CoPs facing rationalization: The politics of community reproduction

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Abstract

Purpose: This article aims to explore the relationship between contemporary forms of manufacturing rationalization and the reproduction of communities of practice (CoPs) centred on tasks and craft. Building on critical literature highlighting tensions between CoPs and rationalization, this article aims to develop a nuanced account of how CoPs are reproduced in the context of rationalization.

Design/methodology/approach: A qualitative case study was conducted of a CoP involved in the production of automotive components. Following a change in ownership, the company was instructed to rationalize production according to principles of lean production. Data were collected through participant observation and semi-structured interviews.

Findings: The CoP of the case study reinterpreted, resisted and redefined the lean production practices according to established norms and values. In collusion with local management, workers protected the integrity of the community by engaging in hypocritical reporting. While lower-level managers buffered the rationalization pressures, workers would "get the work done" without further interference.

Research limitations/implications: The critical research approach may be applied to a wide range of cases in which informal or professional work organization collides with change programmes driven by management. Future research is encouraged to investigate more

closely how CoPs gain access to formal and informal power by enrolling lower-level managers in their joint enterprise and worldview.

Practical implications: Managers should be aware that attempts to rationalize community-based work forms may lead to dysfunctional patterns of organizational decoupling.

Originality/value: This study is one of the first to empirically examine the relationship between CoPs and manufacturing rationalization.

Keywords

organizational learning, communities of practice, rationalization, lean production

Introduction

Communities of practice (CoPs) are informal groups that collectively develop their identity and repertoire through pursuing a joint enterprise (Wenger, 1998). CoPs are central to contemporary debates on "new organizational learning" (Örtenblad, 2011), which is collective and situated in practice (Lave and Wenger, 1991; Cook and Yanow, 1993).

In a recent article, Ingvaldsen (2015) argues on theoretical grounds that the tendencies of contemporary rationalization run counter to the formation and reproduction of CoPs, thereby integrating previous critical research on CoPs, management, power and formal organization structure (Contu and Willmott, 2003; Cox, 2005; Pemberton *et al.*, 2007; Raz, 2007; Örtenblad, 2009). In this article, we ask how CoPs are reproduced in the shadow of corporate restructuring and manufacturing rationalization. Extending Ingvaldsen's (2015) argument, we highlight the social processes and technical contingencies that make CoPs – and new organizational learning more generally – resilient in the short term and perhaps even in the long run.

Previous analyses of CoPs and its associated forms of learning have mainly emphasized micro-level interaction (Gherardi, 2009) and newcomers' socialization paths (e.g. Nicolini *et al.*, 2003). However, how CoPs are situated within the wider organizational context of formal structure, power and ideology has received insufficient attention (Contu and Willmott, 2003; Raz, 2007; Ingvaldsen, 2015). Wenger's "reinvention of [CoP] as a managerialist conception" (Cox, 2005, p. 534) severely obscures an important theme in the early literature: how CoPs exist beside – and partly in tension with – the managerially prescribed work organization (Brown and Duguid, 1991; Kimble, 2006). Here, we return to the original, non-managerialist version of the concept to contribute to debates on the relationship between CoPs, management and formal organization structure.

The research topic is approached through a case study of a small department producing automotive components. Over time, workers had developed a CoP, but following changes in company ownership they were suddenly obliged to conform to principles of lean production. The resulting dynamics are analysed through a "power-process" perspective (Vallas, 2003), showing how workers and lower-level managers reinterpreted and resisted the officially prescribed production principles and thereby buffered the impact of rationalization on the community.

CoPs, formal structure and rationalization

At the basis of the contemporary interest in CoPs are the works of Lave and Wenger (1991) and Brown and Duguid (1991). Lave and Wenger (1991) show how collective learning in organizations is woven together with identity, artefacts, language, morality and patterns of socialization, leading to the emergence and reproduction of workplace communities. Hence, learning and knowing are processes situated in concrete practices. The knowledge cannot be

fully explicated and captured in operating procedures (Cook and Yanow, 1993) and learning happens along socialization paths that "elude any form of engineering and planning" (Gherardi *et al.,* 1998, p. 294). Örtenblad (2011) describes the learning mechanism associated with CoPs as "new organizational learning" as opposed to "old organizational learning", which centres on codifying, refining and exploiting individual knowledge as a de-contextualized entity.

Early formulations of the CoP concept are rather intuitive and heuristic (Kimble, 2006). Wenger (1998) introduces more rigour by conceptualizing CoPs as characterized by *joint enterprise*, *mutual engagement* and a *shared repertoire*. A joint enterprise is the result of a collective process of negotiation that reflects the full complexity of members' sustained mutual engagement. It is defined by the participants in the very process of pursuing it. CoPs have a shared repertoire of routines, tools, stories, artefacts, language and ways of doing things. The elements of a shared repertoire gain their coherence by belonging to the practice of the community.

Currently, CoP may refer to several related, but distinct, forms of group-based working and learning (Cox, 2005; Amin and Roberts, 2008). Alongside the original CoP centred on members' performance of tasks and craft in close, face-to-face interaction, Amin and Roberts (2008) refer to professional, epistemic/creative and virtual CoPs as distinct forms. Wenger's later works (e.g. Wenger and Snyder, 2000; Wenger *et al.*, 2002) depart from his previous conceptualization in framing CoPs as instruments of knowledge management and innovation, which can be managed and cultivated. To paraphrase Kimble (2006), the CoPs, who used to live "in the wild", became "tame" as objects of cultivation and harvest. Similarly, Örtenblad (2009, p. 239) refers to how the concept has been "'colonized' by functionalists" – a problematic development, as it sidesteps the fundamental difficulties in making instrumental for management what is situated in workers' collective norms and practices.

This article is based on the original, non-managerialist version of the concept – the task-/craft-based CoP (Amin and Roberts, 2008) – and picks up themes of power, tensions and contradictions prevalent – at least implicitly – in the early literature. In Brown and Duguid's (1991) study, "reps" rejected officially prescribed work procedures, the canonical practice, in favour of non-canonical practice developed informally over time within the community. The canonical practice and formal modes of interaction prescribed by management were hardly relevant for the unpredictable nature of the task environment. More recently, it is shown that CoPs sometimes function as "communities of coping", which resist and subvert managerial prescriptions and overall organizational goals (Raz, 2007).

To further understand the relationship between CoPs, formal organization structure and power relations, we evoke the concept of "rationalization". Rationalization is here used in a Marxian sense to describe processes through which labour productivity is improved through rearranging the division of labour and introducing new technology under capitalist relations of production (Adler, 2007). The prototypical form of rationalization is scientific management, which aims to bring production under managerial control through measurements, calculations

and standardization. Typically, scientific management involves close monitoring of individual operations and minute accounting of results (Ezzamel and Willmott, 1998). Rationalization has often led to adverse consequences for workers in terms of work intensification, de-skilling and suppression of autonomy (Johansson and Abrahamsson, 2009), but also to more extensive involvement, as technical efficiency depends on capturing workers' ingenuity and consent (Adler, 2007). In contemporary manufacturing, rationalization is often undertaken under the label "lean production", which extends Scientific Management (Niepce and Molleman, 1998) and incorporates refined process and output controls, such as total quality management and Six Sigma (Shah and Ward, 2007).

Ingvaldsen (2015) argues that the long-term tendencies of contemporary rationalization run counter to the formation and reproduction of CoPs along several dimensions. First, rationalization means that tacit and contextual knowledge are (attempted to be) made explicit, broken down and synthesized into new work routines. This is part of Scientific Management and gains further importance as new technologies automate manual tasks and confront workers with symbolic, digital interfaces. Second, informal learning in day-to-day work is supplemented and partly replaced by formally organized targeted problem solving in the spirit of old organizational learning (Örtenblad, 2011). Mandatory group-based problem solving using analytical techniques are now widespread in industry (Anand *et al.*, 2009). Third, technological change rearranges the division of labour and upsets established distinctions between crafts and tasks. Thereby, sources of work-related identification and "natural" trajectories of learning and socialization (Gherardi *et al.*, 1998) are rendered unstable. For instance, extensive automation blurs the distinction between mechanical and electrical trades, and has introduced new bodies of knowledge; for instance, programming. Fourth, technological change and reconfiguration of value chains call for centralized planning, which tends to override the trajectories of learning found in local CoPs.

Given these tensions, any attempt to rationalize community-based work forms will likely lead to struggles and negotiations over work forms, meaning and identity. Workers resist status deterioration and increased managerial control. New technological artefacts are ascribed meaning based on existing interpretative frames (Orlikowski, 2000) and may be contested independently of the designers' intentions. Even if Ingvaldsen's (2015) argument about long-term tendencies is accepted, the short-term dynamics will be political and unpredictable.

Methodology

The research design is a single-case study involving in-depth qualitative analysis of a CoP in context. The majority of empirical data were gathered through two of the authors' three-week employment at the case plant in May 2013. Data collection was initially open-ended, exploring how lean production was applied in Norwegian manufacturing. At the plant, the authors' task was to update product and process documentation. As information about processes was mostly informal and tacit, the researchers cooperated closely with the blue-

collar workers. Through this interaction, the authors obtained profound insight into the work practices and shop-floor culture. In July 2013, two other research assistants held similar positions for four weeks. In October 2013, the authors who had conducted the initial participant observations returned to the plant for follow-up interviews on key topics from the preliminary analysis. Table 1 provides an overview of the empirical material.

Analysis of the data was based on Vallas' (2003) "power-process" perspective on change, in which "outcomes of workplace change initiatives is in large part shaped by the social and organizational processes that unfold during the implementation of new work practices" (p. 227). Following Vidal (2007), we focused particularly on managerial orientations, worker power and workforce dispositions. Plant management's duty to conform to lean production set the process in motion, enabling us to investigate how the tensions between CoP work-forms and rationalization manifested and played out in this particular case. The norms and values of the CoP shape workforce dispositions and sensemaking, and importantly, also the actions of lower-level managers. The shared worldview of workers and lower-level managers, and its associated strategies, emerged as the key finding to explain the negotiated outcome of organizational changes.

In presenting the case study, we first establish that we are dealing with a CoP and explore its characteristics based on Wenger's (1998) main categories. Reflecting the processual form of analysis, we proceed with a narrative on how changes unfolded, structured around the two top-level categories from the inductive analysis of field notes and interview transcripts (Corbin and Strauss, 2008): "Reinterpretation and resistance" and "Middle managers as a 'buffer of hypocrisy'". Each category gives rise to a separate section that elaborates on the category and relates it to the other constructs.

Table 1: Overview of empirical material

Period	Material collected
May 2013 (three weeks)	Two of the authors worked at the plant and engaged in participant observation, which was written up as field notes.
July 2013 (four weeks)	Two research assistants worked at the plant and engaged in participant observation, which was written up as field notes.
October 2013 (two days)	Semi-structured interviews, transcribed: 3 operators, 1 team leader and 2 middle managers.

Case study

The case department as a CoP

The case plant produces parts for the global automotive industry, and has about 800 employees. The department under study is a small unit within the plant with 12 operators, one team leader, two middle managers who also serve as production engineers, and one production manager. As the production manager had additional responsibilities beyond the department, the middle managers were responsible for day-to-day operations. Operators followed a one-shift schedule, so the whole group met daily. Products were made for the aftermarket, so production was characterized by high product variety and small batches. Manual assembly tasks dominated, as there were no automated production lines.

Although the department was a formal unit in the organizational hierarchy, it can also be described as an informal task-/craft-based CoP. The department employees had, for many years, been more or less left to themselves by management, which had focused its attention on the high-volume production lines elsewhere at the plant. As one of the middle managers stated: "We were just the ones who used to potter around with some old stuff in a corner." In combination with exceptionally low turnover – implying prolonged mutual engagement (Wenger, 1998) – this led to the emergence of a CoP constituted around the main tasks in the department: making the parts and handling the old, unreliable machinery. The shop-floor culture was characterized by the value of "getting the work done" and strong individual "ownership" of specific products. Even though most work was performed individually, operators continuously informed each other of how they were doing and the progress of the work. When difficulties occurred, mainly due to the complexity of the assembly and sometimes lack of experience with particular products, the operators helped each other out. Considered as a group, the workers enjoyed extensive autonomy restricted only by production plans based on customer orders. They distributed tasks as they liked, chose their work methods, and coordinated tasks through mutual adjustment.

The identity of the community included a strong sense of being different from the rest of the plant. While "the others" were seen to be involved in mass production, "we" (the department) had to make a broad range of products and handle unreliable, old machines. The workers took great pride in this difference, and in their supposed superior ability to improvise, be flexible and make the machines work. "Getting the work done" despite unreliable machinery, delays and sudden changes in production plans could be seen as the community's joint enterprise (Wenger, 1998). Relatedly, workers would demonstrate strong commitment and put forth discretionary effort in solving production problems. The CoP not only included the workers, but also extended to the team leader and partly to the middle managers. The team leader, a former operator, was considered "one of the guys". He would spend about half of his time doing practical work. The middle managers, who had also been working in the department for many years, emphasized their strong bonds with the operators. One of them explained it in the following way: "I tell the operators: You're not here for me, I'm here for you."

Workers' interactions also embodied characteristics of a shared repertoire (Wenger, 1998). Work was often allocated without explicit deliberation, and workers just seemed to know when and how to help each other out. The following example is illustrative: During

packaging, a particular task was cumbersome for the worker. We observed that a colleague, who just happened to be nearby, spontaneously helped out without being asked. No explicit communication took place; knowledge about the product, the procedure and the social norms were embodied in their actions. In the department, there was widespread use of humour, jargon, nicknames and other communicative shortcuts, which would have been incomprehensible to outsiders. For instance, when referring to the various types of racks for packing, operators used a range of different shorthand terms, seemingly adhering to no logical structure.

The community-facing "Lean Enterprise"

Some years prior to the study, the plant had been bought by a multinational corporation with its own production system called Lean Enterprise (a pseudonym). Following the acquisition, the Norwegian plant was instructed to implement lean production. At the department, Lean Enterprise consisted of three main practices: (1) regular morning meetings to coordinate production, (2) the use of production indicators, displayed on a whiteboard in the production area, and (3) standardized work instructions. These practices do not amount to a full implementation of lean production, but are clearly intended to put work processes under rational control by "minimizing […] internal variability" (Shah and Ward, 2007, p. 791).

Two of the authors were present when Lean Enterprise was officially introduced to the department. A meeting for all employees was called next to a large, new whiteboard filled with various figures and diagrams along with the company logo. The three managers, the team leader and four operators participated, as well the plant's "lean expert". The remainder of the operators chose not to join the meeting, but were working as usual nearby. The lean expert introduced the whiteboard, which was to be used for displaying the production status and deviations in production volume, quality and delivery according to plan. Simple colour codes would indicate whether the status was satisfactory (green) or deviant (red). To emphasize how the new system would lead to new ways of working, one of the middle managers boldly declared: "We [the department] are now at day one of a new life!" However, when we returned for interviews about five months later, few changes had actually happened. Our analysis indicates that the lack of change had two related causes:

- Lean Enterprise was interpreted as a mechanism of managerial control and was resisted by the community.
- Middle managers, who were sympathetic to this resistance, protected the integrity of the community by becoming a "buffer of hypocrisy".

Resistance and reinterpretation

From the outset, workers showed very little enthusiasm for the whiteboard, its associated indicators and the morning meetings. A few days after the introduction, we overheard a

worker asking the team leader whether the managers could just carry out this meeting and give the workers a quick briefing afterwards. Given the values of the community, the formal meetings were considered a waste of time – a distraction from "getting the work done". Additionally, the worker seemed to imply that information would be disseminated throughout the group anyway, independently of formal meetings. In the later interviews, several workers stated that they had not been using the whiteboard; it was considered the "managers' business".

While morning meetings were considered a bothersome waste of time, the display of production indicators triggered anxiety and resistance. To the community, the whiteboard and the colour codes were mechanisms of managerial control, operating through the distribution of blame, as per the following example: Shortly after Lean Enterprise was introduced, the production manager was using the red colour to show a deviation. Anticipating how one of the workers would react, she stated: "[Operator's name], you must not let this red mark cause you a heart attack!" The worker who had been addressed responded defensively: "I've just been concentrating on my work – there's so much to do. It is definitely not my fault!"

This brief dialogue is typical of the way in which the community interpreted the colour codes to be about blaming individuals. The production manager was well aware of this interpretation, despite her earlier reassurance that the whiteboard was about visualizing the status in the department. The fear of "red marks" was a recurrent theme in the department, and the fairness of the indicators was repeatedly questioned. Most importantly, workers complained that delays in other departments, on which production depended, would show up as deviances in their indicators. This happened despite their best effort to compensate for delays caused by others. As such, they were "punished" at times when they were displaying the virtues of the community: flexibility and putting in extra effort to "get the work done". Additionally, the middle managers claimed that the measurements did not give the right impression of the status in the department. This category of fairness is further explored in the next section.

The final element of Lean Enterprise, the written work instructions, did not trigger resistance from the community. We experienced that workers were happy to go through the assembly processes with us in order to write the instructions. The written instructions resonated with the community's need to preserve knowledge about operations that were performed infrequently. Additionally, the instructions were not enforced as standard operating procedures. We observed that, in practice, workers were free to depart from the procedures. The instructions were more like a reference book, to be used as needed by the individual worker. They were not associated with Lean Enterprise.

Middle managers as a "buffer of hypocrisy"

The community's interpretation of Lean Enterprise clearly ran counter to the intentions and prescriptions of the production system. Workers did not use the whiteboard for daily

production management. Nor did they use morning meetings or performance reports to improve standard operating procedures through "continuous improvement". Confronted with this resistance, managers did not attempt to enforce compliance with Lean Enterprise. On the contrary, they effectively aided the workers in protecting the informal work organization from rationalization pressures. They did so by decoupling formal reporting from actual work practice, becoming what we, inspired by Brunsson (1989), label a "buffer of hypocrisy".

The hypocrisy primarily showed through two related practices: (1) ceremonial morning meetings and (2) redefinition of how production figures were measured. Throughout the period of investigation, regular morning meetings were held, but frequently only the team leader and the middle managers participated. Workers preferred to get on with daily tasks, and managers allowed them to do so. In the meetings, numbers were indeed written down and graphs were coloured, but this reporting was largely decoupled from what happened on the shop floor. The measures had been redefined in such a way that they would be useless in any serious attempt to coordinate or improve production based on the numbers.

Already when the figures were introduced, the middle managers wanted to adjust definitions to make the results as uplifting as possible. One example was a discussion on how to measure "(on-time) delivery". Middle managers argued that the figure representing delivery was to be coloured green as long as they were delivering in accordance with a revised daily production schedule, which took into account, among other things, delays caused by other departments. The production manager, on the other hand, stated that all deviations ought to be based on the initial production schedule. This latter alternative, which is obviously more in line with lean production principles, would have the effect of stating a deviance regardless of why the plan had been revised. According to the middle managers, such a measure would be "unfair to the workers", since numbers could turn red even though the workers had "done nothing wrong". The production manager disagreed, and argued that it should be made known how much "firefighting" was going on in this department because other departments had changed their priorities. Nevertheless, several weeks after the figures were established, our observations indicate that the team leader continued to colour according to deviations from the revised production plan, rather than the initial plan. In consequence, very few deviations were actually marked on the whiteboard, since plans were revised in such a way that the daily objectives were achieved.

The figure representing "productivity" was also contested, as explained by one of the middle managers during interviews: "We haven't really found a good way to measure 'productivity'. It's just coloured green […] We admit to not using it as intended." Although nothing was actually measured, this did not prevent them from "updating" the department's status on productivity on a daily basis. Later in the interview, the manager revealed how the figures and colour codes were followed up: "I take them down and it just fizzles out to nothing." This statement is consistent with our observation of a high pile of reporting sheets lying in the manager's office. It seemed as though higher-level managers were not interested in the numbers, and within the department, the reports were not followed up systematically.

The behaviour of the middle managers can be interpreted as giving in to the workers'

demands to be left alone. However, as peripheral members of the CoP, the middle managers largely shared the workers' attitudes toward Lean Enterprise. Like other lower-level managers at the plant, they expressed that Lean Enterprise had been forced upon them against their will. The mother company was considered centralist and bureaucratic, as shown in the following quote:

> [The city in which the headquarters are located] is the core of the corporation, everything is controlled from there, and things must be done the way they decide it [...] It seems like the corporation wants to implement [Lean Enterprise] everywhere without considering the different contexts. (Middle manager)

This centralization was contrasted with the flexibility and practical arrangements at the local plant and in this particular department. The other middle manager stressed the necessity of adjusting Lean Enterprise practices to fit the particular unit: "This system [referring to the whiteboard with the figures] must then be tailor-made for each unit. We get a template, but this template must be adjusted for the specific unit."

These quotes highlight middle managers' doubts about the appropriateness of Lean Enterprise for the department. In light of the fact that the production figures were redefined into something technically useless, managers clearly showed little confidence in the whiteboard and indicators as instruments of efficient production. Nevertheless, they were instructed to implement it, and could not openly reject it. The result was a decoupling of formal structure and actual work practices (Meyer and Rowan, 1977). Pretending to act in accordance with Lean Enterprise, middle managers buffered the community from the practical consequences of lean rationalization. Through middle managers' hypocrisy, the community was able to reproduce and continue along its natural trajectory of socialization and learning, as if little had happened.

Discussion and conclusion

The case study demonstrates empirically that there are tensions between CoP work-forms and contemporary manufacturing rationalization, and that attempts to rationalize community-based work forms lead to shop-floor struggles over meaning, identity and work practice. By exploring processes of reinterpretation, resistance and hypocrisy, the study reaffirms Ingvaldsen's (2015, p. 439) claim that even within manufacturing, CoPs may succeed to contain rationalization pressures – at least in the short term.

Furthermore, the study qualifies Ingvaldsen's (2015) argument about managerial strategies, the scope of rationalization and consequences for CoP reproduction. As we have seen, middle managers' strategies protected the CoPs' integrity and evolution, rather than overriding it with an "old", rationalistic approach to organizational learning (Örtenblad, 2011), as implicit in lean production. Middle managers justified these strategies based on their assessment that lean production was unsuited to the particular task environment in the

department, which was characterized by more variability and uncertainty compared to the mass-producing units at the plant. If this assessment is valid – and not simply an expression of the community's values and vested interests – it suggest that CoP work forms may be functional even in the long term at the fringes of mass production.

This study contributes to understanding the relationship between CoPs and formal organization structure, particularly the role of lower-level management. The peculiarity of the case department pertains to the fusion of formal structure and informal community, which put the middle managers in an ambivalent role of negotiating the boundary between two groups to which they belonged: management and the community (cf. Wenger, 1998, pp. 109–110). When lower-level managers are enrolled as peripheral members of the CoP, power relations are altered so that the traditional buffering function of middle management (Hales, 2005) can be mobilized in favour of the community. It allows the community to resist rationalization pressures by partly subsuming the official work organization to the unofficial norms and values.

Combining the early conceptualizations of CoP (Brown and Duguid, 1991) with concepts and methodologies from critical organization analysis (Vallas, 2003; Vidal, 2007; Ingvaldsen, 2015) may inform a research programme that properly situates CoPs and new organizational learning within relations of power and domination (Contu and Willmott, 2003). It avoids the strong functionalist or managerialist assumptions on which the analysis of organizational learning and the learning organization is often based (Örtenblad, 2011), and can therefore give a more realistic account of the phenomena. Going beyond the topic of organizational learning, it may advance our understanding of a wide range of cases in which informal or professional work organization collides with change programmes driven by management. Examples may be the often troublesome implementation of new accounting regimes in the public sector (e.g. Tremblay, 2012) or the contested adoption of lean and other manufacturing concepts in services (e.g. Holmemo and Ingvaldsen, 2016) and healthcare (e.g. Benders *et al.*, 2017).

An organization in which actual work practice is largely decoupled from formal structure may seem dysfunctional, as much effort is squandered in working against or around official prescriptions. However, as argued by Brunsson (1989), hypocrisy may also be a reasonable adaptation to competing pressures. Insofar as the CoP work forms are better adapted than lean production to the social and technical contingencies of the specific task environment, the hypocrisy may actually advance overall company goals of efficiency, retention of employee motivation, and innovation based on the learning that takes place in the community. Top managers should show caution in advancing universal "best practice" (Netland, 2012) when hypocrisies, or even inferior organizational learning, are likely results.

As an alternative, management may decide to appreciate the informal work practices, value them as a context of organizational learning, and explicitly work with the community. An approach to change management driven more by dialogue and less by compliance could potentially bridge the gap between the community's values and prescribed operational practices. Management and workers could engage in joint sensemaking regarding how the

operational practices should be enacted and what purpose they should serve. This would require management to be open to modifying the production system as a response to workers' concerns. In a sector characterized by cost-based competition and multinationals insisting on global blueprints for "best practice" (Netland, 2012), this may seem like wishful thinking (cf. Thompson, 2003). Still, the interpretive flexibility of modern manufacturing concepts may leave room for local processes of dialogue in which informal norms and established ways of working may be turned into a resource, rather than a source of resistance (Rolfsen and Knutstad, 2007).

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