Information, communication and society

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Introduction
The terms ‘information’, ‘communication’ and ‘society’ are inextricably linked, since society is only possible when human beings come together and communicate. Indeed, pre-historic ‘societies’ were probably limited to communicating family and kinship groups that subsequently coalesced when man moved from the hunter-gatherer stage to that of the settled agricultural community. The very word ‘community’ shares its Latin root with ‘communication’ and, fundamentally, both have to do with sharing.

What is shared in community or society? Many things, of course, from tools and weapons to living space and, in various societies at various times, husbands and wives. Clearly, however, the communication of information is the means whereby social understandings are achieved, the means whereby societal members are drawn into events and actions, and the means whereby individuals’ knowledge of events, phenomena, traditions, interpretations of the world, and needs for action are transmitted in society.

Even today we speak of ‘scholarly communication practices’ when we mean the submission of papers to journals and conferences, the function of citations and other ‘communication’, or, as we might say, ‘information’ practices.

The aim of this paper is to explore the role of information science within the context of communication in society: consequently, ‘information science’ is here defined predominantly as a social science. Clearly, there are aspects of information, its organization and communication, that are explored outside a social science framework. The most obvious of these is information retrieval research, where the methods employed could not be labelled ‘sociological’ under any definition. [Of course, we might speculate as to whether information retrieval research might benefit from a sociological approach and, if so, what benefits might follow – but that would be another paper.]

Sociological aspects of information science
Almost twenty-five years ago I published a paper with this title (Wilson, 1981) which included Figure 1 – an attempt to delineate the scope of information science. (For simplicity, not all of the possible connections are drawn on the diagram.)

Virtually all of the areas identified in the figure may involve acts of communication; clearly, primary and secondary dissemination are communication processes involving publishers and database developers, while information exchange is more of a personal communicative act and information seeking may also involve interpersonal communication as well as searching databases or other information resources.
Figure 1: The field of ‘information science’ (Wilson, 1981)
All of the areas in the diagram have been and still are, areas of research in information science, but it is important to note that sociologists and other social scientists have also carried out research into particular areas. For example, the role of invisible colleges in the practice of research was a strong research theme in the 1960s and 1970s (see, e.g., Crane, 1972) and we should not forget that the re-discovery of bibliometrics was led by a historian of science, Derek de Solla Price (1963). (I say ‘re-discovery’ because, of course, Bradford’s foundation work dated from 1934.)

The study of information seeking behaviour is, of course, a very strong area of research in information science at present. The ISIC series of conferences (inaugurated at Tampere by Pertti Vakkari in 1996) has gone from strength to strength and papers in the proceedings are among the most cited in this sub-field.

From the perspective of other disciplines, research into information behaviour is pursued in the context of its relationship to other factors. My earlier paper cited the work of Sarata (1976), which related the opportunity to learn to job satisfaction, and that phenomenon has been explored in other contexts, up to the present. For example, Schifter (2000) shows that ‘Opportunity for scholarly pursuit’ was the third most important motivator for university teachers to engage in asynchronous learning networks. Also Yeh and Jeng (2002) found that opportunity for learning was a factor in job satisfaction in software maintenance.

In the case of information exchange in the workplace, the most cited author is probably T.J. Allen (1966), whose work on communication networks in research laboratories launched at least a decade of work by other scholars. Allen is so frequently cited in information science that it is easy to forget that he was approaching the communication problem from another discipline and other disciplines, especially communication studies and management also continue to cite him to the present (see, e.g., Frank and Fahrenbach, 1999; Mihm, et al., 2003).
The aim of this brief conspectus of the nature of information science and its social science connections is simply to set the scene for an examination of what may happen to the field in the future and what it must do to survive.

**Where are we going?**

A conference of this kind offers an occasion for speculation: the costs of being wrong are low, since no one expects totally accuracy in forecasting and the possibility of being right could turn us into global gurus, demanded by talk-shows on television and interviewed on our expertise in the daily newspapers. A rather unlikely outcome!

However, succumbing to the temptation to forecast, we can identify a number of trends in the communication of information in society that have implications for a social-science oriented information science.

**Digital resources**

First, the digitization of information sources is now a given. Inevitably, the volume of serious information available in digital form will increase. Much business information is now available only in digital form, and we can expect that trend to continue. For example, what incentive is there for an academic to produce a text-book, today? The probability of high sales is low, unless one happens to write a high-school algebra text, which is adopted by every school in the country. Given the emergence of network-based learning, both for distance and local purposes, it will be much easier to develop a text-book for online use and, perhaps, sell that online version to others (or make it freely available), than to go through the time-consuming process of preparing a text for print publication. We also have Google involved in digitizing books in its Google Print for Libraries programme (http://www.google.com/press/pressrel/print_library.html) and national libraries are digitizing rare books and other historical resources – the National Library of Estonia, in common with national libraries around the world, has a number of such collections.

What are the implications of this for a social science oriented information science? Well, we can expect a lot more attention to be given to solitary, rather than social behaviour. When we need to discover things in the non-digital world, we need to talk to people. Skilled individuals, called ‘reference librarians’, attend to our needs and we engage them in conversations – more or less structured depending upon our and their knowledge of the field. In the digital world, however, our interaction with information resources is increasingly individual and solitary and the social dimension is eroding. We can see this, to a degree, in the growth of papers concerned with Web searching.

![Figure 2: Growth in papers on Web searching](image-url)
The figure shows the papers published with the terms ‘Web search’ or ‘Web searching’ in the title, as revealed by a search on the Web of Science, from 1995 to 2004. The trend line shows the almost exponential growth of papers on the subject.

Thus, in terms of information seeking, we are approaching a situation in which personal, unmediated access to digital resources will become the norm and where, however desirable, access through a skilled information intermediary becomes secondary and, perhaps, disappears altogether.

Democratisation of network access

The second trend is what I shall call the ‘democratisation of network access’, although others may speak of ‘the information society’ to mean similar things. Not only do academic researchers now have day to day access to the Internet, increasingly so does everyone else. The trend towards democratisation is readily discernible in the data on Internet access for different countries. Figure 3 shows the data for the top 15 countries in Europe (Internet World Statistics, 2005):

You will see that nine of the top fifteen countries already have more than 50% penetration of the population – including even Portugal, which is one of the poorest nations in the EU, while Estonia leads the Baltic States and, as far as the New Entrants are concerned, is beaten in the rankings only by Slovenia.

World-wide, the top ten countries in terms of penetration are those shown in Table 1

As a result of this democratisation, the trend towards individual performance is likely to be balanced by another trend towards collaboration. Other forms of social interaction arise through the use of Web-based resources: students frequently work together and collaborate in their searching, exchanging information about useful resources and people in general do the same through discussion lists,

<table>
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<th>Rank</th>
<th>Country</th>
<th>% penetration</th>
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<tr>
<td>1</td>
<td>Sweden</td>
<td>73.60</td>
</tr>
<tr>
<td>2</td>
<td>Hong Kong</td>
<td>70.70</td>
</tr>
<tr>
<td>3</td>
<td>Denmark</td>
<td>68.70</td>
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<tr>
<td>4</td>
<td>United States</td>
<td>68.50</td>
</tr>
<tr>
<td>5</td>
<td>Norway</td>
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<tr>
<td>6</td>
<td>Australia</td>
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<td>7</td>
<td>Iceland</td>
<td>67.10</td>
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<td>8</td>
<td>Netherlands</td>
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<td>9</td>
<td>Switzerland</td>
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<td>10</td>
<td>Canada</td>
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Table 1: Top ten countries in Internet penetration
chat rooms, etc. Thus, the formality of the reference desk is being replaced by the informality of interpersonal communication. This is already the subject of research in information science, (e.g., Haythornthwaite, 1998) and sociology, (e.g., Wellman, 1996) and the area is likely to grow in significance.

**The rise of open access publication and open archives**

The Internet has also enabled at least the beginnings of another revolution – open access journal publication. The Directory of Open Access Journals currently (18th February, 2006) lists 2,044 publications. Some of these, of course, are journals that, in return for the authors paying a charge for the publication of a paper, agree to make the journal freely available. This is not quite the ideal of open access, since it depends upon authors (or their institutions) having the ability to pay. On the other hand, the DOAJ includes many truly open journals: those that require payment neither for publishing papers nor for access. My own journal, *Information Research*, is, perhaps, the leading example in our field of this type of journal.

Allied to open access journals are open archives: the creation of institutional, departmental, cross-institutional and disciplinary archives. The best known of these is probably the disciplinary archive for physics – arXiv, held at Los Alamos National Laboratory, but the Open Access Initiative is resulting hundreds more such archives being established.

The signs are that open access publication – of one kind or another – is likely to grow in significance in future years. The National Institutes of Health, for example, requires researchers funded by them to deposit a copy of any publication in PubMed Central, the online digital library that it maintains. More recently, the Research Councils in the UK have set out a policy that would require those receiving grants from the councils (which leads to about half of all the peer-reviewed research outputs in the UK) to deposit their publications in an institutional or other open access archive.

Internationally, the Budapest Open Access Initiative of 2002 declared:

> We invite governments, universities, libraries, journal editors, publishers, foundations, learned societies, professional associations, and individual scholars who share our vision to join us in the task of removing the barriers to open access and building a future in which research and education in every part of the world are that much more free to flourish.

The overall outcome of these developments is that much more scholarly material will be available to those solitary searchers as well as to those working collaboratively on term essays and Masters’ theses. The entry of the search engine Google into this arena in the shape of Scholar Google, threatening the supremacy of the original database services, as well as its proposed digitisation of the holdings of major libraries (although this has recently hit some barriers), points to a possible future that harmonizes with the other developments outlined to this point.

**Decline of the public sphere**

Third – the market economy and the decline of the public sphere is having an impact all over the world on the nature and extent of public services. Naturally, in our sector, the impact is felt
most significantly upon public libraries, but the application of these ideas to university education is also having an effect in that sphere.

Quite recently John Buschman (2003) has written on this phenomenon: he notes, for example, that the impact of this New Liberalism ideology can be measured by looking at what happens to public funding, pointing out that the median spend a year, per pupil, on books in schools in the USA was $8.09, which would buy little more than one paperback book.

Buschman notes that the professional body in the USA, the American Library Association, has appeared to be powerless in this situation; considering the ‘outsourcing’ of services (i.e., contracting commercial companies to perform public sector functions) he notes:

...the American Library Association could identify no core value or practice in the field to defend against the business model of librarianship that total outsourcing of selection and privatization represents, and therefore took no action or stated no principle on the issue. (Buschman, 2003:133)

The impact has been felt in the UK since the Thatcher administration and it was recently reported, of the University of Wales at Bangor that there were plans to lay off eight subject librarians because their services to academic staff were hard to justify and that they did not deliver ‘value for money’. The academic staff were certainly appreciative of these undervalued services, complaining that, if these librarians were removed, they would have to do the necessary information skills training themselves – additional work that they could ill afford to take on.

The impact of the decline of the ‘public sphere’ is particularly seen in public libraries as the graph below indicates. I had to estimate the figures for 2000/1 and 2001/2, but you can see from the line and the trend line that the future looks less than optimistic.

Couple this decline the in public sphere with the other developments I have discussed and some general conclusions might begin to form in one’s mind.
Mobile information systems
The development of the mobile phone and the introduction of wireless access to the Internet and intranets is transforming the way people think of gaining access to information. And the trend is likely to continue: a recent report from the European Commission (Forge et al. 2005) suggests that mobile communications traffic will increase from about 25 billion minutes of traffic a day in 2010 to about 325 billion minutes in 2020.

Individual developments in this trend include, for example, the rise of the Blackberry as a mobile e-mail access device; wi-fi hotspots in coffee bars, hotels, libraries and airports; the rise of the ‘wireless city’, providing Internet access from anywhere in the city. So, not only do we have the decline in public service and an increase in network access, as well as, increasing number of freely accessible texts, we now have the capacity to access these resources, not simply at home, but also while we are on the move.
Conclusion
What we see here, or at least what I see here, are trends that are changing fundamentally the way that information is being sought and that are likely to bring about more significant changes in the future. Those changes will dramatically affect the nature of traditional libraries and information services over the next five to ten years, to the point at which serious medium term planning for that radically different environment of information provision is needed.

The implications for education for library and information science must be highly critical, of course, and I have not commented upon the extent to which schools in various places have been affected to date. For example, the closure of a number of schools in the USA, the most significant of which were Columbia, the University of Chicago and Case Western Reserve – formerly very highly rated institutions. Also, in the UK we have seen the absorption into larger units of a number of formerly separate departments, e.g., at Liverpool John Moores university, University of Central England (where the department now seems to have disappeared altogether) and University of Northumbria at Newcastle. And, where they survived, departments have been diversifying into allied areas in order to ensure their survival.

With the developments I have outlined there is clearly a need for very radical re-thinking about the role of what we have called for many years, ‘professional education’. We have been ‘moving with the times’ for many years now, particularly in respect of our interaction with technology. And technological resources and associated teaching of such matters as Web design and information searching have increased in significance in the curriculum. But Web design, database development and a host of other topics (including even information retrieval, which is now a research area in computer science) are also taught in other fields – and often taught better.

In fact, it has been evident for many years now that we are a field in search of a focus: or, perhaps that is too optimistic, since the search has been necessary but lacking. I have explored the impact of change on the curriculum a number of times over the past ten years, employing ‘catastrophe’ theory in one instance (Wilson, 2000) to try to explain the dynamics of change in the field, suggesting that three strategies were available to us: expansion, divestment and
contraction, and loss of identity but survival of function. We can see examples of these in LIS education today – for example expansion through diversification at Loughborough, Sheffield, Michigan and the University of Washington; divestment and contraction at Aberystwyth, and loss of identity but survival of function at Liverpool and Strathclyde.

The question is: If we want to survive, how do we present what we do in such a way as to attract students and research money? How do we make ourselves unique? I explored the content of the curriculum a few years ago at the British-Nordic Conference on LIS Education in Dublin and used a diagram to show the interrelationships.

I would now suggest that the focus of what we profess is on **content** – the information, in whatever medium, that needs to be organized (in whatever kind of system) for access by those who need it, or, in the case of recreational materials, who may derive pleasure from them. The other circles in the diagram are the province of others – systems belong to computer science and information systems departments, organizations to sociology, social psychology and management, and people to psychology, anthropology and sociology.

Of course, we need to interact with these other areas – there is no question of that, but a focus upon **content** gives us the reasons for that interaction and, instead of trying to do what these other fields do better than us, we should be advertising what we do best.

We might also re-visit the connection between information and education. In the late 19th century and early 20th century in the UK there was a considerable debate about the role of the public library in society and many believed that it ought to have a close relationship to the education system. In fact, when county libraries were established they were generally subsumed under the county’s Education Committee. Today, in many parts of the world, education is in crisis: a recent article in the Times Higher Education Supplement noted;

*Undergraduates are entering university less numerate, literate and knowledgeable than ever before, according to the most comprehensive study undertaken of how university admissions staff view the latest intakes of students.*

and
They say that students are increasingly weak at reading critically, constructing arguments and communicating ideas in writing and have poor grammar skills compared with undergraduates of ten years ago. (Shepherd, 2006)

Might we not imagine that a stronger focus on the role of books in the education of the child might do more to improve this situation than a thousand more initiatives of an essentially bureaucratic nature? Although many child readers are lost to libraries when they enter their teens, surely their reading skills would not be lost if their reading had been encouraged by the availability of well-stocked and professionally-staffed libraries? And, given the trend towards the networked library and the wireless city, together with increasing numbers of people visiting such libraries for purposes other than borrowing books, might it not be possible to reduce the ‘wasting’ of teen-age readers by effectively marketing books in relation to the Internet, gaming and technology?

Ten years ago (Wilson, 1995) I attempted a different analysis of the situation then and I think that my conclusion still stands:

While, inevitably, we are to some degree prey to the stronger forces of politics and economics, we can have some say in the kind of future that evolves. If we spot trends early enough, and move with them, we can be in advance of the general tendencies in society and in our professions, and if we embrace the excitement of change we can be part of the process of change and, to a degree, put our own ‘spin’ on the course that events take. (Wilson, 1995)

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References


**Biographical note**

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