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**ACCOUNTING, POWER AND RESISTANCE IN THE 'PLANT WITH A  
PROBLEM'**

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***A Paper Prepared for presentation at the Second Asian-Pacific Interdisciplinary Research  
in Accounting Conference Osaka City University Japan 4-6<sup>th</sup> August 1998***

This paper is part of a larger research project funded by the Institute of Chartered Accountants in England and Wales.

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**INTRODUCTION**

Over the last decade, many researchers have been concerned to document and analyze the wide-ranging changes that are purported to be taking place in the ‘new organization’. These changes relate to the organization of work and the emergence of new manufacturing and production practices such as teamworking, flexibility, multiskilling and Total Quality Management (TQM) (see for example, Wood, 1989; Whittaker, 1992; Ezzamel, Green, Lilley and Willmott, 1995). Emerging in parallel with these new management practices are apparently ‘excellent’ management accounting techniques, aimed at facilitating the management of the ‘new organization’, for example Activity-Based-Costing (ABC), Throughput Accounting (TA), Cellular Accounting systems, Backflush Accounting, Value Added Accounting and Strategic Management Accounting (see for example Bromwich and Bhimani, 1989). Most of the studies that have addressed accounting change and the role of accounting systems in the management of the ‘new organization’ have been concerned with the technical dimension of these changes but without problematizing their development (for a brief review of this literature see Ezzamel, Lilley and Willmott, 1997).

In contrast to this technical focus, a different research tradition is emerging which seeks to problematize these recent changes. In this context, the work of Miller and O’Leary (1993, 1994) has been prominent. Miller and O’Leary (M&O) have developed the notion of the ‘politics of the product’ as an organizing slogan for examining the diverse discourses, including those of management accounting, that have emerged and competed to represent the translation of raw materials and human labour power into goods and services. The ‘politics of the product’ framework aims to provide some explanation of *why* the relevance of conventional management accounting practices to the factory and to the product has been questioned by academics, gurus and practitioners. It also seeks to explain *how* the

problematization of the factory/product was engineered in such a way that renders as the recipes new `excellent` management accounting techniques, thereby arguing that the emergence of these techniques is inseparable from the problematization process. The strength of the M&O framework is in its concern to understand current attempts to `reform` management accounting as something more than a technical means for gaining better representations of new manufacturing technology. In M&O's work accounting is `politicized` explicitly by linking its fate to the product, the factory, and the emerging modes of governance.

While we find much to commend in the M&O framework, we are concerned that it does not promote an engagement with the workers' lived experience in having to deal with or even accommodate these new accounting developments. Accounts of organizational change that might suggest the `apparent consent` or `total subordination` of workers to the formal organization of contemporary employment relationships may mask significant dynamics of covert or even overt resistance by labour.

In this paper, we attempt to go beyond M&O's analysis of the `new organization` by examining the dynamics (scenarios/discourses) of resistance to planned organizational `change` at one relatively large manufacturing site in the North-West of England. In doing so we contextualize a number of developments in that factory - `a factory with a problem` - which culminated in the launching of Throughput Accounting (TA), to replace what were then deemed irrelevant conventional management accounting practices, as a means of disciplining the shopfloor. We then show how this apparently `excellent` accounting technique was problematized in terms of failing to deliver and how it was `shelved` and replaced by yet another `excellent` accounting technique, this time Activity-Based-Costing (ABC), which was presented as the tool that will instil discipline among workers and managers alike. We also explore how various scenarios of resistance employed by the shopfloor contrived to frustrate these managerial initiatives and argue that engaging with the workers' lived experience has allowed us to expand and enhance our understanding of the role of management accounting in change situations in a manner that not only complements but also goes beyond the work of M&O. This paper also adds to the sparse literature linking

accounts of resistance to the role of accounting in organizations (e.g. Ezzamel, 1994; Dugdale and Jones, 1995; Carmona, Ezzamel and Gutierrez, 1997).

The research site, which we refer to as Northern Plant is the primary European production facility of the North American owned multi-national automotive manufacturer we refer to as *N-Gineering*, which currently stands as the leading supplier of a range of high-tech 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 the introduction of advanced forms of competitive Japanese style lean manufacturing and production methods. Changes in the *technical organization* of the plant's manufacturing operations have taken place, however, without any substantive changes in the *social organization of production* that were designed to accompany these developments. The paper shows how this has been the result of variety of largely 'distancing' (Collinson, 1992. 1994) individual and collective strategies of worker resistance at the plant, that have continued to frustrate management attempts to re-engineer the social organization of production (Ezzamel, Willmott and Worthington, 1996). The empirical content of the paper is drawn from on-going research at the plant, the participant observation of one of the authors who has worked and/or researched at the plant between 1979 and 1997 and almost seventy recorded interviews with senior and middle managers, supervisors, shop stewards and shopfloor workers that have been conducted between 1995 and 1997.

The remainder of this paper is organized as follows. In the next section we provide an overview and critique of the M&O framework on the 'politics of the product', and emphasize the importance of addressing the workers' lived experience for understanding change dynamics in organizations. This is then followed by a brief description of the history of Northern Plant and the change initiatives purported to have taken place in that factory recently. We then analyze and problematize the sequential introduction of Throughput Accounting (TA) and Activity-Based-Costing (ABC) as 'excellent' accounting techniques aimed at subordinating and disciplining the shopfloor, and explore the various scenarios of resistance by workers which rendered these 'novel' accounting techniques inoperable. In the final section we examine the implications of our analysis for understanding the role of accounting in organizations before we draw together our main conclusions.

## **An Overview of the Politics of the Product Framework**

Our analysis here takes as a starting point the work of M&O (1993; 1994) on the “politics of the product” but moves decidedly beyond it. M&O’s concern is to problematize accounting expertise in relation to the wider shifts they identify in the American ideals concerning quality, efficiency, competitiveness, etc. (a new form of economic citizenship) seeking to recapture economic grounds lost recently to other major international competitors. M&O coin the term “politics of the product” to characterise the wide-ranging debates, strategies and arguments that have been taking place in the USA over the last decade which focus on the factory and the manufacturing process and seek to place the debates concerning accounting within this framework: “The factory is to be redesigned and accounted for in novel ways, and a new alignment of interests and activities forged” (1993 : 188). The politics of the product framework, M&O argue, has three different, yet interrelated, dimensions: (i) problematizing activity, which renders certain activities/objects/techniques (such as accounting) with visibility and significance as being problematic; (ii) programmatic terrain, in which agents (agencies) promote new ways of overcoming the deficiencies identified/fabricated in the factory and product; and (iii) technologies, presented as operable, to remedy the deficiencies through intervention in the factory. These dimensions, M&O recognize, are reciprocal in the sense that, for example, the problematizing of a particular activity is inseparable from the process of promoting new ways of managing the factory.

Evident from M&O’s formulation of the politics of the product is the explicit linking of the problematization of accounting to two basic issues in particular; the politicization of the product and factory, and the national competitiveness of the USA. Poor product quality, lack of sensitivity to customer demands, high levels of production wastage, weak co-ordination between demand and supply channels, absence of hands-on expert management knowledge of the product and the production process, and inferior configuration of factory activities and space compared to major international competitors have been collectively an important part of the rhetoric used to problematize manufacturing. Concern over American competitiveness had even a wider remit reaching to the social and cultural fabric of American society which has been characterized in terms of “widespread social decay” (1993 : 194). These included inadequate managerial expertise which was remote from the factory yet imposed a significant overhead upon it, obsession with financial engineering (e.g. buyouts, mergers, etc.) rather

than the promoting of technical and product innovation (pseudo-professionalism of managers), and chronic deficiencies in education. Accounting expertise was constituted as central to these debates, as several proposals were promoted to `reform` arcane, irrelevant, and misleading accounting calculations and reporting practices by developing novel accounting techniques that are capable of being aligned to the emerging, more competitive products and factories. But, as M&O have noted, the prescription of novel accounting practices was part and parcel of the problematization of past accounting practices.

Conventional accounting practices have been firmly blamed for the demise of the American capitalist enterprise, as accounting was accused of promoting a particular calculative mentality among managers which led them to develop structures with tall hierarchies and pursue complex forms of financial entrepreneurship in which enterprises were managed at a distance. This resulted, the argument goes, in confusing accounting for financial magnitudes (crucial to financial policies and strategies), and attempts (which are doomed to fail) to represent physical production processes in financial terms. Moreover, various accounting techniques were presented as obsolete and irrelevant to manufacturing as top and middle managers were typically furnished with historical, highly aggregated, and infrequent, e.g. monthly/quarterly, profit figures which misled decision making. Accounting calculations failed to address issues of product quality, quantify benefits of advanced manufacturing, and reveal the consequences of long-term strategic decisions. Also, accounting calculations failed to reflect the complexities inherent in the manufacturing of multiple, differentiated products and the allocation of factory overheads on the basis of cost drivers. Accounting therefore stood accused of producing figures which `seriously “lagged” major changes in the competitive context of the American factory, such as intensified and global competition, shortened product life cycles, the inherent logic of advanced automated production, and information machineries. Accounting technologies rendered “visible” a manufacturing process that no longer existed` (1993 : 197).

These deficiencies could not be tolerated in the drive towards a more competitive manufacturing. The challenge for accounting “reformers” was therefore to move beyond the mere problematization of accounting to the next two stages of providing a programmatic terrain and operable technologies. The new role for accounting needed to be aligned to the

demands for a new form of accountability in a new type of economic citizenship. The new mode of economic citizenship, which is premised upon continual entrepreneurship and creativity to promote design and manufacturing innovation, is to link the product to the customer thereby supplanting the previous link from capital markets to the enterprise. This calls for products to fit with the life style of the customer, the latter being accorded the most (and only?) privileged of positions in the firm's relationships. A new form of accountability now has to cascade through the successive stages of production (and these are to be constituted as internal customers to each other) within the factory, culminating in ultimate accountability to the external customer. Under this new form of accountability nothing is spared: everything that goes on in and around the factory, and forms of expertise that were typically removed from the factory, such as accountants and managers, now come under the scrutiny of the non-forgiving customer-based accountability; 'The question has been posed as to whether administrative expertises can themselves be visualized, accounted for, and evaluated as activities that are extended "components" of the product offered to customers' (M&O, 1993 : 201). But these changes in accountability come as a response to major changes in the factory, including developments such as cellular manufacturing, and just-in-time, and corresponding changes in management style through initiatives such as empowerment and job-enlargement in a new dawn of participative, co-operative labour-management relations. In this new climate labour is transformed from 'a cost factor to be minimized' into 'a precious asset to be conserved and cultivated' (Dertouzos et al., 1989 : 135; cited in M&O, 1993 : 199), and where the only difference between labour and management is reflected in achievements based on results.

Novel accounting technologies were actively promoted by academics/consultants which aim to calculate and highlight the value added to the customer by each and every activity/individual. In the words of M&O (1993 : 200): 'Excellent management seeks to allow and reinforce only those forms of expertise and activity that shape the required characteristics of the product. Excellent accounting helps to open up those fields of visibility and modes of dialogue in which activities, no matter how spatially remote from the factory, are pondered upon and judged in terms of the value they add to the product'. Among these innovations M&O list Activity-Based-Costing (ABC), Charge-Back Accounting systems, Just-in-time based accounting calculations, and new accounting practices aiming to quantify the added

value that administrative and managerial functions (now seen as activities) bring to the business. But the role envisaged for the new accounting is still broader: 'Novel accountings are to help give visibility to a myriad of activities - "establishing vendor relations, purchasing, receiving, disbursing, setting up a machine"' (Turney, 1989 : 25) - that are to be objects of the continual, pragmatic 'innovation-mediated' approach to production (Kenney and Florida, 1993) that the new economic citizenship is seen to require. Suppliers, customers, and workers themselves, as well as managers and consultants, are to study persistently such blocks of activities to see how components deemed non-value-adding can be identified and removed' (M&O, 1993 : 201).

### **Evaluation**

M&O's politics of the product framework has many useful attributes. First, it locates the contemporary debate about accounting within the wider debates concerning shifts in modes of corporate governance, issues of national competitiveness, the reforms promoted for manufacturing and management, and the demands for new forms of accountability. In this way, changes in accounting practices are contextualized and understood within this broader frame of reference. Second, it shifts the terms of reference for the debate from the purely economic to the realm of the political; this is in stark contrast to much of the literature in the field which espouses a functionalist perspective informed purely by restrictive economic arguments. Third, it acknowledges explicitly the reciprocal nature of the relationships between the three dimensions of the politics of the product; the problematizing activity, the programmatic terrain and the operable technologies. Thus, in the case of accounting for example, M&O acknowledge that the rhetoric to problematize and discredit certain accounting practices is inseparable from the strategies used to promote alternative and novel accounting practices. However, although we view the M&O framework as a move in the right direction, we would also argue that it does not go far enough, for it does not engage with the impact of workers' lived experience and the strategies for resistance on change initiatives.

In developing their framework, M&O seem to initially distance themselves from any direct engagement with the debates on corporate governance, manufacturing, and accounting. Rather, their main concern appears to be with developing a theoretical framework that can accommodate these debates, but with them standing as 'neutral' observers and 'disinterested'

parties. M&O present their position in terms of getting the priorities right, hence delaying any adjudication of recent modes of corporate governance and accountability until what is at stake becomes clearer: `Prior to entering into such a process of adjudication and evaluation, we argue it is important to explore what is at stake in this seemingly practical matter of better adapting means to ends` (M&O, 1993 : 190). Despite some cautionary remarks they make concerning these developments, their main theoretical arguments continue unabated in a way that shows little, if any, recognition of the price paid by other agencies such as labour, for the benefit of shareholders and senior managers. Thus, we encounter statements to the effect that `This new programme for responsabilizing individuals should be treated with caution. The personal satisfaction of the worker is a familiar refrain in a number of attempts to reconfigure economic life to boost productivity` (ibid. : 199). Also in explaining the ambitions of the new economic citizenship and the associated promise that new expertise hold the vital answer to the problems identified they remark that: `Such assurances clearly should not be taken at face value. Nor should it be supposed that the current concerns with quality and with teamwork spell the end of conflict within the enterprise` (ibid. : 203). But these concerns are not worked into their main thesis and are typically marginalized: `But even if some of the themes that make up the appeals for a new economic citizenship are well worn, its significance as a programme for governing economic life should not be underestimated. For it provides an organizing rationale that seeks to link together the opportunities and demands of new technology with a revised perception of the relationship that individuals are to have with their productive activity` (ibid. : 199).

We would contend that the lack of direct engagement with these debates limits the value of the M&O framework, for it does not address explicitly how an important part of the equation, labour, negotiates its interests within this broad framework of governance and new citizenship and in the process shapes/redefines many of the important parameters of that framework. This limitation persists in their subsequent, `more contextualized` study of the Caterpillar company and its Decatur plant (M&O, 1994). In that study, they draw on many company internal documents, in addition to some interviews most of which were conducted with company executives/managers, with only a few with factory superintendents/supervisors, and one interview of a group of workers (these numbers are gleaned from their footnote references to quotes in the text; M&O do not make clear in their paper how many interviews were

conducted). It is not surprising, therefore, that when they refer to the views of workers/supervisors views concerning the radical developments reported to be taking place in the plant, a critical edge is lacking in their analysis. More surprisingly, labour is presented as accepting these changes without reverting to either overt or covert strategies of resistance. For example, they state (ibid. : 38): `Workers were called upon actively to exercise joint “proprietorship” of that “small business” delineated by the cell and the assembly spur, and to participate in the full range of tasks involved in building a perfect product, on time`. Later on (ibid : 39) they quote a shop floor worker from the Decatur plant remarking on a new multiskilling initiative: ‘So now, with the new, modern way, we do all kinds of jobs`. Not only are these references to labour attitudes extremely sparse in their text, but also these views appear to be taken by M&O at face value. We do not wish to totally deny the possibility that labour may indeed view many of these changes as inevitable, or even mutually beneficial to themselves as well as to managers and shareholders. But, more critical studies typically studies reveal other attitudes by labour, ranging from potential nervousness and unease to accusations of scape-goating and exploitations if these initiatives are perceived by them as potentially leading to job losses or labour intensification. In our subsequent analysis we show how, by engaging with the lived experience of shopfloor workers, as they negotiate their interests in relation to a number of manufacturing, management and accounting initiatives, new problematizations of the factory, management, and labour kept emerging leading as a result to new modes of governance and surveillance within the organization.

### **NORTHERN PLANT : ANOTHER ‘FACTORY OF THE FUTURE’ ?**

When *N-Gineering* opened Northern Plant in 1971, it employed 70 people who manufactured and supplied a very limited range of high-tech automotive products to two major European-based vehicle manufacturers. Within less than ten years the plant was established as the flagship of *N-Gineering*’s European operations. By the late 1980’s it was employing almost 700 people and generating an annual sales turnover of around £70m.

Northern Plant first began experimenting with ‘new wave’ (Storey, 1994) Japanese style manufacturing and employee involvement initiatives in 1983. At that time, quality circles and SPC (statistical process control) quality assurance techniques were introduced (Deming, 1982).

However, following its acquisition by Motor-Co, a much larger U.S.- based multi-national in 1986, *N-Gineering* underwent a major strategic re-organization of its global manufacturing and assembly operations, resulting in a significant reduction and concentration in the number of its manufacturing facilities. Central to this re-organization was an emphasis on exploiting specific Japanese-style flexible manufacturing and production methods. An overview of these developments are illustrated in the following diagram.

**Management Control / Managerial Accounting At Northern Plant 1971 – 1997**

	<b>Product Demand</b>	<b>Manufacturing Arrangements</b>	<b>Management Control Strategy</b>	<b>Managerial Accounting Techniques</b>
1971 - 1975	<b>Low</b>	Group Technology	Relaxed System Of Responsible Autonomy	Conventional Standard Costing Based
1975 - 1986	<b>High</b>	Group Technology With Some Use Of JIT/TQM Production Methods	Highly Relaxed System Of Responsible Autonomy	Conventional Standard Costing Based
1986 - 1991	<b>High</b>	Group Technology With More Strategic Use Of JIT/TQM Production Methods	JIT/TQM-Based Teamworking System Of Responsible Autonomy	(TA) Throughput Accounting With (TOC) Theory Of Constraints
1991 - 1995	<b>High</b>	Process-Based Cellular Manufacturing	JIT/TQM-Based Self-Managing Teamworking Methods	Transition From TA/TOC To (ABC) Activity Based Costing
1995 - 1997	<b>High</b>	Product Focused Based Cellular Manufacturing	Self-Managing Cellular Based Autonomous Production Teams	(ABC) With (ABM) Activity Based Management And (VF) Visual Factory And (MBF) Management By Fact

In contrast to Northern Plant’s earlier sporadic and unsustainable experimentation with ‘new wave’ manufacturing methods, *Motor-Co’s* manufacturing initiatives articulated a more strategically focused change programme, spearheaded by a drive to establish cellular

manufacturing throughout its manufacturing operations world-wide. At Northern Plant, this involved an initial investment in 'process based' cellular manufacturing arrangements (Alford, 1994), supported by cellular accounting practices and OPT-based scheduling technology and inventory control systems (Goldratt and Cox, 1984). More recently, Northern Plant has sought to consolidate these initiatives, by re-engineering its 'process based' cellular manufacturing arrangements into the more advanced form of 'product focused' cellular manufacturing (Alford, 1994). This also included major investments in the 'social organization of production' (Storey, 1994). The most far-reaching of these included flexible teamworking and multi-skilling initiatives (mid-to-late 1980's), TQM training programmes (1993), a Toyota-style U-shaped cellular production system and *Kaizen* (1994/5).

When Northern Plant announced its plans to introduce 'product focused' based cellular manufacturing in January 1995, it was identified and promoted as *the* initiative that will *finally* establish the plant as a 'truly' lean manufacturing facility. However, as in the case of the plant's previous 'new wave' (Storey, 1994) manufacturing initiatives, although 'product focused' based cellular manufacturing has resulted in changes in the *technical organization of production*, this has not been accompanied in any substantive changes in the *social organization of production* that is deemed integral to 'new wave' lean manufacturing and production methodologies. Northern Plant's failure to transform its *social organization of production*, as we have shown elsewhere (Ezzamel, Willmott and Worthington 1996), is the result of continued shopfloor resistance to new working practices.

In this earlier study of the failure of 'planned organizational change' at Northern Plant we illustrated how workers' responses to management's quest to transform working practices has involved largely 'distancing' strategies of resistance that resonate with those documented by Collinson (1992, 1994). *Contra* Collinson, however, we were concerned to show how distancing forms of resistance enabled these workers to effectively 'outflank' (Clegg, 1989) attempts to incorporate them into JIT/TQM based teamworking practices. This has been achieved largely by redirecting discursive strategies of 'resistance through distance' *towards* rather than simply *against* management in ways that were effective in undermining their authority and discrediting their objectives. We also showed how more organized forms of resistance, largely orchestrated by trade union representatives at the plant, were effective as a

strategy of avoiding formal opposition to new working practices. By ostensibly acquiescing to management's call for their active involvement in planning and facilitating 'change', the shop stewards at the plant have to date successfully subverted the concepts of teamworking and 'empowerment' by turning its ideology in upon itself and its protagonists through a process of 'resistance through negotiation'.

To achieve this workers constantly challenged managers' integrity. This was done by consistently refusing to ascribe their [apparent] commitment to 'change' as anything other than a strategy of 'self-interest', that was designed to enable them to "get on" at the expense of shopfloor workers who would then be left to either simply work harder, or lose their jobs - given the inevitable reduced labour requirements of 'lean' production methods. In addition managers were also accused of 'hypocrisy', or condemned as either 'lazy bastards' or "head workers" who were therefore *the* major obstacle to 'change'. For example, [some] foremen (team-leaders) or middle managers (cell-leaders), who had previously worked on the shopfloor at the plant were regularly reminded of *their own* 'misbehaviour', such as poor time keeping or attendance record, sleeping on night shifts or 'abusing' rest allowances, prior to being recruited into management positions (Ezzamel, Willmott and Worthington, 1996). The rationale for resisting the prospect of new working practices by 'distancing' themselves from them in this way is simply to prevent new working practices from being openly discussed between management and workers. As Arnold (1995) has shown, workers facing the prospect of 'new' working practices in contemporary manufacturing perceived resistance to be much more difficult once this occurs (see also Pollert, 1995)

Worker resistance to 'new wave' (Storey, 1994) 'lean' manufacturing and production methods at *N-Gineering's* Northern Plant, however, stands in sharp contrast to many other accounts. In Arnold's (1995) study, for example, workers expressed a concern to guard against the "*false sense of security*" (our emphasis) of believing that 'team-working' and concepts such as 'self-management', 'empowerment' and 'employee involvement' can mean anything other than a route to work intensification. Whereas at Northern Plant, [almost all] workers almost automatically perceived this to be the inevitable outcome of 'lean' manufacturing and production arrangements. More notably, the 'distancing' forms of resistance employed by these workers remained effective over both time and space. Indeed,

much of it took place almost exclusively during team-briefings, cell-meeting, training sessions, formal information briefings, or annual pay negotiations, rather than at the point of production on the shopfloor itself. Workers' ability to contain resistance within this social space in this way. Moreover, it was not in fact until late 1995, following almost ten years of on-going resistance to 'lean' production arrangements and new working practices, that a more concerted *corporate driven* managerial effort to counter this actually emerged at Northern Plant.

In this paper we are concerned to illustrate *how* and *why* 'distancing' patterns of resistance, that for almost ten years had largely contained the struggle to resist lean manufacturing methods and working practices to the 'briefing room' and 'negotiating table' respectively, were later employed with equal effect on the shopfloor. Firstly, as a defence against first-line managers' and supervisors' attempts to operationalize new working methods without their consent or co-operation, and secondly, against the disciplinary 'power' and 'surveillance' of 'new' managerial accounting techniques specifically designed and introduced at the point of production to counter their resistance.

### **A 'Golden Past'**

The expansion of manufacturing operation at Northern plant has been built upon high-tech R&D expertise previously pioneered in the aviation industry where *N-Gineering* had originally operated. Prior to the mid-1980's, *N-Gineering* pursued an arms-length policy towards managing its overseas operations, a policy that enabled Northern Plant to develop its own on-site R&D and manufacturing expertise. This was so successful that within less than a decade it had become the benchmark for the industry. Following a pattern that had developed with its original major European customers in the early 1970's, Northern Plant pursued a customer relations policy that actively sought inter-company co-operation on issues of product development, price quality and delivery performance. This earned the plant a reputation, within *N-Gineering* and the industry, for highly valued customer-responsive approaches to the design, development and production of its products. In short, Northern Plant's relationship with its major vehicle customers during the boom years could, in contemporary jargon, be described as a 'preferred supplier' relationship.

Throughout this period *N-Gineering* has remained at the forefront of a rapidly expanding global market. In the early 1980s, at the high point of its market leadership, it accounted for almost 90% of the market share for its products world-wide. Given the company's market position and its almost unrivalled reputation for quality, product development and reliability, there was little pressure to extend or follow-through on the company's largely ad hoc or sporadic experimentation with the Japanese style quality control methods and production techniques (e.g. quality circles, SPC and a JIT kanban batch-control system) that were explored by the company during this period. This lack of any sustained pressure to follow-through on the range of new wave (Storey, 1994) manufacturing arrangements left the social organization of the plant virtually unchanged at the time of the *Motor-Co* take-over in the mid 1980's. This organization amounted to highly indulgent (Gouldner, 1954) 'flexible' working practices based upon patterns of relatively *unplanned* responsible autonomy (Friedman, 1977). Within this system, unspoken agreements had developed in which workers would "deliver the numbers" to meet constantly pressing output requirements so long as managers turned a blind eye to how this was done. Prior to the take-over, management-labour relations were largely conducted in a highly informal and often ad hoc and idiosyncratic manner as managers would not only tolerate but even connive in almost any practice so long as production levels were maintained. This left workers to develop their own ('flexible') methods to produce this output.

*N-Gineering's* hands-off policy towards those responsible for managing Northern Plant, supported by an insatiable demand for its products, meant that there was relatively little pressure to change what had been a highly successful production formula. As one long-serving senior manager explained, Northern plant was simply expected to produce, pro rata, what it had always produced - a figure that was based upon, and effectively capped by, the use of time and motion studies to determine what levels of output could be expected. Output targets were officially determined by a measured day rate system. This required operators to hand in a performance (job) card to their foreman at the end of each shift, thereby supplying the relevant information to satisfy *N-Gineering* that the plant was operating efficiently. But, in effect, the measured day rate system had become little more than a shell which concealed the highly informal *negotiated order* that had emerged over an extended period. Formal/managerial procedures bore little relation to shopfloor practice. As one long-term employee, now a cell leader observed,

“in those days, we’d just throw anything we had at a problem to get round it...money, men, overtime, whatever....*this was what kept everybody happy...so it didn’t seem to matter how you got the parts out so long as the customer got them....that’s what this place was built on...getting the parts done...getting them out the door...working together ...just dealing with things*” (our emphasis)

As soon as workers had fulfilled their quota - that is, had fulfilled the negotiated level of output for the shift - a range of activities and pursuits filled the hours that remained before the job cards were completed and returned to the foremen at the end of the shift. These pursuits - all of which were known about and tolerated by many of the managers at Northern Plant - included card schools, darts, chess, table tennis championships, sleeping areas, drinking dens, etc. There were also regular excursions to the pub, not infrequently with participation of some of the foremen. In some cases, deals were made that allowed workers to go home or ‘disappear’ for lengthy periods.

Carving out the time to engage in these activities necessitated a great deal of co-operation between workers who exercised considerable ingenuity in “making the numbers” in what was in some cases only a fraction of the time allowed by the time-and-motion calculations. This in turn demanded highly developed negotiation skills with management over the nature of control in the workplace and, more specifically, over controls that regulated the pace and duration of work. A relationship of mutual trust developed so that the quality of the manufacturing and assembly work, and not just the requisite quantity of output, was maintained in the absence of close supervision. If the work produced ahead of time failed to satisfy quality standards, it would always be re-worked within the ‘free time’ of those workers responsible for the defective product. On occasions, when managers faced particularly pressing or unexpected output or delivery requirements, it was also understood that workers would respond by guaranteeing output requirements in the quickest time possible, even if these reached above and beyond the official output levels of the measured day rate.

Given the degree of slack in the system - between the level of production required and the level that was potentially attainable - it was not difficult for management to countenance the brokering of ‘deals’ and ‘agreements’ that ensured the smooth running of the plant. Any problems that did occur were quickly addressed through discussion and the trading of time and/or other valued resources.

The plant's history is important for understanding the 'lived experience' of such conditions that, in this case, has remained the crucial factor governing on-going shopfloor resistance to new working practices. It was not simply that high output levels were achieved when controls were relaxed but that these targets were achieved much faster. This was largely accomplished by working 'smarter' not harder. From management's standpoint, this arrangement served to eliminate uncertainty about whether delivery commitments to customers would be met. For the production workers, the self-managing negotiated order was equally important. They gain greater control over the organization of working practices, and exercised a considerable measure of control over their working day. It also gave workers a highly valued sense of autonomy and self determination in which they exercised 'choice' in the 'self-managed organization of production. This is evident in their current recognition of this period as a 'golden past' (see Gabriel, 1993) - a time when they "didn't mind" and even "enjoyed coming to work", when it was "a laugh" and that "everyone [both workers and managers] got stuck in together". It was also a period in which they gained considerable *tacit knowledge* and experience of what they could expect, some years later, from working *smarter* rather than *harder* under team-based 'lean' manufacturing and production arrangements.

Long-term involvement in *self-managing* practices, informal organization and co-operative management-labour relations, prior to the advent of 'new wave' manufacturing and production methods at the plant provided them with a practical or tacit knowledge of concepts such as *flexibility*, *quality consciousness*, *empowerment*, *employee involvement* and *kaizen* in operation. Thus, their *earlier* involvement in production had been relatively negotiable and more importantly unconditional. Prior to *Motor-Co's* quest to modernise the plant, workers gained high levels of over-time and considerable 'free time' in exchange for their effort and co-operation in production. In contrast, they perceived 'new wave' manufacturing and production methods as an attempt to incorporate their involvement and co-operation into a new *non-negotiable* social organization of production which they would find more difficult to influence. In the light of their previous experience of unplanned 'responsible autonomy', the prospect of a non-negotiable and *uncompromising* system of production requiring them to work *harder* under tighter managerial control methods is readily discerned and collectively condemned.

## Coming Down to Earth

At the time of *N-Gineering's* acquisition by Motor-Co, Northern Plant was already experiencing pressures for change. New competitors entering the field, who had reduced the gap in the technological and manufacturing expertise previously enjoyed by *N-Gineering*, were increasingly challenging *N-Gineering's* domination of the market. This had reduced its market share (albeit of a much larger - and continually expanding - market) at the end of the 1980's to only 55%. The expansion of 'lean' manufacturing and production methodologies throughout the industry had also added pressure for 'change', as the manufacturing methods and supplier relations favoured by *N-Gineering's* major automotive customers brought in new quality standards and JIT delivery requirements. At Northern Plant, however, the impact of these developments was felt much harder.

The strategic re-organization of *N-Gineering's* European manufacturing operations at the end of the 1980's had resulted Northern Plant losing a large proportion of what had previously been its most profitable business to sister plant's on the European mainland. This left Northern Plant with responsibility for manufacturing only a limited number of its previous range of products for a much more *highly competitive* segments of *N-Gineering's* product market. As a result, almost over night, virtually all production became what the plant called 'ex-works', which meant taking products straight for delivery from the end of production lines in an attempt to meet delivery deadlines. By mid 1989 frequently missed deliveries were resulting in up to £50,000 per month being spent on freighting their product to different customers around the world. In, effect, increasing competition, changing price and delivery requirements from major customers, and an unprecedented fall in revenues from the substitution of commercial diesel [Type B] business for the more profitable passenger car [Type A] business and mounting demands for increased performance and profit levels from its parent company had pushed Northern Plant into crisis. The plant's financial controller's recollection of this period was that :

“we were introducing a new scheduling system, which was quite complex, and we were also losing a lot of money because we'd moved out of passenger car [type A] business and we were doing predominantly commercial diesel [type B] business instead.... So, suddenly, almost over night, for reasons which were determined by a [new]European management group, when Northern Plant entered 1989 we had a horrible sales mix in a plant that was suffering some industrial relations problems, and we were losing money - up to £300,000 per month because our delivery performance was in crisis.”

## **OPTIMISED PRODUCTION TECHNOLOGY AND THROUGHPUT ACCOUNTING : THE WAY FORWARD ?**

The substitution of type B products for Type A products and the subsequent poor delivery performances had not only resulted in a serious loss of revenue at Northern Plant, but also a significant loss of credibility with both major customers and its parent company, who were, by now, making threats that remaining production at the plant would be moved elsewhere if *immediate* improvements were not forthcoming. *Motor-Co's* solution to the plant's poor performance at this time was to simply *press* for an ABC overhead recovery approach to measuring the plant's performance along with head count reductions.

“every time we produced an additional bad result, although I didn't share this with a lot of the people in the organization at that time, North America's [*Motor-Co's*] reaction was "reduce the head count". Then we'd have another bad result the next month, because we weren't making anything on time in '89, and we'd get "have you reduced the head count, when are you going to reduce it further ?" And clearly the more we gave in to this the more likely we were to provoke another industrial relations dispute”..

( Financial Controller )

In the wake of the crisis productivity gains through flexible manufacturing methods, teamworking and co-operative management-labour relations were now considered vital for reviving the plant's previous competitiveness and profitability. Therefore, in contrast to earlier *sporadic* and *unsustained* attempts to implement 'change' at the plant, senior managers were now concerned to fully operationalise cellular based JIT and TQM based manufacturing methods. To achieve this - championed by the plant's financial controller and a small team of cell accountants - the plant turned to managerial accounting measures and the 'theory of constraints' approach to manufacturing. This, which was later combined with the OPT (Optimised Production Technology) scheduling system, (Goldratt, 1984) was introduced to the plant as the primary '*driving force*' for change.

The rationale for favouring TA and the OPT scheduling system at Northern Plant, rather than *Motor-Co's* activity based overhead recovery approach, was a simple one. Although *Motor-Co* and consultants hired by the plant early in 1990 had promoted the potential contribution of

Activity Based Costing to Northern Plant's needs, the Financial Controller and senior managers at the plant itself were not convinced.

“The flavour of the month at that time was something called ‘Activity Based Costing’.. So I got[one of the big six auditing firms] to come in to see if Activity Based Costing would *help us*. They promised us that it would, but the problem was they wanted me to pay them fifty thousand pounds to help them do it. Not only was this a lot of money, but I was a bit suspicious of consultants who, after a fortnight in a plant know what to do when people who had been here years were banging *their* heads against the wall”. To cut a long story short we shelved that idea and tried to develop our own solutions”.

Following the loss of its most profitable production to sister plants in Europe, senior managers had accepted that ‘new’ management accounting techniques based upon some variant of standard costing could be helpful in reducing the unit cost of the more costly commercial-diesel production. But, ABC’s focus upon squeezing cost out of the production process, by identifying where expenses are being incurred and then examining how they might be eliminated, was deemed highly inappropriate to the plant’s needs. In short, given the buoyant demand for the product in an expanding market, it was agreed that the benefits to be derived from squeezing operating expenses were comparatively limited in relation to those offered by TA. Northern Plant’s goal, therefore, at this time was to respond to the crises facing the plant by taking advantage of relatively unlimited market opportunity.

In addition, the newly formed cellular accounting team were also concerned that ABC would exacerbate growing industrial unrest at the plant. It was argued that to continue to simply emphasise or privilege cost reduction as a strategic priority would serve only to widen the gulf between management and shopfloor workers at the plant. To counter this the Financial Controller explained that at that time his priority, in looking critically at the role of accounting as a vehicle for ‘change’, was to re-direct attention away from head count reduction and towards the most wealth producing aspects of the business:

“ O.K. you can tell people “we’ve got a horrible sales mix, that its costing us say £2m a year in profit”. But once you’ve said this once or twice or three times everybody gets bored with the story.... a £2m or a £2.5m sales mix problem a £2.1m, a £1.9m it all becomes irrelevant. And in fact, everyone was aware of this anyway...that we had a bloody big sales mix problem... because out on the shopfloor they were trying to cope with it everyday....with more set-ups, with

smaller batch sizes.... So what we wanted to do was drag peoples mind off just head count reduction and to emphasis the most wealth producing aspects of [the] business". Cos [by then] we'd already devoted eighteen months to trying to get rid of people and literally every management meeting hinged on "have you got rid of so and so yet ?"... *And we're talking about secretaries and an operator or two....* which, let's face it, wasn't going to turn the business around".

### **Cell Accountants, Schedule adherence and the end of efficiency ?**

We have explained that Northern Plant had not simply chosen a TA/TOC rather than an 'Activity Based Costing' (ABC) driven approach to 'change' for purely technical reasons. TA/TOC driven cellular manufacturing methods were designed to increase competitiveness through gains in productivity and market responsiveness. This, however, ran into serious difficulty from the outset. Although during 1989/90 the plant did in fact successfully re-engineer its previous manufacturing layout into process-based cellular arrangements (Alford, 1994), the newly formed 'change' team, made up of a small group of senior managers, supported by the cellular accounting team, found it difficult to cultivate commitment to either the goals and philosophy of the HRM initiatives, or the cellular accounting system and its objectives. A major difficulty in the early stages was simply substituting conventional standard costing-based performance indicators - against which managerial efficiency at the plant had traditionally been measured - with 'new *novel* accounting performance indicators.

The plant's [new] cellular manufacturing strategy was introduced to the workforce through a series of in-house training seminars during 1990/91. These seminars were designed to achieve five relatively distinct, but inter-related objectives; (i) to (re)introduce the concepts of JIT and TQM, teamworking and flexibility to the plant, within the context of its proposed cellular manufacturing plans; (ii) to explain the importance of the role of TA and TOC within this system of production; (iii) to promote the concept of 'continuous improvement', by introducing workers to the idea of understanding their role in production in 'value-adding' and 'non-value-adding' terms; (iv) to promote the role of a range of *corporate driven* HRM (human resource management) initiatives designed to facilitate the development of these initiatives and; (v) to explain the internal organization of each manufacturing cell, which it was intended would comprise of a number of autonomous *self-managing* 'teams' of managers, R&D technicians, supervisors, and skilled and semi-skilled production workers.

To summarise, TA/TOC and the concept of ‘value-adding’ and ‘non-value-adding’ manufacturing ‘activity’ were introduced to the workforce as not simply more convenient accounting devices (Jones and Dugdale, 1995) for measuring [their] performance, but a means of providing them with a greater understanding of the ‘financial realities’ of their involvement in production (ibid). It was emphasised that these concepts were an important catalyst for ‘change’ that had been absent in the plant’s previous efforts to [fully] operationalize ‘new wave’ (Storey, 1994) manufacturing and production methods. That combined with the proposed new HRM initiatives, [managerial] accounting would teach workers to constitute themselves as ‘producers of profit rather than [simply] products’ (Jones and Dugdale, 1995 : 319), as each ‘cell’ took ‘ownership’ of its costs and its responsibility and commitment to *N-Gineering’s* [new] manufacturing philosophy.

Although, our research shows that almost all the cell managers and their team-leaders/supervisors claimed that in principle they had in fact *welcomed* the concept of cellular manufacturing, they had had at the time little if any faith in it ever being fully operationalised at Northern Plant. Their argument was two fold. Firstly, given the constant high market demand for the product, they believed that this was simply an “unrealistic way doing things”. Secondly, they also believed that the plant’s cellular manufacturing initiatives also faced entrenched shopfloor resistance to ‘change’, that senior management either failed to recognise or refused to address. These issues are now given separate attention in the next two subsections of this section of the paper. This is then followed by a brief account of senior management’s response.

### **‘Back to the Future’**

We have noted that almost all cell managers and their team-leaders had, in principle, actually welcomed the concept of cellular manufacturing, but at the same time believed it to be either *inoperable* or *inappropriate* at Northern plant. Most attributed this to the market demand for the product generally, but, in particular, ‘problems’ that had result from the switch from manufacturing a range of the more profitable [type A] *passenger car* products to mainly less profitable [type B] *commercial diesel* products. Namely, low-volume short-batch production runs, frequent change-overs and set-ups to cater for different and more often competing

customer requirements. It was explained to us, that inspite of senior management's [apparent] commitment to the principle of OPT-based production scheduling, as the core component of its cellular manufacturing strategy (Goldratt and Cox, 1984), little if anything had changed in reality. Production schedules were *still* "regularly altered" or "broken into", both without warning or at short notice, or, as one cell manager suggested, in response to "which customer complained the loudest". In addition, as they saw it, production control also failed to plan or programme the OPT system effectively enough to provide accurate or up-to-date information of schedule requirements, or shortages or arrears that were to be given priority, as this typical evaluation from the night-shift superintendent indicates:

"on night shift, its Production Control's job to decide what kits [products] needs to be built, when they need to be built, where the parts [components] are [i.e. at any given stage in the production process] and, because we have so many arrears, to prioritise all this...what happens in reality, is that I get information from production control, I get information from the afternoon [shift] supervisor and I get information left in the dispatch area from the sales department, but in the majority of times, the three bits of information don't match up"

(night-shift superintendent)

Similarly, this cell manager explained that :

"things change hour by hour and so we'd need information on a day to day basis, *as a minimum*, to be able to manage as well as we should do. But even so, everything runs so fast that even if you did get the amount of information you're supposed to get, *on a daily basis*, you wouldn't have time to go through it or sort it out. So you just try to keep ahead. You set your plan and just go at it"

(Cell Manager)

Sharing these frustrations, almost all cell leaders and supervisors interviewed stressed that it was not simply the OPT scheduling system that remained a major "headache" during this period. In their view they receive neither a "great deal" of what they considered *useful* information from the cellular accounting system generally, or the kind of support for improving productivity that was intended to come from the cellular accounting team itself. As one cell manager saw it, the actual [accounting] information they did receive still remained

“very much historical” inspite of the rhetoric of the new accounting system and, therefore, of “little if any use” to them. As he put it :

“I’m supposed to have a say in determining the budget...but in reality I don’t. They’re supposed to be monitoring me against the budget, but I don’t believe they doing that either. There’s no variance analysis where they come back to me as say “you’ve overspent your tooling budget” or that “you’ve done this or that this month” or whatever. I’ve never yet in all the time I’ve been here actually been praised for being under budget or kicked up the backside for being over. It’s just a piece of information you get and so all I do with it is have a quick look over it, if there’s any big numbers in there that sort of stick out, then I think ‘Christ’ What was that !. Beyond that it just gets filed away”.

(Cell Manager)

### **‘Accounting for the Problem’**

We have noted earlier that following the introduction cellularised manufacturing, conventional standard cost accounting had been deemed highly inappropriate to Northern Plant manufacturing strategy. By late 1990, however, it was considered a serious liability that had to be abandoned entirely. The cellular accounting team explained that they had in fact only continued to use conventional standard cost accounting at the plant because of corporate pressure. Therefore, supported by the senior management team, a decision was made to use conventional standard costing-based efficiency reports for “*external consumption*” only - “to keep the auditors and the yanks happy” as it was put to us, but otherwise to abandon its use altogether. As the financial controller explained :

“Looking back on it we really did this in a non-TQ manner. We dropped efficiency one week and introduced schedule adherence the next.... At the time, I didn’t exactly expect to be carried shoulder high for introducing this, but I did expect them to take to it. But they didn’t ... and it caused bedlam”

Adding to this he explained that cell managers and their supervisors believed that the introduction of TA and the ‘schedule adherence’ system had not only been “badly planned”, but that its *real purpose* was to *manipulate* them, rather than *motivate* them towards embracing the plant’s new manufacturing and production methods, by actually *concealing* improvements in their performance. As he put it :

“it was really weird what happened...we actually got quite perverse reactions from people. For instance a lot of cell managers hated ‘schedule adherence’ and actually wanted the ‘old efficiency’ [report] back. The main problem was that they thought I’d introduced ‘schedule adherence’ because their efficiency had gone up, but that I wasn’t prepared to tell them about it any more”.

To account for this the ‘cellular accounting’ team explained that standard costing efficiency reports were “what managers understood”. That having “grown up with [standard costing]”, they had learned how to “manipulate efficiency” and, in fact, as they [cell accountants] saw it, had “probably got their job [simply] by being good at [doing this]”. Consequently, they believed [at this stage] that the latter’s reluctance to embrace TA and the ‘schedule adherence’ system resulted from the cellular accounting team having simply failed to “get the message across” and, therefore, capture their imagination for ‘change’.

Cell managers and their supervisors, however, perceived this as a ‘poor’ if not ‘naive’ evaluation of the situation. In terms of either the extent of the constraints on ‘change’ due to production related problems, or those due to on-going worker resistance to new working practices. Their attempts to make this clear to senior management simply resulted in the latter re-emphasising the aim of their role as ‘change agents’ within the plant’s new social organization of production. That is, to seek commitment to the ‘values’ and ‘philosophy’ of ‘lean’ production by “*empowering*” rather than “*controlling*” workers. This became a serious cause for concern amongst cell managers and their supervisors. In short, they perceived themselves to be caught in a “no win” situation, between demands to achieve productivity gains under what they saw as “impossible conditions”, and the requirement to *achieve these gains* by ‘managing’ the shopfloor only at a distance’ (see Ezzamel and Willmott, 1997).

In response to these ‘contradictions’ supervisor in particular found themselves drawn back to ‘making the numbers’ as a way of attempting to convince senior managers that they were performing efficiently. Rather than actually managing the new scheduling adherence system as it was intended to be managed, they simply endeavoured to meet the most urgent output requirements in the fastest way possible, as they had done so prior to the introduction of cellular manufacturing at the plant, but now without senior management’s knowledge or acquiescence. Those interviewed believed that without doing so they “wouldn’t have survived”. Whilst this expedience did to the larger extent produced the desired effect amongst

senior management, it at the same time rendered them vulnerable to shopfloor workers who, as we show in the next section, were quick to *exploit* their situation as a means of continuing to resist the introduction of new working practices at the plant

### **‘Managing Resistance’**

We noted above that in our initial account of resistance to change’ at Northern Plant (Ezzamel, et al 1996), we were able to show shopfloor workers countered attempts to promote teamworking, mainly during team-briefings or cell meetings, and largely through ‘distancing’ strategies of resistance (Collinson, 1994). In this section our concern is to demonstrate how these patterns of resistance were later followed through in different way, but with equal effect, on the shopfloor itself as a defence against more concerted managerial effort to introduce new working practices at the point of production during this period. We explain that the further success of this strategy was not simply the result of workers’ ability to continue to exploit the ‘spoiled identity’ of [certain] cell managers and supervisors as a form of resistance to ‘change’, but their ability to recognise and ‘exploit’ what they perceived to be the latter’s growing ‘insecurity’ within the plants ‘new’ social organization of production. Namely, their vulnerability to the outcome of

Workers achieved this by continuing to challenge those managers and supervisors who had been party to the ‘indulgency patterns’ (Gouldner, 1954) that had characterised the plant’s management labour relations prior to the advent of ‘new wave’ manufacturing in much the same way. For example, whenever these particular managers were involved in the introduction or the promotion of new working practices, they would find themselves again initially condemned for their ‘hypocrisy’ or as self-interested “creeps”. In contrast to this more aggressive stance, workers also employed, on occasions, more ostensibly ‘friendly’ strategies of resistance designed to play on the contradictions facing supervisors in more subtle ways. These involved, for example, suggesting that supervisors had “no need to bullshit the lads”, that they ‘understood’ and to some extent *even* ‘sympathised’ that *N-Gineering’s* [new] corporate cultural philosophy required them to “put on a performance” for senior management. That in reality “TQ is just a game” that senior management and *even* corporate management have play to either “keep their jobs” or “get on” in *N-Gineering*. It was suggested therefore that supervisors “should remember” that providing output requirements

were produced in sufficient numbers and regularly on time for delivery “no one [really] care’s whether ‘TQ’ is in or not” at Northern Plant. That, given this, it was “common sense” that all that “really mattered” was whether or not then plant was profitable for *N-Gineering*, and that on the face of things “it must be” otherwise it would have been closed-down. In the light of these insights their ‘advice’ to these managers was “not to rock the boat”, but, instead to “keep the lads happy” otherwise they would be left with no choice but to “screw them” if necessary. Whilst reassurances were consequently given that ‘parts’ [components] would continue to be produced in sufficient number to ensure that there were no ‘come-backs’ from senior management, it was made clear that this remained contingent upon their ‘attitude’. In other words, whether or not new working practices were ‘pushed’ or ‘policed’ beyond what [they (workers) accepted] was required to convince senior *and/or* corporate management that they had been introduced, or that progress was being made.

During 1995/96 Northern Plant sought to combat this by adopting a strategy of attempting to introduce ‘change’ through a series of pilot projects. At first these were introduced only on sections where it was felt progress could be made, rather than on sections perceived to be ‘militant’, or more resistant to ‘change’ than others. Dedicated ‘change’ teams were formed to operationalize these projects. The rationale behind this strategy was to establish *examples* or *models* of self-managing’ teamworking in operation. This, it was believed, would reduce and eventually overcome the “fear of change” at the plant, as shopfloor workers and shop stewards “*saw for themselves*” that ‘new wave’ manufacturing “really did” involve working ‘*smarter*’ rather than ‘*harder*’. Following only poor results management subsequently revise this strategy, by transferring their efforts to make progress with these projects away from sections/cells deemed more inclined to accept, or at least ‘try out’ new working practices, and towards those they regarded as ‘militant’. The plant’s ‘change teams’ had argued that if a “breakthrough” could be made amongst these [militant] groups, more widespread acceptance of change would automatically follow elsewhere. This was then extended to the actual process of selecting workers for the ‘change teams’. Inevitably, a number of workers who were generally considered by both management and shopfloor workers to be either ‘militant’ or ‘lazy’ were subsequently recruited to these teams. The plant’s human resource manager who ‘masterminded’ this explained that by allowing this he had hoped to demonstrate to the workforce generally, that “if [even] these people could change, then anyone could change”.

This in fact produced the opposite effect. Other workers, simply condemned these workers as a “joke” or “con men”, arguing that they had simply accepted positions in the ‘change teams’ as a way of “getting of the shop [floor] all together” and, therefore, having to work at all. Summing this up, one worker stressed the point that it was “unacceptable” to have “cheeky bastards, who, in his view, having “never actually done a decent day’s work in their life”, in a position where they were “[now] going to show others how to work harder”. Managers also questioned the wisdom of this strategy, some of whom openly expressed the view that they found it extremely frustrating to have to work closely with these workers, having previously had “running battles with [some of] them for years”. For this reason *they also* saw this move as a “joke”:

“How can you expect to get people [workers] to accept the likes of [...] as a ‘change agent’ when we all know he doesn’t deserve a job with the company in the first place. He may have convinced [the human resource manager] that he’s had a ‘road to Damascus’ thing, but its a ‘fuckin joke’ isn’t it”. (change team manager)

[Some] shopfloor workers, however, were also quick to seize upon the [apparent] ‘road to Damascus’ experience of these workers as a form of resistance. In one incident ‘a newly appointed *Kaizen* team trainer had invited a group of workers, during an informal tea break, to “look over a proposed new training schedule”. The response from one worker was a ‘disarming’ counter-invitation to “browse through the *“Sporting Life”* with a horse racing enthusiast within the group as the other members proceeded to disperse’ (see Ezzamel, et al, 1996). In other incidents they were simply insulted or repeatedly ‘interrogated’ by workers who [sarcastically] ‘claimed’ that they were at a loss to understand why these workers had “given up such a good job [on the shopfloor]” to become trainers, or why they themselves did not actually want to “work on the shopfloor anymore if it was going to be so good [in the future]”. Skilled workers and shop stewards also used these workers as a target from which resist ‘change’. The skilled workers, for example, adopted a strategy of refusing under any circumstances to ‘recognise’ any ‘change team’ member, ‘team leaders’, or any shopfloor workers appointed as trainers/facilitators involved in any of the plant’s ‘change’ initiatives who are not ‘time served’ craftsmen. In contrast, the shop stewards at the plant approached the issue by ‘warning’ both management and shopfloor workers prepared to take ‘team leader’ positions that the workforce would be balloted for industrial action if this role includes any responsibility at all for

disciplining workers in any way. In their view, this would only be acceptable to them, as trade union representatives, if those workers willing to accept 'team leader' roles that included responsibility for disciplining shopfloor workers, were also willing to surrender their union membership and their current hourly paid contract of employment in exchange for a salaried/staff position that the company would *have* to make available.

### **'ACCOUNTING FOR THE 'PROBLEM' : A(NOTHER) STRATEGIC RESPONSE**

The lack of progress from these initiatives resulted in *N-Gineering* 'labelling' Northern plant as a 'factory with a problem'. Following a series of visits, which included 'crisis meetings' with plant managers, shopfloor workers and the shop stewards, their evaluation of the plant was that it suffered from a serious lack of discipline. In the wake of these visits *N-Gineering* immediately replaced almost all of the plant's senior management 'team', followed soon after by the replacement of a number middle-managers, first-line managers and supervisors. It was announced that the role of their replacements, supported by a senior management 'task-force' drawn from other plants throughout *N-Gineering*, was to lead a "no-nonsense" approach to re-engineering the plant's social organization of production.

These developments immediately resulted in a major revision of the plant's existing 'change' strategy, including the role played by TA within this. Although some of the benefits derived from the plant's Throughput Accounting initiatives had been recognised by corporate management, it was now considered totally at odds with *N-Gineering's* overall manufacturing strategy. TA/TOC and Cellular Accounting were subsequently abandoned at Northern Plant, and replaced by a number of new ABC-driven accounting initiatives, which were introduced between late 1994 and 1996. These included the 'visual factory' (Grief, 1995) concept, ABM (Activity-Based Management, see Cooper, et al, 1992), MBF (Management By Fact) and, later, NDM (Non-Discretion Management).

These concepts were introduced as a "tool-box" of data gathering techniques that would help to reinforce the importance cost control (Soin, 1995) within the plant, especially at the point of production. Again, they were launch through a series of in-house training seminars/workshops, but this time by a team of accountants who were introduced to the plant as *N-Gineering's*

'Strategic Accounting Group' (SAG) from its European Headquarters. The SAG explained that their role was to support the plant's existing TQM and human resource management initiatives. Specifically, it was explained that the 'visual factory' concept, combined with MBF, was designed to render *all* manufacturing and production processes more 'visible' and, therefore, open to more immediate or *corrective* intervention as either '*problems*' or '*opportunities*' for [continuous] improvement, were identified and acted upon. But only in specific ways. To explain, MBF involves the use of conventional 'time and study' methods to measure both the 'manufacturing capability' of individual machines or assembly operation within each U-shape cell, and therefore the 'manufacturing capability' of the cell itself. This data is then used to determine optimum output targets for each cell. Actual day-to-day output and performance levels are then monitored by displaying in the form of bar-charts etc on a series of highly visual 'performance indicators' located in close proximity to each cell (see, Dohse, et al 1985; Delbridge and Turnbull, 1992; Oliver and Wilkinson, 1992). The underlying premise of MBF is to "let the facts speak for themselves", as a basis from which to identify and apply appropriate corrective measures to the over-utilization or under-utilization of the plant's manufacturing or *human* resources.

ABM was subsequently introduced as simply 'a [human resource] planning and budgeting system' (Berry, Broadbent and Otley, 1995 : 57) that was also designed to support MBF. As a derivative of ABC (Activity Based Costing), its role was to enable employees - both managers and workers - to conceptualise different manufacturing and production processes as 'activity pools'. It was explained that the underlying concept of 'activity pools' is premised upon ABC's analysis of the 'role that activities play in 'causing' costs to be incurred' in production processes (Soin, 1995 : 285). In short, 'products utilise activities and activities consume resources' (ibid) By appreciating this workers are then able [encouraged] to understand in financial terms the *interdependence* between different 'essentially task-based' manufacturing and production processes. To summarise, it was emphasised that whereas ABC is able to provide a more critical view of the relationship between the use of resources and the allocation of costs to those resources, ABM - through the notion of 'activity pools' - is seen to provide the basis for a more critical appreciation of *human resource activity* in essentially value-adding and non-value-adding terms.

To illustrate this the SAG provided a number of ‘activity profiles’ of different production personnel from each of the plant’s manufacturing cells. These were drawn from a series of interviews between these personnel and members of the ‘strategic accounting group’, supported by newly trained in-house ABM and MBF dedicated ‘change team’. This was done by collecting data from questions related to a specific range of ‘everyday’ tasks and responsibilities performed by shopfloor workers at the point of production in relation to : (i) the frequency and duration of manufacturing set-up times, waiting time, breakdown times, the responsiveness and of machine-setters and/or maintenance personnel to these ‘problems’; (ii) the nature and regularity of any [other] interruptions to, or delays in, manufacturing processes or the flow of production. supply of parts or material to and from required locations within and between cells; (iii) quality control ‘problem’. This was then fed back in the form of ‘activity profiles’ that the ‘strategic accounting group’ presented to workers as a “true and accurate” representation of how much time they actually spent in “real” ‘value-adding activity’ in the day-to-day running of production. Representing the data from the ‘activity profiles’ to workers in this way was intended to illustrate to them the amount of ‘spare [labour] capacity’ (Berry, et al, 1995) that remained ‘untapped’ in the day-to-day running of production at the plant, and the potential productivity gains to be made from utilising this ‘capacity’.

During the training workshops the concept of ABM and the data produced by it were resisted in much the same way as previous initiatives. Again a series of distinct but inter-related 'strategies were adopted. Workers either refused to acknowledge or accept the validity of the data, claimed that it was beyond their understanding, or dismissed it as “just more management bullshit” that was designed for the purpose of ‘work intensification’. For example, it was argued that ABM’s methodology offered only an *abstract* account of “what workers do”, rather than what they “*actually do* in reality”. To qualify this workers initially ‘*explained*’ to the SAG, that the process of manufacturing a wide range of short-batch production runs required them to address a complexity of day-to-day ‘problems’ that simply cannot be measured in this way. In response to this the SAG argued that this was not in fact the case. That ABM had been specifically designed for this purpose. To *measure* this ‘activity’, *but only* in ‘value-adding and non-value-adding terms. This served only to ‘confirm’ to workers that ABM was designed for no other reason other than ‘work intensification’. To literally rendering them “accountable” for any ‘poor’

performance or output figure, down-time, or any other stoppages or interruptions to production, irrespective of their cause or whether such causes lay beyond their control or not.

Any further attempts by the SAG to explain that either the VF 'concept', MBF or ABM were designed introduce workers to the concept of working *smarter* rather *harder* simply faced further intractable arguments and behaviour. The VF 'concept', for example, was condemned as a management attempt to [eventually] introduce a system total surveillance over the shopfloor and its MBF methodology was subsequently re-labelled "management by fear. As one worker put it :

"This [MBF] is a bad one this... If they [management] get this in you won't get a minute to yourself, you'll be 'screwed down', and that's what they're after, to be able to make you account for everything you do for a full shift and if you can't, they've got you haven't they, and that's it, that's all this [MBF] is about...'nailing you down'"

### **Accounting for Surveillance**

By mid to late 1995 this struggle over the introduction of these [new] 'accounting concepts' intensified. It was announced at this time that through the '*routine*' gathering and processing of data drawn for the 'activity profiles' it had been estimated that the plant was operating at possibly forty percent below its manufacturing capacity. By April 1996, following little if any improvements, the 460 shopfloor workers at the plant were given a management ultimatum that they must "*produce more or risk the sack*". In a further series of 'crisis' meetings that followed this ultimatum, shopfloor workers were further informed that it had been decided that *N-Gineering's* corporate management were now no longer in a position, given increasing competitive pressures within the industry, to "tolerate the plant's continued resistance" to the introduction of new working practices. Any remaining faith in the textbook wisdom of seeking productivity gains, or the introduction of teamworking by '*managing at distance*' was abandoned. In its place *N-Gineering* introduced a series of new disciplinary measures specifically designed to increase much *closer* managerial control and surveillance over the shopfloor. These included a system of NDM ('non-discretion management'), coupled with MBF, and supported by a new 'time and attendance' policy and a new disciplinary 'code of conduct'.

As the term suggests, NDM is designed to ensure that *all* supervisors adhere to one uniform and consistent approach to shopfloor discipline. Although dropped since, supervisors were initially

instructed by senior management to use this system to 'police' the shopfloor by patrolling/visiting each of the U-shaped cells at two hourly intervals. and, without exception, immediately discipline workers [teams or individuals] who's performance, without adequate reason or explanation, fell short of that determined by MBF. This was carried out by automatically issuing 'offenders' with a written 'letter of concern' that they also registered with their cell manager and the 'human resources' department. 'Offences' for which 'letters of concern' were to be issued include : poor work performance(s); poor 'house-keeping'; 'bad attitude'; unnecessary, or un-accounted for absence(s) from work stations; poor time-keeping or absenteeism; accidents or injuries; or any other offence thought to warrant '*concern*'. . As one supervisor put it

“NDM doesn't allow you to make any decisions, you just adhere to it. You can't use your discretion because your just a 'tool' [...] to discipline people”

This informant went on to explain that through NDM, *N-Gineering* were simply “sending the message [to the shopfloor]” that further resistance to 'change' would not be tolerated. That “they're going to discipline people out of the door as and when they can” a means of “breaking” this resistance.

In response workers initially resisted these new disciplinary measures by simply *manufacturing* 'down-time' that enabled them to account for lost production or poor performance figures. They achieved this by either “booking” [recording] breakdowns, waiting time, or any stoppages or interruptions to the flow of productions that had either never occurred, or by recording more time than it actually took themselves, machine setters or maintenance personnel, to address these problems. In certain cases workers also avoided or refused to record output figures or stoppages, sarcastically or dismissively claiming that they had simply forgotten or had been “*too busy*” to do so.

This precipitated a period of increasing tension in management-labour relations at the plant throughout 1996 that eventually culminating in a call for industrial early in 1997. At the end of January 1997 the 550 shopfloor workers at the plant almost unanimously voted to take strike action against these new disciplinary measures. Their main grievances were not related

specifically to the the new forms of discipline and surveillance at the point of production, but *N-Gineering's* new time and attendance policy, that they perceived to have had been imposed upon them without prior consultation or negotiation between the plant management and elected trade union representatives. As one worker put it "this [is] a sacker's charter" designed to impose not only a totally unrestricted managerial prerogative over the nature and organization of production at the plant, which workers find unacceptable, but a "management by fear" regime designed to arbitrarily target and more easily dismiss given individuals as a mean of applying pressure to others to conform to the demands of the plant's new social organization of production.

### CONCLUSIONS

In this paper we have drawn upon an intensive case study of a factory (Northern Plant) that has been in the throws of a number of major changes both in its management and accounting practices in order to shed further light on the role of accounting in change situations in contemporary organizations. Although we have drawn on the `politics of the product` framework developed by Miller and O`Leary (1993; 1994), we have also departed from that work by appealing to the importance of engaging with the workers` lived experience at work. This has allowed us, in the context of our case study, to link attempts to change accounting practices, and management practices more generally, to the issues of disciplinary power and resistance on the shopfloor, rather than analyze such attempts in a less critical and less problematical manner.

We have suggested that in the early 1980s, the strong market position and the high reputation enjoyed by the parent company meant that despite some experimentation with such techniques as quality circles, SPC and JIT, little pressure was exerted by headquarters upon the managers of Northern Plant to secure the success of these sporadic initiatives. Quite simply, Northern Plant was managed by the numbers; the numbers in this case being matching output, pro rata, with what the plant had produced in the past. As a consequence, the social organization of the plant remained virtually the same; the unspoken agreement between management and the shopfloor was for the production quota to be delivered by the workers who, in return, would enjoy unplanned responsible autonomy with no management intervention. Accounting practices, which in the parlance of modern textbooks would have

been described as fairly conventional, focused on balancing the books, and comparing actual and expected output through the use of standard costing to allow the policing of the informal management-labour relations. The accounting system emphasized, and rendered visible, the day rate system through which production targets were determined, and the shift in the performance of every operator was controlled by the use of a job card. However, this arrangement was merely aimed at satisfying the quest for efficiency made by the parent on the plant and concealed the informally negotiated order between managers and workers. The considerable slack in the system was guarded by both managers and workers; as the production quota was frequently delivered in much less than the time allowed for by the time-and-motion calculations workers were able, in the full knowledge of the plant managers, to spend the remainder of the time on leisurely pursuits.

Changes in ownership of the plant and in external market conditions brought quick and significant pressures on management to improve performance. New managerial initiatives, including team working, flexibility, and cellular manufacturing were launched and with these came a demand for novel, and `excellent` accounting practices. Past conventional accounting practices, such as standard costing, were now being presented as part of the problem with the plant. These were no longer, it was claimed, aligned with the new strategic drive of the plant. The possible adoption of Activity-Based-Costing (ABC) was considered as the potential accounting recipe for the plant. Yet, quite quickly, this new initiative was reconstituted as being irrelevant, problematical, and not conducive to the best interest of the plant or the parent. This possible alternative was abandoned in favour of Throughput and Cellular Accounting practices. However, this was not to last long as, once again and perhaps surprisingly, Throughput Accounting re-presented as wanting in attending to the needs of the plant, and was disbanded in favour of a package comprising ABC, ABM, and MBF. But to understand these shifts and countershifts, we have argued requires the analysis to penetrate beyond the kind of framework proposed by M&O. It was through engaging with the workers` lived experience that we have been able to trace the dynamics of disciplinary power and resistance on the shopfloor and to understand more fully how and why these shifts occurred. As the plant managers came increasingly under pressure to improve plant performance, the new management and accounting initiatives were perceived by the shopfloor as being aimed exclusively at exploiting labour in order to increase production. Alternative management

accounting techniques such as ABC/Throughput Accounting, Management by Fact, etc. were simply seen by workers as a means of subordinating them and rendering their performance easier to manipulate by management.

The perceived continuous failure, from the perspective of senior management, of middle management (including supervisors) in controlling the shopfloor, and in seeing through the implementation of the various management and accounting initiatives was to be `punished`. Rather than direct accounting techniques being directed at the shopfloor, as the earlier experimentations with ABC/Throughput Accounting had seemingly been aimed at, it was the turn of middle management to be brought under the constant gaze of senior management. This was to be achieved through the withdrawal of delegation from middle management, placing greater, and more direct, measures of accountability upon them, and imposing extremely heavy sanctions upon recalcitrant staff. Under these new measures, middle management could no longer `shelter` the shopfloor. Moreover, any weakness or lack of resolve by middle managers in disciplining the shopfloor was seemingly avoided. The trust of senior management in middle management to exercise its prerogative to manage was now replaced by a total lack of trust.

These accounts shed interesting light on not only the reasons underlying the introduction of new accounting practices but also upon their (in our case extremely quick) demise. For as Miller and O`Leary have correctly noted, the introduction of new accounting techniques should be seen as intertwined with the problematizing activity of previous practices so that such new alternatives are frequently masqueraded as the sure solution. But equally importantly, the demise of what had been only recently perceived/presented as `excellent` accounting cannot be simply explained through lack of relevance; rather our case study suggests that we are likely to uncover more convincing explanations by linking these developments to the scenarios of resistance that workers develop as they seek to negotiate and manage their own lived experience in the turmoil of the `new` workplace.

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