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Digital Resource Management in Modern Libraries

Ms.Khan Zainab Mohammed Akram

Mumbai University Institute of distance & open learning (IDOL)

Vidyanagari, Santacruz(e)

Pcp Centre: JMF's Vande Mataram Degree College,

Dombivli (w) 421202

ABSTRACT :

The paper explains how the Digital Resources are kept/managed in present day libraries i.e… modern libraries and what are the vital skills are required for the Librarians for smooth and efficient functioning of the library. In short. Digital documents are easy to access and it can also be accessed remotely. In other words, Digital libraries are called Virtual Libraries.

Key words:

Digital Libraries. Digital Resources, e-Resources, Management of Digital Resources

Introduction :

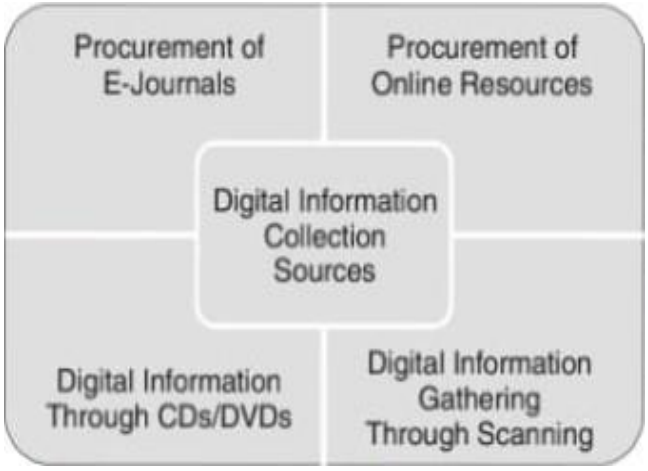
Digital resources are defined as digital. Electronic. Streaming video. Audio recordings. CDs. DVDs. VHS recordings. And subscription databases. Digital Resources are defined as material (data/or programs) encoded or manipulated by computerized device. Electronic resources refer to those materials or services that require a computer for access, manipulation, or reproduction including, but not limited to, numerical. Graphical and textual files. Electronic journals, bibliographic or full-text databases and Internet resources.

According to Barker, there are three types of documents used in digital resources.

1. Static : Static are the most basic, they contain fixed information and never change their form (such as traditional online data).

2. Dynamic : Dynamic documents also contain fixed information but also able to change their outward form. The way embedded materials if presented to users (such as multimedia, CD-ROMS)

3. Living : Living documents are able to change their form (outward appearance) and this embedded information.(such as information on the web, for example. An Article which can be edited and updated).



Procurement of E-Journa1s :

An electronic journal is a periodical publication which is published in electronic format, usually on the Internet. Electronic journals have several advantages over traditional printed journals.

DOAJ (Directory or Open Access Journals) :

DOAJ is a community-curated online directory that indexes and provides access to high quality, open access. Peer reviewed journals. DOAJ is independent. All funding is via donations, 40% Of which comes from sponsors and 60% members and publisher members. All DOAJ services are free Of charge including being indexed in DOAJ. All data is freely available.

J-GATE :

J-Gate is the most comprehensive database & gateway to access research information from over 56 Million journal articles with access to I I Million Full Text articles covering multiple subject domains.

J- Gate @ Consortia :

Launched in 2001 by Informatics India Limited, J-Gate is an electronic gateway to global e-journal literature. J-Gate provides seamless access to millions of journal articles. The J -Gate platform is fronted by a simple, intuitive. And easy-tousle interface, and also gives users complete control over search filters. By allowing users to access content from a wide variety of publishers on a single platform, J-Gate exponentially increases journal usage.

A search platform Is available with a resource-sharing facility for members of the consortium. This product is customized for coverage Of Consortium subscribed journals as well as member library subscribed journals. A customized service developed and delivered to a library consortium for the exclusive access and use of its registered closed-user-group members only. Who desire to share resources and infrastructure through an agreement.

- A single cloud based database containing journal articles available through the consortia and the libraries Of all the participating members Online Journal Access Catalogue (OJAC).
- Resource sharing platform for all journals. To all the faculty and students Of institutes creating one single gateway to the library subscribed journals.
- A metadata framework for the entire consortia at one single place on the cloud accessible to all the participating members.
- Bibliographic access to all journal holdings of all the members on one single platform.
- Customization made possible for Journal coverage as desired by the consortium. Resource-sharing features as defined by the customers. User interface within the features and functionalities of J-Gate.

J-Gate @ Specialty :

A specialized database devised with a specialized approach to journal content indexing. Catering to subjects that require specific Journals for their respective fields. This extension of J-Gate has journals indexed to meet the needs of all the subsets of each specialization and includes all its features and functions.

J STOR :

JSTOR (short for Journal Storage) is a Digital Library founded in 1995 originally containing digitized back issues Of academic journals. It provides full-text searches ofalmost 2,000journals.As more than 8.000institutions in more than 160 countries had access to JSTOR;ISI most access is by subscription, but some of the site's public domain and open access content is available at no cost to anyone.

The above-mentioned journal portals are important gateway for acquisition of journals to educational and research institutions. Journals are available in Digital issues and it can be accessed at any time and at anywhere. In the above portals, OIV11-access and Cost pay journals are available. In addition to the above portals, the journal issues can also be purchased from leading journal publishers like EBSCO. PUBMED, SCOPUS. Etc.

Access :

JSTOR is licensed mainly to academic institutions. Public libraries, research institutions, museums. And schools. More than 7.000 institutions in more than 150 countries have access. JSTOR has been running a pilot program of allowing subscribing institutions to provide access to their alumni. In addition to current students and staff. The Alumni Access Program officially launched in January 2013. Individual subscriptions also are available to certain journal titles through the journal publisher. Every year. JSTOR blocks 150 million attempts by non-subscribers to read articles

Procurement of Online Resources :

Ne resources those are accessible via the Internet and World Wide Web. In general. Web pages and documents on the internet that provide useful information are known as online resources. While an online resource is archetypal data and educational in nature. Any support software available online can also be considered a resource. Materials. Notes. Timetables, notice. Etc.. available online for reading.

An online book Is a resource in book-like form that is only available to read on the Internet. It differs from the common idea of an e-book. Which is usually available for users to download and read locally a computer. Smart-phone or on an e-reader. Quora, Amazon. Jain Book Agency.Snapdeal.com, Infibeam.com are the leading online book sellers in India.

Newspapers are also available online and it can be accessed through internet from anywhere and at any time. The leading online newspaper providers are New York Times. The Atlantic, Asia Trrnes Online, BBC Online, CNN. Etc.

In addition to the newspapers and books, theses and dissertations are available online from leading online publishers like ProQuest. Shodganga, EBSCO,PQDT. British Library ETHOS. Etc.

Digital Information through CDs/DVDs :

DVD (an abbreviation of digital versatile disc) is a digital optical disc storage format invented and developed in 1995. The medium can store any kind of digital data and is widely used for software and other computer files as well as video programs watched using players. DVDs offer higher storage capacity than compact discs while having the same dimensions.

Storing Digital Image Files on DVD :

Copy digital photo files onto a DVD by using computer's DVD burner (this figure shows an external DVD burner). A DVD can store more digital images than a CD. And DVD burners have largely replaced CD-only burners in most computers.

DVDs: pre-recorded kind of DVDs come with stuff already written to them. One can view what' is stored in DVD.But cannot erase the stuff from and then rewrite to them.

DVD+RW and DVD—RW discs: Can be written to, erased. And written to again.

Compact disc (CD) is a digital optical disc data storage format that was co-developed by Philips and Sony and released in 1982. The format was originally developed to store and play only sound recordings (CD-DA) but was later adapted for storage of data (CD-ROM). Several other formats were further derived from these, including write-once audio and data storage (CD-R) rewritable media (CD-RW), Video Compact Disc (VCD). Super Video Compact Disc (SVCD). Photo CD, Picture CD. CD-i. and Enhanced Music CD. The first commercially available audio CD player. The Sony CDP-IO was released October 1982 in Japan.

Data Storage :

CD data are stored as a series of tiny indentations known as “pits”, encoded in a spiral track molded into the top of the polycarbonate layer. The areas pits are known as “lands”. Each pit is approximately nm deep by 500 nm wide. And varies from 850 nm to 3.5 pm in length. CD-ROM capacities are normally expressed with binary prefixes. Subtracting the space used for error correction data. A standard 120 mm. 700 MB CD-ROM can actually hold about 737 M. In comparison, a single-layer DVD-ROM Can hold 4.7 GB of error-protected data.

Digital Information Gathering through Scanning :

An Image Scanner often abbreviated to just Scanner is a device that optically scans images, printed text, handwriting or an object and converts it to a digital image. Digital Cameras can be used or the same purposes as dedicated scanners. When compared to a true scanner. A camera image is subject to a degree of distortion. Reflections. Shadows, low contrast. And blur due to camera shake. Digital cameras Offer advantages Of speed, portability and non-contact digitizing Of thick documents without damaging the book spine. As of 2010 scanning technologies were combining 3D scanners with digital cameras to create full-colour, photo-realistic 3D models of objects.

A scanner is an electronic device which can capture images from physical items and convert them into digital formats. Which in turn can be stored in a computer, and viewed or modified using software applications.

Simple page images or elaborately marked-up text begin the transformation from analogue to digital by scanning or digitally photographing the original text. For many digital projects. Scanning will turn out to be one of the easiest tasks. Operating a flatbed scanner is not much harder than using a photocopier. Put down the document, press a button on computer or scanner. At least with that one page: the instructions from there become more like shampooing: Lather. Rinse. Repeat. Censurer digital cameras that capture at least three megapixels of data can work equally well although they tend to be slower to set up and harder to frame precisely over a page or book. Document Imaging Management workflow automation can help to:

Now-a-days lot of hard copy documents are scanned and those scanned documents are saved either into Fn-drive or CD and they can be forwarded through mail as separate attachment and this reduce rather than feeding a document into a computer. The contents shall be directly sent to the exFcted destination. It is a kind of reproduction of document.

Review of Literature:

1.Manoj Kumar Sinha and Awadhesh Singh Gautam describes in the study Electronic Resource Management in University and Institutional Libraries of India in Changing Environments: An Overview describes that ICT has brought the revolutionary changes in tir functioning of libraries and information centers. The impact of ICT including WWW and Internet is visible in every walk of life. The libraries are not the exception. Due to electronic publishing. Many e-resources in the form ofe-journals. E-books and on-line / off-line databases are being published. It will be academic libraries specially colleges and universities libraries have procuring these resources for their libraries. Due to escalation in the cost of learning resources both printed and e-resources and financial problems the academic libraries are facing, consortia models are being adopted and experimented for the procurement and access to e-resources by the colleges and universities. The first part of parry about the e-resources, its characteristics. Advantages. Formats. Issues and challenges for managing e-presences in the university and institutional libraries whereas second part deals with a brief account of collection development policy guidelines. Criteria for selection and evaluation of e-resources . pricing micelles for e-resources. At the end Of the paper some suggestions have also been given for the optimum utilization of e-resources.

2.Nilratan Bhattacharjee and Awadhesh Singh Gautam in their study Best Practices for Managing E-Resources in Academic Libraries explains that Libraries functions as an essential central component in an education system. It plays an important role in an academic institution. In twentieth century, rapid development of the Information Communication Technology (ICT) has revolutionized each and every filed and Library and Information Centers (I-ICs) is one of them. Has changed the academic libraries in terms of collection. Organization and services. Traditional concept of acquiring information is gradually replaced by accessing information online. The collections Of modern libraries are restricted to print media only but libraries actively archiving the electronic resources due to its diverse nature like eco-friendly, time saving, cost saving, multi access. Flexibility to access without physical presence in libraries etc. The developments in have changed the users expectation from the academic libraries in different ways. Of the literary users have changed and they prefer electronic resources more than the print resources. E-Resources represent an increasingly important component of the collection building activities of libraries and library environment has been leading towards digital/electronic library. But still libraries are facing many problems in managing these e-resources. Ihis paper

discusses the concept of e-resources. Various types of e-resources. Advantages and disadvantages of e-resources.

This paper also describes the best practices in managing e-resources for maximizing its utilization in academic libraries and information centers with the help of modern technologies.

3.Shariful Islam & S K Mamun Mustufa in their study A Review of Digital Resources among different types of libraries in Bangladesh briefed that a library without digital resources is like a king without a kingdom. But sad stories continue in most Of the developing countries specially the night mares is a reality for the libraries Of Bangladesh. Most of the libraries (including national, public, academic, special) in Bangladesh have no electronic/digital resources or very limited resources. In this reality, aims of this paper are to explore the present status of digital resources in different types of libraries and as expected the findings were shocking. As this paper was based on secondary resources. The findings shows that there were digital or electronic resources available at the collections of national and public libraries, some digital resources were found in case of special libraries and a notable number of resources were found in the academic and university libraries though still the collections need to be increased in numbers, in that regard this paper concludes with some specific guidelines to increase digital resources in university libraries.

Modern Librarians Need Digitally Savvy Librarians :

The emphasis on digital data and collaborative space also frees up librarians to focus on one of their most traditional responsibilities: helping to increase student literacy.

In today's campus culture, librarians are integral to ensuring students have a solid understanding of the digital resources they are using for academic work. For example, librarians can help students get better at identifying credible resources and thinking critically about the information they find. Two skills that many young scholars need to develop.

These and other changes are also influencing the way that institutions teach the next generation of library professionals. With the aim of better training them for the new demands of modern libraries. A new library science programmed will create education models that define the library as a research lab and help future librarians navigate the complex tasks of supporting researchers.

In higher education. 21st-century librarians are seeing a redefinition or their roles, moving from stewards of physical information to educators on digital literacy. Institutions are also taking a new look at library buildings. Which are becoming less about offering a refuge for quiet, independent study and more about creating opportunities for creativity and collaboration.

On most campuses. Librarians are still the caretakers of academic information. It is simply that the format of that information is moving increasingly toward digital. To support modern research, libraries will need to offer students access to the digital versions of scholarly research. Much of which now includes complex data sets and visualization.

Degree of Collaboration:

The Degree of Authors Collaboration is shown in Table No.2 Various method have been proposed to calculate the degree of research collaboration. Here in this study the formula proposed by subhramanyam (1983) uses

$$C = \frac{NM}{Nm + Ns}$$

The degree of Collaboration

Where,

C = is the degree of Collaboration

NM = Number of Multi Author

Ns = Number of Single Author

$$C = \frac{1125}{336 + 1125} = 0.77$$

Thus the degree of Collaboration (C) 0.77

So, in the study the degree of Collaboration during the overall 10 years (2009-2018) is 0.77

Table 2: Degree of Collaboration

Year	Single Author (NS)	Multi Author (NM)	TotalNM+NS	Degree of Collaboration
2009	23	45	68	0.66
2010	29	61	90	0.67
2011	26	85	111	0.76
2012	39	122	161	0.75
2013	36	123	159	0.77
2014	32	139	171	0.81
2015	26	135	161	0.83
2016	43	109	152	0.71
2017	42	133	175	0.76
2018	40	173	213	0.81
Total	336	1125	1461	0.77

Table 2 Degree of Collaboration of authors by year-wise falls between 0.66 and 0.81 with an average of 0.77 during the study period. From 2009-2018 it has been increasing gradually. The multi author articles are higher and predominant than single author.

Collaboration Index:

The simplest of the indices presently employed in the literature is the collaboration Index, CI, which is tk be interpreted merely as the mean number of authors per paper.

$$CI = \frac{\sum_{j=1}^{A} = jf_j}{2a}$$

it is a mean number of authors per joint paper.For this analysis, we have omitted the single authored papers which is equal to 1 always. To determine the mean number of authors per joint authored paper, the following formula has been used.

Table 3 : Collaboration Index

Year	Single Author	Two Authors	Three Authors	Three and Above authors	CI
2009	23	14	15	16	2.67
2010	29	23	23	15	2.4
2011	26	31	19	35	2.97
2012	39	41	33	48	2.56
2013	36	38	33	52	3.14
2014	32	39	42	58	3.49
2015	26	43	29	63	3.55
2016	43	31	26	52	3.16
2017	42	41	37	55	2.93
2018	40	52	48	73	3.07
Total	336	353	305	467	2.04

Table 3 shows Collaboration Index (CI) that is a measure of mean number of authors per paper, CI among the years 2.67 (2009) and 3.07 (2018) with an average of 2.04; indicating the trend towards multi-authorship publications in the field of Natural Disasters Literature.

Collaborative Co-efficient :

The patterns of Co- authorship amoung different countries have been examined by making use of Collaborative Coefficient (CC) suggested by Ajiferuke et al (1988). The formula used for calculation CC is given below:

$$CC = 1 - \frac{\sum_{j=1}^{A} = \left(\frac{1}{j}\right) f_j}{N}$$

Where Fj = The number of j authors in research papers

N = Total number of research papers published and

K = The greatest number of authors per paper.

Table 4: Collaborative Co-efficient

Year	Single Author	Two Authors	Three Authors	Three and Above authors	CC
2009	23	14	15	16	0.49
2010	29	23	23	15	0.42
2011	26	31	19	35	0.50
2012	39	41	33	48	0.50
2013	36	38	33	52	0.52
2014	32	39	42	58	0.55
2015	26	43	29	63	0.56
2016	43	31	26	52	0.37
2017	42	41	37	55	0.51
2018	40	52	48	73	0.54
Total	336	353	305	467	0.33

Table 4 identified collaborative co-efficient for the year 2009 is 0.49 which increased gradually to 0.54 in 2018 with an average of 0.33. According to Ajiferuke, CC tends to be 0 as single-authored papers dominate and near 1 tends to be co- authored papers dominate. The mean value is 0.33 which indicates the better collaboration rate among the authors.

Table 6: Distribution of Level of Collaboration

Level of Collaboration	Papers	%	Cumulative %
Collaboration with another institution (same country)	531	36.34	36.34
Collaboration within the same institution	343	23.47	59.81
Without Collaboration (single authored)	330	22.58	82.39
Collaboration with international institution	249	17.04	99.43
Unidentified	8	0.54	99.97
Total	1461	-	100

Table 6 identified the level of distribution of different level of Collaboration among the authors of the papers. it shows that the highest number of paper of Collaboration with another institution 531(36.34%) followed by collaboration within the same institution, without Collaboration (single authored), and collaboration with international institution with 343(23.47%), 330(22.58%), 249(17.04%). Respectively.

Conclusions:

Authorship pattern and productivity are the important parameters in order to study Authorship Pattern. Study is based on 1461 articles during the period 2009-2018. It provides the Authorship pattern. The main objective of the present study is to understand the paternity model e collaborative research in the field of Natural Disasters using the data collected by Scopus database. The scheme of paternity and collaborative research are important aspects of dating analysis. In the field of science and technology, the growing trend in more paternity and collaborative research is well established. For various bibliometric studies. The necessary scientometric measurements have been used for meet the objectives of the study. It has been revealed by this study that more articles dominated this field of research.

A high percentage of multi-authors. The articles of two authors are published more in number, followed by those of a single author, the third Author's articles. The degree of collaboration is high and could be attributed to Interdisciplinary nature of research.

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