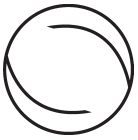

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Taking Teams Seriously in the Co-creation of Firms and Economic Agency

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Abstract
In this paper it is suggested that it is time to take the agency of teams seriously. Whereas the debate has previously focused on how firms may function more effectively by using team-based work organization, our aim here is to discuss and understand how teams affect the evolutionary dynamic of companies. Fieldwork in four Danish manufacturing companies helped us discover that firms as 'communities of teams' are highly dynamic entities with complex layers of different team forms that operate, innovate and improve by constantly recombining, collaborating across organizational divisions and redistributing authority, thereby challenging some of the existing 'idioms' of team research and theories of the firm. Building on these findings, we rethink research on teams by re-describing the evolutionary dynamics of firms and call for new comparative research.

Keywords
economic agency, team communities, theory of the firm, work organization

Introduction

In 1987 Richard Whitley published an article entitled 'Taking firms seriously as economic actors', which became programmatic for studies of how firms are socially constructed in different ways in different societies, i.e. the literature on national business systems (NBS) (Morgan, Whitley, & Moen, 2005; Whitley, 1999; Whitley & Kristensen 1996, 1997). Departing from the explanations of large firms given by Coase, Williamson and Chandler, Whitley (1987) insisted that firms should be given a more open-minded and yet systematic consideration:

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> Taking firms seriously as economic actors implies that their boundaries, constitution and development become significant foci of analysis and that the conditions under which particular kinds of firms become established, interact and change require systematic consideration. Rather than reducing them to epiphenomena of market processes or class conflicts, firms needs to be conceptualized as interdependent, semi-autonomous economic agents, which are able to control and direct the uses of resources by virtue of delegated property rights in ways which make a difference to economic and social outcomes. (Whitley, 1987, p. 126)

Since then, studies of the nature of firms have accumulated new knowledge about how differently they are constructed in different national contexts. For instance, in some societies firms are part of business groups which structure behaviour differently than the typical Chandlerian corporation, as a political-economic coalition limits the individual firm's autonomy and independence but increases its resource base, while in other countries they are regulated to become atomistic economic actors.

While firms were studied in their institutional context, the global landscape changed. In some countries such as the US, clusters of innovative firms came to challenge the dominance of large, multidivisional companies, especially in IT and biotechnology. R&D labs of large corporations that had been stimulated by antitrust legislation, patent systems and military procurement after the Second World War (Mowery, 2009) broke up and more 'open innovation' (Chesbrough, 2003) patterns emerged, while outsourcing changed production logistics. Within companies, work organization integrated planning and execution and softened boundaries between, for example, R&D and production, so that firms could change and redefine their roles continuously in an attempt to achieve both cost reductions and speedy innovation (Herrigel, 2010). As a result, the former conceptualization of firms as constituted as hierarchies with functional divisions among departments is being questioned (Heckscher & Adler, 2007; Stark, 2009).

Therefore, it is time to pose Whitley's question concerning 'work teams', which hypothetically may form the new building blocks of current economic organization. Teams should then be studied as 'interdependent, semi-autonomous economic agents partly able to control and direct the uses of resources', rather than epiphenomena of managerial decision processes and hierarchical control ex ante. Surely, work teams are in most cases initiated by top managers of firms as economic agents (Barker, 1993; Sewell, 1998). But the creation of teams may have a certain twist as to where agency is placed in the organization, and who can legitimately initiate particular actions.

Penrose (1959) is widely seen to have captured the basic logic of how firms grow and develop. According to her, managers are continuously developing novel routines to expand the operations of firms. When routines become mature they can be left to subordinate workers to be carried out and repeated. The firm's core competence is to hierarchically create novel routines of a distinct logic (see also Nelson & Winter, 1982).

The NBS approach complicated the hierarchy by showing that institutions helped shape both the social position of workers and managers and their mutual authority in divergent ways among countries. But NBS basically took for granted that firms followed the Penrosian logic.

One important aspect of team organization is to delegate both a set of operational activities and routines to work teams, and also to make them responsible for the continuous improvements of products, services and routines and, to varying degrees, for co-creation of innovative change (Benders, 2006; Benders & van Hootegem, 1999; Den Hertog & Tolner, 1996; Mueller, 1994; Sundstrom, de Meuse, & Futrell, 1990; Uhl-Bien & Graen, 1998). Thus they seem to break with the hierarchically structured evolutionary logic of firms.

Yet the literature on team organization mostly neglects to seriously reconsider the evolutionary dynamics of firms as a consequence of teams gradually gaining roles that managers held. The

literature takes for granted that responsibilities are delegated to teams top-down (e.g. Carroll, Hatakenaka, & Rudolph, 2006; Kanter, 1979; Kuipers & de Witte, 2005; Senge, 1990; Strang & Jung, 2009; Womack, Jones, & Roos, 1990). This view follows from the design of studies which focus on relations between a team and the managerial level.

Such a framing of the object tends to ignore important questions. What happens to the managerial function when a multiplicity of teams constantly doubt and change existing routines? What happens to managerial authority when teams become the primary location for improvements in performance? What happens to political coalition-making when continuous improvements differ among teams and locations are changed over time? What happens when teams, by taking seriously their obligations for continuous improvements and innovations, collide in struggles over demarcations? Do teams in such instances not start defining the problems that managers have to solve, rather than vice versa? Therefore, it is important to actually study how teams and their members are mutually constituted and jointly co-create the firm as a 'community of team communities' and how this changes the evolutionary logic of a firm.

Focus needs to shift to how relational team figurations (Elias, 1978; Emirbayer, 1997) become constituted, demarcated and developed through the everyday interactions of people within distinct organizational and institutional contexts, and must seek to understand how teams shape the work organizing practices and vice versa. If the Penrosian precondition of hierarchically shaped unity and coherence can no longer be taken for granted, firms must be studied as a community of teams in which it is a challenge to achieve collaboration (Heckscher & Adler, 2007), and where cooperative endeavours towards a common task situation is the moment for revealing their intra- and inter-relational processes among members. Thus teams are not treated as 'given' entities in isolation, but as forming a processual figuration that becomes constituted, assumes boundaries and develops in relation to other team communities (Bechky, 2003; Brown & Duguid, 2001; Elias, 1974; Lotz, 2009). To Kozlowski and Ilgen (2006), communities of teams evolve through a lineage of emergent states where their effectiveness as economic agents changes as they learn to resolve problems of (self-)regulation and governance. Departing from this view, it is our aim to explore (1) how team communities at the level of everyday work-organizing practices become shaped and governed through complex interaction and (2) how these micro-dynamics shape new organizational forms and the evolutionary patterns of firms.

The structure of the paper. The next section positions our approach within the general theoretical debate on teams and further specifies the possible consequences of team-based organizational forms. Four case companies are then introduced, followed by a section which describes our experiences and reflections on observations made on team-based organizations in these Danish manufacturing firms. Trying to take the empirical manifestations, relational and evolutionary dynamics of teamwork seriously, our study reflects an iterative research journey through a confusing empirical landscape. The fourth section takes stock of our findings compared to existing 'rules-of-thumb' in the team literature, while also moving the focus from the individual team to that of team communities in order to capture the dynamic of a firm. In the final section, tentative outlines of this dynamic are proposed, showing how it may be rooted in different institutional legacies and contexts, and calling for new comparative studies.

Studying Teams as Co-Creative Economic Actors

Interest in team-based work organization and its benefits exploded in the academic literature of the 1990s as well as among practitioners (Delbridge, Lowe, & Oliver., 2000; Kirkman & Rosen, 1999).

The concept and the benefits of teamwork are ambiguous and widely debated in empirical research, indicating that there are as many varieties and effects of teamwork as there are organizations experimenting with it (Casey, 1995; Den Hertog & Tolner, 1996; Guzzo & Dickson, 1996; Knights & McCabe, 2000; Koch, 2004). Nevertheless, these debates on teams draw on a set of traditions, which have resulted in a number of distinctive bipolar types of team (Mueller, Proctor, & Buchanan, 2000; van den Broek, Callaghan, & Thompson, 2004). Examples are: 'Swedish' and 'Japanese' (Benders & Van Hootegem, 1999), involvement and productivity (Mueller, 1994), high- and low-road (Bacon & Blyton, 2000), strong and weak (Koch & Buhl, 2001) and neo-Taylorist and anti-Taylorist (Pruijt, 2002). Although classified in various ways, all reflect different aspects of two prominent types: socio-technical and lean teams, inspired by the socio-technical school (Benders & Van Hootegem, 1999; Sewell, 1998) and the lean production philosophy rooted in Japan (Kenney & Florida, 1993; Womack et al., 1990). The implications of analysing the empirical manifestations and relational dynamics of team processes via such dichotomies become clear when taking a closer look at the two models.

Typically it is stressed (e.g. Benders & van Hootegem, 1999; Delbridge et al., 2000; Mueller, 1994; Sewell, 1998; Steijn, 2001; Townsend, 2007) that the socio-technical team model (STTM) is initiated as a means of enhancing the autonomy of workers and the quality of working life, whereas the rationale for lean teams (LTM) is to increase workers' efficiency and performance. The STTM, by striving for autonomy, codetermination and job enrichment through continuous skill development and reintegration of conception and execution, is opposed to Taylorist discipline at work (van Hootegem, Benders, Delarue, & Procter, 2005). Team autonomy is not a key feature of LTM, although it also makes use of multiskilled workers and continuous skill development. It allocates tasks to work units (U-cells) with strong leaders accompanied by quality circles and continuous improvement systems (Kaizen) to increase efficiency and productivity (Benders & van Bijsterveld, 2000; Macduffie, 1995). The two positions represent different movements but have tried to appeal to their opponents by blurring differences (Pruijt, 2002), to the effect that the ideology of teams has become hegemonic and in the interests of all (Sinclair, 1992). Thus the bipolar way of theorizing teams has become problematic because demarcation lines are unclear and the empirical manifestations of current work practices question bipolar team models (Minssen, 2006; Scarbrough & Kinnie, 2003; Wergin, 2003).

The dual typology of teams is counterproductive as it focuses analytical effort on classifying, and therefore tends to neglect what is going on 'in reality' and how teams evolve in practice, where dichotomous elements are often combined and come to constitute a variety of hybrids (Bacon & Blyton, 2000; Benders & van Hootegem, 1999). Consequently, bipolar team models make it difficult to study how a gradual mix of 'old' and 'new' team practices, reflecting complex and contradictory arrangements, may characterize changes in organizations. As bipolar team models are typically framed within a hierarchical conception of team structure, it becomes difficult to acknowledge how various modes of autonomy and control may be constituted in non-hierarchical ways. Framed in this way, it becomes problematic to take into account how the nature and degree of autonomy varies and continuously changes over time depending on the concrete team structure, work situation and organizational context (Stewart & Barrick, 2000). A dichotomist perspective is not able to deal with the paradox that both too little and too much autonomy appear counterproductive and calls for new governance practices and performance measures within and across teams. Nor does it acknowledge how aspects of autonomy and interdependence not only concern the team as an entity, but are intrinsically shaped by both intra- and inter-relational team processes.

Accordingly, more recent research has moved beyond dichotomist team models by introducing much more differentiated typologies of teams and nuanced understandings of autonomy,

interdependence and effectiveness (Kozlowski & Ilgen, 2006). Yet surprisingly few studies explore the managerial challenges and governance principles of teams moving beyond a hierarchical preconception of the organization, and keep treating teams as rather static organizational forms or entities (e.g. Keller, 2001; Kuipers & de Witte, 2005) instead of studying them as developed by both endogenous and exogenous relations (exceptions are Garibaldo & Rebecchi, 2004; Vallas, 2003). In contrast, the intra- and inter-relational dynamics of team communities form our focal point. By studying these micro patterns of interdependencies, we wish to contribute to a more fine-grained understanding of how the everyday interactions and co-creations among team members in and across teams call for new experimental governance practices that may constitute and develop the firm in novel ways. Put differently, from a relational approach, we aim to develop our understanding of how team communities may be supported and monitored by non-hierarchical processes, and how they evolve over time and may become constitutive for the firm and its evolutionary dynamics.

A team-oriented change in the organization of the firm may have important consequences for how, who and through which processes the boundaries, constitution and development of both teams and firms become determined. At least in a transitory phase, traditional concepts of governance encounter a number of novel challenges. If teams are still hierarchically controlled and decisions still reside with top managers, numerous tensions may be created because, with the change, managers have lost the feel for developing future routines from past experience. In this situation, the future evolution of the firm has often been left to internal market mechanisms favouring growth of teams having shown the highest relative performance in the past. This solution, however, soon leads the firm astray as emerging needs and novel, preliminary and volatile teams are deselected, with the effect that exploitation takes dominance over exploration and innovation. Thus, for firms that aim at enhancing their cost-effectiveness to finance more innovation, neither market nor hierarchy are good governance solutions.

Consequently, the more teams become the focal agency of a complex organization, the more difficult it is to imagine that the firm can escape from having its dynamic constituted by complex negotiation and deliberation processes among teams, involving both political and economic aspects and a sense of responsibility for the future among all the firm's constitutive teams. Will agency then have been relocated from the firm as such to rest with the community of teams? What then becomes the nature of the firm?

Methods and Cases

Empirically, we draw on four longitudinal case studies conducted from 2002 to 2008. The first two phases were extensive explorations aimed at attaining a general view as to how Danish firms experiment with team-based forms of organizing. The third phase was an intensive exploration of in-depth case studies focused on achieving a more nuanced view of how new organizational patterns and modes of governance unfold within and between communities of teams (Yin, 2003).

The four case organizations operate in the engineering, medical instruments and distillery industries in Denmark; the sites studied are each part of a multinational corporation and had experimented with team-based organizational forms for around 12 years. They were selected from a larger sample of 12 companies, visited in 2002 (1–2 days of interviews in each company). In 2005–06, one day was spent on each site. In the third phase, 2007–08, four companies were investigated 'mini'-ethnographically, staying 8–12 days on each site. The four companies were selected because, as will be seen later, we wrongly thought that they exemplified four different types or extreme cases of team organization (Flyvbjerg, 2001). Tracing the everyday relational dynamics

and work-organizing practices of team communities requires a focus on what people actually do, how they collaborate, how they connect (and disconnect), and how they manage and coordinate their daily work to accomplish their tasks. Studies were triangulated between three different data sources: talk, observation and documents (Kunda, 2006). The methods deployed included formal and informal interviews at all levels (employees and managers), observations and secondary data (Fetterman, 1989; van Maanen, 1988). In total 120 interviews plus various observations and informal conversations were carried out. Finally, findings were presented in a seminar for each of the four firms to give and receive feedback.

Our research is exploratory and does not claim to be representative. Instead of generalization, the aim is to generate fine-grained insights into how team communities may evolve as collaborative configurations and how they may become constitutive for the firm and its evolution. The section that follows provides a short introduction to the four firms (pseudonyms are used).

'Tools Ltd' positions itself as a problem solver and supplier of total tooling solutions, including customized tools and know-how intensive services. It supplies 'traditional' products (cutting tools, lamina inserts, tool fixtures, fastening systems and measuring equipment) from a wide range of suppliers, but in combination with services such as tool maintenance, calibration and production optimization. Collaborating closely with customers, it makes continuous improvement in their tools management, and has developed a wide range of competencies as what it learns from one customer can be used to service others. The company has advanced from servicing a few traditional enterprises to a broad and increasingly advanced set of branches. It has expanded internationally since 1995 to become a small multinational with subsidiaries and sales offices abroad. It employs 650 people (our study took place at its headquarters where approximately 450 employees work). It is fully owned by management and employees (of whom 85 percent own shares). Teamwork takes place in the unconventional physical facilities of 'roofed villages' with no walls separating production, stores, sales, administration and R&D.

'Hydraulic Ltd' produces hydraulic, electro-hydraulic and electric solutions for slow vehicles (e.g. tractors). Its expertise is in control and steering, work and propelling functions, high-performance components and integrated systems for a wide range of applications. With approximately 9000 employees worldwide and revenue of more than $1.7 billion it has sales, manufacturing and engineering capabilities on all major continents. The corporation was constituted through a merger between Danish and German firms that took over an American company, which acted as the headquarters until the Danes regained control. During these changes in ownership, the Danish facility made radical innovations in valve technology and introduced team organization on the factory floor. In this way it achieved a high position as a system supplier for a number of US original equipment manufacturers. Employment in the Danish facilities studied grew from 700 employees in 2000 to 2400 in 2008.

The Danish site of 'Spirits Ltd' which we studied employs 250 people in bottling, storing and distributing different types of spirits and wines. During the last few decades it has been sold four times. During our visits it belonged to a Swedish state-owned multinational. Changing ownership and tough market competition have forced the factory into continuous improvement in quality and cost reduction. Rivalry and negotiations over setting and meeting benchmarks among the different plants in Finland, Sweden and Denmark have been used to contest and evaluate the comparative advantages of each factory. For two years, uncertainty prevailed about which of the factories should be closed, and during this period the team organization operated under fierce pressure. Hardly had the Danish facility won this contest when a new French owner took over in 2008 and reframed rivalry over mandates.

'Health Ltd' is one of world's leading providers of medical analysers. It employs nearly 1700 people worldwide and its products are sold in more than 100 countries. Its headquarters (with 800 employees) are in Denmark and its global organization comprises three product companies and a number of international sales, distribution and service subsidiaries. Until recently, Health Ltd was a Danish family-owned multinational developing products and services in collaboration with hospitals all over the world. However, in 2003 it was taken over by a large American multinational that wanted to change the original high discretion team organization towards a lean model, along with a more intensive and constant pressure for innovation. While medical analysers and production of instruments constitute the core métier, the company also offers a wide range of liquids, samplers and services such as process analysis, IT systems, quality and technical support and training. Its strategy is to assist acute sections of hospitals to make continuous improvements.

Exploring Empirically the Micro-Dynamics of Team Communities in Danish Manufacturing

Given our longitudinal studies, the cases are rich in information on how the reorganization of Danish firms' team-based work forms unfolds as a non-linear process without given outcomes. Rather, their reorganization happens as a process of recombining 'new' and 'old' work practices, roles and rules in experimental ways at all organizational levels. And it is exactly the multilevel experimental character of such processes that casts doubt on the relevance of both a Penrosian perspective of the firm and rules-of-thumb in much team literature. In what follows we take a closer look at our empirical observations and how analytical reflections changed how we conceived of observations.

Visit 1

Compared to the 1980s (Kristensen, 1986) Danish managers had by 2002 discovered the comparative advantages of leaving increasing responsibilities to Danish factory floors. Whereas in the 1980s autonomy and teams caused conflicts between hourly paid and salaried staff, showing many similarities with the shaky introduction of teamwork in the US (Vallas, 2003), field visits in 2002 (Kristensen, 2003) made it clear that team-based high performance work organizations (HPWOs) were evolving rapidly, being a core element in strategic partnerships between managers and shop stewards in Danish plants. But a larger sample of plant visits also revealed that the team concept referred to very different realities (see also Minssen, 2006). In some, teams were U-formed cells, in others they looked like a department and in yet others they were ad hoc groups working on temporary projects. Moreover, they migrated from one to another over time. They were also constituted very differently. Some were created hierarchically by managers appointing team leaders; in others the team leader role would rotate among team members; some teams constituted themselves by electing a team leader and others even saw the team leader group as an extension of the union club, which would nominate those eligible. In a Danish owned firm, a large group of elected shop stewards managed the entire floor. Discourses ignored this heterodox reality, and speakers would talk about 'apples', while listeners would hear 'pears'.

Visit 2

Our next phase of extensive case visits therefore aimed at identifying a set of HPWO 'ideal types' and we believed we had identified four different types in the four selected case companies.

Spirits Ltd constituted a lower boundary case in which teams had been formed and team leaders selected jointly by management and union representatives, forming a partnership of enthusiasts, but struggling with a majority of lukewarm staff or opponents who would rather gossip negatively in the corridors than engage in serious collaboration over improvements. This partnership was particularly interested to learn about additional organizing principles from our investigations of other firms, and part of our studies of other firms thus concerned finding solutions to this problem (normally discussed as 'team climate'; (Kozlowski & Ilgen, 2006).

For example, we found that where the team leader role rotated among members, teams were less prone to split into fiery souls and opponents, and team members would be more constructive as they prepared themselves for their coming roles. This minor detail seemingly improved the ability of team members to take on the roles of others and to improve on their shifting roles in the team. Yet in most cases it had failed because many people did not want to be team leaders.

In Hydraulic Ltd a different principle had solved the problem by giving everyone leadership responsibility: the introduction of a total production management (TPM) concept, in which all team members had operational duties *and* managerial responsibilities for carrying out continuous improvements in, for example, organizing (team leader), maintenance, logistics, quality, safety and environment. All members of an operational team were also part of a secondary cross-team joining colleagues with similar managerial tasks from different operative teams. So operational teams were mutually competing over performance, while collaborating across teams over possible improvements. Thus all team members were located in a nexus, receiving inspiration and ideas for continuous improvements and innovations, making it easier for everyone to actively contribute, making team members more equal. Furthermore, the team leader role was continuously being elaborated by a sophisticated joint educational programme organized by the further training institutions in the region and the plant's HR department. Hydraulic Ltd was thus expected to constitute the upper boundary case, placing other cases between Spirits Ltd and Hydraulic Ltd.

Health Ltd seemed to be a mixture. Here, all workers were members of quite permanent operational teams with a hierarchically appointed team leader, and most workers would simultaneously have a second job in another team. Often, workers would also join ad hoc teams working on development projects. Thus an operational team would know what was going on in most parts of the factory, could comparatively assess their own team, receive suggestions for improvements and coordinate with other teams through personal ties. Workers were attentive to the sub-optimizing behaviour of team leaders and would ask shop stewards for coordinative interventions when needed. Shop stewards used the works council to form ad hoc committees, representing the operational teams, on novel issues for coordinated action.

Finally, Tools Ltd provided a highly interdependent and laterally accountable form of team organization. First, all employees were part of a different primary operational team. In addition, they would continuously and in abundance form ad hoc teams, for example to serve a new customer, engage in an R&D project, or to set up a foreign subsidiary. The variability of ad hoc teams was high: they were all led by the seven people from the R&D team, and most operational teams were involved in a number of ad hoc projects. Continually recombining teams through ad hoc teams created a flow of challenges and ideas for improvements for the operational teams, which seemed to run close to top performance though no monitoring system measured teams and individuals. The absence of such a monitoring system meant that team leaders were not mutually competing over performance measures, which reduced the temptation to form rival fiefdoms. As already shown by Dalton (1959), traditional hierarchies had difficulties in maintaining functional unity, because department leaders would find opportunistic ways of undermining and taking advantage of these systems, creating an environment in which all tried to look after narrow departmental

self-interests. The literature on teams is ripe with similar observations of opportunistic games (see e.g. Vallas, 2003), thereby turning a potentially collaborative community of teams into hostile fiefdoms. Tools Ltd had a monitoring system, but it worked very differently than in lean organizations. As more than 85 percent of employees owned shares, they were keenly interested in the overall performance of the company. Daily reports would compare budgets and results up to the previous day. Results higher than budgeted would lead to equal monthly nominal bonuses for all employees. Budgeted performances, on the other hand, were estimated so dividends to shareholders would cover interest rates paid on banking loans raised to buy the shares. Thus individuals would always be able to see the overall performance of the firm in relation to their personal economic situation.

All field sites but Tools Ltd imagined possibilities for improving their HPWOs, so we expected that they would make it possible to investigate four diverse types of evolutionary logic and thereby construct a new typology.

Visit 3

By our return 6 months later everything had changed. In both Hydraulic Ltd and Health Ltd, pressure from American HQ to change over to lean systems had overruled the past working practices. Hydraulic Ltd even exchanged a Danish manager with an American manager, causing the breakup of the partnership with union representatives, and effecting a collapse in the TPM system that organized collaboration across teams. The factory instead fragmented into mutually hostile fiefdoms. Hydraulic Ltd was simultaneously increasing capacity to meet the exploding growth in product demand, considering what to subcontract and introducing lean principles. In Health Ltd, changes had created such a mess that union representatives were mainly concerned with finding a way of rescuing collaborative managers to jointly search for a compromise between the former and the new organization. In both companies, workers and shop stewards were struggling to compensate for ongoing mismanagement and for the ruin of the firm's reputation among customers. Spirits Ltd had in the meantime changed for the better. The owner had proclaimed that subsidiaries would be benchmarked in preparation for plant closures. This had changed the game and everybody was struggling hard to perform. By introducing a second job, as in Health Ltd, and by engaging most people in changing or building new production lines, everybody was keenly searching for improvements. Despite being in chaos, all three sites showed no signs of despair. But we had lost the opportunity to research a set of 'ideal types'.

The sites demonstrated a surprising changeability, which a fourth visit confirmed. Once more the situation had changed. Hydraulic Ltd had got rid of American managers and a new managerial team was eagerly trying to form a new partnership with shop stewards to reconfigure the HPWO. Health Ltd had lost former collaborative managers, but had instead obtained a manager who was eager to learn how to combine lean with Danish high discretion. Spirits Ltd had won the benchmark battle and was absorbing the activities of closed plants, introducing whole new lines and making surprisingly quick improvements to prepare for a new takeover. Most of the practices from the first visits were still in place and had been recombined with new organizational elements, but hardly anyone held a comprehensive view of the current HPWO. Only in Tools Ltd were the constitutive principles still in place, apparently because they allowed the firm to absorb continuous changes and redefinitions of roles within the existing organization.

What runs through our recurrent visits is that ownership is highly volatile, managerial teams are frequently changing both in terms of personnel and templates employed, but somehow the community of teams gradually assemble organizational elements that lead to progress. It is indeed a

process that is different from a Penrosian systematic accumulation of new routines by managers in a stable governance system.

Three Recurrent Observations Derived from our Field Studies

Existing bipolar team models seem of little help in understanding this empirical context and our typology strategy had to be dispensed. Instead, we found a 'hotchpotch' landscape of diverse and constantly changing team-organizing practices, both among and within teams.

However, although the ongoing reconfigurations of teams unfolded in diverse ways, the most dynamic typically encompassed a highly flexible three-layered team structure consisting of operational or primary teams (e.g. a production or sales team), secondary cross-teams for identifying and distributing managerial improvements among the teams, and tertiary or ad hoc teams put together for situational development tasks by involving people from many primary teams. The combination of these three ways of relating gave rise to various collaborative and rival relationships, paving the way for frequently changing team communities. The organization of work within primary teams structured employee work practices, while cross-teams and ad hoc teams generated a collaborative, competitive and recombinatory process by bringing together practices and knowledge across the firm (Lotz, 2009). Along with this general organizing principle, our fieldwork identified three recurrent observations.

First, all four cases had developed an ability to constantly reorganize and recombine their work-organizing practices within and across teams. Thus, despite different organizational architectures, all showed a common ability to capture, compensate for and yet try to get the best out of new organizational designs, templates for governance and so on imposed from headquarters or by managers. For example, both Health Ltd and Hydraulic Ltd expected to learn a lot by experimenting with lean but, contrary to their American principals, they had no expectations of achieving a final system. For 25 years one organizational system after another had set new directions, but in retrospect this could be seen as a long experimental search for useful new building blocks to be integrated with existing practices. For instance, a team worker describes the 'merger' between the company's former work practices and new lean principles in this way: 'We take from lean what we can use ... that is, we make it work within the specific unit. We're good at finding creative solutions when necessary' (Isaac, Health Ltd). After these changes others would follow and new lessons would be learned (see also Benders & van Bijsterveld, 2000; Steijn, 2001).

The second recurrent observation was that each of the firms had achieved a significant ability to collaborate and co-create across traditional organizational boundaries, be they internal (employees/managers, among teams) or external (customers, partners, suppliers, labour market institutions). Consequently, organization members at all levels were engaged in ongoing distributed search practices creating an ability to change roles and routines directly by interactive work activities (see also Sabel, 2007). We observed operators collaborating with construction to develop new products and processes, searching for better technical solutions together with machine suppliers, or finding novel ways of solving problems for customers. The story of Bruce illustrates how this takes place in practice.

An empirical glimpse of everyday reorganizations and the co-creation of collaborative co-designing teams

Bruce is an EXPERT when it comes to Tools Ltd's most hardcore technically refined measuring machine. He has worked at the company for about six years and describes himself as a bit of a nerd and a workaholic: 'Working with the measuring equipment makes me all electric. I'm really passionate about it ... it's my hobby as well as my work. I just can't stop ... That's why I'm so good at what I do.'

> Bruce started off in the grinding department. After two years he wanted to learn something new and asked his boss to be allocated to the measuring machine. Since then he has trained himself and some colleagues in measuring techniques. Just now Bruce is instructing two co-workers one afternoon a week for 18 months.
>
> But Bruce has grown tired of just instructing others without receiving any input himself. So last week he submitted a proposal to the team leader and the production manager ... to break down a wall between two different measuring rooms. This will enable him to get acquainted with a new measuring machine, while continuing to train his colleagues on the other machine. The proposal was presented, discussed and decided on within a day. He says: 'It's cool to feel that people are listening to you.'
>
> Bruce continues: 'I've had many opportunities to constantly learn new stuff, to widen my horizons and try out new things.' He describes how he works with the German supplier of the measuring machines, sharing experiences and exchanging views to build up a joint pool of know-how on the programming of the machine and its potential. He has also revised and translated the instructions from German into Danish and English, and agreed to do similar jobs. These tasks take up most of his spare time, but he cannot resist the challenge, and argues that it pays in the long term because the machine supplier depends on his knowledge and expertise. 'This gives us an advantage when buying new machines,' he says.
>
> (Extract from field notes, 2007)

Bruce's story, though exemplary and non-representative, gives us a glimpse into how organization members, through extensive collaboration at many levels, are constantly changing routines, thereby incrementally reshaping the work roles and teams of which they are part. Research on cross-functional teams shows in the same way that collaboration across traditional organizational boundaries leads to improvements in performance and innovations (e.g. Bunderson & Sutcliffe, 2002; Gebert, Boerner, & Kearney, 2006). Bruce's story also illustrates how difficult it is for managers to intervene and design new routines as they are outside the stream of co-creation that changes the organization in small incremental steps.

The third recurrent observation is that firms with Danish managers had developed aspirations for and ways of gradually distributing as much authority as possible throughout the organization by delegating responsibility and agency to teams. In all cases, teams were typically hosting lateral accountability as well as intelligence, creating the foundation for a governance system based on mutual involvement. Research on self-managing and empowered work teams indicates that empowerment tends to create more productive and proactive teams (Kirkman & Rosen, 1999; Stewart, 2006), so this process seems very reasonable. Yet the gradual decentralization of agency was brought to a halt when American managers took over top positions in the case firms and instead implemented lean templates. This may reflect that diffusion of HPWOs and the degree of empowerment of employees differs radically among countries and seems to have become especially hesitant in the US, where projects such as Saturn, despite success, did not diffuse widely. Delegation of agency seems to have taken different roads in different countries (Minssen, 2006; Wergin, 2003; Woywode, 2002). In particular, on the dimension of employee empowerment and decentralization of agency, the Nordic countries and the Netherlands constitute a cluster where the 'learning organization' has diffused widely. In Denmark, 60 percent say they work in 'learning organizations' (Lorenz & Valeyre, 2003), 85 percent that they are often or sometimes using their own ideas at work and working within a highly participatory organizational frame (Andersen, 2003) and 59 percent that they work with people from other firms on a daily basis and that customers rather than bosses set the pace and tasks of jobs (Eurofound, 2007; Undervisningsministeriet, 2005). Thus it seems that our case studies are more representative for countries in which the transitions of work and the sophistication of team communities take on a process of cumulative causation by teams responding to needs of co-creation among each other, whether placed internally,

with suppliers or with customers. Managers seem unable to govern this process, but may put it on hold by 'alien' interventions.

These three recurrent observations compared to bipolar team models illustrate clearly that contemporary work teams come in many varieties and are not always an outcome of managerial action, but instead arise from internal and external relational dynamics that continuously change modes and combinations of collaborative and laterally accountable team practices. Managerial intervention is only one among many ways of triggering these change processes. Therefore, new sensitizing, comparative, relational and dynamic conceptual frameworks are called for in order to understand the workings and co-creative dynamics of teamwork in contemporary firms. Our empirical observations suggest that a central step is to understand the comparative differences in the emergence of communities of teams, the agency they distribute, their internal and external relations and the way they create and change governance. Possible themes and questions relating to such an approach are discussed in the rest of the paper.

What Happens to the Idioms of Teams When Teams are Taken Seriously as Economic Co-Creative Actors?

Insisting on studying teams as communities within a larger community of teams implies a radical shift and questions many positions within the tradition of team studies.

One of the core points has been the 'autonomy' of the individual team. Our findings contradict the normal concept of autonomy, because the more individual team members change roles within and the more they participate in activities outside their operational teams and become enmeshed in inter-team activities, the more they can contribute to the reflexive practice that leads to improved performance. The more widespread stimulus is to change, the more team members become able to take on the role of others and reflect on those roles (cf. Mead, 1934). The more they take part in cross-team discussions, the more new information and new points of reflection they can introduce in their primary team. Conversely, the more this happens, the more the members can carry back to the cross-team committees to help other teams reflect on their jobs. Thus for a community to evolve in the individual teams, it is very important that a community of deliberation is formed among the teams.

In firms where the life of the individual team is less enmeshed within the larger organization and where only team leaders communicate or coordinate with other sections, the workers' collective easily divides into three: enthusiasts, lukewarm defenders and opponents, where the latter prefers to raise their voices outside the reflexive meetings, as observed in Spirits Ltd. Whereas the former group tries to create a formal system that sustains the evolution of a community of reflexive practitioners within and among the formal teams, the latter group tries to create an informal community (similar to the workers' collective under Fordism) in opposition to the formal system. Among them, they fight to make a coalition with the lukewarm group. In such a system it is fairly difficult to develop a reflective community and traditional managerial roles are sustained.

For a community of deliberation to take over the continuous self-reflection of a managerial team, formalized interdependencies and communication among teams are necessary (see also Minssen, 2006) and this breaks with the rule of socio-technical theorizing that teams must be granted relatively high autonomy over a discrete set of tasks. Second, it breaks with the rule that, within the teams, individual members should be granted fairly high autonomy over both planning and execution, as a community of deliberation is dependent on involving many with several roles so that practices and routines can mutually be called into question.

Thus the well-functioning team community breaks with another important rule on role conflict (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964). In this view, role conflicts are sources of conflict and ambiguity leading to stress, which should be avoided. This is also why Burns and Stalker (1961) view the 'organic organisation' as unstable, and see hierarchical role division and rule-bound behaviour as necessary for organizational stability. A community of deliberation around team communities seems to be an alternative, as it makes it possible to negotiate solutions to continuous role conflicts.

Finally, our study breaks with the rule that measuring performance has negative effects on the community dimension of teams. Traditional literature taught us that performance measures would lead to a neo-Taylorist rather than an anti-Taylorist form of team dynamics (Pruijt, 2002). Instead, our cases indicate that elaborate measures are not only helping to improve on performance, but also sustain an informed communication among teams (see also Kozlowski & Ilgen, 2006). Without a measuring system it is impossible to monitor the improvements in routines and roles and navigate a community of team communities. Performance measures tied to individual inducements, however, may harm collaboration.

Additional observations that conflict with the usual dichotomies of the literature could be made, but those mentioned suffice to indicate the need for a reinterpretation of evolutionary dynamics of team-based organization. This we shall try to illustrate next.

Evolutionary Dynamics of Communities of Team Communities: A New Challenge to Comparative Business Studies

The current 'design' of the four studied team-based organizations was not planned but evolved experimentally over several decades, and none expects to have found a final form. Contrary to dual ideal types or states, our studies confirm recent findings (Kozlowski & Ilgen, 2006) that the building of such organizational forms goes through a multifaceted process of learning and refinements, during which participants will have to change opinions and points of departure many times, and that there is no 'ideal state'. While our studies indicate that communities of teams might evolve from less to more elaborate forms, this process unfolds as a sequence of highly frustrating events, which only in retrospect reveal their benefits and help create a constituting narrative of the firm as a community of teams.

In the first phase of developing a team-based organization, there is a set of typical problems to overcome (Vallas, 2003): structural inertia; resistance from middle managers and opponent workers. Most changes happen incrementally while the new forms of work organization only function after bundles of reforms have accumulated (MacDuffie, 1995), and involve a shift from hierarchical to 'discursive coordination' (Minssen, 2006). In the US, managers tried to overcome this by developing lean principles in technical staff groups to be hierarchically implemented on the factory floor – the Penrosian way – while neglecting the formation of autonomous teams that could continue the process (Blackburn & Rosen, 1993; Vallas, 2003). In the Danish cases, the genesis of team-based work has also been painful and has entailed conflicts, ambiguities and stress, and in the early phases opponents among the workers were able to create coalitions with middle managers and mobilize support from the lukewarm. Had such coalitions become dominant, it would have been impossible to acquire elaborate communities of teams.

Vallas (2003) showed how conflictual interests slowed down the evolution of team-based organizations in three of four American plants. The fourth was successful because, instead of subversive games, a continuity of negotiations among local union representatives and managers was institutionalized. Whereas in the US negotiation procedures may only emerge exceptionally,

in Danish companies the legacy of elected shop stewards, conveners, work council and board representatives makes it normal for conflicts to be handled by negotiation. Negotiations led to reform partnerships between top managers and conveners or other representatives from the floor (Kristensen, 2003), which served to overcome the problems that hamper progress during the initial reform process in many countries. With their relations to the larger complexes of vocational training institutions, labour market institutions and regional and local corporatist bodies, local union representatives constituted useful partners as they helped organize further training to empower teams, reform wage systems and change public services towards the needs of the new working life (Kristensen & Lilja, 2011).

This partnership in particular made it possible for Denmark to follow an evolutionary process of forming HPWOs in a different way than in the US. In Denmark, which in the 1990s became the EU's most further training intensive country, the focus was on delegating increasing responsibility in step with increasing employee skills, with the effect that operational teams became highly autonomous, while it was difficult to detect a formal management system (Lorenz & Valeyre, 2003). This evolution paved the way for the next step during which operational teams became combined and recombined in ad hoc development projects, but having to overcome internal rivalries among units, shop stewards and conveners (or new managerial positions) took on the task of counteracting 'silo-thinking' and fiefdom-strategizing by reorienting the negotiating order towards the coordination of teams. This in turn triggered the formation of a great number of temporary committees designed to solve problems of common interest among the teams. Obviously what happened was that the habit of negotiating diffused to every corner of the firms. In the late 1990s these were extremely experimental and innovative, as the rotation across teams of operatives led to learning and innovation. Yet it became obvious that firms were lacking an apparatus for making systematic, continuous and coordinated improvements. This led to the new reform experiments that took place after 2000, a time when lean or TPM managerial concepts entered the scene. But instead of being installed in a neo-Taylorist way, new forms of self-managing cross-teams and monitoring offices were set up to search for and mainstream improvements across teams (Kristensen, 2011).

We would expect that attempts to deal with these problems would lead to the emergence of an even more advanced form of negotiating order. However, we have in no case seen that the firms have space for reconfiguring their governance systems. Our observations indicate that only by diffusing negotiations even more than is currently the case can the problems that Burns and Stalker (1961) predicted be overcome. This calls for managers and their 'top adversaries' to focus on continuous negotiation over goal-setting, monitoring/intervention, diagnosis and feedback, i.e. become the guardians of processes and procedures by which the underlying system evolves (Kozlowski & Ilgen, 2006).

The previous section illustrates the evolutionary pattern of communities of teams within a Danish organizational context. As we have tried to make clear, it runs through emergent states almost in reverse order to that in the US. This has great implications for the study of team-based organizations in different countries. While a Penrosian process still dominates in the US and leads to limitations at the bottom of hierarchies, in Denmark an innovative hotchpotch process at the bottom leaves the managerial apex in a state of confusion at the top, leading to recurrent introductions of novel organizational elements that do not really add up to a deliberate system.

A Quest for Future Comparative Team Research: Concluding Remarks

Comparing quite detailed observations of Danish experimental evolution of team-based firms with knowledge from literature about the evolution of lean organizations in the US easily becomes just

another twist in the temptation to create bipolar team models. One could be tempted to see Danish firms as 'heterarchical communities' (by combining Stark, 2009, and Heckscher & Adler, 2007). From such a perspective, it is obvious that the impetus to make novel routines comes from collaborative endeavours within and between teams and within and across firms in the Danish case, whereas the managerial level in the US follows the Penrosian logic as managers allocate to teams foregone mandates within which to search for improvements and routines, which are then assessed, selected and codified to be diffused to other teams by the managerial level. One could move a step further and claim that the firm communities of Danish firms are prone to engage in what Herrigel (2010) has called 'sustained contingent collaboration' with other firms or public institutions, while the US firms are a better fit for 'autocratic or captive supplier relations' or 'contract manufacturing' and might be on the road to play very different roles in the international division of labour. While the Danish firms are suited to making situational innovations, American firms are good at making fast, systematic improvements and cost reductions within a frame of given products. These patterns in many ways reproduce the craft origin of Danish companies and the managerial drive of American firms.

But in a similar way to Danish firms, whereas the larger firms in particular in the US are struggling to diffuse innovative solutions and speed up continuous improvement, the smaller outfits are searching for ways in which to play more significant roles within the American economic archaeology by delegating more innovative autonomy to operators and softening the organizational boundary between R&D and production (Herrigel, 2010). While this process re-evokes the need for and pressures on the negotiating regime, in the US it provokes managerial apexes to a search for new role matrices. The outcomes of these evolutionary tendencies are far from given.

To us it is quite obvious that, had we compared the evolutionary dynamics of figurations of team communities from, say, Germany and Italy, processes of transformations towards the dynamics of implementation and the current evolutionary challenge of these communities would have differed from both the Danish and the American patterns.

For organization studies it is imperative to start studying these evolutionary patterns comparatively, as both leadership roles and organizational solutions will be directed towards highly divergent problems and because apparent similar phenomena may play very different roles in shaping the evolutionary direction of HPWOs. In what follows, some of the need for comparative studies will be identified.

First, we need more fine-grained studies of existing orders of negotiation and their ability to diagnose, make feedback on, monitor and set goals for team communities. Today, the orders of negotiation are invisible, and there seems to be very little comparative assessment of different formations.

There has been a tendency to see performance-based pay systems as a route to neo-Taylorism. Perhaps one of the unexpected advantages of bonuses, profit sharing and co-ownership is that firms have been pushed to become much more financially transparent with such schemes. We think there is a need for comparative studies into how financial transparency is created and how it enters into the negotiations among teams, employees and managers. Further, how distributional and integrative negotiations (Sisson & Marginson, 2000) become intertwined to form new ways of interest aggregation in communities of teams. Different forms of financial transparency will also influence the ability of teams to take agency. No doubt such information systems lead to operational rivalry, but they also trigger the possibility of reflexive collaboration. This balance is worth assessing comparatively.

We are also in need of comparative studies that can inform us about how managers cope with the role that the hierarchy above them imposes on them, and the shifting roles (and positions) they must adopt in the ongoing negotiations that align much of the coordination taking place within the community of teams in the larger landscape of, for example, a multinational company.

After all, managers are seen from the outside (e.g. from shareholders, foreign headquarters, banks and other financial institutions, regulatory authorities, inspectors, certification bureaus, etc.) and to a different extent in different countries, to hold formal responsibility and hierarchical control, and they must look professional and be responsive to the general waves of mimetic isomorphism of their contexts (Meyer & Rowan, 1991). So it is important to investigate how they deal with accommodating the two spheres differently in different countries.

Clearly, our cases showed a shortcoming, as they had no procedure for negotiating the negotiating order. This means that they are communities without meta-government and the ability to initiate deliberate constitutional reform. This function remains with the multinationals that own them rather than with the managers that are expected to run them. As Mueller and Purcell (1992) and Kristensen and Zeitlin (2005) have shown, multinational corporation headquarters play off subsidiaries against each other through a continuous flow of benchmarks in association with investment and headcount bargaining. The rationale underlying this flow of shifting benchmarks is to force the subsidiaries to evaluate themselves and continuously question their own performance in the light of best practices. This restless external flow of questions and reporting make it very difficult for the community itself to reflect on its practices and through this evolves a deliberate organization of negotiations. On the other hand, multinationals force their subsidiaries to make increasing use of subcontractors, to the effect that they force subsidiaries to collaborate across the formal boundaries of firms. Therefore, what the agency of teams becomes strongly depends on how they go about the deliberate relationships among firms at the local or regional level. We are in need of comparative studies into how firms become constituted differently in such complicated networks, and how this affects the governance of communities of teams.

Our research demonstrates that the evolution and character of the communities of teams in the case companies under study have drawn on many distinctive institutional features of the Danish system: for instance, the culture of negotiation and collaboration among employers and unions, the network among firms in a small enterprise economy, further training institutions, welfare institutions, and so on. We are in grave need of comparative studies identifying which institutional building blocks enter into the construction of team communities in different countries and how these affect their evolution and prospects. In our view, communities of teams seem to be the loci for combining global competition with human progress; therefore comparative team studies also comprise a search for promising routes towards creating both organizational and human growth.

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Maja Lotz is an Assistant Professor at the Department of Business and Politics, Copenhagen Business School. Currently she is a postdoctoral fellow at Stanford University. Rooted within the field of Organizational Sociology, she researches in new forms of work organization, co-creation, learning and experimental governance within and across various organizational settings (such as teams, units and firms). In particular, she has studied the dynamics of everyday work roles, communities and work-organizing practices enabling mutual learning and innovative co-creation in current economic organizations.