
The Study on the Challenges and Prospect on Marketing Nigeria Made Computer Software: A Case Study of Gombe Metropolis

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ABSTRACT: *This study examines the challenges and prospects of marketing Made-in-Nigeria software, with a focus on the Gombe State region. It investigates attitudes towards locally produced software, identifies societal problems affecting software marketing, analyzes challenges faced by software development students, explores factors influencing the preference for foreign software, and proposes strategies for promoting Made-in-Gombe software. The research questions address various aspects of software marketing and the behavior of Gombe consumers. The study finds that there are significant challenges in marketing Made-in-Gombe software, including perceived inadequate skills among developers, limited government support, and socioeconomic factors impacting students' software development, poor classroom environments, frequent lecturer transfers, and insufficient learning materials. Locally made software is also perceived as inefficient, and the high cost of hosting websites and deploying software hinders its development. The study's significance lies in aiding multinational and indigenous companies in Nigeria with effective marketing planning, providing insights for academics and marketing consultants, and encouraging further research in promoting Gombe-made products. While the study focuses on Gombe-made software, its findings can be applicable to other locally manufactured products. Recommendations are provided to address the identified challenges and improve the marketing of Made-in-Gombe software.*

KEYWORDS: challenges and prospect, marketing, Nigeria, made computer software, Gombe metropolis

INTRODUCTION

Software produced within Nigeria by its citizens is in other words referred to as Made-in-Nigeria software. There is a big need for Nigeria to produce its own software being a third world

developing country. This will drive the development, growth and stability in every sector of her economy and give her a platform for global competition.

In the year 1988 the government of the day in Nigeria, took a bold step towards encouraging the consumption and patronage of services or products that were produced in Nigerian. This is to drive and if possible help actualize the Decree for enterprise promotion at home. This decree came into being to reduce dominance of imported products in the economy, to drive local profit retainership thereby and creating more jobs amidst other reasons. Between Nigerian independence which came in 1960 till now, the Nigerian economy have experienced so many changes and undergone political and social changes as well which has resulted in both small and big companies losing their businesses. This was caused mainly by ineffective government participation, management, lack of vision or foresight and laid back leadership exhibited towards indigenous firms. There is low employment of natural resources and underutilization of manpower which has crumbled the entire economy. This scenario holds a lot of implication implications which can affect the image of a country on the global market and impede foreign exchange. This irregularity can cause short supply of products and in some cases could encourage the circulation of fake products due to decline in the income of consumers, shortages caused by fluctuation in household income, bad reputation of indigenous goods, low no zeal for advertising, poor orientation on marketing and a general discontentment for products made in Nigeria (Aire, pp.46-62, 1973: Kalegha et al 1983, p.5). However, as the system is becoming democratized coupled with the awareness for self-reliance being raised by government which will enhance sustainable growth, it has increased the hope that Nigerians will eventually imbibe the habit of going for our indigenous brands other words called made in Nigeria goods.

LITERATURE REVIEW

This part will discuss the concept of software development, it will further elaborate on software and why it matters to Nigeria and Gombe economic future. The literature review will also discuss software marketing, and will also establish a review of relevant research works that was undertaken and presented

Concept of Software development

Software development is the production or creation of software. This software could be produced for a variety of purposes for meeting specific needs of a specific client/business; perceived need of some set of potential users; for personal use and increasing market competition. Software development is defined as the activity that involves process of writing and maintaining the source code, and in the broader sense, the term includes all that is involved between the conceptions of the desired software through to its final manifestation. Therefore, software development may include research, new development, modification, reuse, re-engineering, maintenance, or any other activity that results in software products. Moreover, as a nascent Industry and fast-changing

technology, market forces alone are often inadequate to harness the software industry potentials and it has therefore become particularly important to focus on the dynamic nature of the public services and social priorities and to serve the needs of the poor, rural areas, small and medium enterprises (SMEs and non-governmental organizations (NGOs) who are also part of the stakeholders and critical elements needed to drive a robust knowledge economy.

The foregoing fundamental change to development is a result of a number of factors, including the increasing reliance on technology, the need to adapt to changing market place demands, the issue of maintenance and integrating legacy systems along with a growing requirement for effective management of IT. These issues are the driving force for the extinction of monolithic software systems. The notion of monolithic system is being replaced by the creation of modularized, loosely coupled parts and components that can be re-used and readily integrated across applications. This relatively new and growing requirement for componentization of software is impacting the nature of the global software development industry as it evolves into a manufacturing industry.

Factors influencing Software Development

The factors influencing software development and the institutional frameworks that promote its programmes and projects can be grouped into two categories. These are the internal and external factors.

Internal factors

- **Human resources:** This encompasses the skills and experience of top/middle management and production workers, education level of staff and regular trainings, collaboration between company's employees, costs of labour, motivation of a personnel to better performance and increased productivity and the rate of staff turnover.
- **Products / Services:** This consists of the competitive features of a product/service, its quality, extra services related to a product (guarantee service, free installation, etc), delivery term and quality, technological innovations used in production processes, pricing options offered to customers.
- **Company-related:** This entails timing for market, sales trends, company's reputation and image, brand perception, location (in terms of proximity to local markets, distribution channels, development of infrastructure and communications), resource base (price and quality of resources, proximity to resource supply), government support, quality of suppliers, flexibility and responsiveness to market changes, profitability rates, company's expansion potential.

External factors

- **Market environment:** It depicts the level and intensity of competition (number of competitors, their scale, recognition and experience on market), market trends (growth of customers, companies, sales, etc), and innovations by competitors (whether the competitors

produce or sell traditional or hi-tech modern products or services), market entry barriers (control of resources, large initial investments, government policy, etc).

- **Economic factors:** It covers inflation rate, income growth, general taxation burden and taxes imposed on target product/service category, exchange rate, trade barriers (for international traders), access to loans (availability and costs of fund/credits), unemployment rate and influence of weather or seasonality. The government fiscal and monetary policies are also critical factors of influence.
- **Social factors:** This shows the demographic trends (population growth), lifestyle trends, consumer attitudes, ethnic/religious influence, media market development, age distribution (percentage of audience with target age group), healthcare protection (development of healthcare services), education level, labour mobility, social legislation and government support.
- **Technological factors:** The component include IT development, technology transfer, legislation (laws and directions on technology processes, intellectual property protection, patenting, licensing, etc), communication sector growth (broadband internet coverage, LAN networks, cellphone users).
- **Political factors:** This features the environment policy, legislation trends, competition regulation, political stability, trade regulation, current or potential wars and conflicts and other political tendencies of instability that can engender fear of insecurity and appropriation.

The concept of software and why it matters to Nigeria's economic growth Just 40 years ago, these following companies were non-existent; Amazon, Facebook, Google, Apple, Microsoft, and Precise Financial Systems [PFS] – they were not even ideas. The first five are American technological firms dealing in software and hardware while PFS is a Nigerian software company. In that time, these companies have become the standard bearers in the economic world, amassing great knowledge and wisdom that makes them part and parcel of the everyday fabric of human society and living.

Software marketing in Gombe

Indigenous software development has been described as one big area of opportunity for Gombe to bridge the technology gap. Experts say inadequate infrastructure and death of active software engineering practices remain chief hurdles to a timely achievement of this feat, DAYO OKETOLA writes.

In today 's world of knowledge revolution, software is one of the biggest revenue generating sectors globally.

However, it is sad to note that Nigeria has not appreciated the huge potential that exists in the software market. The state has, therefore, continued to depend on foreign softwares to drive the economy.

This situation, according to experts, does not only reduce innovation, but will also increase the country's technology dependency rate in the future.

They also say that software development industry is non-existent in the country due to lack of infrastructure, death of indigenous software development and high level piracy.

The need to find a lasting solution to the problem must have prompted the National Information Technology Development Agency to conceive the idea, recently, of establishing two software development centres in the country to provide training in web design, software production, software engineering and software programming.

The Director-General of the agency, Mr Kashifu Inuwa, who said the northern and southern parts of the country would get one centre each, was quoted as saying software engineers from developed economies would be engaged to train Nigerians in various areas to boost Information Technology utilisation industry in Nigeria.

He said, "We have been discussing the issues of providing more software personnel in the country because we believe that this is the only way Nigeria can contribute meaningfully to this knowledge-based economy. We propose to set up two centres in the country. With these, Nigeria can provide a lot of software developers in the country and in the continent at large in the long run."

In the same vein, the Institute of Software Practitioners of Nigeria has also called for the establishment of a national software development policy and awareness, all in the bid to address the seeming insurmountable challenges in the software development sub-sector.

A United States-based Nigerian software engineer, Mr. Modibo Usman, who is the Chief Software Architect, Schaide Incorporated, said Nigeria needed more than what NITDA was already proposing to leapfrog the software revolution in the country. According to him, "The software industry is Nigeria's light at the end of a tunnel. It offers us the greatest opportunity to catch on the technology gap. But we are not doing much in this area and the window is closing. The average mid-level software developer earns between \$75,000 to \$150,000/annum in the US. The US imports over 100,000 software developers from India alone every year. On the average, two out of every five developers are from India and four out of every five are from Asia. There is a huge demand for software developers, yet only a handful of Nigerians is into mainstream software development. In the Middle East, countries like Dubai, UAE; Saudi Arabia pays up three times as much."

Speaking on the problems facing the Nigerian software development sub-sector, Usman noted that Nigeria's learning institutions remained the number one culprit. He said, "The problems I see start

with exposure of our institutions of learning to active software development practices. They are not as integrated with the rest of the world as expected. If we have young software graduates coming out of school without being able to deploy an average enterprise grade application; that does not help the situation very much. Companies like Microsoft have outreach programmes that collaborate with schools worldwide, which allows those schools to be part of Microsoft's software research and development.

All these marketing strategies and techniques are potentially available to software developers and vendors in Gombe too. The Gombe software market has been expanding since 2020 and the importance of marketing as a major business activity has been increasing. In addition to attempting to understand market behaviour, it is necessary to study some of the market dynamics that are operative presently and which could point the way forward.

Another problem faced while marketing made in Nigeria software in Gombe is the problems encountered by the local software manufacturers. Challenges faced by the local software manufacturers are divided into four categories:

- Regulatory System
- School System
- Societal System
- Security System

1. Regulatory System

- Nigeria did not have a ministry dedicated to ICT until July, 2011.
- Focus on rolling out new regulations over ensuring adherence to existing regulations.
- Over reliance on foreign ICT products and vendors.
- High cost of production due to lack of enabling infrastructure

2. School System

- **ICT related courses** are not yet fully integrated in **all tiers of education**.
- The emphasis on the school preparing students for a **great job over** preparing them to solve problems or be **great entrepreneurs**.
- There is poor **government support** on school infrastructure.

3. Societal System

- Slave mentality that anything made overseas must be better than the ones made in Nigeria.
- Many philanthropists would rather give fish than teach people how to fish. What is wrong with building Co-Location Hub or "software villages"?

4. Security System

- Many made in Nigeria software are not built using secure coding practices or international standards like COBIT 5.

According to Deloitte's Security Survey on eBusiness Platforms in Nigeria, November 2013, results show that of the total platforms sampled, online shops / retail markets had the highest

number of security flaws, followed by financial institutions. 28% of the e-Business platforms reviewed transmitted user credentials in clear text.

- Intellectual property rights are usually not protected due to poor enforcement of the Copyright Act.
- Many of our IT professionals are still under colonization – in their minds. They are working hard to “catch up” with Microsoft, Facebook, Twitter, Samsung, etc. If we always think of catching up, we will never be ahead, and consumers are transacting with those ahead. Create the future!

RELATED WORK

Soriyan, A. and Heeks, R. performed a comprehensive study of the Nigeria software industry was undertaken leading to the profiling of the industry in terms of existing software corporations, ownership, developed products and services rendered. According to them, the Nigerian software market is dominated by imported packages. However, this has not meant the Nigerian firms are simply retail outlets for those packages. Instead, the imported packages form the base for further software services to be offered by those firms. In part, this servicing derives from contextual differences: the fact that software packages developed in and for industrialised country markets are not exactly applicable in developing countries without some adjustment (Avgerou 1996). Perhaps in larger part, though, locally-provided services derive from the fact that many packages – products such as Microsoft Access – are "shells" or "skeletons" that must at least be populated with user-specific data and, at most, can be programmed with user-specific interfaces and processes.

Akinola S. Olalekan presented research findings concerning the state of the Nigeria software industry and highlighted process compromise, resistance to measurements and poor training of students at the higher education institutions as some of the problems befalling the industry. He mentioned that The Nigerian software industry is in the developing stage when compared with the Capacity Maturation Model (CMM) proposed by the Software Engineering Institute of Carnegie-Mellon University. The existing few ones are sited in some strategic cities in the country, mostly at Lagos, Port Harcourt and Ibadan. This is due mainly to the high level of commercial activities going on in these areas.

A recent survey conducted by Compumetrics Solution Limited in 2003 revealed that out of 1,005 organizations, which are into different ICT businesses, 15 (1.4%) are into software developments, 24 (2.4%) are into web solutions and 53 (5.3%) are into hardware business. The findings show that the software industry in Nigeria is just coming into limelight. In her effort to foster the development of software and its industry in Nigeria, the Nigerian government recently set up a committee for the development of local software in the country. Essentially, the committee is to

advise government on how to position software in Nigeria. Indeed, the mandate of the committee is: *“Make money from software”*

In Uzodinma, P. O. (2015), wide skills gap in modern tools is identified as the major challenge of developers in Nigeria and recommends regular trainings on modern tools as well as mentorship and business advisory to raise young innovative developers. He mentioned three (3) challenges of the software engineering industry vis-a-viz

- **The Problem of Scale:** A fundamental problem of software engineer is the problem of scale; development of a very large system requires a very different set of methods compared to developing a small system. In other words, the methods that are used for developing small systems generally do not scale up to large systems. A different set of methods has to be used for developing large software. Any large project involves the use of technology and project management.

For software projects, by technology we mean the methods, procedures, and tools that are used. In small projects, informal methods for development and management can be used. However, for large projects, both have to be much more formal.

While dealing with a small software project, the technology requirement is low and the project management requirement is also low. However, when the scale changes to large systems, to solve such problems properly, it is essential that we move in both directions- the methods used for development need to be more formal, and the project management for the development project also needs to be more formal.

- **Cost, Schedule and Quality:** The cost of developing a system is the cost of the resources used for the system, which, in the case of software, are the manpower, hardware, software, and the other support resources. Generally, the manpower component is predominant, as software development is largely labour-intensive and the cost of the computing systems is now quite low.

Hence, the cost of software project is measured in terms of person-months, i.e. the cost is considered to be the total number of person-months spent in the project. Schedule is an important factor in many projects. Business trends are dictating that the time to market of a product should be reduced; that is, the cycle time from concept to delivery should be small. Any business with such a requirement will also require that the cycle time for building software needed by the business be small.

One of the major factors driving any production discipline is quality. We can view quality of a software product as having three dimensions; Product Operation, Product Transition, Product Revision

- **The Problem Of Consistency:**

Though high quality, low cost and small cycle time are the primary objectives of any project, for an organization there is another goal: consistency. An organization involved in software development does not just want low cost and high quality for a project, but it wants these consistently.

Sowunmi, O. Y., Misra, S., Ferdnandez-Sanz, L., Crawford, B. and Soto, R. (2016) presented findings from a research aimed at increasing patronage of locally developed software and reducing software importation into Nigeria is. It reveals neglect of international standards by most developers and lack of innovative developers as major causes of low quality products and poor patronage. It further recommended international accreditation and certification of Nigerian developers to expose them to international standards adopted by foreign developers in creating quality and innovative software products.

RESEARCH METHODOLOGY

To conduct a sound and successful research, and to meet its objectives, requires precise and adequate information. Research methodology is specific procedure employed in the process of collecting, recording and analyzing data about a problem. The methodology tells us how information about our research topic was collected or gathered. Basically, research refers to enquiry into unknown which must begin from known. According to Shuttle worth, Martin (2008). Research can be defined as gathering of data, information and facts for the advancement of knowledge. Similarly Waltz and Bausel (1981) define a research as a systematic, formal, rigorous and precise process employed to gain solutions to problem or discover and interpret new facts and Relationship. The procedures to be used in conducting this research are:

1. Study Area
2. Source of data collection
3. Instrument for data collection
4. Population of the study
5. Sample size
6. Method of data analysis

Study Area

The present town of Gombe is situated in the North east of Nigeria. –The boundaries of Gombe town to the north and west are Kwami and Akko local governments, to the south, northwest by Akko and Yamaltu-Deba Local Government Areas respectively. The areas also correspond to the territory of Gombe Local Government Area. It is located between a latitude of 10° 25' and 10° 40'N and longitude of 11° 10' and 11° 25' E.

The climate of the area is characterized basically by two typologies of weather namely: the long and severe dry seasons and the short wet season. The dry season normally ranges from October to

March, while the wet season is normally between June and September. The average rainfall is about 85mm²

Sources of Data Collection

The sources of data collection as regards to this study are the research conducted by the researcher where primary source of data is used. Primary Data relates to the first-hand information obtained by the researcher directly without a third party. It is a data that has been observed, recorded by the researcher for the first time. The primary sources of data constitute the questionnaire being administered to some software developers in Gombe State and some randomly selected students of Computer science students in Gombe state University.

Instrument for Data Collection

The instrument used in the collection of data for this research is the primary source. Basically there are two sources for collecting data which are primary and secondary However, for the purpose of this research, questionnaire was used which is the primary instrument for data collection. About 60 questionnaires were administered to various respondents in Gombe. A questionnaire is a formalized schedule for the collection of data.

The questionnaires contained 15 questions for the software development. The questions in the questionnaires are framed so as to be able to answer the objectives and research questions of the study. The questionnaire is in two part, part (A) containing personal data and part B containing research questions. It has four (4) points scale grading ranging from strongly agree to strongly disagree. Nominal value is to be assigned to the different scaling items.

Population of the Study

In research terms, population refers to the group that have at least similar characteristics in common, the researcher selects some software developers located in Gombe to be his population. Their responses would give the required information for the research and for the use of the software development industry in Gombe state.

Sample Size

This is the method for selecting the respondent among the total population. The sample size of this research is limited to 60 members, 20 of the members are software developers in Gombe and 40 members are students of computer Science in Gombe state University.

Method of data analysis

For the purpose of this study, Tables, frequencies and percentages will be used in the presentation and analysis of the data collected in this study.

Data Analysis and Interpretation

This part deals specifically with data presentation, analysis and discussion of major findings. The document data collected from the respondents was analysed using tables and simple percentage (%).

However, this section will be divided into two parts

- Demographic data where personal information about the respondents were tabulated and analysed
- Analysis of the answers Obtained from the Questionnaire administration.

Data presentation**Table 4.2.1: Table Showing Gender of Software developers and Students**

	Frequency	Percentage	Frequency	Percent	Frequency	Percent
	Staff	(%)	Software Developers	(%)	Students	(%)
Male	5	100%	4	80%	16	53.3%
Female	0	0%	1	20%	14	46.7%
Total	5	100%	5	100%	30	100%

Table 4.2.1 shows that 100 % of the staff selected are male, 80% of the Software developers are Males and 20% of the software developers are female, while 53.3% of the students are males and 46.7% are females.

Table 4.2.2: Age Distribution of Respondents

S/N	Names of School	20 – 30 years	%	31 – 40 years	%	40 and Above	%	Total	%
1	Staff	1	20	3	60	1	20	5	100
2	Software Developers	4	80	1	20	0	0	5	100
3	Students	30	100	0	0	0	0	30	100

The table 4.2.2 above shows that 1 respondent representing 20% is within the age of 20 – 30 years, 3 respondents representing 60% are within the age range of 31 – 40 years and 1 respondent representing 20% is above 40 years. Also, out of 5 respondents among the software developers, 4 respondents representing 80% are within the age of 20 – 30 years, 1 respondent (representing 20%) is within the age of 31-40years, and no respondents is above 40 years old. Also all the students selected to answer the questionnaire are within the age of 21 – 30 years representing 100%.

Research Question one: What attitudes do Gombe People have towards made in Nigeria computer Softwares?

Table 4.2.3

S/N	ITEMS	RESPONDENTS	SA	%	A	%	D	%	SD	%	TOTAL	%
1.	People in Gombe think that software developers in Gombe have no adequate skills needed to make a software	Staff	0	0	0	0	3	60	2	40	5	100
		Software Developers	2	40	2	40	1	20	0	0	5	100
		Students	19	63.3	7	23.3	4	13.3	0	40	30	100
2.	There are no professional software developers in Gombe	Staff	0	0	0	0	2	40	3	60	5	100
		Software Developers	0	0	2	40	1	20	2	40	5	100
		Students	8	26.7	17	56.7	3	10	2	6.7	30	100
3.	The software made in Gombe are not fully deployed for other people to use	Staff	0	0	0	0	4	80	1	20	5	100
		Software Developers	0	0	2	40	2	40	1	20	5	100
		Students	9	30	7	23.3	10	33.3	4	13.3	30	100
4.	There is no support from Gombe state	Staff	0	0	0	0	4	80	1	20	5	100

	ministry of Science and Technology	Software Developers	2	40	0	0	2	40	1	20	5	100
		Students	12	40	10	33.3	6	20	2	6.7	30	100
5.	There is no advertisement of software and software development companies in Gombe	Staff	0	0	0	0	1	20	4	80	5	100
		Software Developers	0	0	2	40	1	20	2	40	5	100
		Students	9	30	10	33.3	7	23.3	4	13.3	30	100

From the table above, no respondents among the staff strongly agreed or agreed that People in Gombe think that software developers in Gombe have no adequate skills needed to make a software, but 3 respondents (representing 60%) agreed and 2 respondents (representing 40%) disagreed. 2 respondents (representing 40%) from the software developers strongly agreed, and 2 respondents (representing 40%) agreed, while 1 respondent (representing 20%) disagreed and no respondent strongly disagreed. Also 19 respondents from the students (representing 63.3%) strongly agreed, 7 respondents (representing 23.3%) agreed, 4 respondents (representing 13.3%) disagreed, and no respondent strongly disagreed.

Out of 5 respondents from the staff, no respondents strongly agreed or agreed that There are no professional software developers in Gombe, 2 respondents (representing 40%) disagreed, and 3 respondents (representing 60%) strongly disagreed. no respondents among the software developers strongly agreed, 2 respondents (representing 40%) agreed, while 1 respondent (representing 20%) disagreed and 2 respondents (representing 40%) strongly disagreed. Also 8 respondents from the students (representing 26.7%) strongly agreed, 17 respondents (representing 56.7%) agreed, 3 respondents (representing 10%) disagreed, and 2 respondents (representing 6.7%) strongly disagreed.

No respondent from the staff strongly agreed and agreed that the softwares made in Gombe are fully deployed for other people to use, and 4 respondents (representing 80%) disagreed, while 1

respondent (representing 20%) strongly disagreed. No respondent from the software developers also strongly agreed, while 2 respondents (representing 40%) agreed, 2 respondents (representing 40%) disagreed and 1 respondent (representing 20%) strongly disagreed. Also 9 respondents (representing 30%) from the students strongly agreed, 7 respondents (representing 23.3%) also agreed, 10 respondents (representing 33.3%) disagreed, and 4 respondents (representing 13.3%) strongly disagreed.

No respondent from the staff strongly agreed or agreed that there is no support from Gombe state ministry of Science and Technology to software industry. 4 respondents (representing 80%) disagreed while 1 respondent (representing 20%) strongly disagreed. 2 respondents (representing 40%) strongly agreed. No respondent agreed, while 2 respondents (representing 40%) disagreed and 1 respondent (representing 20%) strongly disagreed. From the students, 12 respondents (representing 40%) strongly agreed, 10 respondents (representing 33.3%) agreed, 6 respondents (representing 20%) disagreed and 2 respondent (representing 6.7%) strongly disagreed

Moreover, no respondent among the staff agreed or strongly agreed that there is no advertisement of software and software development companies in Gombe, 1 respondent (representing 20%) disagreed and 4 respondents (representing 80%) strongly disagreed. No respondent from the software developers strongly agreed, 2 respondents (representing 40%) agreed and 1 respondents (representing 20%) disagreed while 2 respondent (representing 40%) strongly disagreed. From the students, out of 30 students, 9 respondents (representing 30%) strongly agreed, 10 respondents (representing 33.3%) agreed, 7 respondents (representing 23.3%) disagreed and 4 respondents (representing 13.3%) strongly disagreed.

Research Question two: What current strides have been recorded in research in computer science?

Table 4.2.4

S/N	ITEMS	RESPONDENT S	S A	%	A	%	D	%	S D	%	TOTAL	%
1.	Government don't give scholarships and grants to students to perform research in computer science	Staff	0	0	0	0	3	60	2	40	5	100
Software Developers		2	40	2	40	1	20	0	0	5	100	
Students		11				7		1	3.3	30		

				36. 7	1 1	36. 7		23. 3				10 0
2.	Poverty of the students' parents have contributed to slow research among the students of computer science in the university	Staff	3	60	2	40	3	60	2	40	5	10 0
		Software Developers	3	60	0	0	1	20	0	0	5	10 0
		Students	12	40	1 1	36. 7	7	23. 3	1	3.3	30	10 0
3.	Poor class room environment in schools affected students research in computer science in the university	Staff	2	40	3	60	0	0	0	0	5	10 0
		Software Developers	1	20	3	60	0	0	1	20	5	10 0
		Students	6	20	1 2	40	1 0	33. 3	2	6.7	30	10 0
4.	Frequent transfer of Computer science lecturers to private universities as a result of strike can	Staff	2	40	3	60	0	0	0	0	5	10 0
		Software Developers	2	40	2	40	1	20	0	0	5	10 0

	affect students research	Students	11	36.7	10	33.3	6	20	3	10	30	100
5.	Inadequate learning materials has negative consequence on student's research in universities	Staff	4	30	1	20	0	0	0	0	5	100
Software Developers		3	60	1	20	1	20	0	0	5	100	
Students		14	46.7	8	26.7	4	13.3	4	13.3	30	100	

From the table above, No respondent from the staff strongly agreed or agreed that Government don't give scholarships and grants to students to perform research in computer science, 3 respondents (representing 60%) disagreed and 2 respondents (representing 40%) strongly disagreed. 2 respondents from the software developers (representing 40%) strongly agreed, and also 2 respondents (representing 20%) agreed, while 1 respondent (representing 20%) disagreed and no respondent strongly disagreed. Also, 11 respondents from the students (representing 36.7%) strongly agreed, 11 respondents (representing 36.7%) agreed, 7 respondents (representing 23.3%) disagreed, and 1 respondent (representing 3.3%) strongly disagreed.

Out of 5 respondents from the staff, 3 respondents (representing 60%) strongly agreed that Poverty of the students' parents have contributed to slow research among the students of computer science in the university, 2 respondents (representing 40%) agreed, while no respondent disagreed or strongly disagreed. 3 respondents (representing 60%) from the software developers strongly agreed, no respondent agreed, while 2 respondents (representing 40%) disagreed and no respondents strongly disagreed. Also 12 respondents from the students (representing 40%) strongly agreed, 11 respondents (representing 36.7%) agreed, 5 respondents (representing 16.4%) disagreed, and 2 respondents (representing 6.7%) strongly disagreed. 2 respondents from the staff (representing 40%) strong agreed that Poor class room environment in schools affected students research in computer science in the university, 3 respondents (representing 60%) agreed and no respondent disagreed or strongly disagreed. 1 respondent (representing 20%) from the software

developers strongly agreed, 3 respondents (representing 60%) agreed, while no respondent disagreed, and 1 respondent (representing 20%) strongly disagreed. Also 6 respondents (representing 20%) from the students strongly agreed, 12 respondents (representing 40%) also agreed, 10 respondents (representing 33.3%) disagreed, and 2 respondents (representing 6.7%) strongly disagreed.

2 respondents from the staff (representing 40%) strongly agreed that Frequent transfer of Computer science lecturers to private universities as a result of strike can affect students research, 3 respondents (representing 60%) agreed and no respondent disagreed or strongly disagreed. 2 respondents from the software developers (representing 40%) strongly agreed, 2 respondents (representing 40%) agreed, 1 respondent (representing 20%) disagreed and no respondent strongly disagreed. From the students, 11 respondents (representing 36.7%) strongly agreed, 10 respondents (representing 33.3%) agreed, 6 respondents (representing 20%) disagreed and 3 respondents (representing 10%) strongly disagreed.

Moreover, 4 respondents from the staff (representing 80%) strongly agreed that Inadequate learning materials has negative consequence on student’s research in universities, 1 respondent (representing 20%) agreed while no respondent disagreed or strongly disagreed. 3 respondents (representing 60%) from the software developers strongly agreed, 1 respondent (representing 20%) agreed and 1 respondent disagreed and no software developer strongly disagreed. From the students, out of 30 students, 17 respondents (representing 46.7%) strongly agreed, 8 respondents (representing 26.7%) agreed, 4 respondents (representing 13.3%) disagreed and 4 respondents (representing 13.3%) strongly disagreed.

Research Question three: What are the challenges confronting manufacturers of made in Nigeria software in Gombe metropolis?

Table 4.2.5

S/N	ITEMS	RESPONDENT S	S A	%	A	%	D	%	S D	%	TOTAL	%
1.	Lack of support from the government to support locally made softwares.	Staff	2	40	2	40	1	20	0	0	5	100
		Software Developers	2	40	2	40	1	20	0	0	5	100
		Students	14		8		6	20	2		30	

				46. 7		26. 7				6. 7		10 0
2.	People think locally made softwares are inefficient	Staff	2	40	2	40	1	20	0	0	5	10 0
		Software Developers	0	0	4	80	0	0	1	20	5	10 0
		Students	12	40	12	40	6	20	0	0	30	10 0
3.	Cost of hosting websites and deploying softwares hinders software development in Gombe	Staff	1	20	4	80	0	0	0	0	5	10 0
		Software Developers	0	0	3	60	1	20	1	20	5	10 0
		Students	12	40	8	26. 7	9	30	1	3. 3	30	10 0
4.	Gadgets used for Software development are expensive thereby slowing down the process of	Staff	1	20	3	60	1	20	0	0	5	10 0
		Software Developers	2	40	2	40	1	20	0	0	5	10 0

	software development	Students	6	20	13	43.3	5	16.7	6	20	30	100
5.	Advertisement is expensive	Staff	0	0	0	0	3	60	2	40	5	100
		Software Developers	1	20	2	40	1	20	1	20	5	100
		Students	10	33.3	13	43.3	4	13.3	3	20	30	100

From the table above, 2 respondents from the staff (representing 40%) strongly agreed that Lack of support from the government to support locally made softwares , 2 respondents also agreed and 1 respondent (representing 20%) disagreed while no respondent strongly disagreed. 2 respondents from the software developers (representing 40%) strongly agreed, and 2 respondents (representing 40%) agreed, while 1 respondent disagreed and no respondent strongly disagreed. Also 14 respondents from the students (representing 46.7%) strongly agreed, 8 respondents (representing 26.7%) agreed, 6 respondents (representing 20%) disagreed, and 2 respondents (representing 6.7%) strongly disagreed.

Out of 5 respondents from the staff,2 respondents (representing 40%) strongly agreed that People think locally made softwares are inefficient, 2 respondents also agreed while 1 respondent (representing 20%) disagreed and no respondent strongly disagreed. no respondent from the software developers strongly agreed, 4 respondents (representing 80%) agreed, while no respondent disagreed and 1 respondent strongly disagreed. Also 12 respondents from the students (representing 40%) strongly agreed, 12 respondents (representing 40%) agreed, 6 respondents (representing 20%) disagreed, and no respondent strongly disagreed.

1 respondent from the staff (representing 20%) strongly agreed that Cost of hosting websites and deploying softwares hinders software development in Gombe, 4 respondents (representing 80%) agreed and no respondent disagreed or strongly disagreed. no respondent from the software

developers strongly agreed, 3 respondents (representing 60%) agreed, and 1 respondent (representing 20%) disagreed, while 1 respondent strongly disagreed. Also 12 respondents (representing 40%) from the students strongly agreed, 8 respondents (representing 22.7%) also agreed, 9 respondents (representing 30%) disagreed, and 1 respondent strongly disagreed.

1 respondent from the staff (representing 20%) strongly agreed that Gadgets used for Software development are expensive thereby slowing down the process of software development, 3 respondents agreed and another staff disagreed while no staff strongly disagreed. 2 respondents (representing 40%) strongly agreed. 2 respondents (representing 40%) also agreed, 1 respondent disagreed and no respondent strongly disagreed. From the students, 6 respondents (representing 20%) strongly agreed, 13 respondents (representing 43.3%) agreed, 5 respondents (representing 16.7%) disagreed and 6 respondents (representing 20%) strongly disagreed.

Moreover, no respondents from the staff strongly agreed or agreed that Advertisement is expensive, 3 respondents (representing 60%) disagreed while 2 respondents strongly disagreed. 1 respondent (representing 20%) from the software developers strongly agreed, no respondent agreed, 2 respondent disagreed and 1 software developer strongly disagreed. From the students, out of 30 students, 10 respondents (representing 33.3%) strongly agreed, 13 respondents (representing 43.3%) agreed, 4 respondents (representing 13.3%) disagreed and 3 respondents (representing 20%) strongly disagreed.

The researchers focused attention on some areas regarding to the challenges in marketing Gombe made software, these areas include advertisement, government intervention in the study of software, socio-economic background of students studying software related courses, poor research tools available at schools, and the attitudes of the society towards indigenous software.

CONCLUSION

From the findings of the study presented in chapter four and discussed above, the researcher concludes that:

1. People in Gombe think that software developers in Gombe have no adequate skills needed to make a software
2. There is little support from Gombe state ministry of Science and Technology.
3. Backgrounds of students affect the production of software in Gombe
4. Poor class room environment in schools affected students research in computer science in the university
5. Frequent transfer of Computer science lecturers to private universities as a result of strike can affect students research
6. Inadequate learning materials has negative consequence on student's research in universities
7. People think locally made softwares are inefficient
8. Cost of hosting websites and deploying softwares hinders software development in Gombe

Recommendations

From the findings of the study and conclusion reached on the basis of the problems observed in the course of this study, the researcher made some recommendations a number of ways out of the challenges faced while marketing softwares made in Gombe.

The following recommendations were given by the researchers:

1. Government should create the enabling environment through national strategy and policies needed to encourage well-trained professional developers of Nigeria extraction in diaspora to bring in their expertise and resources to invest and develop the local software industry.
2. Government should formulate policies and national strategies that will deliberately encourage end-users to patronage locally developed software products that are qualitative and innovative.
3. Developers in Gombe should focus more on international certification and development of quality and innovative software products capable of addressing ecosystem challenges rather than developing products with similar functions as those of foreign counterparts already deployed in MDAs, banks and multinationals with intension of replacing them.
4. Regulators in the Education sector like National University Commission (NUC) and National Board for Technical Education (NBTE) should ensure that Innovation and Technology Management courses are introduced into the curriculum of Computer Science and related courses to expose students to innovative creation and management of software.
5. Software organizations should adopt measures aimed at continuous enhancement of their products quality and standard by ensuring that quality assurance practices are enforced in their software products.
6. Mentorship and business advisory should be encouraged through additional software Hubs to mentor and equip young developers with knowledge and skills needed to develop standard and innovative software.

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