the customer, and so keep their databases as pure as possible while developing better customer relationships (O'Leary et al., 2004). It has also been suggested that the value of the Internet can be seen in the quicker flow of information and more consistent communications that can result from its use (Maxham, 2000). Using the Internet enables CRM to become more interactive, affecting the relationships that are developed (Xu et al., 2002). It has been suggested that while the Internet is used for promotional purposes, its interactive capabilities have not been used to their fullest extent (O'Leary et al., 2004).

### **Technology Applications within CRM**

The development of CRM technology can be viewed from the perspective of the level of information technology applied in building customer relationships. Four stages can be identified in this development process (Stefanou et al., 2003). These four stages are illustrated in the diagram below:

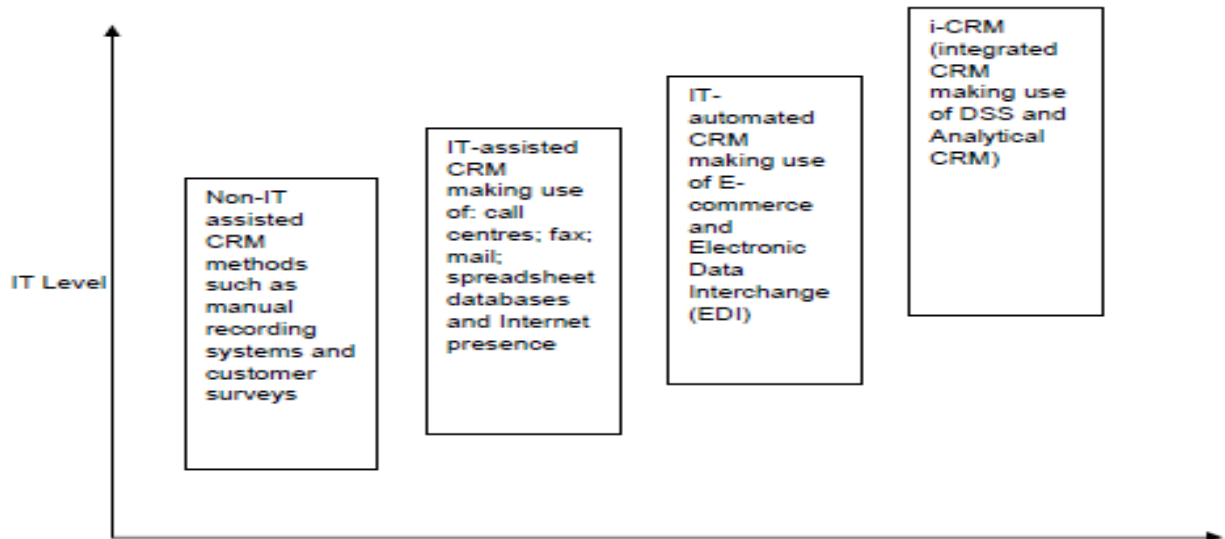


Figure 2: Stages of Technology Implementation in Customer relationship Management

Source: Adapted from Stefanou, Sarmaniotis & Stafyla, 2003

## METHODOLOGY

For the purpose of this research study, an exploratory study design and survey approach were adopted because this research study is descriptive in nature. The population of this study comprises the selection of 11 major SMEs which are mainly into service and manufacturing. The simple random and stratified sampling techniques were adopted for this study. Multi-regression analysis was used to test hypothesis one and hypothesis two while hypothesis three and four was analyzed using correlation analysis (Mugenda and Mugenda, 2003, Koltari, 2006).

Table 1: Returned Rate of Questionnaires

Questionnaire	Respondents	Percentage of respondents
Returned	100	91.74
Not returned	9	8.26
Total Distributed	109	100

Field survey, 2018

Table 2: Analysis on Socio-Demographic Characteristics

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Socio Demographic Data	Frequency	Percentage%
<b><u>Gender</u></b>		
Male	53	53.0
Female	47	47.0
TOTAL	100	100
<b><u>Age</u></b>		
16-20	3	3.0
21-30	8	8.0
31-40	65	65.0
41 and above	24	24.0
TOTAL	100	100
<b><u>Employment Status</u></b>		
Permanent	23	23.0
Temporary	41	41.0
Casual	36	36.0
TOTAL	100	100
<b><u>Business Experience</u></b>		
6month to 1year	35	35.0
Between 2 to 3years	34	34.0
3 to 5years	19	19.0
5years and Above	12	12.0
TOTAL	100	100
<b><u>Level of Education</u></b>		
SSCE	28	28.0
NCE/ND	15	15.0
HND	7	7.0
B.Sc	48	48.0
M.sc/MBA/M.A	2	2.0
TOTAL	100	100

The data presented in the table 4.2(Gender) above shows that fifty-three (53) respondents representing 53.0% are males of the total number of respondents while forty-seven (47) respondents representing 47.0% are females. This implies that male respondents are greater than female respondents which may be due to the policy of the business of employing more male personnel than female personnel.

The data presented in the table 4.2(Age) shows that three (3) respondents representing 3.0% were age ranged of 16 – 20years, 8 (eight) respondents representing 8.0% were age ranged of 21-30 while majority of the respondents fall between age range of 31-40years, with sixty-five (65) respondents representing 65.0% and twenty-four (24) respondents fall between the age range 41 and above representing 24.0% of the total percentage of respondents. This shows that the majority age range of the respondents 31-40.

The data presented in the table 4.2 (Marital Status) shows that eighty-nine (89) respondents representing 89.0% are single; nine (9) respondents representing 9.0% are married, while 2 of the respondents representing 2.0% are divorced. This implies that majority of workers are singles

The data presented in the table 4.2 (Employment Status) shows that 23 of the respondents representing 23.0% are permanently employed while 41 respondents representing 41.0% are temporary and 36 respondents representing 36.0% are casual.

The data presented in the table 4.2(business experience) shows that 35 respondents representing 35.0% had 6month to 1year experience, 34 respondents representing 34.0% had between 2-3years experience, 19 respondents representing 19.0% had between 3-5years experience, 12 respondents representing 12.0% had above 5years experience. This suggests that majority of the business experience of the respondents are between 6month-1 year.

The data presented in the table 4.2(educational qualification). It shows that twenty-eight (28) respondents representing 28.0% were SSCE holder, 15 respondents representing 15.0% were OND/NCE holder, seven (7) respondents representing 7.0% were HND holder, forty-eight (48) respondents representing 48.0% were B.sc holder, two (2) respondents representing 2.0% were M.sc/MBA/M.A holder. This reveals that majority of the respondents are B.Sc holders.

### Test for Hypotheses

**Hypothesis 1:** Computerized Record does not affect effective financial decision and policy

**Table 3a Model Summary<sup>b</sup> for Computerized Record and effective financial decision and policy.**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.438 <sup>a</sup>	.192	.178	.44486

a. Predictors: (Constant), Computerized Record

b. Dependent Variable: effective financial decision and policy.

Table 3b ANOVA<sup>b</sup> for Computerized Record and effective financial decision and policy.

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.774	1	2.774	14.016	.000 <sup>a</sup>
	Residual	11.676	59	.198		
	Total	14.450	60			

a. Predictors: (Constant), Computerized Record

b. Dependent Variable: Effective financial decision and policy.

The results from the model summary table revealed that the extent to which the variance in Effective financial decision and policy can be explained by Computerized Record is 19.2% i.e. (R square = 0.192). The ANOVA table shows the Fcal 14.016 at 0.000 significance level. That competitive dynamics has a significant relationship with competitive dynamics.

Table 3c Coefficients<sup>a</sup> for Computerized Record and effective financial decision and policy.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.930	.266		3.502	.001
	Computerized Record	.483	.129	.438	3.744	.000

a. Dependent Variable: effective financial decision and policy

The coefficient table above shows that the simple model expresses how has computerized Record a positive effect on effective financial decision and policy. The model is shown mathematically as follows:

$Y = a + bX$  where Y is effective financial decision and policy and X is Computerized Record, a is constant and b is the value of the coefficient. From this table therefore, effective financial decision and policy =  $0.930 + 0.483$  Computerized Record. Therefore, for every 100% increase in effective financial decision and policy, computerized record contributed 48.3%.

The above result implies that computerized record has a positive significant relationship on effective financial decision and policy i.e. since our P value (0.000) is less than 0.05. Then, the decision would be to reject null hypothesis ( $H_0$ ) and accept the alternative Hypothesis ( $H_1$ ), i.e. there is a significant effect of Computerized Record on effective financial decision and policy.

### Hypothesis 2: Online marketing does not affect sales volume

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.331 <sup>a</sup>	.109	.100	.833

a. Predictors: (Constant), Online marketing

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	8.104	1	8.104	11.669	.001 <sup>a</sup>
	Residual	65.979	95	.695		
	Total	74.082	96			

a. Predictors: (Constant), Online marketing

b. Dependent Variable: Sales Volume

The results from the model summary table revealed that the extent to which the variance in Sales volume can be explained by online marketing is 10.9% i.e. (R square = 0.109). The ANOVA table shows the Fcal 11.669 at 0.000 significance level.

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.346	.593		5.643	.000
	Online marketing	.361	.106	.331	3.416	.001

a. Dependent Variable: Sales Volume

The coefficient table above shows that the simple model expresses how online marketing has a positive effect on Sales volume. The model is shown mathematically as follows:

$Y = a + bX$  where Y is sales volume and X is Online marketing, a is constant and b is the value of the coefficient. From this table therefore, Sales volume = 3.346 + 0.361 Online marketing. Therefore, for every 100% increase in sales volume, online marketing contributed 48.3%.

The above result implies that online marketing has a positive significant relationship on sales volume i.e. since our P value (0.000) is less than 0.05. Then, the decision would be to reject null hypothesis ( $H_0$ ) and accept the alternative Hypothesis ( $H_1$ ), i.e. there is a significant effect of Online marketing on Sales volume.

### Hypothesis 3: Social media does not affect customer base

		Social Media	Customer Base
Social Media	Pearson Correlation	1	.109
	Sig. (2-tailed)		.0023
	N	100	144
Customer Base	Pearson Correlation	.109	1
	Sig. (2-tailed)	.0023	
	N	100	100

**\*\* . Correlation is significant at the 0.01 level (2-tailed).**

When p-value (sig level) is less than 0.05 (5%), the null hypothesis ( $H_0$ ) is rejected, otherwise accepted.

The result in the table above showed that there exist a positive and significant relationship between Social media and Customer base with r value = 0.109 (10.9%). Hence, it can be deduced that social media has a positive relationship with customer base.

### Hypothesis 4: E-customer relationship management does not play any role in retaining customers

		E-customer Relationship Management	Retaining Customers
E-customer Relationship Management	Pearson Correlation	1	.461**

	Sig. (2-tailed)		.000
	N	97	97
Retaining Customers	Pearson Correlation	.461**	1
	Sig. (2-tailed)	.000	
	N	97	97
	<b>** . Correlation is significant at the 0.01 level (2-tailed).</b>		

When p-value (sig level) is less than 0.05 (5%), the null hypothesis ( $H_0$ ) is rejected, otherwise accepted.

The result in the table above showed that there exist a positive and significant relationship between E-customer relationship management and Retaining customers with r value = 0.461 (46.1%). Hence, it can be deduced that E-customer relationship management has a positive relationship with Retaining customers

### Empirical Findings

As stated earlier, the discussion of this study followed the hypotheses raised and tested and they are presented below:

#### Hypothesis One:

This shows that the simple model expresses how has computerized Record a positive effect on effective financial decision and policy in the work of Shahnam, (2000) which state it explicitly how entrepreneurs succeed in their business. . He contends that successful business operators consider profit to be a measure of success and competency. They set personal but attainable goal for their business and are concern in how well they are doing. In this sense, they are conscious of every transactions accruing from their business and hence they are in a better position to control loss. It is then relevant in this research where the SMEs managers or owners are expected not only to monitor their business transactions but also to make the most accurate decisions that would bring profit to their enterprises.

#### Hypothesis Two:

The result implies that online marketing has a positive significant relationship on sales volume, according to the finding of ( Xu et al .,2002 and Stefanou et al., 2003), which probed the relationship between innovation and the growth of



sales for firms in high tech sectors. They observed that innovation is of a crucial importance for selected fast growth firms. If any undertaken innovation is successful, the share of innovated new products is likely to increase in the total sales of the firm and when this happens, firms will be able to achieve growth in their sales turnover, investment and employment which would all result to achieving growth of firm size.

### **Hypothesis Three:**

The result showed that there exist a positive and significant relationship between Social media and Customer base which can be based on the work of In the empirical study by Ab Hamid, Akhir and Cheng (2013), a direct correlation was found between customer retention and social media followers. That is, those customers, especially those in the younger generations, that are engaged or aware of the social media communication of a company. **Hypothesis Four:**

The result showed that there exist a positive and significant relationship between E-customer relationship management and retaining customers in lieu to the research conducted by Maxham, (2000) customer retention had been measured by four dimension. That is, overall firm satisfaction; positive words of mouth; repeat purchase intentions; and loyalty to the firm. Which leads directly to the cooperative behavior that is conducive to relationship marketing success; and important in the establishment and maintenance of long term relationship with customers?

### **Conclusion**

Based on the empirical evidence from the study, it could be concluded that adoption of technological innovation in SMEs have direct (positive) relationship with the growth of business. From the analysis of the data obtained in the field, it is concluded that: computerized accounting system aids an effective financial decision and policy of Small and Medium Enterprises (SMEs) because SMEs can manage their cash flows effectively. Also from the facts available, SMEs appreciate the role which online marketing plays on their sales volume, more patronization has been coming in for the business which leads to product and business expansion as well as the sales revenue; the use of social media to promote goods and services is taken as priority which turn leads to increase in their customer base because awareness creation about the product and service is boundless through it. Also, e-customer relationship management plays a major

role in retaining customers in SMEs as customers' feedbacks and complaint are now being attended too digitally without seeing the customer physically.

### Recommendations

Prior to the findings in this research work, the following recommendations have been deduced to help improve the growth of SMEs:

1. Since there is positive relationship between technological innovation and the business growth, SMEs should engage in periodical innovation of their products, market, organisation in order to remain relevant in the market environment and as well to sustain their growth.
2. The internet is revolutionizing the way business is conducted and according to the findings, online marketing has positive effect on sales volume, SMEs should involve in using the internet to promote their product/services in order to gain a larger market share.
3. The management of SMEs should find out the actual choice of technological innovation that will be appropriate for the business in order to improve its performance and growth.
4. SMEs should have a proper and well monitor distribution strategy and must be able to tailor it in such a way that it will increase its sales thereby increasing the profit of the organization.
5. SMEs should must not be skeptical about adopting new technological innovation but rather be highly sensitive because swift response to new technological innovation can give them a competitive advantage over their rivals
6. SMEs should position themselves in a flexible manner that will make them to adopt or absorb new innovation that is trending in the market environment into their business.
7. Effort should be made by SMEs to understand the pricing strategy employed by their competitors in order to have a positive behaviour from the consumer towards their products/services
8. There is need to sensitize the SMEs on how utilization of new technology can enhance business growth.
9. SMEs should embark from time to time on research & development & innovation since the environment is highly dynamic.

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