Constructing a Theory of 'IS Business Value' from the Literature

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1. Introduction

The purpose of this paper is to draw attention to an innovative use of literature in social science research where the literature may not only be seen as a secondary source of data (Strauss & Corbin 1990) but may also serve as the basis for theory building (Lewis & Grimes 1999; Saunders et. al. 1999). This will be exemplified by attempting to construct a theory of 'IS business value' from the literature.

To meet this goal, first a very brief analysis will be undertaken of literature usage in social science research, highlighting the paucity of theory development. Next, current uses of the literature for theory development will be examined. Then the important role of definitions derived from the literature will be highlighted, before the focus shifts to meta-triangulation, a method that facilitates theory construction based on the literature. In the final section, the way meta-triangulation was used to help create a theory of 'IS business value' is described.

2. Usual uses of the literature

Current usage of existing literature in social science research is extensive ranging from simply gaining a knowledge of the 'state of the art' to the development of conceptual frameworks to direct research. The range of uses of the literature base includes, to:
- provide the bases of argument (Clark 1986);
- provide an overview of the state of the art, including best practice (Clark 1986);
- identify the gaps in the body of knowledge (Zikmund 1997);
- resolve apparent contradictions;
- stimulate theoretical sensitivity via knowledge of philosophical writings and existing theory (Strauss & Corbin 1990);
- direct theoretical sampling (e.g. provide ideas of where you might go to uncover phenomenon);

- provide supplementary validation (Strauss & Corbin 1990);
- unearth research questions (Strauss & Corbin 1990); and
- place interpretations on the literature by using it as a secondary source of data (i.e. where the literature is grouped and given conceptual labels).

Even though Strauss & Corbin (1990) suggest that the literature may serve different purposes dependent upon whether the type of research being conducted is quantitative or qualitative, there are a number of purposes that these two categories of research have in common, including, to:
- identify previous research in the area;
- discover gaps in understanding;
- derive theoretical and conceptual frameworks to guide research and interpret the findings; and
- delineate important variables and suggest relationships between them.

A specific purpose suggested by Strauss & Corbin (1990) for investigators using quantitative methods:
- testing relationships among variables or determining how they cluster.

Strauss & Corbin (1990) also suggest that in qualitative, exploratory research the emphasis is on the discovery of relevant categories and relationships between them, and putting them together in new rather than standard ways. In these instances, they believe that qualitative researchers seek to explain phenomena in light of theoretical frameworks that often evolve during the research itself. Alternately stated, the focus is more on the development of mind maps such as new classification models of the body of knowledge, showing how concepts can be grouped or clustered together according to schools of thought or themes without necessarily considering the relationship between groups.

Whilst the use of the literature may or may not be dependent upon the type of research, it is not common to see theory building as an intended outcome of a literature review. It is this observation that prompted the writing of this paper.

In the past, there was a widely held view (especially by positivist-oriented researchers) that the social sciences were characterized by a certain vagueness and unclear thought which is a result of ambiguous and invalid conceptualisation (e.g. Direnzo 1966). One possible reason for this was that there had been relatively little concern for the role of conceptualisation in theory construction. However, Parsons highlights the importance of theoretical and philosophical conceptualisation: 'science is not common sense, and its most basic theoretical ideas and frames of reference require development through complex intellectual processes which involve not only interpretations of observations but also theoretical and partly philosophical conceptualisation' (in Bagozzi 1984). In a similar vein Meuller (1997) draws attention to the importance of the literature as a basis for the construction of sound theoretical models.

Nevertheless, it has been suggested that theoretical issues are often introduced merely as a background for empirical analysis (Babbie & Wagenaar 1992), and in other studies, selected empirical data is cited simply to bolster theoretical arguments. In neither case is there really any interaction between theory and research for the purpose of developing new explanations. Additionally, many studies make no use of theory at all. Table 1.1 presents the findings of a now rather dated study by Wells and Picou (1981) (in Babbie & Wagenaar 1992) that demonstrated the limited use of theory in social science literature twenty years ago. In the absence of recent evidence to the contrary, it is assumed that a similar situation still prevails.

Table 1: How theory was Utilized in American Sociology Research, 1936-78

Primary Theory Utilization	Percent
Not theoretically related research	35.8
Theory used to support authors ideas	1.9
Theory is used to focus research problem	3.3
Concepts are used to discuss and interpret findings	20.8
Theory is used to discuss and interpret findings	0.9
Modification or extension of existing theory	4.5
Development of theory	2.1
Theory is used to develop testable hypotheses and findings support the hypotheses	
Theory is used to develop testable hypotheses and findings refute the hypotheses	2.5
Unfavourable discussion of theory	2.7
Favourable discussion of theory	3.0
TOTAL	100

Source: Wells & Picou (in Babbie & Wagenaar 1992)

However, as already discussed, theory has an important role to play in research: 'empirical research without theory produces a series of anecdotes' (Walsham 1993, p. xiii). As a discipline is considered to be mature if it has developed a solid foundation of relevant theory (Direnzo 1967), it is suggested that information systems research should have sound theory construction as a major goal. It is suggested that theory building using the literature as a source of data is a step in the right direction for our discipline. To this end the following section deals with the issue of theory construction as it pertains to the literature.

3. Theory building from the literature

The theory-building tool that is the focus of this paper is that of meta-triangulation. Meta-triangulation is a process of building theory from multiple paradigms roughly analogous in its processes to traditional (i.e. single-paradigm) triangulation (Saunders et al. 1999). Laying the groundwork for meta-triangulation requires defining the phenomenon of interest, focusing paradigm lenses, and collecting a meta-theoretical sample. As in traditional induction, this initial phase delineates boundaries that both constrain and enable theory building (Eisenhardt 1989). In the following section the importance of definition is emphasised and used to introduce the meta-triangulation methodology.

3.1 Definition

Sound definition is the first step in theory building. Whilst deriving definitions from the literature is not theory building in a traditional sense, it serves as the basis for subsequent theory building in that theories are explanatory statements (involving definition), which are devised as descriptions and interpretations of the findings of scientific investigation (Direnzo 1967). In other words definitions are components of theories.

A definition according to Aristotle 'is a phrase signifying the essence of a thing'. By essence

is meant the set of fundamental attributes which are the necessary and sufficient conditions for any concrete thing to be a thing of that type (Direnzo 1967). In this approach, definition is considered synonymous with the term concept. Concept usually means a 'rational representation of universal application which comprehends the essential attributes of a class or logical species of phenomena' (Direnzo 1967, p. 13). Thus the function and purpose of definition is to 'lay bare the principal features or structure of a concept, partly in order to make it definite, to delimit it from other concepts, and partly in order to make possible a systematic exploration of the subject matter with which it deals' (Direnzo 1967, p. 14).

There are three kinds of definition of a construct: real, nominal and operational. A real definition is a statement of the 'essential nature' or characteristics of some entity. Real definitions tend to be somewhat vague unless they have been subjected to the rigor of some hermeneutical method such as holistic construal. A nominal definition is assigned to a term as a working definition for the purpose of inquiry. An operational definition is a description of the operations that will be undertaken in the measuring of the concept (Direnzo 1967, p.14). The conceptual order is demonstrated in figure 1.
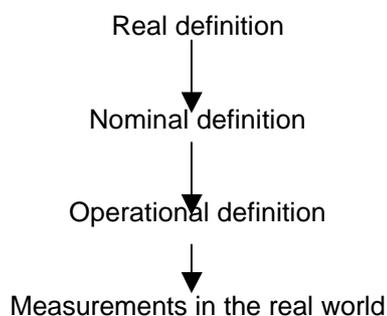
Real definition

↓

Nominal definition

↓

Operational definition

↓

Measurements in the real world

Figure 1: Conceptual Order
(Source: Adapted from Direnzo 1967, p. 14)

The three definitions, if grounded in the literature, can reduce the vagueness and unclear thought, associated with social science research. In addition, definition is important for subsequent theory building and thus is relevant to the following discussion of meta-triangulation, as the first step in meta-triangulation is to define the phenomenon of interest.

3.2 Theory building via meta-triangulation

Meta-triangulation is a literature synthesis approach that culminates in theory construction (Saunders et al. 1999). The approach seeks to identify the paradigms underlying extant theory and use the uncovered multiple paradigms to create an even richer theoretical basis for understanding the phenomenon being studied.

Meta-triangulation is a process by which theory is built by the application of multiple paradigm lenses to the literature or to data collected about a given phenomenon. It is also termed multi-paradigm research (Lewis & Grimes 1999). Multi-paradigm theorists consider paradigms as heuristics that may help scholars explore theoretical and organizational complexity and extend the scope, relevance, and creativity of existing theory.

As summarised by Lewis and Grimes (1999), in multi-paradigm reviews researchers seek to reveal the impact of theorists' underlying, and often taken-for-granted, assumptions on their understandings of the research topic. An attempt is made to differentiate among varied sets of assumptions, making differing assumptions explicit, thereby delineating paradigm distinctions and aiding awareness, use, and critique of alternative perspectives.

Whilst Lewis and Grimes (1999) suggest the addition of a multi-paradigm research phase, which moves beyond review of existing literature to apply divergent paradigm lenses empirically, Saunders treats the literature as the data source. Both methods culminate in a theory building stage described by Lewis and Grimes (1999) as meta-paradigm theory building.

Meta-paradigm theory denotes a higher level of abstraction, from which 'accommodation' does not necessarily imply unification or synthesis but, instead, the ability to comprehend paradigmatic differences, similarities, and interrelationships (Gioia & Pitre 1990). The goal is a richer, more holistic, and contextualised understanding. Meta-theorizing techniques help theorists explore patterns that span conflicting understandings.

In both approaches to meta-triangulation (i.e. Lewis & Grimes 1999; Saunders et al.) the proposed methodology consists of three phases: data collection, data analysis and theory construction. In Saunder's (1999) methodology data collection includes an initial review of the literature related to the phenomenon, a focusing of the paradigm lenses and collection of the metaphysical sample (e.g. journal articles and conference proceedings). As mentioned above, in the meta-triangulation strategy devised by Lewis and Grimes (1999), the metaphysical sample

is extended to additional data collection. In each approach data analysis includes multiple paradigm coding, grouping and categorizing. The coding, grouping and categorizing is performed in a similar fashion to that of traditional qualitative data analysis. The culminating theory building stage consists of attempts to arrange the emergent patterns into a framework or theory.

Denzin's (1978) depiction of theoretical triangulation helps conceptualise the process. The phases he proposed approximate multi-paradigm approaches: initial groundwork to define the theoretical perspectives to be used (multi-paradigm review), data analysis using each lens in turn (multi-paradigm research), and theory building to contrast and account for differing interpretations of the data (meta-paradigm theory building). Denzin (1978) claimed this process challenges theorists to purposefully seek out, rather than avoid or ignore, conflicting interpretations.

The deficiency in Saunders et al.'s (1999) approach appears to be in the final theory building stage as no methodology or guidelines are provided to implement this stage. It is suggested that application of the holistic construal methodology initially designed by Bagozzi (1984) would be a worthy addition to the theory building stage of meta-triangulation. Cronk (2000) exemplified the holistic construal

method of theory construction as it was applied to aid the understanding of the 'IS business value'.

4. 'IS business value' theory using meta-triangulation

Guided by meta-triangulation thinking, the 'IS business value' literature from various disciplines was collected and analysed. However, as suggested by Smircich (1983) recognizing an author's paradigm may be an arduous and arguable task. He noted that not only do authors rarely state their paradigm but, often, make the choice unconsciously. In this example it was difficult to differentiae between critical theory and relativism paradigms as both dealt with constructed view of reality to some extent. However, the paradigm lenses were focused to include four major paradigms:

- positivist paradigm reflected in quantitative economic/financial perspectives on value;
- realism as indicated by the combination of multiple perspectives on value and hence measurement type;
- critical theory as indicated by context specific measures of value; and
- constructivism reflected in perceptual perspectives of value.

Definitions of these paradigms are provided in Table 2.

Table 2: Basic Belief Systems of Alternative Inquiry Paradigms

	Positivism	*Realism (or post-positivism)*	*Critical Theory*	*Constructivism*
Ontology	naï ve realism: 'real' reality and thus is apprehensible	critical realism: 'real' reality but only imperfectly and probabilistically apprehensible. Thus triangulation of many sources is necessary to 'know' it	historical realism: 'virtual' reality shaped by social, political, cultural, economic, ethnic, and gender values, crystallized over time	relativism: multiple local and specific 'constructed' realities
Epistemology	objectivist: findings true	modified objectivist: findings probably true	subjectivist: value-mediated findings	subjectivist: created findings
Methodology	experiments/ surveys: manipulative; verification of hypotheses; chiefly quantitative methods	experiments/surveys/ case studies: manipulative; falsification of hypotheses; may include qualitative methods	dialogic/dialectical: a dialogue between researcher and subjects that transforms the social situation	hermeneutical/ dialectical: interaction between researcher and subjects to distill a more informed consensus

(Source: adapted from *Guba & Lincoln 1994, p. 109; Perry et al. 1997, p. 551*)

Collection of what Saunders et al. (1999) termed the 'meta-theoretical sample' included data from journal articles, conference proceedings and books. Following Saunders

et al. (1999), the literature was coded and grouped according to the paradigm/underlying assumptions. Further sub-coding was conducted for example categorising paradigms

further by level of measurement (organisational, intermediate and system levels). Level of measurement also suggests underlying assumptions about the way value is accrued in an organization. For example, some see value as a contribution to the organisation's bottom line. Alternately stated, if an investment is valuable it will make a difference to organisational performance (however that is measured).

Table 3: The multi-paradigms of 'IS business value'

PARADIGM	MEASUREMENT APPROACH
Positivist	

Sub-Paradigm	***Quantitative Organizational Level Measure***
	Financial/economic
	  - *Simple Financial*
	  - IS factor (eg. annual IS expenditure) vs some organizational performance measure (eg. Pre-tax profit)
	   Data Envelope Analysis
	  - converts multiple input measures and multiple output measures into a single measures of relative efficiency
	   Resource View
	  - labour and IS considered jointly and treated as a resource
	  - deployment issue

Sub-Paradigm	***Quantitative System Level Measures***
	  Financial
	     Cost/benefit
	  Non Financial
	     System Usage

Sub-Paradigm	***Quantitative Intermediate Level*** *Process Enhancement*
Critical Theory	

	Qualitative/ Perceptual Measures of Value
	Perceived Fulfillment of Objectives
	  - Fulfillment of system objectives
	  - Fulfillment of organisational objectives
	  - Value Analysis
	  - Organisational impact
	- **Value perceived as**:
	  - System quality, Information quality, User satisfaction,
	  - User information satisfaction, Individual impact.
	  - Usefulness
	  - System flexibility, System responsiveness, System functional integrity
	  - Value of information processed
	  - Value to the stakeholder
	   Service quality- improved client services, servqual instrument
	   Benefit of System and System Goals, nature of system benefits
	   Benefits - Alignment with Business Strategy

Realism	

	Multi-Dimensional/Business Perspective Measures
	  - ComputerWorld Index
	   Balanced scoreboard..
	  - IS value as a measure of business contributions..................
	  - Enterprise level measurement, IS impact on contact with customers
	  - Information economics...
	  - Business value linkage ....

Historical Relativism	
	Multi-dimensional Qualitative Measures Context, content and process

Source: Adapted from Cronk and Fitzgerald (1999)

Other paradigms view value as unmeasurable at the organisational level due to issues of collectivity. Paradigms were then grouped, and tabulated with an accompanying evaluation of the paradigm. Table 3 summarizes the results of this analysis.

Competing paradigms (Guba & Lincoln 1994, p.116) are seen as different theoretical perspectives, or different ways of accessing the phenomenon under study. From this alternative realm of abstraction, each paradigm is seen as contributing a layer of meaning. Hence all the paradigms are viewed as being a valid portion of the holistic 'IS business value' picture, that is, of the theory of 'IS business value'.

It is suggested that the meta-triangulation approach described by Saunders et al. (1999), and applied here to 'IS business value' literature, reflects the inductive approach to theory building where the theory is constructed by looking for, and analysing, significant patterns in the literature, involving the following four steps:

- selecting a phenomenon and identifying all its concepts;
- assessing all theses concepts in a variety of situations;
- analysing the resulting literature in order to identify any recurring patterns of interest; and
- the patterns constitute the emerging theory, which is then subjected to further research.

These steps can be undertaken using the literature as data where a substantial literature base exists to provide the various situations, concepts and paradigms for use as the data. The ultimate goal of these inductive methods of theory building is to create a theoretical explanation by specifying phenomena in terms of '... conditions that give rise to them, how they are expressed through action/interaction, the consequences that result from them, and variations of these qualifiers' (Corbin & Strauss 1990, p. 7). Further analysis can be performed to further model 'IS business value' in these terms (e.g. Cronk 2000).

5. Conclusion

The meta-triangulation process is considered an extension of traditional strategies aimed at enhancing the potential insights available from existing literature, data, and theorists' intuition (Lewis & Grimes 1990). Meta-triangulation follows many of Weick's (1989) prescriptions

for building theory using 'disciplined imagination,' deliberately and dramatically increasing the quantity and diversity of literature reviewed, of analytical methods used, and of conjectures examined.

Applying meta-triangulation to 'IS business value' facilitates a shift from a simplistic towards a richer, more contextualised and multidimensional theory. This paper has argued that multi-paradigm inquiry holds considerable, and largely unmet, potential for extending existing understandings of complex and paradoxical phenomenon such as 'IS business value' where competing paradigms have tended to confuse measurement of the construct in the real world.

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