

# Global Implications of E-Commerce Tool and Artefact Creation

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## INTRODUCTION

It is argued that Electronic Commerce (EC) platforms can be seen as artefacts—tools that are made, used, inherited and studied within a cultural context. This context encompasses economic, historical, technical, and social values and assumptions that are focused on particular ideas and definitions (relating to the example of B2C activities and processes contained within Electronic Grocery Systems (EGS)). The issue we should face as makers, users, inheritors, and scholars of these tools, however, is that the tool context and inherent in-built values on which this context is based, particularly relating to matters of effective use of EC tools in a B2C marketplace, may not be in evidence across all cultures. This would make the successful use of EC, in a global sense, a difficult and complex undertaking.

## BACKGROUND

Understanding the process and role of tool creation and use in relation to the information technology and systems (ITS) discipline/paradigm (and EC in particular) is fundamental to understanding the cultural bias inherent in the process. The definitions used in this chapter are those generally used by the research community in the area of technology transfer (TT) (Robinson, 1988). These definitions are loaded with such terms as “artefacts,” “technology,” and “tools.” If we accept that ITS is a tool-focused discipline, then we must look at the context of the creation of those tools in order to better understand how they can be used more appropriately and effectively in different cultural contexts.

Bunker and Dean (1996) discuss Kuhn’s (1970) theory that suggests that the underlying structure of a discipline arises from a set of assumptions generally accepted by practitioners, teachers, and disciplinary constituents. Techniques and tools defined by the discipline are created from a common understanding. They may be part of an evolutionary creation process or equally be created through a “paradigm shift”; however, they do become indicative of the generally held underlying assumptions of the discipline. Schein (1984) suggests a three-stage ascent from basic assumptions to the artefacts and creations that drive the evolution of paradigms. If we look at

the tools in current use by a discipline, generally accepted underlying assumptions may be deduced.

The model of a discipline is in four parts (see Figure 1). By extending the idea of tools as the visible sign of paradigmatic assumptions that underpin a discipline, we find that four entities play a role: the tool Maker, the tool User, the Scholar, and the Inheritor of the discipline. The tools that reflect the ITS discipline are created and used in a multitude of contexts. What are the implications for the discipline and the diffusion and use of these tools?

## ITS Tools in Context

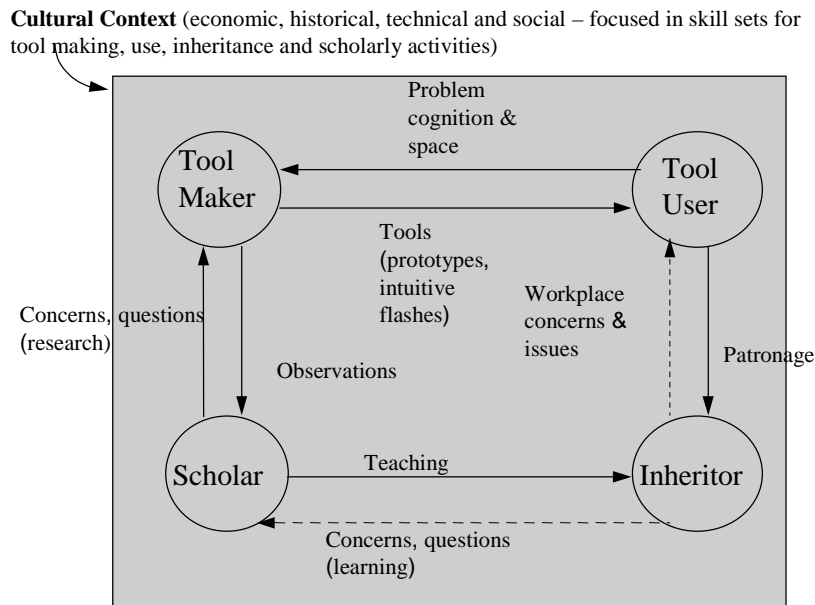
Young (1971) in his *An Introduction to the Study of Man* defines tools in the following ways: tool making assumes skills and ways of life that are transmitted by interpersonal communication and tradition rather than genetics; tool making involves foresight as to the use of the tool; tools are made by a technique that is learned from others and involves symbolic communication (language); tools are made according to an evolutionary convention (gradual) and are made and used in a cultural context. For example, the ITS literature is full of stories about ITS failure (Sauer, 1993). Are these really stories about the lack of contextual acceptance of these tools within organisations or target cultures?

Techniques and tools are created from a common understanding or cultural context. They become an expression of generally held underlying assumptions (Schein, 1984). The cultural context underpinning tool creation and use is created and evolves over time. The assumptions, which in turn underpin cultural context, are deep-seated, taken-for-granted, invisible, and pre-conscious, and are patterned into what Schein (1984) terms cultural “paradigms.”

Cultural paradigms can be expressed in a number of ways. Research conducted by Kluckhohn and Strodtbeck (1961) and Hofstede (1980) are typical examples of the different assumptions upon which various cultures are based. Schein (1984) expresses the assumptions of cultural paradigms as the: organisation’s relationship to its environment; the nature of reality and truth; the nature of human nature; the nature of human activity; and the nature of human relationships.

If we accept that there are vast differences in cultural paradigms around the world, and that ITS tool creation

Figure 1. Disciplinary model (Bunker & Dean, 1996)



and use is underpinned by these cultural paradigms, what then, are the implications for the development and use of an ITS tool in one culture for diffusion and use in another? In this fast-paced, highly volatile and mobile global society, many organisations find themselves in a situation where the transfer, diffusion, and use of ITS is pushed at an extraordinary rate. Cardwell (1994) argues the importance of ITS as being a strategic technology of which the applications and scope exceeds all others. Richard Baskerville (1995) explains that the use and management of ITS are an expression of an organisation’s structure and culture, and that as we computerise the symbolic universe of the organisation, we can view the system and its information as artefacts.

This has far reaching implications for organisations, nations, and the global economy. Robinson (1988) has likened the process of developing technology in one society and implanting it in another without adaptation as an organ transplant from one body to another without any testing for compatibility.

### Electronic Commerce (EC) Tools in Context: Electronic Grocery Systems (EGS)

The Internet has played a key role in the establishment of EC activities (especially in B2C relationships), and EGS systems have been dependent on the development of Internet technologies and their uptake speed and scale by potential consumers. Consumers in the West have begun to demand increases in the quality of service being offered

by their grocery provider. Shoppers want a product selection adapted to their needs and the ability to shop at their convenience at any time (Choudrie et al., 1998).

The introduction of the Internet and the development of EGS systems have allowed consumers to shop at their convenience rather than being bound to retail opening trading times. The subsequent growth of the Internet and the increasing demand for value-added grocery shopping has created demand-pull for EGS services. Consumer demand for EGS services, combined with supplier demands for shopper profile information, has created a large uptake of EGS systems from a business and consumer perspective (Deutsch et al., 2000).

As discussed earlier, however, we have also seen the need for contextual value or cultural compatibility between the creator and the recipient of a technology in order for the technology to be transferred and utilised successfully. A certain level of cultural homogeneity is necessary in order for the tools and artefacts of one culture to be successfully utilised within another (Bunker, 1998). Electronic grocery shopping (EGS) systems utilise the tools and artefacts of ITS that have been created from a predominantly Western and particularly North American cultural viewpoint (Simon & Doran, 1998). This viewpoint assumes that the shopping culture of the consumer accepts multiple distribution channels for consumer items, but it neglects resources and skills required by the consumer to best utilise these multiple channels, as well as any essential social activity associated with the shopping task and associated processes. These types of systems may be acceptable in a culture that has had a history and experience (and thus development of suitable associated

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