

### The Challenge of the Product Focused Cells. Changing Patterns of Management Control in a Changing Manufacturing Environment

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During the past decade, one of the major thrusts of change in manufacturing industry has been the alignment of manufacturing methods to rapidly changing and turbulent market demands (Piore & Sabel, 1984; Smith, Child & Rowlinson, 1990). A focus upon core products and processes, involving customer responsiveness and the elimination of waste has been coupled with a drive to improve product quality and cost reduction. 'New Wave' lean manufacturing techniques (Storey, 1994) and management control methods (Berry, Broadbent & Otley, 1995) are therefore now widely commended as a means of improving competitiveness in industry (Smith, 1990). However, it is always easier to extol the virtues of such techniques than to translate them into a coherent set of practices (Kunda, 1992).

This paper offers a critical account of the changes taking place in contemporary manufacturing. Drawing from on-going research currently being conducted in a relatively large 'world-class' manufacturing enterprise in the North-west of England, we present a case study account of the influence of market conditions and established cultural norms on the development of customer-led forms of cellular based lean manufacturing and production arrangements (Womack et al, 1990) and corporate driven 'Total Quality Management' control methods (Wilkinson & Willmott, 1995). In doing so, the paper examines the effectiveness of senior management involvement in facilitating the development of a corporate driven cross-functional team based approach to fully operationalizing 'new wave' (Storey, 1994) manufacturing practices, within the context of a comparative examination of the transferability of innovative manufacturing and management techniques between different sites of the same company.

The research site, which we refer to as Northern Plant, is the primary European production facility of the North American multi-national automotive manufacturer *N-Gineering*, which currently stands as the leading supplier of a range of high-tech automotive products within the industry. For more than two decades (*N-Gineering* has enjoyed the 'lions share' of a continually expanding global market largely through effective investment in research and development, new technology and more recently advanced forms of competitive Japanese style lean manufacturing and production methods (Womack et al, 1990). Since the late 1980's, however, *N-Gineering's* global manufacturing strategy has undergone a process of almost continuous change. To preserve market share and competitive advantage in what is today an increasingly competitive market environment, *N-Gineering's* have announced a further major re-organization of its existing global manufacturing strategy as a vehicle to establish the company as a 'truly' world-class (Schonberger, 1986) manufacturing enterprise. This currently involves the re-organization of existing manufacturing operations, into geographically defined *customer or market* responsive locations around the world, to facilitate a network of highly autonomous decentralised manufacturing divisions or profit centres (Demirag, 1995), which, under the direction rather than the direct control of a governing corporate policy, can thus take on a more 'self

managing' customer focused approach to the planning, control and co-ordination of specific customer focused manufacturing operations.

The paper, which is drawn from the participant observation of one of the researchers who has previously worked at the plant for a number of years and over fifty recorded interviews with senior and middle managers, supervisors, shop stewards and shopfloor workers at the plant, offers an in-depth and qualitative insight into the management of planned organizational change in a 'world-class' manufacturing environment. To contextualise the empirical data we offer a brief history of Northern Plants position within *N-Gineering* and its *changing* fortunes within an increasingly competitive market environment. In particular the paper examines Northern plant's experience of *N-Gineering's* largely 'failed' efforts to re-engineer working practices, mainly at the point of production, over a six year period.

The paper is organized as follows: In section one, we present a brief history of the plant, outlining Northern Plant's position both within *N-Gineering's* global operations and its experience of changing economic and market conditions within the high-tech automotive industry. In doing so, we develop an insight into the importance of strong market demand and established culture(s) in enabling or constraining the effective implementation of innovative manufacturing and management practices, from which we account for Northern Plant's *repeated* and largely *failed* efforts to fully operationalize corporate driven strategic manufacturing objectives during the past decade. In the next section, we offer a further insight into Northern Plant's experience of 'successfully' transforming the *technical organization* of their manufacturing operations from antediluvian practices into today's 'product focuses' cellular based approach that is now considered to be the benchmark for the industry, but without any 'real' changes in the *social organization of production* that were designed to accompany these developments. This is followed in subsequent sections by a more critical evaluation of the social and organizational dynamics of planned organizational change in manufacturing, which explores the *ineffectiveness* of new forms of strategic JIT/TQC based management control systems in securing commitment to new team based working arrangements within a cellular manufacturing structure.

The theoretical framework of the paper seeks to explain the relative failure of management innovations in terms of the power relations through which change in organizations is mediated (Clegg, 1989; Willmott, 1994; Ezzamel, 1994). It is argued that support for change is conditional upon effectively *managing* these relations despite wider corporate and market driven forces that threaten to undermine them. Power relation within and between employees at different levels within the organization structure are identified as a source of on-going tension within the plant, inasmuch that employee's (including managers) concern for job security and a degree of control over the organization of their work conflicts with the demands of the new social arrangements of advanced manufacturing and production methods.

From this, the paper attempts to provide a critical account of how these tensions and conflicts are related to, and compounded by, investments in identity (e.g. the status enjoyed by middle managers or the collectivist values of

shopfloor workers and union representatives). When employees perceive their sense of identity to be disrupted or devalued by the claims and demands of the new social arrangements of production they are more likely to resist or subvert the process of planned organizational change than to embrace it. In short, the paper offers a more qualitative account of the dynamics of planned organizational change in manufacturing that goes beyond research that has relied principally or exclusively upon interviews with managers or with shopfloor staff. The quality of our access to the company sheds light upon how employees within different levels and functions within organizations make sense of the implementation and innovation of strategic change taking place throughout the industry. In contrasting their perceptions of the everyday experience of 'new wave' manufacturing and production methods with 'official' corporate or senior management versions of advanced forms of customer-led lean manufacturing in operation, we attempt to advance a more critical understanding of how, in practice, 'new wave' manufacturing and human resource management change initiatives are enacted particularly at the point of production.

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