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Full Length Research Paper

Impact of information communication technology (Ict) on corporate performance: A case study of cement manufacturing firms in Nigeria

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In the world over ICT has emerged as one of the major tools used by corporate organizations for optimal performance because of its effective and efficient application in business operations. This becomes necessary for organizations that want to survive to embrace ICT in all ramifications. Despite the enormous investments in technology and information system in recent times, demonstrating the impact of such investments on organization's corporate performance has proven difficult. The study was motivated by observational sought to show the impact of ICT on corporate performance focusing on six (6) cement plants in Nigeria. Research questions and objectives were stated and literature massively red from other empirical work on contributions of ICT to organizational performance in Nigeria. The population for the study comprised of staffs (6,080) of six cement industries where 375 were selected using Yaro Yamane's formula as sample size for the study, however, only 300 questionnaires were successfully completed and returned and they were use for descriptive statistics, in order to ensure validity of the instrument (questionnaire), experts and friends were given the study for assessment and a pilot study was carved out on two cement industries not selected for the study. Responses, rate of responses and simple percentage (%) were presented in tabular form for critical analysis. The conclusion was drawn that ICT has positively contributed to corporate performance, recommendation on improved investment and control in ICT were given and finally the researchers proposed future grey areas for research such as the impact of ICT investment on revenue and market share, and optimal level of investments for firm's ICT.

Keywords: Information communication technology, corporate performance, Manufacturing firms

INTRODUCTION

The introduction of computer and advent of internet has changed the way we live in the modern world. To be successful in the 21st century, companies must take advantage of the new information technology especially in internet and globalization (Ayatse, 2006). Modern innovations have led to the description of the age in which we live as "the information age." Information technology and Management therefore plays a vital role

to the extent that timely access to information could save a life while improper management of information could lead to huge problems and losses of opportunities.

Information technology and systems have revolutionized firms and industries, becoming the largest component of capital investment in many industrialized societies. Information systems are transforming business and the visible results of this include the increased use of

Table 1. Breakthrough of sample size used for the study

Cement Manufacturing Industries	Population	Sample size
Benue Cement Company (BCC)	1000	62
Lafarge Cement Industry	821	51
Unicem	804	50
Ashaka Cement	658	40
CCNN	297	18
Obajana Cement Company	2500	154
Total	6080	375

Table 1.0. Age distribution of respondents

Response	Frequency	Percentage of response (%)
18-30	120	40
31-45	150	50
46 and above	30	10
Total	300	100

Source: Survey data, 2012.

cell phones and wireless telecommunication devices, a massive shift toward online news and information, booming e-commerce and internet advertising, and new Federal security and accounting laws that address issues raised by the exponential growth of digital information. The internet has also drastically reduced the costs of business operating on a global scale. According to Laudon and Laudon (2007), these changes have led to the emergence of the digital firm, a firm in which; most of the firm's significant business relationships with customers, suppliers, and employees are digitally enabled and mediated.

Information systems are essential for conducting day-to-day business as well as achieving strategic business objectives. Nigerian cement industries would be non-existent without information systems. Some service industries such as finance, insurance, and real estate industries could not operate without information systems.

In the 1950s, business embarked on the first widespread use of computers primarily as tools for recording and processing accounting transactions. This ICT has only really been a part of industries for about the last 60 years. Nonetheless, ICT is one of the most important resources in today's business environment and successful businesses are investing heavily in ICT (Hagg, Cummings and Dawkings, 1998). The ongoing diffusion of Information Communication Technology ICT among firms is a current example of the dynamics of technological change and economic development (Koellinger, 2006).

The effects of ICT on corporate performance are subject to debate because not all studies have demonstrated clear payoffs from ICT investments. Also,

the results vary depending on how performance and ICT payoffs are measured and analyzed. For example, one empirical study finds positive impacts of ICT investments on productivity, but not on profits (Hitt and Brynjofsson, 1996). Another study did not find positive effects of ICT capital on productivity, while ICT labor positively contributed to output and profitability (Prasad and Harker, 1997). An analysis of the profitability of ICT investments in an empirical study that explicitly considered the competitive dynamics in a market showed that the profits of non-adopters of ICT are reduced as other firms adopt new ICT. Furthermore, the gross profit gains of ICT adoption are related to firm and industry characteristics and the number of other users of the technology (Stoneman and Kwon, 1996).

It is in recognition of the contribution of information communication technology (ICT) to corporate performance of this country and the fact that there is need for the diffusion of information on impacts of ICT which led to an increased awareness of the value of information systems in Nigerian Industries and business. However, concerted attempt to match this increased awareness with profitability of ICT investments of the campaign have been minimal giving rise to an information gap. It is in realization of the need to bridge this gap that this research work was carried out to assess the impact of Information Communication Technology (ICT) on Corporate Performance among cement manufacturing firms in Nigeria. The specific objectives are to:

- i. examine how cement manufacturing industries in Nigeria use ICT in conducting business.
- ii. examine the impact of ICT on profitability trend in Cement Manufacturing in Nigeria.

Table 2.0 Sex Distribution

Response	Frequency	Percentage of response (%)
Male	215	72
Female	85	28
Total	300	100

Source: Survey data, 2012.

Table 3.0 Educational/Professional qualification

Response	Frequency	Percentage of response (%)
SSCE	28	9
OND/NCE	150	50
B.Sc/HND	72	24
Post-Graduate	50	17
Total	300	100

Source: Survey data, 2012.

Table 4.0 Work experience

Response	Frequency	Percentage of response (%)
1-5	40	13
6-10	210	70
11 and above	50	17
Total	300	100

Source: Survey data, 2012.

iii. ascertain how Cement Manufacturing Industries in Nigeria have improve on their production system with the adoption of ICT.

iv. determine the impact of ICT on corporate performance of cement manufacturing industries in Nigeria.

v. determine how ICT have affected cement industries' relationship with their customers.

METHODOLOGY

The study was conducted on the operations of selected cement manufacturing firms in Nigeria. These cement companies include Dangote Cement Company DCC (formally Benue Cement Company), Dangote Cement Company (Abajana plant), Ashaka Cement, Unicem, Cement Company of Northern Nigeria (CCNN) and Lafarge cement. The research work was descriptively design in order to evaluate the impact of ICT (independent variable) and corporate performance (dependent variable).

The population of the research is made up of 6080 respondents comprising strictly the staffs of 6 leading cement manufacturing industries in Nigeria.

The individual sample size per company was determined using the population allocation formula as specified by Bourley (1964)

$$n_h = \frac{n \cdot N_h}{N}$$

where;

n_h = sample size per each company

N_h = Total no of employees in each company

N = Total population size

n = Sample of the population used for the

study.

This study used a total sample size of 375 respondents as shown in table 1 below.

Data obtained through structured questionnaires that were administered by trained Enumerators to the 375 respondents yielded the cross sectional data for analysis. Data for the study were analyzed using descriptive statistical tools such as table, frequency and percentages for data analysis (Aburu, 2010).

The Findings

The preservation and analysis of data is based on quantitative as well as qualitative approaches.

Table 5.0 Whether Nigerian cement factories make use of ICT \

Response	Frequency	Percentage of response (%)
Yes	300	100
No	0	0
Not sure	0	0
Total	300	100

Source: Survey data, 2012.

Table 6.0 Whether ICT improved corporate performance of cement manufacturing industries in Nigeria.

Response	Frequency	Percentage of response (%)
Yes	300	100
No	0	0
Not sure	0	0
Total	300	100

Source: Survey data, 2012.

Table 7.0 ICT has improved customers' interactions and satisfaction in the cement industry.

Response	Frequency	Percentage of response (%)
Yes	190	63
No	95	32
Not sure	15	5
Total	300	100

Source: Source data, 2012.

Percentage breakdown is used to present facts collected from respondents in a tabular form.

The researchers distributed 375 copies of questionnaires to be filled by a sample size of 375 persons comprising staffs of 6 cement companies (DCC), Lafarge Cement Company, Unicem, Ashaka Cement Company, Cement Company Northern Nigeria (CCNN) and Obajana Cement Company. The analysis and conclusion of results is based on the number of duly completed and returned questionnaires which was 350 representing 80% success.

From table 1.0 above, 120 or 40% of respondents were in the age bracket of 18-30, 150 or 50% were between 31- 45 and the remaining 30 or 10% respondents were from 46 and above. This indicates that the majority of the respondents were between 31- 45 years, by implication the respondent were matured enough to respond accurately to the questionnaires.

Table 2.0 above shows that, 215 or 72% respondents were male at the remaining, 85 or 28% respondents were female. This shows that male form large segment of the sample population.

From the table above, 28 or 9% respondents were secondary school graduates, 150 or 50% were OND/NCE

holders 72 or 24% were graduates, while the remaining 50 or 17% were post graduates. This shows that the majority of the staffs of the cement companies in Nigeria were OND/NCE holders.

Table 4.0 above shows that, 40 or 13% respondents work with Cement Company from year 1 to 5, 210 or 70% work from 6-10 years while the remaining 50 or 17% work from 11 years and above. We therefore, conclude that majority of cement companies' staff work from 6-10 years which indicates adequate relevant experience for the study.

Table 5.0 shows that 300 or 100% agreed with the use of ICT in cement industries in Nigeria, while none of the respondents claimed no or not been sure. We then concluded that, all cement factories in Nigeria embraced ICT.

Table 6.0 above shows that, 300 or 100% respondents agreed with improved productivity as a result of ICT application in cement industries while none of the respondents claimed no or not being sure we therefore, concluded that, application of ICT to cement industries would increase productivity.

The table above shows that 190 or 63% of the respondents agreed with improved service delivery by

cement industries as a result of ICT application, 95 or 32% disagreed while the remaining 15 or 5% were not sure. This shows that, application of ICT in cement industries improved quality service delivery.

CONCLUSION

From the foregoing it can be deduced that Nigerian cement manufacturing industries embraces the use of ICT in all their departments and processes. ICT have greatly improved corporate performance of cement manufacturing industries in Nigeria positively. It was also seen that production in Nigerian cement manufacturing industry improved significantly since the advent of ICT. In terms of corporate governance and financial reporting, the financial implications of losses associated with insufficient information for strategic decisions could be great on corporate entities when quantified in monetary terms and this has led several companies to invest in finding better ways of improving on information systems. ICT has also improved customer's interaction and satisfaction in these industries. Aside the positive impact that ICT has on corporate performance, it was also observed that the relationship between investments in ICT by Nigerian cement manufacturing industries and their productivity trend is positive.

RECOMMENDATIONS

In this study we recommend that industries should embrace ICT in all facets of their processes and dealings as business responses to changes in their environment are enhanced through digital communication. Also the ability of a firm to use ICT is becoming intertwined with the firm's ability to implement corporate strategy. So, it is recommended that ICT investment should be part of budget in Nigerian industry. The study also recommend future researchers to research on the impact of ICT

investments on revenue and market share, suitable methods for evaluating and justifying investments in ICT, and the optimal level of ICT investments for firms.

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