

The Impact of Electronic Publishing on the Academic Community

Session 7: Supplementary papers

Open questions with some answers on the impact of electronic publishing on the academic community

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I am fully aware that I am not saying something new by telling the academic community that their desktop terminals connect them to the world in a way no previous means of communication has allowed. But what I would like to discuss is the unprecedented power the Internet delivers to the final user in terms of global communication. Empowering the final user means a lot for democracy (in terms of social organization) but empowering the academic means a lot more for society at large. It means that academics who so wish can instantly deliver their message across the world; they can make available to the interested audiences (at the appropriate level) their findings and views, i.e. their contribution to human knowledge. For the first time a single, homogeneous depository of knowledge is created to which millions of people have easy and cheap access on a global scale. This new collective intelligence brings with it, of course, a whole new range of opportunities and problems.

Plus ça change

The Internet, and more specifically the Web, brings in new paradigms to the work of the academic community. By its very nature, the Web applies a metaphor of broadcasting: a number of people, organizations, institutions, groups, enterprises (or even a single individual), broadcast their message to the world, while others receive it, in the same way that they receive other similar signals (television, radio, audio, phone and fax messages). Is, therefore, the science world

entering that of the media? This is highly possible but this generates more questions: where does one draw the line between the two? Is that necessary?

This new paradigm, where scientists meet together and collaborate in a virtual space, eliminating everything that goes between, breaks totally with established practices and values. An Organization for Economic Cooperation and Development conference in 1996 (The Global Research Village) looked into the problem and endorsed some trends (electronic archives on pre-publication and final publications, etc.). But there is still no perceived unique way forward.

There seem to exist several reasons for this. First and foremost there is widespread technophobia: not all members of the academic community approach the idea of electronic publishing with enthusiasm. Several scientists regard the issue as a technical detail, of no interest to them, still they consider it a technical advance which their secretaries or their computer support team must master, in the same way a typist must handle a typewriter. This dichotomy in perception contrasts a revolution in the approaches of the scientist through personal computing with the mere evolution of those of secretarial and other support-oriented professions.

A second question arises from the rapid pace of technological change and the possibilities of keeping up with it. There are limits to the time which academics can devote to upgrading their skills and understanding of possibilities available in cyberspace. In as much as the academic is not adhering to the personal computing paradigm this has little or no meaning at all. But where should the balance be?

Writing and publishing on paper seems very simple compared with the (apparent) complexity of electronic publishing (bear in mind, however, that this simplicity is perceived now, not in the early days of print). Books and printed journals continue to be seen as the standard way of distributing knowledge. It is clear that electronic publishing technologies will have to go a long way to gain audiences and establish themselves for good. Time therefore emerges as another important factor for the take-up of these technologies, together with the known socio-economic and cultural issues.

The fast lane to the future

Despite my rather reserved approach, there are considerable changes under way and one can identify them as follows.

As electronic publications start to coexist with the printed ones, there is a strong effect of sensitization of interested people. Questions are being put and reflection is emerging on striking the right balance: this is possibly a first stage for a major change over the next decade.

Fast hardware and high-performance software is appearing on our desks with the speed of light. Telecommunications links become faster and more reliable over time. Fuelled by the new international agreements on telecommunications markets worldwide and information technology products and components (ITA), things should only improve for the global information infrastructure. These are unprecedented phenomena: new interlocutors have emerged and new patterns of interactive communication have been born. Machines talk to other machines for the

first time in order to index information; individuals talk to company and university machines to locate the latest available information (and to develop new software applications or to update hardware capabilities); accessing large information archives without leaving your cup of tea has become commonplace. All these developments mean one simple thing: time has been dramatically reduced for all possible transactions and this results in acceleration of all procedures, services or the time to get a product to the market.

This acceleration is the major change perceived in the world of academic (or more general) publishing. Acceleration, however, means different things to different people. Some might see the quality dimension deteriorating for good, others might welcome no control at all, since the new medium is abruptly fast and simple, cutting down all the intermediate traditional filters, though these serve also as a safety belt for all types of intrusion. Adjustment to this speed is not easy: hence the reactions.

Another major factor is globalization. Using electronic publishing a document is instantly available from Australia to the North Pole: intermediate structures (publishers, librarians and bookstores) can wait or adapt, either they will find some new way to adapt themselves, or they will fight their long way "back to the future"¹. But nothing will be the same. And the academic community will, almost certainly, not escape from these developments.

Instead of a conclusion

Is "*citius, altius et fortius*" (faster, higher and stronger) the message which could be derived from this debate? To what extent will the media shape the messages involved? Are there any alternatives to consider? How will education and training systems (finally) adapt, if they are ever willing to do so? These are only a few questions for a major debate which is only just starting.

¹ "People invested in yesterday will fight to the last person. People trying to invest in the future will push the agenda of social change". Walter Wriston, former Citibank chairman, in *The Future of Money*, *Wired*, October 1996