

About Electronic Libraries and Other

The parabola of western civilization and culture began with hieroglyphic writing and ended with computer icons! Will this statement ever become true? This thought came to my mind while listening to an invited talk on electronic libraries.

Obviously, as a professor and a researcher in computer engineering, I greatly enjoy all the useful tools for exchanging information among the scientific community; I could not work without electronic mail, and I often profit of ftp and WWW facilities for obtaining a lot of “grey literature” in a cheap and fast way. So, let me say, I am pretty well embedded in the current advanced technological environment.

However, when people become too much enthusiastic of their technological achievements and begin forecasting of the totally paperless office (which is a useful one mainly where the air conditioner's fan blows too strongly) and of electronic libraries, filled with thousand of CDs and of digital tape juke-boxes, to be read on a computer hypermedial screen, I become cautious and I think some reflections are in order, not to stop the technological progress - history shows this is not possible, and also not wise, to do - but to keep it controlled and to avoid cultural disasters to us and to the future generations.

We live in a time where computing power and storage and transmission lines capabilities are made available at incredible rates and costs, and this fact is perceived, by the greatest part of the users, especially at the low-end of the computing machines, i. e. PCs and workstations; this “fat cows” season brings with it a lot of wastes. Application tools become larger and larger due to the addition of a lot of unnecessary and baroque graphics with very little enhancing of the true functionality of the packet (when not garbling it!). Today a PC for office work needs at least 8 Mbyte memory (actually I have 16!) and 200 Mbyte disk to do much the same work it did two years ago with 2 Mbyte memory and 80 Mbyte disk!

We also are polluted by a lot of “garbage information”. It suffices to browse in some anonymous-ftp directory to find all sort of gadgets, from horoscopes to top models images, while cooking recipes travel at 64 kbps along computer networks. You can find all this stuff not on a commercial system, which could honestly make profit out of it, but on Internet, the scope of which should be different!

But let us leave such topics to “information ecologists” and return to electronic libraries. Cost is one of the main issues which are brought forward in favor of them. The cost and time needed to produce a classical paper book are much higher than those for storing and transmitting it in electronic form. From a purely quantitative point of view this is certainly true, but how much we loose in quality! Editing of electronic material tends to be rather poor, while, when preparing material for printing, careful proofreading and pagination (not to say of the choice of fonts) makes the final product much more agreeable and readable. Also from the point of view of the consumer, the book *as an object* is a valuable one, with the possibility of underlining and evidentiating text and the pleasure of bringing it with you everywhere, without the fear of battery consumption!

The cost of a book is a function of both the number of copies produced and of the technology used to produce them. The state of art allows for a large use of computer technologies in book production, which are, at least partially, used by all the most important publishers. We should try to go even further in that direction to lower the cost of printed books, but this effort would be vanifed if we simultaneously make them fully available to the users in electronic form, with no investment return to the publisher. This reflection brings with it a lot of consequences of legal and commercial nature, which should be thoroughly investigated *before* of blindly advocating the advent of electronic libraries.

Also from the point of view of book management in traditional libraries and in information retrieval systems it seems that the brute force approach could prevail in view of diminishing costs: orientative figures range from 60 U.S.\$/book for traditional cataloguing techniques to 2 U.S.\$/book for electronically scanning and storing with full-text searching. Such an approach is to give very high *recall* figures, while a high *precision* in the retrieved material will still be based on the capability of the inquirer to express as most exactly as possible his needs. Therefore, all the work of classification, indexing, and the building of thesauri, cannot simply be dismissed by searching the full text a hundred time faster.

One of the most valuable heritages of the western culture is *abstraction*, i.e. the capability of transferring a great deal of information from the rough material into a structured framework; let us be very cautious to transform librarians, which used to be the keepers of this kind of culture, into a set of people feeding pages to an OCR machine.

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