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THE EXPLORATION OF RELATIONSHIPS BETWEEN INFORMATION

FULFILMENT & ORGANISATIONAL DESIGN

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THE EXPLORATION OF RELATIONSHIPS BETWEEN INFORMATION FULFILMENT & ORGANISATIONAL DESIGN.

Abstract

Purpose: The purpose of this paper is to explore the relationship between information fulfilment and organisational design.
Design/ Methodology/Approach: This exploration is undertaken in four ways. First, the early part of the paper places information fulfilment within the literature. Second, there is an attempt to further determine the meaning of Information Fulfilment. Third, the factors that impact on Information Fulfilment are identified within the context of organisational design. Fourth, empirical findings are reported in the form of a European project which investigated the "relationship" between organisational design and information fulfilment.
Findings: Information fulfilment is shown to be about the process of taking an intuitive "feel" and delineating a number of aspects which are concerned with what might be called emotion. Fulfilment is also connected with organisational roles and wider environmental issues
Originality/ Value: The contribution of this paper to the discipline of information management is that information fulfilment is found to exist and to be an important issue influenced by the design of an organisation
Keywords: Information Fulfilment; Organisation Design; Management.
Paper Type: Conceptual / Research Paper

Introduction

"I come to work. I have 23 tasks to complete and I want to feel I have at my fingertips all the information I need, pure and relevant, for me to undertake each task to the very best of my ability"

Many will find such a statement describes aptly how they feel about information at work. It covers several aspects, including information needs, accessibility, quality including what might be called emotion and, as an unstated background, the organisational context. This multi-aspectual thing is difficult to identify and inevitably has associations with cognitive and affective stages of information models. I am suggesting it be called "Information Fulfilment, " important in terms both of self-satisfaction i.e. fulfilment of role, and in terms of the overall success of the organisation. An initial introduction of the idea of information fulfilment has been made in Burke (2005; 2006), and this article continues that exploration. The above tentative attempt towards a definition does not imply that there is no need to explore or involve intellectually the user of the information. On the contrary, there is a need to determine the impact of what information the managers' within the organisation may make accessible, when information becomes available and other related issues. The challenge in this area is not only to provide sufficient information but also to avoid a situation in which bureaucratic complexity leads

to information overload, in which users "satisfice". (Simon, 1957). These aspects warrant sufficient importance to be dealt with separately and will form the basis of future papers

Information fulfilment (IF) is a complex, area which is difficult to define. Nevertheless this study makes a clear attempt to define the concept and then to use the concept, locally, for each part of the research. Information fulfilment can be thought of as having its roots in Aristotlian philosophy. Aristotle, writing in 335BC considered why an artefact (a thing) exists as it does. He proposed that there are four reasons for form – form being defined as something which causes a "thing" to be what it actually is. He considered first, the material the thing is made of – Aristotle called this the *material cause*; second, how it was built – *the efficient cause;* third, the shape of the thing – the *formal cause*, and fourthly the fulfilment of the maker's initial purpose – the *final cause*. Whilst each of these reasons are equally important it is this fourth reason for the existence of form – this fulfilment of purpose - that formed the initial idea behind information fulfilment.
In early studies IF was defined in simple terms as having "access to all the information needed in order to compete a task" (Burke,2005). This was further expanded in each of the studies as the concept became clearer and the definition became more grounded. For example, the definitions of what constitutes information fulfilment (for that group of people) was further explored in each of the studies to ensure consistency of understanding in each of the original research fields. Since then the concept has been further defined and the above vignette has been devised in order to provide both further clarity and an opportunity for us to identify more easily with the notion of information fulfilment.

This paper, however, is concerned with the continuing investigation of Information Fulfilment and we will now consider the two key of areas of "fulfilment" and "organisational context".

First, Information fulfilment as a feeling of "being fulfilled in a work role¨. This is in essence the emotional state of mind which underlies the initial quotation. Information Fulfilment in this sense has not been explored in any detail in the academic literature although there are of course many useful and relevant current information models. For example, Wilson's models (1981; 1987; 1999; 2005) cover many aspects, as indeed do other eminent scholars.

However, one distinguishing feature of Information Fulfilment which sets it aside from other characteristics in Information Seeking behaviour is that it is an expression about fulfilment of "higher" needs. The phrase "to the very best of my ability" might be deconstructed to include three things, doing justice to one's role; having a sense of justice to the field and the feelings of pride in making a contribution to the discipline or the enterprise, in addition to a mere feeling of satisfaction.

Consequently, the definition of Information Fulfilment is not an easy task and further analysis will be addressed later in the paper.

The second area of importance is Information Fulfilment in terms of the overall

organisational context. Many factors can affect Information Fulfilment such as organisational design and the vignette arises from an unstated background of organisational context, that is, the 23 tasks one must tackle are those that contribute towards the success of the organisation, towards helping it achieve its goals. The analysis of what leads to information fulfilment might also help the organisations to critique what it thinks are its goals, to achieve justice for the wider community or environment, and thus be ethical in the wider sense, and contribute to its reputation, sustainability and longer-term success. The word 'fulfilment' is used to reflect several of these things. It reflects fulfilment of 'information needs' that is having access to complete knowledge to undertake a task. It reflects a fulfilment of information quality requirements (purity and relevance) and that one can have confidence in the information. And it reflects the fulfilment one has in one's job as a human being. It also reflects that the organisation's needs and its duties in the wider world are fulfilled.

The shape of an organisation is the most fundamental aspect of organisational life which impacts significantly on members of the organisation; on the productivity of the organisation; on the culture of the organisation and the management of the organisation. In addition, the shape affects the organisation's capacity to compete, to be flexible in times of change and to adapt quickly to new technology. Information Fulfilment is not merely a personal feeling but relates to a person's ability to contribute to the overall success of the organisation. Thus, if the hierarchical shape is not given careful consideration, the combination of these factors could eventually result in the halting of organisational progress. Although many new shapes of organisation structures have been developed in order to take account of new methods and patterns of work, there is still a need for thought and evidence as to the nature of the relationship between the organisational design, in this case the structural hierarchy of the organisation, and the fulfilment of information needs through effective information management.

The purpose of this paper, then, is to explore the relationship between information fulfilment and organisational design. This exploration is undertaken in four ways. First, the early part of the paper places information fulfilment within the literature. Second, there is an attempt to further determine the meaning of Information Fulfilment. Third, the factors that impact on Information Fulfilment are identified within the context of organisational design. Fourth, empirical findings are reported in the form of a European project which investigated the "relationship" between organisational design and information fulfilment. Finally, the implications of the results of the project are followed by a discussion about the concept and the paper concludes with suggestions for further work.

Placing Information Fulfilment in the literature.
In order to place information fulfilment at an appropriate place in the literature it is important to consider what has already been discussed so as to establish that this intuitive issue has not been adequately explored nor even characterised. Although we could consider the concept of information from many angles for the purposes of our paper we

will choose to briefly look at major notable issues such as Information Modelling, Information Retrieval, Systems of Behaviour and Information Seeking.

Information Modelling
First Information Modelling is about information in terms of Data storage; Normalisation; Data Architecture; Ontological Modelling; Text Storage. Work concerning the retrieval of information is concerned with the processes of information retrieval which change as the search progresses. These studies considered information seekers institutional contexts, information problems, uncertainly reduction and styles together with issues such as speed; efficiency; accessibility; text searching; web searching and query languages. However this area does not deal with the higher intuitive characteristics which are associated with information fulfilment.

Information Retrieval
The information retrieval discipline is concerned with the processes of retrieval which change as the search progresses. Writers have concentrated on particular aspects of retrieval such as Uncertainty (Ingwersen, 1996; Kuhlthau, 1993) Serendipity (Rice, 1988; Foster, 2003) and Browsing (Levine, 1969). Retrieval studies are interesting and valuable in that they are usually of a practical nature, but emotive aspects such as Information fulfilment do not normally form part of this area.

Information Seeking
There has also been emphasis changed to an examination of the systems of behaviour which people use to seek information. A particularly important work in this area was that carried out by Ellis, (1989; 1993) which is summarized briefly as follows. Ellis examined information-seeking behavior of social scientists using primary material collected using semi-structured interviews. His results identified six types of information seeking behaviour, which he categorized as Starting; Chaining; Browsing; Differentiating; Monitoring and Extracting. These are useful categories and although the "pure and relevant" aspect of Information Fulfilment could be considered to be related to the "Differentiating" stage, other more emotional aspects are not within the remit of this model.

Information seeking is concerned with behaviour of humans when searching for information. It can be defined as a study of how (and where) people look for solutions to information problems. In general information seeking has been examined by a variety of authors and the pivotal ideas can be traced through publications such as the American Psychological Association Reports on Information Exchange, 1963- 1969, the British studies undertaken at Bath University in 1979 and 1980; the papers by Earle and Vickery, (1969) and later papers published in the 1970's such as those by Line, (1971) and Reason, (1974)

Wilson, (1996) reviewed the literature in information seeking behaviour in fields outside information science, namely psychology, consumer research, health communication research and innovation research. From this study, a new model of information behaviour was proposed. This study showed that an earlier model which he had proposed in 1981

needed to be expanded to what he termed the "person in context" stage i.e. the decision to actually seek information. The expanded model of 1996 thus examined in more general terms information behaviour rather than information seeking.

However even within the 1996 Wilson model, no mention is made of some important aspects of information fulfilment. The information seeking needs of the person come from the traits Wilson identifies as Psychological, Affective, and Cognitive. Although fulfilment certainly involves these, there is something more in the concept of fulfilment that these areas do not quite reach. Three things take Information Fulfilment beyond Information Seeking, doing justice to one's role; having a sense of justice to the field and the feelings of pride in making a contribution to the discipline. This is recognised from a motivation perspective by, for example, Maslow's (1943) hierarchy of needs and more fundamentally by the philosopher Dooyerweed (Basden and Burke, 2004)

Wilson's (1997), expanded earlier models to include an emphasis on information need relating to satisfaction in that the "experience of need can only be discovered by deduction from behaviour or through the reports of the person in need". The model allows for analysis of the context of the need e.g. the environment, the social role and the cognitive state of the person searching for information; the barriers the seeker may encounter and the actual behaviour of the seeker, adapted from Ellis's model of starting chaining, extracting etc.

However even within the 1997 Wilson model, the final stages are information processing and use. The closest suggestion is that contained in Wilson's 1999 review of information behaviour models where a "satisfaction/non satisfaction" (as discussed in the next section) end stage or a solution statement is suggested which would resolve the "uncertainty" that was originally present at the start of the searching process.

Although within Information Seeking many stages are explored such as level of task uncertainty; the stages and processes of seeking; the ideas of information use, exchange, and transfer, the users, the technology, the information resources the person needs, the work environment and so on, Information Fulfilment goes beyond these ideas and attempts to define the higher emotional feelings of information seeking. Established models are not enough to subtly define this emotional need.

Information Satisfaction
Information Satisfaction can be defined as "a perceptual or subjective measure of system success; it serves as a substitute for objective determinants of information system effectiveness which are frequently not available." (Ives, Olsen & Baroudi, 1983). In this way we might hope to give attention to the emotional and personal side of Information Fulfilment.

Information satisfaction goes beyond a measurement of productivity and is an attempt to talk about subjective matters by discussing intangible costs and benefits associated with the concept of satisfaction. It is about the level of satisfaction gained from bringing

together disparate relevant unstructured information in order to make decisions. How then does information satisfaction measure against information fulfilment? Information satisfaction is concerned with subjective issues and does cover information concepts concerning relevant unstructured decisions. However the concept of satisfaction does not address the deeper emotional issues of dignity, justice to the role and contribution to the field, nor is it really apparent that satisfaction does justice to the three aspects of "at my fingertips"; "purity" and "best of ability".

Other relevant areas
It is also worth mentioning the relevant theories in communication disciplines, such as what is termed "gratification theory" (Fiske, 1990), i.e. the way in which a mass of people, (usually an audience) has "complex needs "that it needs to gratify through various media. Diversion; escapism; emotional release; personal relationships: companionship and social utility are classified by McQual (1972) as categories of gratification whilst the social utility category encompasses the "work" category. Wilson (1999) comments that the categories " may have a cognitive component recognized in the concept of the need for cognition: the need to find order and meaning in the environment, which is also expressed as the need to know, curiosity, the desire to be informed."
The situational contexts of information seekers have been studied but in terms of learning styles in mediated online learning. (Spink, Wilson, Ford et al. 2002) This study examined human information seeking processes and looked at aspects such as uncertainty and the analysis of cognitive styles of learning. Pask's work on learning styles was also reviewed for relevance to modern information seeking (Ford, 2001) in that the appropriate kind of technology is now widely available in educational institutions, making it easier to conduct they type of research proposed by Pask's models.

There is then great diversity in both the approaches and content of Information Seeking research - yet the fulfilment of information needs are critical as information fulfilment can be seen as the next logical action which takes place after the established final stages of information seeking. Whilst information satisfaction is a critical concept within information seeking, information fulfilment is different in two distinct (and perhaps paradoxical ways). First, information fulfilment has a wide scope in that the term has implications for the organisation and the wider environment, and second that the term is also very personal and has some relevance to the way in which the user relates to the information as fulfilment implies an emotional state of mind.

Information Fulfilment.
Having introduced the idea of information fulfilment and considered the placing of the concept in the literature, it is now useful to further discuss some of the issues and characteristics of Information Fulfilment which go beyond all steps mentioned above. First, we can look again at the definition given earlier:

"I come to work. I have 23 tasks to complete and I want to feel I have at my fingertips all the information I need, pure and relevant, for me to undertake each task to the very best

of my ability¨

So far we have connected Information Fulfilment to a variety of characteristics. These are, "at my fingertips", "pure and relevant", and "to the best of my ability". The first two characteristics are of a practical nature, whilst the third is linked to what appears to be an emotional state of mind. We have attempted to further analyse the emotional issues associated with Information Fulfilment into areas such as dignity, having a sense of doing justice to one's role and the feelings of pride in making a contribution to the discipline. We shall now look at these in more detail.

If we are then talking about justice to one's role, justice to the field, and contribution to the discipline, then we are perhaps referring to fundamental work roles. Is information fulfilment then merely a fulfilment of a work role? To answer this question we need to further examine the definition. There are three key phrases in the vignette that distinguish fulfilment from other information processes.

The first phrase, "at my fingertips¨ is about the availability of required information. It means that one does not have to go seeking it, which is not merely a matter of consumption of valuable time but, more importantly, about interrupting ones flow of thinking or other commitments. It is similar to Heidegger's view of 'at hand'. Wilson's model does not include this issue although at the time this was perhaps not a pertinent issue.

The second phrase, "pure and relevant¨ is about confidence that the information that is 'at my fingertips' has a sense of "added value" i.e.information that has been through some kind of critical evaluative process. This can be seen in both this positive way yet also could have a negative perspective i.e. information that has not been distorted, reduced in meaning, or otherwise filtered, interpreted or processed. Ideally, if information has been through a critical evaluative process then the information is primary matter from an original source, with no intermediary stage, though it is recognised that this might not always be feasible. Wilson does acknowledge the importance of relevance, but that he proposes a mediator between user and the information resource means that his model can never achieve the ideal of purity.

Finally the third phrase, "to the best of my ability¨ is about an inherent need to feel proud of a job well done. As suggested in the introduction, this might have at least three elements, of doing justice to one's role, doing justice to the field or domain of information, and making a contribution in one's enterprise or discipline that is worth making. Other elements might also be present. In Wilson's model, this can be said to be subsumed into affective needs, but that does not allow the analyst to differentiate these elements of dignity, and there is a danger that it would usually be reduced to mere feeling. Whilst Hjorland's (2002) work on socio cognitive perspectives is also relevant, this work does not allow for all aspects of fulfilment.
Connected to the sense of doing justice to one's role, of doing a good day's work, and a job well done is the feeling of "dignity", the state of being worthy of respect from self and from the (academic) community through a sense of achievement and peer review.

When these characteristics are combined they then can result in emotions associated with making a contribution to the discipline. It is not that one is consciously aware of Information Fulfilment in pursuit of the 23 tasks, but rather, that a deep sense of it would be experienced It is when the underlying emotional needs which deal with concepts of self worth, self respect and dignity have been fulfilled then it is possible for information fulfilment to be achieved.
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Whilst we have established that Information Fulfilment implies an emotional state of mind, the issue of information fulfilment as a paradox needs to be considered. Information fulfilment has a wide scope in that the term has implications for the organisation and the wider environment, and second that the term is also very personal and has some relevance to the way in which the user relates to the information. To this we could add the phrase ". "A person, undertaking tasks in a social environment (organisation) feels that they have all the information needed to undertake these tasks".

The wider environmental issues of information fulfilment deserve equal consideration. These can only be looked at in terms of the myriad of relevant issues surrounding the organisation, of which there are many. In this paper, one issue has been chosen – that of the design of the organisation and this is considered in more detail later in the paper.

Factors that Impact on Information Fulfilment.

So far we have introduced the idea of information fulfilment, considered the placing of the concept in the literature and discussed some of the issues and characteristics of Information Fulfilment. In order to better understand the notion of Information Fulfilment it is now useful to consider the factors that influence fulfilment within an organisational context. We can do this by identifying the factors that influence the function of an organisation. These may include the organisational design which influences the shape of the organisation; the type of industry in which the organisation operates; the strength of competition; the barriers to entry; the external environment and many issues concerning culture, trust and power. From all of these I will suggest one factor to examine in more detail, that of organisational design. Other factors will be looked at in future work. Levels of Information Fulfilment can be influenced by types of design of organisations and decisions about design are related to fundamental ideas about how organisations function. In the following sections three very different views concerning organisational function will be considered, those proposed by Tushman and Nadler, (1978), Etzioni, (1964) and Blau and Scott, (1966).
One of the most useful studies which placed the organisation directly within the context of information processing was the study mentioned earlier by Tushman and Nadler. They suggested a set of three major classifications (known as assumptions) about how organisations function. First, they found that organisations are open social systems which need to deal with areas of uncertainty and in order to deal with this uncertainty the organisation needs to develop information processing mechanisms, which can deal with external and internal areas of uncertainty. Second, they proposed that organisations can be viewed as information processing systems in order to facilitate the effective collection,

processing and distribution of information. Third, they found that organisations can also be broken down and viewed as a set of sub organisations or divisions and departments. This view about how an organisation functions portrays an organisation as an "information processing entity" and this emphasis on information processing is one of the factors that affect aspects of Information Fulfilment.
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Other studies have been undertaken which attempt to classify organisations in a different way. For example, Etzioni, (1964) examined relationships between power and involvement. He classified the functions of organisations into three main types – the coercive type, e.g. prisons, the normative type e.g. private schools, universities and the utilitarian type of organisation e.g. restaurant, shops. He also considered levels of involvement to the organisation such as alienative, (not wanting to be involved) calculative (usually involvement for money or similar rewards) and moral involvement (such as spiritual commitment).
Etzioni's view of organisation, known as "power centres" is helpful as it offers a way of analysing types of power relationships and levels of commitment in the organisation which can be reflected in the structure of the organisation, or considered before a new or changed organisation structure is introduced. Etzioni's "power centred" organisations are likely to produce strong cultural factors which affect the relationship between individuals, the organisation and information fulfilment.
The third main set of classifications is that proposed by Blau and Scott, (1966). Their definition of the function of an organisation was based around who benefits from the function of the organisation. They classified four types of organisations- mutual benefit associations; business concerns; service organisations and commonwealth organisations. Within each of these categories they identified a "prime beneficiary" e.g. in the business concern the person who owns the business would be the person to benefit most from the function of the organisation, within the service organisation the people who use the organisation e.g. in a public library the general public living within that area, would benefit the most from that organisation and so on.
This classification of the function of an organisation is based on a model of "need, provision and reward". This model highlights the different groups of beneficiaries of the organisation and thus affects information fulfilment in this way. The organisation structure can thus be designed around the different needs of the beneficiaries - or as considered jointly by other stakeholders of the organisation.
Organisations however cannot function without the effective and efficient use of information. It was recognised that this term and the relationship between the management of information and the eventual fulfilment of information needed to be validated by both theoretical and rigouress empirical research. In order to determine this, we will next focus on aspects of organisatinal structure and Information Fulfilment.

To assist organisations in the achievement of Information Fulfilment, we must first find a way of helping organisations categorize the relationship between organisational design and Information Fulfilment and this is considered in the following sections.

Empirical Findings: Towards modelling Information Fulfilment

This section draws together the analysis and findings of the empirical research and moves towards attempting to categorize the relationships concerning the design of organisation structures and information fulfilment. Whilst we have established that many factors influence Information Fulfilment, the empirical research reported here concentrates on the single factor of organisational design. Furthermore, what is reported here can be used as an exemplar for future work in this and related areas.

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The research, which took the form of a European project, described in more detail elsewhere (Burke, 2005) was collected during 2002- 2005 in three "ethnographic fields" of broadly similar university departments, working within the area of information systems and management. The work was undertaken in two phases – Phase 1 which is complete and Phase 2 which includes additional countries and is ongoing work. The universities in Phase 1 were located in three different countries, Russia, Poland and the UK. The aim of the European project was to

"Suggest a new information model which can be used to analyse the relationship between the structure of an organisation and the impact of that structure on what is known as Information fulfilment".

Decisions about collecting the data were made by classifying the "data sets" in the following ways:
- Classifying the actors in the field by status. In the chosen educational field, there were two sets of actors, namely "staff and "students".
- Classifying Information Fulfilment into four key areas:
  - Formal academic information
  - Informal academic information
  - Formal social information
  - Informal social information

- Identifying the type of organisation structure of the University

The Departments chosen for this study were primarily associated with the field of information science. There were two groups of participants, the staff focus group and the student focus groups.

The data compilation was based on a series of questions which were grouped around the following themes – understanding of the term Information Fulfilment; access to formal and informal academic information; access to formal and informal social information; ease of finding information under each of these categories; and knowledge of the organisation structures. These were chosen as each area was considered to represent the four main areas where fulfilment could naturally take place in a work environment. The areas were considered to be representative of both formal and informal interaction and would therefore cover everyday occurrences.

The study investigated the success of the categories of information and ranked responses by percentage which were then classified into three levels - high, medium and low. As the research attempted to propose a new part of an information model, it was important to consider details of the background and flavour of each of the fields, in order to compare differences and to ensure that Information Fulfilment was a robust "real" concept, relevant in all three fields. To this end, the ethnographic tool was that of participant observation and the approach that of the symbolic interactionist where symbols and rituals are all interpreted primarily within the context of the individual. Despite major cultural differences, the case for the existence of information fulfilment in established models was found to be useful in each of the fields, and indeed a natural and essential part of the information process, regardless of the context, the country and whether people were aware of any "formal" information processes.

The three fields were found to have different types of organisation structures, based on official sources and information from the respondents about the atmosphere and culture of the organisations. The field members were asked and observed about different types of information and in particular, the level of information fulfilment found within each of the information category. The results are presented by analyzing by categorizing the levels of information fulfilment with the three types of information.

The data from both of these groups was collected by using symbolic interactionist participant observation throughout the period in the form of transcripts of conversations, field notes and naturally occurring interactions. After a series of refinements, the final results are as reported in Figure 1.

Type of Information	Bureaucratic Structure	Entrepreneurial Structure	Matrix Structure
Formal Academic	High	High	Medium
Informal Academic	Low	High	High
Formal Social	High	Medium	Low
Informal Social	Medium	Low	Medium

Figure 1 European Project Results: Phase 1: Levels of Information Fulfilment

The results can be further refined by examining which types of structure gained the highest levels of Information Fulfilment. In this way, the new information model, which was the aim of this research, is presented in the form of a matrix, (Figure 1) which, it is envisaged will act as a starting point for further research in this area.

This matrix can be used to analyse the relationship between the structure of an organisation and the impact of that structure on what is known as Information fulfilment. From this model, it can be concluded that each type of organisation structure has its own merits, depending on the type of information used in the organisation and the way in which communication is likely to take place.

Implications of the Results

Russia
There are many advantages and disadvantages of bureaucracies, yet this is the model that seemed to work the best for formal information in a culture which was quite controlled. A well documented ethnographic observation is that of the affects on morale of working in a stifling bureaucracy. (Crozier, 1971; Morrill, 1995; Burris, 1983). As Hodson (2004) states "the most repeated relationship uncovered by workplace ethnographies is the strong role of lack of autonomy as a corrosive effect on employees experiences and attitudes" This was reflected in the Russian study where there was little freedom, and rules were followed, yet there was a high sense of order and high information fulfilment.

This study raises the issue regarding the re-emergence of the bureaucracy, as a soft bureaucracy a structure created with all the advantages of a traditional bureaucracy but with the negative constructs carefully filtered and controlled. Castells (2001) noted this along with writers such as Heckscher and Donnellon, 1994; Courpasson, (2000) and Garsten and Grey, (2001). Current work in this area is receiving considerable attention in the relevant literature, for example Courpasson and Reed, (2004) and Hodgson, (2004). Hodgson in particular is interesting in the note to exercise caution "to cast doubt on the viability both of a bureaucratic utopia and of the totalizing "iron cage" of some critical theorists wherein bureaucratic and post-bureaucratic technologies blend seamlessly together". Nevertheless, the results from the Russia study showed that formal aspects of information giving and receiving were very successful in establishing high levels of information fulfilment.

Poland
 The Entrepreneurial bureaucracy had equal success in both the formal and informal academic fields. This is perhaps a reflection of the state of the Polish country as it moves slowly towards a form of Westernised democracy and informality. It would have been interesting to have undertaken a similar study a few years ago to establish whether Poland would in fact have had similar scoring to the Russian results. The social categories did not score highly. The sense of pride was strong in Poland and the sense of a huge effort to modernize the country and the particular city where the fieldwork took place. Similar field studies have shown that people in organisations where society is beginning to alter, aim to have enthusiasm and take pride in their work (Applebaum, 1981) and this was certainly demonstrated in the Polish study. As stated earlier, the entrepreneurial organisation has developed since Mintzberg work on the structuring of organisation in the early 1990's and the entrepreneurial process has been defined as the process of "using innovation to create value by bringing together a unique bundle of resources to exploit an opportunity" (Stevenson et. al., 1985). The resources although concrete in terms of the

new buildings could be seen as resting with issues of trust and about having the determination and courage to embrace changes and to encourage new ideas. Indeed, a number of authors have shown that entrepreneurs do have a tendency to reflect the "characteristics of the period and the place in which they live" (Filion, 1997; McGuire, 1976) Finally, if an entrepreneur should "learn from what they do," (Collins & Moore, 1970), then the success of the informal academic information may well be the start of the success of the more informal channels in future years.

Britain
The results also show that informal information is now a more successful way of communicating in an organisation and it was notable that this was high in the younger organisation which was technologically competent, no doubt as a result of the proliferation of email and other mobile communications technology in organisations. However, within the British study the cultural analysis clearly showed a sense of the importance of "belonging to a group" and making decisions based on group participation to varying degrees. This strong "need to belong" could, ironically, be another reason for the success of the informal communication, as the pressure to belong intensifies, and informal communication becomes increasingly important.

The British organisation was classified as having an organisation structure most closely allied to that of a matrix operating within a bureaucracy. The matrix was defined as an organisation structure where a "simple chain of command (a bureaucracy) is replaced by that of a multiplicity of reporting relationships". (Pass et.al, 1991). Such a structure was prevalent in the British study as it created the space necessary for collaborative, creative writing and innovative project work. The flexibility of the department and the autonomy of the staff both contributed to the success of the informal communication and the existence and validity of the matrix structure which operated within the University bureaucracy.

The aim of the European research project was to suggest a new information model which can be used to analyse the relationship between the structure of an organisation and the impact of that structure on information fulfilment.
An argument is made for the theoretical integration of Information Fulfilment as the final stages of information processing models. This is important as it is posited that Information Fulfilment should become an accepted part of information searches. From this, the data collected during the fieldwork is analysed using various models. The models shows that three categories of relationships are possible (within this research study) which vary from strong levels of information fulfilment through to medium and weak levels of fulfilment. The final refinement of the results displays a matrix of the levels of information fufilment. As organisations realize the potential of high information fulfilment and this is taken into consideration when creating or changing an organisations structure, this matrix would be a useful tool to guide the choice of the shape of the structure taking into accounts the likely modes of communications.

The exemplar was demonstrated in an educational setting and future research would be useful which examines similar models in business and industry settings. Finally,

organisation shapes are, of course, only one significant factor among many other variables which strongly influence levels of Information Fulfilment.

Rich insight and general trends.
The work offers interesting insights and certain trends are shown from the "snapshot" of the ethnography.

The author engaged in deep and prolonged immersion in the work by careful consideration of the human, social and organisational aspects action of information technology and their applications.
Rich insight is offered into the human social and organisational aspects of information management in eight ways, thus reflecting the eight key research decisions. First, the decision to take an interpretist stance allowed the contexts and the social surroundings to be entirely rooted within the fields. This allowed for human, social and organisational issues to be studied in a very "real" way. This was a fundamental and critical issue regarding the success of this research.
Second, the decision to use ethnography as the research tool was successful in allowing the human, social and organisational aspects to be highlighted. This methodology examined the way in which information was used in the organisation by the people and provided an appropriate tool to record the social context of each study.
Third, participant observation was an ideal research tool as there were no "barriers" formed to relationships. People were observed in their natural habitat, in (their) normal familiar territory. Levels of immersion were identified to attempt to raise awareness of natural assumptions and the difficulties of undertaking this kind of research.
Within the sphere of ethnography there are a variety of paradigms and the one which was chosen was that of the symbolic interactionist participant observer. This allowed a research lens to be adopted where all symbols and rituals were viewed from the actor's viewpoint and within the culture and the context of each situation. The cultural framework which was offered formed the fifth decision as this allowed a particularly deep and rich insight into the human, social and organisational aspects of information management.
The final three decisions were about the research analysis process, and formed the basic underpinning of the work. For example, the social setting of the studies were micro-substantive i.e. study of a particular organisation (Becker, 1953; Strong,1979; Werthman,1963) the chosen ethno- record format was "topical headings" and the data sorting was completed employing a method of Blumer's (1954) "sensitising concepts". Using Blumer to sort the data assisted with the final analysis of the research and formed one of the richest pictures of the cultures to emanate from the study.

Third, the research, on reflection, did not contradict conventional wisdom but instead showed trends towards certain factors. For example, it was not surprising that both academic and formal types of information gained high levels of Information Fulfilment in the Russian purest bureaucracy, but the research did provide a rich insight into the background and the culture of a current Russian educational organisation. The Polish entrepreneurial bureaucratic structure scored highly in both formal and informal academic information which was quite surprising and interesting that this kind of

structure existed in Poland.   This trend was a move towards more freedom which in fact reflected the economic and political state of the country. The British bureaucratic matrix scored the highest on academic informal information which reflects a trend towards informality and openness in UK higher education. However this is a subjective judgment and it is also to be recognized that the level of immersion in the UK field was high, classified as "Native: Familiar", as the UK ethnography was in a familiar setting and the researcher has worked in the UK higher education sector for twenty three years. This was therefore the most difficult ethnography was to undertake, nevertheless there was attempt made, and to some extent achieved to provide a rich understanding of that particular field.

Inevitably the time span was limited but this proved to be a useful framework in which to work and compare results. Of course social phenomena are "not homogenous through time" (Checkland and Howell, 1998), and so what is presented is a picture of life at a certain moment in time and space. The data can be quantified as follows:

Russian field: Total 110   (90 students, 20 staff)
Poland field: Total 77   (60 students, 17 staff)
UK field: Total 66   (55 students, 11 staff)

The grand total of 253 people formed this ethnography, and each of the ethnographies was undertaken for the identical period of 10 days. It was unfortunate but inevitable that the exact numbers of participants could not be identical in each of the fields, but the study was a snapshot of life at a particular time and any attempt to "match" figures would have created an artificial social setting which would have harmed the authenticity of the ethnography. This decision was made in order to give a "flavour" of the study to the reader and from this a variety of insights have emerged, rather than presenting an appendix of sterile analysis.

There was considered to be sufficient quantity of data for insights to emerge. The study can be repeated and with each progressive study the concepts and ideas are further refined. This is seen as both a limitation and as an advantage in that the research is both active and progressive.

The limitations of the study were carefully balanced against the richness of the research. Each case study attempted to paint a picture, to relive the ethnographic experience. This was achieved by citing a very full picture of exactly what the responses were to the questions along with comments from the observation.

Participant observation allows the researcher to "immerse oneself in the life of the people one studies" (Lewis, 1985)

It is however worth considering the affects of the levels of immersion in the fields and how these affected the opportunities for insights to emerge. The Russian level was classified as New: New, (new to the country and new to the university), the Polish level as Familiar: Familiar (familiar with the country and familiar with the university) and the British level as Native: Familiar (Native to the country and familiar with the

university).Theses levels were reflected in the levels of difficulty which the researcher experienced in carrying out the ethnography. The Russian one was certainly the easiest, whilst the Polish one was a little more difficult and the British one was uncomfortable in the sense of being aware of colleagues and other non related issues. However, by bearing in mind the issues note by Ball and Ormerod (2000) concerning factors such as situatedness, richness, participant autonomy openness, personalization, reflexivity, self reflection, intensity, independence and historicism, the researcher did attempt to maintain a professional stance at all times, and to put aside assumptions and biases as much as possible. Issues concerning trust were prevalent in the studies and this is commented on by Cooper, (2004) who compared several studies of participant behaviour and commented that the time needed to establish trust on studies such as this is an important consideration and one that needs to be carefully balanced with other factors.

Discussion & Conclusion

The purpose of this paper was to explore the relationship between information fulfilment and organisational design and this has been achieved by discussion of various aspects of Fulfilment. For example, it has been possible to create a succinct definition of Information Fulfilment that may need further work but is a reasonable description and this definition has provided an opportunity to analyse various important characteristics. It has also become clear that the current literature on information seeking is not sufficient to fully characterise Information Fulfilment. Information Fulfilment has been shown to be about the process of taking an intuitive "feel" and delineating a number of aspects which are concerned with what might be called emotion. Fulfilment was also found to be connected with organisational roles and wider environmental issues and we have demonstrated how issues of Information Fulfilment relate to organisation design.

Further work is of course needed to expand on the ideas in this paper. For example, there is more work to be done on delineating the aspects and links with other issues need to be explored. The European project demonstrated that levels of Information Fulfilment were an important part of the working life in all kinds of organisations, and there has been shown to be some kind of relationship between levels of fulfilment and the design of an organisation. The empirical research project is ongoing and is currently in Phase II which includes additional European countries.

The contribution of this paper to the discipline of information management is that Information Fulfilment is found to exist and to be an important need influenced by the design of an organisation. Inevitably, this is the start of a journey towards a deeper understanding of this area. It is noted that in Wilson's recent paper (2006) he asks the question "Where does human information behaviour research go from here?" This paper whilst not an original attempt to answer that question inevitably perhaps offers interesting insights.

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