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Chapter I

Deferred System's Design: Countering the Primacy of Reflective IS Development With Action-Based Information Systems

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This chapter examines the issues of who an IS developer is and what constitutes IS design activity. These questions are critical to informing the further progress of evolutionary and adaptable systems. It suggests that action developers should be considered as developers and that IS design should be regarded as ongoing design that is online and in real-time. The IS Design Continuum is introduced to categorise three types of IS design activity, autonomous, specified and deferred. Deferred System's Design is proposed as incorporating the action developer and ongoing, online design activity that caters for contextual and semantic properties of human information.

INTRODUCTION

This chapter is an analytic and critical reflection on information system (IS) design activity. Two fundamental issues in IS design activity especially pertinent to

evolutionary and adaptive systems are explored. One is the question of who is an IS developer. With over four decades of experience of the application domain and technological advancement we can broaden our notion of a developer. The other question is what constitutes IS design and development activity. At present IS design activity is a professional domain bound in IS methodologies and projects, but recent developments in types of IS and software development require us to think outside the box. Both these questions concern the form of modern organisation and organisation design to come and the complex system environment. As information technology (IT) is a defining characteristic of organisation, it is important that we develop a clearer understanding of these two issues.

There is a separation of IS design from implementation in the IS literature on structured systems development (DeMarco, 1979; Gane & Sarson, 1977; Kackson, 1975; Wernier, 1976; Yourdon & Constantine, 1978) and on object-oriented development (Booch , 1994; Jacobson et al., 1992; Rumbaugh, 1996; Shlaer & Mellor, 1989, 1991). The reason for delineating design as a separate activity is that technology use in industry is itself deeply associated with the history of industrial design. Systems analysis as a set of techniques and tools for complex problem-solving, with its focus on broad strategic and policy questions, has its origins in military, industrial and engineering problem resolution (Checkland, 1978). The engineering aspect is supported by professional bodies like the British Computer Society in the practice of IS (BCS, 2001).

Reflective design, as practised in structured systems analysis, is based on the assumption that an optimal and efficient solution can be obtained for a problem domain. The feasibility study and consideration of alternatives are a search for an optimal design and development that stems from a focus on "research strategies" for problem solving. Such analysis answers how we move forward from a given state (S^0) to a desired state (S^1), design being the fundamental plank of problem solving. The design itself is based on obtaining a full set of system requirements from a problem domain assumed to be rational and decomposable.

Yet IS design is substantially more than problem solving. Mazda's chief designer declared that: "We are finished with industrial design. We want to make emotional cars" (Cooper & Press, 1995). IS designers too need to broaden their perspectives. Whilst IS are still built using problem-solving techniques, their critical usage is itself a higher order of development, whose focus is both operational and as a mode of organisational social interaction. Given the human and social basis of IS design and that IS design itself is a value-adding activity, we need to recognise a wider community of IS designers than professional developers and their computer-oriented interpretation of the world. IS design is industrial design plus phenomenological aspects of organisational life. Namely, capturing the meanings of social action in IS and processing them to add value for further action.