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## Short and long translations: Management accounting calculations and innovation management

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### A B S T R A C T

Management accounting calculations relate innovation to the firm through translations where both can change. Based on examples of the management of innovation from three firms the study shows how management accounting calculations rather than describe the properties of innovation add perspective to them mediating between innovation concerns and firm-wide concerns. This mediation happens through short and long translations. In short translations, management accounting calculations extend or reduce innovation activities via a *single* calculation. In long translations innovation activities are problematised via *multiple* calculations. When calculations challenge each other in long translations they problematise not only what innovation should be, but also where it should be located in time and space. In the three examples, calculations mobilised alternative propositions about the relevance of technical artefacts and linked this to innovation strategy and sourcing strategy in the firm's inter-organisational relations. Tensions between calculations associated with technological, organisational and environmental entities framed considerations about the value of innovation to the firm strategically differently. All this happens because management accounting calculations are partial rather than total calculations of firms' affairs and value.

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### Introduction

Management accounting calculations relate innovation activity to the firm through two types of translations; a short translation which helps extend or reduce innovation activities in view of an actual or a possible performance variance; or a long translation which develops competing contexts for innovation and impacts firms' innovation strategies and sourcing arrangements. This conclusion, which will be developed and justified later, adds weight to theories of management accounting calculations which see them as inscriptions that produce knowledge (Robson, 1992), create visibility (Cooper, 1992), mediate between complementary resources (Miller & O'Leary, 2007), and identify objects and objectives to be managed (Chua,

1995; Hoskin & Macve, 1986; Miller, 2001; Preston, Cooper, & Coombs, 1992; Vaivio, 1999). Management accounting calculations are related to organisational practices either in relation to individual managers' localised, embedded decision making (e.g., Boland & Pondy, 1983; Ahrens & Chapman, 2004, 2007), or in relation to change programs that reach deep into the organisation to manage the labour force and transform the firm (e.g., Ezzamel, Willmott, & Worthington, 2004; Ezzamel, Willmott, & Worthington, 2008; Miller & O'Leary, 1994). We follow these ideas but add one nuance suggesting that management accounting calculations are not only mobilised by others – they also mobilise others. In this study, this means that accounting calculations create contexts for something, and in this research this something is innovation. The research question is: how do management accounting calculations mobilise innovation activities?

The central finding, which is based on the empirical study of relations between management accounting

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calculations and innovation in three firms, is that management accounting calculations link innovation activities to firm-wide concerns rather than describe and represent innovation activities. The visibility, insight and knowledge produced by management accounting calculations rarely concern the details of innovation practices. It rarely creates deeper knowledge about the intricacies of innovation activities; it typically creates insight about links between innovation and wider organisational concerns which are mediated via short or long translations, where length reflects the number of elements taken into account. In short translations innovation activities are mobilised by a *single calculation* and related to a variance from a standard or budget which will reduce or increase innovation activities depending on whether the deviation is positive or negative. Short translations mediate between innovation activity and the costs and revenues of the firm.

Long translations have *multiple calculations* that create tensions about the role of innovation. Here, calculations challenge each other and develop organisational tensions and dialogues beyond innovation activities. Long translations develop new possible versions not only of preferred types of innovation activities, but also about their location in time and space. They develop competing propositions about the relevance of technical artefacts and link them to innovation strategy and sourcing strategy in the firm's inter-organisational relations. The tensions within long translations mobilise technological, organisational and environmental entities by framing considerations about the value of innovation to the firm strategically differently.

The remainder of this paper is structured as follows: first we analyse central discussions about the role of accounting calculations in innovation. Here, accounting calculations are typically not accorded a constructive role, but an emerging literature suggests a positive link between management accounting calculations and innovation finding that management accounting calculations are abundant in innovative contexts. Yet, the literature is silent on *how* the calculation influences elements of innovation. Then the research strategy and methods are presented; drawing on aspects of actor-network theory we trace relations between proposed management accounting calculations and innovation activities. The empirical section presents three examples of translations between management accounting calculations and innovation management. Then the findings are discussed and finally conclusions are provided.

### Management accounting calculations and innovation management

Often, management accounting calculations and associated management control systems have been understood to hinder the development of innovation. The innovation management literature usually denies a constructive influence of management control systems on product innovation (Damanpour, 1991; Dougherty & Hardy, 1996; Gerwin & Kolodny, 1992; Leonard-Barton, 1995; Tidd, Bessant, & Pavitt, 1997; Verona, 1999). Formal control systems constrain, or at best are irrelevant in, innovation and R&D settings (Abernethy & Brownell, 1997; Birnberg, 1988;

Brownell, 1985; Hayes, 1977; Rockness & Shields, 1984; Rockness & Shields, 1988). They are obstacles to creativity and incapable of supporting innovation (Abernethy & Stoelwinder, 1991; Amabile, Conti, Coon, Lasenby, & Herron, 1996; Miles & Snow, 1978; Ouchi, 1977; Ouchi, 1979; Tushman & O'Reilly, 1997). Rationalisation is seen as incompatible with the creativity required for innovation (Burns & Stalker, 1961; Hall, 2001; Raelin, 1985).

However, increasingly it is proposed that management control systems enable innovation (Clark & Fujimoto, 1991; Cooper & Kleinschmidt, 1987; Cooper & Slagmulder, 2004; Davila, 2000; Davila & Wouters, 2004; Hansen & Jönsson, 2005; Ittner & Kogut, 1995; Ziger & Maidique, 1990). Management control systems can be enabling for corporate activities (Ahrens & Chapman, 2004, 2007), and Simon's 'levers of control' framework (1987, 1990, 1991, 1994, 1995) suggests that interactive use of management control systems stimulates innovation (Bisbe & Otley, 2004; Widener, 2007). Here, formal management control systems can – under certain circumstances – help firms facing rapidly changing product or market conditions. For example, Simons (1990, p. 141) suggests that

“the prototypical prospector faces strategic uncertainties owing to rapidly changing product or market conditions; interactive management control systems such as planning and budgeting are used to set agendas to debate strategy and action plans in these rapidly changing conditions. Defenders, by contrast, use planning and budgeting less intensively [because they] operate in a relatively stable environment, many aspects of the business that are important in terms of current competitive advantage are highly controllable and managers need only focus on strategic uncertainties – often related to product or technological changes that could undermine current low cost positions.”

When environments are complex and dynamic firms have management control systems which foster dialogue and interaction about the development of products and markets and the innovative pressure may be accommodated via interactive use of management control system (Bisbe & Otley, 2004).

Likewise, Davila (2000, p. 402) identifies uncertainty and product strategy as drivers of management control systems in new product development and he adds that a broad definition of management control systems is necessary to understand their role in relation to product development (ibid., p. 404):

“The study reinforces a broader definition of management control systems to go beyond financial measures and also include non-financial measures... This finding suggests that researching management control systems in new product development cannot be restricted to traditional accounting measures, but needs to encompass a broader set of measures... As the theory predicted, uncertainty and product strategy are related to the design and use of management control systems.”

Depending on the type of uncertainty facing managers they will use different combinations of financial and non-financial information. Like Simons, Davila emphasises

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