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Managerial Subjectivity and Information Systems: A Discussion Paper

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MANAGERIAL SUBJECTIVITY AND INFORMATION SYSTEMS: A DISCUSSION PAPER

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Abstract

The 'information' of an information system does not have a single or static existence, it holds multiple meanings for those using the system. This paper utilizes a critical theoretical perspective to examine the over emphasis of managerial perspectives on Information System usage. Within the field of Information Systems, the position and relationship of the manager to information is perceived as the primary analytical position for understanding an information system in its totality. This managerial perspective on the system is the foundational Management Information Systems (MIS) model and was developed to interpret system throughput and, as a result, utilizes a static and linear approach to interpreting the meaning of information. By examining meaning and information as an aspect of the socio-cultural environment described as the 'post-modern condition', researchers are able to critique static models. Conceptualizations, such as this, are discussed as being a consequences of the modernist framework that underpins and shapes the field of IS (Information System). This paper critiques the centrality of the managerial perspective and its dominance within this field of research. It is argued that by incorporating other theoretical positions, such as 'consumption', into the definition of the system we alter the understanding of that system. This enables a paradigmatic shift towards a more thorough 'user'-based consumption analysis. Consumption analysis accommodates the fluidity of meaning that a diverse variety of social processes contribute to any information system.

Keywords: Systems theory, management, subjectivity, information systems, consumption analysis, end user analysis

Information has no intrinsic value; any value comes only through the influence it may have on physical events. Such influence is usually exerted through human decision-makers.

(Emery 1971, 1)

Methodology

The objective of this paper is to critique a core assumption of Information Systems (IS) research: that the information within a system has static meaning. This discussion follows the existing systems theory debate introduced by Checkland and Holwell (1998) and extends the issues surrounding 'simple' versus 'complex' systems analysis. Within this framework, it also questions the assumption, made throughout the literature, that information systems exist within static modernist frameworks. By utilizing qualitative analysis and drawing upon literature found in Information Systems, Organisational Analysis, Post-modernism and Systems Theory these concerns can be addressed. The theoretical grounding for this discussion relies upon the systems-oriented theories of Luhmann (1995), and the consumption analysis approaches of Baudrillard (1988), Harvey (1989) and Lyotard (1993). This work is an adjunct to my current research that considers the relationships between Information Systems, information consumption and cyberspace.

Introduction

Information systems (IS) teachers, learners and practitioners would be familiar with the foundational model of the information system (Figure 1).

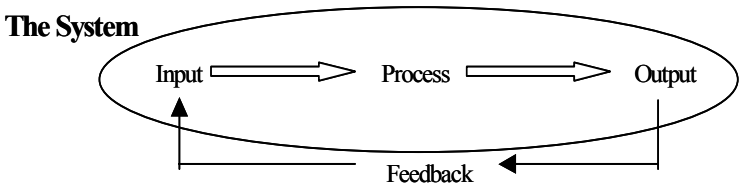

Figure 1. The Foundational Model of the Information System

This model utilizes a through-system position, with information entering through an input mechanism and, then, moving on to output. Systems operating within organisations are usually considered open with recognition that the system dynamically interacts with the surrounding environment (Robbins & Barnwell, 1994). The system's boundary delineates internal elements from environmental conditions and operations external to the system that impact upon the system as a whole. This boundary is however somewhat permeable. Feedback can, and should be, an integral component of the information system. Within the boundaries of the system, information is processually transformed from input into output. Systems developers plan for information that is taken into a system to be altered in predictable and *systematic* ways in order to reach output. Integral to this initial assumption, the meanings and purposes associated with specific information is also assumed to be fixed. For example, Scott and Walsham's (1998) study of the UK banking sector and the shifting boundaries of the computer-based decision support system that was incorporated in corporate lending processes, highlights the expectations of the systems developers for fixed meanings within these systems. When the loans manager inputs the data gathered from an interview with banking customer or clients' management records, they presuppose that there is a fixed and limited set of meanings to be found in the entry data. This data is systemically bound providing information to, for example, the customer's income level. In this example, the information is filtered through fifty-two lending advisory screens which enables the decision support system to analyze the borrower's capacity to service their debt (Scott, Walsham 1998; 179-180).

Many systems designs rely on the fact that there will be no alteration to the meaning of the input information. Similarly, internal operational information used in enterprise resource planning (ERP) systems assumes that a fixed meaning for complete management control can be achieved (see Fleisch, Powell 1999). However, from a non-managerial perspective the purpose and use of information within these systems do not necessitate any single complex of meanings. There are an array of meanings that the user may interpret from, and into, a system and its usage. The information of a system is, consequently, dynamic.

While the foundational IS model is an extremely useful presentation of elementary systems theory and its application to the IS discipline, the model is simplified and outdated (see also Galliers, 1987; Checkland & Holwell, 1998). The model is atavistic in its usefulness for the practical understanding of information systems that operate in 'real life' organisations. Systems theory is not discussed here in the dichotomous form that is found in the 'soft' and 'hard' systems debate. In place of this binarism the interpretive position of social constructionists is explored. The assertion that information holds multiple meanings is presented in a post-modern context, challenging the linear association of history with meaning construction (Baudrillard, 1994). This critical position provides the ability to reflect on the impacts and constraints of past discursive positions. Post-modernism enables the identification, and use, of many taken-for-granted positions that are to be found within modernist frameworks (Baskerville, Travis & Truex 1992). It is only now as participants of the 'post-modern condition' that we can critique and question static models of systems usage.

Systems Thinking and Information Systems

An important aspect of IS analysis is the ability to apply systems thinking to the social and technical operations of information sharing (Hirscheim & Klein, 1992). Systems theory requires a bounded site of analysis (Heylighen, 1998). This encapsulation reduces the endless combinations and interactions that are seen within complex systems. General systems theory applies boundaries to incorporate a minimal, but holistic, position of analysis (Heylighen 1998). System theory has been applied in information systems research in both 'hard system', 'cybernetic' approaches and as a 'soft system' (see Checkland and Holwell, 1998 for a history of systems thinking in information systems development). The importance of the work done so far by IS theorist's such as Checkland, Vickers, Cougar, Wood-Harper, Antill, Avison, Schafer, Lee and others is acknowledged in this paper. However, attempt is made here to also explore the systems debate from an interpretivist position and to question the assumption that information is historically inter-related to meaning (Vickers in Checkland and Holwell, 1998). Acknowledging the plurality of meanings that can be found in information is at odds with the view of Vickers who describes information, when it is utilized for managerial goals, as being historically linked to the manager's own experiences. This single subjective position

dominates the understanding of information in much of the IS field and grounds the meaning of information to a specific interpretation: that of the manager (or management). By utilizing Vicker's paradigmatic position, the manager's subjective interpretation is legitimized as the best for the system and, as a consequence, for the understanding of a system's operations.

Modernism Versus the Fluidity of Postmodernism

Post-modern perspectives on information systems and organisational practices differ from modernist approaches because the concern is towards an understanding of the fluidity that theoretical perspectives imbue (Foster, 1985 ix). Questioning whether an information system is solely a methodological concern or whether they are social constructs with particular cultural and historical meanings provides another frontier for understanding users' experience of information systems (Allaire & Firsirotu, 1986). However, the detailed consideration that post-modern analysis requires can prove beneficial for disentangling the impact that modernist perspectives, both methodologically and socio-culturally have on information systems (Myers, 1997). Significant considerations, for this form of analysis, include the impact of meta-narratives that perpetuate particular forms and structures. (Kraft & Truex 1994, Hassard 1993, Cooper 1989, Cooper & Burrell 1988). The positivist knowledge assertions found in meta-narratives assume that there are solid monolithic social relations, 'them' and 'us', that consequently reinforce the framework of 'otherness'. This discourse is also tied to claims for a persistent and 'knowable' reality that is both objective and 'external'. This stands in contrast to post-modern claims regarding the mutual (social) constructions of 'reality' and the uncertain association signifiers (the word) and signified (the concept) in imprecise processes of signification. The subjective position of the 'manager' can only provide partial illumination to the full range of interpretive positions that exist within information systems (Nurminen, 1997, 1994).

Table 1. Specific Elements of Modernity and Postmodernity Relevant to Information Systems as Interpretrational Positions of Opposed Tendencies (after Harvey, 1989)

Modernism	Postmodernism
Economies of scale/Hierarchy	Economies of scope/Anarchy
Monopoly capital	Entrepreneurialism
Purpose/design/Mastery	Play/chance/Exhaustion
State power/Trade unions	Financial power/Individualism
State welfarism	Neo-conservatism
Ethics/Money commodity	Aesthetics/Money accounts
Materiality	Immateriality
Production/Originality	Reproduction/Pastiche
Authority/Blue collar	Ecelectism/White collar
Avant-gardism/Interest group politics	Commercialism/Charismatic politics
Semantics	Rhetoric
Centralization/Totalisation	Decentralization/Deconstruction
Synthesis/Collective bargaining	Antithesis/Local contracts
Operational management/Single task	Strategic management/Multi task
Mass production/Technical-scientific rational	Small-batch production/Pluralistic otherness
Specialized work/Collective consumption	Flexible worker/Symbolic capital
Representation/Industry	Self-reference/Services
Protestant work ethic/Mechanical reproduction	Temporary contract/Electronic reproduction
State interventionism/ Industrialization	Laissez-faire/Deindustrialization
Internationalism/Permanence/Time	Geopolitics/Ephemerality/Space
Homogeneity/Detailed division of labour	Diversity/Social division of labour

Production Analysis Versus Consumption Analysis

Analysis of system operations and information systems generally utilizes a modernist-inspired approach that emphasizes interpretation through production-oriented processes (see Alter, 1996; Hirscheim, Klein, Lyytinen, 1995, 10-40). The information system is understood through its capacity to produce information. The process-driven approach restricts observation of a system to its data, its production and the manner it is manipulated. The objective of the system is achieved when the end product is

effective and produces the desired outcomes. These outcomes are generally assessed from a managerial perspective while other users are reduced to components of the systems' analysis. This position reflects much of contemporary Information Systems thinking (see Alter, 1996; Hirscheim, Klein, Lyytinen, 1995; Achterberg et. al. 1991, Morgan & Smircich, 1980) where, in many cases, the assertion is that there is flexibility outside this position. This claim is justified in the name of practical applicability. The introduction of techniques of consumption within the system's framework challenges these claims by shifting analysis away from the processes of production and the privilege of the manager. Considering less privileged positions provides a plethora of alternative interpretive positions. These positions, enable the user to exist, not only, at the system output and an aspect of managerial consideration, but, also, as the owner of the system and its input.

What Is Consumption Analysis?

Consumption is a social phenomenon extensively explored by Bourdieu in *Distinction* (1989) and Veblen in *The Theory of the Leisure Class* (1899) (cf. Miller, 1987). Consumption is equally an historical development as 'modernism' and 'postmodernism'. Veblen's interpretation of consumption is based on a specific type of consumption and its association with the leisure class in Europe in the 1800's. The luxury of leisure, Veblen claims, came into existence because industrialization enabled some individuals to absent themselves from work. Veblen was interested in displays of wealth through *conspicuous consumption* by the aristocracy of the time. He revealed that through patterns of consumption this group of individuals enabled themselves to be distanced from a world of labour necessity. Exploiting necessity, which ironically, were the foundations of their fortunes. These acts of conspicuous consumption enabled the aristocracy to distance themselves from the *nouveax* (or new) rich who had recently acquired their fortunes through industrial methods. In contrast the new rich were obliged to display their wealth to assert their social pretensions. Of particular importance for Veblen were the "matters of controlled taste". "Good taste became associated with the expression of distance from the old world of work, the practical or the natural world, and was termed 'refined' or 'cultivated', being disassociated from that which could be regarded as cheap" (Veblen in Miller 1987, 148). The significance of such stratification was the desire, and practice, by the lower groups in the social hierarchy to imitate more prestigious groups. These sentiments reflect the initial development of a perception of 'quality' by users. Veblen's position foreshadows the mass culture studies of the Frankfurt school of thought.

Consumption is important for post-modern theory (Jameson, 1984) and reflects broader change occurring in the understanding of cultural meaning and social relations. These changes, in turn, provoke an analytical shift towards consumption. Consumption analysis moves beyond input and output towards an emphasis on usage and internalization. However, consumption analysis is not the simplistic association of object to subject. Understanding consumption, requires a broader social examination. This position can be best exemplified by consumption, in a culinary sense, of a plate of food. To utilize consumption analysis the researcher not only examines the insertion of food (object) into the mouth (subject), but also explores the many inter-related activities found in the symbolic representation of a particular food item and its relationship to the subjects and objects associated with the process of its creation.

By altering the focus of analysis, these broader concerns for information systems as social phenomena can be applied. Similarly, by shifting the central point of analysis of the information system, different interpretations of systems usage and information consumption occur. As Baudrillard (in Poster 1988, 21) announces

> *we must clearly state that consumption is an active mode of relations (not only to objects, but to the collectivity and to the world), a systemic mode of activity and a global response on which our whole cultural system is founded.*

Consumption analysis enables the incorporation of the user within a system. It is the act of consumption and its consequences that are of importance, for the researcher, to the organisation, society and the individual.

User Centered Analysis and Notions of Consumption

Consideration of the user in relation to Information Systems operation is not a new perspective. Hirschheim and Klein (1992) succinctly outline the theoretical and methodological progression from the *ad hocery* of early IS existence, to the technological driven positions of the 70s and 80s, to an array of social and human considerations in the 80s and 90s. Although the theoretical foundations utilized here, do not directly draw on the *Theory of Communication Action,* they have a "social and philosophical basis that systems development must be much more art than science because systems development relies on understanding the users' work language and other experiential knowledge that can be acquired only through participation in a community's forms

of life" (Hirschheim and Klein, 1992,304). The user-centric emphasis of consumption analysis calls for the acquisition of an understanding of the user's experience and their use of the system. From an interpretive position the researcher is required to observe discuss and confirm the user's experience in using a system. Specifically, research of this type must seek to uncover the rituals and symbolic meaning users ascribe to the consumption experience — that is, the use and exchange of information within the information system. This form of analysis can only be applied to operational systems, though an operational system can include the development and upgrading of complete systems, the analysis and development of less than fully operational systems, systems testing and "systems development life-cycle" applications. By bringing together consumption analysis, social process and information system theory a new perspective can be explored that challenges the current assumptions regarding the information of an information system.

Significance of Consumption Notions to Systems Thinking

The significance of consumption to systems thinking is found in its acknowledgement of the system as a socially-constituted entity. Information systems are more than the technical components of a system's infrastructure, they include the interplay between people, information, technology, knowledge and meaning. Considerations of all these elements in their entirety are boundless masses that are unable to be observed in any practical or holistic sense. However, by constructing permeable boundaries for the purpose of analysis and containment of the system, appropriate observation and investigation techniques can be brought to bear on the examination of a system. It is necessary to move beyond the static portrayal of information to acknowledge that information possesses a fluidity and multiplicity of meanings.

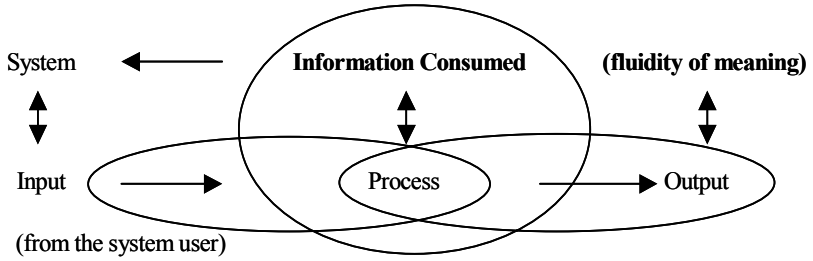

Figure 2. IS Information Consumption Model

Consumption and Reality

The consumption and use of the information within an information system impacts upon the user, which, in turn, enables the users to differentiate their own position from the environment and non-system oriented activities. A self-referential position of consumption can be identified, in which the information within the system and the system itself contribute to the meanings understood by the user (Luhmann,1995). Information within the system maintains its fluidity. However, when there is a disruption to the process of consumption the stability of the meaning of information within the system is disrupted, making use of the system problematic, or, even, redundant.

Prevailing, historically situated conceptualizations of information systems are process and output driven and limited to managerial perspectives. The shared understanding of the system constructs the community understanding of the information system. Baudrillard (1994) describes the post-modern condition with an assertion that a disruption of history and the emptying of references is occurring;

> *Whereas so many generations, and particularly the last, lived in the march of history, in the euphoric or catastrophic expectation of a revolution — today one has the impression that history retreated, leaving behind it an indifferent nebula, traversed by currents, but emptied to references. It is into this void that the phantasms of a past history recede, the panoply of events, ideologies, retro fashions — no longer so much because people believe in them or still some hope in them, but simply to resurrect the period when at least there was history, at least there was violence (albeit fascist), when at least life and death were at stake.*

This disruption of history challenges Vickers' (in Checkers and Holwell, 1998) understanding of information as a static and linear extension to a manager's referential experience. The broadening out of understanding to include other system users also expands the points of reference for information meaning. Consumption analysis and post-modern interpretations enables understanding of the variety of meanings within a system. In this context, meaning is not historically situated but dynamic and non-linear without defined points of origin. This problematises the dominant paradigm regarding the information of an information system and questions the assumption that information is static.

A further re-examination of Scott and Walsham's (1998) case study of the UK banking sector is indicative of the issues being discussed here. Scott and Walsham are critical of the impact of the introduction of new technologies, such as the Lending Advisor (LA) decision support system upon the UK banking sector. They conclude "that users of technologies, like LA, frequently find themselves in a position of dependency", where their acceptance of new technologies may, in fact, reflect more accurately their condition in a turgid labour market. The user's ability to question the appropriateness of new technologies may lead to informal practices that manipulate (or subvert) the LA system. The user's ambivalence towards the new technology could ultimately lead to undermining of the formal policies associated with this technology's introduction.

However, if consumption-oriented analysis of the existing systems and structures were undertaken, prior to the introduction of the computer-based decision support system the manager could utilize undocumented expert knowledges as assessment criteria regarding the borrower's capacity to service a debt. These criteria could include information associated with customers' banking history, financial information gleaned from client interviews and an assessment based on the manager's previous interactions with the customer. This analysis is heavily reliant on the manager's expertise. In this case study the introduction of the new technology was not fully explained to the manager, as the user. As a result, the manager is now unsure of the significance of their own decisions in loan applications The relationship between the information concerning the customer in the existing assessment criteria and the output of the new technology is unclear. An interview with the manager reveals that they would prefer to continue relying on their existing assessment methods, which now only exist informally. If the situation were not to be clarified, the formal policy the bank has adopted regarding the introduction of the decision support system is compromised. The basis of this analysis is not production driven. There is no pre-conception regarding the input associated with the expected output and the importance of the user's social relationship to the system. Information consumption and the user's interaction with the system, in this case, would need to be observed to give insight to the patterns and rituals undertaken by the manager to assess the risk associated with a specific borrower. The boundary of the system is not historically situated as it is not the information input that is of importance but, rather, the user's experience of the current system and its consumption.

This example is entirely hypothetical and draws only on Scott and Walsham's (1998) case as a starting point for re-interpretation and analysis. Enabling systems analysis to move beyond the process driven model of the 70s and 80s opens up many possibilities for applying user requirements to systems operations and quality. The consideration of users' relationship to information within the system, their use of the system and the symbolic behavior that occurs with the use of the systems enables new dimensions of user requirements and quality to be explored.

Conclusion

This paper acknowledges the appropriate application of theoretical exploration at different points of the systems. By extending this perspective to include the acquisition of knowledge and research into the system beyond its initial setup and operational phase must include analysis and observation of the system already in use. The examination of the information system as a consumed experience for the user enables flexibility from the sole viewpoint of management to include 'other' users' perceptions and experiences. This paper has:

1. Explored the static and linear approach to information meaning contained within the core model of information systems.

2. Presented the theoretical positions of post-modernism, consumption analysis and systems theory to incorporate a position of self-reference into the systems construction.

3. Incorporated user based analysis on the system through consumption and use of an information system.

4. Enabled a fresh approach to systems analysis, by opening the way for practical applications associated with quality and user perception of information system design and application
5. The arguments regarding consumption analysis and self-referential systems are presented as hypothetical case descriptions and as an extension to the ideas presented by Scott and Walsham (1998). This analysis would benefit greatly from application to a 'real life' case study and will be pursued by the author in the near future.

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