Роль библиотек и информации в устойчивом развитии общества: экология информации

**The Role of Libraries and Information
in Sustainable Development of the Society:
The Ecology of Information**

Роль бібліотек та інформації у сталому розвитку суспільства: екологія інформації

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Библиотеки должны и могут играть решающую роль в обеспечении устойчивого развития общества. Как хранители письменных знаний и место работы специалистов в области информации, обладающих широкими знаниями и опытом в области информационных ресурсов на различных носителях, библиотеки должны играть центральную роль в обеспечении устойчивого развития общества. Чтобы играть эту центральную роль, библиотеки должны понимать экологию информации и ее значение для библиотек и выполнения ими своей миссии. Экология информации расширяет сферу действий библиотек. Для библиотек – это «система людей, методов работы, ценностей и технологий в конкретной среде» [1], в данном случае – в библиотеке.

Libraries can and must play a crucial role in the sustainable development of a society. As the custodians of recorded knowledge, and as the employers of information workers with the greatest knowledge of, and expertise with, information resources in all media, libraries must play a central role in the sustainable development of society. For libraries to play that central role, they must understand the ecology of information and how it will contribute to the library's support and to the success of the library mission. Information ecology broadens the library's outlook. The information ecology of a library is a «system of people, practices, values, and technologies in a particular local environment,» [1] here – in this case the library.

Бібліотеки повинні й можуть мати вирішальну роль у забезпеченні сталого розвитку суспільства. Як охоронці письмових знань і місце роботи спеціалістів, які володіють широкими знаннями та досвідом у сфері інформаційних ресурсів на різних носіях, бібліотеки мають відігравати основну роль у забезпеченні сталого розвитку суспільства. Для цього бібліотеки повинні розуміти екологію інформації та її значення для виконання ними свого обов'язку. Екологія інформації розширює сферу дії бібліотек. Для бібліотек – це «система людей, методів роботи, цінностей і технологій у певній сфері» [1], в цьому випадку – в бібліотеці.

An Informed Citizenry

Thomas Jefferson: «If a nation expects to be ignorant and free… it expects what never was and never will be».

James Madison: «A popular government, without popular information or the means of acquiring it, is but a prologue to a farce or a tragedy or perhaps both».

«A citizenry that has the ability to locate, evaluate, use, and communicate information is the only antidote to sound-bites, special interest lobbyists, radio talk shows, and big money campaigns». [2]

'Knowledge is power', 'Information is power', and 'The public libraries are the arsenals of democracy'. [3]

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[1] *Information Ecologies: Using technology with heart,* chapter 4, Bonnie A. Nardi and Vicki L. O'Day, MIT Press, 1999.

[2] Johnson, Doug. *Citizenship and technology.* Technology Connection, Jan 1998, v.4, Issue 8, p.48.

[3] These are all phrases that have been used to express the importance of information and public libraries.

«With better access to data you get better arguments in a public policy forum and better public policy».[4]

These are all expressions of what is most important for the sustainable development of a healthy society – an informed citizenry. And they also express the view that libraries play a fundamental role in providing the information which enables the citizens to be informed.

The balance of this paper will develop the role that libraries play in the ideas of literacy, information literacy, and the ecology of information, and relate the library and these ideas to the sustainable development of society.

The Role of Libraries

In the United States, the public library movement had its great impetus in the mid-nineteenth century. It was at a time huge waves of immigrants were arriving, especially in the cities.

Some of the wealthy industrialists were concerned that these people would not make a positive contribution to America. They feared that with their ignorance of the language and their limited educations and high illiteracy rate, that these new immigrants would create social problems and be a threat to those who arrived before them.

In the cities of Boston and Baltimore, leading philanthropists helped create the public libraries that continue to this day in those cities. They saw the public library as a place to which immigrants could come and be educated. They saw it as a place that they could learn to read and learn about the ways of their new country.

These patrons of the public library did not make their donations simply out of the goodness of their hearts. They understood that with literacy, education, and the information that the public libraries provided, the new immigrants would have the skills and knowledge to take their place in society. They would be able to take jobs, be trained, and do what was necessary to meet their families' needs and also to meet the needs of their employers.

This was an early instance of sustainable development provided by libraries and information. The workforce – thanks to the public library – acquired the literacy skills and knowledge to become part of the workforce. Also, the new immigrants – with the information and education they acquired from the library – were less likely to be a problem for society.

The development of the public library movement in the mid-19th century flourished and grew. One essential element was that the public library was to be a 'public' library. That is use of the library and its services was to be free for all of the citizens.

This was one of the foundations of the public library in the United States. Everyone could use the public library. No one would be denied service and no one would get superior service based on their ability to pay.

Many public libraries in the U.S. have the word 'free' in their name, e.g. the Free Library of Philadelphia, the Bedford Hills Free Library, the Rye Free Reading Room, etc.

Equality of Access and Equity of Access

Making the public library a free institution and open to everyone on the same basis provides equality of access. This means that everyone has equal access to all of the materials and services the library has to offer.

But what if the person cannot see? What if the person can only move with the assistance of a wheel chair? What if the person cannot speak English? The idea of equality of access provides no assistance to any of these people.

Hence we now have the concept of equity of access. To be equitable is to imply justice dictated by reason, conscience, and a natural sense of what is fair to all. It isn't fair to people who cannot see that there are no library materials in a format that will inform, educate, or entertain them. Without a wheelchair ramp, a person who cannot walk will not be able to get into the library. If the stacks are too narrow, the wheelchair-bound person will not be able to have access to the information in those stacks.

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[4] Harders, Julie. *Pay and Pay Again. (access to public records),* Quill, v.83, no.8, pp.17-18. This quote is by James Love, of the Washington, D.C.-based Taxpayers Assets Project, and it is cited in Harders' article.

Lastly, the person – in the U.S. – who doesn't speak English has no access to information in the public library if there are no materials in that person's language. In the non-English speaker's case, free and equal access is useless.

In these and many other ways, the libraries of today – even though they provide free and equal access – are challenged to provide equitable access to all of society.

Literacy

Simply, literacy is the ability to read. Information in any alphabetic format is meaningless splotches – be they on paper, online, or in any other medium. One must know how to read to acquire information. Literacy is a fundamental prerequisite for the acquiring the information we need for the sustainable development of society.

However, literacy, by itself is of limited value.

Yes, one can read, but where can one get the materials to read that will contribute to one's education? To help get a job? To provide answers to questions about health, history, horoscopes, and any of a multitude of other subjects?

Of course, the public library must meet the needs of the person who cannot read. There are other forms of literacy – sight or sound literacy. In these cases, equitable access is provided through audio and video tapes, DVDs, CD-ROMs, etc.

Computer Literacy

The ability to read is essentially a prerequisite for computer literacy. One has computer literacy if one can avail him- or herself of the information that is accessible via the computer. Thus the ability to use a PC and to know how to execute the commands that will permit one to access information from that PC are crucial.

So much of the information that we need today only is accessible via the computer. With computer literacy one can access information that may be in the computer's memory or its hard drive, or on a CD-ROM, a floppy disk, the Internet, or elsewhere, but it PC skills are needed to gain access to the information stored in computer-readable formats.

Computer literacy also includes the ability and knowledge to use the various applications and programs to which the computer provides access.

Almost all public libraries in the United States freely make available one or more PCs with Internet access. Many also have PCs available that permit people to do word processing, make spreadsheets, and use other programs. This helps ensure equity of access in that people who don't otherwise have access to computers, the Internet, or various PC applications know that in most cases they can have access to all of these things for free at their local public library.

Review – Establishing a Foundation for the Role of Libraries and Information in Sustainable Development of Society

We see that the free public library is the institution that is open to all, does not discriminate on the basis of one's ability to pay (or not pay), provides equal access to all, and provides equitable access to people with special needs. It also provides access to information in a variety of formats. Lastly for those who are computer literate, the free public library provides access to a host of electronic services and functions through the library's PCs.

Thus, in principle, anyone in the United States has access through their public library to information in a variety of formats and languages.

But having access to it does not mean that they know how to find what they need, where to look, how to evaluate it, and how to use it.

Information Literacy

«Ultimately, information literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organized, how to find information and how to use informa-

tion in such a way that others can learn from them. They are people prepared for lifelong learning, because they can always find the information needed for any decision or task at hand».[5]

People mistakenly think of information literacy as a skill new to the 21st century. This is not so. Reference librarians throughout history have had information literacy skills. Knowing where to look, knowing which sources are reliable or not reliable, are at least two of the information literacy skills that existed long before there were computers.

However the seemingly infinite amount of information that is available electronically as well as in print has made the issue of information literacy an important priority.

The ALA's Association for College & Research Libraries (ACRL) defines information literacy as,

> Information literacy is a set of abilities requiring individuals to «recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information».[6] Information literacy also is increasingly important in the contemporary environment of rapid technological change and proliferating information resources. Because of the escalating complexity of this environment, individuals are faced with diverse, abundant information choices--in their academic studies, in the workplace, and in their personal lives. Information is available through libraries, community resources, special interest organizations, media, and the Internet – and increasingly, information comes to individuals in unfiltered formats, raising questions about its authenticity, validity, and reliability… The uncertain quality and expanding quantity of information pose large challenges for society. The sheer abundance of information will not in itself create a more informed citizenry without [the additional abilities] necessary to use information effectively.[7]

In the United States, librarians in academic libraries through courses in bibliographic instruction teach information literacy to college students and faculty. In public libraries there are classes for both the public and for the staff on how to use the Internet, how to use PC software, how to find specialized resources in a given subject area, and so on.

The libraries in the United States recognize that information literacy is a skill that must be developed and requires knowledge and training.

The American Library Association's Association for College and Research Libraries has set forth five information literacy standards for competence in higher education.[8] They are:

Standard One: The information literate student determines the nature and extent of the information needed.

Standard Two: The information literate student accesses needed information effectively and efficiently.

Standard Three: The information literate student evaluates information and its sources critically and incorporates selected information into his or her knowledge base and value system.

Standard Four: The information literate student, individually or as a member of a group, uses information effectively to accomplish a specific purpose.

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[5] American Library Association. <u>Presidential Committee on Information Literacy. Final Report,</u> (Chicago: American Library Association, 1989.)

[6] American Library Association. <u>Presidential Committee on Information Literacy. Final Report,</u> (Chicago: American Library Association, 1989.)

[7] *Information Literacy Competency Standards for Higher Education,* http://www.ala.org/ala/acrl/acrlstandards/informationliteracycompetency.htm#ildef.

[8] http://www.ala.org/ala/acrl/acrlstandards/informationliteracycompetency.htm is the American Library Association's Association for College and Research Libraries site that spells out Information Literacy Standards for Competency in Higher Education.

Standard Five: The information literate student understands many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.

These standards spell out what one needs to know to be information literate. It is not enough to be able to read – it just means that whatever information appears on a screen or in a book can be read. But is that the information that one wants?

There is so much more one must know if one is to find and use the information that one needs for school, for a job, for one's health, for one's community, for one's society.

The skills comprising information literacy are not easily come by, but they are crucial if libraries and information are to play a vital role in the sustainable development of society.

It is not enough for libraries to have the books on the shelves. It is not enough to provide computers and access to the Internet. It is not enough to provide access to valuable print and electronic reference works and expensive commercial databases. Without users who know how to utilize these information resources, the libraries mission of meeting people's information needs cannot be met. The materials and electronic information are necessary conditions for information literacy, but they are not sufficient.

There is a story told of the student who spent over an hour in his dormitory using his computer to search for specific information on the Internet that he needed for a report. Totally frustrated, he went to the library and asked the reference librarian for help.

The reference librarian conducted what has been called «the reference interview», that is, in a Socratic-like dialogue with the student, she asked several questions in order to determine what the student really needed. Not unlike the psychotherapist, the reference librarian must elicit from the user what the user really wants to know through a process of skilled questions and attentive listening.

Having satisfied herself that she knew what information he wanted and where it could be found, she typed several keystrokes on her computer. The librarian then turned her monitor around so the student could see the information displayed on it that she had found.

He said, «That's it! That's what I wanted to know!»

And here's the important point to this story. The student then asked the reference librarian,

How come your computer was able to find that information and mine could not?

That true story – similar incidents have occurred in numerous college libraries in the U.S. – illustrates the crucial difference between literacy and information literacy. The student could read but didn't have the information literacy skills to find the information he needed. He could have searched all day, gone to countless sites listed in Google, read everything on those sites, but not find what he was looking for.

Information Ecology

Information ecology introduces some key distinctions that are of importance to the sustainable development of society.

Nardi and O'Day define an information ecology to be a «system of people, practices, values, and technologies in a particular local environment.

«In information ecologies, the focus is «not on technology, but on human activities that are served by technology».[9]

Nardi and O'Day go on to characterize *the library as an information ecology*.

The library is «a place with books, magazines, tapes, films, and librarians who can help you find and use them. A library may have computers, as well as story time for two-year olds and after-school study halls for teens. In a library, access to information for all clients of the library is a core value. This value shapes the policies around which the library is organized, including those relating to technology. A library is a place where people and technology come together in congenial relations, guided by the values of the library.[10]

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[9] *Information Ecologies: Using technology with heart*, chapter 4, Bonnie A. Nardi and Vicki L. O'Day, MIT Press, 1999.
[10] *Ibid.*

«Ecology» in this context pertains to the whole local system – the people, the books, the technology, and the array of facilities and services that comprise the library.

In this respect it is much more than information literacy. It is not just having the skills enumerated in the ACRL standards. It includes the multiplicity of people, the physical building, the books, the computers, the electronic resources accessible via those computers, and the library staff. There is a whole interrelated system that makes up the information ecology of the library.

Writers on information ecology heavily stress that it is much more than technology. How the technology is used, what is one trying to accomplish with the use of the technology? What policies affect the use of the technology? Who can have access to the technology? What are the conditions for usage – are there fees, does the monitor have a large print display capability, does the computer translate the words on the screen into physical speech?

And what is the policy of the library regarding the use of its computers? Who can use them? Who cannot? Are there time limits for their use because the demand for the computers exceeds their supply?

All of these questions and their answers help shape the specific and local information ecology of the library, especially in relation to the library's technology services.

Nardi and O'Day go on to state,

> …humans help other humans use technology. Simple things are done with simple tools. The library…sought out advanced technologies, but these technologies are carefully integrated into existing habits and practices, according to the values of the information ecology».[11]

Information ecology is introduced to enable us

> to focus attention on relationships involving tools and people and their practices. We want to travel beyond the dominant image of the tool…, and image of a single person and his or her interactions with technology. And we want to capture a notion of locality that is missing from the system view.[12]

An ecology responds to what is present locally and what interacts with what is local. It is scaled to humans at the local level not large-scale systems.

Returning to the local library as an ecology of information, whether the library is open or closed affects its ecology; whether the librarian is skilled or unskilled has an impact on the library's ecology; what books are in the collection, what services are offered, etc. all help define the ecology of the library.

At the same time, any change in any of these ingredients changes the ecology of information comprising the library – a new librarian is hired with different skills than the previous one; new books are added; new computers are added, thus reducing the wait time for the public's access to them. Each of these changes is an intervention in the library as an ecological system, and thus impacts and even changes other elements in the system.

Addressing the larger issue, the ecology of information in relation to the sustainable development of society, what we find is that the larger society is comprised of innumerable information ecologies. We as individuals interact with local information ecologies. And these interactions cause changes in other elements of the respective ecologies with which we interact.

We as individuals can have an impact on our local information and other ecologies. The various local ecologies and how they evolve will contribute to what larger changes occur in society. All of the libraries, separately and individually adopting policies that made Internet access free to everyone by using the libraries' computers and communication circuits, overall ensured that virtually everyone in the nation has access to the Internet. But this societal change was only effected by the local libraries each buying computers and communication lines and adopting open access policies for the public. It also must be noted, those decisions involved numerous elements – library staff decision making, local funding agencies agreeing to provide funds, advocacy efforts on behalf of the library to get those funds, individuals in the library service area indicating that it was their priority that the library provide Internet access.

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[11] *Ibid*.
[12] *Ibid.*

All of these elements had to do with the local ecological system, the public library. Technology played a role, but in the situation described, human interactions in a variety of contexts were the primary determinants in the establishment of free Internet access at the local public library.

Each public library in its own way, with different local factors and individuals contributing to the net result, instituted Internet service.

Broadening the picture, what we observe is that understanding the information ecology of the given system is of overriding importance to sustaining development at the local level. It is only when the multiplicity of factors, individuals, local conditions, technology, etc. are all taken into consideration that the information sought is found, or the desired result is achieved.

In closing, let us remind ourselves that in the United States the public library exists as an institution that provides a variety of information and other services. Its only mission is to ensure that the people who live in its community have equal and equitable access free of charge and free of anything else that would limit their access to the resources the library freely makes available. This is, at least for this writer, a model ecological system, and one to be replicated (and has been replicated) everywhere. And finally, it is one of the best institutions there is for promoting the sustainable development of a democratic society.

Thank you for your kind attention.

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