

## THE PLACE OF INFORMATION, COMMUNICATION AND TECHNOLOGY (ICT) IN BOOK PUBLISHING OPERATIONS IN NIGERIA

**Lambert A. Ihebuzor, Ph. D**

*Department of Mass Communication & Media Technology, Lead City University, Ibadan, Nigeria*  
Tel: +2348033419512, E-mail: [lambert.ihebuzor@yahoo.com](mailto:lambert.ihebuzor@yahoo.com)

**Odu, Adejare Samuel (Mr.)**

*Seed-G International Limited, 11, Faith House Opposite Winners, Off Polytechnic Road, Ilaro*  
Ogun State, Nigeria

Tel: +2348032311879, E-mail: [goodnessfaith2011@gmail.com](mailto:goodnessfaith2011@gmail.com)

### Abstract

*The technological revolution of electronics is completely changing the conduits of information and communication. Information Technology (IT) is providing almost more information than a lot of professionals in the Publishing Industry can cope with. Book publishing is a highly information intensive activity, hence, in the great scope for exploiting diverse new information technologies in the origination, design, pre-press, production and marketing of published books. This revolution has transformed publishing processes, from manuscript acquisition through book production, marketing/distribution and financial accounting for economics of book publishing. This paper x-rays these developments and how they have added value in book publishing operations.*

**Key Words:** Technology, Information, Information Technology, Communication, Book Publishing.

### Introduction

Information technology is simply the collection of computer systems used by any organization referring to the technological side of an information system. It includes hardware, software, data bases, networks and other electronic devices. Information technology allows its users a wide access to information stored in many locations to communicate and collaborate with others. It could be connected to the global network of environment known as internet, or its counterpart within organization known as intranet or extranet which helps to link intranets with various business and professional partners all over the world. The internet which is a form of information technology allows users to access information location in database all over the world.

Information Technology via the internet is not only changing the way that we work, study, play and conduct our lives but is doing so much more quickly than any revolution with impacts that are far more reaching than any other development (Osifeso, 2012:84)

According to the online website, Wikipedia (2013), Information and Communication Technology is often used as an extended synonym for Information Technology (IT), but is a more specific term that stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage, and audio-visual systems, which enable users to access, store, transmit and manipulate information.

The publishing industry in Nigeria is passing through a phase of transformation which would only become better for publishers and the consumers of the publishers' product. Information Technology (IT) as manifested in personal computers, internet and World Wide Web has revolutionised book publishing operations and has turned the world into a global village. With advancement in technology and information technology (IT), publishing firms are faced with the challenge of keying into this transformation or become irrelevant. In moving from analog to digit technology, publishing firms have taken advantage of new and state-of-the-art equipment which drives the new techniques in publishing that makes product reader friendly. This development has benefitted both the author, the publisher and the reader.

In the past, Book Publishing process involved the acceptance of a manuscript in hard copies, its editing, typesetting and typographic design enacted. But today authors hand in soft-copies known as electronic copies of their manuscripts to editors. Editors can work on the screen of their computers, because the manuscript is not re-keyed, the typesetter should, in theory, return error-free proofs at great speed and lower cost.

Defleur and Dennis (1991:229) posit that Technology has been a mother for change that has driven publishing industries. As far back as Gutenberg, it was technology – moveable type – that spurred change. Later, fast printing presses, the telegraph, zinc engraving and modern photography.

Information Technology is concerned with harnessing the processes, the methods and the products of electronics and communication related technologies (and other related resources in today's knowledge driven society), for enhancing the quality, productivity, speed and efficiency of a set of programmed activities geared towards the achievement of clearly determined goals. When applied specifically to the art, profession and business of book publishing, this would mean harnessing these resources in the pursuit of the business and corporate goals of a publishing company (Obanya, 2005). The main goal is publishing good books at a profit (Perry, 1997). It is evident that the development in information technology has aided the Nigerian publishing houses in their operations in meeting educational needs of various categories of readers in the society. Book publishing is first and foremost, service to the society. By publishing, the publisher is affording humanity the opportunity to read an author's expression of thoughts and ideas. These can be done via on-line (Bankole, 1988; Ihebuzor, 2013).

### **Theoretical Framework**

According to Daramola (2003; 36), theory building is one of the goals of any intellectual discipline. He defines a theory to be "a systematic and deductive way of thinking about reality in order to describe and understand such reality". Theories are foundation upon which predictions are made.

Kerlinger (1973) defines theory as a set of inter-related constructs, definitions and propositions that give a systematic view about phenomenon. By specifying relations among variables with the purpose of explaining and predicting such phenomena, Kerlinger's definition embraces both loose and scientific perspectives.

The paper is anchored on the Technological Determinism Theory, Technological Acceptance Model, Media Ecology Model, and Mediamorphosis Theory.

### **Technological Determinism Theory**

This theory, coined by American Sociologist Thorstein Veblen (1857-1929) presumes that a modern society's technology, drives the development of its social structure and cultural values.

The first major elaboration of technological determinism came from the German philosopher and economist Karl Marx, whose theoretical framework was based upon the idea that change in technology and productive technology are the primary influence on the organization of social relations, and that social relations and cultural practices ultimately revolve around the technological and economic base of a society (Wikipedia, 2014)

According to technological determinists, particular technical developments, communication technologies or media, or most broadly, technology in general are the prime antecedent causes of change in society, and technology is seen as the fundamental condition underlying the pattern of social organization (Chandler, 1995).

Technological determinism theory is usually based on the following assumptions:

1. Communication technology is basic to society.
2. Technology drives change in media industries.
3. Each technology is tilted towards particular communication forms, contents and uses.
4. The sequence of invention and application of technology influence social change.
5. Communication revolutions engender social revolutions.
6. New media undermine old bases of power (McQuail 2005).

The book as a mass communication medium, according to Okwilagwe (2001:37) plays the following roles in human society:

- (i) Patterns the world for the individual members of the society.
- (ii) Defines the authors' own position in relation to the other members of the society.
- (iii) Helps the individual adapt successfully to his/her environment.

The assumptions of Technological Determinism theory when applied to book publishing operations therefore are as follows:

- (i) Book publishing as mass communication is basic to any modern society. This is because the development of any society is organically linked with the virility of its book publishing industry (Adelekan 2005:185).
- (ii) Technology drives change in the publishing industry. The ICT revolution continues to transform the different publishing processes, from manuscript acquisition, through editing, production, marketing, distribution and financial accounting for economics of book publishing.
- (iii) Each technology is tilted towards specific book publishing forms, content and uses. Book publishing is concerned with the production and distribution of books. There are new technologies for acquisition of a manuscript; its editing, graphics, pre-press, production, its distribution to bookseller, and the book purchase.

- (iv) Communication is a very active agent in the changes that are taking place in the world. The global village of McLuhan has been achieved and surpassed even beyond the imagination of the Canadian (Adamolekun and Ekundayo, 2007:22). The worldwide web, the information superhighway and other computer marvels of today has brought operational and social changes in the publishing industry. The application of ICT has given book publishing operators the opportunity to participate in the expansion and acquisition of knowledge for better understanding of the book world and its evolution (George, 2009:64).
- (v) ICT and the application of new media in book publishing operation has created a transformation from the ancient to the modern, and facilitating a transformation from analog to digit process.

### **Technological Acceptance Model**

Fred Davis propounded the Technological Acceptance Model in 1986, in his Doctoral thesis at the MIT Sloan School of Management. The Model originated in the field of Information systems. According to researchers (Chen et al., 2011; Mohammed and Suleiman 2013):

*Technology acceptance model is one of the most influential research models on school studies of the determinants of information systems and information technology acceptance to predict intention to use and acceptance of information systems and information technology by individuals.*

The technology acceptance model tries to explain why society or individuals accept a particular technology. The Model explains acceptance from the three perspectives:

- (i) Perceived ease of use
- (ii) Perceived usefulness
- (iii) Attitude toward the technology

According to Chuttur (2009: 2): The attitude of a user toward a system is a major determinant of whether the user will actually use or reject the system. The attitude of the user in turn, was considered to be influenced by two major beliefs: perceived usefulness and perceived ease of use, with perceived usefulness.

Thus, the relevance of the model lies in the model's quest to explain why an innovation, which social media represents, would be accepted or not by its potential users.

### **Media Ecology Model**

Marshal McLuhan propounded the Media Ecology Model (MET) in 1964. He explains the influence of technologies such as radio, telephone, television, etc., on the entire human communication process, by establishing their social impact on the society.

In essence, McLuhan felt societies are highly dependent on mediated technology and a society's social order and business development are based on its ability to key into that technology. This assertion by McLuhan can be clearly identified in the Nigerian.

Book Publishing operations. This is evident in the development of internet as it changes the environment of Book Publishing as a major aspect of interactions amongst the Publishers' publics. The MET was established on three fundamental assumptions:

- (i) Media infuse every act and action in society.
- (ii) Media fix our perceptions of the society and organizes our experiences.

- (iii) Media ties the world together.

When applied to Book publishing operations in Nigeria, the assumptions are as follows:

- (i) Publishers and authors infuse every act and actions in the society in the writing and publishing.
- (ii) Publishers fix our perceptions and organize our experiences.
- (iii) The book publishing industry is a vital engine that drives the development of any society. Book is a medium of mass communication which enhances effective utilization of other media. It is an index for global development, the grandmother of technology (Oso, Osunbiyi, and Biobaku 2008:3). Books tie the world together.

Media Ecology theory when applied to Book Publishing operations centers on the principles that society cannot escape the influence of technology and that technology will remain central in all aspects of today's publishing operation.

### **Mediamorphosis Theory of Mass Communication**

According to Fidler (1997) Mediamorphosis is a unified way of thinking about the technology evolution of all aspects of communication media ([www.amazon.com/media-morphosis](http://www.amazon.com/media-morphosis)).

Fidler derives his metamorphosis principles from the concept of co-evolution, convergence, and complexity of computers. The thrust of Fidler's position is that as new media forms evolve and develop overtime, and to varying degrees, the development of other existing one such as Book Publishing enhance it operations.

According to Anaeto, Onabajo and Osifeso (2008:91). The essence of mediamorphosis is the idea that the media, (book publishing in this study) are complex adaptive systems. In other words, publishing as a media aspect, respond to external pressures with a spontaneous process of self reorganization for effective communication.

The theory is appropriate for this work because, it explains how the technological development, new media, and their components have affected the operations of the book publishing industry in Nigeria. The provision of adequate internet facilities have increased internet confidence which has led to abundant ICT influence on book publishing operations.

### **Information Technology and Book Publishing Operations**

Information technology in this paper simply refers to the collection of computer system used by a publishing company in book publishing. It refers to the technological side of an information system. It includes hardware, software, data bases, networks and other electronic devices. Information technology allows professionals in the publishing industry a wide access to information stored in many places and to communicate and collaborate with stakeholders. In other words, it allows authors and publishers an opportunity to be partners in the global network of environment known as INTERNET, or its counterpart within a publishing organization known as INTRANET or EXTRANET which helps to link various personnel and departments in the art profession and business of book publishing. Departments involved in the collaborative roles are as follows: Editorial, Design/Graphics, Print Production, Promotion /Marketing/Sales, Distribution and Warehousing, finance and Administration. Both the author and the printer who are external person are also partners in the network. The author is there for any publisher in the same way the printer is there to print for any publisher. It may be right to say that the internet

which is an aspect of information technology permits users to access information location in databases all over the world.

Information technology via the internet is not only changing the way books are published, but it is doing so much more quickly than any evolution with impacts that are far more reaching than other development. Almost all publishing companies who know their union use information technology to support their operations. Information technology helps to improve productivity, reduce cost, improves and fast track decision making, expose book editors and marketers to other views concerning how things are done in other publishing companies with international reputation and therefore creating an opportunity for strategic application.

Technology has revolutionised all the activities of man, including the operations of the book publisher. The World Encyclopedia (1993) refers to technology as all the ways people use their interventions and discoveries to satisfy their needs and desires. Thus, publishing technologies refer to the inventions or discoveries that are tailored towards improving the art, trade, and profession of book publishing. However this new technologies have ambiguous consequence as they potent both danger and promise, especially to the third world countries such as Nigeria.

### **What-You-See-Is-What-You-Get (WYSIWYG) Concept**

The interfacing of Word Processor and microcomputers has provided a fantastic and user-friendly of typesetting material for printing. This is known as Desktop publishing (DTP) which is the creation of documents using page layout skills on personal computer. Desktop publishing software can generate layouts and produce typographic quality texts and images. These systems which essentially allow users, such as editors, graphic designers and typesetters, to set type themselves, make up pages (including graphics) and print the output on laser printers. DTP systems usually give a What-You-see-Is-What-You-Get (WYSIWYG) representation on the screen. While the laser printer output may be used as camera-ready original copy from which printing plates are made.

When used skillfully, desktop publishing allows the user to produce a wide variety of materials, from flyers to magazines and comprehensive dummies of books, without the expense of commercial printing. The same DTP skills and software used for common paper and book publishing are sometimes used to create graphics for point of sale displays, promotional items, trade show exhibits, retail package designs and outdoor signs. The job descriptions that include 'DTP' such as DTP artist, often require skills using software for producing e-books.

WYSIWYG allows publication's designers to develop trial layouts. It is especially useful for highly illustrated information or children books on which editors edit/rewrite the text to fit illustrations in close association with graphic artists. Accurate control of the page layout in dummy form is achieved before funds are committed to the final typesetting. This system is also used in the preparation of promotional materials for the Marketing/Sales department. For a more direct book work, a typesetter's automatic pagination system is usually faster and quite adequate. There are other advantages.

Greenfield (1989) and cited in Okwilagwe (2001: 28-29) listed the typical advantages of DTP as follows:

- Editing and change of the text, with automatic re-arrangement of the original text to accommodate the new material;
- Automatic justification of right or left hand margins with character spacing affected over the complete length;
- Automatic breaking of long words;

- Arrangement of text so that long words are not spelt at the end of a page and the next page starts with the second half of the word. This is termed protecting widows and orphans;
- Searching for a word within the documents;
- Automatic page numbering (pagination);
- Typing in columns, with updating either across or by snake movement;
- Protection of confidential area of text;
- Spelling checks within the selected vocabulary;
- Changing of table columns without re-typing; and
- Automatic calculation of mathematic tabulations during updating;

### **Information Technology and Book Publishing**

The wide availability of computer-driven desktop-publishing technology to small presses and individuals gave impetus to the production of a large variety of self-published books. By the 1970s, the advent of new technologies for the transmission, storage and distribution of data which were once the prerogative of book publishing had become a problem for the publishing industry; digitalized television screens and databases became symbols of the challenges to editors and publishers. Through the internet, authors and publishers share information as members of the global village. The convergence of computers and television has created a new form of media, and altering the way our society learn, bringing “edutainment” or “infotainment” to majority of members of the informed society.

Technology also has led to the development of electronic book which combines the storage, search capabilities and adaptability of a computer with the stimulated page format of a traditional book; early versions appeared in the late 1990s. today, thousands of books are being digitised, to be read on-line, can be downloaded, can be printed out by the reader or printed on demand by the publisher, thus assuring that their electronic versions need never go out of print.

The book publishing industry has benefited from this development in Information Communication Technology (ICT). Book that will formerly take years to produce can now be produced in a few months. Today’s new breed editors and designers now edit and illustrate on computers. Production quality is much better. The editor or the publication designer who is not computer literate can no longer flourish in the creative market of the new world. Electronic publishing has developed, books are available on CD-ROM and a lot of titles are available on-line. Hard disks of Computers are loaded with software like Core Draw, Pagemaker, Print-shop, and Freehand.

Any publishing company that is investing in Information Technology (IT) means all of the following:

- (a) Investing in people.
- (b) Investing in Information Technology hardware and software.
- (c) Investing in systems.
- (d) Investing in processes.

### **Threats to the Future of conventional Textbooks**

Technological development in several freids in creating new challenges to copyright all around the globe, in particular unauthorised reproduction for the market place (Rudolph, 1996).

Paradoxically, the benefits of information and communication technology (ICT) are gradually posing a threat to the future of conventional textbooks. In BBC World (cable television) news broadcast on June 9, 2009, it was reported that the governor of the State of California in the

United State of America planned to replace textbooks on science and technology with digital textbooks on the internet. His worry was that an average of \$100 was spent on the production of conventional textbook.

Digital textbook is a remote luxury in much larger parts of most of the developing countries where electric energy is a tale told of large urban areas even where the energy may not be available for hours, days and even months. Also, the costs of the relevant electronic equipment for accessing the internet in most of the developing countries especially in Nigerian rural areas are so much prohibitive.

With the very rapid advancement of information and communication technology (ICT), the problem of copyright get increasingly complex daily, with example relevant issues like photocopying, electronic books, radio and satellite broadcasting. To tackle these rapidly emerging problems, the World Intellectual Property Organization (WIO), with headquarters in Geneva, has drawn up diverse treaties subscribed to by nations of the world, to protect the various activities and products of the intellect (Oladitan, 1996).

The information and electronic revolution has been making it less expensive for end-users to make illegal copies of copyrighted materials through photocopiers and scanners, and through the sharing and networking of data downloaded from websites and CD-ROM. Moreover, and unfortunately for publishers and owners of copyright, the revolution has also been transforming the problems and controversies surrounding the application of existing copyright laws within and across national boundaries (Bradley, 1995; Tihamiyu, 2005).

Oladitan (1996) opines that technological development in several fields, including in origination, pre-press, and printing processes in book production, is indeed creating new challenges to copyright all around the world, in particular, unauthorized reproduction in the market place in Nigeria. Moreover, and unfortunately for owners of copyright, the revolution has been transforming the challenges surrounding the application of existing copyright laws within and across national boundaries. For these problems and challenges, Tihamiyu (2005) has advised Nigeria publishers to note that the information and communication technological (ICT) revolution also provides opportunities for legal owners and potential pirates. The challenges of piracy are enormous.

This fast development of electronic publishing has its negative sides. With the sophistication of the activities of pirates, books can be offered, copied or shared on the internet without the permission of the copyright owner. Searching for infringers on the internet is like looking for a needle in a haystack. Even when the infringer is identified, he/she could be so far away on another continent that prosecution will be like shooting the man in the moon.

## **Conclusion**

It would be right to submit that the imperativeness of the use of ICT in book publishing operations can not be over-emphasised. Publishers use the new techniques to enhance the speed, accuracy and professionalism in book publishing operation. The notions of global publishing, electronic publishing and international communication are imaginable because of technology, and the technology-driven forms, contents and uses they have taken in the last decade. This development has given impetus to the ICT revolution that continues to reshape the human society into today's global community of publishers and readers. Technology would continue to advance humanity, and would continue to shape and re-shape the operations of the book publisher.

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