



Accounting as an engine: The performativity of calculative practices and the dynamics of innovation



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ABSTRACT

This paper explores the relationships between calculative practices and innovative activities. It investigates how calculative practices such as accounting develop knowledge that functions as an engine (MacKenzie, 2006) for innovation. This is an attempt at exploring the role of accounting through its performative effects so that, rather than only describing the world, it also helps to change it. The thesis is that calculative practices are engines involved in luring actors into doing new things by their ability to inspire them to ask new questions and to see new opportunities.

As engines, calculative practices trigger a process of mobilisation of knowledge and insight which become part of the innovation. This innovation, in turn, leaves traces that can develop new calculative practices. There is a dynamic relation between calculative practices and the innovation: the innovation drifts because calculative practices are engines helping to bring this drift along. In the case of Telepass, which is a technology that is designed both for managing motorists' behaviour and accumulating traces about such behaviour, the innovation was able to influence and recreate the engine anew. This story explains how the trajectory of innovation is a string of drifts mobilised by the performativity of calculative practices.

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1. Introduction

This paper concerns the calculative practices and innovative activities of Autostrade, a motorway licensee which developed the innovation Telepass. Drawing upon performativity theory, calculative practices can be understood as engines (MacKenzie, 2006) that take part in bringing about the step-wise composition of an innovation. As engines, they produce knowledge that catalyses not only the development of innovation, but also new insights into the effects of this innovation. Calculative practices,

by producing knowledge about the effects of innovation, not only make the innovation visible but also open it up to scrutiny and new experimentation which recursively lures people into developing further innovation. This co-production of innovation and of knowledge about the effects of innovation makes the process one where solving a problem 'leads to outcomes that are assessed and taken as starting points for further actions' (Muniesa and Callon, 2007, p. 163). In this process, the progress of innovation becomes a historiography of drifts where the character of the innovation gradually turns out to be surprising and much greater than suggested by the singular steps involved in composing the innovation. This is a form of performativity where new insights inspire actors to do new things. Such insights may motivate new propositions about the potentiality of the innovation if it is just adapted a little more towards new purposes or problems.

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The idea of calculative practices as related to drift has been noted by accounting research which has studied drift as a deviation in the performance measurement agenda (Andon et al., 2007) and as the fluidity of a singular calculative practice which drifts when it is mobilised from many different places and positions (Quattrone and Hopper, 2001, 2005, 2006). However, in addition to Andon et al.'s discussion of the drift of the performance measurement agenda, or to Quattrone and Hopper's analyses of the mobilisation of a particular calculative instrument that drifts in its use, this paper discusses the drift of innovation in the light of the development of an emerging constellation of calculative practices. The aim of the paper is to analyse the multidirectional, accumulative and regenerative relationship between calculative practices and innovation. This is important because it has been suggested that in order to understand innovation, it is necessary to pay attention to the accumulation of knowledge that is associated with its production (Fiol, 1996) and that innovation is aptly understood as a part of a broader engagement with the mechanisms that make it possible to generate new ideas, for instance, through so-called absorptive capacity (Cohen and Levinthal, 1990) or dynamic capability (Teece and Pisano, 1994). In particular, it has been noted that the development of knowledge about innovation or its favourable conditions helps to co-develop it (Akrich et al., 2002a, 2002b). This shifts attention away from any single item of innovation, which may be more or less incremental/radical, to innovation as a trajectory of drifts which develop not only over space but also over time.

Telepass is an example that, to some degree, runs counter to or at least complements notable research about the role of accounting in relation to innovation. To Davila (2000), accounting helps to reduce uncertainty; for Jørgensen and Messner (2010), accounting interacting with strategizing makes an innovation strategy consistent; and for Miller and O'Leary (2007), it makes coordination possible. In each way, accounting helps to make a complex situation less complex and the innovation's effects more predictable. The case of Telepass is an interesting and critical illustration of calculative practices being engines of innovation. It was proposed at the end of the 1980s by the firm Autostrade that managed Italian motorways as an automatic toll collection device to make motorway traffic faster, safer and more fluid than before. Telepass turned out not only to be an innovation oriented to changing the firm's processes and products, enabling motorists to move quickly and safely on the motorway, it was also part of calculative practices because it accumulated knowledge about motorists' behaviour. It was both an operational technology for influencing motorists' behaviour and a set of (emerging) calculative practices that helped Telepass to develop and innovate itself. The accumulative properties of this engine generated deviation and drift.¹

The paper is structured as follows. Section 2 presents an account of the performativity approach that provides the theoretical background for the study and illustrates

how calculative practices can be seen as engines. Section 3 discusses the concept of drift and the relevant literature on management accounting and innovation. The next section presents the methodology of the research and is followed by a section on the empirical material organised to point out the performativity of calculative practices. The discussion section highlights that the case of Telepass adds to management accounting literature by showing how a long term perspective provides evidence of the relations between the accumulation of innovation and the accumulation of calculative practices. The paper concludes by noting that the dynamic process created by the interaction of traces, calculation and innovation re-creates the engine, while in turn the engine helps along acts of innovation but is also transformed by the accumulation of traces about its effect on motorists.

2. The performativity of calculative practices

Understanding calculative practices as an engine can be conceived of through the performativity lens that was famously developed by Donald MacKenzie (2006). Analysing the complex Black-Scholes-Merton financial model, he describes it as an engine for creating action rather than as camera for describing action:

'The empirical success of the Black-Scholes-Merton model was a historically contingent process in which the model itself played a constitutive role. To say that is in no way to diminish the brilliant achievement of Black, Scholes, and Merton; it would be a curious prejudice to see a theory that changed the world (as their theory did) as inferior to one that merely reported on it. Rather, it is to assert that the model was a theoretical innovation, not simply an empirical observation; that the model's relation to the market was not always passive, but sometimes active; that its role was not always descriptive, but sometimes performative . . . An engine, not a camera'. (MacKenzie, 2006, p. 259)

MacKenzie writes about a mathematical financial model as an engine of the development of financial markets. He is careful to explain that this is not a space without human actors and, therefore, that people's ingenuity and engagement count. Yet, he importantly adds that calculative practices such as financial models may be understood not primarily as theories or hypotheses about an existing market but as models that would influence the world because they would lure people into action. These financial models would also lure people into action because they make their work operational; in other words, the model produces information that people would take as a starting point for their actions. Therefore, the calculative practice is more than merely the recording of the world; this makes the calculative practice, in combination with people's engagement with it, an engine driving the world, just as ranking lists may influence law-schools' Deans (Espeland and Sauder, 2007; Sauder and Espeland, 2009) or profit calculations may influence managers' contemplation of strategy (Mouritsen, 1999; Skærbæk and Tryggstad, 2010) or innovation strategies (Mouritsen et al., 2009). Similarly, understanding calculative practices as engines

¹ Butler (1993, p. 226) notes that deviations cannot materialise outside 'the accumulating and dissimulating historicity of force'.

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