

INFORMATION, COMMUNICATION AND TELECOMMUNICATIONS: A PILOT STUDY OF THE BEHAVIOUR OF CITIZENS

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Information, communication and telecommunications are all important to the lives of citizens. This paper reviews the literature on the information-seeking, communication and telecommunications behaviour of citizens and then reports on a pilot study to test empirical measures being developed by the Telecommunications Policy Research Group at RMIT. As a result of the pilot study, an information-communication continuum is proposed to overcome the problems of definition of information and communication needs. There is also a suggestion that a distinction between purposeful information seeking and incidental information acquisition is required. The role of telecommunications in meeting information and communication needs is explored. Policy implications are included.

Keywords: Information needs, communication needs, telecommunications needs, research methods, information policy, telecommunications policy.

A free and open democratic society depends upon the ability of its citizens to make fully informed decisions about the choices that affect their lives and the lives of their communities. ... access to information is power ...¹

Modern social theorists have generated much rhetoric about the need for well informed citizens and the capacity of information to generate wealth and power. Theoretical discussions about the sociology of knowledge have raised fundamental issues about definitions of 'information' and the nature of knowledge in its social context.² There is, however, a paucity of research on the *nature of the process* by which citizens become informed. One of the purposes of this paper is to outline the development of an empirical measure of incidental information acquisition, an important part of that process.

Moyal quotes Wiener as saying that: 'Society can only be understood through a study of the messages and communications facilities which belong to it' and states that her study of the 'Feminine Culture of the Telephone' represents one piece of that evidence.³ Research outlined in this paper should provide another piece of that evidence. However, preliminary research results presented in this paper suggest that, while understanding the processes by which messages are sent and received is central to understanding society, purposeful information seeking may constitute only a small part of those processes.

The first part of this paper will briefly review the literature on information and communication needs, sources used to satisfy needs and methods of contacting those sources, including telecommunications. The second part will present the method and results of a pilot study conducted by the Telecommunications Policy Research Group at the Royal Melbourne Institute of Technology (RMIT) as part of a program of research into information and communication needs.⁴ The pilot study tested two sets of methodological tools using a small sample of older and younger adults, one set to assess telecommunications needs as part of the Basic Telecommunications Needs (BTN) Project and one for the assessment of the information-seeking and communication behaviour of older adults. The latter set of instruments are to be used for doctoral research. There is an overlap in that some of the same instruments are to be used for both research programs.⁵

The pilot results suggest that it is difficult to categorise telecommunications usage because of problems in definition of information and communication. Categorisation of telecommunications use on an information-communication continuum is proposed to overcome these problems. Pilot results also indicate that a distinction is required between purposeful information seeking and incidental information acquisition. A large part of the process of becoming informed would appear to be incidental and/or accidental. In the concluding section of the paper some implications for policy decisions are indicated.

INFORMATION NEEDS

Dervin and Nilan⁶ and Kunz, Rittel and Schuchow⁷ have conducted detailed reviews of the literature on conceptual and methodological issues of information need. A review of the literature by Williamson⁸ suggests that there is no agreement on what constitutes an information need or how one should proceed to develop uniform methods for assessment of such needs. There are definitional problems for both 'information' and 'need'.⁹

In recent years the literature has indicated a shift in approaches to assessing information needs. Dervin and Nilan¹⁰ have emphasised the need for user-oriented approaches. Earlier Dervin had questioned the premise adopted by studies undertaken in the 1970s: that information is used solely for decision-making and problem-solving.¹¹ She has seen information as having a wide variety of possible functions and uses, which include gaining 'understanding', 'clarification' and 'personal sense'.¹² In her most recent research, Dervin has simplified her definition of information and now speaks of the 'gaps' which users face, of information as something constructed by human beings and the importance of 'sense making'.¹³ While Dervin's alternative paradigm is conceptually appealing, methodological problems have been reported.¹⁴

Although Dervin's emphasis on the subjective nature of information needs has had considerable influence, there are researchers who continue to emphasise the objective nature of information. For example, Derr has stated that an information need is "... an objective condition rather than a psychological state."¹⁵ Neither researcher takes account of the role of incidental information acquisition (to be discussed below).

COMMUNICATION NEEDS

Although the need for personal exchange, communication or association is accepted as fundamental to human beings, there is very little literature which deals with communication needs directly. However, recently researchers in the field of telephone use have indicated the importance of social support, for example Moyal in her analysis of the feminine culture of the telephone.¹⁶ Aronson used the expressions telephone neighbourhoods or psychological neighbourhoods to describe the types of networks which people set up.¹⁷ Although the categorisation of calls has not been related to the considerable body of literature available on information-seeking behaviour, mostly these researchers appear to perceive an overlap between information and communication.¹⁸

SOURCES OF INFORMATION

The study of information-seeking behaviour has been seen by most researchers as an integral part of information needs assessment. The premise has been that the investigation of information search processes, as well as having intrinsic value, may enable inferences about need to be made. Prominent in the study of information-seeking behaviour have been the attempts to discover preferences for information sources. Numerous studies have shown that people prefer personal sources, while institutional sources, for example professionals, government departments and libraries, have been shown to be used less frequently.¹⁹ Reasons emerge in diffusion of innovations research²⁰ and the work of Dervin.²¹ The mass media have been found to be widely used, but not always to have supplied useful information.²² The explanation offered for the heavy reliance on interpersonal information sources and the mass media by Patrick Wilson's theory of informing behaviour seems logical: that everyone has a "... set of habits or routines for keeping his internal model of the world up-to-date."²³ This involves monitoring the environment by personal observations, discussions with friends, relatives and colleagues and by use of the news media. Such routines may or may not have the gathering of information as their goal. In the latter case, information acquisition is often an incidental concomitant. Research findings by Chen and Hernon²⁴ lend weight to this theory. Research on preferred methods of contacting sources of information has not been located. For example, Is the telephone an acceptable substitute for face-to-face contact?

SOURCES OF COMMUNICATION

With whom do people communicate? There is a range of possible correspondents as Claisse and Rowe²⁵ call them: for example family, friends, neighbours, firms, shops, welfare agencies, government departments. While there is indirect evidence from the research on preferred information sources, discussed above, the principal research findings are from studies which have investigated telephone use. Despite the fact that certain correspondents belong to several categories (e.g., a business contact can also be a friend) Claisse and Rowe, whose sample included 663 men and women, believed that they could readily identify the main categories of correspondents. They found that 76 per cent of household telephone traffic is with correspondents whom they term 'socio-affective': family, friends and acquaintances.²⁶ Moyal found that family followed by friends were most important for her 184 women respondents.²⁷ Interestingly Moyal also found that the number of weekly instrumental calls (appointment and arrangement making, purchasing or information seeking) of phone dependent physically disadvantaged women was much higher (10-12 per week, than the average for the total sample (2-6 per week)).²⁸ As with information sources, comparisons of the telephone with other means of communication or association have not, to this point, been located.

Two principal considerations are drawn from the above review of the literature. Firstly, there are definitional problems associated with information needs studies. For this research, the notion of people seeking ways of being informed²⁹ in particular situations, rather than having information needs, will be adopted.³⁰ The idea of people having questions to answer, having things which they want to know, find out, clarify or understand (Dervin's approach³¹), appears an appropriate link to that notion. This, however does not mean that people are unable to articulate their needs in objective terms — the approach of the earlier 'everyday information needs' studies.³² Questions can be considered to be personal to an individual, or a group of individuals, or have a wider relevance to the community. The role of incidentally acquired information in answering questions is also important. It also seems possible, in the context of this research, to attempt a separate definition for communication. For example, the notions of associating, or establishing and sustaining personal contacts (Aronson's psychological neighbourhoods)³³, appears to fit within the ambit of communication.

Secondly, there is an overlap between information needs and communication needs: information seeking usually results in a communication need; satisfying the need for personal contact or association can result in an information need also being satisfied. However there are also differences between information and communication needs. An attempt will be made to develop a continuum which will take into account the overlap as well as the differences.

THE PILOT STUDY

With this conceptual framework in mind, a pilot study was carried out over a period of about six weeks during July and August 1991. The instruments tested reflect both a broader approach to information-seeking and communications behaviour, as well as a more specific focus on telecommunications. The results are presented principally to illustrate the development of the instruments. While the results themselves may indicate the trends, they are limited by the small size of the sample.

The Sample: Ten older adults — some very frail and living in special accommodation, others robust, active and living in their own homes — were selected by the snowball method. The ages of the two males and eight females ranged from 60 to 92. Half were well educated — to diploma or degree level. Former careers included accountancy, teaching, engineering, secretarial/clerical. Four were pensioners and six non-pensioners. Two had quite severe disabilities (diabetes and heart conditions). Two younger participants, included to provide a comparison, were both aged 20, were university students with VCE passes and living with their parents.

The Instruments: For the Basic Telecommunications Needs Project (BTN), five major methods — most of which have required the development of instruments — will be used to assess information and communications needs. Only the two tested in the pilot study (diaries and substitution matrices) are discussed in this article. The aim of the other instruments is to assess information needs, the sources used to meet those needs and the way in which those sources are contacted.³⁴

Diaries: Participants used these to record incoming and outgoing telephone calls (and where appropriate, use of fax or other telecommunications equipment) over a two-week period. There was wide variation in the number of calls made and received by participants. The number of local outgoing calls ranged from three to 56, while for incoming calls the range was five to 46. The number of STD calls ranged from nil to eight for outgoing calls and nil to 10 for incoming calls. Four overseas calls were made or received.

Respondents were asked to note the purpose or the purposes of each call made. Both outgoing and incoming calls were classified into a number of categories (derived by the researchers to reflect the content of the diaries). Some calls are recorded in more than one category. Table 1 sets out these purposes together with the numbers of outgoing and incoming calls made with those purposes.

Table 1 indicates that, for older adults, the largest number of calls were to or from family members. Whilst calls to or from friends (the social network) were the next largest category, outgoing calls regarding services were almost as numerous. The latter confirms Moyal's finding.³⁵ It seems that older adults, especially those with limited

mobility, are very dependent on the phone for obtaining services. Purposes such as the provision of voluntary services, organisation of recreation and the discussion of investments and business emerged strongly for older adults, although many of the calls involved were made to family or friends. The tendency for people to rely on personal information providers appears to have been confirmed.³⁶ There seemed often to be an overlap between information and communication needs. The purposes for which the young people used the phone were, in some ways, in stark contrast to those of the older adults. The young people used the phone almost solely for social purposes (although one cannot rely on a sample of two).

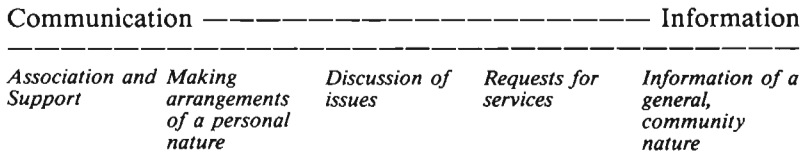
TABLE 1
Purposes of Calls Made or Received

<i>Purpose</i>	<i>No. of Outgoing Calls</i>		<i>No. of Incoming Calls</i>	
	OA*	YP*	OA	YP
Family network (involving contact and support)	51	1	77	2
Social network (involving contact and support)	47	44	60	36
Voluntary services	7	—	15	—
Investment or business-related	11	—	8	—
Services sought, offered to or received, e.g. taxis, banks, libraries	43	—	6	1
Paid employment	6 (+3 faxes)	3	4 (+3 faxes)	2
Recreation (theatres, restaurants, clubs, sport)	20 (+1 fax)	1	17	—
Travel	2	—	3	—
Health (mostly enquiries about people who were ill)	17	—	8	—
Legal	2	—	5	—
Continuing education	1	—	2	—
Concessions	1	—	—	—
Other	1	—	1	—

*OA, Older Adults; YP, Young People

For the wider study clarification of diary data will be sought, if necessary, so that it should be possible to categorise calls along the type of continuum described in Figure 1. The information-communication continuum attempts to take into account not only the differences between information and communication, but also the overlap.

Figure 1
Information-Communication Continuum



The figure above should be interpreted as follows:—

1. Down the communication end of the continuum are calls where association and support are important. Information exchanged is of a personal nature.
2. The next point is for arrangements of a personal nature (with family, friends, voluntary organisations, places of employment, etc.). Information of a personal or general nature may be exchanged.
3. Midway come discussions of issues, e.g., politics with family or friends — where association and information are both important.
4. Requests for services, e.g., ordering taxis, or goods from shops; making appointments with doctors, etc. Information of a general or personal nature may be involved.
5. At the information end are calls where information of a general, community nature is sought, e.g., cinema times, pension rights. The information may be sought from family or friends.

Substitution matrices: A substitution matrix was constructed in an attempt to gauge the importance of the phone for each of the outgoing calls recorded in the diaries. Participants were asked if there were any other ways they could have achieved the purpose or purposes they had in mind. In other words, could other methods of contacting sources be substituted for the telephone. Responses provided an insight into each person's philosophy or rationale of telephone use, together with some indication of the degree of need involved. Whilst participants seldom saw satisfactory alternatives to the telephone for fulfilling the purposes recorded in their diaries, some participants used the phone more sparingly than others. One of the young participants said that she visits people in preference to ringing because she has no privacy at home. On the other hand, the other young participant loves using the phone (and made more than twice as many calls as the other young person). One of the older adults (the participant with the fax machine) said that he always has in mind the economics of alternative methods of communication. Others, particularly those in special accommodation and those without a car, had fewer alternatives to consider.

The possible alternatives which participants frequently mentioned were personal visits and letters. The former were mostly dismissed because, in the circumstances, they were considered to be inconvenient,

time-consuming and expensive. Distance was frequently mentioned. On occasions, participants also saw a phone call as a way of avoiding more personal intrusion. Letters were mostly considered to be too slow as a form of communication. The lack of immediate response was also emphasised. Several participants mentioned that it is not possible to discuss things by letter.

Information Needs and Sources: Participants were asked if there had been questions they had needed to answer, things they had needed to find out, understand or clarify for their everyday life during the past five years (the Dervin approach).³⁷ A matrix was filled in, noting each relevant information topic, e.g., crime and safety; sources of information used, for example family, government departments; and use of telecommunications to contact sources. The topics for which the older adults most often required information were health and legal, closely followed by housing and neighbourhood, income and pensions, and concessions. Employment was the topic for which information was least often required, followed by crime and safety, environment and continuing education.

In keeping with Wilson's theory of information behaviour³⁸ and confirming the findings of Chen and Hernon³⁹ it soon became clear that participants acquired a lot of information incidentally. Usually they listened to radio, watched TV, read magazines, newspapers or other printed materials (e.g., pamphlets, leaflets) without the intention of locating specific information. However they often 'picked up' information through these sources. They also talked to family, friends, colleagues, neighbours without the intention of seeking information, but in the course of the conversation information was exchanged. Some of the information acquired through all these sources was later used.

About halfway through the trials an attempt was made to develop a way of making the distinction between this information acquired incidentally and that which was purposefully sought. The sources where incidental information acquisition occurred were divided into two parts, 'I' (incidental) and 'P' (purposeful). The 'P' category recorded the fact that information had been purposely sought; the 'I' category that information had been incidentally acquired. The knowledge of the topics on which information is usually incidentally acquired, considered in relation to the principal topics for which information is often needed by older adults, should be useful to information providers.

For the broader study, participants will also be asked about radio stations/programs they listen to and TV channels/programs they watch, together with the usual times for listening and viewing; and the newspapers (dailies and weeklies), magazines/journals and other printed materials including junk mail, they usually read.⁴⁰

It can be argued that a lot of information acquisition is incidental. People monitor their world by personal observations, discussions with relatives, friends, neighbours and colleagues and by use of the mass media.⁴¹ Some of the information they thus acquire is later used by

them. It is interesting that the topics on which information had more often been incidentally acquired were not the same as those on which most participants had **needed** information during the last five years. For example, crime and safety and the environment were two topics on which almost all of the older respondents had acquired incidental information through radio or TV, newspapers or magazines. On the other hand, very few participants claimed that they had needed to seek information on those topics during the past five years.

The phone book was a source of information mentioned by several respondents for a range of information topics. There were also comments about how difficult it is to use. Problems in seeking information will be directly investigated in the doctoral study. The phone was often used by all participants when they sought information from family, friends/neighbours/colleagues, professionals, welfare agencies, government departments, the local council and other organisations.

CONCLUSION

The purpose of the pilot study reported in this article was to test specific data-gathering instruments for assessing information and communication needs. The methods presented require additional testing, but appear to complement each other to elicit very useful data on information and communication needs, sources of information and communication and methods of contacting sources. For information and communication needs presently being met by telecommunications, the diaries provide a very useful approach. The substitution matrices help to determine the degree to which telecommunications are perceived as essential for each of the purposes listed. The instruments used to elicit information needs and sources, including media use and methods of contacting sources, appear very valuable for providing a wider perspective on information-seeking and communication behaviour.

The results suggest that categories previously used for the description of calls by researchers in the field of telephone use tend to be too broad and that more refined data about individual calls is required. An information-communication continuum, such as that outlined in this article, can be used to enable researchers to distinguish between calls with a more communicative than informative intent (and the converse). The findings on the differences between purposeful information seeking and incidental information acquisition appear important.

The studies to be undertaken by the Telecommunications Policy Research Group at RMIT will offer insights to social policy makers in the fields of information, communication and telecommunications.

1. If resources are to be allocated efficiently, it is important to be able to identify more precisely information and communications needs. A close match between services and needs is desirable.

2. If resources are to be allocated equitably, it is important to be able to identify more precisely the information needs of a range of different community groups. Moyal's study of the feminine culture of the telephone has already provided part of this evidence.⁴²
3. A better understanding of the role of incidental information acquisition, together with a more detailed knowledge of needs, will assist in the targeting of services. An exploration of citizens' habits of media use will also assist.
4. As technology continues to develop and more interactive services become available, the ability to identify information and communication needs will become increasingly crucial.

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40. This is to be included on the suggestion of Trevor Barr, radio commentator and Principal Lecturer in Media Studies at Swinburne University, Victoria.
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