

## **ICT, PRINTING AND PUBLISHING IN NIGERIA**

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### **Abstract**

The study investigated ICT, printing and publishing in Nigeria. The argument is that, ICT cannot replace traditional printing. Literature reviewed revealed that introduction of ICTs into printing and publishing industry has given birth to new strategies in order to operate competitively. The case study research design was used and data was collected using interview. The ECNEL printing services Rumuomasi Port Harcourt Rivers state Nigeria was studied. Some negative and positive impact of ICT on printing and publishing were given. It was discovered that ICT present risk and challenges for publishers on the other hand, online activities provide opportunities. Despite the challenges, printers do not feel threatened rather, they foresee a bright future in their business. ICT has cut down processes that are involved in printing and this saves cost, time and gives quality output. Reasons why books are scarce and expensive were given. Challenges posed by ICTs among others are: the new ICT equipment are sophisticated and very expensive, because of the equipment complexity, their maintenance is very difficult. It was recommended among others that Printers should adopt digital printing into their operation and move with the trend. That is, printers should face the challenges and opportunities posed by ICTs and make them complementary to their functions. It is concluded that digital and traditional printing complement each other and for this reason, traditional printing cannot be faced out because of the advent of ICTs.

**Keywords:** Impact of ICT, Traditional Printing and Publication Industries, Nigeria.

### **Introduction**

Information and Communication Technology (ICT) has become the golden egg of the society at large. This is because, Information and Communication Technology (ICT) has made its mark in all aspects of our societal life. It is quite interesting to know that ICT has impacted on the lives of the rural dwellers, the market women, the educated and non- educated, etc. Based on this fact therefore, our present society has been rebranded as an information society. Kumar (1999) has

defined information society as a society where the major decisions are determined by information. This makes the right to access information a fundamental right if a country is to afford its citizens the right to determine their own destinations. According to Chisita (2010), the information society is a society in which information assumes a commercial value as opposed to a public good that is accessible for free. The concept of information society according to Kumar (1999) was "popularized by Daniel Bell and Fritz Machlup who envisaged a post-industrial society which would be characterized by an information industry."

With the above fact that our present society is an information society, it is indeed clear that information dissemination to a great proportion has impacted society from rural to urban settlements. This is quite possible with the help of Information and Communication Technology (ICT). The level of information dissemination in our time is really encouraging. Information society is made possible with ICT, according to Chisita (2010), this is due to the fact that government has tried to embark on innovative programmes as a means to provide for the systematic dissemination of information using ICT. It is not out of place, then to say that ICT is of uttermost importance to human existence. Therefore, this research work looks at the impact of ICT on printing and publication industries.

This research work has been divided into two different sections. The first section will be looking at the ways ICT has impacted the print and publication industry positively while the second section will focus on the negative aspect of ICT on print and publication industry.

### **Background History of Printing and Publishing**

Before discussing the impact of ICT on printing and publishing, it is very important to give background history of printing and publishing. This background will help us to appreciate more the contributions that ICT has made on this industry. According to Lachene (2014) printing is "traditionally, a technique for applying under pressure a certain quantity of colouring agent onto a specified surface to form a body of text or an illustration." Lachene (2014:1527) went on to write that:

Certain modern processes for reproducing of texts and illustrations, however, are no longer dependent on the mechanical concept of pressure or even on the material concept of colouring agent. Because these processes represent an important development that may ultimately replace the other processes, printing should probably now be defined as any of several techniques for reproducing texts and illustrations in black and in colour, on durable surface and in a desired number of identical copies.

This broad definition has been retained because Lachene (2014) believes that the whole history of printing is a progression away from those things that originally characterized it. This is also true because after about five centuries during which printing has maintained a quasi- monopoly of the transmission or storage of information, this role is being seriously challenged by new audio- visual and information.

The history of printing can be traced to the early times of human history, during the period, according to the (Wikipedia, 2014), when:

Duplication of images by means of stamps..., the use of round seals for rolling an impression into clay tablets goes back to early Mesopotamian civilization before 3,000BCE, where they are the most common works of art to survive, and feature complex and beautiful images. The printing press is considered one of the most important inventions in history. This device has made it possible for books, newspapers, magazines, and other reading materials to be produced in great numbers.

Printing and publishing industry has played an important role in advancing literacy among the masses. It has developed based on early principles of printing and has gone through many modifications over the years to meet the needs of the people in different areas.

### **Definition of Printing, Publishing and ICT**

Jolly (1999) defined printing as an essential part of publishing which is an industrial process for the mass reproduction of copies of texts and images, typically with ink on paper using a printing press. Publishing is seen as the business of bringing the printed word to the public and this includes the production and distribution of books of general interest which includes books, magazines and newspapers. Igun (2010) defined ICT as the convergences of data processing techniques, electronic media and telecommunication consisting of computer and specific data processing

application accessible through computers (email, internet, word processing, telephone, etc.). ICT covers any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form.

Printing is important because it caused knowledge to be spread instead of keeping it confined to a privileged few. Heinrich (2008) noted that printing concretized the permanent and value of writing. The permanent nature of print also led to the preservation of language. The development of public libraries where books might be drawn out free of charge, is as well the consequence of the invention of printing that has made possible the fast production and mass destruction of books. The printing press certainly initiated an information revolution. It spreads new ideas quickly and with greater impact (Kreis, 2004).

According to Everton (2010), books can be read anywhere because of its portability, it does not require electric power, and one does not have to learn any technology in order to read it. He went further to say that readers simply enjoy the feeling of turning the page and holding a book in their hands, using bookmarks to keep their place as well as highlighting passages and making notes in the margins. Romano (2004) argues that the printed word is here to stay. The overall role of printing is the mass production of publications which makes it possible for people to read books on various subjects, journals, magazines and newspapers which are published at somewhat affordable prices. The printer plays the finishing role of the publishing process as he/she prints, binds and apply the relevant finishing processes on the printed copies. From the above foregoing, it can be said that publishers publish with their readers in mind. With printed books, there is low initial cost to the reader. It is only the book he or she buys and no other device is required in reading it. You just open the book and start turning the pages no technical manual required.

### **Positive Impact of ICT on Printing**

Digital printing technologies are introducing increased levels of flexibility into the print production process, facilitating the creation of Localized publications and, increasingly, customer-tailored publications. Such technologies linked to electronic networks also open the way to print-on-demand, either in the form of self-publishing, the ability of consumers to order out-of-print books. Using similar techniques, publishers and book sellers can experiment and gain maximum benefit from short to very short printing runs.

Although, digital printing can provide greater value in many applications, it must compete with existing production alternatives. In an industry dominated by low-cost offset, digital print faces a tough economic environment, in particular clear cost thresholds. (e-Business watch, 2005).

Intense competition and high expectations to quality, responsiveness to customers and production time are current characteristics of the print market. Consequently, efficiency in production and general focus on cost combined with flexibility towards customer needs for tailor-made print jobs is vital to survival in the sector. Generally, customer demands are changing from standardized orders to order production with changes layout, colours, formats, etc. "When we moved to new production facilities, we were forced (in a positive way) to change to more modern machines and production systems." There was no discussion about it. The new machines are 3-10 times more efficient than the old ones. At the same time, these printing machines have all the necessary functionalities for linking up with a management information system. Online and instant information about orders, print status, production processes etc. will give us a competitive edge in the years to come (e-Business watch, 2005).

Wilson (1997:7) argues that publishers of reference books of various kinds such as compilations of data and books of facts, business information, statistical data, scholarly journals and encyclopaedias are most likely to adopt ICTs and move on to digitalizing their publishing systems faster and eventually get to electronic publishing." However, Ward (2010) states that "to date, digital forms reading affect those that have access to the required devices and the instant reaction would be to say that there is an effect on print, but that so far it is a minor effect."

Nema (2004) says that printing publication as a primary source to communicate research results is coming to an end and is being replaced by ICTs. This is because, the publishing cost through printing is high and traditional publishing is a trade work which requires most of the time, big coastal due to paper and printing costs and paper's internationally noticeable increase. Wilson (1997:67) argues that "as far as traditional publishing is concerned, the printing quantity impact on the cost of a single copy and accordingly its price is considerable." Sader (2007:4) argues that "it is well known that the larger the printing quantity, the lesser is the cost of a single copy" but the quantities of printing materials have a negative effect on the capacity of the available warehouses, thus resulting in an additional cost to the publisher. However, as regards the use of

ICTs, the cost of the digital copy printed on demand is the same, especially, that the cost of setting up an electronic web site as the use of ICTs is not expensive and relatively within reach of everyone.

Evans and Seeber (2000) contend that through the use of ICTs, the costs borne by the publisher remain the same regardless of the quantity. Furthermore, granting the reader the right to print one copy of the work for a fee and the right to download the work electronically contributes in reducing the cost of the single copy to the publisher which results in the increase of his profits, considering that the cost of making the copy (paper, ink, etc) has become the reader's expense and not the publisher's. Junnarkur (2004) argues that the traditional printing model is being challenged as it adapts from a print-only to a hybrid print and digital mode of communication and sometimes to a fully electronic publication system.

There is open source software that allows users to publish information on the desktop such as blogger. Blogs are ICT's applications which are free to all. It is costly to set up a blog. All that one need is access to internet and computer hardware. Today, everyone can write stories and publish online without actually having been to be in a newsroom operation. There are two unique features which the internet offers that print media do not: citizen participation is a very crucial aspect of democracy and this is enabled by ICT. Humbalani (2010).

Nema (2004), Scupola (2003) and Wilson (1997) agree that the advantages of ICTs in printing and publishing are as follows:

- (i) Digital publishing can be disseminated world-wide without the need for separate rights negotiations for different countries and without the costs of reprinting or distribution. It overcomes the geographical limitations associated with print media.
- (ii) ICTs allow the production of electronic publications which can easily be made collaborative and interactive, involving both several authors and readers.
- (iii) The producer can collect valuable market-research data very cheaply through effective electronic interaction with the buyers or users of a digital publication.

- (iv) Electronic books are environmentally friendly because through ICTs, electronic publications can be easily achieved with no need of a warehouse or archiving room.
- (v) ICTs allow the production of digital publication which can be produced and disseminated very rapidly once a page of text has been coded with hypertext multimedia language, it can be published immediately whereas, the printed book takes much longer time to produce and distribute.
- (vi) If correction is necessary, digital text can be updated or corrected with immediacy, whereas a printed book must either go through a second edition, or if the error is caught in time, have an erratum slip inserted. Furthermore, new editions can be produced more frequently and publishers could choose to sell only some chapters.
- (vii) ICTs and e-books reduce the printing inventory and distribution costs as well as the risk associated with demand estimation.
- (viii) Where a digital publication is charged for, the producer does not incur the costs associated with retail book selling, that is, there are no "middlemen" cost.

ICTs and digitalization provide great opportunities for promoting the growth of the publishing industry in developing countries, thus decreasing the trade imbalance in the imports of published materials. However, for developing countries to appreciate the advantages and benefits of ICTs at social and economic level, it is important for them to have access to related technologies and competencies, Scupola (2003).

Digital print's growing market share is based on cost-effectiveness for short print runs, coupled with the ability to change the content of individual pages printed and thereby customize them to individual user needs (personalized printing). Digital print offers opportunities for print on-demand either as 'tailored print', as customization or as versioning. Tailored print provides personalization whereby details such as name and address are changed between each document printed. Customization is where substantial amount of content for example in brochures and catalogues, is altered to match the preferences and interests of readers.

The market is rapidly becoming more receptive to the advantages of digital print. For example, there is a move to "one-to-one marketing", which creates materials tailored to small groups of, or even individual consumers, based on data about their preferences and past purchases. Print-on-demand offers valuable insights on profiting from value webs in e-business market where print providers can directly cooperate with customers and thus achieve valuable cost efficiencies. (e-business watch, 2005).

### **The Negative Impact of ICT on Printing and Publishing**

According to Scupola (2003), with the advent of internet and other digital technologies, copyright is a key issue in electronic communication. Authors and publishers are losing control over the distribution of their work as these technologies enable anyone to copy a piece of published material and send it instantaneously to an infinite number of people. Wilson (1997) stated that ICTs and digital publishing demand access to relatively advanced technology on the part of both the producer and the consumer of information or entertainment even the base level of technology provision is still expensive for the ordinary citizen. Because of this drawback or problem, ICTS and digital materials still reach only a minority of potential users or consumers.

The technology is still to a significant degree, user-unfriendly to many people. There is phobia for technology among many people, especially in developing countries. According to Ajayi (2011), the people in rural areas are key-board-shy. They are yet to fully utilize the potentials of the internet.

Timely technical support specialist is another problem faced by the printers. In most cases, there are little or no funds to maintain the acquired equipment. According to Igun (2001), cost is an important factor that guides the adoption and growth of ICTs in a country. Developing countries often lack the initial allocation as well as matching funds to make feasible investments in ICTS. Many countries often acquire costly technologies without making provision for sufficient infrastructure to run them. Most developing countries are constrained by resource scarcities. They are virtually dependent on substantial foreign assistance to ensure the smooth running of ICTs in printing industries. Often times, it is found that it is very difficult to invite the attention of the producers of the equipment since they are the only ones that can maintain them. According to Igun (2001), constant retraining of manpower to acquaint them with the changing technology often acts as constraints before the smooth growth of ICT.

Mobile computers, notebooks and smaller iPods are either too big or have small screens, or otherwise inadequate, for use across the full range of environments in which printed materials can be read. Also, the ICTs consume a greater amount of energy in its use bandwidth. Computers and related technologies are prone to virus attacks which destroy the files (e-business watch, 2005).

### **Recommendation**

Printers are encouraged to embrace digital printing into their operation and move with the trend. That is, printers should face the challenges and opportunities posed by ICTs and make them complementary to their functions.

Printers should try and purchase state-of-the-art technology that will help them produce quality products in order to emphasize the value of the printed word.

### **Conclusion**

The current development in printing industry and the further evolution of electronic business in this sector are driven by the fast proliferation of new technologies on the one hand and changing patterns in consumer behavior on the other. As a result, companies have to cope with technical complexity, changes in their value chain, increased competition in the market, the erosion of traditional business models and organizational change. From the findings, ICTs on the one hand presents considerable risk and challenges for publishers, on the other hand, online activities provide opportunities for publishers to enhance customer services and to support the brand. This can be said to be true based on the personal interview held with the director of ECNEL printing services. When he was asked of the impact of ICT on printing he said: there is a huge impact. ICT has cut down processes that are involved in printing. For example, gone are the days that we have or make use of 'dark room'. These days, there is no need for films; we do not need to have the photos developed. Images are transferred directly to the computers; they can be altered and sized. Also, computers can be used to produce professional documents through photo image and editing software. Computer to plate technology allows desktop publishing applications to output directly to a printing plate. This eliminates the use of film to transfer the image to the plate. As the name implies, the image is transferred directly from the computer to the plate without the intermediary film-making and imaging steps. This saves time and gives quality output.

Also, variable printing is made possible with new ICTs. According to him, variable data printing is a form of digital printing including on demand printing in which elements such as text, graphics and images may be changed from one printed piece to the next without stopping or slowing down the printing process and using information from a database or external file. For example, a set of personalized letters, each with the same basic layout, can be printed with a different name and address on each letter. This saves cost.

When the director was asked why books are scarce and expensive he said thus: books are scarce because most publishers print on demand and as a result, many books are not in the market and the few ones found are expensive. He went further to say that he gets high patronage from Christian authors with low quality write-ups. Patronage from authors of scholarly work is on the decrease and they always print limited copies. All these lead to books being scarce and expensive.

When he was asked about challenges posed by ICTs, he said thus: the new ICT equipment is sophisticated and very expensive. Because of the equipment complexity, their maintenance is very difficult. We have problem of technical support specialist. "I have a machine that I bought with millions of naira that broke down, I have made necessary move to fix it to no avail. I have written to the producers of the equipment, they sent a representative down to Nigeria, I bore the cost still the equipment is not repaired."

From the ongoing, printers' businesses are not threatened, they are still in business. The society cannot do without traditional printing, because of the problems posed by digital printing, traditional printing cannot be faced out. A lot of finishing are still done manually though slow but cheaper. It saves cost though quality is being compromised. In conclusion, it can be realized that the development of ICT has impacted both positively and negatively to printing and publishing. The use of ICT enhances variable printing, cut down processes, saves cost and time, makes quality publications possible etc. while on the other hand, it leads to low patronage of print materials, purchase of expensive equipment/problem of timely technical support specialists. It also gave birth to print on demand which affects digital publications or printing positively and traditional printing negatively. From the ongoing, it can be seen that both digital and traditional printing has come to stay because customers' needs are met either through digital print or traditional print.

## References

- Ajayi, G.O. (2011) "Nigeria's Status in Information and Communication Technology" (ICT) *National Information Technology Development Agency (NITDA)* Abuja pp. 87-92
- Chisita, C.T. (2010) An Investigation into the Impact of ICT's in the Provision of Agricultural Information to Small Farmers in Harere. IAALD XIIIth World Congress, Montpellier.
- European (e-Business Watch, 2005) On-line Retrieve from [www.europa.eu.int/comm/enterprise/iit/policy/watch/index.htm](http://www.europa.eu.int/comm/enterprise/iit/policy/watch/index.htm) on 25th of August, 2014.
- Evans, N. & Seeber, M. (2000). *The Politics of Publishing in South Africa*. London: Holger Ehling.
- Everton, A. (2010) PDF Books versus Printed Books. Online, Retrieved from <http://searchwarp.com/swa657415-pdf-Books-Versus-Printed-Books.htm>. on 22nd August 2014.
- Heinrich, A. (2008). *The Printing Press: Inventions that Shaped the World*. New York: Paw Prints.
- Humbulani, R. (2010). *The Role of ICT's in Journalism*. Retrieved Online from <http://humbulanivanbaublogspot.com> on July 2014.
- Igun, S.E. (2010) Gender and Access/Use of Information and Communication Technology (ICT) in Nigerian University Libraries. *An International Journal of Information and Communication Technology (ICT)*, Vol.7 No.2 pp.13-19.
- Interview with Ezeano Emmanuel, Managing Director of ECNEL Printing Services on 22nd of September, 2014.
- Jolly, G.S. (1999). *A Guide to Book Publishing*. New Delhi: Har- Anand Publications.
- Junnarkar, S. (2000). E-Publishing Posing Threat to Traditional Book Clubs Online, Retrieved from <http://news.cnet.com/e-publishing-posing-threat-to-traditional-book-clubs/2100-10173-241287.html> on 22 of September 2014.
- Kreis, S. (2005) Lectures on Modern European History: The Printing Press. Online Retrieved from: <http://www.history.org/intellect/press.htm> on 22 of September, 2014.
- Lachene, R. (2014). The History of Printing in Encyclopaedia Britannica Online. Retrieved from [http://www.en.wikipedia.org/wiki/History\\_of\\_printing](http://www.en.wikipedia.org/wiki/History_of_printing) on 22 of September, 2014.
- Nema, R. (2004). Electronic Publishing: Impact on Scientific Communication. 21x1 International Caliber, 2004, New Delhi, 11-13 February, 2004 INFLIBNET Centre, Ahmedabad.
- Roman, J.F. (2004). An Investigation into Print Industry Trends. Online. Retrieved from <https://ritdm1.rit.edu/bitstream/handle/ir850/1323/fRomanograph12-2004.pdf?sequence=1> on

- Sader, R. (2007) Electronic Publishing Online. Retrieved from <http://www.hg.org/article.asdp?id=4874> 25th of August, 2014.
- Scupola, A. (2003). E-Commerce and the Publishing Industry. Denmark. Online Retrieved from: <http://www.cs. ucy.ac.cy/ courses/EPLOII/ readings/v//c8.pdf> on 25th of August, 2014.
- Ward, G. (Ed.) (2010). The Future of Print: Paper Needs to Cost Less. Online. Retrieved from <http://www. risiinfo.org/techannels/pa perm a king/the-futu re-of-print-u 20 lepa per-needs-to- costlessu20 ID.html> on 25th of August, 2014.
- Wikipedia, (2014). Online Retrieved on 15th of October, 2014 from <http://www.en.wikipedia.org/wiki/hhstory> wikihostry.
- Wilson, T.D. (1997). Electronic Publishing and the Futures of the Book Information Research. Online, Retrieved from <http://information. net/ir/3-2/paper 39.html> on 15th of October, 2014.