

Information management education: towards a holistic perspective

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This article investigates the *status quo* of information management education within South African universities. This article is a survey of the literature investigating this issue. The terms *information* and *management* are defined and a definition of the term *information management* is presented. The emergence of information management as a field of study is discussed as largely a response to the information age and the enormous amount of information which has resulted from it. Furthermore the current schools of thought in the field of information are mentioned as well as the paradigm underlying information management. The movement towards a new paradigm is debated. The contexts and levels (i.e. personal, organizational and strategic levels) of information management as manifested in the literature are discussed and suggestions are made with regard to which levels of information management should be taught at undergraduate level and which at postgraduate level. The trends in information management education, as evident from the literature, are pointed out, which forms the background against which the problem of information management education is addressed, and focusses on the issue of multidisciplinary *versus* interdisciplinarity, with the emphasis on a wider or more holistic perspective of information management education.

In hierdie artikel word 'n ondersoek na die stand van inligtingbestuuronderrig in Suid-Afrikaanse universiteite geloods en 'n oorsig van die literatuur wat hierdie knelpunt ondersoek, word gegee. Die begrippe *inligting* en *bestuur* word omskryf en 'n definisie van die begrip *inligtingbestuur* word gegee. Die opkoms van inligtingbestuur as 'n studieveld word bespreek, grotendeels as 'n respons op die inligtingsera en die geweldige hoeveelheid inligting wat daaruit voortgevloei het. Verder word die huidige denkskole in die inligtingsveld aangeraak asook die paradigma onderliggend aan inligtingbestuur. Die beweging na 'n nuwe paradigma word gedebatteer. Die kontekste en vlakke (d.i. persoonlike, organisatoriese en strategiese vlakke) van inligtingbestuur soos gemanifesteer in die literatuur word bespreek en voorstelle word gemaak met betrekking tot welke vlak van inligtingbestuur op voorgraadse vlak en welke vlak van inligtingbestuur op nagraadse vlak aangebied moet word. Die tendense in inligtingbestuuronderrig, soos wat dit uit die literatuur blyk, word uitgewys. Dit vorm die agtergrond waarteen die probleem van inligtingbestuuronderrig aangespreek word en fokus ook op die knelpunt van multidisiplinariteit teenoor interdisiplinariteit, met die klem op 'n wyer of meer holistiese perspektief van inligtingbestuuronderrig.

In this article the concept of information management will be discussed from a theoretical point of view. A clear understanding of the terms *information* and *management* is essential to understand the concept of *information management*.

The emergence of information management as a field of study will be discussed, as well as current schools of thought surrounding this field. The various levels and contexts of information management are debated, with this discussion adopting a wide or holistic perspective of information management. In the final instance the trends in information management education are pointed out.

Statement of the problem

This article forms part of the background against which research was carried out on the current state of education in information management at a macro-level in South African universities (Fairer-Wessels 1995). This article investigates the concept of information management from a theoretical point of view, the emergence of information management as a field of study, the schools of thought on information management, the levels and contexts of information management and the trends in information management education.

The problem under investigation is the multidisciplinary state of information management education and whether it should be adapted to accommodate an integrated and holistic approach to information management education.

A literature survey of items published since the late 1970s was undertaken to determine how the concept of information management is currently viewed by authors, and how information management education is changing in focus towards a more interdisciplinary approach.

Literature

Although the concept of information management has featured in the literature since the 1960s (Horton 1979, 1981, 1982; Smith 1980; Strassmann 1982; Synnott & Gruber 1981; Taylor 1966) it was more than two decades later before the education thereof started receiving attention (Boon 1990; Correia & Wilson 1992; Ettinger 1991; Evans & Treloar 1994; Hill 1993; Larabee 1992; Lewis & Martin 1989; Martin 1991; McClure 1995; Pejova 1996). Authors, however, still remain divided over definitions of the concept of information management, which leaves it as an unclarified area that still needs to be investigated.

Information

Many previous attempts to define the term *information* have failed to produce a commonly accepted operational definition. Although most attempts would appear to be contextual in nature it is worth exploring some of these efforts to identify the nature of information. As only a few definitions will be presented in this instance, it is hoped that some of the definitions may provide perspectives relevant to the discussion of the spectrum of educational experiences which may be required for the development of creative and innovative information professionals.

Porat (1977) in his seminal study on the information economy, recognized that to organize data into information, systems of logic, thought, measurement and communication were needed. Porat (1977:2) defines information as follows:

'Information is data that have been organized and communicated. The information activity includes all the resources consumed in producing, processing and distributing information goods and services'.

Farradane (1979:13–17) defines information as the 'written or spoken surrogate of knowledge', while also discussing the problems of context or meaning of such information.

Machlup (1980:56–58) defines information as the activity or process of informing and getting informed, whereas knowledge is the state of knowing. All information, in the sense of the contents conveyed, is knowledge, although not all knowledge may properly be called information.

Black and Marchand (1982:191–225) identified six approaches to the study of information in an attempt to assess the value of information in organizations, namely: information technology, information/library science, information resource management, value/burden, organizational theory and economics of information. The first four approaches have a 'functional' interpretation of information, while the last two have a 'process' interpretation. They claim that these approaches exhibit a dichotomy between a discrete and a dynamic approach to the creation, transmission and application of knowledge. This dichotomy is evident in the way in which information is defined, and in perspectives on the information life cycle and the relationship between the transfer and final use of information.

Black and Marchand (1982) also state that the information/library science approach focusses on the storage and retrieval stages of the information life cycle, with the unit of analysis being the recorded data. Information resources management (IRM) and organizational development approaches deal with all stages of the information life cycle. But IRM exhibits a functional approach to information while organizational development exhibits a process approach.

In a study by Debons (1981) of information professionals in the United States of America, many of the definitions mentioned above were recognized as contextual. For that study Debons (1981:30) developed two definitions of information within the context of an information system, namely:

- Source-based definition: information is a symbol or string of symbols which have potential for meaning (the commodity of information).
- Receiver-based definition: information is that which adds to or changes (my) picture of the universe (the process of informing).

Debons' (1981:30) definitions appear appropriate in this instance. They represent, respectively, source-based and receiver-based interpretations involving the concept of information as a commodity as well as the process of informing. In both instances, the context or meaning applied to symbols and therefore the cognitive and intellectual operations performed by users are of the utmost concern.

In a meta-industrial society such as ours, an author such as Broadbent (1984:215) has drawn a useful analogy between information and water, as both these resources are integral to survival. Although some individuals and organizations are better able to utilize these resources than others, it is imperative to have access to them. Differential use is made of information and water, as some use them in a value-added sense to make additional resources, while others are unaware of the importance of these resources, or may not have adequate access to either. The availability and use of information, like water, has an enormous impact on the quality of life for both individuals, organizations and society as a whole.

Horton (1992:113) agrees that we need to speak about information holistically or universally, and that it is equally important to manage the content-free or the carrier information services, as it is to manage the things like books, government reports and MIS (Management Information Systems) – they are all included in the same spirit of a universal definition.

At this point it would appear imperative to focus on the education of information professionals and managers who are able to anticipate, understand, interpret and enhance the commodity of information and the process of informing (Broadbent 1984:216), and who would best be able to assist top managers with SIM (Strategic Information Management) and the man-in-the-street, with PIM (Personal Information Management). Information is regarded as a holistic phenomenon. The field of information is fragmented to a much larger degree than we realize. It is as wide (or wider) than communication.

Management

Koontz and Wehrich (1990:41) define management as:

'the process of designing and maintaining an environment in which individuals, working together in groups, efficiently accomplish selected aims'.

According to Best (1988:14)

'management can be regarded as the control of a process or processes toward a specific target state or goal. It follows that information is manageable if:

1. The production of it is undertaken to contribute some purpose in the organization.

2. The relationship of the information to the achievement of the stated purpose can be clearly shown.

3. This relationship can be empirically tested.'

For purposes of this article we regard management *per se* as comprising the functions of planning, organizing, directing and controlling people, products and services, to attain the aims and objectives of the organization.

At this point it seems appropriate to discuss and attempt to define the term *information management* to ensure that understanding of this term mesh with the educational focus of preparing information professionals who have an appreciation of information from both its commodity and process perspectives.

What is information management?

The term has as many definitions as authors who have attempted to define it, and it is unrealistic to expect to find a single definition which covers the entire spectrum of perception and practice of information management (Lewis & Martin 1989:229). Similarly the term is occasionally inverted by some authors to read 'management information' which in essence appears to have the same meaning, although the emphasis is on 'information for management', and not the management of information *per se*.

In the literature there is also much debate over the synonymy of the terms IM (Information Management) and IRM (Information Resources Management), with the general consensus being that IM is regarded as the umbrella term, with IRM seen as part of IM or as the information entities upon which IM is focussed (Burk & Horton 1988:10–11). The terms IM and IRM are, therefore, used interchangeably in the literature.

The term *information management* has assumed a wide range of meanings, most of which are oriented towards IM in large organizations, and which furthermore fall into two categories: firstly, those that emphasize the effective handling of information within the information life cycle; and secondly, those that emphasize the actual management of the information. The organizational perspective is underlined by Marchand (1982:61) who regards the purpose of information management as

'... to promote organisational effectiveness by enhancing the capabilities of the organisation to cope with the demands of its internal and external environments in dynamic as well as stable conditions'.

According to Broadbent, Marchand's (1982:61) definition is perhaps the most well-developed and useful definition of information management, published.

Best (1988:13) also emphasizes information management within the organization by defining it as:

'The economic, efficient and effective coordination of the production, control, storage, retrieval and dissemination of information from external and internal sources, in order to improve the performance of the organization' (modified by Best after White 1985: 21).

According to Lewis and Martin (1989:229–230) a definition of information management is best approached through an attempted identification of the fundamental and inherent characteristics of information management, namely, the integrative; content-oriented; organization-wide; dynamic; and strategic. An operational definition might thus read:

Information management integrates both the functions of an organization and its various component parts. Information management has an organizational focus, emphasizes information content and requires high-level data administration techniques based upon the planning and control of information assets in support of organizational aims and objectives. Information management is both the product and the creator of change and as the process is management-driven it is essentially dynamic in nature with strategic significance.

According to Cronin and Davenport (1991:1) the term *information management* is commonly associated with formal representation of information entities and flows to facilitate the construction of computer models which allow specific functions (transaction processing, decision making, information retrieval) to be automated. Cronin and Davenport (1991:4) furthermore, state that information management can be found across a range of industrial sectors and line functions, handling information at different levels of aggregation, from the byte to the information center.

Burk and Horton (1988:10–11), on the other hand, emphasize the management perspective, and state that information management

'refers to application of one or more of the traditional management processes, such as planning, organizing, staffing, directing or controlling, to an information entity or entities. Without explicit or implicit qualification, the term information management is neutral; that is, it does not imply any specific entity, context or object of management'.

Horton (1992:110) emphasizes the management perspective and regards the managing of information as a business issue, and not as a technical issue. He says that information management is not about online database searching or library card cataloguing, nor is it about the design and development of information systems, but that it is about managing information according to business principles. Horton (1992: 112) adds that

'by putting the word management in there, we are now quite deliberately calling attention to what steps we are going to take to plan, to budget, to manage, and control information'.

Introna (1992) also emphasizes the management perspective as opposed to the technical perspective in his discourse on the management of information, but says that he is opposed to definitions in general and cannot comfortably reach a definition on the term *information management*.

In contrast to the above, Cronin and Davenport (1991:1) have a much more general view of information management

and state that their primary interest, as academics and consultants, in information management is much wider, as they are interested in information management at the perceptual and conceptual level, and in information as it is perceived by the senses, heard, read, written, seen, keyboarded and spoken.

Boon (1990:320) also proposes a fuller definition of information management covering both the information and the management perspectives of information as well as moving beyond the merely organizational context. Boon (1990:320) says:

'A distinction may be made between information management, as the broader concept, and information resources management, the management of the information cycle, and the management of information functions as narrower concepts that indicate particular forms of information management. There is no watertight separation between the meanings of these types of information management. They merely indicate focuses; for example, the management of the information cycle, that is to say it focuses on the management of the cycle through which information moves from its generation to its use and disposal ... information management which is used as the umbrella term, may be defined as the management of information as a resource so that the information functions as well as the information life cycle are able to function optimally. Information management deals with the management of resources such as information media, people, information systems and physical facilities that are required if information as contents is to play a role on the corporate strategic, organizational, operational and personal levels'.

As stated previously information management has been discussed mainly from a corporate management viewpoint, as viewed by Marchand (1982:61), whereas this article proposes to view information management in its broadest sense, that is, holistically. In the literature this holistic view is supported by Cronin and Davenport (1991:45), who state that in a sense, all of us are information managers, with everyday life entailing management of a number of physical commodities. We all manage information on the personal level which is formal and structured (for example, filing of certificates of birth, marriage) as well as informal and less structured (for example, social conversations, phone calls). Personal information can also be seen in terms of spheres of influence: domestic information which is contained within the source environment (the family or company), which can seep out into the wider world as rumour or speculation. Street information of this kind lacks structure and tends to be disseminated through invisible colleges, and old-boy networks. As speculation is confirmed the process of refinement and consolidation begins, resulting in a corpus of more or less structured terrain information, from which it is possible to make projections and forecasts about future events, what they term horizon information.

At this point it would seem appropriate for the author to formulate an independent definition of the term *information management*, which is as follows:

Information management is viewed as the planning, organizing, directing and controlling of information within an open system (i.e., organization). Information management is viewed as using technology (e.g., computers, information systems, IT) and techniques (e.g., information auditing/mapping) effectively and efficiently to manage information resources and assets from internal and external sources for meaningful dialogue and understanding to enhance proactive decision making and problem solving to achieve aims and objectives on a personal, operational, organizational and strategic level of the organization for the competitive advantage and to improve the performance of the system and to raise the quality of life of the individual (by teaching him/her information skills, of which information management is one, to become a global citizen).

Emergence of information management as a field of study

The growth of interest in information management, whether seen as a discipline or in its own right, does not really matter, according to Cronin (1985:106), as it can be seen as a response to problems that have arisen with the advent of the information age, the resulting exponential growth of information, and the enormous shift in occupational ratios with the intellectualization of labour. The process of the intellectualization of labour is an irreversible long-term phenomenon, and will result in further elimination of jobs, not only in the primary and secondary sectors, but also in certain parts of the service industries sector (Cronin 1985:106).

Information management is a response to, and a search for, new and improved means of controlling the information explosion and the resultant increasing complexity of decision making, by improving the flow, the control, the analysis and the synthesis of information for decision makers. Information management is also a movement which recognizes information as an important resource and valuable asset in the problem-solving and decision-making process, which warrants the application of effective management techniques, and which in turn calls for new approaches to the management of information (Cronin 1985:106).

Davies (1996:49) states that there is a vital link between information management and information technology and that we need to improve the exchange of skills and information within these closely related disciplines.

Horton (1992:107) agrees that we need information management because of the information explosion, and the proliferation of modern information technologies, telecommunication networks and new techniques for searching and accessing and retrieving that information. He states that we are now faced with a situation where we have too much data, information and knowledge that we cannot use. We have

reached a point where we have technologies all over the place, and a splintering and compartmentalized situation with regard to information. People have information in their bottom drawers, in libraries and in information centres. Information is found all over the organizational landscape but there is no single central place where one can go to find the information one needs. Largely because of this 'information chaos', information management has emerged as a subject field on tertiary level.

The US Federal Government of the Clinton Administration has also realized the dire need to restructure education programmes that support IRM, as the changes occurring in both IT and in managing this technology are outpacing many government officials' ability to respond in a planned and coherent manner (McClure 1995:1).

Broadbent (1984:217) states that although the growth and importance of the information sector and information *per se* was identified in the sixties by seminal authors such as Machlup (1962) and Porat (1977), the implications of this situation for individuals, groups, organizations and educational programmes has still not fully been realized, which to a certain extent, is still the case today.

Although much has been attempted in the past decade with regard to the education of information science and information management as related subject fields, much of what has been done has been from very specialized and multi-disciplinary viewpoints (Pemberton & Nugent 1995:126–128). In this sense, information management can act as an interdisciplinary catalyst forming a meso or wider framework within which information in all its facets can be addressed from an interdisciplinary and/or transdisciplinary perspective to educate all individuals in all contexts in managing information.

Martin (1988:104) states that the development of information management has not by any means run its course, and that viewed in the context sketched by Daniel Bell two decades ago, the emergence of a society whose central axis is codified knowledge, information management, could, according to Martin, acquire both new meaning and new significance. Martin attempts to portray information management as a mix of factors and a set of relationships in which the information factor is seen to hold the key to organizational change and performance, also with a strategic dimension. He also strongly portrays information management in 'its proper interdisciplinary context' (Martin 1988:103).

Schools of thought on information management

Basing his thoughts on the 17th century writings of Descartes, Toffler (1990:81) maintains that the culture of industrialism rewarded people who could break problems and processes into smaller and smaller constituent parts. This disintegrative or analytic approach, when transferred to economics, led us to think of production as a series of disconnected steps, and strict hierarchical bureaucracies. This, in turn, has led to the paradigm of specialization, which is still followed at many educational institutions.

In contrast to the paradigm of specialization, the rise of the information age and the information economy, which now employs more than half of the economically active population engaged in information-related activities, is based on a systemic or integrative view, where the parts of the process cannot be isolated from one another. Here connectivity, rather than disconnectedness, integration rather than disintegration, are the assumptions that underlie the new production paradigm of integration.

Today the dichotomy is that although the information age necessitates an integrated world order, most educational institutions are still following the Industrial Age paradigm of specialization, producing students that are not able to operate effectively in the real world. In the same vein, information management as subject area on tertiary level is being tutored from the perspectives of various specialized disciplines. With the introduction of hypermedia databases we have crossed the conventional boundaries of subject specialization by reaching across different collections of data, with great flexibility and aiming at free-form and free-flow of information, storage and manipulation. This powerful form of knowledge processing is antibureaucratic, and will eventually mean the breakup of the rigid information monopolies that overspecialization has created in bureaucratic organizations (Toffler 1990:81). With changing professional jurisdiction and new market opportunities, it is not certain what the nature of the information professional will be and what skills and knowledge should be taught in preparation for careers in this field (Hill 1993:226; Moore 1996:24–25).

Machlup (1982:5) attempted a methodological interdisciplinary and transdisciplinary investigation into a cluster of disciplines, he called 'the sciences of information': information science, library science, computer science, informatics, mathematical theory of communication, systems theory and systems analysis, operations research, cognitive psychology, artificial intelligence, robotics, cybernetics, decision sciences, semiotics and cognitive science. His objective was to determine whether some of these disciplines were overlapping, cognate or complementary. Machlup's (1982:14) aim was to organize universities into fewer faculties and to reintegrate specialized fields into multidisciplinary programs in an attempt to bring the departmental systems into harmony with the philosophers' schemes of classifying the branches of learning.

Traditionally, within the field of information there are two major schools of thought, namely the information theory school and the information systems school:

- The information theory school is based on the principles of the mathematical theory of information presented by Shannon and Weaver in 1949 in their work *The mathematical theory of communication*. This school also includes telecommunication studies and has a technological orientation; and
- The information systems school which emphasizes the development of information producing systems. This school also includes finance and accountancy.

Due to the rapid development of computer technology the information systems school has become the predominant school of thought today. Within the information systems school there are two main academic disciplines which have information as their central field of study, namely the field of information systems (Remenyi & Whittaker 1995:144) and the field of information science.

Recently, two other schools of thought have started gaining prominence in the field of information, which are:

- the management school (which for some time has recognized the value of information for problem solving and decision making) and;
- the humanist school that places people at the center of information use.

The current paradigm of information management is the 'processing' and 'decision-making' paradigm of information. This paradigm of 'overspecialization' has resulted in the fragmented approach towards information management, with various disciplines specializing in various components of information management. For example, the field of computer science focusses on MIS (Management Information Systems); the field of library and information science focusses on the processing of information; the field of information systems focusses on managing complex IT infrastructures (Remenyi & Whittaker 1995:144); and the field of management sciences focusses on problem solving and decision making.

A new theory of management information proposed by Introna (1992) is that of meaningful dialogue. This new theory of 'meaningful dialogue and understanding' may form the foundation of a holistic and integrated approach to information and the management thereof.

This 'new' paradigm can support an integration of the above areas of specialization (that is, computer science, informatics, library and information science, management science) to an interdisciplinary curriculum, as meaningful dialogue and understanding is on a meta/higher level than these areas of specialization mentioned above.

Contexts and levels of information management

In the literature, information management is usually discussed from within an organizational context, and usually implemented for the benefit of the organization on various organizational levels. These levels are usually, in order of predominance, the strategic level, the organizational level, the operational level and the personal level.

As the overriding aim of information management is to manage information for the strategic and competitive (economic) advantage of an organization, often on a global level, information management is seen largely as a strategic function of management (Balcombe 1994; Hayward & Broady 1995; Remenyi & Whittaker 1995; Synnot & Gruber 1981).

On the organizational level the function of information management is equally essential, as on this level its objective is to enhance the productivity and economic viability of the

organization, so that it can remain competitively placed in the global arena (Kaye 1996:19-21).

On the operational level the implementation of information management to enhance the actual production or service of goods is also imperative, as this is the lifeblood of any manufacturing or service organization. In non-manufacturing organizations with flat organizational structures, the design and development of new products may take place with an amalgamation of strategic and organizational levels, and here information management remains essential to keep abreast of rival products, and to maintain the competitive edge in the marketplace (McPherson 1995:33).

As stated previously, information management on the personal level has not received much attention in the literature, because it has traditionally been seen by authors within an organizational context as either a line or staff management function. Therefore, in this context, personal level could refer to a manager within the organization needing information by which to manage the organization. Davenport (1988:262) states that although it may be argued that information management is a higher management level function as it contributes to company strategy, it may be equally argued that it applies right down the line.

Horton (1987:273) says that we could aim for information management training in organizations, where chairmen and messengers alike, can acquire hands-on skills to help them over information hurdles. In other words, there could be a move towards more 'adaptive' information management to suit the needs of the learners.

On the other hand, and this is how this article views personal information management: that it could also refer to the information individuals need to manage their lives, both within and outside of the job situation. This would imply short-, medium- and long-term information management on a personal level, where individuals, in the short term, plan their days, in the medium term, plan their annual vacations, and in the long term, plan their retirements by considering various pension schemes or annuities.

For reasons of clarity it is necessary to point out that on the personal level we prefer to speak of long term, as opposed to strategic, because the term strategic implies a business-related context. Within a business context, an individual can have strategic information management needs, but these needs would be linked to that of the organization.

Figure 1 depicts the individual as the core around which various levels of information management revolve, as well as the interrelationships between strategic information management and long-term information management of the individual.

It would appear feasible to offer information management at undergraduate level from an interdisciplinary perspective, where students can be taught multiskills from various areas of specialization (i.e. a multidisciplinary approach) within an *integrated* framework. The education of personal information management (PIM) at undergraduate level would be the

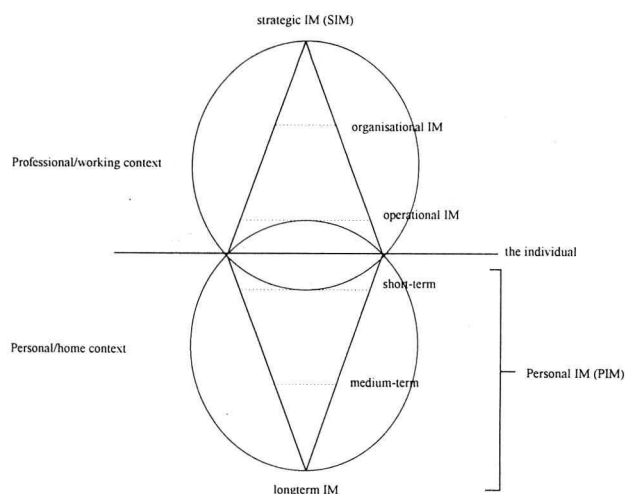


Figure 1 Levels of information management revolving around the individual as the core

obvious starting point and moving from there up to strategic information management.

In the South African context making information management appropriate to a local oral community would require a totally new perspective on information management. Local information intermediaries would have to be used that are acceptable to the community. This is in contrast to the so-called postgraduate course for information intermediaries in industry in Portugal which Correia and Wilson (1992:78) mention.

Furthermore, it would appear feasible for strategic information management (SIM) to be offered at postgraduate level, from a transdisciplinary perspective, where students can then come into contact with different viewpoints or areas of information management specialization. Whereas at undergraduate level they may have studied only one perspective of information management.

Trends in information management education

When we think of information management as an academic field of study pursued by various disciplines, the 'territorial imperative' referred to by Cronin (1983:278) is alive and well. Empirical research has found that the majority of South African universities have courses in information management tutored by the Departments of Accountancy, Business Economics, Computer Science, Informatics, (Library and) Information Science, and by most of the universities' affiliated Business Schools. In each of these departments and schools, information management is tutored from the different specialized perspectives of each particular department or school, with each guarding its territory ferociously.

According to the literature, information management has, since its inception in the early 1980s, as a subject field by leading Business Schools, been taught by various disciplines from different perspectives. In other words, the current trend is a multidisciplinary specialization approach. This is also manifested in the empirical work. A number of front-running

information schools (Ettinger 1991:2938; Martin 1991:21-28; Pejova 1996:17) have, however, moved away from multidisciplinary towards an interdisciplinary approach to information management.

More than a decade ago, Broadbent (1984:219, 225) expressed the need for a holistic approach to information management, and the need to 'hasten the process of cross-disciplinary curriculum development' in information management, as 'little real interdisciplinary curriculum planning' had been done. Broadbent (1984:210) and her colleagues were of the opinion that no one faculty or department on its own could offer the range of educational programmes and courses on information studies, focussing on information management for information professionals with the required breadth and depth.

A decade ago Cronin (1986:140) stated that educational programmes needed to output a variety of manpower: to train generalists with portable skills; high-level specialists capable of developing, marketing and exploiting discipline-based information systems and services; and, most importantly, high-quality professionals with the skills and vision to initiate and develop strategic information policies; and Davies (1996:49) states that it is imperative that management should include IT in the formulation of an information policy. Herring (1994:30) advocates a BA(Hons) Information Management course at Queen Margaret College where the rationale for the course is based on the convergence of knowledge, skills and technologies, mainly within the organizational context. The South African higher educational system, however, is not yet geared to meeting the needs of a society and economy in transition. Pejova (1996:17) states that this is also the case in former socialist countries which have been globally isolated.

Cronin (1986:141) also recommends parameters within which curriculum planning could take place for the training of information counsellors. Some of these parameters are appropriate in this instance, particularly, that synergistic links must be developed between academic departments, within and across institutions; that interdisciplinary teaching and research must be encouraged; and that an integrative/holistic approach to the design and teaching of information-related courses is necessary.

Ettinger (1991:29) also supports interdisciplinary and transdisciplinary studies in information management, and proposes a curriculum in Applied Information Management (AIM), but incorrectly refers to interdisciplinarity as 'multidisciplinary' in her article. She states that

'the goal of the AIM program is to allow a professionally and educationally diversified group of students to examine and construct the multifaceted content of information management from various disciplinary perspectives'.

The AIM program curriculum draws upon faculty and content from at least six different academic units and the program is not housed in any one department, but is jointly administered by three departmental groups (Ettinger 1991:34). This

curriculum focusses on applied information management, which reflects a changed view of information management, where it is not seen as a specialized, localized, restricted activity, but rather as a generalized, distributed, pervasive activity.

A similar interdisciplinary approach to information management is advocated by the School of Finance and Information at Queen's University of Belfast in Ireland, which was the result of a merger of the departments of Accountancy and Information Studies in 1988. The School

'operates as an integrated, interdisciplinary whole, with divisions which specialise in accountancy and finance, and information management, respectively' (Martin 1991:21).

Willner (1993:233) states that by 1990 financial management had become a basic management competency in the corporate library structure. According to Drucker (in Harris 1993:118) it appears that the world economy is shifting from a command model to a knowledge model, and that education should determine who gets each job. Drucker (in Harris 1993:134) emphasizes the importance of information literacy, and that there is too much focus on technology which causes us to lose track of the fundamental nature of information in today's organization. As previously stated, Horton (1992:113) agrees that we need to speak about information holistically or universally, and that it is equally important to manage the content-free or the carrier information services, as it is to manage the information itself.

Cronin (1992:201) states that the next decade will witness a growing interdependency among library and information schools and the formation of new coalitions and that some United States schools might consider positioning themselves strategically and aggressively as providers of capstone courses in information studies (Cronin, Stiffler & Day 1993: 273).

Evans and Treloar (1994:437-448) discuss the co-operative initiative between an existing department of Library and Information Studies at the University of Papua New Guinea and an Information Management group based within a Faculty of Science at Deakin University. This 'marriage' of courses in essence seeks to address the information management problems of Papua New Guinea.

Burrows (1994:150) also expresses the need for a more holistic approach to information management. In the same vein Pejova (1996:17) advocates the need for interdisciplinary knowledge needed by information professionals and managers for organizing and managing information activities in a broader context, with one of the objectives being to give information professionals an holistic view of information opportunities especially in countries in transition.

The trend in information management education since the early 1990s is towards interdisciplinarity with divisions which specialize in accountancy and finance, such as in the school of Martin (1991) in Belfast, Ireland which is a front runner of this trend.

This shift away from multidisciplinary towards interdisciplinarity is noticeable in empirical research done by the author (Fairer-Wessels 1995) amongst university academics which tutor information management, where a minority of respondents are moving towards interdisciplinarity, whereas the majority are still caught up in the multidisciplinary trend. It must be stated, however, that the one approach does not preclude the other, and that multidisciplinary and interdisciplinarity can and should coexist in most disciplines (Martin 1991:21).

The aim of this article was largely to create an awareness of the problematics of (multidisciplinary) information management education (i.e., overspecialization/multidisciplinary) and to prompt/activate academics and information professionals (including information managers) to develop a holistic and integrated approach to information management education. Larabee (1992:31) basing his research in 14 countries, says that it is the duty of educators in IRM to allow their students to have an adequate and balanced foundation of IRM, and to transmit to them (the students) the 'whole truth', that is both theory and practice.

Conclusion

In this article the terms *information*, *management* and *information management* have been discussed, debated and defined from noteworthy authors' points of view, with the author presenting her own definition of the term *information management*. The emergence of information management as a field of study is discussed as largely a response to the information age and the enormous amount of information which has resulted from it. Furthermore, the major schools of thought in the field of information are mentioned as well as the paradigm currently underlying information management. The movement towards a new paradigm is debated. The various levels and contexts of information management, as manifested in the literature, are discussed, with the author proposing to follow a wider rather than a narrow perspective of information management. Finally the current trends in information management education, as evident from the literature, are pointed out, which forms the background against which the problem of information management education has been addressed as is evident in the larger research project (Fairer-Wessels 1995).

This article focusses on the phenomenon of IM and the socio-economic and educational views on it, both on local (empirical) level and on international (literature) level, and forms part of the conceptual framework of the larger research project.

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