



Co-existing concepts of management control The containment of tensions due to the implementation of lean production

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ABSTRACT

There is substantial evidence that the implementation of lean production and similar innovations is not always successful. One of the explanations provided is that elements of traditional control systems may frustrate the transformation process. Although various studies have investigated the changes in control systems due to the implementation of lean production, only a few studies have explored the effects of the remaining traditional controls on lean implementations. This paper argues that lean production brings with it a new concept of control, which alters people's views of being in control. The new concept of control may co-exist with the traditional concept, but particularly at their interfaces, tensions may arise. Using case studies in four manufacturing companies in the Netherlands, this paper explores the various localised ways in which these companies dealt with such tensions to ensure that lean production continued. The paper concludes that lean transformations do not require a fundamental resolution of the problems that arise from inconsistent concepts of control, as long as companies have learned to cope with the localised tensions that may result from inconsistencies between such concepts.

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1. Introduction

In recent years, fundamental changes have been taking place in the production domain of many companies. One of the most influential changes is the implementation of lean production (Fullerton et al., 2010; Holweg, 2007). Core elements of a lean production system are the continuous reduction and ultimately elimination of all forms of waste, and the continuous improvement of the quality of products and processes (Cua et al., 2001; see also Shah and Ward, 2003). Lean production encompasses earlier

production innovations, such as just-in-time (JIT) production and total quality management (TQM). Similar to its predecessors, it has been developed to improve manufacturing and business processes, and to enhance competitiveness and performance. Using case studies and surveys, several researchers confirm that lean production has a positive impact on operating performance (e.g. Krafcik, 1988; Shah and Ward, 2003). However, other researchers are less optimistic about the successes that can be attributed to lean production and similar innovations. They describe complications in the implementation of lean production (Bamber and Dale, 2000; Worley and Doolen, 2006), and they point out that there is a substantial failure rate (Bhasin, 2012; Sohal and Egglestone, 1994). Moreover, they find that the effects on financial performance are not significant (Sale and Inman, 2003; see also Lewis, 2000).

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According to Voss (1995, p. 13), 'Partial implementation, failure to achieve desired performance change and abandoned programmes are commonplace'.

In an attempt to explain lean implementation failures, researchers have pointed at the influence of, for instance, management support (Worley and Doolen, 2006), employee education and training (Bamber and Dale, 2000; Kassicieh and Yourstone, 1998), and organisational culture (Prajogo and McDermott, 2005; Spear and Bowen, 1999). These are all factors which are widely acknowledged to play an important role in any change programme. However, some authors also observe that elements of traditional control systems may be a hindrance to successfully implementing lean production. For example, Maskell et al. (2012, p. 2) notice that: 'Traditional [control] systems do not work for companies pursuing Lean thinking; indeed they are actively harmful'. Similarly, Johnson (2006, p. 6) refers to traditional control systems as 'the number one enemy' of lean production.

The backbone of traditional control systems is management accounting (Chenhall, 2003; Kaplan, 1984; Otley, 1994), in the sense that these control systems assign a central role to planning and budgeting, and emphasise financial controls. Key characteristics are that these systems are mainly concerned with providing financial information, in an aggregated form, and on a relatively infrequent basis (Ittner and Larcker, 1995; Kaplan, 1986, 1989). Moreover, they generally allocate costs based on direct labour hours or processing time, emphasise variances from budgeted standards, and assess capital investments on financial grounds. Already in the 1980s, authors such as Brimson (1987), Brimson and Berliner (1987), Johnson and Kaplan (1987) and Kaplan (1984, 1989) concluded that traditional control systems were increasingly unable to provide support for innovative production technologies, including JIT and TQM. They indicated that these systems were incapable of valuing and recognising the gains from such innovations, and that they encouraged companies to take decisions which would lead to, for instance, higher levels of inventory and lower quality production. According to Johnson and Kaplan (1987), traditional control systems provide information that is too late, too aggregated, too distorted (due to unnecessary cost allocations), and too much focused on short-term financial performance. They argued that these systems do not provide an accurate view of the efficiency and effectiveness of internal operations. As a solution, Johnson and Kaplan proposed the development of new systems for process control and product costing (see also Kaplan, 1988).

Since then, various publications, often aimed at practitioners, have addressed the issue of how accounting systems should be adjusted to fit lean environments, and to avoid the above problems (Brosnahan, 2008; Cable, 2009; Johnson, 2006; Maskell and Kennedy, 2007; Maskell et al., 2012). Under the heading of 'lean accounting', these publications call for accounting systems which organise costs by value stream, avoid the use of standard costs, and present information related to changes in inventories and overheads separately. In addition, the authors argue that control based on a detailed tracking of internal transactions on paper or in computer systems should be replaced

by control built into operating processes. Although the evidence of the adoption and success of 'lean accounting' is limited, it is clear that significant changes have taken place in the control systems of lean companies. Several studies in the fields of accounting and operations management recognise that these companies tend to use more organic control systems, with a more prominent role given to clan controls and a stronger emphasis on non-financial performance (e.g. Abernethy and Lillis, 1995; Kennedy and Widener, 2008). Other studies have found that the management accounting systems of lean companies produce more frequent and more non-financial information, which is made available to lower levels, and that many of these companies have abandoned the allocation of overheads (e.g. Banker et al., 1993; Fullerton et al., 2013). Overall, these findings show that control systems in lean production companies have developed in directions which seek to overcome the problems identified by Johnson and Kaplan (1987).

However, another point made by Johnson and Kaplan (1987) seems to have been ignored by most researchers. According to Johnson and Kaplan, the newly developed control systems should be used alongside the more traditional system. They argued that, as long as a single system which can satisfy both internal and external requirements has not been developed, the new systems should be used for controlling internal operations, while the more traditional system remains relevant for financial reporting. So these authors proposed decoupling as a way of dealing with inconsistencies between the traditional and the new control systems (cf. Meyer and Rowan, 1977). In their view, the use of separate systems alongside each other should not be problematic, given the low cost and high power of information-processing technology. Nevertheless, the question of whether this argument holds in practice has received only limited attention in the literature on lean production.

Researchers have found a reduced emphasis on traditional accounting controls in lean companies, and a replacement of these traditional controls with lean controls (e.g. Kennedy and Widener, 2008; Fullerton et al., 2013). However, they have not investigated how these lean controls interact with the remaining elements of companies' traditional accounting-based control systems. As such, they seem to assume that the traditional control system simply fades away. This assumption may be unrealistic. For example, shareholders or other providers of finance may take a more traditional, financially oriented perspective when evaluating the company. Furthermore, as the way in which a company is evaluated externally will have an effect on how top management attempts to control the operations, this traditional perspective is likely to move down the organisational hierarchy (cf. Cable, 2009). Such a perspective results in a particular *view of being in control*, which denotes the individual understanding of (1) the degree to which the organisation is in control; and (2) the actions that need to be taken to maintain or restore control. As lean production and traditional control systems rely on different concepts of control, at some level the traditional view of being in control will come into contact with the lean view of being in control. At these interfaces, inconsistencies between these two concepts may result in disagreements

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