This is the author's version of an article from the following conference:

Durden, Chris & Perera, Hector (2007). Sailing through turbulence: strategic control or strategic navigation?. *Asia Pacific Interdisciplinary Research in Accounting Conference* (5th : 8 - 10 July, 2007 : Auckland, NZ).

Access to the published version:

SAILING THROUGH TURBULENCE: STRATEGIC CONTROL
OR STRATEGIC NAVIGATION?

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ABSTRACT

This paper proposes a performance management approach that deals with the organisational impact of environmental turbulence. The proposed approach expands the traditional concept of strategic control and could be used to guide the design of management accounting systems concerned with managing organisational performance. In the current organisational environment, where turbulence can be a prominent feature, traditional ideas of strategic control may be too restrictive and lack flexibility in helping organisations respond effectively to varying and capricious external circumstances. Strategic navigation as a performance management approach provides a basis for enhancing the relevance and usefulness of management accounting systems within organisations because it facilitates a focus on managing performance rather than controlling performance and explicitly incorporates flexible and organic control elements.

SAILING THROUGH TURBULENCE: STRATEGIC CONTROL OR STRATEGIC NAVIGATION?

Introduction

The scope and role of management accounting within organisations has been an area of considerable academic debate (e.g., Johnson & Kaplan, 1987; Bromwich & Bhimani, 1989; Lord, 1996; Shields, 1997; Otley, 1999; Hopper, Otley & Scapens, 2001; Otley, 2001; Parker, 2001; Chenhall, 2003; Otley, 2003; Nixon & Burns, 2005). In particular, management accounting systems have been criticised for not always reflecting the changes in the contemporary business environment, which is characterised by, for example, flatter organisational structures, high-tech manufacturing, growth of service organisations, the expanding role of the internet and greater worker empowerment. Reinforcing this criticism is the growing role of networked or more loosely configured organisations (e.g., see Cross, Nohria & Parker, 2002; Goold & Campbell, 2002; Herman, 2002). It has also been argued that renewed emphasis should be placed on the 'management' part of 'management accounting', and that its boundaries may need to be expanded beyond traditional definitions and notions of organisational control (Otley, Broadbent & Berry, 1995; Otley, 2001; 2003).

In response to the various criticisms of management accounting it has been recognised that systems are needed which are more flexible and organic and that better concentrate on information in the context of an organisation's strategies and long-term goals (e.g., Chenhall & Morris, 1995; Chenhall, 2003; Frow et al, 2005). This is seen as a foundation to developing a clearer long-term control focus and enabling systems to be better matched with the varying structures and designs of contemporary organisations. The underlying thrust is that the strategic alignment and focus of management accounting and control needs to be enhanced in order to improve its practical relevance within a contemporary organisational setting. Nixon and Burns (2005) note "that the control needs of the current environment are significantly different from those developed in an earlier period and that improvements are urgently required" (p.260). They highlight how the control landscape has changed significantly and that dimensions such as trust and other 'soft' issues should be considered. They also note a gap "between concepts in the management control literature and conceptual developments in broader, control-related literatures like strategic management" (Nixon & Burns, 2005, p.262). This paper builds on a concept from the strategic management literature – strategic control – and integrates this with research findings and conceptual developments from the organisational control literature and proposes the concept of strategic navigation in an attempt to incorporate the issues above into the design of management accounting systems.

Strategic control is relatively neglected within the management accounting and control literature. We argue that strategic control could be used as an anchor point and made more explicit as a basis for developing management accounting and control systems that are more flexible and organic in relation to the external organisational environment. We propose a new framework – strategic navigation – that is grounded in the traditional idea of strategic control but which encompasses contemporary approaches and thinking concerning organisational control systems.

Analysis of the strategic control literature reveals that it does not address adequately the issue of turbulence in the organisational environment in relation to the profound strategic impact of factors such as technology and globalisation (e.g., see Eisenhardt, 2002). We considered it important that issues of turbulence and unpredictability should be addressed in examining the nature of the interface between organisational strategy and management accounting. Further, the use of the term 'control' in this context seems paradoxical given that the organisational impact of environmental turbulence may not be entirely 'controllable'. Strategic navigation provides a basis for dealing with environmental turbulence and recognises more effectively that organisations may need to make frequent and rapid strategic adjustments in response to environmental turbulence. Strategic *navigation* is characterised by being flexible and forward looking, rather than being deterministic or restrictive in relation to the *control* of organisational activities.

The remainder of this paper is organised as follows. The next section deals with key issues concerning the concept of strategic control. The third section discusses the impact of environment turbulence on strategic control and the effect of this on measurement. The fourth section considers the nature of a new strategic control framework and the idea of fastforward control. The fifth section outlines the strategic navigation approach to performance management. The sixth and final section contains a summary and some concluding remarks.

The Concept of Strategic Control
Strategic control can be described as a type of organisational control that is specifically focused on the implementation of strategy and the monitoring of strategic progress (Schreyogg & Steinmann, 1987; Goold & Quinn, 1990; 1993; Preble, 1992; Muralidharan, 1997). In general, strategic control is operationalised using financial and non-financial measures (Goold & Quinn, 1990; Bungay & Goold, 1991; Parker, 1998) and forms part of the strategic management process (Preble, 1992; Muralidharan, 1997). The strategic management process is often explained (see Figure 1) in terms of three stages, i.e., formulation, implementation, and evaluation (or strategic control) (e.g., Pearce & Robinson, 2005; Preble, 1992; Thompson & Strickland, 2003; Johnson, Scholes & Whittington, 2005). The evaluation stage ensures that strategies remain effective and relevant based on actual outcomes.

<insert Figure 1 about here>

Conventionally, strategic control has been examined from a feedback control perspective (Schendel & Hofer 1979; Preble, 1992; Muralidharan, 1997). This is where existing performance standards and strategies are assumed to be correct and deviations are considered as evidence of 'failure' (Schreyogg & Steinmann, 1987)[1]. On the other hand, the availability of feedback control information is likely to be slow because it is generally not examined until processes are complete (Preble, 1992; Muralidharan, 1997). To overcome the problem of delay in feedback systems, strategic control can additionally incorporate a feedforward element, "by monitoring inputs and predicting their effects on outcome variables" (Koontz and Bradspies, 1972, p.29). Such an approach has also been variously described as future directed control, anticipatory feedback, strategic leap control and steering control (e.g., Koontz &

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[1] From an organisational learning perspective, this is known as single loop learning.

Bradspies, 1972; Lorange, Morton & Ghoshal, 1986; Asch, 1992, Preble, 1992). Koontz and Bradspies (1972) explain that:

> (In incorporating a feedforward element,) action is taken, either automatically or by manipulation, to bring the system output into consonance with a desired standard before measurement of the output discloses deviation from standard. Thus, while feedback relies on detecting errors in controlled variables as system outputs, feedforward is based on detecting and measuring system disturbances, and correcting for these before the system output change occurs (p.29).

The use of feedforward control in a strategic control system means that established strategic plans and goals are also subjected to the control process and that performance is assessed in a manner which is continuous and future directed, rather than only on the basis of predetermined strategies and goals (Schreyogg & Steinmann, 1987; Preble, 1992), i.e., double loop learning. The aim is that an organisation should be able to examine performance continually in relation to existing strategic goals and at the same time critique the appropriateness of strategies and long-term goals in order to validate its performance. Conversely though, if environmental change is rapid and unstable then it may be difficult to assess the relevant impact of deviations from predetermined (or emergent) strategic plans using some combination of feedback and feedforward controls. This is because by the time feedback and in particular feedforward information is measured and processed it may, in effect, be rendered redundant for the reason that environmental circumstances necessitate a reformulation of strategy (e.g., see Lissack & Roos, 2001). A key shortcoming is that measurement mechanisms that can adequately capture the potential organisational impact and relevance of environmental turbulence may be difficult to develop (Stacey, 1996; Fiegener, 1997; Chapman, 1998; Norreklit, 2000; Frow et al, 2005). For example, in relation to the balanced scorecard (a strategic control tool) it has been stated: "Kaplan and Norton's control model is a hierarchical top-down model … not easily rooted in a dynamic environment or the organization. If the balanced scorecard is to become more realistic, then its control methods need to be adjusted" (Norreklit, p.81, 2000). This reflects a fundamental and long-standing problem with strategic control systems and feedforward control: "…if input variables are not known or unmeasurable, the [feedforward] system will not work" (Koontz & Bradspies, 1972).

Strategic perspective
The implicit underlying basis of strategic control is some form of conceptual understanding and explication of the expression 'strategy'. Common to most descriptions of strategy are aspects such as a future orientation, the idea of environmental 'fit' and a focus on longer term performance and business 'success' (Langfield-Smith, 1997; Farjoun, 2002; Pech & Durden, 2003). Often strategy is regarded as a process which involves linking or matching explicitly an organisation's goals, structures and operations with the environmental circumstances it faces (Mintzberg, 1990; Farjoun, 2002). Following this view, organisations should logically ensure that there is a process in place to implement and evaluate strategy (Langfield-Smith, 1997).

Alternatively, strategy could be defined as a process of 'muddling through' to achieve organisational goals rather than in terms of identifiable and mechanistic processes. From this perspective, strategy is emergent and organic rather than planned

(Mintzberg, Raisinghani, & Theoret, 1976; Mintzberg 1988; 1994; Farjoun, 2002; Pech & Durden, 2003). Accordingly, strategy formulation and implementation processes cannot be readily subjected to systematic and formal procedures (Mintzberg, 1987; O'Shannassy, 2001). Formal strategic planning may even be considered as a mere ritual, with real strategy development taking place outside of this process. For example, Langfield-Smith (1997) points out that:

> A more extreme view is that rational normative models of strategy exist in organizations only as ritual, and that the "true" strategy of an organization is not the one formally espoused in mission statements and company documents, strategy develops and resides in the minds of key managers (p.210).

If strategy is considered organic or craft-like, it could be argued that strategic control systems might impose an overly rigid strategic perspective and therefore may limit innovation and long-term performance by constraining an organisation's ability to focus on valid measures or respond to competitive and environmental pressures (Mintzberg, 1987; Lorange & Murphy, 1984; Goold & Quinn, 1990; Mintzberg, 1994). More generally, research has indicated that conventional strategic control approaches may confine managers to pre-specfied plans and goals, which in turn may prevent them from identifying new opportunities and reacting appropriately to threats (Ittner & Larcker, 1997). In this regard it can be contended that an "attempt to identify a few key strategic control variables, will inevitably screen out much information of relevance to the skilful manager, and an explicit strategic control system may conflict with his powers of judgement" (Goold & Quinn, 1990, p.52). These issues are explored further in the next section.

The Impact of Environmental Turbulence on Strategic Control
Environmental turbulence represents a state of continual and constant change, instability and emerging threats. In contrast the notion of strategic control rests on ideas of rational plans in a predictable world (Prebble, 1992). It assumes that organisations are able to select an appropriate mix of strategic control measurement and monitoring tools based on the environmental circumstances that they may face, and process the strategic control data they collect in a meaningful way. Feedforward control in particular assumes the measurability of factors (i.e., input variables) that will impact on the future shape of strategies and long-term goals. However, such factors (e.g., technology, globalisation) may not necessarily be measurable. The limitations associated with traditional control approaches (e.g., Simons, 1995; 2000) have been highlighted in the literature and may limit an organisation's ability to effectively manage its performance in a turbulent environment (Norreklit, 2000; Ahrens & Chapman, 2004; Collier, 2005). In order to manage performance in an environment subject to problems of turbulence and measurability requires "a transformation of cherished ideas about, first, strategic analysis and positioning; and second, approaches to gathering and validating information for executives" (Quinn, 2002, p.96).

In highlighting the problem of turbulence, Pech and Durden (2003) point out that: "Linear, formulaic planning that leads to predictable behaviour is not an option in a turbulent environment" (Pech & Durden, 2003, p.174). They further argue that traditional approaches to strategic planning and decision-making are no longer appropriate. They suggest that organisations should adopt what they describe as 'manoeuvre warfare', which is "… a strategic approach that is more in keeping with the

turbulent quantum dynamics of the twenty-first century business landscape" (p.178). Manoeuvre warfare is based on the idea that organisations must adapt and adjust rapidly to environment circumstances and that strategic orthodoxy (i.e., long-term planning) may result in competitive failure and decline. In this regard an organisation "must be able to change direction or alter its line of focus quickly and effectively without stalling (crashing in the process). These criteria suggest a *change in the management focus away from control and technology and towards knowledge management and responsiveness*" [emphasis added] (Pech & Durden, 2003, p.177).

Pech and Slade (2003) extend the idea of manoeuvre warfare and propose the theoretical idea of asymmetric competition, a situation where notions of predictability, stability and traditional measurement no longer have relevance. An asymmetric competitive approach emphasises creative and proactive (rather than reactive) behaviours within organisations and

> …action through manoeuvre, speed, and an external focus, rather than rewarding a mindset of managerialism that is consumed with maintenance of the status quo, careerism, and the construction of more complex and speed-reducing structures and the slowing of decision processes (p.23).

The underlying stimuli of the unpredictable change in the strategic environment include the unyielding pace at which competition is becoming global, continual and constant technological advancement and deregulation of markets (De Kluyver, 2000; Barkema, Baum & Mannix, 2002; Eisenhardt, 2002). Lissack and Roos (2001) reinforce the view of a highly turbulent business environment:

> Continuity is but a fragile, temporary, and illusionary notion, the assumption of predictability does not hold anymore… Prediction, at best, is possible in the very short-term: the dartboard works better in the long-term. Boundaries are always shifting: composition of work teams, temporary organizations, the company, the industry, and the competitive environment are rarely predictable (p.57, 58).

Following these views, the term 'strategic control' could be described as an oxymoron: how can we control that which cannot be predicted?

Measurement limitations
Understanding and comprehending a turbulent external environment may be difficult to accomplish solely via the use of a traditional measurement approach. In this regard empirical research suggests that formal and structured controls may be less useful within organisations operating in dynamic environments (e.g., Chenhall & Morris, 1995; Fiegener, 1997; Ahrens & Chapman, 2004; Collier, 2005). Accordingly, the use of conventional strategic control measurement tools may be of questionable value within some organisations (also see van Veen-Dirks & Wijn, 2002; Maltz, Shenhar & Reilly, 2003).

Simons' (1995; 2000) concept of interactive control provides some recognition of a more flexible organisational control framework, in that it highlights an informal face-to-face approach relating to the analysis of formal control information. Interactive control, however, is grounded within an overarching formal measurement framework (Simons,

1994; 1995; 2000). In this context Simons (2000) notes various limitations historically with formal management accounting and control information: limited scope; too aggregated and general; too late; and unreliable. He then claims: "Today, with better information technology and a better understanding of how to use performance measurement and control systems effectively, these limitations have been overcome" (p.74). Such a standpoint, however, effectively disregards the measurement problems associated with a turbulent environment (Ahrens & Chapman, 2004). When the environment is unpredictable and constantly changing, formal and systematic collection and measurement of relevant data (i.e., input and output variables) is likely to be problematic (Kootnz & Bradspies, 1972; Elliot, 1991; Mintzberg, 1994; Stacey, 1996; Lissack & Roos, 2001; Eisenhardt, 2002; Ahrens & Chapman, 2004). In other words relevant data may not be amenable to *traditional* methods of capture, measurement and analysis (Ouchi, 1979; Flamholtz, Das & Tsui, 1985; Fiegener, 1997; Collier, 2005; Frow et al, 2005; Pierce & Sweeney, 2005). As Otley et al. (1995) argue, the prediction of the consequences of environmental change is becoming more difficult. Therefore new approaches are needed: "An alternative response is to develop the *flexibility* to adapt to the consequences of change as they become apparent" (Otley et al., 1995) [emphasis added].

The conventional strategic control framework does not recognise the role of a more flexible and/or organic approach in responding to environmental turbulence. At best the conventional framework recognises the existence of informal control, commonly in respect of smaller or less mature organisations. However, the continuing use of such controls is argued to be undesirable, problematic and useful only in rare circumstances (Goold & Quinn, 1990; Goold, 1991; Goold & Quinn, 1993; Simons, 2000). Therefore, use of informal control seems to be viewed as a 'second best' option: "Informal strategic controls are frequently chosen by default, rather than as a conscious matter of corporate policy" (Goold, 1991, p.77). In general, the strategic control literature has argued or implied that structured and systematic monitoring and measurement tools are either more appropriate or desirable (Schreyogg & Steinmann, 1987; Preble, 1992; Goold & Quinn, 1993; Rotch, 1993; Goold, 1991; Simons, 2000; Quinn, 2002). While this reflects the role of formal measurement as a critical component of the organisational control package, it fails to acknowledge that measurement, of itself, may not be sufficient in a turbulent environment. We argue that a combined approach is needed that systematically uses *both* formal measurement and more flexible and organic controls to anchor the strategic control framework. Such an approach has not been addressed to any great length within the strategic control or management accounting literature.

Towards a New Strategic Control Framework
A combined control approach, which includes both formal and more flexible and organic control elements, would provide a means of extending and strengthening the concept of strategic control and its performance management role within organisations. Such an approach would more effectively deal with issues of strategy implementation and performance management in a turbulent environment. The literature highlights various innovative control approaches that could be considered in relation to the development of a more relevant strategic control framework for organisations operating in a turbulent environment. In particular these approaches reflect the explicit and systematic consideration of less formal and more organic and flexible forms of control. The approaches and their relevance to strategic control are considered below.

In terms of managing or controlling organisational performance, Stacey (1996) argues that organisations should attempt to harness the "shadow organisation", which is essentially the basis of covert politics within organisations: "It is a highly complex system that produces patterns of behaviour which are both beneficial and harmful" (p.441). He suggests that harnessing this system, using what he describes as a process of "extraordinary management", is an important means of creating new knowledge and dealing effectively with environmental turbulence. Stacey (1996) explains:

> The practice of ordinary management through the instruments of hierarchy, bureaucracy and Management Information and Control Systems is all about the processing of information, primarily quantitative information. The practice of extraordinary management, on the other hand, is above all else concerned with the creation of new knowledge, largely of a qualitative kind – it is only through new knowledge that an organisation can innovate and develop new strategic directions (p.450).

Such an approach reflects an innovative and alternative means of organisational control that is not grounded in measurement or formal systems. Stacey (1996) describes a number of 'extraordinary management' processes that organisations could adopt to help harness the beneficial power of the shadow system. These include, for example, the use of self organising groups, multiple cultures, developing organisational flexibility and creating resource slack (pp.460-468).

Collier (2005) highlights that various frameworks exist to assist in understanding organisational control, encompassing both formal and informal approaches. He also notes that control tends to have negative conations, reflecting restraint rather than an enabling focus and how this overwhelms the less formal modes of control. A popular framework for understanding control in organisations is Simons' (1995) levers of control. This, however, does not address adequately the role of various informal control processes such as, for example, culture and trust (Collier, 1995). Similarly, Ahrens and Chapman (2004) argue that Simons' approach "leaves the issues of how and why organisations might wish to blend mechanistic and organic control relatively unspecified" (p.278). Nixon and Burns (2005) indicate that informal and social controls are perhaps becoming more important in the 21st century.

Collier's (2005) research into control within an entrepreneurial firm revealed that formal controls were not a significant feature. Rather, there was emphasis on ex-ante feedforward processes as the primary means of control. Collier describes this as "social control" and goes on to note that the owner of the firm "continually learnt and adapted his mental and spreadsheet models through social interaction" (Collier, 2005, p.333). Based on these findings Collier suggests that less formal modes of control need to be considered more seriously as components of the overall control framework and argues that there is "a need for further research, not only into social forms of control, but into the interaction between formal, systems-based controls and social controls" (Collier, 2005, p.337). Collier's research highlights the need for a strategic control framework that recognises control as an integrative or combined package of formal and less formal and flexible components. Frow et al (2005) reinforce this point. They investigated how strategic behaviour was encouraged while maintaining management control by exploring how formal systems were supplemented with "more informal processes of social interaction" (p.274). They discovered that formal control procedures were combined

with "informal social interaction, to resolve tensions arising at the interface between accountability and (a lack of) controllability" (p.289). Chenhall and Morris (1995) found that organic processes can co-exist with management accounting systems in entrepreneurial firms, which can enhance overall firm performance. In other words, there is scope for formal and less formal control approaches to be mutually supportive and combined within an overall strategic control framework.

Research within audit firms by Pierce and Sweeney (2005) highlights the role of trust building and other less formal approaches to control. They found that social procedures were used that operated "not by chance or in a haphazard manner but as a regular and routine element in a sophisticated network of controls (Pierce & Sweeney, 2005, p.361). They note that "extensive informal communication is used by management to exchange information among partners and managers, and also to communicate between management and individual staff members on a range of staff performance-related issues" (Pierce & Sweeney, 2005, p.363). Some of the forms of control used appeared novel, and would not fit easily within a conventional strategic control framework. For example:

> Intuition of partners was identified as a key element of clan control and all the partners emphasised the importance of their experience and insight, or what was referred to as a sixth sense. Frequent reference was made to this sixth sense as an instinctive form of control, which was considered to be an essential quality for anyone wishing to gain admission to the partnership (Pierce & Sweeney, 2005, p.365).

Ahrens and Chapman (2004) examined the use of a management control system in an enabling manner, which they argue puts "employees in a position to deal directly with the inevitable contingencies in their work" (p.271). They contrast this with more traditional formal control systems, which they describe as coercive. A key aim of their research was to highlight flexibility as an important dimension of management control systems. In doing so they highlight a control approach that has a combined focus, encompassing both organic and mechanistic aspects, providing for a form of control that is more flexible than the traditional approach and which could form part of a new strategic control framework.

More flexible modes of control often reflect a process orientation in terms of, for example, organisational learning, empowerment and trust, and could be used to encourage employee initiative and to recognise organisation members as a core source of knowledge in uncertain and turbulent environments (Otley et al., 1995; Pant, 2001; Tomkins, 2001; Chenhall & Langfield-Smith, 2003). Tacit knowledge, for example, is considered implicit and "…seen most often as something hidden, abstract and almost inaccessible" (Boiral, 2002, p.292). It is arguably a core means of generating competitive advantage and can be both individual and group based (Berman, Down, & Hill, 2002). Group tacit knowledge is "difficult-to-articulate and socially diffused", and is about:

> a collective mind, which can be defined as the combination of individual schemata, patterns, or gestalts acquired through mutual experience and expressed through unconscious synchronicity of action when the group is confronted with complex tasks that must be performed within the context of a *challenging environment* (Berman et al., 2002, p.16) [emphasis added].

Tacit knowledge, which is difficult to manage in a traditional sense, directly supports a more flexible and organic approach (Anand, Glick & Manz, 2002; Boiral, 2002; Frow et al, 2005) and it "cannot be reduced to 'variables' or 'things' that managers can *control*" (Boiral, 2002, p.293) [emphasis added]. In other words tacit knowledge represents a potential strategic control process that organisations could attempt to actively develop and support to help deal with environmental turbulence. Also connected with tacit knowledge is the idea of social capital:

> Firms are realizing that they must increasingly draw on the knowledge of agents outside the organisation to meet their knowledge requirements. Organizational social capital refers to the knowledge and information that organizations can access using their employees, formal and informal ties with outsiders such as customers, partner organizations, connected employees of other organizations and so on (Anand et al., p.88, 2002).

In summary, a less formal and more flexible and organic control approach could encompass the *systematic* development of organisational facets such as social interaction, informal monitoring and data capture and the tacit knowledge of organisation members who are interacting and dealing with the external environment. These facets could form part of a new strategic control framework. Supporting a new framework would require high involvement and interaction among line managers, rather than reliance on functional or staff specialists (Fiegener, 1997). Additionally, promoting concepts such as networked or 'boundaryless' organisations based on informal networks could support the development of a more organic and flexible orientation (Cross, Nohria & Parker, 2002; Barkema et al., 2002; Goold & Campbell, 2002).

fastforward control

The goal of strategic control in a turbulent environment should be to help organisations act proactively and anticipate the need for change. This may necessitate continual reassessment and questioning of existing strategies and goals, which implies a broader and more comprehensive focus than feedforward control. This requires moving beyond traditional approaches, such as interactive control[2], which is restricted to the intensive use of selected *formal* controls, such as diagnostic controls. We argue that a key role of strategic control systems should be to broaden and extend the control focus and enable flexible and rapid organisational adjustment in response to environmental turbulence. This could be described as *fastforward control*, the focus of which is proactive and forward-looking in order to help organisations make fast strategic adjustments in response to environmental turbulence. This would require that, in additional to formal controls, attention is given to a broader spectrum of control instruments, including less formal, organic and flexible approaches. A key point is that fastforward control is a combined approach. It includes a deliberate focus on both formal measurement and less formal modes of control. This reflects how consideration of flexible and organic controls should be moved explicitly into the sphere of the measurement and management of organisational performance, rather than being viewed as peripheral or indirect. In other words less formal control elements become part of the central core

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[2] Interactive control systems are "*formal* systems used by senior management to regularly involve themselves in the decision activities of subordinates" [emphasis added] (Simons, 1994, p.171).

of strategic control and performance management and are not seen as secondary or of only limited use in relation to the more established role of formal measurement. The notion of fastforward control subsumes the traditional element of feedforward control, which is also forward-looking but is formal in its thrust and accordingly may lack flexibility (e.g. such as interactive control). Further, the term fastforward control is more pertinent than feedforward control because organisations increasingly operate in environments that are fast-paced, rapidly changing, capricious and likely to necessitate greater consideration of the appropriateness of strategic direction and goals (e.g., see Drucker, 1992; Elliott, 1991; Otley, 1994; Shields, 1997; Drucker, Dyson, Handy, Saffo & Senge., 1997; Otley, 1999; Zahra, 1999; O'Shannassy, 2001; Barkema et al., 2002; Eisenhardt, 2002). The next section develops these ideas further and proposes the strategic navigation approach to performance management.

From Strategic Control to Strategic Navigation
The concept of strategic navigation, as proposed in this paper, builds on the traditional strategic control approach and combines this with the concept of fastforward control (see Figure 2). This recognises the impact of environmental turbulence and reflects arguments in the literature for a broadening of the scope of organisational control in relation to the role of more organic and flexible approaches.

<insert Figure 2 about here>

Strategic navigation recognises explicitly the pervasive influence of environmental turbulence and the potential need for rapid organisational change in response. In this regard it represents an approach that is less formal and rigid, and more flexible, organic and anticipatory than traditional strategic control ideas. Strategic navigation provides a means of incorporating an explicit flexible and organic dimension, namely fastforward control, within a performance management approach. Fastforward control reflects an attempt to purposely harness various intangible dimensions (e.g., tacit knowledge) of organisational functioning as a means of helping to manage organisational performance. The traditional concept of strategic control is driven from a formal measurement perspective, which may be problematic in a turbulent environment. Strategic navigation is dynamic in thrust and does not assume a cyclical, regular or systematic organisational environment. It operates continuously and instinctively according to the degree of environmental turbulence and has an immediate and direct effect on both strategy formulation and strategy implementation.

Figure 2 indicates that strategic navigation effectively acts as a virtual shield to the formulation and implementation of strategy. While the conventional feedback control loop element of strategic control remains a component of the strategic navigation approach (i.e., single loop learning), the effectiveness of this component is determined to a large extent by the fastforward control element, depending on the degree of environmental turbulence. Environmental turbulence represents unforeseen pressures and events, in relation to initial strategy formulation, which arise between strategy formulation and strategy implementation and that may threaten strategic accomplishment. Such events activate the operation of strategic navigation and fastforward control. In figure 2 the solid line from fastforward control to strategy implementation indicates that environmental turbulence may trigger a direct effect on, or change in, how strategy is implemented. This is likely to moderate or override planned implementation of strategy that would have been based initially on the strategy

formulation stage. The solid line from fastforward control to strategy formulation indicates that environmental turbulence also has a direct effect on strategy formulation. More generally, fastforward control reflects the ideas of organisational learning and double loop learning, and how organisations need to develop effective mechanisms for learning, understanding and responding to changes taking place in the external environment (Argyris, 1977; 1999; Burnes, Cooper & West, 2003).

The dashed lines from strategy implementation and strategy formulation signify that these components will influence the likely form and operation of strategic navigation, in terms of the fastforward control elements that are used. In particular, various processes and social interactions used to comprehend and respond to the external environment potentially may be more relevant than how any underlying data are captured and measured and conveyed to managers (Fiegener, 1997; Lissack & Roos, 2001; Ahrens & Chapman, 2004; Collier, 2005; Frow et al, 2005; Pierce & Sweeney, 2005). This is not to suggest that conventional measurement is unimportant, but rather that strategic navigation, in terms of effective fastforward control, needs a combined focus on both measurement and more organic and flexible elements. An explicit combined focus represents a core point of distinction between the proposed strategic navigation approach and the traditional strategic control framework, which is measurement-focused.

The extent to which fastforward control directly affects strategy formulation and implementation is contingent on the level of environmental turbulence: the higher (lower) the level of turbulence then the greater (lesser) the likely effect on implementation and formulation. If environmental turbulence is high, for example, but fastforward control is not operative, then interpretation of the feedback control information is likely to be difficult or even meaningless. This is because feedback information is lagging and iterative and as a result strategy implementation could end up being based on a strategy formulation stage that has become irrelevant due to environmental turbulence. If a regular strategic control approach is used, which lacks a flexible and organic dimension, feedforward control may fail to adequately recognise and deal with a high level of environmental turbulence. In a situation of low environmental turbulence the traditional strategic control feedback and feedforward framework may be sufficient. However, organisations are likely to experience difficulty identifying precisely the degree or level of environmental turbulence they are (or will be) encountering over a particular period of time. Furthermore, by its nature environmental turbulence is uncertain and unpredictable, rather than in a steady state (Lissack & Roos, 2001; Eisenhardt, 2002). Therefore, flexible and organic fastforward controls are critical parts of the strategic navigation approach. In this sense a fastforward control focus helps to ensure the robustness of the overall strategic navigation approach.

The overall goal of strategic navigation is to provide organisations with a more effectual means of anticipating the future and reacting rapidly and effectively to external events as they arise. Strategic navigation should operate as an adaptive and flexible system, depending on the level of environmental turbulence. In situations of low turbulence feedback control will tend to dominate. As the level of turbulence increases the role of fastforward control will become more important, as moderated by an organisation's ability to capture and measure input variables. Fastforward control will, in effect, automatically alternate between measurement and more flexible or organic control approaches, or some combination of both, depending on the nature of the external environment. In situations of moderate turbulence or when the capture

and measurement of input variables is relatively straight forward and unproblematic, measurement will tend to dominate. Conversely, as turbulence becomes more intense and input variables more difficult to identify and measure, the role of flexible and organic controls will become more prominent. In this sense strategic navigation appears more ambiguous and less precise than conventional management accounting and strategic control approaches. Arguably, however, this means that it provides organisations with a more effective strategic framework for managing their performance in an operating environment that may be increasingly less certain, erratic and therefore at times quite turbulent.

Management accounting implications
Management accounting has traditionally been seen as a core tool of organisational control, often with a strong operational and short-term emphasis (Otley et al., 1995; Otley, 2001). Over recent years though, the literature has increasingly highlighted the importance of developing new and innovative control tools and approaches, focused more closely on the accomplishment of organisations' strategies and long-term goals. One possibility in this respect is that management accounting adopts a strategic control thrust, to permit a more explicit strategic focus. An example of this is Kaplan and Norton's (1996) balanced scorecard framework, which revolves around a core set of lagging and leading indicators of organisational performance (i.e., feedback control and feedforward control), focused on organisational strategy. However, a traditional strategic control approach may not adequately deal with the possible difficulties associated with feedforward control in terms of the identification and measurement of input variables (i.e., leading indicators). This is likely to be a more obvious problem when the external organisational environment is turbulent. Input variables relate to both the planned and, more pertinently, the emergent forms of strategy formulation and implementation. In this respect a conventional management accounting and control approach that is anchored strongly in the formal capture and measurement of lagging and leading performance indicators (i.e., respectively, output variables and input variables), could limit management flexibility and judgement in relation to comprehending and responding to what is occurring in the external environment. In this situation, relying solely on formal measurement to identify and capture input variables may fail to provide managers with sufficient or meaningful information about the external environment. Accordingly, the role of management accounting in performance management could build on and reflect a strategic navigation framework.

The designers of management accounting systems should consider how managers will source and obtain information about the external environment which may not be adequately captured using formal control approaches. For example, designers may need to concentrate on organisational design and structure as a means of attempting to facilitate and cultivate the necessary formation and operation of flexible and organic elements of fastforward control. This follows the view that organisational structure "…appears to be overlooked as a control in its own right. In general, structure tends to be taken as given, rather than something which is consciously selected" (Otley, 2003, p.320). This would be in addition to the conventional focus on how formal data are captured, measured and conveyed to managers. Contemporary systems should encourage managers to frequently discuss, challenge and debate organisational direction and enable rapid response to external developments (Otley, 2003). This reflects how strategic navigation develops further the concept of strategic control and includes an explicit focus on less formal and more organic and flexible control approaches. It recognises

that control in a traditional sense (e.g., interactive control) is a restrictive concept and that organisations need, instead, a performance management approach that deals with the potential difficulty of input variable measurement and provides managers with a high degree of flexibility in relation to how they respond to varying external conditions. Strategic navigation helps overcome the problem that input variables, in a formal sense, may not necessarily be measurable or clearly identifiable.

Summary and Conclusion

The ideas presented in this paper suggest that the evaluation and control of strategy should be overarching, continuous and reflect a more flexible and organic control approach. The concept of strategic navigation encompasses these aspects. It represents a performance management framework that deals with the organisational impact of environmental turbulence. It also expands on the concept of strategic control and could be adopted as an integral part of the design of management accounting systems dealing with performance management. A core theme throughout this paper is that the traditional strategic control framework may no longer be appropriate, given the context of an unpredictable and capricious organisational environment. Instead, the proposed approach aims to reflect the idea of organisations making continual strategic adjustments in response to environmental turbulence in order to manage organisational performance. It provides a more relevant basis for comprehending and dealing with environmental turbulence and a guide for the design of management accounting systems.

Strategic navigation, as depicted in figure 2, represents a fundamental broadening in the scope and nature of managing organisations, particularly as this could be applied to the relationship between management accounting and organisational strategy. The overall purpose of strategic navigation is to act as a performance management tool, which could be utilised in a management accounting context. In the current organisational environment, where turbulence can be a prominent feature, the traditional idea of organisational control may be too restrictive and lack flexibility in helping organisations respond effectively to varying and capricious external circumstances. Control in a traditional sense rests on the generally implicit assumption that all relevant input variables relating to the external environment can be satisfactorily identified and measured. Strategic navigation, on the other hand, reflects the idea that "…performance management systems can be seen as a major plank in the process of implementing strategic intent" (Otley, 2001, p.260). Further, it has been suggested that "…organizations are giving up budgetary [control systems] as a primary means of effecting overall control and are having to resort to other techniques. It is not clear what those techniques should be" (Otley, 2001, p.254). Strategic navigation provides an example of what could be used to help fill this management accounting and control void.

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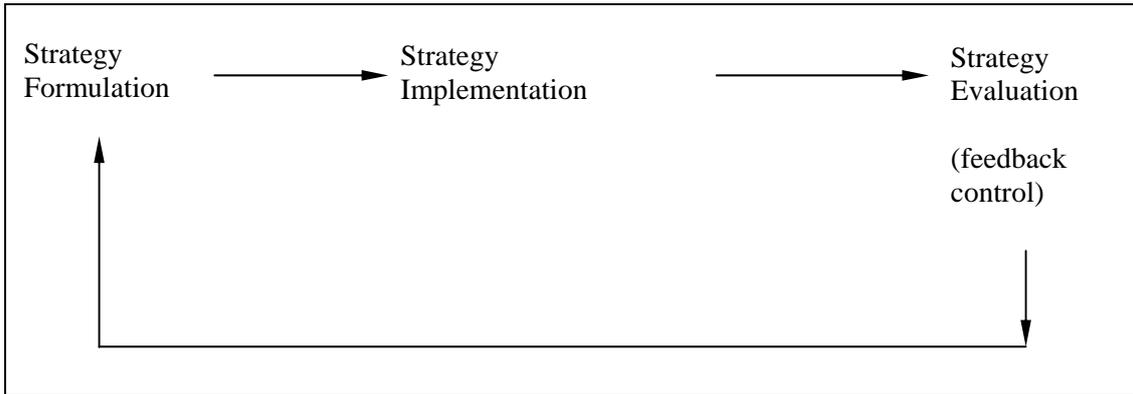
Figure 1. Traditional Explanation of the Strategic Management Process
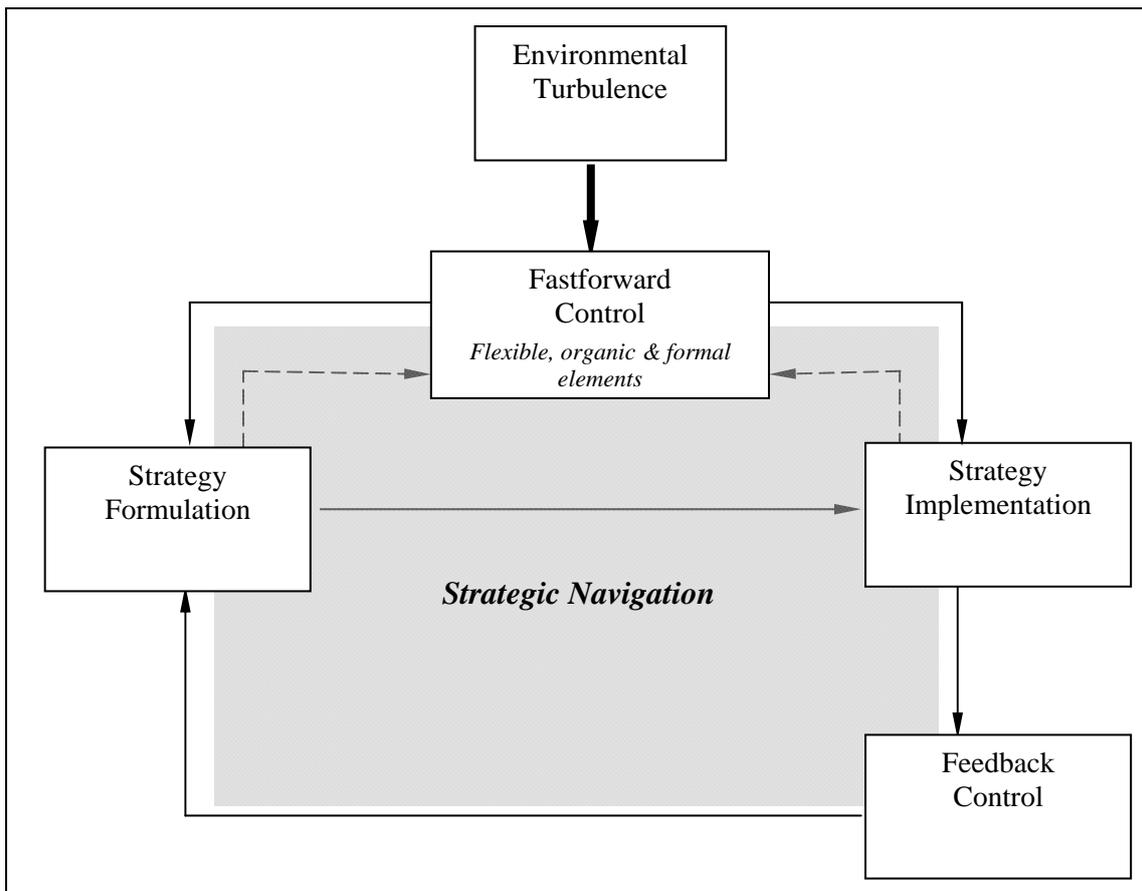*Source*: Preble (1992)

Figure 2. Strategic Navigation Approach to Performance Management