The flexible firm: strategies for a subcontractor’s management control

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Abstract

A “flexible firm” is one which orients itself towards customers, new technology, lateral organisational arrangements and innovation. It is the “new organisation” where the customers and empowered employees—rather than organisational bureaucracy and capital markets—are said to govern the firm. BusinessPrint is a firm committed to flexibility. However, what flexibility is, how it is achieved and what its effect is on the firm’s profitability are difficult to resolve as flexibility may conflict with productivity. In BusinessPrint, flexibility is debated against two modes of management control: one is the “virtual organisation” and the other is the “political organisation”. The former is predicated upon the possibility to inscribe not only the firm’s internal production processes but also its relations to customers and subcontractors in an information system and to let that inscription organise inter-organisational spaces of flows. In contrast, the latter is mobilised via labour processes in local places designed to motivate workers to show unconditional adaptability and improvisation in production activities. © 1998 Elsevier Science Ltd. All rights reserved.

Flexibility and innovation are often presented as indispensable to competitiveness (Stalk & Hout, 1990) where scope rather than scale, customer-orientation and a concern for quality present an image of a company committed to serving its customers and responding to the specific wishes of the market. Concerns about flexibility and innovation make companies pay more attention to customers than to products, more attention to customisation than to mass production, and more attention to variation than to repetition (Goldhar & Jelinik, 1983; Milgrom & Roberts, 1990, 1995). But what are flexibility and innovation? How do companies decide just how flexible they wish to be? Flexibility and innovation may stand out as justifications for a “plant with a future” (Miller & O’Leary, 1993, 1994), but how is such a programme transformed to specific corporate strategies? They may also justify a “new commercial agenda” (Munro & Hatherley, 1993) by which lateral relations with customers are supported through empowerment of subordinates, but how do management control strategies achieve this?

Such questions were relevant to managers in BusinessPrint, a small and arguably flexible and innovative firm that sold complex machines to the printing industry. However, while flexibility and innovation were approved in principle in the firm and generally accepted to be part of its competitive capacity, what they referred to and just how flexible and innovative it was necessary to be, was not easy to suggest. In BusinessPrint, managers debated flexibility and innovation in a struggle over management control strategies. Although all managers accepted that flexibility and innovation were important and possibly a key to its competitive
advantage, why and how it was so was debated against at least two strategies for management control: accounting control in a “virtual organisation” and production control in a “political organisation”, which were drawn upon as justifications and explanations in managers’ attempts to control flexibility and innovation.

Aspects of a potential accounting inscription (typically drawn upon by the CEO) were mobilised to represent the firm’s situation as lack of planning and absence of appropriate information systems. Here, management control was a paper-practice that drew spaces of flows internal and external to the firm together in an integrated representation measuring plans vs actual results. It presented the image of a virtual organisation that existed as information-flows in an informational mode of management. It was not only, however, that information was available and the firm was redesigned to allow intervention at a distance; it also was so that information set aspirations for performance through plans and budgets. It was a normative inscription that connected the past (“aspirations” and “goals”) with the present (“results” and “performance”) and the future (actions to close gaps between “aspirations” and “results”).

In contrast, aspects of a politics in production (often drawn upon by production, sales, and shipping people) were employed to establish coordination as communication and talk between co-present people. For the production people, management control was a “hands-on” practice which separated organisational as well as inter-organisational spaces and treated them individually as places for industrial relation issues to be negotiated in real time. It presented an image of a political organisation which existed as struggles between actors and classes. It was not that information was not produced and used here but rather that it was used differently compared with the “virtual organisation” since it was drawn upon much more selectively and was not seen as a complete representation of a firm’s concerns. In this situation, management control was executed through management by contact rather than via management at a distance.

In BusinessPrint, the management control agenda was mobilised against what others would term a “new commercial agenda” (Munro & Hatherley, 1993) and a “plant with a future” (Miller & O’Leary, 1994). These address the problems of being flexible driven by the customer. The plant with a future and the new commercial agenda focus on the lateral ordering of flows from supplier through production to customers, and they pay extraordinary attention to the well-being of the customer (Stalk & Hout, 1990; Galbraith & Lawler, 1993; Galbraith, 1994; Jenkins, 1997; Wortmann et al., 1997). To do this, firms reorganise their production spaces to support throughput and flows of goods and introduce information technology to underscore spaces to support throughput and flows of goods and introduce information technology to underscore spaces to support throughput and flows of goods and introduce information technology to underscore spaces to support throughput and flows of goods and introduce information technology to underscore. To do this, firms reorganise their production spaces to support throughput and flows of goods and introduce information technology to underscore spaces to support throughput and flows of goods and introduce information technology to underscore.
seen to be shifted to customers and empowered employees. This is also where the contradictions within the “new organisation” arise. On the one hand, the “new organisation” is presented as one where the “hot” rhythm of face-to-face communication and improvisation governs its conduct; but on the other hand, it is also envisaged to be a network within and beyond the firm co-ordinated by a “cold” virtual reality of information and communication technology.

The “new organisation” is thus a heterogeneous constellation of issues which bear on different principles of government. In such a situation, accounting is intertwined with production and marketing in a constellation of issues ranging from product costing via quality, flexibility, innovation and productivity to principles of production management and of customer service. It is in this matrix of issues that companies, such as BusinessPrint, have to orient themselves. What form of flexibility could and should they adopt? Could and should they be innovative, and if so in what way? Can they empower employees, and could and should they? Could and should they concentrate on the customer, and if so, how would they proceed to develop this idea into certain organisational practices?

In BusinessPrint, one concern raised by the CEO was the status of indirect production costs which were said to have increased dramatically over the recent years. This was the accountability issue which in a sense propelled the debate on flexibility and justified his own position to transform management control into a paper-practice. Indirect costs were not the only managerial problem in BusinessPrint nor were its problems defined merely in terms of costing, but indirect costs were a medium that enabled him to challenge the production ethos of the management control strategy then in place. For the CEO, the indirect costs constituted a possibility to devise new contours of a management control strategy that emphasised managerial technologies such as accounting systems and production control systems which possibly could penetrate production matters at a distance. Such a “simple” quest for visibility, however, was not translated merely into a quest for a more “truthful” representation of the production process’s utilisation of indirect resources. In effect, by introducing a concern for indirect costs, the CEO mobilised a much wider agenda that more strategically called forth attention to the role of production processes in BusinessPrint. As will be shown subsequently, the CEO attempted to redesign the firm to fit the contribution accounting system already in place rather than “merely” to create a new and more sophisticated representation of the firm. The CEO attempted to make the firm amenable to intervention at the distance (Miller & Rose, 1990) through managerial technologies already in place: he attempted to redesign the firm around a managerial technology which he already understood. To make do with—and possibly expand the power of—the contribution accounting system and the MRP production control system, the CEO wanted to get rid of indirect costs and transform them into variable costs. This included a heightened emphasis on subcontracting parts of the production process just as it involved stricter agreements with customers about level of service (Gietzman, 1996). Subcontractors, customers and the internal production process were to be inscribed into an informational form of management control in an integrated, virtual organisation beyond the formal boundaries of BusinessPrint. This contrasted with the management control strategy in place which heralded flexibility and innovation as practices tied to a locality where people could see and talk to each other; and where management control was based on direct, co-present relations between managers, supervisors and workers in political struggles about control at the point of production. In this management control strategy, the impetus to manufacture products depended on the ability of management to make workers work flexibly according to the “whims” of the market as customer–orientation took it into an extreme production organisation where the ability to improvise was the driver for quick throughput. Improvisation was the effect of managers’ ability to persuade workers to adapt totally to the immediate production requirements laid out by demand in the form of shipping-orders.

This theme is in some respects similar to Latour’s (1987) point that the translation between
specific ideas (management control procedures) and general ideas (management control strategies) is a network effect. The translation between (general) concerns for profitability and (specific) organisational action may be seen as a process by which problems and solutions are invented, assembled and fabricated (Bloomfield et al., 1992; Preston et al., 1992; Chua, 1995). As mentioned, in Business Print, two competing translations between profitability and organisational action debated how flexibility, productivity, and innovation would lead to commercial success. This theme is not, however, merely a story about the ways a particular managerial technology could be transformed through ingenious machiavellian, micropolitical strategies (Crozier & Friedberg, 1980; Law, 1994). It is also a story about the transformation of resistance and struggle—and thus relations of dependence and autonomy—in modern industrial systems where managers attempt to redesign organisational activities and inter-organisational relations to curtail political risk in labour processes both—as will be illustrated—between managers and workers, and between owner-managers and employed managers. Moreover, it is a story about the transformations of space enabled by the prospect of an informational mode of management (Castells, 1989) by which control of production at a distance would gain primacy over control in production in situations of co-presence. This transformation directs attention to not only the legal boundaries of companies, but also to the spaces of flows by which products and services move between them. The boundaries between firms become blurred since what counted as “internal” and “external” can be problematised via debates on their “core competencies” (Hamel & Pralahad, 1994) and brought about via decisions on technology, customers, subcontractors and management controls. The “space” of the firm can be rendered negotiable, and its control mechanisms may be extended via information systems so that what is “external” may be represented directly in “internal” standard costing and budgetary systems. Such inter-organisational devices—derived, for instance, from the standard costs of subcontractors’ intermediate goods—help some firms control other firms’ activities since the “command over spaces and times is a crucial element in any search for profit” (Harvey, 1989, p. 226) whereby the space of social arrangements involves a regionalisation that constructs distinctions between centres and peripheries in terms of power and influence (Giddens, 1984; Lash & Urry, 1994). Therefore, the command of space involves command over others and their things; and the command over others and their things is materialised via managerial technologies that give social interaction a certain form. As a consequence, managerial technologies, that are intermediaries (Law, 1994), facilities (Giddens, 1984) or technologies (Latour, 1991), help to mobilise, support and bring systems of management control about; and different managerial technologies, or different constellations of managerial technologies, can support a firm’s management control mechanisms differently. In turn, they may leverage organisational and the inter-organisational spaces differently for instance through either a localised political management or a globalised virtual management.

The paper illustrates how BusinessPrint debated the relationship between management control, cost, flexibility, innovation, and customer-orientation and is organised as follows. The next section presents BusinessPrint’s production and management control systems. Part of this includes a presentation of the focal issue in the firm, namely the costs and benefits of flexibility and innovation. Following this, another section analyses the two management control strategies that competed for significance in BusinessPrint. In doing so, both presented solutions, albeit opposing, to the issue of flexibility. These solutions were designed according to management control strategies that attempted to seize and define the customer, technology, subcontractors and workers differently. These four elements acted as obligatory passages that the two possible management control strategies had to be able to account for as they formed the area of translation between the overall quest for flexibility and the particular form of its realisation. The impact of management control on BusinessPrint’s boundaries is analysed more in the last section of the paper which debates the way the product was located in an inter-organisational spaces of flows.
1. The flexible firm

BusinessPrint employed, when the research was conducted, about 320 people and was medium-sized by Danish standards. Some years ago it had been through a management buy-out, and cash was still scarce. BusinessPrint was profitable, though, and there was no sense of any threatening financial crisis. Throughout its history, it had emphasised quality, reduction of inventory, and increased product and process development and had a reputation for experimenting with new ideas particularly in the production management area.

The case study was carried out as an ethnography. BusinessPrint was visited over an extended period (about a year) although the main interviews were all conducted within the first 2 months. In all, about 30 interviews were conducted primarily with managers at all levels from CEO to foremen and supervisors. This included managers from all aspects of the firm’s departments ranging from R&D over production via logistics and shipping to sales and marketing and again to accounting and top management. The top management (CEO) and the chief financial officer (CFO) were, along with a manager of a product division oriented to designing a new product line not included in the study, owners of the firm, while in particular the production manager but also the sales manager and the logistics manager were employed managers. In addition to interviews, participant observation was carried out as access was allowed to meetings and office space was provided in the firm so that presence was there even on days when neither interviews nor meetings were scheduled. In all, the possibility to get to understand a good proportion of BusinessPrint life was there. One omission, however, worth not only of mentioning but indeed of drawing to attention is that contacts with workers and unions were minimal. This access was simply not allowed, but labour process issues did seem to be important in this firm, as it turned out in the course of the research, because they were part of managers’ account of their agendas. The analysis of BusinessPrint is not a labour process approach per se but the language of labour processes was used by managers to indicate an orientation to management focusing on a certain oral, communications–based form of intervention and control. As will be clearer in the following sections, the analysis of this mode of management control is crafted in the text not primarily as a struggle between workers and managers, but rather as a piece of politics between managers in the construction of managerial agendas and priorities.

Access was thus both generous (vis-à-vis management activities) and constrained (vis-à-vis workers and unions) at the same time. This is an obvious limitation, but even the confidence of the empirical material about managers should not be carried too far. As Law (1994) points out, even in an ethnography where researcher(s) may be present all the time, one always wonders whether indeed the most essential bits of transaction, communication and decision making were actually observed. The question is how we can be satisfied that important events have not happened in a place where the researcher(s) was not present? The answer is that we can not satisfy ourselves on this point. What has been done in this case study is to attempt to construct a story, a narrative, which in coherent form adds the pieces of evidence together in a stream of action and explanation which can be told and communicated (Boland & Schultze, 1996; Charniawska-Joerges, 1997). It is therefore perhaps less the individual piece of evidence that counts but the interrelations between various bits of data put into a stream of a storyline which is held together not only by the sheer amount of data but also by the logic that ties various items of evidence together.

Why BusinessPrint, then? This firm was approached for its reputation to, on the one hand, innovate drastically and continually in products and production processes, and on the other hand, for its reputation to be highly customer orientated. It was committed to flexibility, the rumour said. It, among other things, was highly interested in having Ph.D. students and master students around particularly in the technological area. This involved not only attention to new materials and product development, but also an attempt to introduce modern manufacturing conditions, and BusinessPrint was one of the first firms in Denmark to experiment with self-governing work
groups, just as it paid attention to broad just-in-time related concerns such as TQM, continuous improvement and some measure of humanistic industrial relations programs. These were organisational innovations connected to the manufacturing area; it was less customary to look at the firm’s managerial area. So, BusinessPrint was rumoured to be flexible, innovative and customer-orientated, it seemingly had a policy to introduce modern manufacturing conditions, and it thus seemed appropriate for a study concerning the managerial technologies that make flexibility work.

The case study was designed to understand management control and the technologies that support it in what was thought to be a flexible firm. It was designed to contextualise managerial technologies and debate their position in the firm: How does accounting control and production control interrelate? How does marketing and production refer to each other? How are production technologies and managerial technologies mobilised? Such general questions were traced and certain “obligatory passages” (Callon, 1986; Latour, 1987) were identified which characterised broadly the problems which any management control strategy had to be able to answer in order for it to be deemed appropriate in BusinessPrint. Important obligatory passages were here particularly “the customer” and in addition “subcontractor”, “technology”, and “workers”, all of which had a representational space in the management control procedures.

1.1. Products, processes, management control systems

BusinessPrint produced a high-tech product-line and sold most of its products (about 95%) through a large international firm, “the customer”, more specifically through its subsidiaries. It produced about 6,500 units per year (about 35–40% of the world market), each comprising 2,000–3,000 components. The recent years had witnessed an increase in the number of products and variants to accommodate the customer’s wishes.

The production process was simple consisting of four sequentially interdependent processes: In the first process, metals for the cabinet of the products were cut into pieces which were then welded together in appropriate forms. The second process was a painting activity, where the components and cabinets were coloured and lacquered. Following this, the third process was an assembly activity where the finished products were put together from the cabinets produced in previous production processes and from purchased parts such as electronics and lenses. The last process was shipping where the finished goods were put into containers to be sent to customers across the world.

Although capacity was scarce in all processes, painting was particularly important in this respect. It was not possible to rush drying the paint, just as there was set-up time involved in changing from one colour to another (a half day set-up time, and 2 days drying before the part could be transferred to assembly). The painting process constituted a separation or barrier between two regions within the firm that were governed by two different production planning mechanisms. Cutting and welding activities were planned for through a push system devised by a Material Requirement Planning System (MRP) and thus organised via expected sales in the marketplace. The MRP system broke planned final production volume into purchases and production orders (Mackey & Thomas, 1995). The system coupled production and purchasing in an integrated plan which was important not least due to the sheer number of components in the product and to the long time horizon of the whole production process. The lead time for one essential component (which is bought from the major customer) was 8 to 9 months, while other components (especially electronics)

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1 In a world-market of only 20,000 units, distribution and service costs could turn out to be excessive if sales was not carried out through the customer’s net of subsidiaries.

2 This market was in decline because the technology was becoming obsolete. However, BusinessPrint expected to be able to continue producing the same number of units for some time still as it attempted to capture market-shares. It also diversified into another technology although in a different newly established firm.
had a lead-time of 3 to 4 months. Throughput time for the whole production process was 31–35 days, although the supervisors could speed the process up and reduce it.³

Planning in the cutting and welding processes was finely tuned as it detailed the production process minutely from expected sales and orders in the marketplace. This detail in planning was difficult in assembly because shipping directly controlled the sequence in which orders were taken out of the factory. In assembly, therefore, there was more of a pull system, a version of a just-in-time system, more than a push systems influenced directly by the MRP systems’ plans. Customers put their orders directly with shipping which sent containers around the world. This often disregarded the MRP system’s plan because the container space was an important constraint on the movement of products between BusinessPrint and its customers. Therefore, shipping often dismantled the MRP system’s plan and sought to fill a container and thus complied with the customer orders that came in every day.

Although the MRP system did consider assembly processes in its proposed plans, these plans were rarely, if ever, realised in assembly and in shipping. Due to the long production process in the painting department, cutting and welding activities were only loosely coupled with, and thus to a degree separated from, assembly and shipping activities. The painting department made tight coupling difficult as it could not quickly redirect its production vis-à-vis actual demand, and therefore it was a time-space barrier that separated the plan from the customer.

The MRP system was in line with Business Print’s budgetary control mechanisms based on a contribution accounting system. The MRP system focused on standard costs just like the budgetary control system paid attention to variable standard costs. In addition there was an increasing awareness of the unallocated pool of indirect costs, and non-financial measures such as throughput time, set-up time and inventory levels had been in place for years. The pool of indirect cost amounted to about 35% of total cost and was identified as a problem by managers, particularly the CEO but also the CFO in BusinessPrint. Its contribution accounting system did not allocate fixed costs to products or product-lines as this was considered arbitrary, and it increasingly was a mystery to managers what the rationale of the pool of fixed cost was, not least since it grew continuously. Although there was agreement among managers that indirect costs did pose a problem, there was little agreement about what to do about them.

One possibility was to get rid of the fixed costs by exporting parts of the production process through subcontracting. In this way, some, if not all, indirect costs would be transformed to variable costs and suit the contribution accounting system that would enable managers to understand costs as a direct function of the level of production. In this sense indirect costs would be managed by exporting them and getting them back as variable costs. This position was held by the CEO who suggested that it would easier for him to engage more directly in the mobilisation of Business Print if he was able more systematically to intervene in questions of production organisation via an access to productivity through constructing the firm’s financial structure so that comparison between standard and actual would be a direct inscription of efficiency.

Another possibility was to manage the indirect costs directly. Activity Based Costing was proposed by the factory manager to be such a solution. In this way, the indirect costs would still be significant, but they could be related or traced to products or processes.⁴ It was doubtful, though, just to what extent it would be possible to control indirect costs even if they could be traced to products because there was a limit to the possible actions that could be made in reorganising the

³ It was not easy to get an answer to how much foremen can decrease throughput time. As will be shown subsequently, this was part of company politics to be able to do this.

⁴ Although the possibility of Activity Based Costing was known in BusinessPrint, it was ignored by the CFO—but not by the production people!—as it was argued to be possibly arbitrary and certainly costly to operate. BusinessPrint’s accounting system adopted a contribution principle which emphasised product-lines’ contribution towards indirect cost and profits. It did little, however, to “explain” indirect costs.
pool of indirect costs because of the firm’s limited size. In spite hereof, the production manager suggested that a more detailed inscription of the relationship between indirect costs and production activities would be important for the general awareness of the production processes.

These two possibilities were not mobilised merely as technical solutions to problems of insight and visibility but they represented fundamental differences in preferred management control strategies. The preference for a management control strategy was not predicated only on the prospect of a “truthful” representation of a production process; it was also predicated on the type of decisions each manager would be able to execute. It depended on the knowledge and possible courses of action that could be put in motion. This is why the CEO attempted to problematise BusinessPrint’s problems as lack of knowledge of the production process which could be rectified if just the production process could be rendered amenable to control in the form of an inscription that would be able not only to “describe” the state of affairs; it would also be possible to evaluate the effectiveness of production in the comparisons between expectations and realised results. In contrast, the factory manager was able to use information more selectively because he was able to understand to production process directly. He, as will be illustrated more in subsequent sections, was able to “feel” the effectiveness of production processes and did not need an information system to point substandard activities out. He did, though, use information but much more selectively as a “library” of indices that could be drawn upon on request: In some periods he made scrap the important measure, in other periods the inventory list was prioritised, and in yet other periods he called for special attention to quality measures. There was no single representation of the affairs of the production process. It changed over time and was interpreted against his “feelings” for the state of affairs.

The problematisation of indirect costs was thus not merely an “innocent” attempt to create additional visibility through a more “truthful” representation of production processes. This problematisation represented a more fundamental debate on the proper form of management control in BusinessPrint. This is also the reason why the issue of indirect costs could not be confined to indirect costs. They also signified a further questioning of strategies concerning flexibility, productivity, and innovation. Before this is illustrated specifically, however, it is necessary to delve a bit more into how flexibility was an issue in Business Print.

1.2. Flexibility as an issue

The CEO and the CFO were critical of BusinessPrint’s high degree of flexibility:

Today, production is managed from the perspective of flexibility, throughput and inventory. We don’t manage capacity, and we don’t know the costs of our flexibility (CEO). It is not only that the CEO expressed a concern with the flexibility offered by BusinessPrint. Also, and more importantly for the present discussion, the concern with indirect costs enabled a new problematisation of BusinessPrint’s situation. Indirect costs represented more than reduced profitability as they also gave impetus to a possible redefinition of what flexibility should be, what it meant to be innovative, and consequently to what it meant to serve the customer.

Fig. 1 presents one problematisation of flexibility and indirect costs in BusinessPrint. This presentation is worked up from the empirical evidence and is a more coherent argument than any specific actor suggested. According to this figure, BusinessPrint was flexible in as far as it produced many kinds of products and several variants. Flexibility could be an asset as it served the customer, but it could also be a liability as it required resources (particularly of the indirect kind).

Fig. 1 illustrates possible costs and benefits of BusinessPrint’s flexibility. The relationship between costs and benefits was, however, not easy to untangle in the firm which also suggests, in turn, that it is possible to problematise the directions of the “causation” indicated by the arrows shown in the figure. However, the figure illustrates a simple and initial presentation of the issues that were mobilised in a debate that connected costs and
flexibility in numerous, and often surprising, ways. While indirect costs spurred and fuelled a debate on the appropriate degree of flexibility, their association with flexibility was a complex and often a hypothetical one as it was difficult, if not in principle impossible, to produce an accounting calculation which would sort out and evaluate the pros and cons of flexibility. Although accounting performance was drawn upon to produce and frame a debate concerning flexibility, it could not define the desirable level of flexibility and it merely enabled a debate about its pros and cons which is illustrated in figure one. This debate connected indirect costs and flexibility but did little more than hint at possible consequences of different modes and levels of flexibility.

An important piece of background information to Fig. 1 is that BusinessPrint was a subcontractor to largely one customer that accounted for 95% of its revenues and was large as it had revenues more than 10 times BusinessPrint’s revenues. It was a subcontractor in a special sense since it did not deliver parts to the customer’s production process but manufactured products that were complementary to the customer’s product. BusinessPrint’s product line was a set of machines that were required to utilise the customer’s product line. The customer did have the opportunity to change supplier, but it did not do so. BusinessPrint’s product lines leveraged the customer’s product lines, and the customer was highly interested in BusinessPrint’s product-development activities as these also influenced their customers’ demand for its products. In addition, a proportion of the components used in BusinessPrint’s production process was supplied by the customer.

The customer that distributed BusinessPrint’s products through its worldwide net of subsidiaries was large compared with BusinessPrint. Production and product-development activities were typically organised around the customer’s wishes in a situation where its subsidiaries often placed their orders late. Business Print did little to prioritise marketing measures by which it could negotiate other terms of sales with the customer thus underscoring its image of flexibility to the customer. Also, BusinessPrint engaged in heavy product-development activities often—or typically— influenced by the customer. About 60 out of 320 total employment were allocated to product development to support the broad portfolio of products.

Both liberal sales-conditions and continuous product-development influenced BusinessPrint’s indirect costs, as illustrated in Fig. 1. The liberal conditions of sales were expressed in many rush-orders which lead to various kinds of indirect costs. Firstly, a strain was put on the “hidden factory” (Miller & Vollman, 1985) of planning, balancing and moving. Changing plans was a source of tension because the MRP system was...
unable to load new orders both since it took time and resources to make new plans and since the redirection of purchasing orders for components and parts was difficult, if not completely impossible, at short notice, just as rush-orders would not be able to comply with the planned schedule that had put a set of production orders in motion. This produced, it was argued in BusinessPrint, a strain on the firm’s planning capacity. Secondly, set-up costs increased dramatically when new rush-orders were accepted as workers had to be redirected to new production lines. This, for example, involved a “re-training” period where workers were to familiarise themselves with the new product. Thirdly, this often meant that final assembly had to be performed twice. It was difficult to ensure the availability of parts because the production process itself was time consuming not least because the painting process was difficult, and probably impossible, to rush with existing technology. Supervisors therefore often had to take finished products out of finished goods inventory, disassemble them and assemble them anew for a new version of the product.

In addition to these consequences of flexibility in the sales area, innovation in the form of product-development also increased indirect costs in various ways, as Fig. 1 illustrates. Firstly, the orientation towards product-development rather than process-development resulted in complex products and time consuming assembly work. Production was, for reasons of motivation of workers, organised around the individual person who was to assemble a whole unit of the product rather than only specialise in a small part of the whole assembly process. It took about a day to assemble a product and due to this, inspection was infrequent and quality problems arose. The failure rate had been as high as 100% in some product lines. To mend failures, workers were put off the

Fig. 1. A model of cost and flexibility.
piece-rate system and on to the hourly-base system creating additional indirect\footnote{They were defined as indirect simply because they were added to this pool.} costs for production.

Secondly, low priority to the development of production processes raised problems as regards taking new products into production efficiently. The hectic product-development activities were sometimes implemented in production merely as a message on the computer-screen sent from product-development that the product had to be manufactured in a different way. There was little attention given to design for manufacturability and therefore the production process was designed less for efficiency in throughput than for the possibility to customise products. A craft shop mode rather than an assembly line organisation appeared to be in place.

Thirdly, because new products were equipped with new features and new functionality, Business Print continuously proved its ability to employ up to date technology. However, the customer saw this not only as a progressive product programme but also as an opportunity to ask for similar features and functionality in old products. This created a demand to continuously upgrade old products and change them to incorporate new features and technologies. Consequently, additional product-development of old products was continually required and—in a sense—a product was never fully developed.

Fig. 1 illustrates how flexibility vis-à-vis the markets was transformed into liberal sales conditions and a high concern for product development, both of which resulted in an increasing share of indirect costs. It assembles a set of stories about flexibility and costs which together problematise flexibility. Obviously, there was no clear cut answer to the issue of “optimal flexibility” because it was not merely a question of minimal cost; rather, it was a question of minimal opportunity cost and everybody realised that the hard question was to what extent flexibility actually created additional revenues? Flexibility was obviously expensive; but would it be a profitable investment? Although BusinessPrint might get premium prices for its products, why was it confident to accept the customer’s drain on its resources? Or, how was it that BusinessPrint was satisfied that it had responded to its the customer with appropriate measures? The point here is that not all were satisfied with this situation! At least, a debate on the meaning of flexibility was created around two competing explanations of what constituted appropriate management control.

2. Two forms of management control

A firm’s strategy is rarely a fully accepted vision and version of its present and future (Pettigrew, 1985; Mintzberg, 1994). Strategies were emerging as BusinessPrint’s members started to talk about indirect costs and developed this debate into a concern for its mode of production and its kind of flexibility vis-à-vis its customer. As will be elaborated subsequently, managers disagreed on the wisdom of Business Print’s strategy and related management control procedures. Their versions of the sources of strategic excellence were based on varying evaluations of the different management control practices not only because of professional disagreements but also because of ambiguities about how properly to translate between profitability objectives and control practices. In BusinessPrint, the quest for flexibility was debated against two versions of what management control could be about: the “paper” version of management control through a possible virtual organisation, and the “hands-on” version of management control via the actual political organisation.

2.1. Paper, visibility, and restructuring: the possible virtual organisation

One version of the sources of profitability argued that there had to be limits to flexibility and innovation as these were costly and could lead to poor productivity. Primarily the CEO and the CFO adopted this position arguing that flexibility be redefined so that it could accommodate a more coupled organisational system than the one presented in Fig. 1. Indeed, Fig. 1 presented for these managers a problem that had to be managed via more strict adherence to plans and budgets. Flexibility had to be contained, according to this view,
through increased negotiation with the primary customer and create arrangements that would condition and reduce the need for flexibility. If sales conditions were restructured to be a little less anarchistic, the production system would be able to be run more closely by a plan and a budget. Consequently, the various organisational entities would be integrated via a planning procedure governed by the MRP system. This could reduce indirect costs because a heightened attention to eliminating rush-orders would reduce the barriers to a free flow of components from cutting and welding via painting to assembly and to shipping because there would be less exceptions from the plan. The importance of the barrier introduced by painting would be reduced.

Furthermore, according to this view, parts of the production process had to be subcontracted out to make a larger part of BusinessPrint’s costs variable with volume. This would not only reduce business risk but also enhance productivity because different subcontractors could be compared and made to compete with each other on productivity and price. Last, innovation had to be curtailed through increased emphasis on project management systems. The focus of management activities had to be to construct and produce information useful to enhance visibility and to underscore management as a paper practice. Such a call for an information technology which enhanced the possibility to control manufacturing and move the product from the subcontractors through BusinessPrint to the customer was constructed as a response to the “control problem” where production people’s lack of interest in controlling flexibility was seen by the CEO to be an attempt to avoid systematic approaches to production, and therefore it was indicative that the high cost of flexibility was not warranted. As one planner emphasised:

Really, sales determines production from the direct inflow of orders. If I am to control anything, I have to control sales. Presently, we practise an informal JIT system, at least in the latter part of production.

It is not that the planner did not attempt to control production by planning, it is just that the exceptions were so frequent that he had difficulties just putting them into the MRP system:

Last year we made thirty plans. Of these twenty were changes to already existing plans.

The CEO addressed this as follows:

The sales people really influence what goes on in production. We believe the customer sets the rules. We play the passive part as we do not know their sales situation (i.e. forecasts).

The sales manager was blunt about this:

The relationship between production and me is through the sales budget. I don’t concentrate on connections within production.

Production on the one side and sales—and shipping—on the other were separated by the budget and problems concerning the interrelationships between marketing strategy and production strategy were marginalised. The planner argued with some pain as follows:

Shipping has resisted that orders could be booked on specific units in the production plan because if some units were missing later, he could take them from orders to other destinations and ship the rest later.

Production on the one side and sales and shipping on the other interacted weakly with each other as a matter of division of labour; but they strongly supported the point that BusinessPrint’s particular business challenges required a weakly integrated system.

The CEO was aware of this and pointed out that not only sales but also production were interested in maintaining this situation:

The factory manager has succeeded in convincing BusinessPrint that our environment is turbulent which we have to honour by flexibility. Personally, I think the issue of flexibility is exaggerated, and we should agree on rules of conduct with sales so that we can arrange for a longer order horizon.
The question of flexibility was thus a matter for the interpretation both of the uncertainty in the market, and of the relationships between sales and production. The CEO continued:

The factory manager has an unconventional view on things; he is very creative. He runs the factory by his intuition and his knowledge of people. He is good at getting projects through by motivating the workers. It has to do with happenings and celebrations when a certain level of production has been reached. But concerning hard facts he gets soft. I tried to set up a Management Information System so that we had some rules. The factory manager wouldn’t do it.

The CEO’s concern with planning made him transfer the planner from the accounting department to the production department in an attempt to control the factory manager. The CEO hoped that this move would install more planning and let the production process become more predictable. This was only a limited success:

I would like plans and ratios that tell me about assumptions, changes, output, resources etc. I did hope that the planner could have solved the problems with these. He was my right hand. He got the responsibility for production planning but he hasn’t changed much; he has had to live with the customers’ demand for flexibility.

The creativity put into the then present management control system reduced the possibility to put issues and concerns in the perspective emphasised by the CEO:

We have to look at connections. When suggesting a new product, development should also look at the possibilities (in markets and production). Sales has to inform about the market’s requirements.

In a sense, the CEO here recognised that tighter control is a firm wide problem and not one which can be solved by small means. It had to incorporate sales, production and shipping in one move. There was a call for a mechanism, such as an integrated plan, that could inform about the effects of interrelated activities concerning how BusinessPrint could respond to the customer, how the product could be fitted to the production process, and how the development work could be concerned with the market and the production system. What the CEO could not do himself and what the planner seemed not to be successful with was as follows:

I was interested in setting up the assumptions needed to compare what we expected in terms of results. When I see figures deviate from a plan something must be wrong in our cost control, but the control of our processes is very loose so we don’t know whom to blame. How can I accept that things are out of control in this way? I do because the factory manager has other means to run the production (CEO).

The CEO acknowledged that the factory manager had a way to run things. However, these means were not transferable to himself, and they could not serve as a basis for his comparisons with a flexible budget just as they seemed not necessarily to be stable across periods. The CEO therefore also suggested that his desired management control system should be paper-based and concerned with explaining the effects of expectations not met. The call for visibility was strong. Visibility, in this form, was oriented towards enabling insight that would connect the factory’s work with the work in the management offices. The CEO’s quest for visibility created a possibility for a form of management based on deviance from plans and budgets as the factory’s work should be understood in terms that emphasised “ratios that tell me about assumptions, changes, output and resources”, as the CEO suggested.

Visibility was connected to the CEO’s concerns for BusinessPrint as symbolised by the indirect costs. The indirect costs stood as “unexplainable” as they were related to various activities such as set-up costs, quality costs, education and training costs, waiting costs and planning costs in the...
production department and amounted to about 35% of all production costs. Or, as the CEO explained:

We want IPOs (indirect production costs) to be as low as possible, but it is really a mess of everything. They say nothing about productivity, and I think that high IPOs in some situations could suggest that productivity be well. We often lack materials, and people have to wait. IPOs increase, but what is the cause? We don’t know enough about it. Frequently we can just say that there are “illnesses” in our planning.

One response to what was termed “productivity problems” in cutting and welding was the factory manager’s suggestion to invest in a numerically controlled machine which would automate parts of the production process. In contrast, the CEO proposed to subcontract most, if not all, of cutting and welding to subcontractors and by that move he attempted to export fixed, indirect cost and make them variable on their return as subcontractors would be paid by the piece. This move would make costs variable and controllable through the contribution cost system. Subcontracting would both make production cost more understandable, as more costs were direct, and improve Business Print’s cash position, as investments in the numerically controlled machine would not be needed.

The CEO thus saw the possibility to invent management control mechanisms which could couple sales and production more tightly through a restructuring of the production process and to subcontract some of its production processes. This paper-visibility-structuring model of management practices emphasised the manufacture of predictability, and did not accept that flexibility had to be anarchic, just as flexibility might not be what the customer really wanted if it was possible, e.g. to share extra profits generated by a more appropriate set of relations between customer and Business Print.

The CEO thus attempted to establish cross-organisational linkages based on ratios, MRP management controls, and a tightening of the conditions of sales. He focused on stability, or its potentiality, with a view to reduced costliness and financial penetration of Business Print’s activities.

2.2. Hands-on, politics, and labour-processes: the present political organisation

The production manager’s view was less a matter of producing formal knowledge than a matter of using insight. Flexibility required a JIT production system, and productivity would be increased through communicating with workers and motivating them to be interested in Business Print’s affairs. The introduction of new production technology would not only support productivity but also flexibility, although it could increase Business Print’s business risk as more costs were made indirect through additional investments in, e.g. numerically controlled machinery. Co-operation was underscored not only between workers and management but also between product-developers and the production-team to make new products ready for production in an attempt to design for manufacturability. Here, the focus of management activities was to support the mobilisation of information in local arrangements of “insight-deployment” to pinpoint management as a “hands-on practice”.

The factory manager attempted a management form which emphasised motivation, shared culture, and common obligations. He described his informal management style as follows:

Most of our communication is oral, and there are no job-descriptions. I think this is a strength, namely that everything takes place in an informal atmosphere.

The production manager (the factory manager’s deputy) continued and suggested that his main responsibility was as follows:

It is my main responsibility to get the controversies between white and blue collar workers out of the world. This work requires psychological insight just as it presupposes knowledge in industrial relations. You have to find a balance between the analytical part (i.e. budgets), management (i.e. firm’s strat-
And he continued:

We do debate the budget a lot. Each of the three supervisors gets a copy of the budget but they are not particularly thorough in their comments. They are used to solving practical problems rather than analytical problems. Until now I have not seen people who were good at both financial management and production.

It is not that “the figures” were not important. However, the figures used went hand in hand with the attention to particular, practical issues and problems in the factory. The figures were deployed locally since sets of statistics, as Jönsson and Grönlund (1988) would suggest, were assembled to underscore the mobilisation of local information systems. Rather than being oriented towards total information panopticons (Zuboff, 1988; Sewell & Wilkinson, 1992), information was tightly related to talk and communication (Preston, 1986; Ahrens, 1997). It is thus not that information was not important but that its importance was formed in and through talk, and attended sequentially in time and space. Consequently, much of the management of the production department was multifaceted and juxtaposed men, machines and products. One supervisor, for example, explained productivity as follows:

You can’t measure it. You can hear the rhythm of the shop. The less people talk, the better it is. When they are too busy to talk, it is always going well.

The insistence on what the production manager called “leadership”—rather than numbers—is paradoxically perhaps clearest from the role of the piece-rate system. The technical normal standard of 100 was exceeded by far, up to about 140 to 160 and was not primarily intended to be a true reflection of the burden of the work. One supervisor pointed out that “I know what people can do, and I have to be rough sometimes so the speed of 140 (!) can be attained”. The piece-rate system did not primarily improve productivity. It was not even primarily oriented towards productivity problems but perhaps more interrelated with other concerns such as the men’s inclination to work and their orientation to quality. One supervisor explained when asked whether speed would produce quality problems:

No! We know who make the mistakes. We can make them repair the item again, but as this is outside the piece-rate, they would get minimum-wage.

There was thus a tendency for the piece-rate system to reward quality and the mentality behind it.

The piece-rate system, however, also resulted in constant negotiations between management and workers about standards. Particularly in situations of change (e.g. the introduction of new products or new variants), the probability of making mistakes would increase, and the lack of knowledge would hamper productivity and thus wages. Therefore, there were constant debates about piece-rates both for new products and variants, and about the work-load in the transition period between two sets of rates. The production manager explained:

I meet the shop stewards 1/2 to 3/4 of a day per week. They often come to me—rather than to supervisors—and we discuss “active things”, and not so much about problems. Often we talk about the systems group’s results.

The systems group included supervisors, the production manager, the quality manager and people from the department for production techniques (which also suggested new piece-rates). They developed the list of issues to be negotiated between management and workers and instituted an ongoing process of political problem solving. The piece-rate system and the talk between managers and shop stewards were part of a politics in production. Managers were careful to reward continuity, to avoid industrial action, and to support workers who could accomplish varied work
with minimal errors. The possibility of industrial action was familiar to BusinessPrint, and “political risk” was ever present.9

This hands-on version of management control was based on “intuition and feeling”, and when managers suggested that “everybody knows the man’s abilities so he is not able to cheat us”, the reference is not made to time–motion studies but to this person’s competence, inclination, and orientation to “solve the problem thoroughly”, as it was said. Also, as this management style required insight into “workforce psychology and industrial relations” which were necessary to be able to “sense the mood within the shop”, managerial knowledge was focused on workforce management. As the piece-rate system only to a certain degree conformed with maximum productivity, it did not only support efficiency directly. It also supported workers’ acceptance to work according not only to the formal rules laid down but also their inclination to be flexible. It was costly to be flexible; part of this costliness arose from the need to pay some workers more than others.

When the productivity problem arose in cutting and welding, the factory manager suggested that a numerical machine might be able to create the additional capacity needed to increase throughput in production. Probably it would. However, it would also continue to make cost primarily indirect, and the mechanisms to solve production issues through a person-to-person management style would be underscored. This would emphasise—and reproduce in a stronger format—a management control procedure based on hands-on knowledge and the politics of handling labour.

3. The invention of management control

The case-study illustrates management control in the process of being invented and justified (Preston et al., 1992). It is about management control “in the making” (Latour, 1987). The two forms of management control described provide not only divisions according to different professional frames of reference (Spybey, 1989, 1984; Armstrong, 1985). They are also involved in a project of defining and inventing management control against a counterfactual argument: what would have been different had its present form not been present? When the CEO proposed to insert mechanisms that make production processes amenable to control at a distance, he was arguing a hypothetical case whose projected consequences were fragile potentialities. Similarly, the factory manager argued a hypothetical case, albeit a different one. He described the status quo, and was as such concrete and specific. However, the judgement that what was present was good, was a hypothetical theme difficult to justify on other grounds that at the time BusinessPrint as such was profitable.

The connections between management control and profitability were therefore uncertain and ambiguous. They were addressed via problematisation when management control strategies were assembled in the process of responding to different theories of “core competence” and the question by what principles its management control procedures should be devised and organised. Gradually, new topics (such as “customer”, “technology”, “subcontractor”) for this debate were voiced and each management control strategy was evaluated by its ability to incorporate them in a reasonable manner. This was mobilised with reference to ideas such as flexibility, innovation and productivity, all of which were defined and incorporated, although differently, by the two forms of management control as is illustrated in Table 1

Table 1 illustrates the two versions of management control in BusinessPrint. Management control strategies had to prove themselves via three obligatory passages that had to be mobilised in such a way that they intelligently were rendered parts of management control procedures. They gave flexibility, innovation and productivity meaning. Both forms of management control seized flexibility and moulded it to fit their different respective key characteristics. All agreed on the necessity of the three obligatory passages, all of

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9 One of the management accountant’s main concerns was to create the possibility to draw on financial resources in case of strike. He was not willing to disclose what funds he was talking about, but BusinessPrint’s financial base was weak due to a recent management buy-out.
which, however, were adequately ambiguous to allow very different interpretations since they translated differently into customers, technology, and workers. This raises two issues. Firstly, how was it possible for a particular management control procedure to become dominant? How did it gain support? Secondly, how did the object for management control develop as managerial technologies would reshape organisational activities and align them anew?

3.1. Managerial knowledge and management control

The debate on the desirability of the two forms of management control was located in managerial offices and was “lifted out” of, if related to, the daily work to produce and sell products. Although it took departure in indirect costs, it was a piece of talk which quickly extended well beyond allocation of fixed costs to products or other mechanisms for overhead cost control. The debate was carried out against a much broader problematisation of what constituted the business problems of BusinessPrint. It quickly spiralled away from indirect costs into areas such as marketing, production, new technology, productivity, and political risk. The debate on indirect costs constructed linkages to issues more complex than initially expected by managers. Additional aspects to indirect costs were continuously invented and BusinessPrint’s strategy was taken on in its entirety. The explosion of the debate, however, created a new and larger space for the resolution of the firm’s problems, and each management control strategy thus had to prove its worth by creating linkages between customer, technology, subcontracting on the one side and itself on the other. Such explanations were continually called upon. Both management control strategies were required to explain all these issues and incorporate them appropriately. The coherence of this incorporation signified the relevance and power of each management control strategy.

The development of support for a management control strategy was a process where the original
impetus—the indirect costs—was contextualised, deconstructed, and problematised with a view to explaining the importance of the indirect costs to the firm. The indirect costs problem was made complex as it was transformed from “simple” costs to one of “complex” management control which was then staged as challenges to the two management control strategies’ ability to incorporate the firm’s problems. This involved a statement on how the customer, the subcontractor, the worker and the product were to be aligned in the name of the underlying type of managerial knowledge and decision making preferences. This involved not merely a description of the customer, new technology, and the worker; it involved a reconstruction of them to fit a preconceived notion of management control procedures.

For example, the customer was given voice by organisational actors and was spoken for by interested internal parties (Mouritsen, 1997). The flexibility required by the customer was constructed by internal parties who represented the voices of the market and presented them anew as arguments produced within certain preconstituted ideas of management control procedures and managerial technologies which defined BusinessPrint’s problems differently. The customer was an obligatory passage that was defined according to the knowledge and competence which underwrote each of the management control strategies. This is where the CEO attempted to say that the customer really was not so interested in flexibility as was generally suspected in BusinessPrint. According to this view, the possibility to redesign the relations to the customer should be emphasised so that reduced flexibility could be agreed upon. The factory manager was different. Flexibility, according to his view, was the key to competitiveness and he emphasised a production organisation which could accommodate any customer requirement. These were inscriptions of the customer devised by the explanations made possible when managers appealed to their preferred form of management control. The customer was a medium more than an end.

Similarly, new technology was given voice by organisational actors when they debuted productivity and the cost-structure of Business Print. Were indirect costs necessary? The factory manager argued that they were because these enabled the high degree of flexibility and innovation. It did not mean, though, that they were beyond control, the factory manager argued, but this control should be executed via a heightened emphasis on understanding them directly. He attempted to introduce Activity Based Costing to invent an accounting system, as it was argued, that could monitor the production process directly and the consumption of indirect resources in particular, primarily in the area of quality, set-up and changeover, and design to customer specification. Even if this was the case, however, there was little conviction that this measure really could redirect the management of BusinessPrint towards other strategies. The possibility to think of interesting financial relations within production was meagre since the indirect costs were not only conditioned on “traceability” to cost-objects. They also arose from industrial relations issues in production where, for example, the piece-rate system was related to motivating some of the work-force to make an extra effort. The speed of the production process greatly exceeded the standard of 100 and it was designed in this way to reward those who attempted to work hard and thus not accept informal “work-to-the-rule” agreements among workers. Therefore, to a certain degree, the proposal to embark on Activity Based Costing might be an attempt to curtail the CEO’s position by suggesting alternatives, whose investigation would delay and postpone the “final encounter” between the two possible versions of management control. In a sense, by introducing Activity Based Costing, the production manager possibly suggested a means in which he might have little faith himself; but it might have been seen as an attempt to try to convince the CEO, that there might be technical solutions to his problems of lack of insight into the indirect costs. Such a move would, if successful, create a new agenda for the CEO.

The CEO saw things differently, however. Indirect costs to him tended to distort visibility, as it was merely counted and presented as a large, undifferentiated cost pool. They represent a dark spot where the CEO could not go, and he wanted to get rid of it to enhance a form of visibility that
he understood, namely the direct cost approach. He preferred outsourcing to investments in new flexible production machines to change the cost-structure towards a larger part of variable cost and thus make the financial structure more flexible. Through transforming costs, outsourcing would make the then present accounting system more useful in its orientation towards monitoring and managing variable costs. This transformation of fixed to variable costs emphasised a form of visibility by which managerial knowledge and power depended on monitoring boundary conditions rather than the production process itself.

These examples (the customer and technology) illustrate that both management control strategies attempted to incorporate customer and technology. It was such a constellation of issues that a debate on management control brought about in BusinessPrint. Management control may prima facie be understood as an implementation of a strategy for an identified organisational entity (Anthony & Govindarajan, 1995). In BusinessPrint the debate on management control contrasted to this view and was a process less of disinterested analytical activity than a politics of explanation where customer and technology were spoken for by interested internal parties.

3.2. Controlling organisational spaces

The solution proposed by the CEO was to produce a virtual organisation and to employ information panopticons (Zuboff, 1988; Sotto, 1997) to control production within and beyond BusinessPrint. It would redefine the relationships between regions within and beyond BusinessPrint as it would change the patterns of dependence and autonomy between the entities involved in manufacturing the products. Castells (1989, p. 169) points out that “[t]he space of flows among units of the organization and among different organizational units is the most significant space of the functioning, the performance, and ultimately the very existence of any given organization”. Goods and products were transferred from subcontractors through BusinessPrint to the customer and the end-user. The connections between the regions involved in producing the product were envisaged to be organised differently through the two forms of management control.

The paper model suggested that the connections between the production places were to be controlled by planning and monitoring. The individual production cell was generalised to be a digit in an information system, and the flexibility which was managed by each production cell’s ability to improvise and get products shipped was to be changed. Through attempting to increase the planning horizon, the uncertainty of the environment was to be reduced, and the whole set of flows across the intra- and inter-organisational spaces was reconstructed to be mediateable by plans. The flexibility needed was reduced and accommodated through agreements with the customer on conditions of delivery. This strategy would see flexibility as impeding planning, and it would seek to reduce the need for it.

The hands-on model, in contrast, suggested that the connections between the spaces of production were not the primary target for management control as they would not allow for the importance of improvisation within the individual production cell. The separation between production cells was to be maintained and the management of people within each unit was presented as crucial. The politics of the individual production place required management to assure that production would not be hampered by industrial action of whatever form.

The two management control strategies differed according to the object made amenable to intervention as it regionalised space differently. Through regionalisation, the space of flows within and beyond BusinessPrint was set up so that alignments were constructed to fit the managerial technologies inscribed in the preferred management control mechanism. Regionalisation thus determined how a space of flows was controlled and who did it. It divided between locations and set up centres that were able to act on others’ actions and incorporate them. The distinctions in relations of autonomy and dependence between locations in the whole space of flows were predicated upon differences in power and domination. The two management control strategies worked out domination and power differently.
through their mobilisation of managerial technologies which aligned locations differently and lead to different conceptions of integration. It is not that one of the management control strategies was inherently more enabling than the other. They work out the intertwenement between distance and closeness differently. Latour’s (1987, p. 228) point that new technology can recast “the different spaces and different times (which) may be produced inside the networks built to mobilise, cumulate and recombine the world” applies here, and as each of the management control strategies drew on different managerial technologies, they would mobilise the world differently (Latour, 1991).

The power within the paper version resided in the possibility to act at a distance on spaces constructed as elements in a wider plan devised, executed and controlled from a centre. The informational mode of management, that characterised the paper version of management control, enabled the manager to influence action far removed from the centre. Through informational panopticons, the manager “reduced distance” and created an optic by which remote places could not only be seen, but were also constructed as media to implement the centre’s strategies. The CEO’s attempt to reconstruct the customer to being less demanding concerning flexibility, his suggestion to export large parts of the production process, and the idea to transform fixed costs to variable costs did two interrelated things. Firstly, complex relations were made simple as they could be debated as direct costs rather than as a set of overhead costs whose form and function were difficult for him to understand. Secondly, subcontractors and the customer alike were transformed to directly being part of a game which was not only controlled by BusinessPrint but also an integral part of its strategy to simplify its business processes. The managerial technology required here was one that inscribed subcontractors and the customer via a computer program where cost assumptions or demand assumptions were rendered calculable through contracts.

This managerial technology contrasted to the hands-on version. Here, managers worked though co-presence and awareness of the constant possibility of industrial action. This dissuaded managers to generalise workers into a simple factor of production, as the uniqueness of each day could produce conflict or resistance. Meetings, talks, and celebrations were managerial technologies that situated work in the production cell rather than primarily in the product. The distance represented in the product and the closeness of production processes were intertwined through local commitment to throughput whose manifestation was “co-operation”. It was not the case that workers and managers were unaware of “the environment”. The “remote” customer was present, even daily, as the constant requirements to accommodate rush-orders and new products manifested themselves in debates about piece-rates and other conditions of work. The remote stood in a direct relationship with the local and was incorporated via attention to disruption, change, unpredictability, and fluidity.

Both management control strategies thus concerned themselves with the intertwenement of distance and closeness through their managerial technologies. The paper version suppressed uniqueness and attempted to redesign subcontractors’ work, BusinessPrint’s production process, and the customer’s expected, normalised patterns of demand to fit a generalised mode of management control disregarding contingency and uncertainty. The hands-on version, in contrast, focused on uniqueness in subcontractors’ delivery, BusinessPrint’s craft based production processes, and the customer’s specific patterns of demand and the political problems that arise from struggles with the workers. Attention to contingency was pivotal to enable throughput. Both management control mechanisms took distance and closeness in but they created different expressions of their status.

The spaces of flows through BusinessPrint could be aligned by different technologies and its environment therefore had to be figured out. Questions about organisational boundary, technology, customer and the needs for flexibility, innovation and productivity were mobilised in a debate about BusinessPrint’s core competencies and its internal and external relations of autonomy and dependence. These boundary conditions were not merely aspects of the juridical version of the firm. They
were more about the way the customer, technology, workers and the subcontractor were defined and incorporated via interpretations of flexibility. As drawn in by the paper version of management control, it challenged the political organisation by its insistence on redrawing BusinessPrint’s internal and external spaces through passages that standardised the customer, the technology, the worker, and subcontractors.

The customer was drawn into the firm and used to transform the environment. Through negotiations with the customer it could be possible to contain uncertainty of sales and thus stabilise production. In this way, the customer was made an explicit part of BusinessPrint’s management control systems as a variable inserted directly into the production planning process. The customer was transformed from something “outside” to something “inside” and was defused as an argument for uncertainty.

The technology was debated as a boundary condition contextualised by a strategy of subcontracting. The debate on production technology (a numerically controlled machine) was taken on to solve a productivity problem. It could be resolved, however, as a strategy to export parts of the production process and make subcontractors compete on that part of the production process. The productivity problem could be externalised and the possibility of a technological solution, which would strengthen the production regime and underline the internal flows of production, could be rejected. In this way, the question of technology was also a question of organisational boundaries the control of which was changed from a politics in production to a matter of standard variable cost.

The worker was also transformed through the subcontracting measure. In the strategy of the politics of production, the worker was to be managed through industrial relations measures. In exporting production work to subcontractors, the CEO also wanted to export politically active workers. The possibility, and likelihood, of industrial action strained BusinessPrint’s capital, but through a virtual export of “political problems” the burden of large indirect overhead costs would vanish both because there was less likelihood of stoppages in production and because of the transformation of indirect costs to direct costs.

The subcontractors, although “outside” BusinessPrint, were integrated in its management control system as factors in a computer program. They were represented as variable costs, could be compared with each other, and could be rewarded on their productivity. As they were constructed as “variable” to BusinessPrint, it had little responsibility for manufacturing operations, but it had power to influence them considerably since they were part of the information system that drew together spaces from subcontractors through to and including—to a certain extent—the customer.

In a sense, through the informational accounting version of management control, fixed costs could be exported (technology and—to a degree—workers), political problems could be reduced (workers), customers and subcontractors could be integrated in the management domain of BusinessPrint (from organisational to inter-organisational relations) and thus BusinessPrint could possibly transform the production spaces according to an idea of a virtual company whose primary core competence would be to organise others. The inscription of the spaces of flows was less a mirroring of an existing organisation than an attempt to transform it. With the informational mode preferred by the CEO, BusinessPrint would underscore a commitment to a virtual organisation that existed more powerfully in information panopticons than in the producing entities (Sotto, 1997). In inscriptions, producing entities’ affairs were not merely described. In addition, what counted as management control was transformed. Problems of flexibility, innovation and productivity were partly spatial since they were part of a process by which spaces of flows changed and were regionalised. The spaces of flows were not merely steps in a logistical model of firms’ interrelationships; they were also—and perhaps more importantly—characterised by their position as centres or peripheries in flows of inter-organisational decision making. Through such transformations of space—via mobilising the customer, technology, and risk—the intertwinement of distance and patterns of closeness took new configurations which, however, did not come about automatically. They
were effects of struggles between managers in their attempts to devise management control systems. The “choice” between the “paper” or the “hands-on” version of management control was not the result of a mere calculation. It depended on the ability to seize flexibility, the customer, technology, or risk and to present these in a form that made them congruent with the preferred management control mechanism.

3.3. Owner-managers and employed managers

There is, as suggested above, a certain political economy element in the transformation of production processes analysed as struggles between workers and managers and in addition there is a struggle between managers over professional competence (Armstrong, 1985). On top of this there was another division between managers in BusinessPrint concerning ownership. The CEO and the CFO were owners because they carried through a management-buy-out some years previously, while the factory manager was an employed manager. There was a “control problem” because the factory manager was able to comprehend the factory system. He was acknowledged to be able to produce results but results were not enough for the CEO. He also wanted a means of control which then evaded him because of the factory regime oriented towards the immediacy in production. The factory manager was able to persuade the workers to work through his personal management style. In this situation, the CEO was put out of control letting the factory manager decide where the firm was going. The factory manager controlled the place of production by means unavailable to the owners. The CEO found this unbearable, however, not only for the lack of prestige of limited access to management decisions but because his concerns in some measure were different from those of the factory manager. The CEO was—because of the recent management buy-out—acutely aware of the firm’s low cash position which could jeopardise the viability of the firm if the men decided to go on strike. BusinessPrint would quickly face the prospect of not being able to pay the bills that would materialise irrespective of whether the firm generated cash or not. Perhaps the best example of the concern was the CFO’s joy when he explained that he had found a financing possibility if workers would go on strike in connection with the then upcoming wage negotiations.

There was, however, another dimension to the low cash position. The CEO was interested in using BusinessPrint as a cash cow to finance another venture, mobilised in a newly established product division, in digital technology. The firm’s product lines shared an analogue technology which over some years (they talked about 10 years) would have to be replaced by a digital technology. A proportion of BusinessPrint’s cash went into developing this technology. However, this product division was not put within the then geographical space of BusinessPrint but had been put in a separate company which was not only legally separated from BusinessPrint, but also geographically. The political tensions—which were highly problematical to the CEO—justified his decision to re-locate the development and production of this technology to a different part of the country with high unemployment rates and a workforce that was more likely to be “co-operative” than the one in BusinessPrint’s geographical area.

The development of this new product required financing, and BusinessPrint delivered some of this. Moreover this new technology was not only an up-to-date version of the technology that the existing customer wanted; it was also a technology which—it was argued—developed the customer-base and possibly made the firm less dependent on a single customer.

The political economy of the struggle between the two versions of management control was thus complex. It explained why the CEO was eager to get more of a say in running BusinessPrint: It was partly because he—as owner—wanted to be in control, and partly because his agenda required the firm to generate cash for a project that—to a certain degree—would manage the customer and the workforce by moving the firm to a different location: it would both get a more varied income structure because of the potential of new customers, and it would get less political risk due to a more disciplined workforce.
4. Conclusion

Even if flexibility, innovation, and productivity are often portrayed as important to modern production firms, it is often difficult to define what they mean. Their rhetorical qualities may rally people to attempt to change firms. However, it is only in their execution and thus transformation into management control systems that they become organisationally sedimented.

BusinessPrint, which is discussed in this paper, was torn between two translations between profitability on the one hand and flexibility, innovation, and productivity on the other. Contrasting the “paper” and the “hands-on” versions of management control, managers struggled to represent and transform BusinessPrint in two ways justified by two versions of what flexibility, innovation, and productivity could look like and how they could be managed.

The “paper” version of management control stressed the importance of plans and deviations from plans to control internal and external processes of spaces of flows. It argued that there be a virtual firm whose comparative advantages accrued from the ability to incorporate flows of goods and people through an informational mode of management. In contrast, the “hands-on” version of management control stressed human resource management and industrial relations as the key to success in the market. Labour processes were seen as pivotal as they determined the rate by which throughput was achieved. People and politics, rather than information, made a complex production process run.

These versions of management control expressed different concerns for the control of spaces of flows. The “paper” version attempted to control production at a distance so that each space was fitted into a informational representation that could govern a production network beyond the boundaries of the firm. Each entity in this network was mobilised as nodes in a process governed from the informational centre and its contribution to the network was highlighted. This was a challenge to the “hands-on” version which emphasised the differences between spaces (both regarding people, technology and politics) and resented being made similar in formation systems. There was, in contrast, a more focused attention to the local conditions that made production inherently unstable and fluid.

The distinction between the two forms of management control was not only important for its attention to the means of management. Management control issues were perhaps more important because they gradually took on strategy in its totality, and via debates on appropriate forms of management control the issue of (the control of and through) flexibility took on new elements such as the constitution of customers, technologies, the firm’s boundaries and political risk. For example, about the development of productivity, the “paper” version attempted to subcontract part of the production process rather than invest in numerically controlled technology. This transformed fixed costs to variable costs and made comparison between different suppliers’ productivity and prices possible. The “hands-on” version, in contrast, would introduce technology to improve productivity and reduce set-up time. It also, however, confirmed that production is a local practice. In both situations, the questions of technology could not be separated from questions of governance, the boundaries of the firm, and the status of the customer.

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