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SAME BUSINESS SAME SYSTEM? A CRITIQUE OF ORGANIZATION AND THE INFORMATION SYSTEMS PROCESS

ABSTRACT

In trying to understand any aspect surrounding the success and failure of information *systems (IS) practice, concepts of organizational analysis become increasingly* important. Many issues arise and must be dealt with when an information system is to be developed and implemented. In order to avoid information system failures, information system analysts should adopt an approach that exploits the intrinsic and contextually dependent characteristics of organizational activities. Such an exploitation acknowledges the uniqueness inherent in individual organizations and may inform the adoption of appropriate technologies that can then be innovatively employed for competitive advantage. In order to facilitate successful future organizational change practices and to lay the base for supporting overall information system effectiveness, there is a need to employ both in theory and in practice, ideas of organizational learning and (critically informed) interpretivist information system analysis, design and implementation.

KEYWORDS: critical systems thinking; contextual dependency; information systems development

INTRODUCTION

In today's society the intensity and complexity of organizational behaviour leads to the need for new approaches, which may aid understanding. The importance and relevance of focusing on differences between business models and organizational practices are common to all enterprises. Many contemporary organizations rely heavily upon information and communications technology. An information system project is a complex organizational endeavour and many projects suffer from substantive difficulties in implementation (e.g. Anon. 2000; Whitaker 2007). These problem scenarios could be attributed to a lack of support for the analysis of organizational aspects. Business and information from the awareness, adoption and acknowledgement of some of the more advanced theoretical and empirical research in the field. The concerns highlighted in this article are supported by experiences made in industrial information systems development projects, both regarding systems development within larger multinational organizations with thousands of employees (Bednar 1999; Bednar and Wang 1994) and small businesses with no more than 250 employers (Harvey, Mallalieu and Hardy 1999; Mallalieu 2003). Experiences from these and information systems development practices support the suggestion that there is a serious understatement of some of the important issues that for more than twenty years have been (atleast in part) discussed under such labels as 'Soft Systems Methodology' (see Checkland 1981) and 'social informatics' (e.g. Kling 1999).

BACKGROUND

Which specific tradition of inquiry is a systems analyst addressing? Or what exactly 'analysis' implies here is often unclear (e.g. Bednar and Welch 2008; Checkland and Winter 2006; Knox 2007). In the 1970s conventional IT systems analysis may, for example, have started with a feasibility study and focused mainly on an existing possibly manual system. The next step may have been a systems investigation, which was meant to be a more in-depth and overall study of the existing system. The third step (labelled 'systems analysis') was focused on those particular problems that had already been 'discovered' and described (e.g. Avison and Fitzgerald 2006). However conventional systems analysis was unsatisfactory in many ways (Avison and Fitzgerald 2006) and was soon followed by a number of structured approaches, more or less related to formal mehods (see e.g. DeMarco 1978; Jackson 1983). Since the structured methods were focused on the programmers needs (Avison and Fitzgerald 2006), supporting a closer understanding of organizational issues would have benefited from wider perspectives being sought and incorporated into the analysis process. Research efforts to redress this dilemma at least in part, and to try to counteract the lack of focus on the needs of the organizational members can be seen in such approaches as Multiview (Wood-Harper, Antill and Avison 1985), ETHICS (Mumford 1983) and Soft Systems Methodology (Checkland 1981). By the 1980s surveys had also identified a trend towards the avoidance of preset boundaries within the information system research community in relation to what constitutes information system research (e.g. Nissen 1986). There are several, possibly interpretative, traditions in information system research, which may challenge the idea of an information system as a system definable within a formal and closed problem space.

As early as the 1960s, Mumford and others made the connection between information system development and its implications to organizational change (Mumford 1983). She suggested that organizational change was inevitable if an information system was implemented in a business. Some computer scientists also recognized that information system development should be aligned with the specific business process (e.g. Langefors 1966). It could, however, be argued that the business processes recognized by the computer scientist were not necessarily well related to business strategy and business processes in general. Such a

business process, as perceived by the computer scientist, seems to have been founded upon a formal representation of the technical and administrative system.

When a fit between information system and business process integration is studied, it may be assumed that differences according to companies' specific contexts could be found. Issues in this area were also recognized and studied as early as the 1960s and 1970s. One such example is the inquiry into the interdependence between business logistics and information systems development. The analyst inquiry and question is not however as clear-cut or unproblematic as some research might have assumed (Langefors 1995). An analyst inquiry into organizational processes, business logic and organizational sense making may be much broader and deeper then any formalized inquiries into business logistics would include. Neither is it obvious that the basic business logic of different companies is necessarily equal just because they are classified as being in the same business – whatever 'same business' might mean. It is also unclear as to how idealized classifications of business processes are related to individual business processes and why such presuppositions should be seen as valid. If the assumptions of individual business classification of 'business process' were made through extrapolations from ideal descriptions (in the Weberian sense) of assumed general business models, such a connection would certainly be in need of at least some kind of further justification. If the assumptions regarding a classification of different organizational representations of processes are not made in this way, what are they based upon?

There are several main processes that can be viewed as interrelated and therefore of interest. The objective of these viewpoints is considered in terms of identifying the unique characteristics of an organization – the business process, the business change process, the information technology development process, the information systems process and so on. We can also consider the process of inquiry or the (system) analysis process. The process (or the representation of an 'ideal' process) we are discussing is a representation of the analyst's inquiry into (1) the business process and (2) the information system process. The critique of this article into 'sameness' is a discussion of how ideal classifications may hold a degree of responsibility for some of the difficulties encountered under conditions of systems/process change.

Business process modelling is means of representation that is often adopted to aid the task of organizational assessment. Alabastro, Beckmann, Gifford et al. (1995) have defined modelling as 'the process of developing and providing an abstraction of reality' and when that modelling is aimed at business processes then it is termed 'business process modelling'. Gruhn defines 'business process' as a set of logically related activities, which are carried out to reach a defined outcome (Gruhn 1995). Business processes can also be described as something, which defines the organization's behaviour and are (supposedly) the key to competitiveness (e.g. Davenport 1993; Hammer and Champy 1995). Process modelling has developed from a technical background, and is associated with ideas relating to the dynaic behaviour of systems, be they organizational, business, or software. According to Carmel and (1995), process models are used to represent explicit knowledge about organizational and technical processes. This knowledge needs to be made available for purposes of improvement. Improvement programmes benefit from the documentation and analysis of processes in order that change and implementation issues may be better understood prior to work being carried out.

Information system process models commonly focus on the flow of information through a given environment and the different entities that make up that environment. An information system can be viewed as an input process connected to a computational process connected to an output process. The goal of these methods is to specify (1) the required input (2) the transformations that may be performed upon that input and (3) the output produced by the transformations. Critics make the point that these systems design methodologies are based on pseudo objective models of systems and suffer from two faults. Firstly the representations used by the analysts only contain what the analyst thinks is important, and secondly analysts tend to fill in gaps in available information using their own intuitive judgement. Such systems methodologies view the process of problem solving as being deterministic. They also view the process of problem solving as being a clear linear sequence, which defines how the problem and solution will evolve and ultimately be defined (see also Checkland and Holwell 1998; Jayaratna 1994; Walsham, 1993, for related critique and discussions).

Many of the experienced processes can be described and those descriptions can be called representations. However it is important to remember that there is a major difference between some 'actual' (observable) business process and a description of that business process (Avison and Fitzgerald 1995, 2006). The difference can be described as the difference between a terrain and a map over that terrain (Bourdieu 1977). In information system analysis, analysts tend to look hard into the information system process, they evaluate the rigidity and the validity of the observations and analyse possible discrepancies betwen the described information system process and the experienced information system process. What tends to be forgotten is the analysis of the discrepancies between the described business process and the experienced (observable) business process. Much effort is then put into trying to understand the fit between the business process and the information system process. At this point, it is all too easy to mistakenly equal the described business process to the actual business process. This is a serious problem if the business process is taken as given.

In such an area of inquiry and analysis, it is insufficient to assume that questions posed are both valid and acceptable. Neither is it sufficient that the data-analysis, after the classifications and generalizations are made, is thoroughly and reasonably presented. Some serious issues remain related to the assumptions that surround the analysis method and framework. The assumptions and concepts of the analyst, which have a major impact on the inquiry, are not always presented. Unfortunately this can significantly reduce the quality of analysis or research undertaken, compared with, if the analyst's approach and problematization of the basis for the analytical framework had been considered (and expressed) more maturely and thoroughly. If too many issues, which substantially influence the quality of possible (and made) conclusions and interpretations, are excluded, the analyst (from this point of view) is left totally in the dark. Such an analysis has qualities residing in the combination of analyst approach, analyst method and justification strategy. Unfortunately such a lack of reflection heavily inflates much of the analysise efforts made.

In general, a discussion on analysis does not by default explain or justify why or how general examples of different business strategies would be connected to any specific real world organization. To say that, for example, one specific company has a business strategy or business process, which would be equal to an ideal business process that those 'kind of' companies in general 'should have' should not remain unchallenged. If statements like the following surface, they can serve as examples:

Different companies in different industries are likely to have different business processes.

This could be seen as an over-simplistic statement interpreted as an analyst's own assumptions, and not by default always explicitly explained. The statement, alternatively, could have been 'different companies in any industry […]' as companies are primarily unique. This can equally apply to the notion of information systems where issues surrounding the adoption of equivalent software packages, for example, may seem superficially to lead to the assumption hat different companies adopting the same packages will be operating the 'same system'. If on the other hand a more generous interpretation of the statement is made, the statement could instead have been 'different companies even in the same industry are likely to have different business processes'. In any case what does likely mean and why should it be seen as likely? Or do such statements hide an assumption that suggests that different companies in the same industry have the same (or similar) business processes?

CONTEXTUAL ANALYSIS

In the field of information systems, contextual analysis is described as the analysis part of the information systems development process. It is proposed as a form of analysis of the relationship (e.g. interaction, alternation or a reciprocal action) between the assumptions of contextual dependency and assumptions of the information systems development process. The concept of context is critical to the construction of the specific analysis of an organization, its processes, systems and methods of implementation. It is the acknowledgement of the specific and individual nature of the organization and its context that underpins effective analysis. Undertaking a contextual analysis if there is no understanding of contextual dependency (or if the dependency is not inquired into or spelled out) could be seen as an inadequate analysis (Bednar 2009).

When considering a possible question of analysis and inquiry: 'What differences in the business information technology planning process are found within companies multiple viewpoints?', there are several identifiable, underlying questions layered within this statement. What is meant by business process? On what basis are the assumptions about different organizations and the following classifications related to the unique, the different and the specific within organizations? How is this justified? Is information system development represented as closely related to the information system and information technology process? How are inquiries into the relevant contextual dependencies made and by whom?

What is meant by difference? If information systems analysis, for example,is based upon a survey and interpretation of an information system/information technology process, why is no equally represented survey and interpretation of a related business process taken into account? This happens when the business process as it is represented by the corporate management is taken for granted. A further neglected viewpoint relates to the possible difference between business plans and business processes.

If there is no analysis of and in-depth inquiry into related business process, how is it possible to evaluate any integration between an (unknown) description of any specific business process and the description of an information system/ information technology process? If the integration is evaluated through a relationship between assumptions about business process as presented by senior management or related to industry-type and the information system/ information technology process, this would seem to be a slightly changed question of inquiry. For example, the focus would no longer be set at the differences according to the specific company's business process, but it would focus on differences according to generalized

assumptions of an industry-type business process. This would seem to be inconsistent. The default case therefore is that the broad concepts of organizational business processes do not scale down to unique individual companies. Or rather as it is assumed in this article the labels seem to be used inconsistently where general ideas of business process versus specific ideas of business process is only one of many examples.

Both the 'subject' and the label 'contextual analysis' are changing variables and are not to be seen as heterogeneous. Nardi (1996), for example, studies context and consciousness in relation to 'activity theory', where the emphasis is put on human–computer interaction. Pettigrew (1985) has, in relation to organizational issues, used 'contextual research' in his arguments for a pursuit of a strengthening of the interdependence between theory and practice. Beyer and Holtzblatt (1998) on the other hand mention 'contextual design' in their descriptions of how to do contextual inquiries as a way to create definitions of customer-centred systems. Dawson (1994) speaks about contextualist inquiry and relates it to organizational development. Walsham and Sahay (1999) relate to a general form of contextualism and draw upon the actor network theory (ANT) by Bruno Latour for their methodological approach (for more in-depth information about ANT see Latour 1987, 1999).

Contextual analysis can also be viewed as a relational approach – to work contextually and to continuously take one's surrounding environment into consideration, acknowledging that each situation creates changes in several dimensions (e.g. AgnerSigbo 1993). She further suggests that this would include an implicit necessity to, on occasion make efforts to stop, reflect and use, the experience and imagery of 'rich still pictures' or 'earlier experienced films' as stepping stones. Such experienced prints of realities are not created or constructed beforehand; they are reconstructed as we experience them. The approach is described as being extensively contextually based and situational over time. The necessity of undertaking projects within a predetermined time can inhibit the extent to which such contextual analysis can be affected. The quantity of information produced could with improper management lead to a situation of information overload. Gunhild AgnerSigbo (1993) suggests that the detail of analysis should not be too intensive since the analyst would be unable to cope with the information overload, especially if they are to sketch and build systems with the intention of having those systems working during a reasonable time frame.

Many contextual approaches appear to be pragmatic methods for analysis practice, for example the work on continuous development by Gunhild AgnerSigbo and Sissi Ingman (1992) and Gunhild AgnerSigbo (1993), participatory design by Ann Hägerfors (1994) and the Siv Friis (1991) work on prototyping. The focused contextual dependencies in these approaches have a tendency towards the local, such as individual and group experiences, collaboration, autonomy and competence. Simply said, contextual analysis seems to be about putting phenomena in relation to its surrounding, influencing, multidimensional 'environment'. The missing link in such cases is some form of theory for the identification and description of important factors within the context, although there may be some kind of impressionistic imprints in use. Contingency theory on the other hand does not always count to the contextual approaches, but it does include some kind of understanding of what the context includes and how it might impact or influence. In general however, contingency theory could be described as having a closer relationship to the organization as a whole whilst most of the other contextual approaches seem to address individuals and groups. Whilst contingency theory has an intimate relationship to the idea of organizations as open systems, other contextual approaches do not necessarily recognize this common ground.

Contingency theory has often been heavily criticized; a key criticism relates to underlying deterministic assumptions, empiricism and weakness of the correlations that are assumed to be established. Other issues of importance are the neglect of power relations by contingency theorists as stressed by Child (1984). He proposes a strategic contingency approach to organizations. This alternative approach is supposed to focus upon the role of managerial choices in their efforts to actively shape organizational structures in response to contingency. Contingency factors, such as the environment, are, in turn, not treated as independent, but as dependent variables. Such factors can be partly chosen, controlled, influenced and sometimes ignored by a full range of organizations from the powerful multinational organizations down over (e.g. Child 1984).

How users of 'contextual analysis' are supposed to interpret 'context' and if there are particular aspects of the 'context' that are constructed or reconstructed is ambivalent and unclear. Context can be equalled with the closest surrounding 'environment' (both abstract and concrete). However, our view is that, in relation to social and cultural open systems, any particular (understanding of) context could be expected to be both (re)constructed and (re)evaluated. Otherwise it might be argued that a contextual analysis would be irrelevant since one might just as well have used a logical positivistic and objective approach. Also to avoid an unconscious exclusion of (for example) organizational issues, an inquiry into contextual dependencies might be rejuvenated with sense-making activities such as rational communicative actions and systems thinking built upon both individual as organizational reflexive and critical perspectives (see section 'Contextual dependency' for further comments on these issues).

CONTEXTUAL DEPENDENCY
More recently critical realism by Bhaskar et al. has been proposed by IS researchers to be a viable option (e.g. Mingers 2008). But this effort has been heavily criticized (by, for example, Hirschheim, Monod) for ignoring engagement on an appropriate level with relevant aspects of the philosophy of science? There are several strands of 'critical' thinking and these are not by default compatible. Work undertaken in the field of feminism and contextualism can, for example, be related with 'critical theory' and information and communication technology (ICT). The cyberspace in a postmodern and feministic approach has been pursued by Donna Haraway (1985, 1992) and raises the requirement for the critical questioning of difference and boundaries in relation to the impact of new technologies on society. A main strand of 'critical' thinking that often is labelled and generalized as 'critical theory' has its origin in 'The Frankfurt School'. This has further developed to many versions where, among others, the work of Habermas (1984) on the theory of communicative action and Erik Fromm (1956, 1981) with his normative theory of having and being are of interest.

Within the field of information systems research, one example is the work by Kalle Lyytinen (1992), 'critical social theory' is a label that has been used. According to Lyytinen the impact of critical theory on the information systems field has developed in a bidirectional manner, based on a critique of science, the relationships between theory and practice and the nature of social action. Firstly, the work of Habermas (1972) has influenced the discussion surrounding the evaluation of the dominant research paradigm, in his work on knowledge constitutive interests. This work deals with the necessity of the sense-making activity of organizational agents requiring a grasp of the contribution of the information system towards environmental understanding. The second approach adopts Habermas's (1984) later work on pragmatics and communicative rationality to develop notions of information system use and development. The taxonomy of social action enlightens understanding of the design, delivery and use of

information systems. Lyytinen identifies six major roles of an information system. These roles focus on the effect of information system on the efficiency of organizations to order, collect and distribute information. The sixth role, however, is to:

[p]rovide a channel for the symbolic interaction and establish an attentive symbolic environment for organizational action. (Lyytinen 1992)

This role relates most strongly to the requirement for the application of critical social theory and discusses the notion that information systems induce and create a 'new organizational reality'. Within this role an information system impacts upon the negotiated channels for symbolic interaction and hence the common view of the symbolic field in which they operate. This view of critical social theory in information systems is dependant upon Lyytinen's definition of an information system from Ives, Hamilton and Davis (1980) as a

computer based organisational information system which provides information support for management activities and functions.

Such comments imply the concept of an information system as by default being a subsystem to the organization. In other information system research such a conceptual limitation (if used by default) is suggested as being a major inhibitory factor both to the organizational development itself as to the development of the technological information and communication systems (e.g. Bednar 1999, 2000). An alternative view is to equate the organization itself as an information system. In this view the information system is as inherent a part of the organization as the actors and the supporting processes.

One other version of 'critical thinking' that might have a major impact on future, information systems development is 'critical systems thinking'. This work is heavily connected to general research on systems in society as presented by Werner Ulrich (1997a, 1997b), which has its background in systems science, and the work of West Churchman (1979); it could also be related to Gregory Bateson (1972) among others. Werner Ulrich further suggests that systemic thinking can be an active reflective practice:

Reflective practice then is as much a concept of practical philosophy (ethics) as it is one of epistemology (theory of knowledge); it intends selfquestioning practice in the ethical sense of a practice that systematically questions its own value implications and lays them open to the critique of all those who may be concerned. "emphasia adde" (Ulrich 2000: 248–49)

It is quite possible to relate this to the framework for strategic systemic thinking (SST) as described by Bednar (2000). Although both contexts and some of the basic concepts are different (e.g. information systems vs civil society), the SST framework is intended to support the creation of a contextually adapted systemic thinking inclusive of a self-questioning practice similar to the one mentioned above (e.g. Bednar and Welch 2009). Where Ulrich goes on to focus on the interdependence of boundary judgements, observations and evaluations; a parallel to this in SST could be drawn to focus on the interdependence of multiple levels of contextual dependencies (such as the relations to inter-individual systems, intra-individual systems, sense-making processes and evaluations). There are, however, several other differences between the version of systemic thinking as suggested by Ulrich and the systemic thinking implied here. One of the more important differences is concerned with how a relationship can be established between contextual analysis through systemic thinking and Habermas's theory of communicative action.

Sense-making as a rational possibility and the pursuit of meaningful communication through 'strong argumentation' based on the competence and reason of agents was proposed by Habermas (1984). In the theory of communicative action, he offers a methodology that rests on assumptions about a 'common' sense base that is supposed to have its origin in 'the public sphere'. Habermasian theory is based upon an idea of rational reconstruction that assumes that all relevant intuitions of competent agents are to be accepted as true and accounted for. The public space as discussed by Habermas is defined as the social sphere where people reason over the realms of life. Since the theory of communicative action can be seen as normative and related to assumptions of an objective reality, it is clear that the theory also might be in conflict with some interpretative approaches and epistemological contextualism. Within the sphere of contextualism however, this means that assumptions of the 'common' are not to be viewed as unquestionable and objective realities.

Alternatively, if the described understanding of the 'common' consensus is replaced with a self-imposed belief of temporal assumptions of such a common consensus, the problems of the positivistic trap may be avoided. Avoidance of the built-in implications in the theory of communicative action that includes a universal definition of truth (even if this 'truth' might be negotiated) could be seen as essential. In this article, the suggested temporal and ad hoc assumptions are then to be seen as open for recursive reevaluations. Such reevaluation might surface as necessary when the uncertainty and ambivalence experienced by a communicative agent is so strong that it results in a decision (by the same communicative agent) that a serious misunderstanding has occurred. Since Habermas (1984) acknowledges that the social sphere requires a logic different to natural sciences, he suggests an alternative rationalism. The social is presented as being structured around symbols, which then are interpreted through an individually constructed inquiry. His idea is that, in using the logic of critical theory, the (required) inclusions of a systemic analysis of those interpretative schema enables access to the means by which such social action (supposedly) occurs.

In the reinterpreted version of contextual analysis, which is presented in this article, an evolved representation of interpretative schemas could be related to an inquiry into contextual dependency. Contextual analysis is thus to be described as an inquiry into multiple levels of contextual dependencies. In order to make inquiries into contextual dependencies both macro- and micro-level perspectives enter the realm of consideration (Bednar 2009). An example of such an effort can be seen in the framework for SST (Bednar 2000). This is considered against what Habermas (1984) calls 'undistorted communication', which through SST is re-evaluated and explored as a possibility (a relative and temporary option) to construct temporal assumptions of 'undistorted communication' but not as an objective truth or necessity.

DISCUSSION AND CONCLUSION
In an inquiry and analysis based upon activities related to classifications and interpretations, it becomes important to present the basic assumptions that frame the generalizations. The information system and information technology analysis are inquiries into unique individual organizations where the relationship between specific processes could be viewed as being intimately intertwined with the uniquely individual business contexts that those very same unique individual organizations have. The assumptions and justification upon which such transfers from the specific to the general are made should be spelled out.

When treating (contextual) analysis as an inquiry into contextual dependencies, we might expect a reflection on differences between assumptions of 'espoused theories' and assumptions of 'theories in use'. In this article we suggest that the style of representations of processes all too often do not seem to differentiate between these two aspects even though they might have a major impact on any evaluation of descriptions of organizational activities. There are many reasons why such a reflection is significant in this kind of analysis. In that the discussion seems to equal descriptions of activities in organizations with actual activities in organizations. Such a representation habit or assumptions of indifference should be justified, not the least because they could be (and we would argue, quite successfully) challenged by analysts more closely familiar with many of the contemporary theories used within the IS area.

That the primary focus of system analysts cannot be system design but (IS) analysis is being supported by the interpretative tradition in information systems research. Soft systems methodology also suggests a greater support for the sense-making process in analysis activities. Significant emphasis from the information technology industry is put on project management skills (strong leadership) and requirements engineering, which by default has a strong relationship with structured systems approaches and formal methods (e.g. Anon. 2000; Menzies, Easterbrook, Nuseibeh et al. 1999). A traditional and heavy reliance on mathematical and formal methods is less than convincing where such a description does not equal experienced characteristics of the majority of computing activities (e.g. Mahony and Van Toen 1990). The lack of reliance in practice on formal methods also has parallels in relation to characteristics and experiences from activities related to organizational change, information systems analysis and development (e.g. Bednar and Wang 1994). That a belief in rationality and a pursuit of strong managerial control practices in general is questionable in any kind of organization (not only in the public services) has been convincingly argued by Chris Argyris (1990). SvenErik Sjostrand (1997), who sees the idea of rational management as problematic, furthers this notion and that management practice should be characterized as a combination of rational and irrational behaviour. He additionally notes that in order to succeed an ideal manager would consciously practice a combination of both rational and irrational approaches to leadership.

The traditional practice in system analysis and development is all too easily narrowed down to a simple 'lessons learned' activity and allows for little more than 'first order change' and single loop learning (e.g. Argyris and Schön 1978, 1996; Bateson 1972 on organizational learning, single-and double-loop learning). Double-loop learning and 'second order change' in practice seems to be very difficult to pinpoint within projects; feedback about the sense-making process itself is provided in an elusive way, if at all. What surfaces here, although relevant, but which in practice is very problematic, is the required focus on the management of the double-loop learning process itself. The nature of practical knowledge and system development strategies in practice suggests that two very significant features of information system research seem to be omitted (or marginalized) in information system practice. These relate to understanding of

• differences between organizational design and practice;
• influence of sense-making processes on information systems.

The roots of these problems are not newly discovered; they were initially identified in the 1960s. Langefors (1966, 1995) suggested that interpretation processes and personal pre-knowledge influence all information systems. Some information system researchers

(Checkland 1981, 1986; Checkland and Holwell 1998) have also stressed the uncertainty of problem definitions as having a major impact on information system development practices due to the complex social dimensions of information systems and organizational sense-making. But nevertheless these and similar issues continue to haunt IS practice and research field of today.

The authors of this article acknowledge that the role of analysts and any presented inquiry is determined by the particular inquiry's interests and background beliefs, as well as by the specific questions asked. It is suggested that it should be seen as possible to explore possibilities for a broadening of any particular interpretative framework in use. Such a broadening activity could be explored through a systemic and reflective sense-making learning process. This kind of understanding of both practice and theory, we argue, could provide a more robust place for analyst's activities, information systems development and research.

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