Chapter 11
Models for Interpretive Information Systems Research, Part 1:
IS Research, Action Research, Grounded Theory — A Meta-Study and Examples

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ABSTRACT

Interpretive research designs are increasingly being applied in Information Systems (IS). This chapter is a meta-research study that briefly explains the concepts of positivism, interpretivism, and qualitative and quantitative research, before overviewing the advent of interpretive IS research. The chapter then presents two interpretive models that can serve as research designs for postgraduate studies and ad-hoc research. Action research, which originated in the social sciences, involves longitudinal studies, in which the researcher participatively investigates products or interventions that address real-world problems over several cycles, in a reflective and responsive way. Grounded theory can serve as a research method, as well as a full research design, since it can be integrated into other models as an analysis approach. Grounded theory is applied to generate themes, patterns, and theories from continuous collection, coding, and analysis of contextual data. The patterns and grounded theories emerge inductively, and are expanded and refined as further data is gathered.

INTRODUCTION

Research designs based on the interpretive paradigm, can serve well as approaches for the design and development of artifacts within the discipline of Information Systems (IS). This chapter overviews research paradigms, then introduces two approaches applicable to interpretive IS research. In the current computing milieu – with its emphasis on interactivity, user-centricity, and usability – inquiry processes originating from the human

sciences are relevant to IS. Interpretive research is also used in educational-technology research, where interpretive goals investigate how artifacts function by addressing and interpreting phenomena of domain processes, human performances, and innovations in complex contexts. This chapter relates particularly to research on human and contextual aspects of computing, and highlights research designs appropriate for the subset of IS that incorporates e-learning systems, which users must be able to use easily before they can even begin to learn.

Different research designs have varying structures and procedures to guide the research process, and are appropriate for different kinds of computing applications. This chapter forms Part 1 of a discourse entitled 'Models for Interpretive Information Systems research'. It discusses and graphically illustrates two approaches, *action research* and *grounded theory*, explaining how they can be used as research designs and giving examples of studies where they were applied. Part 2 of the discourse, in Chapter I.7b, considers three models from the family of design- and development research, namely: *development research*, *design-science research* (so called in IS), and *design-based research* (so termed for educational technology research).

Interpretive research, which originated in the behavioural social sciences, is increasingly applied in Information Systems (IS). Research design and -paradigms in IS have been receiving focused attention over the past two decades (Baskerville, 1999; Baskerville and Wood-Harper, 1996, Cockton, 2002; De Villiers, 2005b; Glass, Ramesh and Vessey, 2004; Klein and Myers, 1999; Myers, 2004; Pather and Remenyi, 2004; Roode, 2003; Walsham 1995a; 1995b; Wood-Harper, 1985). This meta-research study suggests various underlying theoretical frameworks to guide the research and development process, providing cohesion and internal consistency. It is not focused primarily on major business systems, but more on small-scale systems for personal computing.

The fact that researchers and practitioners are taking cognizance of social responsibility (Du Plooy, 2003); human factors, and behavioural aspects, is in line with the current emphasis on the human-computer interaction (HCI) concepts of user-centricity and usability. This study outlines the positivist and interpretivist research paradigms and suggests models to operationalise interpretive research. Influences from positivism cannot be excluded, as research methodology continues to evolve and develop, and 'mixed methods is another step forward, utilizing the strengths of both qualitative and quantitative research' (Creswell, 2009: 203).

Examples are given to illustrate each research model/design, several of which come from the domain of e-learning. The chapter should be useful to postgraduate students undertaking research in IS or e-learning for their masters or doctoral studies, as well as to faculty who facilitate teaching and learning processes.

Research Paradigms: Positivist and Interpretivist

Different research paradigms are based on different philosophical foundations and conceptions of reality (Cohen, Manion and Morrison, 2005; du Poy and Gitlin, 1998; Lincoln and Guba, 1985; Olivier 2004). Each paradigm is implemented by distinctive methodological strategies.

The *positivist* paradigm holds that knowledge is absolute and objective and that a single objective reality exists external to human beings. Positivism is equated with the scientific method, whereby knowledge is discovered by controlled empirical means, such as experiments. Positivist research aims for an exact, value-free representation of reality. Research results should be reliable, consistent, unbiased, and replicable by other researchers. Positivist research is operationalised mainly (yet not exclusively) by quantitative methods, where data comprises numbers and measures, analysed by

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