

The Intellectual Revolution; new technology in librarianship

An introduction and abstract

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The Twentieth Century was a glorious century for librarianship. Several major innovations, including the catalog card, classification schemes, machine-readable records, cooperative collection development, open shelves, interlibrary loan and many other initiatives have transformed the library from a storehouse of books to a vibrant place of information interchange.

At the second half the century, libraries become increasingly internationalized showing signs that the world of information is becoming one, in spite of political, linguistic, economic and other boundaries. Information explosion outpaced solutions brought forth by the innovations. Three areas of librarianship were especially vulnerable to the onslaught of new information technology:

1. the labor intensive operations that are expensive and slow;
2. the linear organizational concept of book-stacks and card-catalog that cannot process the random reality of distributed global information; and
3. the cataloging rules that cannot control media without a title page.

The computer that causes the problems is also the solution, librarians were quick to accept that. The Seattle Public Library started using the then simple computing equipment to sort and print catalog as early as 1958. Large-scale library automation in America began when the Library of Congress established the MARC format in 1979 with the promise to revolutionize librarianship. Soon, library automation enthused the world. As dramatic as it was, computerization of library has not yet been revolutionizing until the early twenty first century. Computer has been used mainly for emulating the catalog card. Emulations have lessened the problems and does not solve them.

Library has always been an expensive operation that only the privileged of the rich can support and the well educated can use. Economic affluence of the developed and developing countries during the later parts of the twentieth century endowed the less rich and the less educated with personal library amenities that they cannot afford before. Information has been democratized. Many millions of people around the world are affluent enough to have a computer of their own. The number is on the rise in recent years -- admittedly some hundred millions others re in pathetic poverty who do not have the same luxury. The affluent cyber citizens crisscross political, economic and linguistic boundaries to create and to interchange information. Such boundaries were and still are difficult to penetrable. Technologies have made these boundaries more porous. It is a revolution because these traffics upset the traditional power structures, change people's styles of life and greatly expanded the society's intellectual capacity.

The revolution is still going on. Bigger changes are coming. Non-book emulations, such as virtual wind tunnels, virtual weather, virtual cadavers, video games, and a lot more other inventions, especially the emulation of real people, will increase in number. Eventually such virtual objects will make their ways into libraries as books do. The library will then not only have books and databases but also these virtual objects. The fundamental technical difference between a conventional library and a new library is temporal. The old library remembers the past, especially what have happened in people's mind. The new library will be able to project thoughts into the future that have never happened before.

The revolution will be coming from the mass. The lesser rich and the lesser educated will also gain access to information. The information future will be more equitable and the society will be more creative. The changes are not only for efficiency. We are in the middle of an intellectual revolution.

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