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# Making Choices: Research Paradigms and Information Management: Practical Applications of Philosophy in Information Management Research

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## ABSTRACT

*This paper examines questions regarding the choices of research paradigms and the practical application of philosophy to the life of professional information managers. The purpose of this paper is to examine a variety of research approaches which information managers may find useful to meet the needs of working in the networked, digitized age. This is achieved by a discussion of the research paradigms inherent within both information theory and social theory. These approaches are considered and the reasons for acceptance and rejection detailed together with the final justification for an interpretist approach as the most appropriate context in which to work, in order to meet the emerging trends and current challenges of information technology management.*

## INTRODUCTION

Philosophy can be defined as the questioning of basic fundamental concepts and the need to embrace a meaningful understanding of a particular field. The discipline of philosophy can be used to allow research to be viewed in a certain way, by using particular “accepted” approaches e.g. positivism, interpretism. These “accepted” approaches are useful to the information professional for three reasons. First, the approach clearly communicates the stance of the research, second, it allows others to quickly understand context and third it provides a means for clearly articulating the results of that research.

The purpose of this paper is to examine a variety of research approaches which information managers may find useful to meet the needs of working in the networked, digitized age. This is achieved by a discussion of the research paradigms inherent within both information theory and social theory. These approaches are considered and the reasons for acceptance and rejection detailed together with the final justification for an interpretist approach as the most appropriate context in which to work, in order to meet the emerging trends and current challenges of information technology management.

## THE THREE C’S: COMMUNICATIONS, COMPETITION AND CHANGE

The way in which information professionals undertake research is of paramount importance as we need to react to what can be termed the three “C’s” i.e. Communications, Competition and Change.

Communications have radically altered since the impact of technology, e.g. the immediacy of communication and the accessibility of all time zones mean that business can thrive 24/7 in an international arena. This in turn has led to increase in competition as markets expand and borders disappear, allowing and encouraging trade in many countries. Inevitably, the need to react quickly and efficiently to competition causes the need to change whether it is small scale administrative changes or major

restructures and mergers. Change is all around us, as much in the private sector as the public sector. Change is now rapid and continuous, management texts no longer refer to how to manage change, but simply to how to manage in times of change, the change in wording although small has huge significance.

What is important in information management research is an ability to undertake research within the world created by the three “C’s” and the suggestion in this paper is that research which involves the study of people and cultures, should, unless there is good proven reason, be undertaken from an interpretive viewpoint. This is because an interpretive approach allows the context of the research, in particular during the data collection to be taken into account. When dealing with people and information this is a vital factor in establishing information needs in order to ensure that systems (for example) provide information satisfaction and information fulfillment. Paradigms which assist with dealing with subjectivity are considered in the following section.

## RESEARCH PARADIGMS

Subjectivity can be seen to be a fundamental aspect of research which deals primarily with people and information. This subjectivity must be addressed in some way so as to ensure that research is conducted with rigour and fairness. This is achieved by setting a research methodology within a suitable research paradigm and clearly communicating the assumptions pertinent to that research paradigm. Ideas around paradigms were considered by Kuhn (1962) in his revolutionary treatise “The Structure of Scientific Revolutions”. He identified a paradigm as a “disciplinary matrix”, as a means of identifying and therefore sharing assumptions about core beliefs and values.

Others, such as McArthur, (1992) defined a research paradigm in more general terms as:

*an overriding viewpoint that shapes ideas and action. A paradigm shift occurs when ideas and practices taken more or less for granted under the old paradigm are reassessed under the new. Such a shift occurred in the sixteenth century when Copernicus claimed that the Earth went round the Sun and in the nineteenth century with Darwin’s theory of natural selection.*

The research paradigm, once chosen, acts as a “set of lenses” for the researcher – it allows the researcher to view the fieldwork within a particular set of established assumptions, thus merging the abstract usefulness of the paradigm with the practical application of conducting rigorous research.

## **INFORMATION THEORY FRAMEWORKS**

Within the discipline of information management, the term information science is used when discussing theoretical and philosophical ideas of the area. Information science is simply the “science and theory” which underpins the whole arena of information management and is thus the term used in this section.

Information science does not hold to one particular paradigm. Rather, as a relatively young discipline, it is still searching for its roots and thus discussion about what constitutes the philosophical dimension of information science is an ongoing debate. At its most basic level, information science both as a profession and as a discipline is concerned with gaining and maintaining “respectability” in terms of the sciences and the need to establish itself as a real “profession”. Hjørland’s work (1992; 1995; 1997; 1998) in the area of theories in information science is well documented and thought provoking. His work in 1992 on the concept of the subject in information science attempted to set out a philosophical framework which categorised boundaries of what constitutes a subject, a field and a discipline in order that information science is established, and accepted, as a “robust” science. His later works deal, for example, with the growth of information science theories (1997), and “discourse communities” i.e. the fact that different “documents have different meanings in different domains and therefore must be considered differently by different information systems” (2000). Whilst Hjørland favours the “Socio- Cognitive” view of information science, work undertaken by Basden and Burke (2004) dealt with the question of defining documents by application of the fifteen Modal Aspects created by the philosopher Dooyeweerd. These include such aspects as juridical aspect, the lingual aspect and social aspects. Within this framework, the areas of diversity, responsibility, roles, identity and change were analysed and discussed.

Budd’s (2001) work also addresses the question as to whether information science can be called a “science” in the true sense. Budd posits that Bacon was the true “father” of sciences who postulated that the scientific method was about collecting factual data through a method of observation agreed by a specific set of rules, resulting in new knowledge which then added to existing knowledge which in turn built up a complete body of knowledge. If this is so, then all who work within the information profession are quite justifiably scientists. However, other philosophers – from Aristotle and Plato to Kant and Locke, Hume and Berkeley have argued that the discussion should not be about what is a science, but about what is knowledge and only when this question is answered can the question of what constitutes a science be satisfactorily concluded.

Hjørland (1998) attempted to define the discipline of information science in a different way by considering the basic epistemological assumptions on which information science is based. He does this by considering four areas, that of empiricism, rationalism and historicism and pragmatism. He does concede that this is inevitably a “narrow” look at a very wide field, but he provides pegs on which to hook ideas and frameworks. He reviews ideas in retrieval, in subject classification, ideas concerning the typology of documents and information selection. He concludes that empiricism, rationalism and pragmatism are not satisfactory as frameworks for information science as they do not cater for the lack of boundaries in aspects of information science. Instead he suggests that historicism is the way forward as this allows for all facets of the discipline to be considered equally thus providing a stable epistemological assumption for information science. Burke (2003) builds on this view that other variables should be considered which in the past have been overlooked, or brought into an area of concern at a later stage, such as organisation structures and the impact of information processing systems on both the people and the organisation.

However, all these approaches are broad and do not address specific fundamental questions such as which approach to consider when undertaking research. The views about what constitutes the underlying assumptions of information science are still unclear, although there are a several schools of diverse thought resulting in a rich tapestry of interwoven ideas.

## **SOCIAL THEORY FRAMEWORKS**

The Information Systems discipline is in a better position. It has “borrowed” frameworks from the sociology discipline and one of the most important papers was written towards the end of the 1970’s when sociology was a growing and thriving field. This view has now been widely accepted and forms the social theory framework which sets out the major viewpoints.

From a sociological viewpoint, Burrell and Morgan writing in 1979 endeavoured to present the pertinent issues of the 60’s and 70’s into a single model. They created the framework for four sociological paradigms which are now widely accepted and used to convey a standpoint on a particular issue. The four paradigms are Radical Humanist; Radical Structuralist; Functionalist and Interpretive views. They contain “fundamentally different perspectives for the analysis of social phenomena”. (Burrell & Morgan, 1979)

The functionalist paradigm refers to the search for explanations of social phenomena, from the view of a realist – what can be described as a positivist perspective. It is a logical, rational view which is often “problem orientated in approach”. It has its roots in the pure sciences where issues could be measured, evaluated and monitored.

The radical structuralist paradigm however espouses an objective view. This view is concerned with structure, with structural relationships and with the certainty that as all things have a structural relationship within society, then all things can be explained in a logical way. This view is closely aligned with that of the functionalist.

The radical humanist paradigm views the world as one in which everyone has potential that we are able to “do better” and “be better” than society at any given time, permits. This view of “endless possibilities” is closely allied to the interpretive viewpoint as it is a view which allows and encourages subjectivity. The perspective of the “critical social researcher” is formed from within this paradigm.

The fourth paradigm, the interpretive view is concerned with understanding, with interpreting the world and each situation, dependent on the tangible and intangible variables that were present at the time. This seeks a view “within the frame of reference of the participant as opposed to the observer of action”. This frame of reference is vital in order to undertake research based within information management which deals primarily with people, information and cultural contexts.

Now that the research paradigms have been introduced, the research lens becomes more focused and the research paradigm which, it is suggested, best suits this information management and people based research is sought.

## **RESEARCH PARADIGMS: ACCEPTANCE AND REJECTION**

As the information science discipline does not offer an easily “accepted” paradigm, a decision was made to explore and accept one of the paradigms offered by the social theorists. Within the information systems field the two major opposing research paradigms are that of the positivist, (Burrell and Morgan’s functionalist paradigm) and the interpretist. Within these spectrums lie the other schools of thought. Each of these paradigms has their own merits and limitations. Within the information systems research arena writers such as Walsham (1993; 1995) and Galliers (1985) take a strong stance on the interpretive view as the most useful. However, although the interpretive style is being proposed as the most appropriate paradigm for information management research which deals with people and culture, the reasons why the other paradigms were rejected are equally important to consider and this task is undertaken in the following sections:

### **THE FUNCTIONALIST / POSITIVIST APPROACH**

Within the functionalist paradigm, the positivist approach to research can be defined as an approach where facts are clearly defined and results are measurable. According to Myers, (1997) “Positivist studies generally attempt to test theory, in an attempt to increase the predictive

understanding of phenomena.” The researcher is seen as an objective instrument. Positivists aim to forecast the general patterns of human activity regardless of historical or cultural contexts.

Adopting this perspective in people and information based research would not allowed context – which can be critical to a study - to be taken into account. Whilst this perspective which searches for explanations for social phenomenon could have allowed for standard, structured, “reasonable” conclusions about behaviour, it could have missed, for example, a rich array of history, a range of social conventions, and the reasons behind the different types of behaviour. On these grounds, a positivist approach is rejected.

### THE RADICAL STRUCTURALIST / POST MODERNIST APPROACH

The radical structuralist paradigm provided a framework for other views such as the post modernists whose research approach is based on a deep mistrust of the other methods as they all take place by systematic empirical observation. A post modernism (Dorst 1989: Rose1989) would take issue with the fact that results are presented in a detached way and would want the researcher’s experience to be part of the final results.

This is in direct contradiction to the more “usual” research view where the researcher must identify his or her role in the process and attempt to separate that from the research participants. However, this approach does have possibilities for UK based research, but could be rejected, for example, on the grounds of the difficulty of placing the researcher as a “participant” in the field due to the language and conversational difficulties that would have been encountered. These problems could of course be overcome if the language skills are available. On the whole, however, the radical structuralist / post modernist approach can be rejected due to practical considerations.

### 9. THE RADICAL HUMANIST / CRITICAL SOCIAL APPROACH

The criticism of the positivist is that positivists ignore social context. To counteract this, the radical humanist approach is centred on dynamic action, is zealous in approach to needing and demanding a solution or improvement in the situation. This view has developed into a flourishing approach to research known as “critical social research”. The goal is to return or give the power to those who need it most. The critical research approach can be defined as looking beyond what is present –to the past of the people, including the cultural past, to the issues that have formed strong influences in the past and the history and form of politics prevalent within the field. The critical approach can assist with helping people recognise reality in an objective way – it aims to help them understand and cast off false beliefs and myths that may have prevented them from achieving their goals in the past.

This standpoint would be useful in an intervention type of study in a research setting where the aim was to assist people and to help them transcend imposed limitations. The zealousness inherent in this approach would form a strong starting point for the rejection of the “accepted norm” and would present an idealistic alternative. However, if the researcher needed to collect data without interruption to daily lives, was present for a short time span and did not have the power to radically change established structures this could not be considered a suitable approach. On these grounds a radical humanist / critical research approach was rejected.

### THE INTERPRETIVE APPROACH.

At its most basic level the interpretive approach allows for discussion and questioning of assumptions. According to Clarke ((2000) interpretivism:

*Confronts the difficulties presented by the nature of the research domain such as the intangibility of many of the factors and relationships; the inherent involvement of the researcher within the research domain; the*

*dependence of outcomes on the researcher’s perspective such as the definition of the research question, the design of the research question and the measurement of variables.*

Clarke’s concern with the measurement of variables is particularly pertinent to information and people based research. As the goal of the interpretive researcher is about sharing the perspective of the groups, it is considered the most appropriate means of undertaking research based on people and information needs. This is the method which allows the most natural behaviour of those seeking information and thus helps researchers to make key decisions about information needs, information satisfaction and information fulfillment .

### JUSTIFICATION FOR THE INTERPRETIVE APPROACH: AN EXAMPLE

The justification for the use of the interpretive approach can be summarised by examining Myers (1997) epistemological assumptions of interpretivism together with a consideration of how the assumption fits a particular research study. This example - the Information Fulfilment Project (IFL) was taken place over a number of years and was conducted in three countries by ethnographic means using participant observation and Blumer’s (1954) symbolic interactionist approach. The study examined the relationship between the design of an organization’s structure and information fulfillment. Information fulfillment was defined as a final stage of information seeking behaviour which ensures that the user has gained all the information needed to fully complete a task, beyond initial satisfaction. The research was conducted in higher education institutions in Poland, Russia, and the UK. It was thus important to choose a research lens which allowed the different cultures of the countries to be carefully considered. Hence the interpretive research stance was the one which appeared most appropriate. The following table was used in the study to explore the epistemological assumptions which underlie the interpretive approach (stated in the left hand column) whilst the right hand column contains comments on the usefulness and relevance of the research study to each of the assumptions in the IFL project.

The deconstruction of the five assumptions that make up the interpretivist view show that this stance is justified as it provides the best methodological approach of collecting social phenomena in natural settings, which is so important in the field of information management and which was vital to the success of the IFL research project. Whilst the application of the interpretivist view to the information field is well documented, it is still relatively unusual to apply these principles to the field of information management and thus demonstrate the usefulness of this lens to the information fulfilment research project.

### CONCLUSION

The purpose of this paper was to provide an insight into making research choices in information management and to suggest a way of applying one aspect of philosophy to information management research. This was achieved by an examination of research approaches which may be useful in information management research and as background to this discussion the importance of communication, competition and change were highlighted. Each of the research paradigms were examined for relevance and although there were possibilities of usefulness in different contexts, it was generally considered that interpretivism is the most useful and the one that will give the richest results. The decision was justified by taking an example of information management research – the IFL project and deconstructing decisions against Myers (1997) epistemological assumptions of interpretivism.

The central theme of this paper is that research which deals primarily with people and information in a world of change, competition and fluid communications technology, should take into account and allow for an understanding of human behaviour. This understanding helps to highlight different contexts, backgrounds and cultures and therefore provides assistance in making appropriate choices concerning research

Figure 1. Justification for the use of the interpretive approach

| Epistemological Assumptions  | Relevance to the IFL Project   |
|--|--|
| Epistemological Assumption 1<br><br>"Data are not detachable from theory, for what counts as data is determined in the light of some theoretical interpretation, and the facts themselves have to be reconstructed in the light of interpretation".  | All the data collected from the time spent in the field needed careful analysis and to be interpreted in the context of each of the field settings. This was a critical element for the success of the study.  |
| Epistemological Assumption 2<br><br>"In the human sciences theories are mimetic reconstructions of the facts themselves, and the criterion of a good theory is understandings of meanings and intentions rather than deductive explanation"  | As the fieldwork was undertaken in three very differently constructed societies, two of which were rich in folklore and historical traditions it was essential that the research paradigm allowed for meaning in a particular instance rather than gave a full overall explanation for all actions   |
| Epistemological Assumption 3<br><br>"The generalisations derived from experience are dependent upon the researcher, his/her methods and the interactions with the subjects of the study. The validity of the generalisations does not depend upon statistical inference 'but on the plausibility and cogency of the logical reasoning used in describing the results from the cases, and in drawing conclusions from them' (Walsham, 1993) | The research was not a statistical study based on quantitative data, but a "snapshot", a "photo album" of three societies at a particular point in time. This was a study of qualitative data, and whilst there were some informal interviews, these were of a conversational nature, and the results put into loose groupings. It was more important to let the participant decide what they regarded as informal or formal information as this varied from person to person (depending on their job) and from society to society. (depending on the country) |
| Epistemological Assumption 4<br><br>"The languages of human sciences are irreducibly equivocal (because of multiple emergent meanings) and continually adapt themselves to changing circumstances".  | Each of the societies chosen for the field work was quite different in nature. Two of the three societies have also undergone a major shift in government patterns in the last ten to fifteen years. Inevitably this meant that the field was undertaken in an intensely "fluid" environment where the participants had to "continually adapt themselves to changing circumstances" This needed to be reflected in the chosen paradigm and interpretism offers the flexibility to allow for this   |
| Epistemological Assumption 5<br><br>"Meanings in the human sciences are what constitute the facts, for data consists of documents, intentional behaviour, social rules, human artefacts etc. and these are inseparable from their meanings for agents".  | Much of what happened in the field was observed – although there was some informal data collection a considerable proportion of finding out whether a participant felt they had "information fulfilment" was gained from observation. This fifth assumption emphasises the nature of interpretism as a vehicle for the importance of behaviour and the way in which people follow – or disregard rules. This was essential for the success of this research.   |

paradigms and information management, which in turn will ensure thoughtful methodology and justifiable research results.

**REFERENCES**

Basden, A & Burke, M.(2004) Towards a philosophical understanding of documentation: a Dooyeweerdian framework. *Journal of Documentation*. 60 (4)

Blumer H.(1954) What is wrong with social theory? *American Sociological Review* 19 pp3-10

Budd, J (2001) *Knowledge and Knowing in Library and Information Science* Maryland, Scarecrow Press

Burke, M. (2003) Philosophical and theoretical perspectives of organisational structures as information processing systems. *Journal of Documentation*. 59 (2)

Burrell & Morgan (1979) *Sociological Paradigms and Organisational Analysis*. London Gower

Clarke R (2000) *appropriate research methods for electronic commerce* <http://www.anu.edu.au/people/Roger.Clarke/EC/>

Dorst, J.D. (1989) *The written suburb : an ethnographic dilemma*. Philadelphia Univ of Pennsylvania

Galliers, R.D. (1985) *In search of a paradigm for information systems research* in Mumford et. al. (eds) *Research Methods in Information Systems*, (Proceedings: IFIP WG 8.2 Colloquium, Manchester 1 -3 September, 1984) Amsterdam, North Holland.

Hjorland, B (1992) The concept of "subject" in information science. *Journal of Documentation* 48 172-200

Hjorland, B (1997) *Information seeking and subject representation: an activity-theoretical approach to information science*. Wesport Connecticut, Greenwood

Hjorland, B. (1998) Theory and meta theory of information science: a new interpretation. *Journal of Documentation* 54 pp606-621.

Hjorland, B. (2000) Library and information science: practice, theory and philosophical basis. *Information Processing and Management*. 36 pp 501-531

Klein H. & Myers, M (1999) A set of principles for conducting and evaluating interpretive field studies in information systems, *MIS Quarterly*, Vol 23, (1) March pp67-93

Kuhn,T., (1962) *The Structure of scientific revolutions*. Chicago, University of Chicago Press.

McArthur,T., (1992) *The Oxford companion to the English language*, Oxford, Oxford University Press

Myers, M.D., (1997) Qualitative Research in Information Systems *MIS Quarterly* (21) 2 June 1997 pp241-242

Rose, D., (1989). *Patterns of American culture: ethnography and estrangement*. Philadelphia: University of Pennsylvania Press

Walsham, G (1993) *Interpreting Information Systems in Organizations*. Wiley, Chichester.

Walsham,G. (1995) Interpretative case studies in IS research: nature and method, *European Journal of Information Systems*, 4, 74-81

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