**STRONG STRUCTURATION THEORY & ACCOUNTING INFORMATION:**

**AN EMPIRICAL STUDY**

Orla Feeney (*Corresponding Author*), Dublin City University, Dublin 9, Ireland

P: +353 1 7005067; E: orla.feeney@dcu.ie

and

Bernard Pierce, Dublin City University, Dublin 9, Ireland

P: +353 1 7005450; E: bernard.pierce@dcu.ie

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**1 INTRODUCTION**

This paper explores 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 not only improves our understanding of the role of accounting information in NPD, but enhances our understanding of Strong Structuration Theory, particularly the interactive and overlapping nature of structures, both internal and external.

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 & NEW PRODUCT DEVELOPMENT**

A firm’s innovativeness is executed through its New Product Development (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). 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 phenomenon. Structuration Theory emerged as an appropriate theoretical lens through which to examine the role of accounting in NPD. Structuration Theory allows us to make sense of social actions in organisations. It provides 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. Structuration Theory was chosen as a theoretical lens for this study primarily because it places agency and structure, that is people and practice, equally at the centre of the analysis.

**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. The next section acknowledges this debate and embraces these challenges, ultimately presenting Stones’ strong structuration model as the theoretical lens through which this empirical study is explored.

The Start of the Journey: Giddens’ Structuraton Theory

Structuration Theory was originally set out by Anthony Giddens. In his formulation of the theory, Giddens is primarily concerned with understanding the relationships between the activities of knowledgeable agents and the structuring of social systems. Giddens’ key contribution is the reconceptualisation of the structure-agency dualism as a ‘duality of structure’. 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. Using signification structures, agents draw on interpretive schemes and discursive practices to communicate meaning and understanding (Giddens, 1984, p. 28). Agents then draw on their internal structures of legitimation to define the limits of acceptable conduct and sanction particular behaviours (Giddens, 1984, p. 29). Finally, agents draw on their internal structures of domination to exercise power and exert influence. (Giddens, 1984, p.31).

Signification, legitimation and domination describe the knowledgeability of agents in relation to their social structures. This is distinct from their modalities, which are the media by which agents draw on these structures. Agents draw on interpretive schemes to make sense of activities through signification structures. They draw on norms to legitimise their behaviour through legitimation structures and they draw on facility to control allocative or authoritative resources through domination structures. Essentially, structures of signification and legitimation are rules, and structures of domination are resources, which together represent abstract codes or templates that guide agents’ social behaviour and can be both enabling and constraining of human action (Conrad, 2005).

A number of studies rely on Giddens’ Structuration Theory 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) use Structuration Theory to examine how accounting systems supplement local meanings and norms by imposing discipline on the work of dispersed organisational participants. Roberts (1990) illustrates, in structuration terms, how face-to-face meetings between divisional managers build a greater sense of local accountability than more formal systems of measurement and control. Macintosh and Scapens (1990, 1991) and Scapens and Roberts (1993) use Structuration Theory to explore how management accounting systems change over time and why there might be resistance to change in management accounting practices. Similarly, Ahrens and Chapman (2002) and Conrad (2005) use Structuration Theory to examine aspects of accountability as well as tradeoffs between legitimacy, signification and domination over time.

These studies demonstrate the suitability of Structuration Theory as a ‘sensitising framework’ for the analysis of management accounting systems as they are used in organisations (Macintosh and Scapens, 1991). Examining management accounting systems in terms of signification, legitimation and domination structures, together with their underlying modalities, recognises accounting as a social phenomenon within an organisation. These studies tell a story of how and why accounting information in specific organisational circumstances plays the role that it does.

Criticisms of Giddens’ Structuration Theory

Giddens’ work has been considered underdeveloped in certain fundamental areas and has been subject to criticism in the literature.

*Excessively Philosophical*

Firstly, Giddens’ work has been accused of being overwhelmingly philosophical (Thrift, 1985; Bauman, 1989; Gregson, 1989) and limited in terms of its role in guiding the understanding of specific phenomena in terms of time or place (Stones, 2005, p.7). Its application to empirical research has been considered doubtful and has been described as a ‘meta-theory’, or a way of thinking about the world, as opposed to an empirically testable explanation of social behaviour (Thrift, 1985; Baumann, 1989; Gregson, 1989). Giddens himself claims that Structuration Theory is ‘essentially procedural and does not supply concepts useful for the actual prosecution of research’ (Giddens, 1990, p.311).

*Lack of clarity on external structures*

Giddens’ conception of Structuration Theory is based on a mutually interacting duality of structure which contains both subjective and objective elements. Within this theory, human agency is entirely subjective, but it can create social structures which then become externalised and subject to objective analysis. In recognising the existence of this duality of structure, Giddens accepts the existence of an external structural context within which an agent must operate. However, he goes on to focus on the agent’s internal knowledge of those structures and how that specifically influences his behaviour. The external structural context itself is virtually ignored, leading to a lack of clarity as to how the duality of structure actually operates (Whittington, 1992; Archer, 1995; Parker, 2000).

*The realism-structuration divide*

Ultimately, Giddens’ Structuration Theory attempts to unite the interpretative and functionalist traditions into a single theoretical framework, which subsumes the traditional subjective/objective perspective of social theory. Giddens’ key contribution is his proposal that agency and structure are not two independent phenomena with one superseding the other, but that agency and structure exist as a duality, which are simultaneously both the medium and the outcome of social interaction (Sewell, 1992; Whittington, 1992).

One of Giddens’ strongest critics, Margaret Archer, criticises Structuration Theory for its combination of individual agency and social structure into a single recursive relationship that blends structuralism and individualism. She 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 however 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 re-produced 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).

British 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). According to Stones (2001), Giddens rejects any dualism which always views structures as being entirely external to the agent. Instead, according to Stones, he distinguishes between virtual structures, which are internal to the agent, and objective external structures. Action is always mediated through the former but agency is affected by both (Jones and Karsten, 2008).

Stones (2001, 2005), in his development of Structuration Theory, draws on all of these criticisms, debates and defences in relation to Giddens’ work.

Stones’ Strong Structuration Theory

Stones 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). Parker (2006) describes Stones’ theory as ‘the most serious attempt to date to give Structuration Theory a new lease of life (p. 122)’. In order to encourage its use at a more empirical level, Stones moved away from what he called Giddens’ ‘ontology in general’, developing Structuration Theory so that it could be used to guide empirical research in specific situated contexts, otherwise known as ‘ontology in situ’, via a meso-level framework.

As represented in Figure 1, Stones’ meso-level framework breaks the notion of the duality of structure into four analytically separate components called 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). These four components are introduced by Stones in order to:

… elaborate upon and clarify the variety and nature of the elements involved in the duality of structure (p.9).

*External structures*

Giddens’ critics, most notably Archer (1995), call attention to his neglect of external structures and discuss the notion of the ‘objective existence’ of external structures and, in particular, the degree of constraint imposed by those external structures. Stones (2005) believes that Archer’s conception of external structures separates these structures from the agents and negates the role of the agents and, in turn, the duality of structure within external structures. In response, he presents external structures as those structures which provide the agents with their conditions of action.

Describing them as ‘independent forces and pressuring conditions that limit the freedom of agents to do otherwise’ (p. 109), Stones gives particular consideration to the nature of the autonomy of external structures, wishing to avoid accusations of being overly voluntaristic in his conceptualisation of them.

To this end, within external structures 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. Whileindependent causal influences are entirely independent of the control of the agent, an agent’s capacity to control or resist an irresistible causal force is dependent on his hermeneutic frame with all of its beliefs, understandings and meanings. They have, what Stones (2005) describes as, a ‘value-dependent’ influence (p. 112).

Figure 1: The quadripartite nature of structuration

(4)

(3)

(2)

(1)

OUTCOMES

INTERNAL STRUCTURES

EXTERNAL STRUCTURES

ACTIVE AGENCY/ AGENT’S PRACTICES

(b)

(a)

conjuncturally specific knowledge of external structures

general dispositions or habitus

 *(Stones, 2005, p.85)*

*Internal structures*

Archer (1995) criticises Structuration Theory for its combination of agency and structure into a single recursive relationship. She argues that Giddens’ stance on the duality of structure, in which structures refer to the agent’s internal knowledgeability of structures, means that it is impossible to tell where structures begin and agents end, and vice versa. Stones defends Structuration Theory against this criticism by referring to Giddens’ distinction between virtual structures which are internal to the agent and objective external structures. Stones develops this notion of virtual or internal structures by suggesting 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.* Theseemerge 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. While Giddens discusses virtual structures of signification, Stones describes the situated agent’s own sense of the interpretative schemes and discursive practices associated with his role, as well as conjunctural knowledge of how particular positioned agents within a given context would interpret the actions and utterances of others. While Giddens refers to virtual structures of legitimation, Stones discusses the situated agent’s own sense of the normative expectations that come with his position, as well as conjunctural knowledge of how agents-in-context would be likely to decide to behave. Finally, while Giddens describes virtual structures of domination, Stones refers to a situated agent’s own sense of the power capacities existing within a given conjuncture, as well as conjunctural knowledge of how agents within a particular context see their own conjunctuarally specific power capacities (Stones, 2005, pp. 89 – 92). In essence, Giddens can be credited with recognising the importance of an agent’s internal knowledgeability within a given contextual conjuncture, labelling them structures of signification, legitimation and domination. Stones developed Giddens’ explanation of internal structures by providing a model which helps us to relate this internal knowledge to external structures (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. These dispositional internal structures, for the most part, exist in a ‘taken-for-granted’ and unnoticed state, and are drawn upon naturally without reflection (Stones, 2005, p.87).

*Active agency*

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 concept of agency is amongst the most problematic in social theory. It is considered vague and elusive, primarily because it is very difficult to disentangle agency from the structures to which it is so tightly bound (Emibayer and Mische, 1998). Archer (1982, 1988, 1995, 2000) was particularly concerned by Giddens’ refusal to separate structure from agency in his presentation of the duality of structure but Stones addresses this criticism by explaining that structures, both internal and external, while causally influential, can pre-exist the moment of their being drawn upon.

*Outcomes*

As discussed from the outset of this chapter, 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).

Stones’ Strong Structuration Theory and Accounting research

Several studies in the management accounting stream have drawn on Stones’ work to explore the role of management accounting in varying contexts and circumstances. In doing so, they have contributed to our understanding of Stones’ elaboration of Structuration Theory.

Jack and Kholeif (2007) discuss the potential for Stones’ strong Structuration Theory in guiding qualitative case study research in organisation, management and accounting disciplines. First, they revisit two of their own studies in order to apply Stones’ theory in an accounting context. They go on to examine the appropriateness of Stones’ theory in the context of two important papers: Ahrens and Chapman (2006), which discusses the relationship between case research and theory, and Pozzebon and Pinsonneault (2005), which examines the use of Structuration Theory in Information Technology (IT) research.

Jack (2004, 2005) uses a mixture of institutional theory and Giddens’ Structuration Theory to explore why certain accounting practices have persisted over a fifty-year time span, specifically examining the use of the agricultural gross margin in UK agriculture since the 1960s. The data collected describes different clusters of actors behaving in different ways, all contributing to inertia in terms of the development of new management accounting practices. The theoretical frameworks considered were found by Jack to be inadequate to explain the findings, and the data analyses were recast in terms of Stones’ strong structuration ontology. Jack based this re-analysis on Stones’ (1996) study together with unpublished chapters of Stones’ (2005) work which were made available to Jack. A strong structuration approach encouraged what Jack and Kholeif (2007) describe as ‘mid level contextualisation’ (p. 218), which facilitated a focus on a number of actors in different groups (farmers, governments and advisors) who provided insights into their own and their industry’s practices. What resulted were two investigations. The first is a review of the literature and documentation examining the initiation and implementation of the agricultural gross margin over a fifty-year time period. The second explores more deeply aspects of signification, legitimation and domination amongst the actors and clusters of actors in the different groups. Combined, these investigations resulted in a study which shares Stones’ (2005) concern for both ‘hermeneutics and structural diagnostics’ (p. 81).

Kholeif’s (2005) examination of how an organisation’s introduction of an Enterprise Resource Planning (ERP) system affects the role of the management accountant was originally conducted using a similar fusion of structuration and institutional theories. The emergence of Stones’ (2005) strong structuration framework facilitated an enhanced analysis of the actions and structures involved. This revised study was introduced in Jack and Kholeif’s (2007) work and presented in detail in Jack and Kholeif’s (2008) study. In these, they clearly identify the quadripartite nature of structuration in operation, highlighting the difficulties in establishing enduring structures when there are conflicting dispositions and conjecturally specific understandings within the roles of different clusters of actors in the organisation. In light of such conflicts the role of the management accountant becomes overwhelmed by the position practices of internal and external actors, and ultimately reverts to the traditional roles of data custodian and information provider.

Jack and Kholeif’s (2007) paper provides a compelling case for the use of Stones’ (2005) strong Structuration Theory to inform substantive empirical research. The theory emerges from rigorously-argued ontological grounds, which are in keeping with the views of Ahrens and Chapman (2006). It addresses Pozzebon and Pinsonneault’s (2005) concerns that few studies in management and accounting literature recognise any critical work on Giddens’ theory since 1984.

Coad and Herbert (2009) combined 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 differed between 1998, 2002 and 2007. 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).

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) are particularly vocal with regard to the potential of Stones’ (2005) framework to enhance case study work, particularly if introduced at a design stage so that researchers can more explicitly examine internal and external agents and structures.

**4 CASE STUDY**

This study consists of a field study of the manufacturing division (MMD) of the Magma Group (Magma). Case study materials gathered during the period 2007-2011 include interviews, site tours, e-mail correspondence from throughout this period and documentary evidence collected on site. Stones’ re-enforced model of Structuration Theory is considered particularly well-suited to case study research in accounting, organisation and management (Jack and Kholeif, 2007; Coad and Herbert, 2009). Taking a broad view of the NPD process and the managers involved in a particular organisational setting and examining how they draw upon their conjuncturally specific structures of signification, legitimation and domination, and how these are affected by the managers’ external structural conditions and their general dispositional frames of meaning, will facilitate the development of an in-depth understanding of managers’ behaviour during NPD.

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. Interviews were conducted with managers in Topwood and Metbuild, in the divisional entity, MMD, and at Magma’s overall group headquarters (See Appendix 1). The opportunity to compare the perspectives of managers in both companies offered an enhanced insight into NPD in Magma, yet the interviews with managers in MMD and Magma ensured that the larger, holistic aspects of the case were not ignored.

Interviews were semi-structured in nature. An interview schedule was used as a basic guideline during the interviewing to make sure that all relevant topics were covered, to provide direction for the questioning and to help 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. Magma supplied copies of completed NPD project documentation, project documentation for projects in progress and project documentation for deferred projects. In addition, the company supplied a wealth of internal information memorandums and board reports, which were crucial to the development of a sound understanding of the case context. Documentation was a particularly useful tool in this study when searching for more detail and depth during interviews and when probing interviewees’ responses.

MMD consists of two plants - Topwood and Metbuild - each of which manufactures a range of products for the domestic and export markets. 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 in the early stages. 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. As the formal process has evolved, this stage has moved further downstream. In this formal context, accounting information is most heavily relied upon by the Steering Committee to support decisions leading to the significant commitment of financial resources to the project.

There is also evidence of accounting information being used in an informal manner by managers engaged in NPD on a day-to-day basis. 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 some support from Finance if 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.

The findings also provide evidence of 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 are less enthusiastic about its benefits than their Metbuild counterparts.

These findings demonstrate how managers in different circumstances throughout the Group use accounting information in different ways. They also demonstrate how these managers often differ in their perceptions of what constitutes accounting information. The rules and normative expectations associated with the formal NPD process clearly inform how the Steering Committee use accounting information. The institutionalised routines and recognisable language of the Finance function influence the NPD Team’s informal use of accounting information. However, these institutionalised structures cannot be examined in isolation from the human beings who draw on them. These findings reveal that managers in similar, or at least comparable, circumstances also 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. So too do the respective Heads of Operations, each of whom was equally involved in the development of the formal NPD process. 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. This recognition of the significance of agency and structure is the central tenet of Structuration Theory, which is the theoretical lens through which these findings are further explored.

**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 conjuncture. 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.

It would have been beyond the scope of this study to regard all managers interviewed as agents-in-focus. To this end, six managers were selected as agents-in-focus and Stones’ composite research strategy is applied to each in turn. These managers, listed in Table 1 below, are identifiable in the case study map 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. Stones addresses this criticism by replacing Giddens’ analysis of strategic conduct with his broader notion of conduct analysis, which 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 thirteen 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 conjuncturally 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**

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 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 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.

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.

**7 DISCUSSION**

The objective of this study is to enhance our understanding of how managers use accounting information during NPD and in doing so to develop some insight into why managers behave in the way that they do. Stones’ quadripartite cycle of structuration facilitates empirical analysis at the level of ontology-in-situ, allowing a depth of insight into the managers’ conduct. The managers’ conduct, i.e. their use of accounting information during NPD, is encapsulated within active agency. Active agency is that moment when a manager’s internal and external structures combine and are manifested through his action. However, to focus on active agency examines only that dynamic moment when managers act. This is like looking at a snapshot of a particular moment, it will not reveal any insight into how those internal and external structures came about or were affected by each other and it is that insight which enlightens us as to why managers behave in the way that they do. The duality of structure is based on the concept that structures are both the medium and outcome of social interaction. In this way internal and external structures are the medium of an agent’s conduct, but internal and external structural outcomes constitute the internal and external structures at the next round of structuration. This means that depth of insight into a manager’s conduct, that is depth of insight into the internal and external structures which are the medium of that conduct, is really gained by examining these internal and external structures as structural outcomes.

Structural Outcomes

These findings illustrate how each manager’s conduct is guided by their phenomenological perspective in combination with their institutionalised structures, i.e. the collaboration of their internal and external structures. In this way, each manager’s use of accounting information during NPD is an outcome of multiple structuration processes. This is evident in numerous examples of the modification of internal and external structures throughout the findings.

Modified internal structures are reflected in the gradual evolution of the managers’ internal knowledgeability. A clear illustration of the relationship between external structures and the development of dispositional frames is evident in the contrasting impact of Magma in conditioning the agents’ dispositional schemas. A theme throughout this study is the differing dispositional frame of Jack (Topwood’s Head of Operations) and Pete (Metbuild’s Head of Operations). Their contrasting perspectives appear to be associated with their contrasting experiences with Magma. The internal negotiation between the managers’ dispositional and conjunctural structures is also reflected in their use of accounting information. Jack’s dispositional commitment to innovation and technical advancement is constrained by the conjuncturally specific sanctions imposed by accounting information. Pete demonstrates less internal conflict and perceives accounting information as an enabling and supportive structure. Each Managing Director has a very different perspective on the role of accounting information in NPD. Topwood’s Managing Director (Nick) views it as ancillary at best while Metbuild’s Managing Director (John) considers it to be a critical aspect of NPD decision-making. Nick and John’s similar positions in the Group, juxtaposed with their contrasting experiences, demonstrate how their lived experiences are implicated in their perceptions of the role of accounting information in NPD. However, their respective behaviour influences the culture in each company, which informs the dispositional frame of other agents-in-focus. This illustrates the over-lapping nature of internal and external structures when examining a number of agents within a given conjuncture.

Modified external structures are evident in the gradual changes in the institutionalised structures managers are confronted with. The NPD process has evolved over time, having clear implications for how accounting information is used in a formal context throughout NPD. External structures of accounting information consist of those recognisable procedures and accepted conventions that pre-exist the managers using them. Through structuration, these external structures are moulded to individual managers in specific circumstances. This is manifested in the distinction between accounting information used in a formal context and that used in an informal context. Through structuration, Metbuild’s Head of Finance has evolved into a type of business partner, successfully balancing the conflicting accounting information demands of the various stake-holders in NPD. Topwood’s Head of Finance has not evolved in the same manner.

### 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 in the context of the formal 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.

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### 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 itself 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 distinsguishable 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. This suggests that the distinction between independent and irresistible causal forces is not clearcut.

### Interactions between Structures

Stones’ quadripartite cycle of structuration addresses some of the weaknesses 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 modifications 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 decommoditise its product offering. Given each company’s different experiences with Magma, it is not surprising that there are such contrasts in their attitudes to their parent company. These findings demonstrate how these contrasting attitudes are implicated in their use of accounting information. The managers’ contrasting experiences with Magma as an external structure have shaped their differing dispositional frames of meaning, from which they draw on different conjuncturally specific internal structures, the combination of which impacts on their use of accounting information.

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. John was involved in the initial setting up of Metbuild during which he worked with a small management team to ensure the company’s survival. His ideological schema is embedded in Metbuild and its success. Nick joined Topwood as an engineering graduate, quickly working his way up to Managing Director. His ideological schema is embedded in Magma’s corporate success. John’s and Nick’s own lived experiences have clearly shaped their dispositional perspectives, but critically, as agents-in-context they have gone on to influence the dispositional frame of the other agents-in-focus in Metbuild and Topwood respectively.

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.

The findings also provide insight into the impact of interactions between external structures. Changes in the formal NPD process have had clear implications for accounting information in this formal context, pushing it further downstream and reinforcing the sense that in a formal context accounting information is about legitimising decisions already taken. Metbuild’s Head of Finance has been more successful than his Topwood counterpart in empowering his colleagues with financial know-how. This has resulted in the Metbuild managers engaging with accounting information on a day-to-day, informal basis to a greater extent than their Topwood colleagues.

Whether accounting information is used in a formal or informal context is itself an outcome of structuration. However, the findings suggest that one can influence the other. The use of informal accounting information in Metbuild facilitates day-to-day dialogue between cross-functional managers using an accounting-based vernacular. Metbuild’s Managing Director suggests that the high quality of accounting information available to the NPD Team means that there are no surprises when a project is subjected to financial scrutinty in the latter stages of the NPD process. In this way, the managers’ engagement with accounting information on an informal basis makes them more receptive to it when they must engage with it in a formal context. In contrast, Topwood’s Head of Operations is less comfortable with accounting information in the earlier stages of NPD. He is not empowered with strong financial know-how and suggests that it would be helpful if the NPD Team were involved at the outset in a helpful and participative manner. His attitude to accounting information when a project is subject to financial scrutiny within the formal process is far less positive than his colleagues in Metbuild and he blames Finance for this, describing then as ‘control freaks’ and ‘snipers’ who ‘pick people off along the way’.

It is the interactions between structures, both internal and external, which provide depth of insight into the managers’ behaviour. These interactions are ongoing and iterative with the result that accounting information and its role in NPD always has the potential to evolve and transform.

### 8 CONCLUSIONS

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.

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. Giddens’ model relied on the concept of methodological bracketing, originally introduced in order to operationalise Structuration Theory as a framework for research. Critics accused Giddens’ of pushing the bracketing too far however, effectively re-introducing the dualism which Structuration Theory was intended to eradicate in the first place. Stones’ model was designed to specifically address this weakness 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. Stones’ 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, 2010). 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.

Structuration Theory has potential for supporting future research into the role of accounting information in various contexts. Future research in this regard would benefit from more depth of understanding of the composite research strategy. In addition, 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.

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**APPENDIX 1**

**Magma Group HQ**

**Magma Manufacturing Division**

**Topwood Europe**

**Metbuild Europe**

Managing Director – ‘*Nick*’

Head of Operations – ‘*Jack*’

Head of Finance – ‘*Paul*’

 Managing Director – ‘*John’*

 Head of Operations – ‘*Pete*’

 Head of Finance – ‘*Des*’

Head of Magma Manufacturing Division – ‘*Simon*’

Director of Sales – ‘*Alex*’

Marketing & Business Dev Director – ‘*Greg*’

Chief Executive of Magma Group – ‘*Bill*’

Magma Head of Strategy – ‘*Max*’

Magma Head of Finance ‘*Ian*’