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Coping with ambiguity through the budget: the positive effects of budgetary targets on managers' budgeting behaviours

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Abstract

Much consideration has been given over the years to what may be described as the 'negative' aspect of budgeting; that budgets may constrain innovation and learning, and that budgetary pressure may lead to unintended behavioural side effects. In contrast to this, the present study examines the extent to which budgets have a more positive, 'comforting' role to play in the individual's work experiences. We argue that managers confronted with uncertainties associated with role ambiguity may respond by becoming positively committed to achieving budgetary targets as budgets offer a source of structure and certainty. We find that the use of budgets as an antidote to role ambiguity is a powerful influence on the manager's budgeting behaviour. We test the strength of this effect and we find that budgetary commitment brought on by the experience of role ambiguity may over-ride the potential for recognised explanatory variables such as leadership style, the expectations of the superior, and occupational socialisation, to inform managers' budgeting behaviours in these circumstances. Budgets, it seems, may be as useful to the individual as they are problematic.

Introduction

Budgets often receive a 'bad press'. Not only are they accused of stifling innovation and learning (e.g. Ansari, 1979; Argyris, 1977; Bartlett & Ghoshal, 1993; Emmanuel, Otley, & Merchant, 1990; Hedberg & Jonsson, 1978; Hope & Fraser, 2003; Johnson & Gill, 1993), but a high emphasis on budget attainment is deemed liable to create various behavioural side effects that are likely to prove dysfunctional to the firm. Issues examined include data manipulation (Hopwood, 1972), interdepartmental strife (Argyris, 1960), job-related tension (Brownell, 1981; Hopwood, 1972), group based 'anti-management' behaviour (Argyris, 1952), 'gaming' (Hofstede, 1968) and short-termism (Merchant, 1990). The rather negative view of budgets is also evident in the number of studies that have, following the pioneering work of Hopwood (1972) and Otley (1978), sought to understand the extent to which factors such as participation (e.g. Brownell & Dunk, 1991; Brownell & Hirst, 1986), locus of control (Govindarajan, 1988; Harrison, 1993), task uncertainty (Brownell, 1983; Hirst, 1981), and degree of strategic change (Abernathy & Brownell, 1999), may moderate the expected dysfunctional consequences of a high reliance on accounting measures of

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performance (RAPM) in the context of performance evaluation (see reviews by Brownell, 1982; Hartman, 2000; Kren & Liao, 1988; Otley & Fakiolas, 2000; Shields & Shields, 1998). Such research continues (e.g. Otley & Pollanen, 2000; Van der Stede, 2000). However, despite considerable evolution in the conceptualisation and specification of variables deemed relevant in this context, researchers appear to be still some way from reaching definitive conclusions as to what conditions are most likely to allow RAPM to operate effectively without incurring the 'problems' that Hopwood had predicted would accompany budget constrained styles of supervision. Part of the explanation for this lack of convergence is attributed to confusion and ambiguity in the meaning and measurement of the RAPM construct itself; problems with the use of methods for data collection and analysis; and the uncritical use of contingency theory (Briers & Hirst, 1990; Brownell & Dunk, 1991; Chapman, 1997; Hartman, 2000; Lindsay, 1995; Otley & Fakiolas, 2000; Vagneur & Peiperl, 2000). Nevertheless, whatever reasons we may invoke to explain the inconsistency of the research findings, one consequence of the persistence with the research agenda raised by these debates has been to perpetuate analysis of the dysfunctional effects of budgets to the exclusion of any consideration of the more positive role(s) that budgets may play in people's work-related experiences. Since the work of Argyris (1952) and others (e.g. Caplan, 1966; Stedry, 1960), the perspective adopted in the budgeting literature has been one of "Human problems with budgets" (Argyris, 1953).

The lack of a counter-balancing 'positive' perspective on budgeting is surprising, not least because the potential for budgets to play a more functional role in managers' work-related experiences has been suggested by the human relations movement in accounting. Path-goal theory of financial controls, for example, suggests that where managers do not have self-evident paths and clear-cut goals, they will welcome accounting based controls such as budgets for the structure and certainty they provide. This is particularly true of senior managers, whose roles are frequently ambiguously defined. Macintosh (1995, p. 215) argues that budgets "serve to reduce sharply role ambiguity". At the same time, interesting and persuasive as these arguments are, they remain under-developed and certainly under-researched. In particular, little is currently understood about how or why managers may use the budget to cope with uncertainty and ambiguity, what this means in terms of budgeting behaviours, and more importantly, perhaps, what the implications may be for individual and organizational performance. The question of whether or not budgets may play a positive role in people's work-based experiences remains a neglected topic.

The importance of understanding the potential functionality of budgets at the level of the individual is evident in recent empirical research on contemporary attitudes of senior managers to performance evaluation based strictly on accounting measures of performance. Storey, Edwards, and Sisson (1997), for example, found that managers, faced with increasingly tight budgetary targets, not only accepted but positively endorsed the rigorous degree of accountability they experienced. The main reason for this was the extent to which managers welcomed the certainty created by the combination of clear goals and well-specified objectives, and a performance evaluation system that was tightly focused on how successfully those objectives have been achieved. Contrary to the expectations associated with the dysfunctional aspects of RAPM, the degree of close monitoring and evaluation of performance did not produce discontent. Rather, Storey et al. (1997, pp. 201–202) found that "tight evaluation was linked to a favourable view of the system of evaluation" and that managers were "most likely to be strongly motivated when they felt that their activities were closely evaluated by their companies". Storey et al. (1997, p. 203) explain the sense of satisfaction expressed by managers as the result of their sense that companies with demanding targets appear to know where they are going and what they want from their managers. Managers generally appreciated the sense of strong direction from the top, as expressed in the detailed specification and tightness of their performance targets, and welcomed the sense of certainty and mission this communicated.

In the example quoted above two distinct, but clearly related, processes are discernible in managers' responses to RAPM. On the one hand, there is positive endorsement by managers of the goal specificity and goal clarity that operates in the context of performance focused companies. On the other hand, there is also appreciation of the use made of budget constrained styles of supervision which focus on evaluating how successfully specified goals have been achieved. Viewed from this perspective, the absence of such clarity and specificity and the reliance on a more relaxed supervisory style with regard to APM, as envisaged, for example, by Hopwood's (1972) notion of a 'profit conscious' style of supervision, may paradoxically cause more problems than it solves. It may be suggested that where this certainty provided by a clear emphasis on budget goals is lacking managers may seek ways to recreate it for themselves. In this context, identifying with the budget may be seen as functional by managers precisely because it is seen as providing a clearly defined performance target which, if achieved, will provide a degree of security amidst the inherent ambiguity of the managerial role (Macintosh, 1995).

The presence of role ambiguity provides the focus for our examination of the potential functionality of budgets at the level of the individual. Specifically, we examine the extent to which managers may actually commit to meeting budgetary targets, not because of the threat of accountability or the promise of reward, but because doing so offers a sense of clarity and security, particularly in circumstances where their role is fraught with uncertainties. In effect, we seek to understand how far managers who experience anxiety brought on by ambiguity and uncertainty within their role may use budgets as a means of coping with this anxiety. We address this aim through the analysis of evidence garnered from a recently conducted company case study. The sources of role ambiguity are explained, and managers' reactions to this and their attempts to secure for themselves a more gratifying role experience through commitment to budgetary targets are traced. Using quantitative evidence we are also able to test the strength of the effect that role ambiguity may have on managers' behaviour towards budgetary targets against the more usual explanations for budgetary commitment by managers suggested in previous research. We argue that budgetary commitment brought on by the experience of role ambiguity may over-ride the potential for recognised explanatory variables such as leadership style (Argyris, 1952), hierarchical contagion (Hopwood, 1974) and occupational socialisation (Brownell, 1985; Hirst, 1981) to inform managers' budgeting behaviours in these circumstances. Moreover, as the case study company exhibited a distinct lack of emphasis on RAPM and a marked absence of formal accountability and reward from the budgetary system, we are able to examine the role played by budgets, *of themselves*, as an antidote to role ambiguity in circumstances unencumbered by the presence of factors which would undoubtedly confuse the analysis and limit interpretation of the results.

The section that follows introduces the case study and presents the qualitative evidence that identifies managers' experience of role ambiguity, its causes, and their reactions to it. Section 3 develops several arguments relating to the use of budgets as coping mechanisms. Section 4 describes the quantitative methodology that was used to test the resulting hypotheses, while Section 5 presents the results of this analysis. Section 6 outlines the study's limitations and concludes the discussion. Our findings suggest that the experience of role ambiguity may exercise considerable influence on managers' budgeting behaviours; it may ensure their budgetary commitment in the search for a more gratifying role experience. The implications of these findings are discussed in the concluding section.

The case study: Infotain plc

The case study company, which we have called Infotain plc, is a major UK (FTSE100) based organization which operates in what it describes as the 'global communications business'. Infotain plc is a prime example of a modern 'professional adhocracy' (Euske, Lebas, & McNair, 1993) or information-age company (Bartlett & Ghoshal, 1993; Simons, 1995, 1999). Defining features include fast-moving circumstances, jurisdictional and decisional ambiguity, fluid role responsibilities, frequent job transformations, a constant need to prioritise among tasks, and front-line empowerment. The company supplies and maintains a range of communication and infotainment products and services to both major private sector companies and large public corporations. It employs around 12,000 people, and operates from several sites located primarily in the UK. Turnover exceeds £4 billion per annum.

The aim of the case study was to examine the design and operation of the company's control processes and procedures, with particular attention being paid to investigating the 'human dimension' of management control. Of the areas investigated, research into budgeting's role in the process of management control was intentional, not least because budgets have long been viewed as a, if not the, pivotal organizational control mechanism (Ansari, 1979). Several other issues, including the company's empowerment initiative, managers' experience of role ambiguity, and the notion of budgetary commitment, were also explored in some detail, given initial insights which showed these to be interlinked and potentially significant to organizational performance. All issues were addressed through interviews with senior and line managers; meetings with personnel from both the accounting and human resource functions; and scrutiny of company memoranda, reports and other documentary evidence. Interviews were used to elicit managers' views, beliefs, and actions about the control systems at their disposal, and were conducted over the two-year period of this case study. During this time, initial ideas and arguments were developed and refined in the light of additional evidence through, for example, further interviews with managers. The following seeks to elaborate on the key issues to emerge from the qualitative field work.

For reasons relating to the company's highly organic context and the need to ensure a high rate of strategic adaptation and change at firm level, given a fast-moving business environment (Dutton, Ashford, O'Neil, Hayes, & Wierba, 1997), Infotain had largely abandoned budgeting in its traditional form. It adopted a broader control environment which sought to encourage strategic adaptation and change through, for example, the use of beliefs systems (Simons, 1995). Although 'prudent' budgetary goals and other financial targets were set by the accounting function to instil cost consciousness throughout the firm, there was little formal accountability or reward attached to budgetary performance. Only the most senior managers had financially based accountabilities. Cost centre managers, although allocated resources, were not explicitly assessed or rewarded on their ability to remain within budget. Indeed, tolerance limits were attached to overall budget allocations, which meant that budget targets could be exceeded (or under-achieved) by upwards of 10% for 'strategic reasons'. 'Out of spends' were also possible if the manager had a good reason to exceed the 10% tolerance limit. Managers could also renegotiate their budgets periodically in the light of unfolding events. The reasoning behind this flexibility, according to top management, was to ensure, or at least not to deter, strategic adaptation in response to a rapidly changing, highly uncertain environment. Managers were therefore given considerable licence to sacrifice initial budgetary targets in favour of unexpected, but potentially profitable, opportunities if and when they arose during the budgetary period. They were specifically encouraged to balance the need for variance correction with (1) the need to meet launch deadlines for new products and services and (2) the possibility of making improvements to on-going projects as new information became available, notwithstanding the extent to which meeting agreed time-frames and modifying projects often required additional resources.

The degree of discretion that managers were afforded in terms of budgetary performance mirrored the ethos of empowerment which pervaded the organization. For reasons similar to those which appeared to drive the company's seemingly radical approach to budgeting, there was a general reluctance to define and limit individual responsibilities. This was epitomised in the company 'motto' "tell me what you've done, don't ask me what to do". Middle-ranking managers were particularly empowered to indulge in 'autonomous strategic behaviour' (Burgelman, 1983a, 1983b), 'issue-selling' (Dutton et al., 1997), and other grass-roots activity that typifies an emergent strategy process

(Mintzberg & McHugh, 1985). Most were members of at least one autonomous multifunctional project team, and several remarked on how they were "free" to commit to accountabilities that would take them "completely away from any form of hierarchical relationship". Managers saw themselves in terms of having "multiple stakeholders" as a result of "mutual accountabilities" and omnipresent interdependencies (Spekle, 2001).

The company's empowerment strategy appeared to be supported by managers. The majority of those interviewed suggested that the dissipation of responsibility for strategy formation throughout the managerial ranks was necessary as the rapid technological advances, short product life cycles and a fiercely competitive environment made the notion of detailed strategic planning problematic (Mintzberg, 1979). At the same time, some interviewees did appear uneasy with the high levels of ambiguity and uncertainty that a lack of a clear "authority map" and a highly organic context created. This lack of role clarity extended to performance evaluation. For example, some managers commented how they received little formal feedback from their superiors on their role performance, while their superiors commented how it was difficult to do so, given a person's activities did not necessarily support the line relationship. These conditions were prevalent throughout the firm and prompted some managers to express concern about the extent of their fluid role responsibilities, their mutual accountabilities, and the continual need to prioritise amongst tasks. For example, one manager remarked:

> Things are in a constant state of flux around here, and this can be a bit of an issue for me personally at times. I like to be clear about what I am supposed to do, but I appreciate this can't really be the case around here.

Another manager commented on how "the constant need to prioritise" often led to people to "doubt their choice of priority". Other managers suggested, somewhat more negatively, that the blurring of roles and responsibilities was "a necessary evil" or just had to be accepted and was therefore "something to live with".

In examining how managers sought to "live with" the ambiguity and uncertainty prompted by the company's empowerment initiatives, evidence emerged from the field study to suggest a degree of 'coping through the budget'. A number of interviewees remarked how committing to meeting budgetary targets "provided an anchor" or "focal point" in the midst of jurisdictional and decisional ambiguities, and the constant push for innovation. They made it clear that they wanted to achieve predetermined budgetary targets, and expected their subordinates to do likewise. One manager remarked: "I don't like all this change. If there's a budget and a target, then it should be met. End of story". Several others commented on the importance of this role of budgets through references to the company's ethos: when asked to "tell me what you've done, not ask me what to do", they ruefully said they would "tell them they had met the budget!" One manager, in more serious vein, remarked:

> I am no longer sure where my job ends and someone else's begins. There's an incredible amount of uncertainty, and people are always being asked to do many different things at once. The whole thing is a mess. This does bother me; a hell-of-a-lot at times; I just don't know what I should be doing half the time. But, at least I know where I stand with the budget. If I keep this in order and hit the targets, and make sure my guys are doing the same, then no one can argue with that, not even the chief executive!

The above evidence suggests both causal direction and a rationale for the surprising degree of budgetary commitment that was evident at Infotain. Managers' propensity to pursue budgetary targets was, in part at least, driven by their desire to create for themselves a degree of structure and certainty in the face of the ambiguities and uncertainties that had become characteristic of their situation as a result of their experience of empowerment. Moreover, the evidence indicates that the pursuit of structure and certainty through the budget in these circumstances may well override other factors such as organizational position and leadership style in determining attitudes towards the budget in these circumstances. One manager, for example, remarked how his manager's "harsh" attitude towards budgetary targets was inconsistent with his supervisory style, which was "generally supportive and understanding". Further, the use of standard practices for qualitative data analysis, including interview coding and cross-tabulations (Miles & Huberman, 1984), revealed that those who expressed varying degrees of concern about their role also tended to show commitment towards the budget, irrespective of their organizational position or what could be interpreted at this stage as their more general approach to the job. In contrast to this, factors such as business unit affiliation did emerge as possible predictors of budgeting behaviours for the group of interviewees who, through an absence of relevant remarks, showed little or no concern for the uncertainty they faced as part of their role. These are potentially important observations, not only because they challenge longstanding assumptions about the conditions required to ensure budgetary commitment, but also because they suggest that the behavioural literature in accounting may have omitted a significant determinant of budgeting behaviours: the experience of role ambiguity.

These insights drawn from the qualitative data may be further explored through the analysis of quantitative data. While this complements the qualitative data in examining how and why budgets may be used as a coping mechanism against the ambiguity experience brought on by empowerment initiatives, it is distinctive in that it provides a basis for testing the strength of the relationship between role ambiguity and budgetary commitment. [2]

Role ambiguity and budgetary commitment

In this section, we develop a number of arguments in order to test the strength of the relationship between role ambiguity and budgetary commitment. We argue that empowerment may constitute a source of role ambiguity. We then consider the concept of role ambiguity before presenting the arguments as to why budgets may be useful mechanisms to alleviate stress and comfort managers affected by role ambiguity. We conclude by arguing, firstly, that the use of budgets as a coping mechanism leads managers to commit to meeting budgetary targets, irrespective of the presence of some factors (i.e. recognised explanatory variables such as leadership style and the superior's expectations), and the absence of others (e.g. formal accountability and reward), and secondly that coping is related to a gratifying role experience (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964). The various arguments and proposed relationships are depicted in Fig. 1, which presents the framework for the forthcoming discussions.

Empowerment and role ambiguity

A fundamental aim of empowerment initiatives is to embed notions of strategy formation throughout the firm (Otley, 1994). As middle-level managers are often closer to the customer and other stakeholders than top management, and therefore have more detailed knowledge of what strategic issues require attention, empowerment initiatives frequently envisage middle-level managers playing pivotal roles in detecting new ideas and in mobilising resources around these new ideas (Dutton et al., 1997; Kanter, 1982; Simons, 1995). In pursuing these 'strategic forcing' roles (Burgelman, 1983a, 1983b), managers are encouraged to undertake 'boundary-spanning' activities, apply individual initiative, and work as 'team players' (Euske et al., 1993). However, such activities tend to result in the blurring of role responsibilities and traditional line relationships, and, at times, poor communications between superior and subordinate. In this respect, empowerment initiatives undoubtedly disrupt the chain-of-command principles characteristic of formal hierarchical management structures (Bartlett & Ghoshal, 1993; House & Rizzo, 1970) and, in so doing, may create or increase role ambiguity (King & King, 1990).

Role ambiguity occurs when an individual is unsure about others' expectations of him-or her-

[2] In view of the field evidence, and in anticipation of the analysis to follow, causal direction is implied in the arguments that are developed.

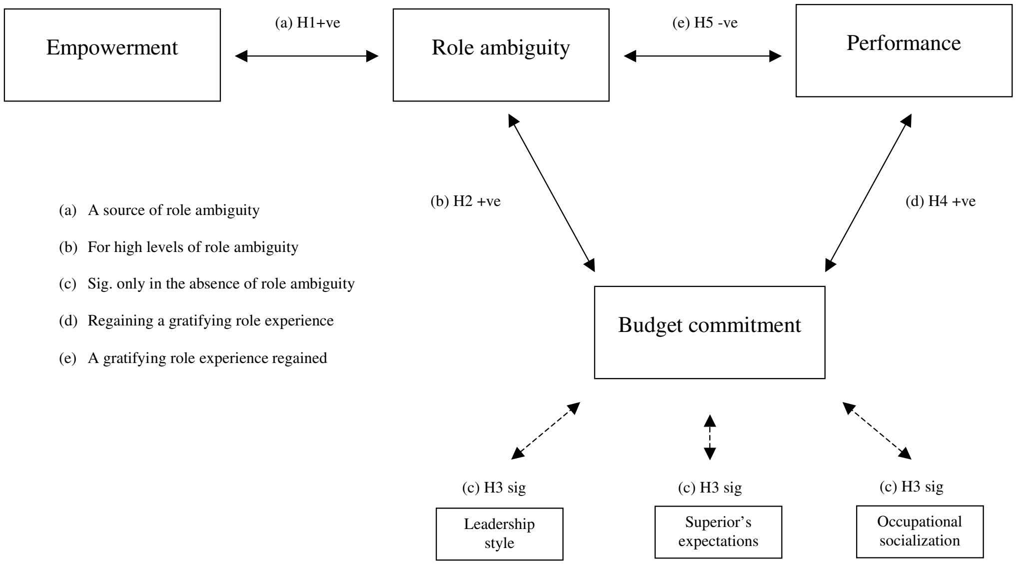

Fig. 1. Diagrammatic representation of the arguments.

self. It has been conceived as the "discrepancy between the amount of information a person has and the amount s/he requires to perform his or her role adequately" (Kahn, 1974, p. 426). The increased job transformations and fluid role responsibilities precipitated by empowerment initiatives may leave the manager unsure about what his or her duties and responsibilities are. The manager may also be unclear about the activities which should be performed in order to fulfil these responsibilities, while the consequences of action (or inaction) may be unknown. Such 'objective' role ambiguity is, in many respects, a fact of managerial life (Macintosh, 1995), but people have an inherent, if varying, need for role clarity (Elovainio & Kivimaki, 2001; Eysenck, 1954; Kahn et al., 1964). [3] As a result, a close correspondence is expected between objective and subjective, or experienced, role ambiguity (Kahn et al., 1964; Netemeyer, Johnston, & Burton, 1990). In general, we prefer to know what our duties and responsibilities of office are, and how we are supposed to discharge them, while from a socioemotional perspective, it is important that we know what the consequences of performance or non-performance will be, particularly for ourselves, but also, perhaps, for our colleagues and the organization in general (King & King, 1990). However, this sort of means-ends knowledge is unlikely to be forthcoming from the fluid role responsibilities and the high levels of jurisdictional and decisional ambiguity created by empowerment initiatives. Rather, the flexible approach to task requirements and the boundary spanning activities prompted by empowerment are likely to lead to imprecise lines of authority and lack of clarity about what is required. Consequently, we may argue that managers' experience of empowerment is likely to be related to their experience of role ambiguity. We therefore hypothesise that:

H1 (A source of role ambiguity): Empowerment is associated with role ambiguity.

Coping with role ambiguity through the budget

Experienced role ambiguity is an unwanted psychological state, which occurs when the person is concerned or 'stressed' by a lack of clarity and

[3] The need for role clarity can vary according to a person's tolerance of objective role ambiguity (Eysenck, 1954).

structure to the role (King & King, 1990; Siegall, 2000). Doubts about how others evaluate us, about how satisfied they are with our performance, are frequent and deep-seated sources of anxiety (House & Rizzo, 1970; Kahn et al., 1964; King & King, 1990). As a result, those who experience role ambiguity must confront it in some way (Kahn, 1974; Siegall, 2000), usually by invoking 'coping strategies'. These are attempts to regain clear, orderly and meaningful cognitive experiences. Such attempts may involve the use of defence mechanisms, which are able to distort the reality of the ambiguous situation in order to relieve the anxiety of the undistorted experience (Dougherty & Pritchard, 1985). However, within the role theory literature there is little elaboration of what these defence mechanisms may consist of. Consequently, little is actually known about the nature of these defence mechanisms, except for evidence to suggest that it may involve the person leaving the role (King & King, 1990). Notwithstanding this, our evidence indicates that it is plausible to argue that identifying with the budget by emphasising the achievement of short-term budgetary targets constitutes an important defensive strategy against the experience of role ambiguity; it is certainly one which most managers within the firm can invoke.

There are several reasons why budgets offer a useful coping strategy. First and foremost, budgetary control is organizationally 'good citizenship'. Those who are controlling their costs are benefiting the firm (Merchant, 1998). Moreover, because of the visibility of accounting information (Roberts, 1991), the manager can be *seen* to be an organizationally 'good citizen'. This is important, as it means that the manager is able to predict, with a high degree of confidence, the consequences of performance. More importantly still, the acquisition of such knowledge does not depend, for example, upon clear communication with the hierarchical superior about what should be done, how it should be done, or what kinds of behaviours are likely to result in reward. Rather, the manager autonomously 'knows' what needs to be done to acquire a positive organizational identity, knowledge which is aided by the 'mechanistic' credentials of budgetary systems (e.g. assumptions of certainty and independence of responsibility—Ezzamel & Hart, 1987). These make it clear what is required (achieve the budget), who is responsible (the manager), and, given the arithmetical nature of accounting reports (Hopwood, 1976), what regulatory action must be taken if the manager is to meet his or her own budgetary target: instruct the subordinate to do likewise (Hopwood, 1976).

Those who experience role ambiguity may therefore value the budget for the comfort and security it offers. But, such psychological return is conditional upon the achievement of targets; there is little comfort to be gained from exceeding pre-established targets or missing the budget. Thus, if budgetary control is to be used as a coping strategy, the manager must commit to the budget, and must exercise 'tight budgetary control' to achieve budgetary targets. Anything less decreases the probability of meeting the budget and, thereby, jeopardises the possibility of gaining the sense of socioemotional security that is desired. There may be valid 'strategic reasons' for exceeding the budget, but these reasons will be less visible to others and longer-term in their fruition. Role ambiguity is not avoided by these actions; rather ambiguity increases as objects and events recede in time and space, a fact which most people appear to accept (King & King, 1990). Those who experience role ambiguity are thus unlikely to adopt a flexible approach to the budget or even to forgo budgetary targets in favour of longer-term payoffs; such behaviour serves to increase perceptions of uncertainty (e.g. how much flexibility) and ambiguity (e.g. is it for the 'right' strategic reason that the subordinate is being instructed to forgo the budget) at a time when certainty is desired. The coping strategy is committing to the budget. The reward is a more gratifying role experience (House & Rizzo, 1970).

An over-riding influence?

The corollary of the above argument is that those who experience little or no role ambiguity may adopt a more flexible attitude towards the issue of budgetary control, because they have little need to 'cope'. The absence of role ambiguity removes the need for the manager to commit to meeting the budget in order to counter or distort the ambiguity experience. However, in view of the findings of prior research, we may argue that budget flexibility in these circumstances is likely to be shown only to the extent that variables such as leadership style (Argyris, 1952; Hopwood, 1974), the supervisor's behaviour towards the budget (Hopwood, 1974), or even the manager's previous work experiences and current functional location (Hirst, 1981) do not themselves result in budgetary commitment. People for whom the experience of role ambiguity is minimal or absent may still exercise tight budgetary control because of their task-orientated approach to the job (Hopwood, 1974) or because of the effects of hierarchical contagion (Bonini, 1963; Hopwood, 1974). Equally, of course, these managers may not exercise tight budgetary control because their style of leadership is more considerate or employee-oriented, or because this is what the superior expects, or indeed because they are merely reflecting established views within the particular business unit or function in regard to the importance of budgets (Hirst, 1981).

In effect, therefore, it cannot be suggested categorically that budget flexibility is associated with an absence of role ambiguity. But, what we can argue with some conviction is that, because role ambiguity triggers a seemingly powerful desire for structure and certainty (Kahn et al., 1964; Siegall, 2000), and because budgets offer a potentially effective coping mechanism, those experiencing role ambiguity *are* likely to commit to meeting the budget in these circumstances. The ambiguity experience crystallises attitudes towards the budget in a way that non-experience does not. The strength of the relationship between role ambiguity and budgetary commitment may be assessed by examining the extent to which the experience of role ambiguity overrides or suppresses other explanatory variables in determining the manager's behaviour towards the budget. The most appropriate variables to include in the analysis are those, such as leadership style and hierarchical contagion, which have been shown previously to shape managers' budgeting behaviours. We will therefore examine the argument that the experience of role ambiguity leads the manager to commit to meeting the budget irrespective of (1) his or her natural inclination to behave otherwise, as is the case with a considerate or employee-orientated style of leadership (Hopwood, 1974), (2) what the superior may expect of the manager (DeCoster & Fertakis, 1968; Hopwood, 1974), and (3) the effects of occupational socialisation, as demonstrated through business unit affiliation.

The formal hypotheses for the above arguments are as follows: [4]

H2 (A crystallisation of attitudes): Those who experience high levels of role ambiguity are more likely to commit to meeting the budget than those whose experience of role ambiguity is minimal or absent.

H3 (An over-riding influence): The experience of role ambiguity over-rides recognised explanatory variables (leadership style, hierarchical contagion) and other predicted factors (e.g. occupational socialisation) in shaping attitudes to the budget in these circumstances.

H4 (A coping strategy for gaining or regaining a gratifying role experience): The higher the commitment to the budget, the higher the level of self-reported performance. [5]

[4] The five hypotheses seek to reflect the various components of the 'theory' (i.e. source of role ambiguity, asymmetry, suppression of recognised explanatory variables, and 'coping'). Their separate examination is necessary, given the intricacies of the arguments. In fact, a more complete picture is possible through this cumulative approach to the empirical analysis.

[5] The role theory literature stresses how people invoke coping mechanisms in a bid to obtain a more gratifying role experience, but offers little guidance on what may constitute a 'gratifying role experience' or how this may be measured. The present study sought to construct this phenomenon in terms of performance. The reasons are twofold. First, it is reasonable to argue that one measure of 'gratification' is performance; those who are satisfied with their role are likely to feel that they are performing well (and vice versa). Second, and more importantly perhaps, given a lack of formal accountability and reward at the research site, and given a general emphasis on innovation and learning, the manager has much less need to evaluate his or her worth to the organization against accounting numbers (Roberts, 1991). Self-evaluation of performance in this context will thus represent a feeling of general well-being within the role rather than a specific measure of task accomplishment.

H5 (A gratifying experience regained): Performance is inversely related to role ambiguity.

Method

The arguments were tested on data collected from a questionnaire survey involving 'level three' managers drawn from five of Infotain's eight strategic business units. The business units were chosen to represent a spectrum of functions, including engineering, product development and sales and marketing. All level three managers from these business units were asked to participate in the questionnaire survey. Completed questionnaires amounted to 221 out of a possible 270, of which all were usable. The response rate was 82 percent.

The choice of managerial level was dictated by several factors. First, level 3 managers represent, for the firm in question, junior executives with budget responsibilities and regulatory duties (level 4 managers were also allocated resources). Second, meetings with accounting and human resource personnel and the perusal of documents relating to formal accountabilities established several important facts about the way budgetary control was exercised at this level. One is that these junior executives were neither assessed nor rewarded for staying within budget. Another is that most managerial ranks, including the one in question, were not, by and large, able to participate in the setting of their budgetary targets. Instead, 'prudent' budgets tended to be imposed by the accounting function in a bid to establish cost consciousness throughout the managerial hierarchy. When questioned about whether or not they accepted their budgetary targets, managers responded by saying they had "no choice"! This is important in the context of the present study as the lack of participation in setting budgetary targets is normally expected to make managers less committed to achieving them. Commitment to budgetary targets, even for intrinsic reward, is considered to be inexorably bound with notions of perceived legitimacy and 'ego involvement', which come from managers' ability to participate in the setting of budgetary targets (Collins, 1982). As regards the achievability of their budgetary targets, managers when asked in interviews commented that they were moderately difficult or difficult. None suggested that the budget was easily achievable.

A final reason for focusing on level 3 managers is that managers at this level and below were empowered to behave 'strategically'; they could, if necessary, exceed their original budgetary targets for 'strategic reasons'. The same applied at the next level down, but it was felt that lower-ranking managers may generally feel more insecure, and therefore might be more predisposed to experiencing role ambiguity. The intent of the study was to focus attention on the highest managerial level possible where any feelings of anxiety and insecurity may be minimised, thereby establishing a context which would make significant results less rather than more likely.

Measurement of the variables

Commitment to the budget: tight budgetary control

Ten questions were initially devised to measure managers' commitment to the budget as manifest in the exercise of 'tight budgetary control' (Van der Stede, 2001). Tightness may be exhibited in two main ways. One is that which is imposed by the budgetee on him or herself. The other is the tightness that is imposed by the budgetee on the subordinate. Both are necessary if the budgetee is to obtain security from meeting the budget (Hopwood, 1976). Hence, both these approaches were applied in devising the questions. The ten questions are shown in the Appendix (questions 1–10).

Confirmatory factor analysis was employed to determine validity. This resulted in the original ten-item instrument being reduced to eight, as survey items that load above 0.40 were retained (Dutton et al., 1997; Van der Stede, 2001). A Cronbach Alpha score of 0.76 was obtained for this eight-item measure, which is comfortably above lower limits of acceptability, generally considered to be around 0.50–0.60 (Nunnally, 1967), and may be regarded as reasonable for an instrument which is being used for the first time. Cron-

Table 1
Factor loadings for budgetary commitment measures

Items in order shown in Appendix A	Rotated factor loading	Squared multiple correlations
1	**0.716**	0.525
2	**0.651**	0.566
3	0.340	0.511
4	**0.533**	0.483
5	**0.814**	0.879
6	**0.583**	0.482
7	0.243	0.548
8	**0.708**	0.624
9	**0.488**	0.475
10	**0.510**	0.897

bach Alpha for all ten original items was 0.66 (Cronbach, 1951). Thus, omitting the two items with weak factor loadings "not only makes the scale more parsimonious, it also enhances its overall reliability" (Van der Stede, 2001, p. 129). Factor loadings are reported in Table 1. The two omitted items are statements 3 and 7 (see the Appendix).

The underlying principle that was applied in devising the research instrument was that of 'trade-off'; budgetary commitment through 'tight budgetary control' (Van der Stede, 2001) was measured, not by examining, for example, 'the amount of emphasis placed on attaining budget targets' per se, but by examining the extent to which such emphasis may be exhibited in the context of the need for strategic adaptation and change. Tensions between these important aspects of organizational endeavour are inherent to firms (Simons, 1995); they were a particular feature at Infotain. It is likely that most firms would like managers to strike a balance between budgetary control on the one hand, and innovation and learning on the other. To that end, getting respondents to demonstrate their preferences and priorities in trade-off situations is a potentially useful way of establishing strength of budgetary commitment. Respondents were therefore asked to what extent they expected budgetary targets to be met, given the need to consider (1) long-term financial performance, (2) problems of controllability (Choudhury, 1986), (3) unfolding events and opportunities, and (4) strategic developments. Items 6 and 10 are used as overall anchors (Mahoney, Jerdee, & Carroll, 1963, 1965). Each item was measured on a five-point scale, with 1 representing strong agreement and 5 strong disagreement with the statement presented. Items 1, 7, 8 and 9 were reverse scored.

An expectations approach is used to measure the degree of tightness as applied to the subordinate. This is in keeping with the findings of the field study and suggestions in the literature (e.g. Machin, 1979). The communication of expectations represents an influence attempt, which is aimed at ensuring compliance with what is expected (Kahn et al., 1964; Machin, 1973, 1979). Thus, expecting pre-determined budget targets to be achieved in the context of trade-off represents budgetary commitment. It is 'tight budgetary control'.

Experienced empowerment

The notion of empowerment has been extensively discussed, but there are surprisingly few research instruments that have been devised to detect and measure the extent of a manager's empowerment in a business context. In this study, we use a five-item instrument (reduced from six items on the basis of confirmatory factor analysis) to measure respondents' perceptions as to the degree of strategic empowerment they were afforded in the discharge of their role. Consistent with findings from the qualitative study, respondents were asked to indicate the extent to which they were expected to indulge in various 'boundary-spanning' activities which took them away from the line relationship with the superior. Each item was measured on a five-point scale with 1 representing strong agreement with the statement presented and 5 strong disagreement. The Cronbach Alpha score for the five-item instrument is a highly respectable 0.72 (Nunnally, 1967). The research instrument is shown in the Appendix (items 11–15).

Role ambiguity

Role ambiguity is assessed using a slightly adapted version of the well-tested measure first developed by Kahn et al. (1964) (see questions 16–21 in the Appendix). A reliability measure of 0.80

was obtained for the resulting six-item instrument. [6]

The superior's budgetary expectations

Hopwood's (1974) research suggests that tight budgetary control (in the form of a budget-constrained evaluative style) is passed on from one level to the next through the notion of hierarchical contagion (Bonini, 1963). However, what is of greater interest here is the extent to which the budgetee may be committed to meeting the budget even though the superior may expect otherwise. Use of an expectations approach (Machin, 1979) works both ways, in that the superior may expect the manager to trade budgetary targets in favour of strategic adaptation. This was evident at Infotain: the few level 2 managers that were interviewed suggested that they would be prepared to forgo budgetary targets for strategic reasons. The extent to which level 2 managers expected their subordinate(s) to trade budgetary targets for strategic reasons was assessed by asking level 3 managers what they perceived to be expected of them in relation to the budget. A five-item instrument was devised and reduced to four items following factor analysis. The four items are shown in the Appendix (questions 22–25). A Cronbach Alpha score of 0.79 was obtained for the four-item instrument.

Occupational socialisation/business unit affiliation

Occupational socialisation (DiMaggio & Powell, 1983) at the business unit level was assessed according to membership of a particular business unit. This was represented as three separate dummy coded (0 or 1) current position variables. For example, in the first variable members of business unit one (engineering) were coded 1 and the remainder 0 (Donabedian, McKinnon, & Bruns, 1998; Sim & Killough, 1998). The process was repeated for each of the other four business units.

Leadership style

A five-item instrument was devised in order to detect and measure leadership style in action at the research site. [7] Broadly speaking, each question sought to measure leadership style along a high task/low consideration—low task/high consideration continuum. For example, Question 26 asks respondents to indicate the extent to which they expect subordinates to revise their responsibilities/commitments as circumstances change; the more revisions are sanctioned or expected, the more employee-orientated the manager, given the circumstances encountered. (Expecting original targets to be met in the context of rapidly changing conditions demonstrates a higher regard for the task than the individual, who must confront these 'difficult' circumstances.) Each question in the present instrument was measured along a five-

[6] While the paper focuses on anxiety brought on by the experience of role ambiguity, all 15 items that Kahn et al. (1964) first composed to measure job-related stress and tension manifest as role ambiguity, role conflict and role overload were included in the questionnaire in order to check the validity of the role ambiguity measure through factor analysis. The six items for role ambiguity loaded onto one (of three factors) at 0.50 or above. The analysis yielded three Eigen values >1 which accounted for 68% of the variance. Only the six items relating to role ambiguity are shown in Appendix A for reasons of brevity.

[7] Due to top management placing restrictions on the size of the questionnaire, the general circumstances encountered, and the focus of the study (i.e. the manager rather than the subordinate), a decision was taken not to use the Stodgill (1963) two-dimensional instrument of initiating structure and consideration. This measure contains a range of questions which, in the eyes of Infotain's senior managers, rendered the questionnaire 'to big' in terms of resource implications for the firm. In the event, while this instrument may be well tested, it has several features which limit its usefulness in the present analysis. First, it is mainly used to measure subordinates' perceptions of their manager's leadership style; the measure is generally regarded as being unsuitable for direct assessment because it is vulnerable to 'favourable self-biasing' (Lowin & Craig, 1968; Otley & Pierce, 1995). Second, the Stodgill measure has been criticized for not providing an indication as to how leadership style may manifest 'on the job' (Yukl, 1989). This is limiting in the context of the present analysis, given the focus on examining practical expressions of both leadership and budgetary style. Finally, it is possible for the Stodgill measure to identify managers who score highly on both initiating structure and consideration dimensions (suggesting that they are both highly task-orientated and highly employee-orientated). The present analysis seeks a more straightforward instrument which will measure the relationship between general leadership style (along a broad continuum from task—employee-oriented) and commitment to the budget.

point scale. A Cronbach Alpha reading of 0.71 was obtained. Factor analysis revealed no sub-components, while all items loaded above 0.40 (Van der Stede, 2001).

Managerial performance

In an adaptation of the Mahoney et al. (1963, 1965) *overall* self-rating measure, a three-item instrument was used to measure managers' views of their performance. This instrument includes both an absolute (the Mahoney et al measure) and two relative measures of performance (see questions 31–33 in the Appendix). These relative measures were crucial, given the focus on understanding how well budgetary performance enables the manager to achieve a sense of security in the context of his or her place of employment. A Cronbach Alpha score of 0.75 was obtained for this three-item instrument.

While concern has been expressed in the literature regarding the use of self-report measures to assess performance, a study by Venkatraman and Ramamujam (1987) suggests that this concern is somewhat misplaced. Managers' self-rating of performance tends to be less biased than what one might expect. Moreover, Dunk (1993) points out that self-rating of performance tends to be less lenient than supervisory ratings (Heneman, 1974), while earlier studies by Parker, Taylor, Barret, and Martens (1959) and Kirchner (1965) provide further support "for the utility of self-report measures" (Dunk, 1993, p. 580). Dunk (1993, p. 580) goes on to explain that, "even though the rating of subordinate has traditionally been the responsibility of supervisors, superior managers may not necessarily be well placed to rate the performance of their subordinates." This was precisely the case at Infotain.

Pre-testing and piloting

Several instruments have been devised for the first time in this study, and as such, particular attention was paid to the pre-testing and piloting of the questionnaire. The aim was to ensure that the questions used to measure each variable were unambiguous and captured the constructs of interest. Standard practices were employed, including the use of a panel of experts to assess the questionnaire for understanding, style of question (e.g. trade-off approach), length of question, layout and so on. The questionnaire was revised on the basis of comments received. A second phase of pre-testing and piloting was then undertaken, in which the 26 managers who formed the interview set during the earlier field study were given a copy of the questionnaire and asked to assess the substance, relevance and clarity of the proposed questions. Final adjustments to the questionnaire (mostly to the wording of questions) were made on the basis of feedback received.

Analysis and results

Descriptive statistics

Table 2 reports means and standard deviations and, where appropriate, both theoretical and actual ranges for the variables measured in the study.

Test of hypotheses

Empowerment and role ambiguity

Hypothesis 1 predicts that empowerment will be related to the experience of role ambiguity. The Pearson correlation coefficient is 0.29 ($p < 0.01$), suggesting a significant positive relationship between perceived empowerment and role ambiguity. [8]

A crystallisation of attitudes

Hypothesis 2 seeks to reflect the argument that attitudes towards the budget are crystallised as levels of subjective or experienced ambiguity

[8] Of course, given the relationships depicted in Fig. 1, it is important to test for a possible direct link between empowerment and budgetary commitment. While the Pearson correlation coefficient suggests a marginally significant association between these variables ($p < 0.05$), path analysis (Duncan, 1966; Kerlinger, 1986) demonstrates that role ambiguity completely moderates the relationship between empowerment and budgetary commitment. From this, we conclude that empowerment is linked to budgetary commitment, not directly, but through the experience role ambiguity.

Table 2
Descriptive statistics

Variable	Items	Theoretical range		Actual range		Mean	SD
		Min.	Max.	Min.	Max.		
Budgetary commit	8	8	40	11	38	25.87	7.03
Role ambiguity	6	6	30	11	29	20.35	5.91
Empowerment	5	5	25	7	24	14.23	3.76
Leadership style	5	5	25	8	21	15.67	4.02
Superior's expectations	4	4	20	8	18	11.09	3.58
Performance	3	3	15	5	15	10.04	2.56

increase. To test this, scores for role ambiguity are divided at roughly the mid-point on the theoretical range and compared against budgetary commitment (also divided at the mid-point) by way of Chi-squared analysis. [9] Results are significant at $p < 0.001$, indicating support for H2 (see Table 3); those who experience high levels of role ambiguity are, it seems, more likely to commit to meeting the budget than those whose experiences of role ambiguity are minimal. [10]

An over-riding influence

Hypothesis 3 predicts that the crystallising of commitment in situations of high role ambiguity will suppress the potential for other factors to influence budgeting behaviours in these circumstances. This argument is tested using a stepped process of analysis. In the first instance, it was necessary to establish the extent to which each of the variables—role ambiguity, leadership style, the superior's expectations of budgetary performance and occupational socialisation—is significantly associated with budgetary commitment in its own right. Table 4 presents Pearson correlation coefficients. All are significant to varying degrees, suggesting that each variable is associated with budgeting behaviour. Moreover, results for both leadership style and the expectations of the superior may be claimed to be in the expected direction, given the results obtained by Hopwood (1974). [11]

The second stage of the analysis involved examining the extent to which the experience of role ambiguity over-rides the ability of each of the other variables to influence budgetary commitments. This was done, in the first instance, through two multiple regression analyses, which are differentiated only by the role ambiguity data used. For one, the measure of role ambiguity comprises those scores equal to and in excess of the theo-

[9] For the purposes of this paper, scores below the theoretical mean (i.e. <18) are taken to represent low levels of role ambiguity for which coping strategies are not invoked.

[10] While there are obvious limitations in using Chi-squared analysis to test H2, not least of which is the loss of data, correlation analysis was deemed more problematic because of the argument that the manager may still exercise tight budgetary in the absence of role ambiguity for reasons that are related, for example, to his or her more general approach to the job. At the same time, the probability of this was considered to be less than the probability that tight budgetary control will be exercised in the context of role ambiguity. Recall, that it is being argued that managers *may* commit to the budget in the absence of role ambiguity but *will* if role ambiguity is experienced.

[11] That is, the more task-orientated managers are the more they will be committed to achieving the budget, while the budgeting behaviour of subordinates tends to follow that exhibited by their superiors. Given the lack of prior research into the effects of occupational socialisation on budgeting behaviours, no claim can be made to the 'correctness' of this result, except to say that it confirms the findings of the qualitative analysis; engineering managers appeared generally keener to meet the budget than sales and marketing people. The result for role ambiguity is as expected.

Table 3
Chi-Squared: test of Hypothesis 2

	Budget commitment	Budget flexibility	Row total
Role ambiguity is high	97 (74.6%)	27 (29.6%)	124 (56.1%)
Role ambiguity is minimal/absent	33 (25.4%)	64 (70.3%)	97 (43.9%)
Column total	130 (58.8%)	91 (41.2%)	221

Chi-square value = 43.68, $p < 0.001$ (one-tailed test).

Table 4
Pearson correlation coefficients

	Budget commitment
Role ambiguity	0.54***
Leadership style	0.25**
Superior's expectations	0.18*
Occupational socialisation	0.34***

$^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

retical mean (indicating the experience of ambiguity). This variable, along with hierarchical contagion, leadership style and operational socialisation, is regressed against the budget commitment measure as the dependent variable. For the other, role ambiguity scores below the theoretical mean are used. A third multiple regression analysis was then conducted using the full data set.

Results are reported in Table 5. They provide partial support for H3, in that significant results are obtained for both role ambiguity ($p < 0.001$) but also business unit affiliation ($p < 0.05$) for the first regression; whereas business unit affiliation ($p < 0.001$), leadership style ($p < 0.01$), hierarchical contagion ($p < 0.05$) and role ambiguity ($p < 0.05$) are found to be significant in the second regression. Results for the full regression show role ambiguity and occupational socialisation to be significantly related to levels of budgetary commitment. Overall, therefore, these findings suggest that the experience of role ambiguity may be sufficiently strong to suppress some explanatory variables, but not all. To that end, further studies may wish to extend the range of factors examined in order to obtain a more accurate measure of the strength of the relationship between role ambiguity and budgetary commitment.

A coping strategy for regaining a gratifying role experience

Hypothesis 4 states that commitment to the budget will be related to higher levels of performance. It represents an initial and tentative

Table 5
Multiple regressions: test of Hypothesis 3 (budgetary commitment = dependent variable)

Explanatory variable	Standardised regression coefficients for regression 1 (role ambiguity) $n = 127$	Standardised regression coefficients for regression 2 (minimal role ambiguity) $n = 94$	Standardised regression coefficients for regression 3 (full data set) $n = 221$
Role ambiguity	0.549***	0.224*	0.458***
Leadership style	0.144	0.369**	0.150
Superior's expectations	0.006	0.220*	0.010
Business unit affiliation	0.268*	0.380***	0.289*
Adjusted R	0.340	0.180	0.290
F	12.09***	5.38***	10.23***

$^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.
Variance inflation factors were 2.50 or below for all independent variables (Belsley, Kuh, & Welsch, 1980).

attempt to examine the argument that striving to meet the budget may be used as a strategy for regaining a more gratifying role experience. The Pearson correlation coefficient is 0.24 ($p < 0.05$), providing support for H4. Even attempting to meet the budget appears to offer security and a sense of self-worth (Roberts, 1991).

A gratifying experience regained

Role theory (Kahn et al., 1964) implies that gaining or regaining a gratifying role experience will be associated with a reduction in levels of stress and anxiety. Hypothesis 5 thus states that performance is inversely related to role ambiguity (Dunk, 1993). The Pearson correlation coefficient ($r = -0.45$) supports this argument at $p < 0.001$. A more gratifying role experience is seemingly regained through the budget.

Limitations and conclusions

At least five limitations influence the interpretation of these results. First, the use of respondents from a single organization may limit generalalisability. Second is the use of certain research instruments for the first time, particularly since these were developed on the basis of the qualitative evidence from the study. Third, a number of self-reporting measures, together with an expectations approach have been used on several occasions. This may impact on the results obtained, although several steps were taken (such as interviewing a number of level two managers to establish their views on budgetary performance) to triangulate the validity of the questionnaire data. The fourth is the usual limitation of survey-based research, namely that such a study design does not permit causal statements. Suggestions of causation or inferences implied are based on theoretical positions, although the field evidence does provide some indication as to the direction of the relationship between role ambiguity and budgetary commitment. Finally, no attempt has been made to investigate other potential coping mechanisms available to the manager. Further studies may wish to expand the analysis.

Notwithstanding these limitations, this paper makes a potentially important contribution towards our understanding of the 'human dimension' of budgeting by presenting an alternative perspective on budgets. Extant writings emphasise the dysfunctionality of budgets at both an organizational and individual level. On the one hand, schemes of accountability and reward, as well as participation, are generally deemed necessary in order to ensure people's commitment to the budget. On the other hand, a high emphasis on budget attainment may result in various behavioural side effects that are dysfunctional to the firm. It is, in essence, a rather negative view of budgets. By contrast, our analysis indicates that budgets may have a more positive role to play in people's work-related experiences. People may commit to meeting pre-determined budgetary targets, not because of the threat of accountability or the promise of reward, but because budgets can offer structure and certainty in situations of high ambiguity and uncertainty. Moreover, our analysis suggests that the degree of commitment shown in these circumstances may be such that it over-rides the potential for recognised explanatory variables such as leadership style and hierarchical contagion to influence managers' budgeting behaviours. Strong enough also, perhaps, to counter the absence of formal accountability, financial inducements and participation in the budget setting process (Searfoss, 1976).

The theoretical implications of these findings are potentially considerable. Firstly, we may have to reconsider the role of 'image management' (Johnson & Gill, 1993; Morgan, 1986) as a motivator of budgeting behaviours, and secondly, the motivational impact of budgets, of themselves, may also have to be re-considered. These two issues are inter-related, and are therefore discussed together. Extant understanding on how people relate to the budget emphasises how they are 'pulled' towards meeting budgetary targets for reasons that are grounded in both the formality and visibility of accounting controls (Hofstede, 1968; Morgan, 1986; Roberts, 1991). People naturally desire to appear competent in terms of the criteria by which they are formally assessed (Johnson & Gill, 1993; Van der Stede, 2000).

Moreover, their job may depend upon this (Van der Stede, 2000). At the same time, expectancy theory suggests that budgetary targets need to be accepted as legitimate, as difficult but achievable, and is important before people will commit to attaining them, whether this is for intrinsic or extrinsic reasons (Collins, 1982; Johnson & Gill, 1993; Ronen & Livingston, 1975). There also needs to be some assurance that the outcome is controllable (Choudhury, 1986). On the basis of our evidence, however, it is possible to argue that the appeal of budgetary targets may be less dependent upon issues such as accountability, achievability and (extrinsic) reward than previously envisaged. Our findings imply that the mere visibility of budgetary performance is sufficient to ensure commitment; formal inducements may not always be necessary. People may be 'pushed' towards commitment because meeting the budget offers a way of signalling competence per se (Collins, 1982), particularly in circumstances where the budget is being used as a coping mechanism to counter or distort the experience of ambiguity.

Obviously, however, comments such as these should be treated with caution. Further research is needed to validate the arguments presented here as to why budgets may have a positive role to play in people's work experiences. While the circumstances at Infotain provided a particularly fruitful opportunity to undertake research of this nature, anecdotal evidence suggests that a number of other organizations either have or may be planning to abandon budgets in their traditional form (Hope & Fraser, 2003). There may thus be other opportunities to conduct similar research. More work is certainly needed, not least because managers' use of budgets as an antidote to role ambiguity may impose a 'hidden' but important contingency on the budgetary control process: the very uncertain and ambiguous conditions which may demand a flexible approach to the exercise of budgetary control may also lead to 'behavioural inflexibility' as managers use the budget as a means of coping with these ambiguous and uncertain conditions. These contradictory tensions may lead to a 'design-behaviour' paradox. Where strong reliance on budgets is no longer deemed suitable, or desirable, from an organizational point of view, managers may react, for psychological reasons, by maintaining or increasing their commitment to budgetary targets.

Appendix A

Commitment to the budget

Rubric on the questionnaire: The following statements concern (operational) budgetary performance. Please indicate the extent to which you agree or disagree with each as an indication of what *you expect of yourself and your First Reports in terms of budgetary performance*.

1. You are more concerned with taking actions to improve long-term financial effectiveness than with actions which produce good short-term budget performance.
2. You expect your First Reports to meet short-term budgets even if deviations from budget are occasioned by events outside their control.
3. You take corrective action to reduce variances from budget, even if this involves disrupting on-going projects and programmes.
4. You expect your First Reports to be more concerned with maintaining progress towards initial budget targets than with negotiating increases to the budget as events unfold.
5. You expect your First Reports to be more concerned with actions which produce good short-term budget performance than with actions to improve long-term financial effectiveness.
6. You are committed to achieving the budget.
7. You expect your First Reports to take corrective action to reduce variances from budget, but not at the expense of disrupting on-going projects and programmes.
8. You seek to negotiate increases to the budget where circumstances dictate than focus on achieving initial budgetary targets.
9. You do not attempt to meet overall short-term budgetary performance targets if deviations from budget are occasioned by events outside your control.
10. You expect your First Reports to achieve the budget.

Scale: 1 (strongly agree)–5 (strongly disagree); items 1, 7, 8 and 9 reverse scored.

Experience of empowerment

Rubric: The following statements refer to the breadth of a person's responsibilities; his or her level of empowerment. Please indicate the extent to which you agree or disagree with each as an indication of what you believe is the level of empowerment afforded to you by your superior.

11. As part of your role, some of your actions can be directed towards supporting other people's responsibilities, rather than being directed entirely towards supporting your manager's accountabilities.
12. You have the discretion to concern yourself with issues/events, even if these fall outside your area of responsibility.
13. You are expected to commit to only those responsibilities which will not require you to exceed your normal level of authority.
14. You cannot revise your responsibilities/commitments without authorisation from above.
15. You are expected to act on your own initiative by adapting quickly to the local situation, rather than referring such decisions upward through the company.

Scale: 1 (strongly agree)–5 (strongly disagree); items 13 and 14 reverse scored.

Role ambiguity

Rubric: All of us occasionally feel bothered by certain kinds of things at work. The following is a list of things that sometimes bothers people. How frequently do you feel bothered by each of them?

16. Being unclear on just what the scope and responsibilities of your job are.
17. Not knowing what opportunities for advancement or promotion exist for you.
18. Not knowing what your immediate superior thinks of you and how your performance is evaluated.
19. The fact that you can't get information needed to carry out your job.
20. Not knowing just what the people you work with expect of you.
21. Being unclear about the amount of authority you have to carry out the responsibilities assigned to you*.

*This question was adapted to fit the circumstances encountered.

Scale: 1 (never)—5 (most of the time).

The superior's budgetary expectations

Rubric: The following statements describe some of the expectations a superior has of his or her subordinates in relation to budgetary performance.

Even though you may not be certain about the expectations your manager has of you, please indicate the extent to which you agree or disagree with each as an indication of the *budgetary expectation you believe your manager/superior has of you*.

22. You are expected to concern yourself more with actions that produce good short-term budget performance than with actions to improve long-term financial effectiveness.
23. You are not expected to meet budget performance targets if deviations from budget are occasioned by events outside your control.
24. You are expected to negotiate increases to budget where circumstances dictate/events unfold rather than seek to meet initial budgetary targets.
25. You are expected to meet the budget.

Scale: 1 (strongly agree)–5 (strongly disagree); items 18 and 19 reverse scored.

Leadership style

Rubric: The following statements describe some of the expectations a superior has of his or her subordinate(s). For each statement, please show the extent to which you agree or disagree with each as an indication of the *expectations you have of your First Reports*.

26. You expect your First Reports to revise their responsibilities/commitments as circumstances change rather than seek to accomplish their original tasks.

27. You expect your First Reports to concentrate on getting the job done, rather than be concerned with nurturing good relations with colleagues and subordinates.

28. You expect your First Reports to achieve their objectives and tasks regardless of difficulties encountered.

29. You expect your First Reports to be more concerned with taking actions to achieve specific KPIs for their area of responsibility, rather than taking actions to enhance performance in a broad area of the unit/company.

30. You expect initiative and quick adaptation to the local situation from your First Reports, rather than the referral of such decisions upwards through the company.

Scale: 1 (strongly agree)–5 (strongly disagree); items 21 and 25 reverse-scored.

Performance

31. Please indicate on the following seven-point scale your rating of your own recent performance:

Performance is barely satisfactory	1
Performance is adequate	
Performance is extremely good	7

32. How do you think the performance of your department compares with that of other departments in the business unit? Taking everything into consideration would you consider it to be:

Well below average	1
Average	
Well above average	7

33. How well do you think you compare as a manager with other managers at the same level as you? Taking everything into consideration would you consider yourself:

Well below average Scale:	1
Average Scale:	
Well above average Scale:	7

Questions used to establish business unit affiliation and organizational position:

34. To which business unit do you belong?

35. Please circle the number that represents your position within the management levels of the company

1. Senior management team member,
2. First Report to member of senior management team,
3. First Report to level to manager,
4. Other.

References

Abernathy, M., & Brownell, P. (1999). The role of budgets in organizations facing strategic change: an exploratory study. *Accounting, Organizations and Society, 24*, 189–204.

Ansari, S. L. (1979). Towards an open systems approach to budgeting. *Accounting, Organizations and Society, 4*(3), 149–161.

Argyris, C. (1952). *The impact of budgets on people*. New York: Controllership Foundation.

Argyris, C. (1953). Human problems with budgets. *Harvard Business Review, 1*, 97–110.

Argyris, C. (1960). Organizational effectiveness under stress. *Harvard Business Review, 3*, 137–146.

Argyris, C. (1977). Organizational learning and management information systems. *Accounting, Organizations and Society, 2*(2), 113–123.

Bartlett, C. A., & Ghoshal, S. (1993). Beyond the M-form: towards a managerial theory of the firm. *Strategic Management Journal, 14*, 23–46.

Belsley, D. A., Kuh, E., & Welsch, R. E. (1980). *Regression diagnostics*. New York: John Wiley and Sons.

Bonini, C. P. (1963). *Simulation of information and decision systems in the firm*. Prentice Hall.

Briers, M., & Hirst, M. K. (1990). The role of budgetary information in performance evaluation. *Accounting, Organizations and Society, 15*, 373–398.

Brownell, P. (1981). Leadership style, budgetary participation and managerial behaviour. *Accounting, Organizations and Society, 6*(3), 307–321.

Brownell, P. (1982). The role of accounting data in performance evaluation, budgetary participation and organizational effectiveness. *Journal of Accounting Research, 20*, 12–27.

Brownell, P. (1983). Leadership style, budgetary participation and managerial behaviour. *Accounting, Organizations and Society, 8*, 307–322.

Brownell, P. (1985). Budgetary systems and the control of functionally differentiated organizational activities. *Journal of Accounting Research, 23*, 502–512.

Brownell, P., & Dunk, A. (1991). Task uncertainty and its interaction with budgetary participation and budget emphasis: some methodological issues and empirical investigation. *Accounting Organizations and Society, 16*, 693–703.

Brownell, P., & Hirst, M. (1986). Reliance on accounting information, budgetary participation and task uncertainty: tests of a three-way interaction. *Journal of Accounting Research, 24*, 241–249.

Burgelman, R. A. (1983a). A model of the interaction of strategic behaviour, corporate context, and the concept of strategy. *Academy of Management Review, 8*(1), 61–90.

Burgelman, R. A. (1983b). A process model of internal corporate venturing in the diversified firm. *Administrative Science Quarterly, 28*, 223–244.

Caplan, E. (1966). Behavioral assumptions of management accounting. *Accounting Review* (July), 476–509.

Chapman, C. S. (1997). Reflections on a contingent view of accounting. *Accounting, Organizations and Society, 22*, 189–205.

Choudhury, N. (1986). Responsibility accounting and controllability. *Accounting and Business Research* (Summer), 189–198.

Collins, F. (1982). Management accounting systems and control: a role perspective. *Accounting, Organizations and Society, 7*(2), 102–122.

Cronbach, L. J. (1951). Coefficient alpha and internal structure of tests. *Psychometrica*, 297–334.

DeCoster, D. T., & Fertakis, J. P. (1968). Budget-induced pressure and its relationship to supervisory behaviour. *Journal of Accounting Research*, 237–246.

DiMaggio, P., & Powell, W. (1983). The iron cage revisited: institutional isomorphism and collective rationality in organizational fields. *American Sociological Review, 48*, 147–160.

Donabedian, B., McKinnon, S. M., & Bruns, W. J., Jr. (1998). Task characteristics, managerial socialization, and media selection. *Management Communication Quarterly, 11*, 372–400.

Dougherty, T. W., & Pritchard, R. D. (1985). The measurement of role variables: exploratory examination of a new approach. *Organizational Behavior and Human Decision Processes, 35*, 141–155.

Duncan, O. D. (1966). Path analysis: sociological examples. *American Journal of Sociology, 72*, 1–16.

Dunk, A. S. (1993). The effects of job-related tension on managerial performance in participative budgetary settings. *Accounting, Organizations and Society, 18*, 575–585.

Dutton, J. E., Ashford, S. J., O'Neil, R. M., Hayes, E., & Wierba, E. E. (1997). Reading the wind: how middle managers assess the context for selling issues to top managers. *Strategic Management Journal, 18*(5), 407–425.

Elovainio, M., & Kivimaki, M. (2001). The effects of personal need for structure and occupational identity in the role stress process. *Journal of Social Psychology, 141*(3), 365–378.

Emmanuel, C., Otley, D., & Merchant, K. (1990). *Accounting for management control*. London: Chapman & Hall.

Euske, K. J., Lebas, S., & McNair, C. J. (1993). Performance management in an international setting. *Management Accounting Research, 4*, 275–299.

Eysenck, E. J. (1954). *The psychology of politics*. London: Routledge & Kegan Paul.

Ezzamel, M., & Hart, H. (1987). *Advanced management accounting: an organizational emphasis*. London: Cassell.

Govindarajan, V. (1988). A contingency approach to strategy implementation at the business unit level: integrating administrative mechanisms with strategy. *Academy of Management Journal, 31*, 828–853.

Harrison, G. (1993). Reliance on accounting performance measures in superior evaluation style—the influence of national culture and personality. *Accounting, Organizations and Society, 18*, 319–339.

Hartman, F. G. H. (2000). The appropriateness of RAPM: toward the further development of theory. *Accounting, Organizations and Society, 25*, 451–482.

Hedberg, B., & Jonsson, S. (1978). Designing semi-confusing information systems for organizations in changing environments. *Accounting, Organizations and Society, 3*(1), 47–64.

Heneman, H. G. (1974). Comparisons of self and superior ratings of managerial performance. *Journal of Applied Psychology*, 642–683.

Hirst, M. K. (1981). Accounting information and the evaluation of subordinate performance: a situational approach. *Accounting Review*, 771–784.

Hofstede, G. H. (1968). *The game of budgetary control*. London: Tavistock.

Hope, J., & Fraser, R. (2003). *Beyond budgeting: how managers can break free from the annual performance trap*. Boston, MA: Harvard Business School Press.

Hopwood, A. G. (1972). An empirical study of the role of accounting data in performance evaluation. *Empirical Research in Accounting, 12*, 156–182 (Supplement to Journal of Accounting Research).

Hopwood, A. G. (1974). Leadership climate and the use of accounting data in performance evaluation. *Accounting Review, 49*(3), 485–495.

Hopwood, A. G. (1976). *Accounting and human behaviour*. London: Haymarket.

House, R. J., & Rizzo, J. (1970). Role conflict and ambiguity as critical variables in a model of organizational behaviour. *Organization Behavior and Human Performance, 7*, 467–505.

Johnson, P., & Gill, J. (1993). *Management control and organizational behaviour*. London: Chapman.

Kahn, R. L. (1974). Conflict, ambiguity and overload: three elements in job stress. In A. McLeans (Ed.), *Occupational stress* (pp. 47–61). Thomas Publishing.

Kahn, R. L., Wolfe, D., Quinn, R., Snoek, J. D., & Rosenthal, R. (1964). *Organizational stress: studies in role conflict and role ambiguity*. New York: Wiley.

Kanter, R. (1982). Middle managers as innovators. *Harvard Business Review, 60*(4), 95–105.

Kerlinger, F. N. (1986). *Foundations of behavioral research*. New York: Holt, Rinehart and Winston.

King, L. A., & King, D. W. (1990). Role conflict and role ambiguity: a critical assessment of construct validity. *Psychological Bulletin, 107*, 48–64.

Kirchner, W. K. (1965). Relationships between supervisory and subordinate ratings for technical personnel. *Journal of Industrial Psychology*, 57–60.

Kren, L., & Liao, W. M. (1988). The role of accounting information in the control of organizations: a review of the evidence. *Journal of Accounting Literature, 7*, 280–309.

Lindsay, R. M. (1995). Reconsidering the tests of significance: an alternative criterion of adequacy. *Accounting, Organizations and Society, 20*, 35–53.

Lowin, A., & Craig, J. R. (1968). The influence of level of performance on managerial style: an experimental object lesson in the ambiguity of correlated data. *Organizational Behavior and Human Performance, 3*, 440–458.

Machin, J. I. (1973). Measuring the effectiveness of an organization's management control systems: the expectations approach. *Management Decisions, 11*(3), 260–279.

Machin, J. I. (1979). A contingent methodology for management control. *Journal of Management Studies, 16*, 2–29.

Macintosh, N. B. (1995). *Management accounting and control systems: an organizational and behavioral approach*. New York: Wiley.

Mahoney, T. A., Jerdee, T. H., & Carroll, S. J. (1963). *Development of managerial performance: a research approach*. Cincinnati: South Western Publishing Company.

Mahoney, T. A., Jerdee, T. H., & Carroll, S. J. (1965). The jobs of management. *Industrial Relations*, 97–110.

Merchant, K. A. (1990). The effects of financial controls on data manipulation and management myopia. *Accounting, Organizations and Society, 15*, 297–313.

Merchant, K. A. (1998). *Modern management control systems*. Upper Saddle River: Prentice Hall.

Miles, M. B., & Huberman, A. M. (1984). *Qualitative data analysis: a source book of new methods*. Sage Publications.

Mintzberg, H. (1979). *The structuring of organizations*. Englewood Cliffs, NJ: Prentice-Hall.

Mintzberg, H., & McHugh, A. (1985). Strategy formation in an adhocracy. *Administrative Science Quarterly, 30*, 160–197.

Morgan, G. (1986). *Images of organization*. London: Sage.

Netemeyer, R. G., Johnston, M. W., & Burton, S. (1990). Analysis of role conflict and role ambiguity in a structural equations framework. *Journal of Applied Psychology, 75*, 148–157.

Nunnally, J. C. (1967). *Psychometric theory*. New York: McGraw-Hill.

Otley, D. (1978). Budget use and managerial performance. *Journal of Accounting Research, 16*, 122–149.

Otley, D. (1994). Management control in contemporary organizations: towards a wider framework. *Management Accounting Research, 5*, 289–299.

Otley, D., & Fakiolas, A. (2000). Reliance on accounting performance measures: dead end or new beginning? *Accounting, Organizations and Society, 25*, 497–510.

Otley, D., & Pierce, B. J. (1995). The control problem in public accounting firms: an empirical study of the impact of leadership style. *Accounting, Organizations and Society, 20*(5), 405–420.

Otley, D., & Pollanen, R. M. (2000). Budgetary criteria in performance evaluation: a critical appraisal using new evidence. *Accounting, Organizations and Society, 25*, 483–496.

Parker, J. W., Taylor, E. K., Barret, R. S., & Martens, L. (1959). Rating scale content: III Relationship between supervisory and self-ratings. *Personnel Psychology, 11*, 49–63.

Roberts, J. (1991). The possibilities of accountability. *Accounting, Organizations and Society, 16*(4), 355–368.

Ronen, J., & Livingston, J. L. (1975). An expectancy theory approach to the motivational impact of budgets. *Accounting Review*, 671–685.

Searfoss, D. G. (1976). Some behavioral aspects of budgeting for control: an empirical study. *Accounting, Organizations and Society, 1*(4), 375–385.

Shields, J. F., & Shields, M. D. (1998). Antecedents of participative budgeting. *Accounting, Organizations and Society, 23*, 49–76.

Siegall, M. (2000). Putting the stress back into role stress: improving the measurement of role conflict and role ambiguity. *Journal of Management Psychology, 15*(5), 427–435.

Sim, K. L., & Killough, L. N. (1998). The performance effects of complementaries between manufacturing practices and management accounting systems. *Journal of Management Accounting Research, 10*, 325–346.

Simons, R. (1995). *Levers of control*. Boston, MA: Harvard Business School Press.

Simons, R. (1999). *Performance measurement and control systems for implementing strategy*. Englewood Cliffs, NJ: Prentice-Hall.

Spekle, R. F. (2001). Explaining management control structure variety: a transaction cost economics perspective. *Accounting, Organizations and Society, 26*, 419–441.

Stedry, R. C. (1960). *Budget control and cost behaviour*. Prentice Hall.

Stodgill, M. R. (1963). *Manual for the leader behavior questionnaire form XII*. Columbus: Bureau of Business Research, The Ohio State University.

Storey, J., Edwards, P., & Sisson, K. (1997). *Managers in the making: careers, development and control in corporate Britain and Japan*. London: Sage.

Vagneur, K., & Peiperl, M. (2000). Reconsidering performance evaluation style. *Accounting, Organizations and Society, 25*, 511–525.

Van der Stede, W. A. (2000). The relationship between the consequences of budgetary controls: slack creation and managerial short-term orientation. *Accounting, Organizations and Society, 25*, 609–622.

Van der Stede, W. A. (2001). Measuring 'tight budgetary control'. *Management Accounting Research, 12*, 119–137.

Venkatraman, N., & Ramamujam, V. (1987). Measurement of business economic performance: an examination of method convergence. *Journal of Management* (Spring), 109–122.

Yukl, G. (1989). A review of theory and research. *Journal of Management, 23*, 251–289.