Warintek as a strategy to improve the performance of Indonesian SME's through dissemination of appropriate technology information: the role of Academic Libraries

by:

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Introduction

In the era of free trade, information is becoming vital and strategic in encouraging economy growth. This time we have resided in the third year of the third millennium, a period in which the global market will be started (AFTA in 2003 and APEC in 2010). Indonesian people have to prepare themselves to face this era. One thing to be considered in facing the era is mastering science and technology.

Education remains the most important thing to improve people's knowledge and skill. Through education we expect that the society can both improve their knowledge and skill as well as follow its development so that they can solve their problems caused by the changes in politics, economy, social and culture. Having knowledge and skills, Indonesian people is hoped to be able to face future problems, uncertainty, challenges, and even threat. One of education version of which can be developed to educate people for a lifetime is that informal education such as lifelong education, and it will use library as the education center. Besides, becoming center of informal education, the libraries can also play role not only for community development but also cultural preserver. Libraries stand as deposit for local documents such as custom nuptials, special food from certain area etc.

Universities or Colleges have played important roles as the organizations producing information, including information on appropriate technology. This information or publication is potential enrich information materials which then disseminated among community to assist them in their learning process for a lifetime. Such materials often recognized as "grey literature". Generally, those materials are published in limited number by the government, colleges or universities. The publications consist of thesis, dissertation, research reports (including appropriate technology information or publication) and others. If we can manage this sort of materials we can provide them for community need of information, and will be very useful for the community to improve their skills and knowledge.

Unfortunately, such as grey literature materials haven't been published in a wide range in number, they often are not in standard form. That is why they are very easy to be lost. To get those publications are very difficult because only certain institutes or units collecting them. To overcome those problems hence require conversion or transformation the inflexible printed form to digital form so that they will be easy to be disseminated or distributed.

Information Kiosk (WARINTEK) at a glance

Information Kiosk which was recognized as WARINTEK (<u>WAR</u>ung <u>IN</u>formasi <u>TEK</u>nologi or Kiosk of the Technology Information) is one of the government program which was executed by

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The Deputy Ministry for Research and Technology on Utilization and Socialization of Science and Technology, The Ministry for Research and Technology. The objectives of this program is that to improve the utilization of documentation units and/or information, and it is wrapped in "complete packages" in the form of improvement skill and knowledge of people in term of information access and management so that they can develop science and technology data bases, especially for local appropriate technology or home industry technology; accessing the appropriate technology information, including banking information such as credit etc. This skill and knowledge will be very useful for the community and can give the impact to the regional economy development, especially for small and medium scale industries (SMI) and small and medium scale enterprises (SME). The information include (a) databases; (b) special information such as research reports include appropriate technology information; and (c) bibliographic and scientific information such as primary and/or secondary publications in some aspects; sciences (for example: Biology, Chemistry, Physics, Environment, Economics, Social and Culture etc.) and technology (for example: Biotechnology, Engineering and Design etc).

Generally, WARINTEK has been provided by some PCs connected to internet. Besides, local server has been acting as a provider for such information too. The information has been supplied by some data bank of WARINTEK such as government agencies, colleges and universities etc. That is why, in certain circumstances, the PCs could not have connection to the internet (some regions in Indonesia still have unreliable connection to the internet), the users can access the local server and able to obtain the information from local databases and/or full-text digital information to meet their information needs.

WARINTEK was launched in August 2000 by LIPI (Indonesian Institute of Science and Technology) represents Strategic Policy of National Science and Technology 2001-2004 from the Ministry for Research and Technology. WARINTEK has been more popular since "PT Myoh dotcom" (one of the IT enterprises) launched WARINTEK 9000 year 2001 and the community has been very enthusiastic. Many WARINTEK then were founded by NGOs on self-supporting motivation. Some WARINTEKs, with "PT Myoh dotcom" facility, and have been established by many NGOs, private companies and government agencies with franchise system. This time there are more than 120 WARINTEKs have been established in Indonesia.

The Aims of the Program.

- Disseminating the information on science and technology to the urban and rural communities (such as group of decision makers, researcher, university staff members and lecturers, students, association of profession, etc).
- Encouraging the community's awareness on the importance of information in improving their life quality, especially in improving the performance of SMI and/or SME, learning and teaching process and research innovation.
- Socializing the science and technology information to the community especially academic communities to improve the quality of researches and academic writings.
- Actively giving technology training to support the local government in improving the quality of formal and informal education to skill up the community.
- Opening up the community view on power of information technology in assisting them to improve their knowledge and skills as well as its impact to their quality of life and welfare.

- Strengthening the role of the documentation units such as provincial libraries, district libraries, academic libraries in supporting local small and medium industries and small and medium enterprises.
- Giving environment to the community in order to consider that the information as also be a commodity.
- Improving the development of science and technology at local and regional governmental levels.

Scope of Activities

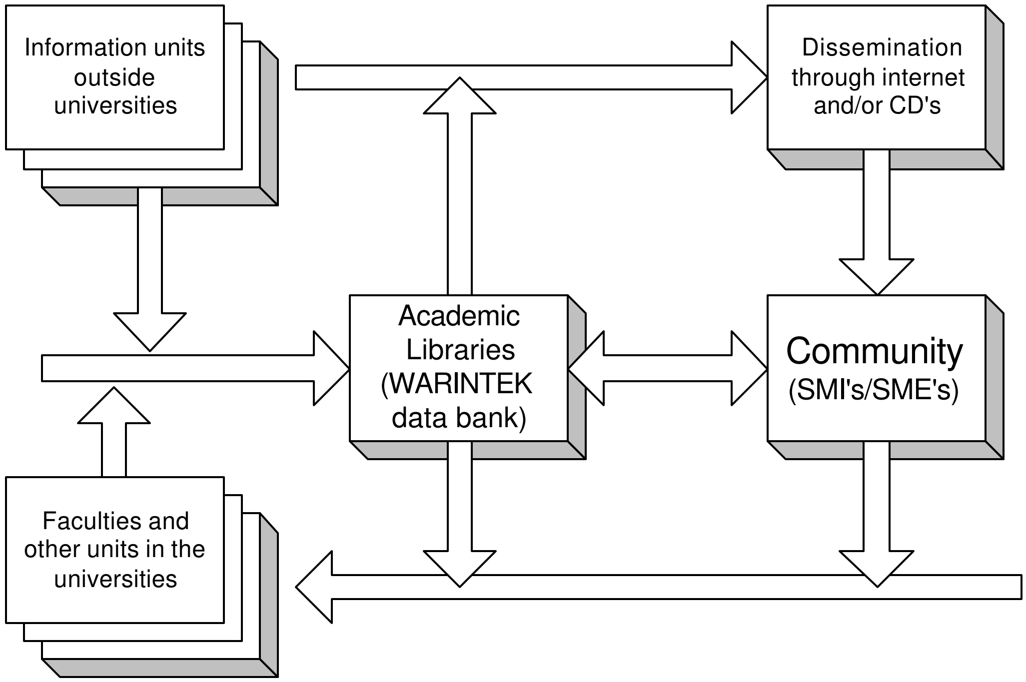
The scope of activities of WARINTEK is:

- Information services on science and technology.
- Data bases development of information on local technology (such as home industries, etc).
- Library automation and network establishment by connecting to some sources of information.
- Training to develop the community's skills and knowledge in the document management, library and information services, etc.

Role of Academic Libraries

Universities and/or colleges in Indonesia represent one of the government agencies. Its number is very enormous (there are more than 1600 colleges and universities in 2003). Their programs has been recognized as "tri dharma" consists of education, research, and community service. Research programs at the universities and colleges produce some publications such as research reports on basic sciences as well as in applied sciences. Whereas, the community service programs, they produce some publication such as brochures, leaflets and others. If we can manage and disseminate those publications it will be very useful for the community. The publication will assist the community, especially for rural community, in developing their skills and knowledge. Those publications consist of research reports, journal articles, reports of survey, proceedings, thesis, dissertation and other publication like leaflets, brochures and others. Some of these publications contain appropriate technology information. Unfortunately, those kinds of publications sometimes are very difficult to be accessed. Besides, it can be very difficult to keep and maintain them because of the absence of standard form. Even sometimes those publications could not be kept for long period off time, and also very easy to be lost.

Library's function is to collect process and disseminate the information for the university communities needs. It also can play role to preserve its university's publications (as a depository library). Furthermore, library can process those publications (such as developing data bases, reproducing them in digital format etc.) and disseminate them to the community through students who get along with community service programs, university's community development program conducted by university's staff members and other community development programs. Academic library can act as Data Bank to the WARINTEK in providing information required by the community. If all academic libraries can do this function hence the problem of collection availability will be able to overcome by an exchanging publication program (especially in digital formats). Scheme of relation between units can be seen at the following picture:



Library can collect information (grey literature publication) from faculties, departments and other units in the university. Besides, library can collect those publications from other institute outside university. Library then, process and disseminate the information directly to the community (users come to the library) as well as through the library publications which can be accessed through internet and/or CD-ROM. The users also can give the information (such as local appropriate technology information) to the library as well as to the university and other institution.

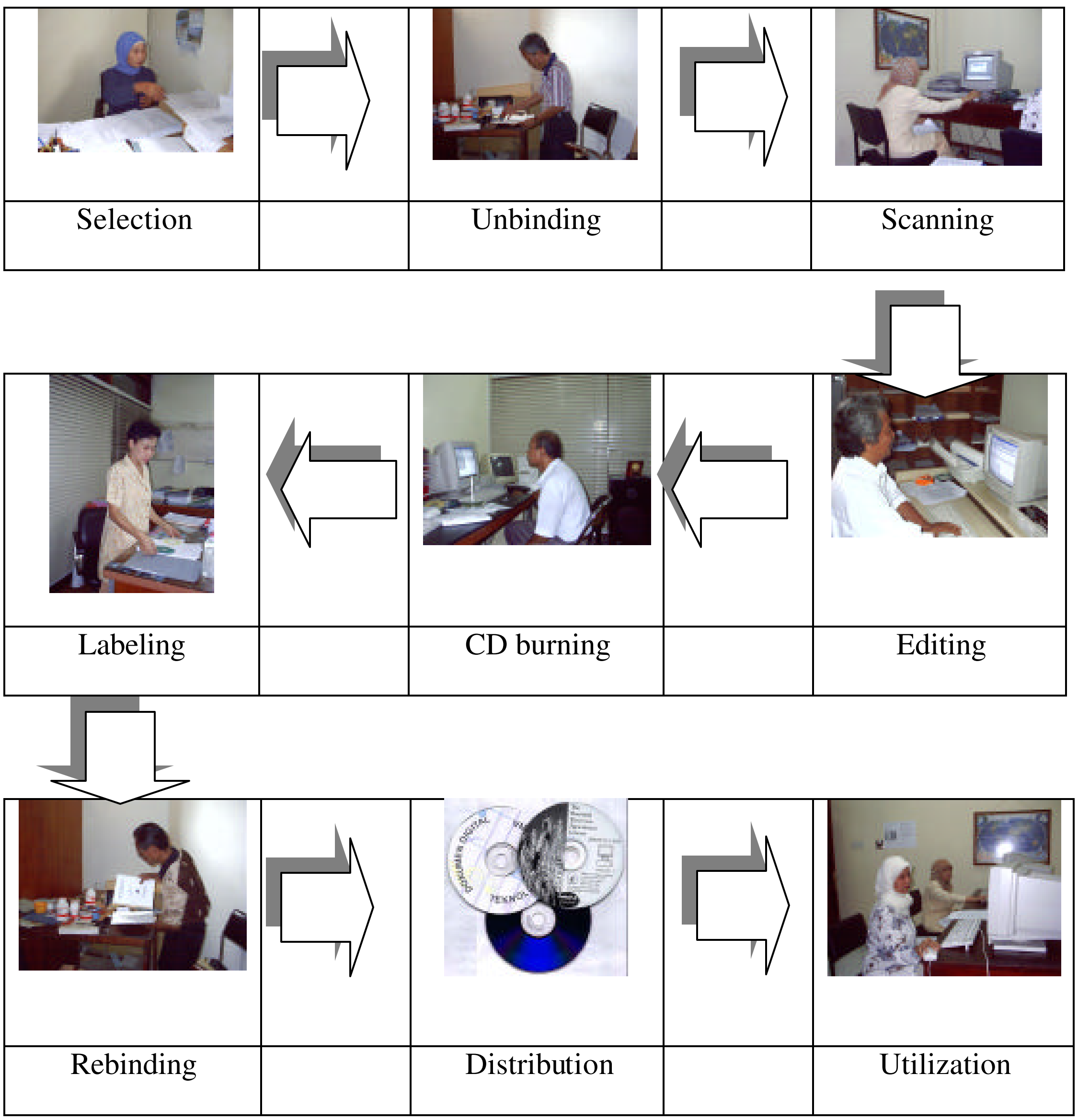
Process of Digitizing of the Appropriate Technology Document

The Dissemination of appropriate technology information program in this paper is the case of Bogor Agricultural University Library. This Program use CD-ROMs in disseminating the information directly to the community as well as through community service units of the university. Below is the process of digitizing the document:

1. Selecting and collecting materials to be digitized. Materials need to be selected in order to meet the target of digitizing. In line with objectives of digitizing program hence materials to be converted to the digital format are the materials consisting information on appropriate technology.
2. Unbound the printed material so that it can be read by flatbed scanner. This process need to be done to facilitate scanning operator, because they scan the materials sheet by sheet.
3. Scanning process. The operator scans the materials and save the file in the PDF format. The Scanner with ADF (Automatic Document Feeder) facility will process the material faster than the flatbed scanner. The scanning process will be done automatically by machine. Operator just put some sheet of (for example 30 to 50 sheet) material to be scanned in paper basin. The scanner will scan automatically and will take sheet by sheet until the supply of sheet in paper basin finished.

4. Editing the result. Result from scanning process need to be edited, book marked etc so that the page of document can be accessed and read easily.
5. Database development. The database also need to be developed and it linked to the digital publication so that the publication can be accessed fast and easily. Some WARINTEK, especially academic libraries, use CDS/ISIS or WINISIS for developing databases. The software was distributed free of charge by UNESCO so that it has been used by many institution all over the world.
6. CD burning or data migration. Finally, data has to be migrated to CD's as well as to the server (local and/or web server). The CD's also has to be labeled and distributed to the community.
7. Rebinding the document. If the document still needed to be served in the library it has to be rebound. Then the document can be returned to the stack.

Generally, the process can be described as follows:

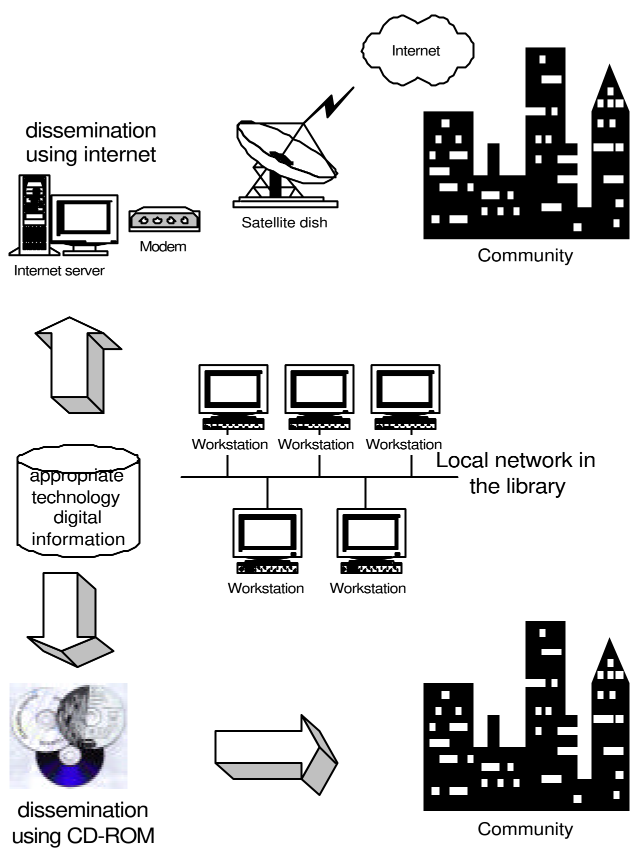


Dissemination of Appropriate Technology Information/Document

The Digital Information as a product of digitizing process consists of appropriate technology information. Its can be stored in any media such as in hard-disk (local server) in a web server, or can be copied onto CD-ROM. Dissemination of those publications to the community follows its media such as:

- If the publication stored at local server, hence accessing document can be conducted at the library. User will come to library, then access to the computer. The result of the searching can be printed, or copied to floppy diskette or recordable CD.
- If the publication stored in the web server, hence user can access to the document through internet either from house, office and/or also from internet kiosk (such as WARINTEK). Storing the publication on the web such this will give wider opportunity to the community to access to digital information.
- If the publication stored on CD-ROM, hence user can have the CD-ROM either purchasing and/or free of charge. With CD's the library can distribute to the community in certain opportunities like library promotion and/or exhibition. With CD's distribution have some advantages for example users do not need to connect to internet. It also can be distributed to the community in low price.

The dissemination of information/publication can be described as follow:



Program has been executed

Some programs have been executed by the academic libraries as Data Bank of WARINTEK can be described as follow:

1. Training on Internet for the library staff.
   In preparing the library staff to be internet operator, the library conducts the internet training. Mastering the internet operation they can assist the user in surfing the internet, chatting as well as getting free email address.
2. Training on Digitizing of grey literature materials.
   In developing digital collection we need staff with skill on technique of converting the printed form material to the digital form. In the training the participants learn how to convert the printed publication to the digital form as well as to develop the databases, CD burning, etc.
3. Development of Database on Appropriate Technology Publication.
   One of the objectives of WARINTEK is to provide information, especially information on appropriate technology to the community. In fact, colleges and universities produce many research reports that can be processed (such as repackage) and they can be very useful to assist the community in improving the skills and knowledge. For dissemination or distribution the library can cooperate with University Research Units and University Community Service Unit.
4. Training of Internet to Student
   Internet training to student executed by giving an introduction to internet for about 30 minute then continued with surfing to internet. The students also learn how to access the scientific information as well as general information; applying free mail address from the internet service provider and chatting with other internet users.
5. Promotion to Lecturer, Student and to the community.
   The Expecting users of WARINTEK are lecturer and student as well as external users from outside university. To promote the service of WARINTEK we need to get the users appreciation. That is why, the library in any occasion promoting the WARINTEK and its service such as through library exhibition by distributing the digital document which is has been produced by library. Some big exhibition which has been participated by the library is Jakarta Library Expo 2001 and 2002 and 2003.
6. Dissemination of Appropriate Technology Information/publication
   Library has distributed the CDs which is consists of appropriate technology information to the community. In some occasion of library exhibition or meeting the library usually provide at least 5 copies of CDs to be distributed for free as “door prize” for participating the meeting.
7. Seminar and Workshop
   In order to share the knowledge and experience among the WARINTEK manager (or organizer) conduct seminar in local, regional and national level. Those seminars usually were sponsored by the Ministry for Research and Technology as well as other government institution, universities and private companies.
8. Databases development Training
   Training for library staff in developing databases using CDS/ISIS and WINISIS were conducted in some university libraries such as Bogor Agricultural University Library, Siliwangi University Library, University of Brawijaya Library etc. The participant learn how to develop new data bases, data entry, data editing, data searching, data exchange, and printing etc.

9. Development of data bases and online union catalogue
   To facilitating library network it need to be build union catalogue. Bogor Agricultural University Library has developed the union catalogue consist of more than 30 academic library's catalogue. It has been distributed in CD the member of the library network.

Constraints

There are some constraints in executing the WARINTEK program such as:

1. Lack of Facilities
   As common condition of Indonesian libraries (including academic libraries) that the development of libraries have not been a major priority. As a result, the library's equipments to support the production of digital material, service and also dissemination of the digital information is very scarce and sometimes is very left behind. Besides accessing to internet is also very limited especially from the number of computer point of view that can be connected to internet. The bandwidth is also very limited. Some libraries even have to subscribe to ISP (Internet Service Provider) by themselves in order to access the information on internet.
2. Lack of Human Resources.
   Generally, libraries do not have enough staff especially who those with high skills on information and communication technology. If there is a good staff in the library sometimes the university will rotate or promote him to other unit within the university. That is why the library needs policy in order to keep the library staff in the position. The library also needs to recruit new staff with ICT skill to do information technology job.
3. Limitation of Operational Budget.
   It is very usual that library, including academic libraries, in Indonesia do not have enough budget to do their programs. Some libraries (with the program of WARINTEK) get an incentive budget to help the operation of the program of WARINTEK. Although the incentive is quit small, it can help to fund some activities. With those activities the library can generate income, and the program will be sustained.

Conclusion

WARINTEK is one of the government program initiated by the Ministry for Research and Technology. It was aimed to push the community to utilize the information units such as library to obtain the information in improving their skills and knowledge, especially for small and medium industries (SMI) and small and medium enterprises (SME). It needs an extra effort and promotion so that the program can be realized. From the information provider point of view it needs an effort and budget so that the program can be sustained and even improved. From the users point of view it needs to be stimulated continually so that they persist to access to information provided by WARINTEK.

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