Contextual Analysis of Motifs used on Dajo Pottery Ceramic Forms

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Abstract
This paper is a contextual analysis of pictures, motifs, and symbols used on the ceramic works of Dajo Pottery. It starts by categorising the works under analytical groups, particularly as it relates to the pottery embellishments which define their visual qualities. The socio-cultural implications of the ceramic works are also explored, and relevant examples are cited to show a link between the works and indigenous Nigerian cultures. The paper concludes by encouraging the use of cultural elements in the achievement of pottery designs. Contemporary ceramists should look inward and develop design concepts that will not only serve functional purpose, but also help in promoting indigenous cultures. This will hopefully increase the appreciation and patronage of local ceramic products locally and internationally.

Key words: *Ceramics Design, Dajo Pottery, Motifs, and Symbols*

Introduction
The outer treatment of every artistic form determines how attractive or aesthetically pleasing it appears. Since the introduction of modern ceramic practice in 1950, different perspectives to the treatment of form and surface pattern have emerged. One of such perspectives, is derived from the view of Okpe (2003) who advocates the treatment of modern ceramics, as art work which reflects individual and cultural identity. As such, there appears a creative shift, not only in the general approach to the creation of ceramic works, but also in the representation of visual qualities used in embellishing the ceramic forms. This, in a way, has led to a diversified approach in the study of ceramic works, particularly as it relates to visual elements that aid the general understanding of contemporary ceramic art. Scholars such as Ene-Orji (2009), Bakinde (2007) and Ngumah (2009) all demonstrate this in their approach to the study of modern ceramic works.

The implication therefore is that, such studies on aesthetic qualities (pottery patterns) contribute not only to increasing one's visual perception of the ceramic forms, but also offer interesting avenues for art historians and critics to intellectually explore and contextualise their socio-cultural relevance. It is on this note that, Siyanbola and Ganiu (2015), describe pottery patterns as essential elements which externalize the cultural identity of a particular set of people. It is on the basis of this, among other factors that this paper carries out an aesthetic analysis of different surface embellishments (motifs, pictures and symbols) on Dajo Pottery ceramic works.

In view of that, the paper discusses the background of the pottery center, by citing a few achievements which justify the choice of its works for review. Furthermore, attempts are made to categorise and describe the surface embellishment of Dajo Pottery ceramic works, particularly as it relates to their visual qualities such as motifs and symbols. The discussion is contextually done with the aim of broadening general understanding on the socio-cultural relevance of the ceramic works.

Dajo Pottery
Dajo Pottery Limited is a company, which was founded by a renowned Nigerian ceramist, Mr. Levi O'Bem Yakubu. The pottery company was established in 1987, and incorporated by the Corporate Affairs Commission in 1992. It is located on No-1, Dajo Pottery Close, KM-5 Gboko Road, Makurdi, Benue State of Nigeria. The company has passed through some significant milestones and daunting challenges that it has used, as stepping stones, to greater achievements and innovations. Some of these have been technical break-through, which have significance, for the whole of the ceramic industry in Nigeria and beyond. For example, the pottery center installed modern equipment which improved the production of its ceramic wares in terms of design. This made the company to receive several awards such as "National Award, for the Promotion of Nigerian Culture, through Visual Arts (2007), as well as a three time winner of the world's most prestigious award in ceramic. These are International Kaolin Grand Prix Award (2012) and International Ceramic Excellence Award (2008), all in China.

Through the quality of its works and designs, Dajo Pottery has also made contemporary Nigerian ceramic industry popular to the outside world, particularly by taking Nigerian ceramics to world prominence. In most of the ceramic contest/exhibition events that Dajo Pottery participated, its products have proved themselves, in both quality and design, nationally and internationally,

particularly for its creative approach in handling of forms, and in the treatment of surface qualities (embellishment) of the ceramic works. Hence, this paper analyses the visual forms of the pottery company, which have contributed to its break-through by exposing its aesthetic value for the general understanding of its works

Surface Embellishments of Dajo Pottery

In the field work undertaken before the compilation of this paper, the authors identified three things that make up the surface quality of Dajo Pottery works. These are classified under pictures, patterns, cultural designs. However, in classifying and discussing the surface embellishment of Dajo Pottery works, two groups are considered. First, attempt is made to identify the types of pictorial designs, as well as motifs and symbols contained in the works of Dajo Pottery. This is done by sorting them into groups of visually related designs for analytical purpose. Secondly, the design origins, as well as cultural meanings of such pictures, motifs and symbols, are discussed and analysed respectively within the context of their socio-cultural significance. This two groups are adopted because of two reasons. First, it is espouse to give a vivid description of the motifs and their constituent parts, and further to expose the aesthetic value of the ceramic forms being studied. Secondly, the approach is also relevant, particularly in fostering the general understanding of the visual elements (motifs or symbols) which are commonly associated with Dajo Pottery ceramic forms.

Pictorial Designs

Pictorial designs involve the capturing of images, symbols or motifs of visual scenes on the body of the ceramic works. For example, Plate I shows a village scene captured in a visual perspective at sun set. In terms of colour, the work is captured with different shades of blues, with the lower part of the ceramic vase looking dark, fading upward to the sky-blue top, representing the sky. The middle part, where the design-illustrations are made, is treated with light colours, creating an illusion of depth and distance. In this case, the picture on the body of the ceramic work was captured by using brush strokes in black ink to create illusion of forms like huts and trees.

Plate I: Pictorial design showing the visual illustration a village Scene on a ceramic work, 2009, Dajo Pottery Collection

Another ceramic work which is executed in this creative dimension, by Dajo Pottery artists, is a conventionally made ceramic plate titled *Ekombi Dance from South-South Nigeria* (Plate II). The form of the work is approached in a perfectly round shape, and it captures a photographed image of Ekombi Dance group of the Efik ethnic origin in Cross River state of Nigeria. The uniform hair-do, facial expressions of the dancers, as well as their gorgeous costumes, are symbolic attributes of an African culture. Apart from that, the smiles and dramatisation of the hands as captured on the ceramic piece, reveal the energy and vitality, which are usually displayed by most cultural dance groups in Africa. Above all, the work *Ekombi Dance from South-South Nigeria* demonstrates a clear cultural link of the pottery center to its African origin, and perhaps, the practicing background of the artists. This is not shown, in terms of its form *per-se*, but in the symbolic pictorial designs, which are used in embellishing the ceramic works.

Plate II: Ekombi Dance from South-South Nigeria, 2010, Dajo Pottery Collection

The textural quality of this kind of ceramic surface design is either smooth or rough, depending on the technique employed by the artists. Sometimes, they are made to appear in colour or monochromatic manner. Using this method, Dajo Pottery Limited captures the images of past leaders, tourist centers in Nigeria, cultural troops (dancers) of different ethnic groups, and so on.

Motif Designs on Dajo Pottery Works

A motif can be described as a decorative design or pattern, which is repeated in a particular form to adorn the surface of an art work.The study identified six (6) categories of motif-types used on Dajo pottery ceramic works. The first type is ***Geometrical motif designs***. These are creatively achieved by the use of lines and basic geometrical shapes, to create motifs which are synonymous to African designs. The design is achieved either by scratching (graffito), imprinted or raised patterns. In Plate III for example, the motifs are created by scratching straight and curved lines to form different geometric shapes such as triangles, circles, and rectangles. The motif designs are made to appear busy, covering the entire surface of the vase, if eventually results in textured surface. In Plate IV however, the designs are made at the upper and lower parts of the ceramic vase to achieve balance. Again, the proficient use of lines and dark colour to enhance the motif designs, is well captured. In Plate V, however, the approach involves the use of zigzagged, curved, and straight lines to achieve design patterns, which are synonymous to geometric shapes often seen on ancient wooden sculptures, created by traditional African artists.

Plates III, IV, and V: Examples of geometrical design motifs, Dajo Pottery Collection

The second type is ***Dimple motif design*** which involves the use of special tools, to create multiple depressive marks on the body of the ceramic wares. The dimples can be creatively made to assume the shape of a leaf, or technically manipulated to give an impression of a rough surface covered with seed patterns when viewed from afar. In Plate VI for example, the dimple motifs are artistically manipulated to achieve a spiral or circular designs. The pot takes a conventional shape, and adapts traditional symbols. The handles of the pot are made in form of lizard, clinching tight to the body of the pot. The ceramic ware is made to appear brownish in colour, with shiny surface achieved by the glaze chemicals applied.

Plate VI: An example of dimple design motifs, 2008, Dajo Pottery collection

The third type is the ***curvilinear motif design***, which is achieved by effective usage of lines to create curved lines pattern that look like ridges. In line with Ngumah's (2009) study, some of the designs in this category show evidence of *Uli* influence, with mild adaptation of other cultural symbols combined with traditional motif to bring out aesthetic features of the ceramic forms. For example, Plate VII is ceramic work which was created to exhibit such design qualities. Again, the lizard symbol is creatively harnessed to achieve stylized handles of the pot. Apart from that, the colour for the pot is made to appear like those traditional pottery works locally made in Nigerian villages.

Plates VII: Curvilinear motif design, 2007, Dajo Pottery collection

The forth type is ***glazed effect designs***. In this category, the glazing chemicals applied or used on the surface of the ceramic works, melt during firing and create an irregular pattern. Such patterns, very often, are separated by irregular boundaries, which can only be noticed by the colour effect produced by each glaze-chemical used. This happens when one colour spills or runs on another.

The textural effects of most works in this category are smooth, and their general colour appearances are treated with harmonious hues. Plate VIII shows a visual example of ceramic design achieved through this means. The general colour appearance of the ceramic vase is achieved with different shades of brown. While the upper and lower parts appear dark, the center part is treated light brown, giving an illusion of perspective. At the joint between the neck and the belly of the ceramic vase, is a sparkle-design of irregular lines with a mixed effect of ash and yellow colours.

Plates VIII: Glazed effect design (One piece at different angles), 2011, Dajo Pottery collection

The fifth type is the ***scratched surface motif design***. In this category, ceramic surfaces are made to look rough either by scratching certain parts of the ceramic work and leaving some, or by scratching the entire surface. For example, in the "African Traditional Silos and Huts", the top part of the work, representing the roof, is made to look rough to give an impression of a thatch-roof. On the other hand, the lower part of the works (Silos and Huts) is made to appear smooth, a characteristic which is synonymous with many African architecture.

Plate IX: Scratched surface motif design, 2006, Dajo Pottery Collection

The sixth type is the ***tree bark (simulated) motif design***. This kind of motifs is created by adapting the visual looks of tree barks on the ceramic surfaces. The approach involves the capturing of details of tree-bark on the body of the pottery pieces, in a manner that is creatively unconventional in design. The motifs in this category, are either made to appear on ceramic works like "Tree Stump Flower Vase" (Plate X), capturing the forms of a tree-bark design, or as part of a larger work.

Plate X: Tree bark motif design, 2012, Dajo Pottery collection

Dajo Pottery Ceramics with Cultural Symbolic Designs

Another group of Dajo Pottery ceramic designs are works embellished with cultural symbolic import. Symbol can be described as sign or something that represents an idea or something else in a specific context. Dajo Pottery therefore, uses various cultural symbols in enhancing the visual qualities of its ceramic works. Some of the ceramic works represent the adaptation of African idioms captured in visual terms, while others are literal signs, symbolising natural things that are common in the environment. For example, the lizard symbol used by Dajo Pottery on some ceramic vases, represent an African idiom which is derived from the Hausa adage: *Kadangare bakin tulu in ka kashe, ka pashe tukunyar, in kabari zai bata ruwan*. This by interpretation, expresses the dilemma of taking a decision between the higher and lesser evils. Other symbols are derived from indigenous cultural costumes used by some ethnic groups in Nigeria. A clear example of how Dajo Pottery used cultural symbols is expressed in Plate XI, where the mug cups produced by the pottery centre are captured in colour of the traditional fabrics, popularly used by Idoma (red and black) and Tiv (black and white) respectively.

Plates XI: Dajo Pottery Mug cups captured in different designs Of indigenous textile fabric, 2009, Dajo Pottery collection

Apart from that, there are ceramic works, with flower symbol captured on them. The use of flower symbols by Dajo Pottery in adorning the visual looks of some ceramic pieces, connote an aura of gorgeousness and freshness of life with a beautiful beginning. Above all, the surface embellishments discussed in this paper demonstrate an intercourse between form, function, and culture. This corroborates with the views of Ajayi (2007) who advocates that, design in ceramics can take any shape, but function should not be sacrificed for aesthetics.

Conclusion

This paper discusses as well as presents an aesthetic analysis on Dajo Pottery ceramic works, with emphasis on its motifs, symbols, and general visual qualities used in embellishing ceramic forms. In the course of the analysis, it was observed that, the ceramic forms and visual elements contained in the works of Dajo Pottery Limited, reflect the traditional culture, motifs and symbols of diverse ethnic groups in Nigeria. In some cases, the embellishments are made in form of repetitive patterns of cultural symbols used as form of identity of a particular ethnic group. For example, the black and white colours captured on some ceramic vases, are symbolic of Tiv a'ngeer, which is a unique cultural costume of the Tiv.

Recommendations

Based on the above discussion of motifs, symbols and other pictorial elements, used on Dajo Pottery's ceramic works, this paper therefore recommends that:

- Contemporary ceramists should look inward and develop design concepts that will not only serve functional purpose, but also help in promoting indigenous cultures. This will, hopefully increase the appreciation and patronage of local ceramic products.
- More researches should be conducted on works of other ceramists to expose the socio-cultural relevance of their designs, motifs, and symbols, as this will improve people's understanding of modern ceramics.

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The Importance of Computerization and Digitization of Museum Collections to Enhance Design, Display and Research

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Abstract

There is an expectation for museums to change from an 'old' to a 'new museology' which is currently shaping museum collections, their functions and roles in the 21st century. In order for museums to cope with current trends of digitization and access to their collections, irrespective of where the audience may be, it becomes compulsory for them to shift in this paradigm towards a change in the methods used in cataloguing and storing of museum collections for the purpose of enhancing Display, Design and Research. Qualitative type of research was used. This study based its contents on previous conducted researches, relating it to present day problems faced in Nigerian Museums. The research therefore discovered the need for Nigerian Museums to fully digitize their collections in order to enhance research and easy access by the audience. The research came up with procedural outlines for easy computerization of museum's collections and the need to train staff in the use of the required equipment.

KEYWORDS: Museums, Computerization, Digitisation, Collections, Preservation.

Introduction

Museums are massive repositories of collections with diverse and versatile information on material culture. Many museums, particularly in developed countries, are already creating large computerized information system for collection management. Yet, if such computerized system is to be used effectively for cultural and scientific research with the aim of dissemination of information and knowledge to the general public, then museums in Sub Saharan Africa must overcome the limitations of computerization in documentation of artifacts (Dallas, 1994). Majority of the museums in the region are yet to fully digitize their collections for easy accessibility and research. Nevertheless, a number of private collections in the region, especially manuscripts have been digitized through the support of governmental and non- governmental agencies.

Digitization implies conversion of documents and art works into digital images (Fabunmi et al, 2006:23). Digitization as defined by UNESCO is the creation of digital objects from physical, analogue originals by means of a scanner, camera or other electronic device. One great advantage of digitization is, it allows collections to be accessed by millions of users over internet simultaneously in different locations.

Today, a museum without a collections database and a Web presence is hardly thought of as "professional." Design, functionality and interactive elements are quite important with users today when working with a computerised system, These aspects should be considered when setting up museum computers, as visual aesthetics is now something users look forward to.

Computerization requires entries of information from collections of catalogs, objects and documents which then allows extraction of data in the form of records, files and database. In figuring this process we typically imagine digital artifacts through manifestations that emphasize their continuity with their physical originals: the digital image resembles the museum object. This fidelity is both functional and reassuring; yet it is also highly questionable. For like all digital artifacts, the objects that emerge from digitization are in fact nothing but data: abstract, structured patterns of difference, shuttling between storage and display media. As data, the digital object has no intrinsic, tangible form. Our encounter with a digital object consists of a particular representation or rendering of that data; but other representations are always possible. This paper presents a check list on issues relevant in the definition of this trend in the museums.

Computer Documentation

Computerization or the use of computers to establish an effective system is currently seen as an opportunity for museums to effectively establish control over the management of its collections, research process and improve communication with visitors. The main purpose of using computers in museums is to make accessible the information held in massive archives of documentary material. Manual records in themselves often contain little data because of lack of control of data entry which results from lack of recording of some relevant information. However, the development of the technology of science has greatly facilitated the extraction of information from what has come down

to us. Computer documentation of collections has the potential of making data available to users on a scale hitherto unimagined. We can also reasonably speculate that in the future the new technologies will enable us to extract even more information. Accurate records will clearly enhance this process. Consequently, we need information systems that can grow not only quantitatively but also qualitatively. The system must also enable different pieces and groupings of data as required for different functions such as exhibition planning, conservation, research acquisition to be accessed. It is, therefore, imperative that museums change over to computer systems which can adapt these increasing demands. Information development and management in museums is a complex process. Often museums not only lack an understanding of computerization systems but their staff may even be prejudiced against them. Consequently, their ability to plan computer information systems may be hindered by one or more of the following factors:

1. Ignorance of the potential of the computer system themselves (Perkins, 1994:7).
2. Because of no. 1 (above) the potential users are unable to specify objectives for the design of the system.
3. There is a lack of perception of the technological contribution to the future growth of knowledge.
4. There is prejudice against computer system.
5. There is a shortage of finance.

Therefore, it can be said without hesitation that the launching of an automation project in a museum needs breaking into strategic phases in order to realize the appropriate objectives. UNESCO has broken down this strategy into the following steps in its Fundamental Principles of Digitization of Documentary Heritage:

1. The planning process
- Identification of material to be digitized and rights related thereto.
- Assessment of resources needed.
- Discussion of standards.
- Definition of methods and timing of quality control.
- Assessment of risks, including current and future draw backs.

2. Pre-digitization process
- The selection of materials to be digitized.
- Quality control of the objects to be digitized- an assessment of their state of preservation and need of cleaning.
- Priotization of digitization.
- Any treatment that may be required or possible.
- The collection of metadata (especially descriptive and structural metadata). Metadata simply means information that describes digital objects and enable users to find, manage and use digital objects. It represents the total historic record of the digital objects and the totality of information about the object (Asogwa, 2011 http://unllib.unl.edu/cppl).
- Bibliographic and archival preparation.

3. Digital conversion process
- Digitization.
- Availability of professional equipment.
- Quality control.
- The creation of digital masters from which access copies are made

4. Post digitization process
- Control of metadata related to long term preservation.
- Submission of information to delivery and repository systems, data collection and management.
- Making digitized copies and metadata available online.
- Assessment and evaluation of the project.
- Quality control.

A museum computer system should give necessary information to the end user and at the same time provide tools for working with such information (Rumyantsev and Rudov, 2016). Another effective way of making museum computerization effective is by providing a virtual exhibition, virtual tour or

a unique service in content personalization alongside the obligatory service of data preservation and presentation. Scholars such as Sylaiou's (2010), Hemminger, Bolas and Shiff (2014) all stress the importance of digitization of cultural content and describe a technique that is based on three dimensional graphics which allows the user to not only get the requested information from a museum archive but also to take a virtual tour of exhibition rooms in the said museum. Such an approach in the digitization of art produces a high resolution of digital imaging, while maintaining the smallest details on art works (Ben-Ezra, 2011).

New developments in information technology, such as semantic information systems and object oriented, structured text encoding mechanisms, hypermedia and telemetric can help in museums in a seamless assimilation into the use of information and communications technologies. Parry (2007) posit that digitality has helped to support a realignment of museography that is taking place, from object centred to experience-centred design. Bearman (1994) and Duff et al, (2009) argued saying new technologies are fundamentally changing the ways in which museums communicate. He further stated that since the late 1980s, computer based interactive programs have delivered more varied and exciting information on the museum floor than traditional mechanical interactive or static signage (Duff et al, 2009).

It is important to note that Pallud (2014) further stressed that museums should be aware and comply with all the latest trends in information technology and web design. The latter is interested in the end user mostly, which causes high competition leading to an improvement in the computer functionality, design and interactive elements for the consumer of such services. An important role in museum resource system makes studying the peculiarities of design, construction and evaluation of its effectiveness very important.

Benefits of Computerization

Computerization in museums provides local and global benefits. The local benefits are those concerned with the greater efficiency of curation and research. The global benefits which results from the worldwide adoption of compatible computer systems (IBM, Macintosh, etc.) and standard information access procedures opens up the networking potential for researchers to network the information of overseas museums. The networking potential for researchers is only now beginning to be utilized and will greatly enhance comparative research in ways which was unimaginable. Therefore, we can optimistically look forward to a universal network of data. In order to attain a certain level of universal access to information, standardization of data entry and classification is a necessary prerequisite in museums.

Although it is difficult to reach such standards, many organizations and scholars are devoted to developing museum information standards. The International Council of Museums (ICOM) committee known as the International Committee for Documentation (CIDOC) has two working groups at the international level, the Data Model Working Group and the Data Terminology Standards Working Group. The Canadian Heritage Information Network (CHIN) is another institution that is devoted to this task at the national level. The Museum Documentation Association (MDA) is the sole body responsible for setting museum documentation system standards in the UK and which many museums in the UK now follow. It is therefore imperative for the Museum Association of Nigeria (MAN) to take up the challenges for developing documentation system standards which can adapt to the global system. The process of computerization in itself is a complete research work which will greatly enhance the standard of the museum. Unlike manual records where relevant information on objects are not properly recorded, the computerized system enables us to enter all relevant data on each into the database system. Classification of museum collection is very necessary in order to standardize the data for research purpose. Although there is a standard universal taxonomy of natural specimens, we are yet to reach an internationally accepted classification of man-made objects. Nevertheless, it is particularly important to standardize category, type, object name, material, technique and geographical location of objects in museums at the local level to enhance research. The classification and standardization of data will greatly facilitate data entry and access and will also enable us to develop a thesaurus to avoid repeated mistakes. It also helps in retrieving information and avoids redundancy. With the classification and standardization of data and their subsequent feeding into the computer, we can retrieve information through the computer's query facility. Depending on the choice of the keywords used to initiate the search, we often find that there is much material to use. For example, a computer can provide a researcher with comprehensive listings of objects, photographs, publications and reference materials on hand.

A museum computer system should give necessary information to the end user and at the same time provide tools for working with such information (Rumyantsev and Rudov, 2016). Another effective way of making museum computerization effective is by providing a virtual exhibition, virtual tour or a unique service in content personalisation alongside the obligatory service of data preservation and presentation. Scholars such as Sylaiou's (2010), Hemminger, Bolas and Shiff (2014) all stress the importance of digitization of cultural content and describe a technique that is based on three dimensional graphics which allows the user to not only get the requested information from a museum archive but also to take a virtual tour of exhibition rooms in the said museum. Such an approach in the digitization of art produces a high resolution of digital imaging, while maintaining the smallest details on art works (Ben-Ezra, 2011).

To successfully cope with this development in the computer age, museum must have a realistic, reasonable and manageable plan in proportion to the scope of the project and the size of the institution (Perkins, 1994:7).

Museums are public institutions where the local community, researchers and the general public should have access to information on the collections. The definition of a museum as "a non- profit making, permanent institution in the service of the society and its development, and open to the public which acquires, conserves, researches, communicates and exhibits, for purpose of study and enjoyment, material evidence of man and his environment" (Statutes of ICOM Article 2) makes it clear that whatever system of information management and dissemination a museum undertakes, it should be accessible to the public (Chieze, 1994: 31). Though, in most cases museum automation is initiated to address in-house needs and requirements, a flexible system should be chosen to accommodate future system developments, information standards (Robert, 1994:4-5) and the growth of knowledge. If museum professionals and scholars should expedite computerization of collections documentation in museums, there would be a network of information easily accessible to everybody. However, the implementation of an automation system in museums should be taken with great caution. The museum is non-profit making organization and the acquisition of the computers involves huge amounts of money that museums cannot afford. It is therefore important for financial and personnel reasons, that museums should breakdown the automation project into phases. Over a period of time, it should be able to come up with a comprehensive network system. In order to have a balanced system of information management, museum professionals should learn from other institutions that have already automated their systems. This could be partly achieved by attending conferences, meetings with colleagues and participating in discussions about appropriate issues (Sledge, 1994: 42).

From this study it is possible to broadly identify the major characteristics required by a museum for an information system. Lists of characteristics have been prioritized according to their importance for information management and its future in a museum.

Characteristics of Museum Automation

These characteristics are:

1. Defining the data to be computerized.
2. Classification of data.
3. Thesauri of terminologies.
4. Hardware and software specifications and
5. Personnel.

1. The first issue to be addressed by a museum when automating itself is to define the information to be computerized. It is necessary for a museum to classify the areas it will computerize in order to plan adequately. The museum for instance, can be divided into different sections such as collections management, museum management and administration for efficiency and gradual computerization. Collections management is an object-centered information management which could be computerized as the first priority. The section will include areas of object acquisition, documentation, exhibition, conservation, storage, security, loans and insurance. Museum management and administration (education, marketing, etc.) can then follow.
2. Consequently, the classification and standardization of data structure, syntax and terminology and potential implications (as a result of the knowledge) for data retrieval and manipulation will follow (Spergeon, 1994:15). The classifications of category types, cultural groups and geopolitical regions will ease data entry, control and retrieval which are needed to network data of the rapidly growing level of computer usage among museums (Robert, 1994:4).

Accordingly, classification of category type for a hat will, for example, be in the following order:
1st category type: Artifact;
2nd category type: Clothing;
3rd category type: Headwear;
Object name: Hat

The expansion of the categories will provide more opportunities for sorting objects under different classifications. Alternatively, the use of object name provides a basis to describe the object in description field that should be indexed to allow retrieval of data where category type is doomed (Abell-Sheddon, 1987: 127). Up till today, there is no internationally accepted classification of cultural groups (Gathercole, 1984: 37). However, the more such step is taken at the local level, the more it will provide opportunity to reach an international standard. The classification of cultural groups is of utmost importance to ethnographic museums and also facilitates research potentials in the museums. The geographical classifications provide the basis to sort artifacts according to their places of origin and association in order to interrelate them for research purpose.

3. The classification of information standards will provide the basis for building of terminology thesauri. The thesauri will provide the linkage between the terms and co-ordinate the internal structure of vocabulary. For example, the category classifications and manufacturing techniques of artifacts can be efficiently linked to aid correlations and other criteria for sorting.
4. The careful analysis of hardware and software requirements is equally important for proper management and security of data. The hardware specifications should be able to accommodate the growing data of the museum. The computer should have a hardware specifications and Hard Disc of at least 2GB. This is, of course, dependent on the size of collections and data requiring entry.
5. There is need to organize and encourage staff during computerization, especially by training them to familiarize themselves with computers. An employed or trained staff will help in-house training of staff members to overcome the equilibrium of computer literacy.

Conclusions

It has severally been suggested that museums are being changed by their societal context through the proliferation of information technology (IT) in our contemporary age. Parry (2007) argues that digitality has helped to support a realignment of museography that is taking place, from object-centered to experience-centered design. Bearman and Gerber (2008) posit that new technologies are fundamentally changing the ways in which museums communicate.

The main reason for computerizing museums is to provide easy manipulation of data and make it possible for researchers worldwide to access and retrieve information in a virtual appealing environment. The automation of museum information will promote interaction, communication and co-operation among the staff of the museum through the computerized management of collections, accounting and finance. Museum collections contain a growing body of knowledge that is communicated by means of exhibitions and publications. Technology has provided us with the means to capture, utilize and distribute the growing body of knowledge to ever wider audience (Spergeon, 1994:19). The global networking of museum information as a result of the new technology will enhance research potentials and encourage comparative analysis of the data worldwide. The application of some of the digitization methods mentioned in the article has shown that computerization and virtual digital technology is becoming increasingly important as a tool for learning about the world of culture, by accurately and convincingly presenting its value for study, research and reference.

Museums in this age continue to face challenges of competing with commercial and private outfits that have advanced in digitization and online access of their products and services. Museums as non-profit making institution have difficulties in leaving up to the standard of such financially buoyant outfits, but can produce a remarkable digital documentation and platforms of their collections with the current information, communication technology available to them. For example, the importance of museums having an online presence cannot be over emphasised, as they are in direct competition with commercial companies that provide the same services, such as in sports, tourism and entertainment. It is important to note that they should be aware and comply with all the latest trends in information technology and web design, (Pallud, 2014). The latter are interested in the end user mostly which

cause's high competition leading to an improvement in the computer functionality, design and interactive elements for the consumer of such services. An important role in museum resource system makes studying the peculiarities of design, construction and evaluation of its effectiveness very important.

Funding remains the major challenge of museums in sub Saharan Africa being an institution that solely relies on subventions and charity. Embarking on a digitization project is very expensive hence, museums need a lot of support from both governmental and non- governmental agencies. Governments can support government owned museums for national identity and tourists' attraction not necessarily for revenue but also to create awareness on the rich cultural heritage. These finances will also go into the training of personnel for the preservation and maintenance of digital formats and sites as well as sustainability of the project.

We shall continue to see this over growing trends and potentials of computerized information management systems and their subsequent universal networking being fully explored by museologists and scholars alike. It is, therefore, left for us to also take this challenge by encouraging our scholars and museologists to work towards attaining a unified computer management system in Nigerian museums. The Museums Association of Nigeria, like its counterparts elsewhere, should consider setting up a committee that will look into the possibility of establishing a body that will be mandated to set standards in museum documentation in Nigeria. The body, when established, should liaise with similar organizations and institutions with a view to standardizing the system in Nigeria comparing to the global system being developed.

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