

**STRONG STRUCTURATION THEORY AND ACCOUNTING
INFORMATION:
AN EMPIRICAL STUDY**

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ABSTRACT

Purpose – This paper uses Strong Structuration Theory to explore the role of accounting information in New Product Development (NPD). NPD is a complex social action involving a wide range of different actors and clusters of actors. Strong Structuration Theory allows us to take a broad view of this social system in order to develop a complete picture of the clusters of actors involved, to comprehensively examine the relevant structures, both internal and external, and to understand how these are formed, reformed or modified through the actions of agents.

Design/methodology/approach –A field study of the manufacturing division of a large group was conducted which explored how managers use accounting information during NPD. Examining how these managers draw upon their conjuncturally specific structures of signification, legitimation and domination, and how these are affected by their external structural conditions and their general dispositional frames of meaning, allowed the authors to develop an in-depth understanding of the managers' behaviour during NPD.

Findings –These findings suggest that the managers' use of accounting information is determined as much by the subjective nature of the managers themselves as it is by the objective characteristics of the structures with which they interact. By using Stones' composite research strategy, which encourages us to conceive of internal structures as always looking outwards and external structures as always looking inwards, the findings help us to understand the 'connecting tissue' between the different elements of the quadripartite of structuration which has been lacking in previous research in the area. This understanding of the connecting tissue between structures was facilitated by the micro-analysis of six managers within a given conjuncture. Using the concept of the agent-in-focus as a tool with which to switch lenses from manager to manager acknowledged the web-like interdependencies between different processes of structuration. This allowed an exploration of the relationships between the various agents and structures.

Originality/value – This study contributes to our understanding of Stones' Strong Structuration Theory at both an ontological and methodological level by operationalising Stones' model in a case study setting.

Keywords Strong structuration theory, Accounting, New product development, Case study, Quadripartite cycle of structuration, Structure, Agency, External structures, Internal structures, Conjuncturally specific internal structures, General dispositional frames of meaning.

Paper type Research Paper

1 INTRODUCTION

This paper uses Strong Structuration Theory to explore the role of accounting information in New Product Development (NPD). NPD is a complex social action involving a wide range of different actors and clusters of actors, all acting together, though in different ways. A detailed examination of the social interactions surrounding accounting information use during NPD has the potential to enhance our understanding of Strong Structuration Theory, particularly the interactive and overlapping nature of structures, both internal and external.

Lukka and Vinnari (2014) discuss the distinction between domain theory and method theory. They describe domain theory as ‘a particular set of knowledge on a substantive topic area situated in a domain or field, while a method theory is the ‘meta-level conceptual system for studying the substantive issue(s) of the domain theory at hand’ (p.1309). The domain theory in this study would refer to the empirical context of accounting information use during NPD as well as literature examining accounting information use more generally. The method theory, Structuration Theory, and more specifically Strong Structuration Theory, provides the theoretical lens and with that the vocabulary, syntax and substantive propositions with which issues within the domain theory may be explored.

The issue of theory selection within the field of management accounting has been subject to criticism (Malmi and Granlund, 2009; Krishnan, 2010). In the context of the distinction presented by Lukka and Vinnari (2014) between domain theory and method theory, questions have been raised as to whether contributions to method theories originating in other disciplines actually serve to contribute to management accounting research (Humphrey and Scapens, 1996). In addition, there have been suggestions that scholars within the field of management accounting have been satisfied to demonstrate the applicability of a given method theory while doing little to contribute to it (Richardson, 2012; Vaivio, 2008). Conscious of these criticisms, this study seeks to develop theoretical knowledge surrounding the chosen method theory.

The remainder of the paper is structured as follows. Section 2 provides an overview of the key issues relating to the use of accounting information and NPD. Section 3 sets out the evolution of Structuration Theory, starting with Giddens' original conceptualisation of the theory and ultimately presenting Stones' strong structuration model as the theoretical lens through which this empirical study is explored. Section 4 outlines the case study, describing the data collection procedures employed. Section 5 describes the data analysis procedures, specifically how Stones' composite research strategy was applied to six specifically selected agents-in-focus. Section 6 presents these findings. Section 7 discusses these findings while Section 8 presents the paper's conclusions.

2 ACCOUNTING AND NEW PRODUCT DEVELOPMENT

A firm's innovativeness is executed through its NPD process; this is a systematic way of pushing a new product along from idea to launch (Cooper, 1990; O'Conner, 1994; Veryzer, 1998). A well-executed NPD process is believed to be truly cross-functional, with multiple participants all having varying perspectives and conflicting interests (Saade and Erickson, 1991; Katzenbach and Smith, 1993; Bowen, Clarke, Holloway and Wheelwright, 1994; Cooper, 1996). It is speculated that accounting information provides an integrating vernacular allowing cross-functional managers to make sense of and discuss issues throughout the NPD process (Nixon and Innes, 1997, 1998). More recent literature suggests that accounting practices have the potential to enable innovation by adapting and evolving in response to the unpredictability of the innovative environment (Davila *et al*, 2009) and mediating between internal and external parties with regard to expectations and deliverables (Carlsson-Wall and Kraus, 2015). However, discussions surrounding the role of accounting information in NPD are largely normative and the validity of their benefit claims have not yet been firmly established in the literature.

Concerns have been expressed in the wider accounting literature regarding the extent to which accounting information can satisfy managerial needs in a turbulent business environment (Burns, Ezzamel and Scapens, 1999; Scapens, Ezzamel, Burns and Baldvinsdottir, 2003; Järvenpää, 2007). There is recognition throughout this literature that the role of accounting information is not homogenous and varies from company

to company. Contingency theory has been used to examine the impact of a number of organisational variables on accounting information use (Merchant, 1985; Govindarajan and Gupta, 1985; Simon, 1987; Langfield-Smith, 1997). However, it is widely accepted that NPD is a cross-functional activity, involving a range of participants with varying interests. It is likely that the role of accounting information varies not just from company to company but from user to user, with the result that the use of accounting information is actually a social phenomenon within an organisation (Feeney and Pierce, 2007).

Much of the literature examining the role of accounting information has lacked a theoretical foundation or has relied on traditional, functionalist theories. A more critical view could be used to explore how the varying motivations and objectives of different users and groups of users are implicated in accounting information use (Chenhall, 2003). This recognition of the social implications of accounting information use requires a theoretical framework which would support the exploration and interpretation of such social phenomena. Structuration Theory emerged as an appropriate theoretical lens for this purpose. It allows us to make sense of social actions in organisations by providing a framework with which it is possible to explore the detailed nature of the internal and external structures which inform managers' use of accounting information during NPD.

3 THE EVOLUTION OF STRUCTURATION THEORY

Structuration Theory has been subject to decades of challenge and debate which in itself has provided the key building blocks of the theory.

Giddens' Structuration Theory

Giddens' original formulation of the theory is primarily concerned with understanding the relationships between the activities of knowledgeable agents and the structuring of social systems. For Giddens, this duality of structure means that structures are both the medium and the outcome of social interaction (Giddens, 1984, p.25).

Giddens proposes that structuration takes place along three dimensions: signification, legitimation and domination. Human agents draw on their own internal structures of

signification to inform their understanding and communicate meaning (Giddens, 1984, p. 28). Agents draw on their internal structures of legitimation to define the limits of acceptable conduct and sanction particular behaviours (Giddens, 1984, p. 29). They draw on their internal structures of domination to exercise power and exert influence. (Giddens, 1984, p.31).

A number of accounting studies have relied on Giddens' Structuration Theory as a sensitising device for researchers to understand the nature of accounting information and its role in the organisation (Roberts and Scapens, 1985; Roberts, 1990; Macintosh and Scapens, 1990, 1991; Scapens and Roberts, 1993; Ahrens and Chapman, 2002; Conrad, 2005). However, Giddens' work has been considered underdeveloped in certain fundamental areas and has been subject to criticism in the literature. As well as being considered overwhelmingly philosophical (Thrift, 1985) and limited in terms of its role in guiding the understanding of specific phenomena in terms of time or place (Thrift, 1985; Bauman, 1989; Gregson, 1989), Structuration Theory has been criticised for its combination of individual agency and social structure into a single recursive relationship that blends structuralism and individualism (Englund and Gerdin, 2008). One of Giddens' strongest critics, Margaret Archer, suggests that Giddens' 'duality of structure' conflates agency and structure to such an extent that structures appear only to be a product of contemporary practices and that they only exist in the 'here and now'. This, in her view, ignores the effect of past practices on present action (Archer, 1996).

Archer does agree that social theory must explain the relationship between individual agency and social structure. She therefore proposes a realist social theory, deriving from a morphogenetic approach, which, in contrast with Giddens' Structuration Theory, recognises an analytical dualism between structure and agency. Archer contends that social structures pre-exist agents, but that they are transformed or reproduced through agents' actions. In other words, structures exist that constrain and enable agents, whose actions produce intended and unintended consequences that lead to the re-production or transformation of the initial structures. The resulting structures provide a context of action for future agents. So, while structure and agency are interdependent, Archer also argues that they are analytically distinct, i.e. a dualism.

To this end, she argues that any attempt to eradicate this dualism, as occurs in Structuration Theory, is incompatible with the distinction between agency and structure which exists in realist social theory (Archer, 1995).

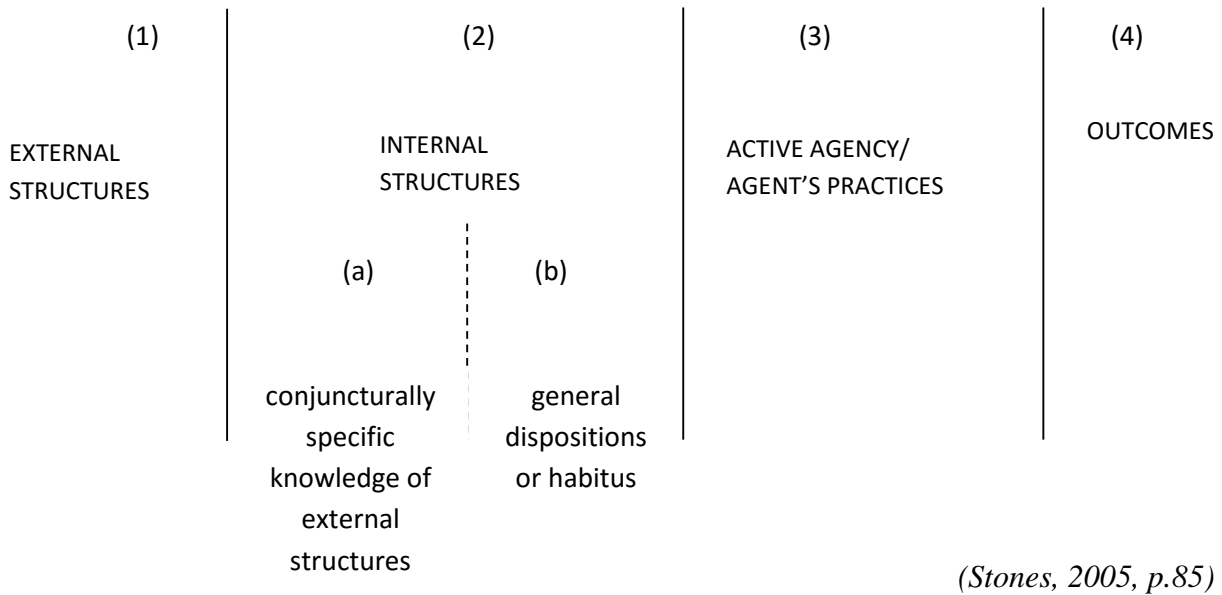
Stones' Strong Structuraton Theory

Social theorist and proponent of Structuration Theory, Rob Stones, accepts elements of Archer's morphogenetic approach. He believes it to be an advance for social theory, particularly in terms of the temporality implied in its characterisation of action; structure precedes action, which leads to a structural outcome, which provides the preconditions for action. Stones disagrees, however, with Archer's contention that a realist approach such as hers is entirely incompatible with Structuration Theory, accusing her of misinterpreting Giddens' notion of duality (Stones, 2001). Giddens does focus on the structures which are created in the moment of structuration, in 'what people actually do' (Giddens and Pierson, 1998, p. 81), but he also recognises that people's actions take place within a context which places 'limits upon the range of options open to [them]' (Giddens, 1984, p. 177).

Stones therefore builds on Giddens' construct, providing what he describes as a strengthened version of Structuration Theory which has more resonance in empirical research (Stones, 2005, p.1). As represented in Figure 1, Stones' framework breaks the notion of the duality of structure into four analytically separate components constituting the quadripartite cycle of structuration. These are: (1) external structures as conditions of action; (2) internal structures within the agent; (3) active agency, i.e. when agents draw on internal structures in producing practical action; and (4) outcomes, as external and internal structures and events (Stones, 2005, p.84).

Stones presents external structures as those structures which provide the agents with their conditions of action. He describes them as 'independent forces and pressuring conditions that limit the freedom of agents to do otherwise' (p. 109). He distinguishes between *independent causal influences*, where the external structures are constituted, reproduced or changed independently of the wishes of the agents although they may directly affect the life of the agent, and *irresistible causal forces* where the agent has the capacity to resist an external influence but feels unable to do so.

Figure 1: The quadripartite nature of structuration



Stones suggests that there are aspects of an agent's internal structures which are habitual or generalisable, and there are aspects which are oriented towards a particular job or task. The latter he describes as *conjuncturally specific internal structures*. These emerge from a specific role or position that has various rules and norms embedded within it. Ultimately, conjuncturally specific internal structures refer to the situated agent's knowledge of the three intrinsically linked aspects of structures presented by Giddens (Parker, 2006).

The habitual and generalisable elements of an agent's internal structures, described as *general dispositional internal structures*, are transposable skills and dispositions, including general world views, cultural schemas, typified recipes of action and habits of speech and gesture (Stones, 2005, p.87).

Active agency refers to the way in which agents draw upon their internal structures and apply their knowledge and understanding to the situations in which they operate. It encapsulates the observable behaviour during which an agent, motivated by his internal structures, chooses to act in order to confront his external structures (Stones, 2005, p.100).

The central tenet of Structuration Theory is the duality of structure, that is, the notion that structures are both the medium and the outcome of social interaction. To date, the outcomes of structuration have received little attention in their own right. This is perhaps due to Giddens' reluctance to distinguish between structure and agency in his presentation of the duality of structure (Stones, 2005, p.21). Outcomes are the result of active agency. This encapsulates the effect of action and interaction on both internal and external structures, as well as other kinds of outcomes. The effects of agency on structures, both internal and external, might result in their being changed, elaborated on, reproduced or preserved. Other kinds of outcomes refer to any event resulting from social interaction, regardless of their impact on structures. This will frequently include the success or failure of the agent's purpose (Stones, 2005, p.85).

Englund and Gerdin's (2014) critical review of Structuration Theory in accounting research calls for more applications of it as a framework for exploring accounting practices as an organizational, social, and political phenomenon. At the same time they are critical of the accounting community for not working as a collective to develop a structurationist understanding of accounting practices, suggesting that researchers have remained largely uncritical of Structuration Theory as a theory. Stones takes Giddens' admittedly abstract theory and points it toward specific concrete situated entities with their particular qualities, relations, shapes, tone, texture and colour (Stones, 2005, p. 76). England and Gerdin's accuse Stones' work of failing to fundamentally develop Giddens' original ideas but we concur with Coad, Jack and Kholeif's (2015) contention that Stones specifically addresses many of 'the concerns of epistemology and methodology that were overlooked or ignored by Giddens himself (p. 154)'. Stones' model presents an opportunity for effective research design which can underpin both the empirical work and its subsequent analysis. Herein lies the most significant contribution of Strong Structuration Theory, and one which is exploited in this study.

Strong Structuration Theory and Accounting

Several studies in the management accounting stream have drawn on Stones' work to explore the role of management accounting in varying contexts and circumstances. Jack and Kholeif (2008) clearly identify the quadripartite nature of structuration in operation in an organisation implementing ERP. Their findings highlight the

difficulties in establishing enduring structures when there are conflicting dispositions and conjuncturally specific understandings within the roles of different clusters of actors in the organisation. Coad and Herbert (2009) combine Stones' Strong Structuration Theory approach with a skeletal model of the structuration process to analyse a case study of management accounting practices in a privatised utility company. The longitudinal nature of their study allowed Coad and Herbert to examine how external structures, internal structures, and management accounting practices evolved over a period of time. However, their analysis stops short of exploring why. They attribute their inability to further explore changes in internal and external structures to the weakness of Stones' model in terms of providing guidance as to why structures interact in the way that they do, and how this influences the reproduction of, or changes in, management accounting practices. They argue that further insight into these issues requires a greater depth of understanding of the 'connecting tissue' between the elements of the quadripartite model (Coad and Herbert, 2009, p. 191).

Stones (2005) breaks down this notion of the sliding ontological scale. He descends from broad abstract levels of national and international social systems down to a meso-level analysis of more local social systems and ultimately to an ontic level of analysis, which explores the position– practice relations of individuals. Coad and Glyptis (2014) present a meso-level analysis in their case study of a joint venture between a state-owned oil company and a ship management organisation. They go on to suggest that further research needs to be carried out at the ontic level of analysis which focuses on the evolution of processes and practices at individual levels.

Although not falling within the accounting stream, Greenhalgh and Stones (2010) adapt Strong Structuration Theory and combine it with actor-network theory (ANT) to examine technology programmes used in the UK National Health Service. They examine the links between human agents and technology in dynamic networks of position practices. The authors admit that adding technology as a third strand to the 'agent-structure' relationship complicated the ontological picture, but it did raise some interesting questions in terms of the capacity of technology to have agency.

In all of these studies, Strong Structuration Theory was used to enhance the analysis of the data available. The data were gathered with alternative, though similar,

theoretical approaches in mind. Jack and Kholeif (2007) provides a compelling case for the use of Stones' Strong Structuration Theory to inform substantive empirical research, particularly if introduced at a design stage so that researchers can more explicitly examine internal and external agents and structures.

4 CASE STUDY

Stones' Strong Structuration model is considered particularly well-suited to case study research in accounting, organisation and management (Jack and Kholeif, 2007; Coad and Herbert, 2009). It allows us to take a broad view over the NPD process and the managers involved in a particular organisational setting. Examining how these managers draw upon their conjuncturely specific structures of signification, legitimation and domination, and how these are affected by their external structural conditions and their general dispositional frames of meaning, will facilitate the development of an in-depth understanding of managers' behaviour during NPD.

This study consists of a field study of the manufacturing division of the Magma Group (Magma). Magma is a large Irish-owned group with three divisions: Natural Resources, Enterprise and Manufacturing. The Manufacturing division – Magma Manufacturing Division (MMD) - consists of two companies: Topwood and Metbuild.

Topwood was acquired in 2002 for €17m. Topwood's biggest competitive weakness is its relatively poor plant quality. The plant, valued at €10m with a capacity of 330,000m³, is comparatively antiquated having had little or no capital investment since its construction in the early 1990s. Topwood manufactures Alpha timber products. Alpha is a commodity product suitable for wall sheathing, roofing, flooring, hoarding, packaging, wall partitioning, DIY and general building applications.

Metbuild was acquired in 2006 for €67.8m. Since then Magma has continued to develop its production facilities investing €17m in new technology and equipment to improve productive capacity and refiner capabilities at its plant. Metbuild now has a very modern plant with two continuous press lines and annual capacity of 440,000m³. Metbuild manufactures Beta timber products. Beta is a slightly more specialised

product than Alpha and is suitable for furniture, shop fittings, mouldings, wall and ceiling panels, shop fronts, external signs and flooring substrates. However, commodity grade Alpha and Beta products are entering the mature phase of their product lifecycles. The industry is looking to the next generation of Alpha and Beta, calling for higher quality products with tighter environmental specifications.

Data gathering commenced in 2007 when an exploratory interview was conducted with Metbuild's Head of Finance (Des) and Head of Operations (Pete) together with an extensive tour of Metbuild's manufacturing facility and access to a large amount of internal company documentation. A period of time was spent analysing this exploratory data, refining the research objective, clarifying the study's theoretical foundation and developing a clearer understanding of the case-site. It was decided to conduct an embedded case study which facilitated the examination of two units of analysis, namely Topwood and Metbuild. This would require interviews with managers in Finance and Operations roles in both of the manufacturing companies. It was imperative that these managers were involved in NPD in some way and were at a sufficiently high level in the organisation that they contributed to decision-making at some stage throughout NPD. Arrangements were made to visit Topwood's plant. After a tour of their manufacturing facility, interviews were conducted lasting approximately one and a half hours each, with the company's Head of Finance (Paul), Managing Director (Nick) and Head of Operations (Jack) all of whom also provided relevant internal company documentation. Interviews were conducted with comparable personnel in Metbuild, i.e. the Head of Finance (Des), the Head of Operations (Pete) and the Managing Director (John). Des and Pete had been interviewed in an exploratory capacity one year earlier.

As data gathering progressed it became clear that any depth of understanding of accounting and NPD in both of these manufacturing entities required the insights of managers at MMD and Magma group level. Interviews were conducted with senior management at MMD, as well as the Head of Strategy and Chief Executive of the Magma group (a list of interviewees is presented at appendix 1). The opportunity to compare the perspectives of managers in both companies offered an enhanced insight into NPD in Magma. However, the interviews with managers in MMD and Magma ensured that the larger, holistic aspects of the case were not ignored.

Semi-structured interviews were conducted during each of which an interview schedule was used. The interview schedule ensured that all relevant topics were covered, provided direction for the questioning and helped the researcher to conduct the interview in a systematic way. Supplementary questions were asked when initial responses needed elaboration or when new issues emerged during the course of the discussion.

In most cases, an interview guide will be developed by building on prior studies in the area. In the absence of such studies, we developed the guide by connecting directly with the various elements of Stones' quadripartite cycle of structuration, though this terminology was never used in the interviews. The objective of the interviews was to understand the internal and external structures at play during NPD in both companies. We sought to explore the role of accounting information in NPD from the interviewee's own perspective and to search out factors, conditions and circumstances which might be associated with that perspective. Interviewees were always invited to discuss any other issues which had not arisen during the interview but which they perceived as important in terms of the subject matter. The interview schedules were tailored slightly to managers at different levels and in different functions but they broadly covered the following areas; company background, the company's position within the group structure, the interviewee's role and responsibilities, a detailed account of NPD including the interviewee's involvement in NPD, a description of the interviewee's use of accounting information in NPD, the interviewee's perspective of the role of accounting information in NPD decision-making, the interviewees attitude to and level of satisfaction with role of Finance in NPD and in general and the interviewees degree of financial literacy.

Stones' quadripartite cycle of structuration informed the study's data collection which was carried out on an iterative basis in conjunction with ongoing consultation with the literature in this area. A deeper understanding of the interactive and overlapping nature of structures emerged during the data analysis stage when Stones' composite research strategy was applied.

Magma supplied copies of completed NPD project documentation, project documentation for projects in progress and for deferred projects, internal information

memorandums and board reports. Documentation was crucial to the development of a sound understanding of the case context and proved particularly useful when searching for more detail and depth during interviews

MMD has a single NPD Steering Committee which reviews NPD projects at a series of stage-gates to decide if they should progress to the next stage. Representatives from both plants have been involved in the development of a formally documented NPD process which tracks the NPD project through each of these stages.

Within this formal process, some accounting information is reviewed at the early stage -gates. However, accounting information is most prominent during the *Business Analysis* phase, when the Finance function presents the Steering Committee with a comprehensive business case for the proposed new product. In this formal context, accounting information is being relied upon by the Steering Committee to support decisions leading to the significant commitment of financial resources to the project.

However, it emerged sometime into the data gathering process that accounting information is also used in an informal manner by managers engaged in NPD on a day-to-day basis. This was much more difficult to uncover because of its unpredictable and informal nature. It was prepared as needed, often in a highly unstructured context. For instance, the case provided evidence of accounting estimations being prepared by the NPD Team during an unscheduled NPD project meeting as well as over informal discussions at lunch. Several managers didn't even recognise this as accounting information:

That's not accounting, that's back of a matchbox stuff (*Head of Operations, Metbuild*).

In this context, accounting information is regarded as a given language used by members of the NPD Team to form an early picture of the potential new product, a picture which is refined and improved as more information is gathered. This information is generally collated by members of the NPD Team themselves, with support and guidance from Finance when necessary.

There are clear differences in the use of accounting information by the Steering Committee and by the NPD Team. At a relatively late stage in the process, the

Steering Committee reviews carefully aggregated pro-forma schedules of accounting information which are prepared by the Finance function. Meanwhile, members of the NPD Team draw on more basic, less sophisticated accounting information in order to discuss and deliberate over NPD issues from the outset of a development project.

There are also contrasts in the use of accounting information by managers in Topwood and Metbuild. Metbuild's managers describe accounting information as a 'taken-for-granted' language which drives NPD. Topwood's managers recognise its importance throughout the process but view it more as a means of being controlled than a way of communicating about key issues. This suggests that not only do managers in different circumstances throughout the Group use accounting information in different ways, they also frequently differ in their perceptions of what constitutes accounting information. The rules and normative expectations associated with the formal NPD process inform how the Steering Committee use accounting information, while the institutionalised routines and recognisable language of the Finance function influence the NPD Team's informal use of accounting information. Managers in comparable circumstances use accounting information in different ways. Topwood and Metbuild's respective Managing Directors, both members of the Steering Committee, demonstrate contrasting perceptions of the role of accounting information. This suggests that a manager's action is guided as much by his individual phenomenological perspective as it is by the social institutions he confronts. In this way it is impossible to examine these institutionalised structures in isolation from the human beings who draw on them. This recognition of the significance of agency and structure is the central tenet of Structuration Theory, which is the theoretical lens through which this data is analysed.

5 DATA ANALYSIS

In the interests of providing methodological guidance to researchers in the field Stones accompanied his quadripartite cycle of structuration with a composite research strategy. This is a series of steps which when applied to a particular agent can provide an insight into that agent's own processes of structuration. These steps can be applied over and over again to a number of agents differently situated within a given

conjunction. In the context of this study this involved analysing the case data several times, each time using a different manager, or agent-in-focus, as the lens of analysis. This is an acknowledgement of the web-like interdependencies between different processes of structuration and recognises that one agent can be first and third person depending on whom the lens of structuration is focused on at any one time. This composite strategy is particularly suited to investigations which seek to explore a particular phenomenon over a given time period (Stones, 2005, p. 126). This essentially involves analysing the case data several times, each time using a different agent-in-focus, in other words, each time using a different manager as the lens of analysis.

When all interviews were completed and all transcripts, notes and company documentation had been subjected to preliminary analysis Stones' composite research strategy was decided upon as the most appropriate means by which to develop further insights into the case data. Criteria were established with which to select the agents-in-focus who would provide the most insight into the role of accounting in NPD. These criteria are as follows; (1) All managers selected must have relative proximity to the NPD process; (2) A manager must be selected who regularly works on NPD Teams; (3) A manager must be selected who sits on the Steering Committee; (4) A manager must be selected from the Finance function, and (5) Comparable managers in Topwood and Metbuild must be selected so as to facilitate comparative analysis. This had the result that any interviewee who provided depth of insight into the role of accounting in NPD was selected as an agent-in-focus. Other interviewees were valuable in providing an understanding of the structuration processes surrounding the agents-in-focus.

To this end, six managers were selected as agents-in-focus. Stones' composite research strategy is applied to each in turn. These managers, listed in Table 1 below, are identifiable in the list of interviewees in Appendix 1.

Table 1: List of Agents-in-Focus

Name	Job title	Company
Jack	Head of Operations	Topwood
Paul	Head of Finance	Topwood
Nick	Managing Director	Topwood
Pete	Head of Operations	Metbuild
Des	Head of Finance	Metbuild
John	Managing Director	Metbuild

It is important to note that in a given analysis, the other five agents-in-focus become agents-in context. Agents-in-context are agents within the community of practice on whom the analysis is not focused but they inform the behaviour of agents in the same way as any other external structure (Stones, 2005, p. 93). The relevant agents-in-context in this study are not limited to the other five agents-in-focus but include networked others throughout the group, many of whom were interviewed during the data gathering process.

Giddens originally introduced the notion of ‘methodological bracketing’ believing it be the only way in which Structuration Theory could be operationalised as a framework for empirical research. When Giddens performed institutional analysis, he bracketed off the agent’s conduct, effectively ignoring the agent’s internal skills, awareness and knowledgeability and treating institutions as chronically-reproduced rules and resources that are unaffected by the agents drawing on them. When analysing an agent’s strategic conduct, he bracketed off the corresponding institutional context, placing in suspension any notion that institutions are socially reproduced. Giddens was criticised for pushing this bracketing too far and creating too much of a distinction between agency and structure, effectively reintroducing the dualism which Structuration Theory had initially set out to eradicate (Englund and Gerdin, 2008; Englund, Gerdin and Burns, 2011; Kilfoyle and Richardson, 2011). Stones defends Giddens’ use of methodological bracketing but he does address his failure to explore the connecting tissue between the two brackets (Parker, 2006). He replaces Giddens’ ‘analysis of strategic conduct’ with conduct analysis, which focuses

attention on the internal aspects of the agent, and he replaces Giddens' 'institutional analysis' with context analysis, which focuses attention on the external aspects of the agent (Stones, 2005, p. 121).

Conduct analysis examines an agent's internal knowledgeability on two levels: dispositional and conjunctual. The analysis of an agent's dispositional frame provides insight into his ordering of concerns, hierarchy of purposes, motives, desires and attitudes, while the analysis of an agent's conjunctural frame concerns the rules, norms and interpretative schemes the agent draws on when he engages in specific roles or tasks. These conjuncturally specific structures provide the critical link between an agent's internal and external structures, as the analysis of the agent's conjunctural internal structures leads us through the agent into his external terrain. Context analysis turns the entire analysis outwards, examining this external terrain and institutional position practices. Instead of placing the institutional context in suspension, the combination of context and conduct analysis seeks to explore the interaction between this external terrain and the agent's internal knowledgeability.

As outlined earlier Stones' composite research strategy consists of a series of recurrent steps which, when applied, should lead to an in-depth understanding of specific phenomena in a particular time and place (Stones, 2005, p. 123). These recurrent steps include the following:

- Step 1: Within the bracket of conduct analysis, identify the general dispositional frames of meaning of an agent-in-focus.
- Step 2: From within these general dispositional frames of meaning, identify the conjuncturally specific internal structures of that agent-in-focus. This will reflect how the agent perceives his immediate external terrain from the perspective of his own project, role or task.
- Step 3: Within the bracket of context analysis, identify the relevant external structures, the position practices that routinely constitute them, the authority relations within them and the material resources at the disposal of the hierarchically-situated agent.
- Step 4: Specify the possibilities for action and structural modification allowed by the identified external structures.

The analysis of Jack was performed first. All of the interview transcripts, notes and documentation were first reviewed in order to identify Jack's dispositional frame of meaning. Any data pertaining to Jack's dispositional frame of meaning were coded in order to identify it. This review was not limited to Jack's interview transcript and notes; all interview transcripts, corresponding notes and documentation were reviewed for evidence of Jack's dispositional frame of meaning. Often the responses of the other interviewees, and not necessarily of the other agents-in-focus, provided insights into Jack's dispositional frame or perhaps corroborated aspects of his dispositional frame that emerged from the analysis of his own interview

The same interview transcripts, notes and documentation were reviewed again in order to identify Jack's conjuncturely specific internal structures. The relevant data were again coded.

Finally, the interview transcripts, notes and documentation were reviewed in order to identify Jack's external structures. Again, the relevant data were coded. The identified external structures were reviewed for possibilities for action and structural modification and the resulting observations were recorded on the coded transcripts, notes and documentation. These four steps were repeated for the remaining five agents-in-focus.

6 FINDINGS

This section provides an overview of the results of this process of data analysis. It presents key insights into each element of the quadripartite cycle of structuration at play during NPD in Magma.

External Structures

The nature of external structures is one of the most debated aspects of Structuration Theory. Giddens' original conception of Structuration Theory, in exploring the duality of structure, recognised the existence of external structures but did not actually deal with them to any great extent, focusing instead on the agent's internal knowledge of those structures. Giddens' critics, specifically Archer (1995), focused on the

'objective existence' of external structures but this only resulted in the separation of external structures from the agents who inhabit them. Stones (2005) pays particular attention to the degree of autonomy inherent in external structures, believing there to be two types: independent causal influences, over which the agent has no control, and irresistible causal forces which the agent may have a degree of control over depending on their hermeneutic frame.

Several external structures were identified in this study. The social identities and position practice relations of each company's Finance function form a significant element of the agents' structural context as do Topwood's Managing Director, Nick, and Metbuild's Managing Director, John, each of whom provides a critical link between Magma and their respective companies. These structures have a value-dependant influence over the managers' behaviour. While they are external to these agents, they are wrapped up in each agent's desires, dispositions and ordering of concerns. The findings also provide evidence of the authoritative and controlling impact of the parent company, Magma, as well as more societal-level factors in the external environment, such as competitive market forces and foreign exchange fluctuations. The NPD process comprising the formally documented set of routine practices governing NPD is another critical external structure shaping the behaviour of the agents-in-focus.

The external structure which perhaps provides the most insight is that of accounting information itself. Accounting information provides its own system of recognisable procedures and patterns of behaviour, which can encompass accounting information used in the formal stage-gate process as well as accounting information used informally throughout NPD. It emerges from this analysis that accounting information, at its basic level, consists of basic stocks of data comprising accepted conventions and codes which are largely familiar to everyone within the organisation. Identifiable concepts framed in accounting terms such as revenue, cost, profit, loss, return and investment are themselves external structures drawn upon by individuals every day, whether in a business context or not. How an individual engages with these external structures, whether in a formal or informal context, depends on that individual's internal structures. These might include their dispositional attitude to accounting resulting from their educational background or their conjunctural

relationship with accounting resulting from their role in the organisation. This illustrates how elements of both determinism and voluntarism are critical in understanding how managers use accounting information during NPD.

Internal Structures

An examination of an agent's internal structures is really an attempt to identify the voluntary factors implicated in the activities of individuals. This is complex because it involves labelling something which is entirely subjective to every agent. Stones' terminology is helpful in this regard. In distinguishing between dispositional frames of meaning and conjuncturally specific internal structures, he provides a framework which seeks to capture all aspects of an agent's internal knowledgeability. The agent's dispositional frame captures those skills, tastes and ways of acting which are acquired through the activities and experiences of everyday life. These structures are generalisable and transposable, and are drawn upon by that agent across various situations and circumstances.

Topwood's Head of Operations (Jack), through his education and training as an engineer and his prior experience working in an R&D environment, has developed a strong dispositional commitment to innovation and NPD. Topwood's Head of Finance (Paul), a qualified accountant, demonstrates a habitual draw towards the routine and structure associated with accounting practices. Topwood's Managing Director's (Nick) generalised views and cultural schema appear to be particularly embedded in the Magma Group's overall strategy. He is less concerned with the process of developing new products and more interested in the outcome of that process and in ensuring that Topwood develop products which adhere to Magma's overall strategy, that is to develop higher value, commercially viable products.

Metbuild's Head of Operations (Pete) is a trained engineer who has worked in R&D for many years. He expresses a clear desire to innovate and create new products but this is tempered by a strong dispositional commitment to financial accountability and profitability, which is evident in the language he uses as well as in his overall attitude to NPD. Metbuild's Head of Finance (Des) shares his colleague Pete's dispositional perspective. Des and Pete work in different functional areas and have different educational backgrounds, yet both are influenced by the same commitment to

financial accountability and profitability, causing them to share certain elements of their dispositional frames. Metbuild's Managing Director (John), having been involved in the initial set-up of the company almost twenty years ago, is strongly oriented toward strategic expansion and growth but this is still grounded in financial accountability.

An agent's conjuncturely specific internal structures are linked to the circumstances of their action. They are specific to a given time, place and role or task and, while they are perceived and made sense of on the basis of an agent's general dispositional frame, they are analytically distinguishable from those more transposable structures. Stones works toward bridging the theoretical gap between internal and external structures by recognising that the conjuncturely specific internal structures of an agent-in-focus are constantly interacting with a web of position practices, external structures and agents-in-context

In Topwood, Jack draws on accounting information as a legitimation structure that sets out what he believes are the normative expectations associated with NPD. Believing that all NPD decisions must be 'backed up' by accounting information, Paul also draws on accounting information as a legitimation structure which sets out norms and rules against which NPD behaviour can be assessed. Nick draws on accounting information as a key signification structure during NPD, regarding it as the primary means of communication between the Steering Committee and the NPD Team. All three managers' primary engagement with accounting information during NPD is in the context of the formal NPD process.

In Metbuild, Pete uses accounting information frequently on an informal basis from the very early stages of the process to resolve NPD issues and make day-to-day NPD decisions. In doing so, he is drawing on accounting information as a signification structure that provides a company-wide interpretive scheme with which everybody in the company can communicate about NPD. Des and John draw on similar interpretive schemes and discursive practices. In continuing to draw on accounting information in this manner, all three agents-in-focus in Metbuild are constantly confirming and reproducing these signification structures. These signification structures are of course intrinsically tied to the legitimation and domination structures

which underpin them. While accounting information, particularly in this informal context, does provide the agents in Metbuild with a language with which everybody may understand NPD issues, within the formal process, it effectively communicates the norms and expectations which must be adhered to during NPD- norms and expectations which are imposed by the parent company Magma

Clear differences are evident between the three agents-in-focus in Topwood. The Managing Director's (Nick) primary loyalty is to the Magma group. From within his dispositional commitment to the Magma group, Nick draws on accounting information as a signification structure with which he oversees the progress of NPD projects. The Head of Finance (Paul) occupies the role of policeman. From within his dispositional commitment to profitability, Paul draws on accounting information as a legitimation structure with which all NPD decisions must be justified. The Head of Operations (Jack) just wants to create new products. From within his dispositional commitment to innovation and creativity, Jack draws on accounting information as a domination structure which sets out the hierarchical order within the Magma group. All three managers are affected by their own internal and external structures and this has implications for each manager's attitude to accounting information. Nick demonstrates indifference to accounting information, Jack resents it yet Paul believes it is at the core of every decision. These analyses suggest that Paul, as Head of Finance, is not successfully balancing the conflicting accounting information requirements of Nick and Jack.

Metbuild's Head of Finance (Des), Head of Operations (Pete) and Managing Director (John) are also differently situated within the position-practice relations surrounding NPD but commonalities in their internal structures mean that they react to their external structures in similar ways. This collaboration of internal and external structures manifests itself in their attitude to accounting information, all three of whom view it as an enabling and supportive structure underpinning NPD. Pete feels empowered by Metbuild's Finance function and willingly engages with accounting information throughout NPD while John believes that every NPD decision must be validated financially. Des, as Head of Finance, is simultaneously supporting members of the NPD Team on a day-to-day basis, while still retaining his position as financial gatekeeper of the formal process.

Active Agency

Active agency refers to those dynamic moments during NPD when managers take action. An understanding of the agent's internal and external structures gives meaning to the action, but the action takes its final shape in the 'doing' of an action or interaction at a particular time or place. The objective of this study is to explore the role of accounting information in NPD so the instance of active agency focused on in the analysis is that moment when managers use accounting information. It is difficult to discuss this without becoming embroiled in the process of structuration which takes place when that instance of active agency occurs. This is because agency is examined in both brackets of the process of methodological bracketing applied to the findings.

Conduct analysis involves examining the agent's dispositional and conjunctural internal knowledge, as well as his reflective monitoring, ordering of concerns, hierarchy of purpose and motivation, all critical components of agency. Context analysis involves examining the terrain facing the agent but, while doing so, recognising the interactions between the internal and external aspects of the agent that lead to agency. This illustrates the duality of structure first introduced by Giddens — the inseparability of structure and agency, meaning that structures are both the medium and the outcome of social interaction.

In this context, it is difficult to uproot that dynamic moment in which agents choose to act from the other parts of the structuration cycle and in fact the most compelling aspects of active agency emerge when considering the outcomes of the agents' conduct. For instance, accounting information as an external structure is presented in the findings as basic stocks of data comprising accepted conventions and codes familiar to everyone. Whether a manager uses these stocks of data in a formal or informal context during NPD depends on that manager's internal structures. The collaboration of these internal and external structures is manifested in the individual's active agency, or use of accounting information, and that active agency provides its own insight into that information. We see this when managers use accounting information as part of the formal NPD process. They review specific items of the information at scheduled, predetermined times throughout NPD. Managers using accounting information on an informal basis during NPD use *ad hoc* items of this information as and when they need it. In this sense, the use of accounting information

during the formal NPD process appears to emphasise the structural element of the duality of structure, while accounting information used in an informal capacity appears to emphasise agency.

This is consistent with Giddens' (1984) study which reports that, in routine situations, structures tend to dominate agency but, in situations characterised by sharp changes in conditions, established routines are undermined and systems are likely to change through the actions of agents. Members of the NPD Team, in facing changing conditions and new information every day, must supplement the formal NPD process in order to effectively develop new products. This results in modified structures of accounting information and has implications in terms of the decentralisation of accounting information throughout the company.

Outcomes

Outcomes are the result of active agency. This encapsulates the effect of action and interaction on structures as well as other kinds of outcomes. The effects of agency on structures, both internal and external, might result in their being changed, elaborated on, reproduced or preserved. Structural outcomes are clearly evident in the findings in external structures of accounting information which are shaped and moulded to suit particular managers in specific circumstances. In this way the use of accounting information, in either a formal or informal context, is itself an outcome of structuration. The outcomes of structuration are evident in numerous examples of the modification of internal and external structures throughout the findings including the clear illustration of the relationship between external structures and the development of dispositional frames evident in the contrasting impact of Magma in conditioning the agents' dispositional schemas, the internal negotiation between the managers' dispositional and conjunctural structures reflected in their use of accounting information as well as the over-lapping nature of internal and external structures when examining a number of agents within a given conjuncture.

This examination of outcomes is a critical element of the study. The duality of structure is based on the concept that structures are the medium and outcome of social interaction. This means that internal and external structural outcomes constitute internal and external structures at the next round of structuration. This is how we learn

why structures evolve and how the evolution of those structures is implicated in managers' behaviour. For this reason, the outcomes of structuration are discussed in detail in the next section.

7 DISCUSSION

To date, Strong Structuration Theory has been used primarily as a means of overcoming the perceived limitations of Giddens' original construct. Some early studies have been particularly useful in demonstrating its applicability to management accounting research as well as its potential to guide future empirical work (Jack and Kholeif, 2007, 2008; Coad and Herbert, 2009) but these studies have referred to the necessity to enhance our understanding of Strong Structuration Theory and build knowledge. This paper drills into the quadripartite cycle of structuration in the context of accounting information use during NPD. It explores the complex and dynamic nature of internal and external structures. By focusing on structural outcomes the findings enhance our understanding of the 'connecting tissue' between the different elements of the quadripartite as well as the web-like interactions between different processes of structuration.

These findings illustrate how an agent's behavior is guided by their phenomenological perspective in combination with their institutionalised structures. This exploration of the combination of agency and structure enhances our understanding of human behavior. For instance, when using accounting information, Jack is drawing on internal legitimation structures that are deeply entrenched in associated domination structures which are shaped by his experiences of Magma as an external structure. Meanwhile, when Jack's counterpart in Metbuild, Pete, uses accounting information he draws on internal signification structures which reinforce his dispositional commitment to financial accountability and profitability developed through his ongoing interaction with an enabling and supportive Finance function. Jack and Pete's internal structures do not exist in a vacuum. They are shaped and modified through interaction with external structures. It is this interaction which determines their behavior. External structures are also subject to modification, or at least an agent's

perceptions of those external structures are subject to modification through ongoing interaction with their internal structures.

The Autonomous Nature of External Structures

By conceptualising accounting information as an external structure, the study develops Stones' model by providing an enhanced insight into issues of freedom, choice and determination within external structures while at the same time illustrating the duality of structure at play. In providing the managers with their conditions of action, accounting information is identified as a key external structure in this study. How these external structures manifest in the managers' day to day environment is an outcome of the interaction of these external structures with the managers' individual internal structures. This illustrates the duality of structure. External structures of accounting information are, in themselves, both the medium and outcome of social interaction. They condition the agent's behaviour and when combined with an agent's internal structures they manifest as structural outcomes in the form of formal or informal accounting information.

Stones' model paid particular attention to the nature of the autonomy of external structures. He describes independent causal influences as those which are entirely outside of the control of the agent, while an agent's ability to control an irresistible causal force is bound up in that agent's own wants, desires, attachments, dispositions, orientations and bonds. Stones' conceptualisation of independent causal forces implies a total absence of control by the agent while his conceptualisation of irresistible causal forces implies that the agent has some control, the extent of which depends on the agent's internal structures. Stones suggests that all external structures fall into one of these two categories which are distinguished in absolute terms by the absence or presence of control by the agent. These findings suggest that this is an over-simplified way of examining external structures.

External structures of accounting information can manifest themselves in a formal or informal context. The distinction between formal and informal accounting information is associated with the degree of control managers themselves have over external structures of accounting information. Accounting information in a formal

context is tied into the formal NPD process. It is somewhat independent of the agent and is relatively generic and homogenous from project to project. In contrast, accounting information used on an informal basis during NPD is fluid and dynamic, evolving on a day to day basis, shaped and moulded to individual managers in particular circumstances as a result of the interaction of their internal and external structures. While the former emphasises the structural element of the duality of structure and the latter emphasises the agency aspect, they are not clearly distinguishable by the presence or absence of control, but by degrees of control. In this sense external structures of accounting information have an element of independence and irresistibility. In this way the distinction between independent and irresistible causal forces is not clear-cut.

Interactions between Structures

Stones' quadripartite cycle of structuration addresses some of the limitations of Giddens' original model, specifically developing Structuration Theory so that it can be used to guide empirical research in specific contexts. However, Stones' model has itself been criticised for its lack of emphasis on the interaction between structures and how this interaction is implicated in their ultimate modification. Using Stones' composite research strategy, it was possible to regard NPD in MMD as a social system through which we could develop an understanding of the cluster of agents involved, examine those agents' structures both internal and external, and explore how these structures interacted with each other and ultimately how they were formed, reformed or modified through the action of these agents. What resulted from this composite research strategy were the six micro-analyses presented in this study. Some of the most compelling examples of structural interactions observed in these micro-analyses are set out below.

The findings reveal that the managers' dispositional frames of meaning are shaped by their structural conditions of action. A key element of these managers' conditions of action is their parent company Magma. The managers' contrasting dispositional perspectives are associated, to some extent, with their contrasting experiences with Magma. Topwood has an ageing plant, has received little or no investment from Magma and offers an inflexible and over-commoditised product range. In contrast, Magma has invested heavily in Metbuild, allowing it to broaden its product range and de-commoditise its product offering. The difference in the relationships that Metbuild

and Topwood have with Magma is reflected in the contrasting attitudes of each company's Head of Operations:

Oh gee, Magma is like, you know, walking around with a ton of weight on your shoulders. That's what it's like (*Jack, Head of Operations, Topwood*).

It's not like Magma can [kill] projects. People have a fair idea. There are no surprises. People know themselves. They know about products and pricing, and they know what markets are at, they have a good idea how everything will fare out (*Pete, Head of Operations, Metbuild*).

Given the different experiences that Jack and Pete have had with Magma, it is not surprising that there are such contrasts in their attitudes to their parent company. These findings demonstrate how their contrasting experiences of Magma may be associated with contrasts in how they use accounting information during NPD. Pete demonstrates a dispositional commitment to Metbuild's profitability, a dispositional commitment which is reinforced by his conjunctural perception of accounting as a useful interpretative scheme with which he makes NPD decisions every day. Jack is less committed to Topwood's profitability. He is instead focused on technical innovation and creativity and feels constrained by his conjunctural perception of accounting as a tool used by Magma to control him. From within their dispositional perspectives, they each draw on different conjuncturally specific internal structures, all of which impacts on how they use accounting information.

A contingent model could possibly be used to explore how differences between the two companies might be implicated in the contrasting use of accounting information evident in the findings. However, this approach would allow us to do little more than observe the differing conditional circumstances of the two companies and offer those differences as possible reasons for contrasting accounting information use. Structuration Theory allows us to do more. It allows us to establish the link between accounting information and the individuals using it, while recognising that those individuals are affected by their conditional circumstances. This helps to explain why these differences in conditional circumstances have such an effect on human behaviour.

The Web-Like Nature of Structuration

Structuration is occurring in many different places at the same time, with agents differently situated within a given conjuncture. The composite strategy put forward by Stones (2005) encourages the researcher to shift the focus of structuration from agent to agent, facilitating the development of a type of conceptual map which recognises the web-like nature of interdependencies within and between the multiple processes of structuration (Stones, 2005, p. 126). The Managing Directors provide an interesting illustration of the interacting and overlapping nature of internal and external structures when examining a number of agents within a given conjuncture.

Nick joined Topwood as a college graduate and worked his way up to his current role four years ago. He is deeply committed to the Magma Group. As a member of the NPD Steering Committee, he uses the accounting information within the formal NPD process to draw together various aspects of a project in order to make an assessment of a project's progress. From within Nick's dispositional commitment to the Magma Group's strategic progress, he draws on accounting information as a signification structure that provides a frame of meaning with which to understand disparate NPD issues. In this way, formal accounting information serves as an important communication device between Nick and the NPD Team. However, Nick does not recognise accounting information as a tool which drives his decisions:

It [accounting information] won't stop the process. One way or another if you had no Finance the process could still continue. And that's reality (*Nick, Managing Director, Topwood*).

John, Metbuild's Managing Director, also sits on the Steering Committee but he engages with Metbuild's NPD Team at a local level far more than his Topwood counterpart. John has been a member of Metbuild since 1986 when he and five colleagues, including a representative from Finance, developed the company from a small operation. He was heavily involved with Magma's acquisition of Metbuild in 2002. John's dispositional frame was formed during his long history with Metbuild and, as a result, he is deeply committed to Metbuild. From his perspective accounting information provides a set of organisational norms, values and standards which legitimate NPD activities. In this context, accounting information is used informally to make NPD decisions within the NPD Team. As part of the formal NPD process, it

communicates a norm or benchmark against which the legitimacy of NPD decisions is assessed, providing a facility through which Magma monitor and control Metbuild's NPD activities. In contrast to Nick, John believes that all NPD decisions, from the very outset, must follow the financial analysis:

It was the case back then [in 1986] and it is the case now, the decisions follow the financial analysis - no ifs or buts... accounting information is the ultimate driver of whether it's a runner or not (*John, Managing Director, Metbuild*).

The analyses of Nick's and John's processes of structuration demonstrate how their micro-level lived experiences have shaped their perspectives but it is important to observe how the attitudes of Nick and John affect their networked others. Giddens' original Structuration Theory has been criticised for over-emphasising the individual nature of action. Stones (2005) conceptualises the agent-in-focus as always being in the midst of, and caught up in, the flow of position practices and their relations. The findings of this study illustrate this by presenting NPD as a complex social action involving a wide range of actors and clusters of actors with intersecting and overlapping internal and external structures. The analyses of Nick and John demonstrate how their lived experiences are implicated in each of their perceptions of the role of accounting information in NPD. However, when one widens the lens of Nick's and John's structuration analyses, their internal and external structures overlap with those of other agents-in-focus. In other words, not only does Nick's and John's contrasting phenomenology affect how they use accounting information in NPD, but their behaviour also goes on to influence the culture within each company, which informs the dispositional frames of other agents-in-focus.

Dispositional Conjunctural Conflicts

Interactions within internal structures are just as important as those interactions between internal and external structures. All three of Metbuilds' agents-in-focus demonstrate an overriding commitment to profitability and financial accountability while in Topwood, the dispositional perspectives of agents-in-focus are more closely aligned with their individual functions. This is particularly evident in the contrast between the Heads of Operations in each company. In Metbuild, Pete's dispositional frame is embedded in Metbuild's financial performance. From within this dispositional frame he draws on accounting information on an informal basis to make

decisions throughout the NPD process. In Topwood, Jack demonstrates a strong dispositional commitment to innovation and technical advancement which he feels is constrained by the conjuncturally specific sanctions imposed by the accounting information reviewed by the Steering Committee. There is an ongoing internal negotiation between these agents' dispositional perspectives and conjuncturally specific internal structures. Jack's dispositional and conjunctural internal structures are in conflict, with the result that he perceives accounting information as an imposing and constraining influence. Pete's dispositional and conjunctural internal structures are less conflicted, meaning that he perceives accounting information as an enabling and supportive tool. This illustrates how the degree of conflict between these agents' dispositional frames of meaning and conjuncturally specific internal structures is associated with their respective use of accounting information.

8 CONCLUSIONS

This study's exploration of accounting information as a social phenomenon reveals it to have a complex relationship with the managers who use it. Using Structuration Theory as a theoretical lens, the findings demonstrate how an individual manager's use of accounting information is an outcome of structuration and depends on the interaction of that manager with their conditions of action. External structures provide an agent with his conditions of action. Internal structures are those aspects of an agent himself which influences his behaviour. An understanding of these external and internal structures gives meaning to individual action, specifically how the interactions between these external and internal structures are implicated in the role of accounting information in NPD. The duality of structure is evident in the modified structures, both external and internal, which result from this action. For many years, contingency theory has been used to understand the relationship between aspects of the contextual environment and the design and use of accounting information systems. Contingency theory stems from the proposition that most events and the outcomes of those events are likely to depend on conditional circumstances and it has been heavily relied upon in the literature to establish the link between accounting information and those conditional circumstances (Chenhall, 2003). Structuration Theory goes beyond contingency theory by establishing the link between accounting information and the

individuals using it, helping us to understand how and why those individuals are affected by their conditional circumstances.

It is clear from these findings that the managers' use of accounting information is determined as much by the subjective nature of the managers themselves as it is by the objective characteristics of the structures with which they interact. In this way, the findings contribute to the subjective-objective debate discussed in the literature. This insight is achieved because of the way in which the study moves along the sliding ontological scale, operationalising Strong Structuration Theory in a case study setting using six individual agents-in-focus, facilitating a micro-analysis of each agent's process of structuration as well as an exploration of the web-like interdependencies between different agents' processes of structuration. This addresses Coad and Glyptis' (2014) call for more ontic level research which focuses on processes and practices at an individual level.

Giddens' structuration model was criticised for being a meta-theory or 'a way of thinking about the world' as opposed to a framework to guide empirical research. Stones' model was designed to specifically address this limitation in Giddens' original structuration construct. Stones presented a composite research strategy as a tool to assist in the application of his strong structuration model in empirical settings. This research strategy informed the study's data collection which was carried out on an iterative basis in conjunction with ongoing consultation with the literature in this area. In this way, this study responds to a direct call from Jack and Kholeif (2007) to introduce Stones' model at the research design stage. In operationalising Structuration Theory in a way that few studies have to date the findings demonstrate the potential for Structuration Theory to guide future empirical research.

By illustrating the inseparability of the agent from the structure the findings contribute to our understanding of Structuration Theory at an ontological level. However, they go further, responding to a direct call in the literature to examine the relationship between structures, both internal and external, thereby enhancing our understanding of Structuration Theory at a methodological level. By using Stones' composite

research strategy, which encourages us to conceive of internal structures as always looking outwards and external structures as always looking inwards, the findings help us to understand the ‘connecting tissue’ between the different elements of the quadripartite of structuration which has been lacking in previous research in the area (Coad and Herbert, 2009). This understanding of the connecting tissue between structures was facilitated by the micro-analysis of six managers within a given conjuncture. Using the concept of the agent-in-focus as a tool with which to switch lenses from manager to manager acknowledged the web-like interdependencies between different processes of structuration. This allowed an exploration of the relationships between the various agents and structures.

Strong Structuration Theory can support future research into the role of accounting information in various contexts but particularly the role of accounting in innovative and dynamic environments. The relationship between accounting and NPD has not been widely researched and is under-developed theoretically. One of this study’s most significant contributions is the presentation of a theoretical lens through which to examine the issue. More research is needed in order to develop a better understanding of how accounting is used to support innovation and NPD in organisations. These findings suggest that this might be best achieved through further exploration of the sociological implications of accounting information use in an NPD context.

In terms of further development of the theory, an enhanced understanding of both external and internal structures is required and this is achievable by focusing on how they interact with each other. The literature would benefit from a greater understanding of the autonomous nature of external structures. This study’s conceptualisation of accounting information as an external structure provided some insights into the complexities surrounding freedom and choice with regard to external structures but more understanding is required in this area.

Future research would benefit from more depth of understanding of Stones’ composite research strategy. A possible limitation of our study is that Magma is a relatively small organisation with a neat set-up which meant that the identification of internal and external structures was straight-forward and the selection of agents-in-focus was quite clear. The relative lack of complexity meant that the case was a

particularly good fit for an application of Stones' largely untested composite research strategy. Future studies are required to consider how to implement this strategy in larger, more complex organisations with looser boundaries and a greater number of organisational actors, e.g. multinationals and conglomerates. The selection of agents-in-focus will be critically important and will require careful consideration in future studies. These challenges will present opportunities for future researchers to further develop Strong Structuration Theory as a model to drive empirical research.

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APPENDIX 1

