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AWARENESS OF VTU CONSORTIUM AND CLOUD-BASED ONLINE RESOURCES IN THE VTU ENGINEERING COLLEGE LIBRARIES

Abstract: Modern academic libraries should well be equipped with online resources along with print resources. Libraries are facing a transition period from print to electronic. The younger generation prefers to refer to the digital form of resources quickly. VTU Consortium is a blessing for readers, who are studying/working in VTU affiliated colleges. To meet the industrial requirements, one who updates his/her knowledge up to global and industrial standards. It can be achieved only by referring to current journals. VTU consortium has given that chance to library users to access world-class eJournals and eBooks on their campuses just by clicking the mouse. This study focuses on the usage of electronic resources subscribed through VTU consortium by students and teaching fraternity and how those resources being utilized by users. This paper gives the idea of promoting these resources at the college level.

Keywords: VTU Consortium, Cloud computing, Online resources, Engineering college libraries.

Educational society is rigorously changing every day. New and advanced methods of learning are coming into existence. Libraries are an integral part of all educational institutions and they play a significant role in the higher education system. Libraries of today are not store-houses of knowledge; rather they are powerhouses of knowledge. They are intermediaries between the resources and users. For two decades, libraries have been blended their services to provide traditional as well as digital resources to needy users. Now, librarians are concentrating on improving their collection development in digital formats.

During the 1970s Information and Communication Technology (ICT) has been developed as a result of new products that emerged in the advanced modern world (Bradley, 2010). Later, libraries have adopted ICT in their in-house activities and access to online resources directly from the publishers. This kind of service awakens the users of the library to utilize them effectively. This has attracted more and more research scholars and academic fraternity to move towards the libraries. The invasion of ICT, easy accessibility of internet, the ever-growing need of electronic resources of library patrons and instruction by All India Council for Technical Education (AICTE) to procure online resources (e-books & e-journals); all these have boosted the libraries to adopt Cloud Computing Technology (CCT) to cater the needs of its users.

Amazing developments in the field of ICT and CCT have changed the very concept of the library by removing all kinds of communication barriers and thereby expanding its boundaries without walls. The entire publishing industry is moving towards electronic-soft publishing to meet their demands. Libraries are also procuring, storing and disseminating the electronic resources to the users on par with the publishing industry is concerned. Also, the ever-growing demands of the younger generation, in acquiring the required information on the spot within minutes; have compelled the urgency and inevitability of the soft publications. Henceforth, the need of the hour is to create an ambiance of soft publications, blended with the hard and print formats, all that lies on the shoulders of a smart librarian to cater to the needs of the diverse readers as well as its users. At this critical juncture, it would be a challenging task for the librarians to provide the urgent and necessary information to their users. So, in this regard, the CCT based facility has turned out as a game-changer in the field of library and information science.

VTU Consortium:

Visvesvaraya Technological University (VTU) is one of the premier and prestigious technological universities in India located at Belagavi, Karnataka. A total of 219 engineering colleges, 3.5 lakh students pursuing their undergraduate (UG), postgraduate (PG) and Ph.D. degrees, four regional centers, 2301 R&D centers all have brought feathers to its crown (Wikipedia, 2019).

Before 2014, few engineering college libraries had the facility of online resources like e-books and e-journals. But in 2014, VTU took a revolutionary measure to enhance its capability and to cater to the highly advanced R&D information to all the affiliated colleges by establishing its one of the much-accomplished dream projects namely “*VTU Consortium*”. The main objective of the consortium is to provide access to all sought of online resources to every student, studying in its affiliated colleges without any hindrance. The consortium has well equipped with the important online resources of the fields of Engineering & Technology, Management, and Basic Sciences from the much-celebrated publishers like Elsevier, Springer, IEEE, ASCE, ASME, etc. The online resources are authenticated in the institute’s static IP’s. Which are available on the campus without any user id and passwords or such related cumbersome due processes. Keeping in mind, that the faculty and student’s mobility of the campus, the VTU has come up in a beautiful way to provide the uninterrupted online services by providing the remote access platform such as ‘*Knimbus*’ as well as a mobile app called ‘*mLibrary*’. Any registered user of the

VTU affiliated colleges can have hassle-free access to the consortium through these innovative remote access platforms while they are off the campus.

Review of literature:

The ongoing modern world has witnessed tremendous developments in the field of ICT. The evolution of the World Wide Web (WWW) enabled people to use the internet for many reasons like communication, entertainment, education, and so forth (Adamou & Ntoka, 2017). With the Internet charges plummeting to an all-time low, accessing and transforming information has become much easier. Because of these popular reasons, gaining access to information has become easier and the dependency on books for information is reducing at a steady pace. This, in turn, has pressurized the libraries to implement and adopt new technological methods like; online journals, e-books, cloud computing technologies, etc.

According to Investopedia consortium means a group, made up of two or more individuals, companies or educational institutions work together to achieve the common goal. Usually, the consortium is a non-profit entity, wherein the library resources are pooled and act as a think tank reservoir for the research scholars, faculty and to the vast student community (Investopedia, n.d.).

Originally, the concept of cloud computing was proposed by a computer genius John McCarthy at Massachusetts Institute of Technology (MIT), Centennial in 1961. McCarthy is regarded as the “Forefather of Cloud Computing”. He in his speech stated that “Computing utility will be on par with telephone utility as quite common for everyone – with simple yet useful benefits”(Pruger, 2018). It started during the cold war between the United States of America (USA) and the Union of Soviet Socialist Republics (USSR) during the 1960’s. During the cold war, they had to protect their communication devices from the serious attacks of their enemies. USA developed ARPANET (Advanced Research Projects Agency Network) for its military purposes in 1969. The creation of a global computer network for ARPANET was developed by the group of computer scientists headed by J.C.R. Licklider. (Hauben, 1962)

Ramnath Chellappa, a professor in the Management Department at Texas University coined the term “Cloud computing” in a modern context in his talk titled “Intermediaries in Cloud computing” presented at the INFORMS meeting in Dallas in 1997. He defined cloud computing as a “computing paradigm where the boundaries of computing will be determined by economic rationale rather than technical limits alone”(“Ramnath K Chellappa | Emory University’s Goizueta Business S,” n.d.).

The word “Cloud computing” was used by Eric Schmidt, the then CEO of Google in 2006 at an industry conference (Rajaraman, 2014). Then the word “Cloud computing” gain popularity, attracted the press and the media as a catchy word. The well-known company Amazon, started its cloud services under the title ‘Amazon Web Services’ (AWS) in 2006, to manage, cater and disseminate its services and products. The term ‘cloud’ looks new and unknown to everyone except for the technocrats. Cloud computing services which have its invisible network, are being used extensively and untiringly by the common man without being aware of it. To name a few; Gmail, Yahoo mail, WhatsApp, Facebook, Instagram, Twitter, etc. are running on cloud platforms provided by their respective enterprises. The unique feature of the ‘Cloud’ is that the user need not own a PC or a separate storage device to store their valuable data. Rather, the user can just log in to their accounts by any means of the device and have the right to preserve, edit, transfer the data on their choice. This makes the user avoid carrying their hefty laptops, where ever they roam around (Benson & Morgan, 2013).

Technology did not spare even the libraries. Libraries are always in the fore-front in adopting new technologies and associated transformations. They are the main beneficiaries of the information technology, as they utilize it to a bigger extent and try to adopt its salient features as and when it is required. Cloud computing technology has emerged as a magnificent boon for the modern world in general and to the libraries in particular. Most of the western libraries have adopted this technology for their in-house activities, to provide good services to their stakeholders. But when we look at the Indian libraries it’s a different scenario altogether!

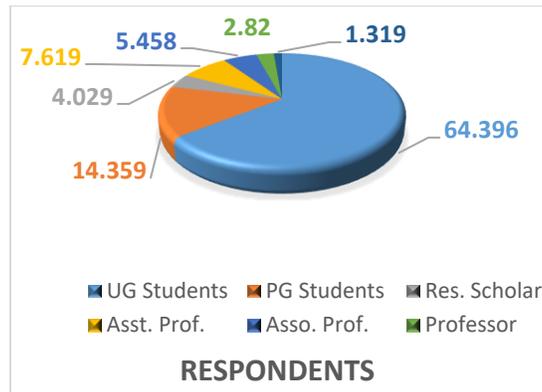
Objectives of the study:

- To find out the awareness of cloud computing technology among library users.
- To ascertain the perception of library users on cloud applications.
- To determine the use of cloud-related applications among library users.
- To identify the problems/barriers in the use of cloud applications.

Methodology:

The survey method is the best method to collect data from a large population. The same method has used to collect the required data from library users of VTU affiliated engineering colleges. The questionnaire is used to collect the data. A well-designed questionnaire was prepared by using an online survey tool –JotForm. The questionnaire link was sent to 4000 library users stretched across Karnataka. Out of 4000, we received a good amount of response figuring around 2730. The data so gathered was analyzed using Microsoft Excel and were successful in obtaining some of the interesting results, which have been suitably discussed and presented in the form of tables, pie-charts, and bar-graphs in the subsequent sections.

Sl. No.	Respondents	Response	Percentage
1	UG Students	1758	64.396
2	PG Students	392	14.359
3	Res. Scholars	110	4.029
4	Asst. Prof.	208	7.619
5	Assoc. Prof.	149	5.458
6	Professor	77	2.822
7	Others	36	1.319
		2730	100

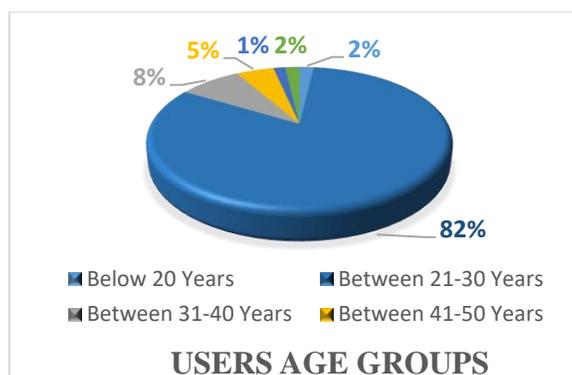


Well-designed, online questionnaire link sent to 4000 library users of all the engineering colleges affiliated to VTU. We received around 2730 filled questionnaires from different categories of library users including UG Students, PG Students, Research Scholars, Assistant Professors, Associate Professors, Professors, and others. UG students represent (64.39%, n=1758), PG Students represent (14.35%, n=392), Research Scholars (4.02%, n=110), Asst. Professors (7.61%, n=149), Associate Professors (4.58, n=149), Professors (2.82%, n=77) and others (1.31%, n=36). The table shows the majority of respondents are UG students followed by PG students and other categories.

Age groups of library users:

In VTU, more than 3.5 lakhs of students pursuing their undergraduate and postgraduate degrees. More students have involved in this data collection process.

Sl. No.	Respondents	Response	Per-cent
1	Below 20 Years	51	1.86
2	Between 21-30 Years	2233	81.8
3	Between 31-40 Years	221	8.09
4	Between 41-50 Years	133	4.87
5	Between 51-60 Years	41	1.5
6	Above 60 Years	51	1.88
		2730	100



As the present student generation are more techno-savvy and are exposed to vivid modern gadgets like PCs, laptops, android mobile phones. They prefer soft copies of journals and books for their references. On the other hand, information-seeking behavior has been increased in the geometric proportions among the teaching fraternity, because of their wise and vast student community. In Table 2, we find the details of the age group of the library users taken into consideration of the survey and their respective contribution in terms of percentage as well as their actual numbers. The data seems to be interesting that; under 20 years have their minimal contribution to the survey that is 1.86% (n=51), and next category is of age between 21-30 years with their contribution of 82% (n=2233), next between 31-40 years with the contribution 8.09% (n=221), next between 41-50 years with their contribution of 4.87% (n=133), next age group between 51-60 years with their part of 1.5% (n=41) and finally of the senior citizen age group that is above 60 years with their part of 1.88% (n=51). This table reveals that the younger age group (21-30) has a major contribution to this detailed statistical survey and helped a lot in arriving at certain valid conclusions.

Awareness of VTU Consortium and cloud-based online resources:

VTU consortium is a major educational initiative addressed by VTU, accessible to all engineering and management students, research scholars and faculty members within their campus through authenticated static IPs.

Sl. No.	Awareness of VTU C.	Response	Percent
1	YES	2562	93.85
2	NO	168	6.15
		2730	100

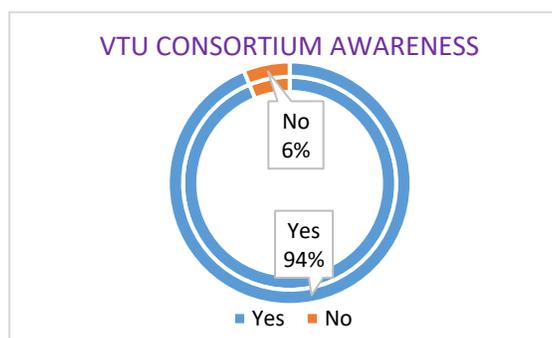
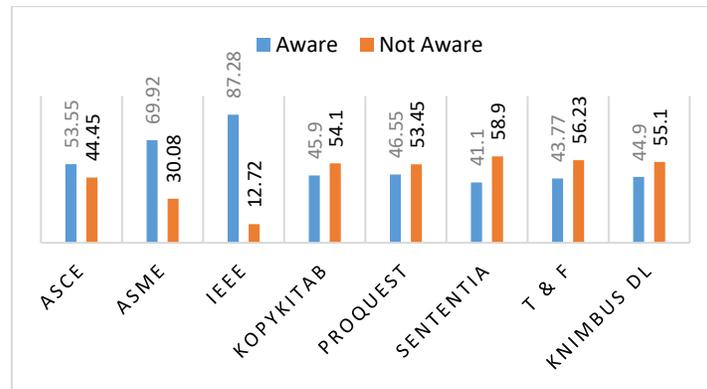


Table 3, gives a handy picture regarding the awareness of the VTU consortium. Interestingly, the majority of the library users that are around 94% (n=2562) are aware of the consortium. Only 6% (n=168) of the users are unaware of the said consortium available on their campus.

USAGE OF CLOUD-BASED ONLINE RESOURCES THROUGH CONSORTIUM:

Sl No.	Resources	Aware	Unaware
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		response	%	response	%
1	ASCE	1462	55.55	1268	44.45
2	ASME	1909	69.92	821	30.08
3	IEEE	2383	87.28	347	12.72
4	KOPYKITAB	1253	45.90	1477	54.10
5	PROQUEST	1271	46.55	1459	53.45
6	SENTENTIA	1122	41.10	1608	58.90
7	TAYLOR & FRANCIS	1195	43.77	1535	56.23
8	KNIMBUS DIG. LIB.	1226	44.90	1504	55.10



In Table 4, we can observe the different online resources/ publishers and their respective awareness. ASCE (American Society of Civil Engineers) has accessed by 55.55% (n=1462) users, ASME (American Society of Mechanical Engineers) accessed by 69.92% (n=1909), IEEE (Institute of Electrical and Electronics Engineers) accessed by 87.28% (n=2383), Kopykitab, an online ebooks platform accessed by 45.9% (n=1253), Proquest accessed by 46.9% (n=1271), Sententia, an online English grammar tool accessed by 41.1% (n=1122), Taylor & Francis accessed by 43.77% (n=1195) and Knimbus Digital Library accessed by 44.90% (n=1226). The overall data shows that the users are well aware of the available online resources of the consortium with the major databases were being IEEE, ASME, and ASCE. This survey and the subsequent data are self-evident of the success story of the VTU consortium concerning its profound usage by the beneficiaries.

VTU Consortium is meant to prepare the students to meet the global standards and industry-ready skills. In this view, VTU has established the Consortium to provide the online resources to its students with nominal charges. VTU consortium has been executed with the executive committee headed by the honorable Vice-Chancellor, followed by the respective subject experts along with the senior librarians of different colleges affiliated to VTU. Every year the committee strives to procure good and useful resources for the major benefit of the students, research scholars, and the teaching fraternity.

Suggestions:

Apart from the existing users, VTU may further increase the impact of the consortium by adequately popularizing it among its beneficiaries. There are certain trusted ways to publicize or create the required awareness regarding the available online/cloud-based resources on their campus.

1. Presentation/Lectures.
2. Guided tour.
3. Making documentaries.
4. Brochures/ Flyers.
5. Email propaganda.
6. Social media - Whatsapp, Instagram, Facebook.
7. Virtual tour.

Conclusions:

In summary of the conducted survey, we have arrived at certain statistical data regarding the usage of the VTU consortium as well as the related online resources which are well supported by pie-charts and bar graphs. ICT technologies have changed the concept of libraries as well as the information-seeking behavior of users. To satisfy their information needs, libraries should adopt the new technologies apart from the existing ones and make the resources available handy. VTU consortium resources certainly have played a significant role in the academic as well as in the R&D activity of the university as a whole and knowledgeable as an individual. University with the motto of serving best in the technical education field is offering such a wonderful facility through its VTU Consortium at a very cost accountable and affordable rates within the frame of the social justice are really laudable!

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