



Digital Library Services on Open and Distance Learning at Universitas Terbuka : Opportunities and Challenges¹

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The Library is an important unit in an education institution, especially to give services on reference need, not only for students but also for academic and administrative staff. Universitas Terbuka (UT) as an open and distance education institution(ODL) has a huge number of students who spreads throughout Indonesia, so that the library services can only be given at a distance. The existence of digital library services provided by UT is currently potential since there are 83000-100000 library web visitors in a month, with the hits of 2.000.000 in average, while the number of visitors who came physically to the library is 240 people in a month. This paper is intended to present the historical background, the opportunities, and the challenges in giving digital library services at UT. The opportunities is focused on the internet accessibility, while the challenges is focused on how to give digital library services for UT's students who spread throughout Indonesia; and how to increase their participation to access the digital library services. It was suggested that the number of visitors to access UT's library website and the availability of the Information technology, will lead UT a big opportunity to develop a digital library.

(key words : digital library services, open and distance learning, opportunities and challenges)

¹ Paper presented for AAOU Conference, WOU, Penang, Malaysia, September 27-30th 2011

Historical Background

Open and distance education system seems to be the new paradigm in education and always have something to offer to everybody. Its history is related to the development of communication technology, especially in the 1980s and early 1990s.

The Indonesia Open University (Universitas Terbuka = UT) was established in September 1985 based on two big issues; ie; low capacity of the university, and low quality of the teachers. Related to the idea of increasing the capacity of university with low cost and of increasing the quality of the teacher, have pushed the government to open a distance university with open system. The government expects that UT can accommodate the huge number of high school graduation and increase the quality of the teacher, in order to increase the quality of Indonesian Education.

To operate easily, UT was designed as a university with networking system which covered all of state university in Indonesia. Through this networking system, UT can use the facilities of the university, either man power or library facilities. UT can utilize the experts of the university to prepare learning material and tutorial, including the facility of Regional Offices (UPBJJ) in 32 cities (now 37). Meanwhile, the libraries are used to give library service to the UT student.

UT make cooperation with several institutions, such as PT. Pos Indonesia, PT. Telkom and National Library. The Post Office was used as an administration and registration agent, and learning material distribution. PT. Telkom was used to make easier communication with the student and to make network all over Indonesia. National Library in 26 provinces (named as regional library) give services for the reference material to the student.

This networking made UT capable in holding educational program all over Indonesia. No wonder if UT got 650.000 students in 26 years and UT qualified in mega top ten university category. UT is the world's 6th largest university (Campus Indonesia, vol 1, no 2, 2011).

By design the library collections are appropriate to provide services only for the UT staff, particularly in the field of distance and open higher education system and courses offered by UT. Services to UT's students are limited for them who visit the library which is located at the

UT main office in Jakarta. The students are allowed to read the library materials but they cannot borrow them.

The necessary services, which are vital to a distance learning system like UT, are made possible through the utilization of communication and information technologies. However, not everybody can benefit from this kind of technologies due to the limited availability of the necessary hardware and software to support the technologies.

Library Services

As a distance education institution, UT's library did not operate by itself. Networking was a key success for it. Therefore, since the beginning, it conducted a networking with other state higher education institution all over Indonesia. Consequently, UT student can use such a library near to their place. It also conducted a networking with the national library collections in regional areas.

As a state higher education library, its activities referred to library programs conducted by Directorate General of Higher Education. When it conducted a project from world bank in 1988, UT's library was also involved. One of important units in that project was coordination unit for library activities (Unit Koordinasi Kegiatan Perpustakaan or UKKP). It was formed as government effort to develop a library network of state higher education in Indonesia. Through the network, there was a possibility to jointly use together the library state university, and then formed, Centre for Scientific Service, (Pusat Layanan Disiplin Ilmu or Pusyandi). Through Pusyandi, it was expected that the library service can be optimized. Students from different higher education can get similar service given in this library networking. The development center of collection was managed in accordance to Pusyandi center. Other higher education libraries can use the collections developed by Pusyandi libraries. There were eight state higher educations as Pusyandi while others was expected to be a member who can use the collections developed by Pusyandi. The state library which being Pusyandi is expected to deliver the information of new collections it developed. UT's library as a member of Pusyandi networking can use the collections developed by those eight Pusyandi, either through the internet or facsimile. The

purpose of this networking was a chance to develop a service system among libraries (wahyono, 2009: 116).

In 1996, UKKP activities began to decrease, related to the ending of the world bank project. Several libraries started thinking how to maintain the network. Several libraries in middle java and east java then initiated to develop a cooperation forum for state higher education libraries, called Forum Kerjasama Perpustakaan Perguruan Tinggi Negeri (FKP2TN). Because of a technical problem, the membership of FKP2TN was limited for state higher education libraries in Ministry of Education in Java. However, because of the demand of IAIN library, the membership was open for state higher education in Ministry of Religion such as UIN, PTAIN, or IAIN. One of the aims of this forum was to increase the fulfillment of information need for library member, and to increase the human resource quality for library member (Aslam, 2004). In 1996, UT library become a member in FKP2TN.

Digital library or virtual library was an information networking which has activities to integrate all kind of library services in a digital or virtual coordinating organization so that it became an information distributed broadly through a communication network of global internet.

The strength of digital library compared to the conventional library were as follows (Wahyono, 2009: 118-121) :

- Access for user : wherever, whenever, easier, and faster.
- Collection: available in various format (printed, audio/video, and digital)
- Information Source: can be used broadly, either its own source or other libraries through internet networking.

Several reasons for UT in developing digital library :

- The huge number of UT's student
- UT's students spread throughout Indonesia
- Having distance learning system.
- Difficult to communicate conventionally with its student.

- To achieve the vision of UT, such as a centre of excellence in information dissemination in open and distance education.

UT digital library has been developed in such a long period, in accordance with the development of UT infrastructure in data networking. In 1996, UT started to develop virtual networking. Its computer center and media research center conducted trainings to its staff in order to develop a web for UT. From the training, each unit at UT was expected to develop a web which contains information related to its units. The staff of UT's library was also participated in the trainings. At the same time, library in all over the world developed what was called digital library, virtual library, or electronic library. As a library which has students spreads throughout Indonesia, even abroad, it has to develop an digital library. It actively sent its staff to participate in training and seminars related to digital or electronic library conducted by several institution outside UT such as University of Indonesia, Bandung technology Institute, and the Indonesian Academy of Sciences (Wahyono, 2009:120)

Even though its format was still elementary, UT's library information already can be accessed through UT web since 1999. It was also developed general information about UT and put it into the web. In 2000, it started to digitalize part of its collection, especially local content material such as research collection on distance education and thesis or dissertation from UT staff and UT's students, UT's annual report, and learning course materials (Buku Materi Pokok—BMP). That library collection have been transfer from media printed to the digital material.

Copy right became a problem in digitalizing the collections. A breakthrough was needed to cover the problem. An effort which can be done was a permission from the writer of research, thesis, and dissertation to be digitalized their findings. Such effort had a positive response from UT academic staff since there was an easy permission from them to digitalize their findings.

At the same time, ITB sponsored the establishment of Indonesian Digital Library Network (IDLN), and UT's library be a member of IDLN. As a member, UT can put a digitalized collection into IDLN.

Beside local content material, UT library also digitalized abstract, table of content of the journal and book collections. Currently, UT's library also digitalized audio video collections, and other collections were photos, newspaper clipping, and documentation related to distance education.

Through digital library, UT's library was develop services as follows:

- Online service on catalogue including table of content of books collection and abstract of the journal.
- Online service on research, thesis, and dissertation findings (abstract and full text)
- Online service on UT's learning course material
- Online service on learning material supplement
- Online service on literature trace related to material used in writing UT learning material.
- Online service on general information about UT.
- Online service on distance education/distance learning information
- Photocopy service at a distance

With the digital library, UT library can gives service with three models of services. First, direct service to student (users) who come to library. Second, through intranet (LAN), and third through internet. The first and the second served by UT staffs and several students who lives in Jakarta. Meanwhile the third, served by UT student and public who cannot come direct to the library and they can access via internet.

Opportunities

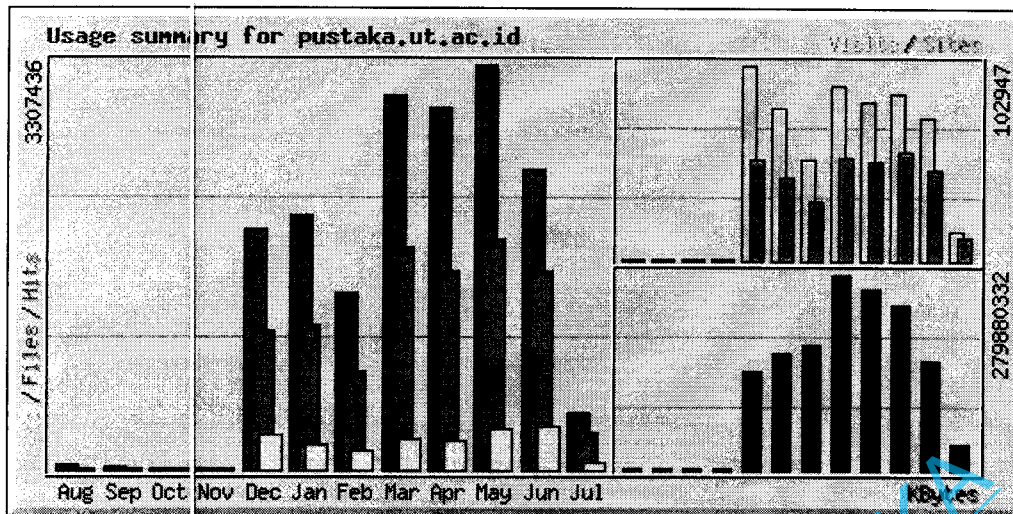
When first develop the digital library, UT does not have an adequate budget for developing digital collections. It is a medium which consist of a collection of UT's local content such as theses, dissertations, journal published by UT, UT,s course matterial, and its supplement, as well as UT's annual report. In addition, bandwidth availability is also very small, making it hard for the development of digital libraries. Today, by having an adequate budget, UT Libraries have enormous opportunities to develop digital libraries which can be accessed by many users at once. In addition it can also subscribe to the UT library books and journals in digital form from various publishers. Thus, the digital library collection covers a digitalized local content, as well as tens of thousands of articles in journals, dissertations / theses in the form of abstract and full text of subscribed each year.

Another opportunity is the Directorate General of higher education subscribes which contains hundreds of thousands of articles in both abstract and full text which can be accessed via online for all colleges. Thus, UT students who are scattered all over the country, even in some countries can access the journal everywhere.

In addition, currently the Directorate General of Higher Education is also developing a academic portal. This portal is a general reference and scholarly Indonesia (Indonesian general and Scientific Reference) which presents all of the data in research from universities in Indonesia. Through this portal, students can find literature on this research, including theses and dissertations from various universities and research institutes in Indonesia.

The development of digital libraries has achieved encouraging results. Since November 2010, the current number of visitors to the UT digital library experienced a remarkable improvement which ranged from 75,000 to 85,000 visitors in each month. The use of digital libraries in Desember2010 month-July in the last six months look like that can be seen on Figure 1.

Graph 1 the use of digital libraries Desember2010 month-July 2011



Source:

Webalizer version 2:21

The data does not explain who visit the digital library website and it cannot be known whether the digital library visitors is UT student or not. However, UT's digital library usage is quite high. The average per day reached in 2841, and within one month reached 88,074 visitors with 3,307,436 hits. This means it is likely that these visitors are UT's students who prepare for examinations.

The conclusion was based on several considerations. Firstly, it can be compared with UT students who are physically visit the library in the central office. The number of students who visit the library at the times before the exam has increased when compared with normal day today. They generally read the books of subject matter of the courses they take. The second consideration is that in general the visited files are the files of materials in digital form such as the book of subject matter and student thesis (Table 2).

Table 2, the most favorite files accessed by visitor

Top 10 of 5327 Total URLs By KBytes					
#	Hits		KBytes		URL
1	22520	0.68%	7444370	3.16%	/puslata/pdf40232.pdf
2	9606	0.29%	6345321	2.69%	/puslata/pdf40148.pdf
3	13346	0.40%	5964566	2.53%	/puslata/pdf40247.pdf
4	17142	0.52%	5903388	2.50%	/puslata/pdf40154.pdf
5	2833	0.09%	5648745	2.40%	/puslata/pdf40163.pdf
6	11137	0.34%	4644550	1.97%	/puslata/pdf40142.pdf
7	382	0.01%	4294241	1.82%	/pdfpenelitian/81087.pdf
8	74055	2.24%	3876182	1.64%	/website/media/system/js/mootools.js
9	6268	0.19%	3781276	1.60%	/puslata/pdf40181.pdf
10	6875	0.21%	3512737	1.49%	/puslata/pdf40127.pdf

The third, the subject of discipline visited in general is the subject of science offered by UT (Table 3). From these data, the field of science that are frequently visited is very diverse in all faculties. Most accessed the social and economic fields, as well as language. From the table, it can be seen that the subject of the legal system of Indonesia, government policy, bureaucracy and the relationship between central and local courses are subjects developed by the Faculty of Social and Political Sciences. While economic development, marketing planning, and strategic management are courses developed by the Economic Faculty. What is presented here is just the initial conclusions. There are no research data that supports this conclusion.

Table 3 disciplines which are visited Top 20 of 8367 Total Search Strings

No	Hits	Search String
1	57	0.50% Indonesia's legal system
2	34	0.30% economic development
3	29	0.25% government policy
4	28	0.24% marketing plan
5	27	0.24% central and local relations
6	25	0.22% government policy
7	25	0.22% literary theory
8	20	0.17% state administrative
9	19	0.17% social change
10	19	0.17% discourse Indonesian
11	17	0.15% factors that affect employee performance
12	17	0.15% horticulture
13	17	0.15% social statistics
14	16	0.14% bureaucracy
15	16	0.14% persuasive communication
16	16	0.14% Catholics to dialogue with other faiths
17	16	0.14% open university
18	15	0.13% science of state
19	14	0.12% Indonesian bureaucracy
20	14	0.12% Management strategy

The visitors is very volatile, but it describes the relative size of the digital library users. The digital library visitors since August 2010 to July 2011 can be seen on Table 4.

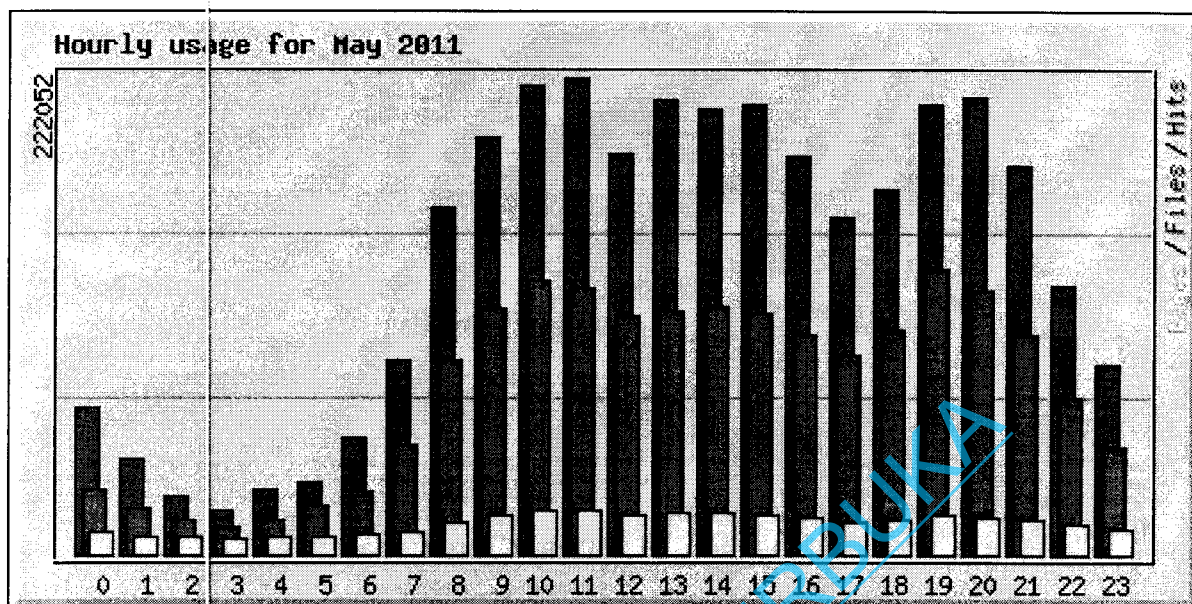
Table 4. Digital Library Visitors from August 2010-July 2011

Summary by Month										
Month	Daily Avg				Monthly Totals					
	Hits	Files	Pages	Visits	Sites	KBytes	Visits	Pages	Files	Hits
Jul 2011	66426	43478	8043	2216	11966	34405625	15514	56304	304351	464987
Jun 2011	81803	53819	11664	2520	48312	154405564	75628	349944	1614582	2454097
May 2011	106691	60784	10960	2841	56830	235708218	88074	339782	1884317	3307436
Apr 2011	98747	53789	8091	2781	52089	259100656	83443	242750	1613691	2962429
Mar 2011	98418	58588	7902	2958	54106	279880332	91714	244990	1816237	3050988
Feb 2011	61580	34996	6834	2297	31124	177388206	52847	157197	804917	1439362
Jan 2011	66847	38075	6783	2582	43709	167533407	80046	210281	1180343	2072264
Dec 2010	65421	36432	9431	3320	53280	140909067	102947	292379	1129421	1966053
Nov 2010	13537	5787	2179	928	924	858467	928	2179	5787	13537
Oct 2010	2444	62	39	4	3	3850	4	39	62	2444
Sep 2010	617	209	174	13	16	563691	408	5232	6293	18514
Aug 2010	1523	359	254	10	19	242618	305	7630	10770	45699
Totals						1450999701	591858	1908707	10370771	17797810

Source: Webalizerversion2:21

From the existing data, it can also be shown when the visitor visit the digital library. Most of them visited the UT digital library during the hours of work from 8 am to 5 pm, then between the hours of 7 pm to 9 pm. We can know the time used for UT student learning, because the majority of UT students are already working, then it is very possible that they study during his work at office. Figure 2 shows us when they access a digital library of UT.

Figure 2. The distribution of UT's digital library visitors based on hour



The illustration above shows how high the UT digital library visitors. From the magnitude of visitor, resources, and the existing infrastructure, UT Libraries has a great opportunity to continue develop the digital library. UT's digital library can provide more extensive services to UT students, particularly in library and information services.

Challenge

As described above, the average visitors of digital library are about 3000 visitors in a day. For conventional library, the number of visitors was outstanding and consequently the librarian will be difficult to serve. However, for the digital library that amount is not too big. With the existing bandwidth, that number does not make visitors have difficulty in accessing.

Considering the number of UT students who achieved 650.000, then the number of visitors is still too small. The percentage is still below 0.50 percent. This description, when compared with Internet users in Indonesia in 2011, is still far below. Currently, the use of

Internet in Indonesia has reached about 50 million people, which means about 20 percent of Indonesia's population. This means that up about 10 percent from 2010. This condition was primarily driven from the trend of Internet usage via mobile phone / smartphone (Www.indonesiainancetoday.com/read/2041/). If we follow the development trend of Internet usage in Indonesian society, UT's digital library users will reach 130 000 people. If users of UT digital libraries is targeted to rise become 5 percent, the number can reach about 30,000 people a day. Thus, hourly UT libraries should be accessible by more than 1000 people. It means the bandwidth should also be raised, because the more the users, then the demands for a collection that should be provided also higher.

Considering the many users who utilize the collections which converted as a PDF, UT's digital library has a big task to transfer the library collection which contain local content such as theses, dissertations, UT's research results, and UT,s course material. This year, the target is to convert the entire subject matter of courses offered to students. Currently only 500 subjects which already converted in digital form so that about more than 400 courses must be digitalized at the end of this year. For the collection of research and thesis, the target in the same year is all of them.

The huge community of Internet users in Indonesia, it is a big challenge as well as a great opportunity for UT to develop UT digital libraries. Thus, the task of most digital libraries is how to make the needs of UT,s students on the library collections and services are fulfilled in the digital library. For the UT,s library, the challenge must be overcome by developing a digital collection that many users need. If users feel the benefits in using / utilizing the UT library, then they will always access the UT,s digital library.

Human resources are also a challenge to be overcome for the development of digital library. Currently the UT library staff only 17 people. Of this number, only six people who became a librarian, the other are administrative staff. They should be empowered to be able to work with librarians in developing digital library. It's all possible, even though the administrative staff must undergo the rotation every eight years. Administrative personnel who have skills in library will be moved to another unit after they worked for eight years. Therefore, ideally the staff working in the library is a person who has a permanent profession as a librarian and worked

in the library so that it has adequate professional skills. For that, the next, UT libraries should be able to recruit a professional librarian that is supported by more or less five administrative staff.

Conclusion

UT library has been developed towards the digital library. Library collection is developed from printed to digital. Due to copyright issues, then the collection was converted from printed to digital. The collections include the books of subject matter, research, thesis and dissertation. From the existing data, it is known that the collection of the most visited web pustaka.uc.ac.id is a collection with local content. The library collection consist of printed materials and then transferred in digital form. UT's digital library users since last seven months have a very significant progress. With the high use of UT digital libraries, and the height trends of Internet users in Indonesia, there is a significant opportunity for UT to develop digital libraries. When compared to the population of Internet users in Indonesia, UT's digital library users is lower. Therefore, the challenge is how to increase UT's digital library users. The efforts can be focused on developing a more diverse digital collections.

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