Re-defining the roles of public libraries in the era of information explosion

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Abstract
This paper examines and re-defines the roles of public libraries in the era of information explosion. It explains the factors that lead to information explosion and its effect on public libraries. The traditional roles of public libraries were also highlighted in addition to the new roles expected of the public libraries in the era of information explosion. Some strategies were proffered for efficient and effective service delivery in public libraries in the era of information explosion. It was recommended that the government should sponsor the public libraries in order to afford the huge cost of ICT in the era of information explosion.

Keywords: Public libraries; information explosion; cultural heritage resources; job performance

Introduction
Invention of new ideas necessitates the documentation of those ideas. People have been recording their thoughts and actions and expressions in numerous ways since time immemorial. With the spread of literacy and invention of new methods of recording one’s thoughts and ideas, the body of knowledge created and accumulated by human beings started to expand. According to Strother, Ulijn, & Fazal, Z (2012), the founding of the first truly public library in England in 1598 facilitated diffusion of information and knowledge for a larger audience. The industrial revolution and various innovations in the 18th and 19th centuries generated a huge body of knowledge which was used as building blocks for social, economic and cultural progresses made in the 20th century. Great advances in computer technology in the mid-twentieth century and subsequently, the emergence of Internet World Wide Web have made our world truly information-driven era. Thus, new ideas are generated in each and every branch of human activity from time to time. In UGC NET (2019), it noted that apart from new ideas, we give new interpretation to known ideas; we also borrow ideas from other disciplines and try to apply them in a new context. As a result, more and more information is produced in a variety of forms leading to information explosion.

Kazi (2014) defined information explosion as a situation when the information user fails to process any more information because of its enormity in size and volume. In Kumari (2017), information explosion is a term that portrays the quickly expanding measure of distributed data and the effects of this abundance of data. As the measure of accessible information develops, overseeing data turns out to be more troublesome. Information in this setting possibly inspected on two fronts: flowing information and stored information. Flowing data is what is transmitted over the wireless transmissions, on the internet and through the phone. Stored information...
According to the New World Encyclopedia, information explosion is a term used to describe the rapidly increasing amount of published information and the effects of this abundance of data. As the amount of available data grows, managing the information becomes more difficult, which can lead to information overload. Edmunds and Morris cited in Kazi (2014) define information explosion as an ‘overabundance of relevant information that cannot be assimilated, or being burdened with large quantities of unsolicited information (which may be beneficial). With the growing intensity of information explosion, individuals and organizations are seeking solutions to this multi-dimensional problem. Libraries and information specialists are in the forefront of these efforts, because as information managers, they have to bear the brunt of this problem. Every day, new information is being added to the existing body of knowledge, making information identification, location and retrieval more and more difficult for individual information seekers and information professionals alike.

Kumari (2017) reported that the creation of imprinting in the mid-fifteenth century, the wide conveyance of books by the sixteenth century, the development of proficiency among the white collar classes in the seventeenth and eighteenth hundreds of years, and the nineteenth century's mass instruction development expanded both the sum and the interest for data. The creation of electronic media, particularly the internet, has contributed monstrously to the data blast. Data and correspondence innovation (ICT) has assumed a significant part for the development of data blast. If the invention of printing has prompted an increase in information generation, ICT has multiplied it.

The terrific rate of knowledge and information expansion is overwhelming and has created the need to re-define the roles of public libraries. This involves the development and maintenance of a system of adequate recording, and storing of all forms of information published and unpublished, printed and non-printed that adds to the sum of human knowledge. The mastery of information generation requires that public libraries need to be aware of different available information sources. According to UGC NET (2019), there is an urgent need for the design and development of different information system that can be a probable measure of keeping an eye on the information explosion in public libraries.

Factors that lead to information explosion
The advancement in ICT, especially search engine technologies has resulted in over abundance of information from myriad sources in response to online searches, which causes time constraints for the information users to scan all these information. Kazi (2014) added that information explosion is usually caused by the existence of multiple sources of information, over-abundance of information, difficulty in managing information, irrelevance of the received information and lack of time on the part of information users to analyze and understand information. With the advent of new publishing media, especially the online ones, there is too much information generating from multiple sources which is one of the main causes of information explosion. This puts increasing pressure on information users who have very limited time to find, locate, retrieve and assess information from all these various sources. There are many other factors which directly contribute to information explosion. Some of them according to 2019 UGC NET are:

i) Increased literacy: Creative contributions are born when a man or woman comes in contact with the light of
education. Increased literacy is a prime factor for information explosion because individuals produce new information as he becomes more and more acquainted with knowledge.

ii) Increased number of scholars: The art of creativity is confined relatively to a very small proportion of the world’s population, who could devise new methods, recognize the existing ideas and offer improved solutions to familiar problems. They set new standards in science and technology, literature, fine arts, business, industry and social leadership. When the society becomes devoid of nature’s gift of talents then it would begin to stagnate and will ultimately perish. In 1800, there were 1,000 scientists and engineers in the world which increased to 10,000 in 1850 and in 1900, to 100,000. In 1950s, the numbers swelled to one million. It is this ever increasing number of scientists that accounts for the rapid proliferation of published materials.

iii) Increased research and development: The increase in research activities is also one of the factors of the exponential growth of information. Nowadays the scale and level of research funding have changed significantly as the research has become mission-oriented, multidisciplinary and assumed a matrix managed character.

iv) Increased literature: Literature of a subject is its foundation. It represents a record of achievements of the human race. Literature is diverse, complex and multilingual in nature. It is becoming more and more interdisciplinary. It is growing at a fast pace. In science, it is almost doubling itself in every 5.5 years. In social sciences it is doubling at the rate of every eight to twelve years and in the documentary media book production more than double in a decade. According to Rider, American libraries which try to collect everything appearing on a given subject double their size in every 16 years.

v) Origin of different types of information sources: Earlier information sources are only published media and handwritten manuscripts but today the sources of information are diversified from databases, micro-forms, online journals, CDROM, DVD, optical disk to hypermedia and hypertext.

vi) Growth of technology: Technology has multiplied by 10 times every 50 years for over 2800 years but nowadays its growth is very fast. Advancement in the field of communication and technology network has brought down the distances between individuals, states, countries and continents throughout the world, Computer and telecommunication are converging very rapidly and its highest impact is felt fall in the information sector. Actually the need for creative achievement has never been more recognized and designed than it is today.

vii) Development of society: Information has been stored in people’s mind and it has been updated and modified through
social contact and communication. As society has developed and become more complex, large quantities of information have been generated, published and disseminated, causing an information explosion.

viii) Development of competition:
We will continue to be confronted with competitive forces leading to creation as long as one person strives to advance, as long as one business attempts to increase its share of the total industrial output or to improve its profitability as long as one nation attempts to improve its position in the world. The competitive forces are leading to the demand for more information. As a result, more and more information is produced.

Effect of information explosion on public libraries
Information explosion has implications to the environment in which we live, to the workplace, the academic world, and our own peace of mind and particularly to the managers of these resources, especially the public libraries. When there is too much information to digest, a person is unable to locate and make use of the information one needs. This results to a situation whereby the volume of information available hinders its effective management and utilization. The National Archives and Records Administration (NARA) of the United States reported a significant growth in the volume of electronic records and total archival electronic holdings – 142 terabytes (Clarke & O’Brien, 2012). All these are putting a tremendous pressure not only on information searchers, but also on librarians, information managers, information aggregators and others who are facing an uphill task in capturing, sorting, cataloguing, classifying, preserving and retrieving information from a myriad of print and electronic sources.

Libraries and information centres, already struggling to serve an increasing number of readers within a shrinking budget, are also being adversely affected by information overload, because every day, they are forced to consult a huge number of information materials in order to find out the best materials – thus putting additional pressure on their time and efforts. Classifying and cataloging these resources also pose additional challenge. Many users consult the library professionals about whether to use a particular information or information source. With the influx of information from various sources, the library professionals are hard-pressed to give appropriate replies to the questions asked by the users. Besides, managing all this information properly is also a challenging task. The professionals who do not have adequate information management and bibliographic control skills could easily get overwhelmed by information explosion.

The management of this has proved challenging for libraries, thereby contributing to the information explosion problem. Public libraries and information institutions are also facing a moral dilemma in advising the users which information materials they can use and which they cannot. Majority of the information found freely on the web is fictitious rather than factual, often unreliable and potentially dangerous. Reliance on such information may lead to serious repercussions. Librarians have a moral responsibility to educate the users on judicious use of information. However, information explosion makes it doubly difficult for information professionals to discharge this duty because of the sheer volume of information on which they have to provide expert advice.
Traditional roles of the public libraries

According to Singh (2015), public library, from time immemorial, has been considered as social institution based on the democratic principle of, “for the people, by the people and of the people”. It is the most popular of all types of libraries because of its functions and services across the society:

1) *It serves as gateway to knowledge for the community.* It is a local centre of information, making all kinds of knowledge and information readily available to its users. Public library has a wider impact on societal as well as national development.

2) *It brings all round development in a society and nation:* Thus it is regarded as “people’s university. It functions as an intellectual power house, aspiring to meet the intellectual, educational, recreational, informational and cultural requirements of the people. It makes provisions of not only recreational materials for leisure reading but also of economic, social, cultural and political materials to make the public aware of the developments around them. This is the only institution, which caters for all categories of users irrespective of age, race, sex, color, creed and religion. Public libraries serve as a catalyst for socio-cultural and educational development by providing access to information and knowledge.

3) *Self education centre:* Public library functions as a centre for self education. It is the primary function of a public library to select and organize need based literature and other means of information and education suitable to the requirements of the local community in which the library is located. It fosters and provides means for self development of the individual and group at every stage of education, closing the gap between the individual and recorded knowledge. As a self education centre, the public library supports and promotes all types of education as formal and non-formal education adult and continuing education, and lifelong education by making provision of adequate stock of books and other reading materials and making them available to all sections of community, irrespective of caste, creed and color.

4) *Centre for lifelong learning:* Education is an ongoing process of improving knowledge and skills. Lifelong learning consists of various forms of education and training, formal and informal, e.g. the school system from primary to tertiary level, the free adult education, informal search and training, individually, in a group setting or within the framework of social movements. Public Library provides a cost effective infrastructure for lifelong learning and easy access to the required reading and learning materials in its collection. The development of the information and communication technology has already laid the basis for the creation of information networks, giving users even of small local public libraries access to the world wide sources of information.

5) *Community information centre:* Public Library functions as community information centre by providing required and essential information to various communities such as rural, linguistic, religious, legal etc. It brings to these communities accurate and up-to-date
information quickly and in depth, particularly on socio – economic needs of the society. It supports the growth of communities through the provision of information services designed to meet local needs. It functions as an important tool for reducing disparity between the information rich and the information poor citizen. The local public library collection is primarily in local language of the area. They also organize various forms of performing arts. Thus a local public library functions as a community information centre.

6) Recreation centre: Public libraries encourage the positive use of leisure and provide ample material and services for change and relaxation. Books of fiction, drama, poetry, newspapers and popular magazines, etc. facilitate recreational reading. Audio-visual materials such as films, television, radio, cassettes, gramophone records, CDs and DVDs increase the utility of public library as recreation centre. As a dynamic institution, it reaches out to the people at their homes and place of work, through branches, book mobiles and deposit stations at prisons, hospitals, and at elders’ homes.

7) Cultural centre for society: Public library also identifies and collects cultural materials of importance, such as work of art and sculpture, paintings, musical instruments, literary documents etc. available in its area.

The collected materials are organized and put to the public use. Thus it links the people of the locality with its cultural past. The public library has also penetrate deep into the life of the community by turning itself into a cultural centre, organizing activities such as lectures, book discussions, film shows, musical concerts, plays, art exhibitions and story telling for children.

8) Centre to support economic development: Public library functions as an information provider for businesses and industries, through the provision of information services designed to meet specific needs. For example compilation of city business directory, information alert service for business, city guide, job and career information guide, topical book list for a particular business or small industry, advice services for business etc. Such services of the public libraries positively contribute to the economic development of the community. The amount and exact nature of the services provided to contribute towards the community’s economic development vary depending on the community itself and the library.

Nowadays Public Libraries are functioning as mobile channels in providing knowledge to the people of rural and urban areas. Public libraries are constantly serving community functions and are performing various important roles in educational, economic, political, social and cultural development of the country. Information, as the most important instrument that lead to explosive growth of knowledge and the direct relation of information to developments in all walks of human life have elevated the role of public libraries in our society. However, public libraries face the challenge of not just keeping up with the most recent and relevant information, but also catering for the changing needs of...
the users. Today, the digital libraries is valued, where users look for visual and audio rich, multimedia content that is interactive and engaging. Rapid advancements in technology have changed the way information is managed and utilized in these libraries. Information users have greater access to information as a result of high internet speeds and mobile communications. Emphatically, this humongous task of providing high quality, credible information in various formats is yet to be accomplished in public libraries especially in developing nations. Agrawal (2019) noted that when we have all data online, it will be great for humanity and it is a prerequisite to solving many problems that humankind faces.

New roles of the public libraries in the era of information explosion

Some of the new roles of the public libraries in the era of information explosion include the following:

1) Knowledge management: The essential mechanisms to fight information explosion are to ensure that the information provided is of high value, that it is delivered in the most convenient way and format. In many organizations, information explosion stems from inherent weaknesses in information processing. When an organization does not have proper mechanism in place for processing the data and information it receives as part of its operational procedures, information tends to pile up at various points and clog the organizational processes. Therefore, every organization needs to have a comprehensive system of information processing, which, in fact, is a part of its knowledge management infrastructure. Standard information management techniques like citing, reusing and linking of information to the existing information is also advocated as a virtuous practice (Huvila, 2011).

2) Adoption of modern approaches to library services: With the challenges of information explosion and ICT, there is a shift from the traditional process of providing information to modern approaches to library and documentation services. Onwubiko cited in Kumari (2017) that the concepts of virtual libraries, digital libraries, paperless systems, electronic books (e-books), CD ROMs and ICT all suggest to libraries and librarians that it can no longer be the era of meek and apologetic librarianship as before but the new era of aggressive and active librarianship.

3) Digitization of information resources: Cultural heritage institutions such public libraries are digitizing materials as quickly as possible especially in developed world. These efforts make collections available to a much broader range of users. They may be able to identify and prioritize local resources that are unique (Anderson, 2013) or they may want to attend to the needs of their immediate users, recognizing that this might be a smaller base than potential online users. By providing digital collections, cultural heritage institutions offer the humanities the raw, large scale data needed to conduct their work. In cases where humanists have their own heritage institutions would do well to seek out new partnerships, sharing resources
(and credit) for these new collections and helping to disseminate them to a wider audience (Sula, 2015).

4) Expansion of collection development: Public libraries are expanding their collecting scope to include new media and formats, software, data sets, instructional materials, and samizdat Web resources. By and large, these resources complement rather than substitute for, print resources (Friedlander, 2002). As OCLC concluded in its report on five-year information format trends, “the universe of materials that a library must assess, manage and disseminate is not simply shifting to a new set or type of materials, but rather building into a much more complex universe of old and new, commodity and unique, published and unpublished, physical and virtual” (OCLC, 2003). It is important, however, that libraries maintain their historic role as flame bearers from one generation to the next. They must find new ways to do so by taking risks and forging new partnerships, not only with other cultural repositories but also with creators, publishers, and ordinary folk (Kenney, 2014).

5) Partners for collaboration: In addressing the new roles of public libraries, Saur (2001) maintained that a successful public library is a dynamic organization working with other institutions and with individuals to provide a range of library and information services to meet the varied and changing needs of the community. This becomes indisputable in the era of information explosion.

6) Facilitation of access to information using a range of tools: Beyond simply digitizing materials, public libraries as cultural heritage institutions must give full access to the humanists to use and mine those collections, along the lines of an API (Application Programming Interface) model. According to Sula (2015), APIs allow users to make structured calls for data and, in some cases, to send updates back to a centralized data warehouse. This allows humanists to access large amounts of information in a simple, efficient manner—something that, say, a web-based gallery display. By opening their collections in this way, Sula maintained that cultural heritage institutions give full meaning to the term “access” and they facilitate a wide range of uses of their material. In addition to making their collections accessible, public libraries can also facilitate the process of citing those materials by providing suggestions with each item or collection in a variety of popular citation styles.

7) Provision of advanced technological tools: A number of advanced technological tools are in use which enhances a user’s ability to find the most relevant information quickly and conveniently. Provision of these technological tools is a special task of the public libraries in the era of information explosion. Because of increased efficiency of today’s search engines, they tend to retrieve far more information against every search request than anybody could possibly handle. In view of this, acquiring web searching skills is an important prerequisite for tackling
information overload, because a user conversant in searching skills is likely to retrieve more relevant information from the web than one who is not. Carlson (2003) mentions some such tools which include advanced tools like intelligent agents (information retrieval programs that observe through sensors, act upon an environment and influence it towards achieving a goal), ranking algorithms (methodologies by which search engines calculate positioning results), cluster analysis (statistical method that attempts to find the natural groupings of objects based on attribute information about the objects), data mining (system for discovering and modeling hidden patterns in large volume of seemingly unrelated data) and personalization algorithms (application of known facts about users to customize information services for them).

Strategies for efficient and effective service delivery in public libraries in the era of information explosion

1) Development of advanced and relevant new policies in public libraries: Addressing the new roles of public libraries in the era of information explosion, Breeding (2006) pointed out change in ICT and the globalization of the world, significantly social structures and social attitudes towards the need of information. Libraries are forced to develop advanced and relevant new policies to offer services to users and to meet their public information needs and knowledge. Considering the new conditions, the user enters ever rarely beyond the library walls, but rather the library goes to his home. This requires adequate, for the local community (which changes dynamic and nonlinear) resources in various formats, qualified staff and resources to support new services.

2) Training of staff as subject specialist in Librarianship: In an era of information explosion, there is the urgent need for librarians to train as subject specialists. According to Katz (2002), this is particularly important for reference librarians, who need not only skilled appreciation of reference sources in general but understanding better than anyone else how to dig out data from a given subject field. Specialization in a specific subject area has become particularly important for librarians in the 21st century.

3) Library cooperation: In handling information explosion, public libraries must cooperate and collaborate with other libraries to share idea on the new trends in development. Library cooperation helps to reduce costs, as it enhances users’ accessibility to more materials at little or no cost to the library. This is made possible either through computer networking or referral services. Users also have access to the expertise of personnel who may not necessarily be staff of their own libraries. A commendable effort at library cooperation to help libraries in dealing with information explosion is the creation of the Online Computer Library Centre (OCLC) based in Ohio, United States of America. OCLC is “a nonprofit, membership, computer library service and research organization” (Kumari, 2017). OCLC’s mission has providing
users with access to a wide range of resources on any subject and opportunity to retrieve relevant information.

4) *Use of ICT:* Use of ICT can help libraries cope with the challenges of information explosion. For instance, the reference librarian can attend to the queries of numerous users through the electronic mail. The availability and accessibility of electronic information resources is made possible through ICT. Such resources as online journals, e-books, CD-ROMs are now accessible to library users. Hundreds of thousands of journals and e-books are available online, thus helping acquisitions librarians keep track of published materials as well as conserving space in the library where hard copies of such materials would have been kept. Through ICT, cataloguers can now make use of online catalogues of other libraries as well as online classification schemes. This makes their jobs more effective.

5) *Achievement of information literacy skill:* According to Kurbanoglu et al (2013), specialists agree that, for information users and information professionals alike, achieving information literacy is vital for successfully dealing with information overload. Librarians are generally very skilled in obtaining information but less inclined to pass judgment on it. That is, the evaluative role of the librarian has been neglected in past years. The role of the librarian, then, must change from that of a locator, to an information evaluator. Also, the librarian should be willing to teach information seekers how to evaluate sources of information themselves.

**Conclusion**

The era of information explosion has maximized the new roles of public libraries in 21st century. Public libraries particularly through their special collections of cultural heritage maintain important cultural artifacts that represent a significant part of the heritage of the communities they serve. In common with many other organizations, public libraries are going through a period of unprecedented and ongoing change as a result of the rapid development of information technology, social and demographic change resulting from the excess flow of information. This presents tremendous opportunities for the public libraries, as information provision is one of its primary roles. It also presents challenges to their managers and staff to ensure that this change can be introduced with the maximum effectiveness and the least stress on staff and the organization. It is expected that public libraries must be away of the issues arising from this changes and establish methods of dealing with them. This can be done by putting some strategies in place to effectively manage the consequences of information explosion. And also take full advantage of ICTs in providing users with access to a wide range of resources on any subject and opportunity to retrieve relevant information.

The following are recommended to enhance services.

1. State government should adequately fund the public libraries to meet the high demand of information explosion.
2. Public library authorities should sponsor their staff to ICT – related workshops and training, partner with other agencies in ensuring the provision of ICT facilities.
3. Public libraries should organize workshops and seminars on ICT.
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literacy from time to time for their library users.

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