

# The use of grounded theory in accounting research

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## **Abstract**

In this paper, grounded theory is investigated and applied to research on electronic commerce in order to demonstrate its use and potential limitations in accounting research. Grounded theory enables relevant theoretical concepts to emerge from the data and, in this way, leads to discovery. In treating 'all as data', grounded theory uses a pragmatic approach, combining qualitative and quantitative data and data-gathering methods to encourage a rich understanding of the situation. This enables the generation of theory rather than the confirmation of existing theory. To illustrate this process, this paper demonstrates the emergence, with the use of grounded theory, of a definition for electronic commerce.

## **Key words**

*Theory development*  
*Grounded theory*

*Accounting research*  
*Electronic commerce*

## **1 Introduction**

In this paper, the grounded theory approach to accounting research is investigated and applied to research on electronic commerce in order to demonstrate its use and potential limitations. Although grounded theory has been used in sociology research for at least three decades, its use and methodology is still debated, and it is relatively new in accounting research.

Research involves the researcher, the subject of the research and the methodology applied. It has been argued that the researchers cannot be objective as they approach the subject from their background and with their own preconceived ideas as well as by means of a methodology that fits these ideas. In addition, research is often influenced by the

established theories in a particular field and therefore often attempts to confirm existing theories without due regard for other possible interpretations of the data. In an area in which there are well-founded theories that describe the area, this approach works well. However, in some areas in the social sciences, theories often do not exist and even if they do exist, they may be too abstract to guide the research process.

This situation is exacerbated by the fact that human behaviour cannot be satisfactorily explained by means of theories, because humans differ from one another in respect of their reactions and they react differently over time. This situation has led to some disillusionment concerning the universal usefulness of mainstream accounting research methods. In the social sciences, there is therefore a need for research that enables the researcher to interpret the data without the constrictions of expectations and theories. Grounded theory enables relevant theoretical concepts to emerge from the data and, in this way, leads to discovery. The credibility of the grounded theory method has been established through the adoption of certain procedures and techniques that ensure that the research process remains rigorous.

This paper first introduces grounded theory as a research methodology and then discusses its application in accounting research. Thereafter an example of the use of grounded theory in research on electronic commerce is investigated to illustrate the use and the limitations of the process. The paper concludes with a consideration of the process and recommendations for its use.

## **2 An introduction to grounded theory**

Covaleski & Dirsmith (1990) place grounded theory in the category of the symbolic analysis approach to social science research. This approach views "reality as a realm of symbolic discourse, [where] humans [are seen] as actors [and] symbol users, ... [where] information as a network of symbols, does not represent reality, it is reality" (Covaleski & Dirsmith 1990:547). The essential character of grounded theory lies in the generation of theory from data by constant comparative, qualitative analysis. Although it is included in the qualitative research paradigm (Patton 1990), grounded theory is a qualitative analysis methodology that may use both qualitative and quantitative methods (Glaser & Strauss 1967).

Grounded theory aims at the emergence of theory from the data, rather than at exploring the data to confirm existing theory. In treating 'all as data', it applies a pragmatic approach, combining qualitative and quantitative data and data-gathering methods to encourage a rich understanding of the situation, and to enable the generation of theory. It features a circular, interlinked, global rather than linear, approach to the research process (Eisenhardt 1989). This can be compared to a complex

network in which the stages in the research process are not disparate, separate, linear steps, but constantly overlap, linked to each other by the emergence of meaning from the data, rather like the neural networks of the human mind.

As a qualitative methodology, it enables the flexible and detailed in-depth study of issues, unconstrained by predetermined categories of analysis. The paradigm provides a broad framework for the researcher to approach the problem beyond the confines of predetermined answers. This method is particularly appropriate in exploratory studies, because it does not presuppose the results, nor does it force the content and process of the study into predetermined theories and structures (Patton 1990). For example, the use of quantitative methodology that seeks to extend or prove an existing theory may be inappropriate in a new field such as that of the implications of electronic commerce for the providers of assurance and auditing services.

Because grounded theory is still relatively new to accounting research, researchers that attempt to use the methodology face a number of barriers. There may be a lack of mentors that are familiar with the methodology, resistance to the methodology or perhaps misunderstanding of the opportunities and constraints involved. The constraints of writing fixed research proposals could endanger the methodology if the proposals are required to adhere to the normal literature review requirements, and set aims, objectives and structure. By their nature, they may lead to a primary focus on deductive research methods rather than on the combination of induction, deduction and verification, which is used iteratively throughout the research process that is integral to grounded theory (Parker & Roffey 1997), thereby defeating the purpose and validity of the methodology (Glaser 1993). Papers on research that is based on grounded theory often use quotations as evidence of the validity of the process and the conclusions, and therefore, while rich in narrative, tend to be longer than papers that are based on capital-market research. The length of the papers and the constraints that journals often place on the use of quotations, may limit the opportunities for publication.

### **3 The use of grounded theory in accounting and management research**

Grounded theory research has implications for both the understanding and the facilitation of change. It goes “beyond conjecture and preconception to the underlying processes of ‘what’s going on’ in substantive areas” (Glaser 1994:4). It is therefore uniquely suited to the task of discovering basic social processes that involve change. It is useful in the health, management and business fields that are notable for their changing environments and the importance and relevance of the dependent variables. These dependent variables in fields that deal with

illness and money problems are significant for the researcher, and also for all participants and professionals (Glaser 1994).

Grounded theory has been used in the study of technological change (computerisation) in health organisations (Prasad & Prasad 1994) and to investigate organisational change (McEntire & Bentley 1996; Brown & Eisenhardt 1997). Brown & Eisenhardt (1997) selected grounded theory building to examine how organisations engage in continuous change, because they were interested in examining a rarely explored phenomenon that existing theory failed to fit. They argue that in such situations grounded theory is more likely to generate new and accurate insights than when the researcher relies on past research or on office-bound experiments.

Lye (1996) also includes the themes of change and new phenomena in the use of grounded theory. She lists five different scenarios to which grounded theory is particularly suited, namely (Lye 1996:6-7, emphasis added):

- 1        *Where there is comparatively little known about a phenomenon and reality is multi-faceted* (Glaser & Strauss 1967; Glaser 1978; Strauss & Corbin 1990). Here the researcher must be open to discover what is going on from participants in the world being investigated.
- 2        *Where there is no prior theory to explain what has happened or existing theories fail to explain a particular set of circumstances* (LoBiondo-Wood & Haber 1994).
- 3        Where the *process of change* is being investigated (Strauss & Corbin 1990).
- 4        To understand basic social programmes behind a phenomenon about which little is known (Glaser 1978). In other words, the grounded theory method is a suitable approach where it is necessary to go behind the scenes to explain *the development of the phenomenon*.
- 5        Grounded theory is a useful approach for understanding the *impact of new ideologies* (Chenitz 1986).

What all five scenarios have in common is the use of grounded theory in new and developing fields. It is therefore ideally suited to the exploratory study of the impact of new phenomena such as electronic commerce in social and economic contexts.

Accounting is increasingly considered to be both shaping and being shaped by its environment (Mathews & Perera 1996). Hopwood (1990) emphasises that:

...accounting is not an autonomous phenomenon, other social, political and economic factors are now being seen as being able to

provide bases for accounting change, often playing a significant role in influencing the course of its transformation (Hopwood 1990:8).

In describing the roles of accounting, Covalleski & Dirsmith (1986:200) also cite Hopwood (1990) as follows:

The roles of accounting are still defined externally to the practices of the craft. Possibly, because of the distancing of inquiry from practice, only the reflective rather than the constitutive tendencies of accounting have been emphasised in the accounts that we now have of accounting change.

Partly because of this realisation, there has been increasing support for research on accounting in its context as well as for the use of alternative research methods to the positivist, hypo-deductive tradition.<sup>1</sup>

Grounded theory has also been justified in accounting research in terms of ensuring that theoretical constructs that arise out of the research are based on the understanding and values that the economic actors attach to key concepts and themes that underlie accounting, economic and financial theory (Curran, Jarvis, Kitching & Lightfoot 1997). The aforementioned authors use the graphic image of a web of meanings and values that traditional (quantitative) research fails to address. As a consequence of its comprehensive techniques and procedures, grounded theory is a valuable research approach in attempting to understand the social construction of accounting (Lye, Perera & Rahman 1997).

Examples of the use of grounded theory in research in accounting and management control include the work of Covalleski & Dirsmith (1986; 1988), who applied it to produce grounded theories of budgeting; Czarniawska-Joerges (1988), who examined changes in organisational control; and Czarniawska-Joerges & Jacobsson (1989), who traced the connections between budget processes in organisations and the cultural context in which the organisations exist. Lye (1996) used grounded theory to conduct innovative research into a new phenomenon, namely the process of change that led to the introduction of accrual-based Crown Financial Statements for public sector accounting in New Zealand. It has also been used for research into the implementation of information systems (Brown 1995); marketing attitudes, strategies and the effectiveness of marketing tools in accounting firms (Mangos, Roffey & Stevens 1995) and decision making (Curran *et al* 1997).

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<sup>1</sup> See, for example, Tomkins & Groves 1983; Morgan 1983; 1988; Willmott 1983; Covalleski & Dirsmith 1986, 1990; Laughlin 1995; Lye 1996; Lye, Perera & Rahman 1997; and Parker & Roffey 1997.

## **4 The process of using grounded theory**

The use of grounded theory is an iterative process. It usually commences with an area of study and permits issues to emerge in the process of the research (Glaser 1992), although Strauss & Corbin (1990) prefer to select a specific issue or phenomenon (Parker & Roffey 1997). This difference in respect of methods persists throughout the approaches of Glaser (1992; 1993; 1994; 1995) and Strauss & Corbin (1990) to grounded theory. The differences may confuse the researcher that is new to the methodology. For a full comparison and explication of these issues, see Lye (1996), Parker & Roffey (1997), and Lye *et al* (1997). Because Glaser's methodology is used in this research project, this section of the paper concentrates mainly on his work.

Parker and Roffey emphasise that theoretical sensitivity is required to select and understand data and to build theory:

Theoretical sensitivity refers to the researcher's capacity to think about the data in theoretical terms. It requires the researcher to interact continually with the data collection and analysis, rather than hypothesising a pre-determined outcome, and suspending judgement until all the data has been analysed (Parker & Roffey 1997:226).

To enhance theoretical sensitivity, researchers use techniques such as questioning, coding, theoretical memo writing, theoretical sampling, reviewing of literature, challenging of assumptions and existing theory as well as making constant comparisons (Strauss & Corbin 1990; Lye 1996; Lye *et al* 1997). Glaser (1992) suggests that the researcher should constantly ask two core questions, namely:

What is the chief concern/problem of the people in the substantive area, and what accounts for most of the variation in processing the problem? And, secondly, what category or what property of category does this incident indicate? (Cited by Parker & Roffey 1997:226).

Theoretical sensitivity is all about recognising insights, the eureka moments (e.g. when the researcher/scientist leaps out of the bath to test a momentous discovery), the moments of insight, minor and major, that lead to discovery and theory building. In this regard, theoretical note taking (writing memos) plays a major role in theory building, because the researcher captures those insights as they occur.

### **4.1 Sampling**

Grounded theory uses theoretical rather than statistical sampling. Glaser & Strauss (1967:45) define theoretical sampling as:

The process of data collection for generating theory whereby the analyst jointly collects, codes and analyses his data and decides what data to collect next and where to find them, in order to develop his theory as it emerges.

In this way, the sampling is guided and controlled by the emerging theory. Alternatively, Strauss & Corbin (1990:176), who propound a more structured approach to the use of grounded theory, describe theoretical sampling as sampling on the basis of concepts that have proven theoretical relevance to the evolving theory. It is used to sample events, situations, populations and responses (Parker & Roffey 1997).

## 4.2 Analysis of data and theory generation

In the methodology of grounded theory, the analysis of data and the generation of theory and conclusions are not separate stages. They progress throughout the duration of the inquiry and conclude as the theory emerges from the data. An evaluator should first deal with the problem of what Guba (1978), cited by Patton (1990), calls convergence. This problem involves the finding of what 'fits' together. Guba suggests that the evaluator should begin by looking for recurring regularities that represent patterns, which can be sorted into categories. These categories are sorted into those that hold together and those that are different. The researcher then works backwards and forwards between the categories and the data to verify the validity of the categories and that the data has been assigned correctly. Then categories are assigned a degree of importance and tested for completeness (Patton 1990).

In grounded theory, a key issue is the coding and development of conceptual categories; combining the explicit coding of all relevant data; and the constant redesigning and reintegrating of theoretical ideas. This method involves comparative pattern analysis (Glaser & Strauss 1967).<sup>2</sup>

Glaser's (1992) approach produces theory, but leaves testing to other researchers that are interested in the area, whereas Strauss & Corbin (1990) call for constant verification and testing in the course of the research. In practice, time, cost and availability can constrain data collection and theory building. Although Glaser (1992) emphasises the need to allow theory to emerge from the data, rather than forcing it as per Strauss & Corbin (1990), the above three constraints may restrict the width and depth of the research as well as its potential for building good theory.

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<sup>2</sup> Others who have explicated the process, include Eisenhardt (1989); Covaleski & Dirsmith (1990); Strauss & Corbin (1990); Glaser (1992); Lye (1996); Lye *et al* (1997); and Parker & Roffey (1997).

### **4.3 Validity issues**

Methods of evaluating positive or quantitative research do not easily transfer to grounded theory (McKinnon 1988). However, there are general guidelines for assessing validity. Glaser (1992) suggested that good grounded theory should satisfy six key criteria: fit, work, relevance, modifiability, parsimony and scope of explanatory power. According to Parker & Roffey (1997:233-234), this means that “the theory should be faithful to the substantive area that it attempts to portray, and it should make sense to the actors who were studied as well as to others involved in that area of work. If the theory and its interpretation are sufficiently comprehensive, then it should be applicable to a variety of contexts in which the observed phenomenon may occur.”

Parker & Roffey (1997:234) summarise the guidance of Glaser & Strauss(1967) as follows:

- Fit – does the theory fit the substantive area in which it will be used?
- Understandability – will non-professionals that are concerned with the substantive area understand the theory?
- Generalisability – does the theory apply to a wide range of situations in the substantive area?
- Control – does the theory permit the user some control over the structure and process of daily situations as they change through time?

In introducing anthologies of examples of grounded theory, Glaser (1993; 1994; 1995) is forgiving in his assessment of research efforts with grounded theory that are genuine attempts to follow the original Glaser & Strauss (1967) approach. He dedicated his 1993 collection to the beginner researchers that adhered to “the canons” of traditional grounded theory. In discussing the 1994 collection, he stresses that not all attempts resulted in good grounded theory, but all did involve a learning process.<sup>3</sup>

## **5 Description of the application of grounded theory in accounting research**

The research this paper reports, commenced with an area of study – auditing and electronic commerce – and a desire to ‘find out what is going on’. An early reading of the literature revealed that no previous research had been undertaken on or conclusions had been reached regarding the impact of electronic commerce on auditing/assurance

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<sup>3</sup> For additional criteria for the evaluation of research undertaken in terms of grounded theory, see Strauss & Corbin (1990) and Parker & Roffey (1997).



services in the New Zealand context. The desire to find out what is going on in this area (Patton 1990; McEntire & Bentley 1996) resulted in the adoption of a qualitative methodology. Further research into qualitative methodology led to the selection of grounded theory as a methodology that is particularly suited to the exploration of new and changing phenomena and their effects.

## **5.1 Data collection and analysis**

This section describes the method used to derive theory from the data, including sample selection, collection of data and analysis of the data. Interviews were the primary source of information, aided by the attendance of conferences and meetings as well as an extensive review of the literature that is relevant to the developing project. Sources of data were selected with the use of theoretical sampling outlined in section 4.1.

### **5.1.1 The interviews**

Why interviews? Stories are a way of knowing. It is a meaning-making process (Seidman 1991:1). As Seidman states, between qualitative and quantitative research methods there are epistemological differences, underlying assumptions about the nature of reality, the relationship of the knower and the known, the possibility of objectivity and the possibility of generalisation. Unlike a star, a lever or a chemical, the subject can think and talk (Seidman 1991). Interviewing is a way of finding out what is going on (Patton 1990).

Eleven key people were interviewed, six from the big six, now five, global accounting firms. These interviewees included four senior audit and assurance partners; one senior audit and assurance manager; and an electronic commerce consultancy manager. The seventh interviewee was an independent assurance consultant that had both an accounting and an information systems background. The remaining four interviewees were information systems audit managers, three in the private sector and the other one in the public sector. All the interviewees were involved to some extent in electronic commerce.

The selection of the interviewees was based on theoretical sampling, limited by availability, cost and time constraints. The decision to interview members of staff of the big six firms was based on the belief that these people were the assurance professionals that were most likely to be familiar with electronic commerce, either directly as users or indirectly through auditing clients that are users of the technologies. In addition, because they have international roles and contacts, they are conversant with worldwide trends and more likely than audit partners of smaller local firms to have a global focus. The big six accounting firms were approached and the subject of the research outlined to them. Five of the six firms agreed to participate. Interviews were arranged with partners

and senior personnel in the auditing or electronic commerce assurance/advisory sections.

Members of the Information System Auditing and Control Association (ISACA) were selected as the other interviewee group. Information systems auditors are professionals that have extensive knowledge of auditing in a computerised environment. They are certainly experienced electronic data information auditors that have knowledge of the design and control of electronic information systems as well as of the associated benefits and risks. Contacts originally arose from attendance at the 1997 annual conference of the ISACA; attendance at luncheon meetings of the Wellington (New Zealand) chapter of the association; and from the interviewees themselves.

At the beginning of each interview, informed consent was obtained from the interviewee. The research topic and its purpose were outlined and the participants given the opportunity to ask questions. Each participant was assured of confidentiality. All of them consented to the researcher audio-recording the interviews and they were assured that the tapes would remain confidential to the researcher and be destroyed once the project had been completed.

Interview questions were open and the interviews relatively unstructured with the aim of permitting the participants freedom in their responses and to avoid the imposition of a premature diagnostic structure on the research data (Glaser & Strauss 1967; Strauss & Corbin 1990; and Mangos, Roffey & Stevens 1995). Interviewees were given two definitions, one of electronic commerce and the other of assurance services. They were asked to comment freely on their understanding of both terms and on the current impact and potential directions of electronic commerce in the assurance area. Non-directive probing was used to encourage discussion. In most cases, the interviews followed a conversational, free-ranging process. "If given a chance to talk freely people appear to know a lot about what is going on" (Seidman 1991:39). The major task of the interviewer is to build upon and explore the interviewee's responses. Inherent in the process is the interaction between the participants. Seidman cites Patton (1990) in stating that interviewers can only minimise interviewer distortion by recognising the interaction and affirming its possibilities.

Interviews were tape-recorded and transcribed in full. To preserve confidentiality, no quotes were attributed to individuals and the actual positions and firms involved not identified. The quotations of the interviewees were edited to the extent of removing hesitations and pauses and adding words in brackets, where necessary, to convey meaning. The quotations were typed in italics to distinguish them from literature references and a central line ----- used to divide quotations from other sources.

### **5.1.2 Conferences**

Conferences were also attended in order to obtain, analyse and interpret papers that are relevant to electronic commerce and business assurance services and to identify potential sources of relevant information. The conferences included the ISACA 1997 annual conference, an international conference that addressed the theme of change and focussed on developing trends in the auditing and control of information systems and changes in the environment in which the profession operates.

Although the papers and presentations were valuable additions to the data, the informal conversations with speakers and participants enabled the researcher to discover emerging themes and to narrow down the original field of the research: the impact of electronic commerce on accounting. Given the various ramifications that electronic commerce has for governments, business, taxation, management, reporting, education and legislation, it became obvious that the topic would be unmanageable.. Attendance at the conference also provided valuable contacts for the interview process. National and international participants proffered their cards for the purpose of future contact. As a result of cost and time restrictions, only those contacts within the Wellington, New Zealand, area were followed up.

### **5.1.3 The Literature**

The project involved an extensive literature review to gain theoretical sensitivity and to examine the degree to which the emergent theory fits reality. From a preliminary review of the literature, there appeared to be little directly relevant prior research. Information technology is changing rapidly and the exponential growth of the use of the Internet and the development of electronic commerce are relatively recent phenomena. Printed material soon becomes comparatively obsolete in an environment of this nature. Therefore, much of the relevant literature is in the form of journals, magazine articles and conference papers.

Some relevant and important material is only available on-line through the Internet. A major example is the report of the AICPA Special Committee on Assurance Services that is only available through the AICPA website: <http://www.aicpa.org>. On-line links are provided for all material gathered through the Internet.

Throughout the collection and analysis of the literature, the researcher remained aware of the purpose of literature in grounded theory development. Literature plays a different role in grounded theory in comparison with the more traditional research methodologies. The literature serves as a source of data. It is important for the researcher to maintain a sceptical and cautious attitude towards the literature to prevent premature acceptance of concepts or ordering of concepts that

are not truly embedded in the data (Chenitz 1986). In grounded theory, the literature review is an ongoing process that is intended to assist in the discovery process. "Literature is conceived of as data and not viewed as inherently true" (Chenitz 1986:45). For further information and caveats on the use of literature in grounded research, see Glaser & Strauss (1967) and Glaser (1992). Glaser (1992:32-33) stresses that grounded theory "must be free from the claims of related literature and its findings and assumptions in order to render the data conceptually and with the best fit. Literature is integrated with the emerging theory during saturation, densifying, and sorting and writing". As researchers compare their work to relevant literature and as connections occur, they should remember that their job is to generate, not to verify.

## **5.2 Data analysis and theory generation**

The data was analysed by means of comparative methods and analytic deduction, revealing recurring themes or categories in the transcripts and in the literature. An iterative process of constant comparison, multiple reading, memo writing, coding, creating of categories and further abstractions (Glaser & Strauss 1967; Strauss & Corbin 1990) resulted in the emergence of the core category 'Webs of Change' and the central themes of changing technology; communication; knowledge and information; wealth creation; and business. Central to this process was the link between technology and people and that nothing occurs in isolation: each category or theme impacts on the others. Auditing and assurance are indeed grounded in a changing environment and change with it.

After the interviews had been transcribed, they were converted into tables and analysed sentence by sentence. Substantive codes were entered on the right-hand side of the table as the researcher determined the essential meaning of each sentence, phrase or paragraph (See table 1 for an example). Where appropriate, the coding used the interviewee's own words. Such codes are called *in vivo* codes (Lye 1996). Substantive codes are the conceptual meanings that arise when generating categories and their properties from the substantive data in the field (Glaser 1992). The first step is open coding, which Glaser (1992:38) defines as:

...the initial stage of constant comparative analysis – before delimiting the coding to a core category and its properties – or selective coding. The analyst starts with no preconceived codes – he remains entirely open.

**Table 1: Coding the data**

<b>Data</b>	<b>Code Key</b>	<b>Substantive Code</b>	<b>Key Concept</b>
<i>...information or the use of information</i>	EI.1	Information	
<i>...but the information part is very important because</i>	EI.2	Information is valuable	New Dimension: Flow of information through EC leading to Knowledge Creation
<i>...information is valuable, knowledge is based on information and advice is based on knowledge so you have ...a hierarchy and its information moving internally within an organisation as well as externally in and out of it...</i>	EI.3	Seamless flow of information in and out of organisation	
	EI.4	Movement of information through EC	
<i>...so, the movement of knowledge through electronic commerce is as important as the rest of it and I think that is the dimension that electronic commerce is bringing over and above EDI.<sup>4</sup></i>	K.1 K.2 K.3	Knowledge Hierarchy of knowledge Movement of knowledge – new dimension	

Glaser (1992) states that the mandate of open coding is that the analyst should start without any concepts, that is with an open mind. It involves the initial discovery of categories and their properties. During this process, the researcher closely examines the data, constantly asking: "What category or property does this incident indicate?" (Glaser 1992:39). The coding was a time-consuming process and was revisited as the data, categories and properties were constantly compared with one another for similarities and differences. In generating categories, the researcher looked for patterns in order to give each pattern a conceptual name (Glaser & Strauss 1967; Glaser 1992).

Open or substantive codes were then sorted into similar groups and the process of constant comparison continued until core categories and themes emerged from the data. This result arises out of theoretical coding, which Glaser (1992:38) describes as "the property of coding and constant comparative analysis that yields conceptual relationships between categories and properties as they emerge [they] are conceptual connectors". During the process, theoretical memos were written as ideas and connections occurred.

<sup>4</sup> EDI (Electronic Data Interchange): The exchange of standardised document forms between computer systems for business use. EDI is part of electronic commerce (EC) (Electronic Commerce Dictionary 2001).

After months of analysing, constantly comparing, revisiting the codes and categories and examining relevant literature, the research finally came together during the writing of the draft report. As the research instrument in this methodology is the researcher (Patton 1990), the theory that emerges is not the only possible one, nor is the report the final step in the research process. What the report captures, is the researcher's understanding at a particular point in time – of specific incidents at a point in time. As Covaleski & Dirsmith (1990:568) found "... in virtually all of our interpretative studies, they are never completed".

## **6 Demonstration of the application of grounded theory to actual research**

To demonstrate the process of grounded theory research, the following section describes the emergence of one of the findings of the research, namely a definition for electronic commerce.

### **6.1 Definition of electronic commerce**

The following preliminary definition was selected after an introductory search of the literature.<sup>5</sup>

A business technology that meets the needs of participants of a global marketplace, using telecommunication networks to link organisations and individuals that engage in forms of computer mediated commercial trading relationships. It includes exchanges where part, but not necessarily all, of the business process is conducted electronically, including reporting of business activities. It therefore includes the electronic exchange of goods, services and information.

Interviewees were invited to comment critically on the tentative definition, and to add, delete or alter details in line with their understanding of the matter. As the project examined the impact of electronic commerce on the professionals interviewed, it was important to determine what their perceptions of electronic commerce were. Most agreed with the description, but were of the opinion that, if it were interpreted narrowly, it failed to fully describe the nature of electronic commerce. The comments made included:

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<sup>5</sup> This is not normally the process (i.e. to begin with the literature). The process normally begins in the field and the literature is consulted later.

*It is all-pervasive; it is in everything we do.*

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*Electronic commerce as I see it, is not something in its own right, but is something in the environment.*

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*I don't think (the definition) is actually broad enough for commercial trading relationships basically because there are so many more electronic mediums out there: companies don't just want to trade via established technologies like EDI etc; they are quite happy to talk to public networks. Electronic commerce's definition (becomes) wider and wider every year.*

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*Right. Yes as far as your definition goes, I'm comfortable with that, but I think what we'll find is interesting is that as a definition it will be too narrow. In two or three years time you'll find that electronic commerce and particularly what is done and what can be done with it will be very much wider than what we are currently thinking*

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*There are lots of different things out there, it is a lot wider than just the narrow (issue) of the Internet commerce.*

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*I think that's fine, you're basically talking about the document flow as well as the goods flow, which is fine, I think networks, telecommunications, and the computer industry are merging into electronic commerce.*

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*It's a blanket term including EDI. Customer to organisation or organisation to organisation has not been a particularly well used transaction process (but) I believe electronic commerce opens that up into a new game. Simple offer and sale offer and acceptance issues still exist, but there is a whole new sphere relative to information which I think probably fits within the definition. I think you need in any discussion you have it is also about the creation of a new market and a new product on a market, typically procurement of information or the use of information*

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*Its forerunner was EDI, which tended to focus just on business purposes, mainly goods and services, but services really didn't get in to it. My understanding of electronic commerce is wider than that. You've got it summarised here in terms of the electronic exchange of goods, services and information but the information part is very important because ...information is valuable, knowledge is based on information and advice is based on knowledge so you have ...a hierarchy and its information moving internally within an organisation as well as externally in and out of it. So, the movement of knowledge through electronic commerce is as important as the rest of it and I think that is the dimension that electronic commerce is bringing over and above EDI.*

The interviewees' comments stressed that electronic commerce is a blanket term that encompasses commercial activities conducted through, or enabled by, telecommunications, computerisation and the digitalisation of information. A key component is its capacity to transfer information and knowledge within and between organisations and their diverse stakeholders.

A further search of the literature revealed the following two descriptions that emphasise the broad nature and role of electronic commerce:

Electronic Commerce: (EC) The conducting of business communication and transactions over networks and through computers. As most restrictively defined, electronic commerce is the buying and selling of goods and services, and the transfer of funds, through digital communications. However EC also includes all inter-company and intra-company functions (such as marketing, finance, manufacturing, selling, and negotiation) that enable commerce and use electronic mail, EDI, file transfer, fax, video conferencing, workflow or interaction with a remote computer. Electronic commerce also includes buying and selling over the World-Wide-Web and the Internet, electronic funds transfer, smart cards, digital cash (e.g. Mondex), and all other ways of doing business over digital networks (Electronic Commerce Dictionary 2001; also cited in Viehland 1997:1).

(It) involves more than buying and selling...(it) encompasses all sorts of presale and post-sale efforts, market research, sales leads, public relations, purchasing and distribution customer support, recruiting, knowledge distribution, customer support, business operations, production management, financial transactions - affecting strategic planning, organisational design, business law and taxation policies (Applegate, Holsapple, Kalakota, Radermacher & Whinston 1996:1).

The communication aspect of electronic commerce is stressed by Brousell, Porter, Radcliff & Rigney (1997) who define electronic commerce very broadly. Their definition states that electronic commerce is another way of conducting business that is all about partnering. As such it is much wider than EDI and includes any way in which business communicates with people globally by electronic means.

Many definitions contained in the literature stress the key role that electronic commerce plays in the transfer of information (Allen 1996; Kalakota & Whinston 1996; Viehland 1997; and Reichwald 1997). As Viehland (1997:1) argues, apart from the production and physical delivery of physical goods, commerce is the process of gathering, manipulating and distributing information. Therefore, he says, electronic commerce is the use of computers and telecommunication networks to carry out these information-processing functions.



Two of the interviewees described electronic commerce as an *enabling* technology. This view is also included in the descriptions of Allen (1996), Kalakota & Whinston (1996) and ECnet (1997). Allen (1996) defines electronic commerce as the selling of goods or services that is enabled through the use of computer technology to exchange information with at least two parties in a supplier-producer-customer value chain that is connected electronically; and ECnet (1997) uses the term 'enablement' to describe the role of electronic commerce in increasing the effectiveness of the business relations between trading partners.

It is a term that embraces both old and new technology. Jenkins (1994) describes it as a new term that defies precise definition, a term that describes a proliferation of EDI (older) and other (newer, cutting edge) technologies. He considers it to be both a technological concept and a business concept. Kalakota & Whinston (1996:1) also describe electronic commerce as the cutting edge for contemporary business and define it broadly as:

A modern business methodology that addresses the needs of organisations, merchants and consumers to cut costs while improving the quality of goods and services and increasing the speed of service delivery. The term also applies to the use of computer networks to search and retrieve information in support of human and corporate decision making.

As is common in grounded theory research, the discovery of a definition for electronic commerce followed a circular route. The initial definition was derived substantially from Viehland's (1997) description plus a variety of newspaper, magazines, journals and Internet sources. As the findings emerged from the interviews, the researcher revisited the literature. The final definition that emerged from the process was then grounded in all the data, both the interviews and the literature.

## **6.2 Electronic commerce: final definition**

Electronic commerce is a blanket term for the use of computers and telecommunication networks to gather, manipulate and distribute business information within organisations and between organisations as well as between organisations and the entire range of their stakeholders, including the reporting of business activities. It includes exchanges in which part, but not necessarily all, of the business process is conducted electronically. It encompasses the entire range of business communication and transactions conducted electronically, including the use of computer networks to search for and retrieve information in support of human and corporate decision making.

### **6.3 Discussion and limitations**

The conclusions drawn are limited to the data examined. Although the theory that emerged has relevance to a wider field, no statistical conclusions are possible. Where appropriate, the interviewees have been able to use their own words to tell their story. Grounded theory research is highly descriptive and has a wealth of meanings that other researchers could interpret in different ways.

One of the findings was the discovery of a definition for electronic commerce. As the purpose of the research was to find out 'what is going on' rather than to impose the researcher's own definitions, each interviewee was asked to examine and critically evaluate tentative definitions. However, an early definition of electronic commerce proved to be too restrictive. Electronic commerce appears to be a blanket term that is used as both a concept and a description for the use of electronic technology within commerce. It is a phenomenon that is expanding and that defies precise definition.

This paper uses only one element (i.e. the development of a definition for electronic commerce) of a larger research project to demonstrate the use of grounded theory in accounting research. In considering the project as a whole, the theory emerged from the data through an iterative process. Global change is taking place. Electronic commerce is impacting directly on the provision of assurance services as well as indirectly through the contextual elements of technology, communication, information and knowledge. In addition, there is the axial principle of the centrality and codification of theoretical knowledge, wealth creation, business and stakeholders.

However, the research does have limitations. It is essentially exploratory. The interviewees do not represent a cross section of the assurance and audit professions and it is possible that another selection of interviewees could have different viewpoints. In addition, the research is highly dependent on the theoretical sensitivity of the researcher, who is also the research instrument for the qualitative approach adopted. As is to be expected in a newly emerging field, the findings are tentative and are dependent on individual interpretation. This paper includes quotations to enable readers to draw some of their own conclusions on the definition of electronic commerce, rather than to merely demonstrate validity. In addition, this paper suffers from the limitation of reporting only one part of a larger project. It can therefore not demonstrate how the theory developed from the data, other than demonstrating how a definition for electronic commerce developed.

## 7 Conclusion

Grounded theory research is achieving recognition as a research methodology that can contribute valuable insights to accounting research. It is a methodology in the qualitative, interpretative tradition and field based, and the resulting theory is firmly grounded in the data. It therefore fulfils the criteria of Tomkins & Groves (1983) for researching the everyday accountant's world. It is a systematic methodology that can be used for researching accounting in its context and studies real-world situations (Parker & Roffey 1997). Its rigour, the discipline of the methodology, the coding, the constant comparative analysis, the theoretical sensitivity, and the sampling and memo writing mean that it can produce original theory with relevance for the participants as well as for the comprehensive situation.

Grounded theory is particularly useful for researching new phenomena in complex circumstances. Such circumstances prevail when the researcher is required to be open to the discovery of what is going on, there is no theory available to explain the particular circumstances, the research involves the process of change and it is necessary to go behind the scenes to study the phenomenon.

The limitations of grounded theory, as a general methodology for accounting research, are mainly related to its reliance on the theoretical sensitivity of the researcher. Without this sensitivity, the research will tend to be largely descriptive and interpretive, without leading to theory construction. It also demands intellectual discipline; emotional and physical commitment; and a time structure that may be unavailable to individual researchers, especially at the master's degree or honours degree level.

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