information sources in the digital environment, will certainly be useful to those who plan and provide these information services.

A number of previous studies have emphasised that a study on information use can reveal interesting and important information about user perceptions and priorities. This information can be an extremely useful tool in reviewing library services, budgeting, and allocating limited resources when planning new services. Straw (1993) in his research stated that information needs is an important area of research among librarians and professionals. The data obtained from such research has driven many important decisions about library collections and services as well as management. Much of this research also would help librarians understand the patterns of communication that exist in the clientele they serve.

Hayes (1990) wrote about the need for academic libraries to serve the professional staff. He argued that the academic library must find ways to better serve the professional staff in institutions of higher education, as the information needs of this user group have greatly expanded in recent years. Hayes further noted that this user group in the 1990's was responsible for an increasingly wide range of activities requiring information on diverse topics, and their information needs generally were not well served by the library or other campus information systems.

With a greater understanding of current patterns of use among academic staff from different disciplines, new methods and systems for improved services in a digital environment can also be designed and developed by the university library. This in turn could lead to increased use of information sources by the university academic staff in performing their day-to-day work, and eventually leading to greater productivity.
In general, the results obtained from this study will benefit the librarians in determining the professional needs as well as the type of services to be provided to the university academic staff. It is hoped that the university, and in particular the library, would be able to design information systems which are useful to the needs of clients, especially in an increasingly digital environment.

**Assumptions**

This study makes three major assumptions. It has been indicated earlier that the university and its library have started incorporating information technologies and services for their community in order to improve access to information. It is assumed that university and the library will continue heading towards this digital environment.

It is also assumed that the user group chosen for this study represents academic staffs that have used the library. Most academic staff rely on information for their professional needs. **It is assumed that they have used the library, at least occasionally, for their information needs and are therefore familiar with existing services and materials available at UML.**

Academic staff use a variety of information sources for their teaching, research, publishing, consultancy, and administration. These sources, including print, nonprint and electronic materials, can be accessed from libraries, homes, or offices. This study assumes that increasing use of information technology has changed the choices available to the staff in performing their day-to-day work. It is also assumed that the academic staff are familiar with electronic resources in their field.
Limitations

Like most studies, this study has a number of limitations and some of these are discussed below.

This study employed a questionnaire as the data-gathering instrument. In doing so, it relied on the accuracy of those completing the questionnaire based on self-reported attitudes and perceptions. Straw (1993) stated "information gathered in any fashion often depends on individuals memory, which may have lapsed over time." The responses given by the staff were accepted in totality and no attempt was made to verify the information.

This study examines the information needs of university academic staff as a whole, and differences among, faculties or disciplines are not examined in detail. This aspect is left to a further study.

This study also makes no attempt to generalise the findings to all academic staff at institutions of higher learning. Only the academic staff at the University of Malaya were surveyed. Academic staff employed by universities, colleges and other educational institutions in Malaysia or elsewhere were not included in the study. Therefore, if the information needs of academic staff surveyed differ from those at other institutions, this study does not reflect that fact.

Factors effecting the information seeking behaviour and information needs are also not examined in detail.
Definitions

For the purpose of clarification, the following definitions were adopted in this study:

Expectations

Millson-Martula and Vanaja (1995) explain that expectations are assumptions about the likelihood of something occurring, coupled with these assumptions is the acknowledgment that the outcome may not be expected. More concisely, expectations reflect anticipated performance. In relation to the non-profit service organisations such as libraries, customer expectations are used as standards against which an organisation performance is judged (Shank, 1982).

Faculty/Academic staff

In some literature, the term faculty is used rather than academic staff. Razzaghi (1990) defines faculty as those involved in teaching or research in the academic environment. In this study, both terms are used interchangeably.

Informal Sources

Informal sources refer to sources generated to answer a specific request for information (Razzaghi 1990). Informal sources of communication include contacts with colleagues and attendance at scholarly or professional meetings (Hart 1997).
**Information**

Krikelas (1983) defines information as any stimulus that reduces uncertainty. The term 'information' is used, in the context of user studies, to represent factual data or advice or opinion, a physical object, such as a book or journal, or the channel through which a message is conveyed, for example, oral or written communication (Rohde, 1986). Longley and Shain (1989) describe information as knowledge that was unknown to the receiver prior to its receipt and information can only be derived from data that is accurate, timely, relevant and unexpected.

**Information Needs**

Krikelas (1983) defined information need as the recognition of the existence of uncertainty. Kuhlthau (1988) described information need as the initial stage of information seeking process. Hartmann (1993), in his research paper, defined information needs as "any requirement for data or knowledge of any kind that is desirable or necessary to conduct research or teaching." Chen and Hernon, as reported by Reniker's (1993) study, noted "information needs arise whenever individuals find themselves in a situation requiring knowledge... to deal with the situation as they see fit." A more theoretical definition of the term 'information needs' has been the subject of discussion in the 70's and 80's. Roberts (1975) views information needs in terms of wants, demands, desires, requirement in a subject area. Wilson (1981) views it in terms of affective needs and cognitive needs.
Information Seeking Behaviour

Krikelas (1983) in his information-seeking behaviour model defines information seeking behaviour as any activity of an individual that is undertaken to identify a message that satisfies a perceived need. In other words, information seeking begins when someone perceives that the current state of possessed knowledge is less than that needed to deal with some issues (or problem). Wilson (1981) had a similar but more detailed definition of information seeking behaviour. He defined information-seeking behaviour as a behaviour, which results from the recognition of some need, perceived by the user, and that behaviour may take several forms. The user may demand for information systems such as libraries, on-line services and other sources. He further explained that, "whatever the source of the information it will at some point be 'used', if only in the sense of being evaluated to discover its relationship to the user's need."

Wilson (1977) noted that a person's process of information seeking begins only after he or she realises that the current state of knowledge is insufficient to meet his or her needs. There are several criterions for choosing an information source. These include accuracy (Chen and Hernon, 1982), familiarity, accessibility, costs (Leckie, 1996) and many more.

Resources

Resource is defined as an expedient or device to fulfil a function (Oxford English Dictionary, 1995). In the context of this research, resources can be defined as devices, which can be used for drawing information.
Sources

Source can be defined as a place or thing from which something originates (Oxford English Dictionary, 1995). This includes persons or documents that provide evidence or reliable information.

University

The Oxford English Dictionary (1995) defines university as "an educational institution designed for instruction, examination, or both of students in many branches of advanced learning, conferring degrees in various faculties and often embodying colleges and similar institutions".

Summary

This chapter has provided an overview of the current role of universities and academic libraries, as well as an understanding of the phenomenon of information needs of academic staff. Generally information technologies have not only brought changes to the role of academic libraries and universities, but also their communities' information seeking activities the perceptions and the use of the new information technologies. Among the current issues faced by many academic libraries is the demand for a better understanding of their communities' changing needs. This study was designed to examine such changing needs among the academic staff at the University of Malaya.

The following chapter presents a review of the related literature.