“We put teamwork back on the agenda again and again”-
The role of support systems in autonomous teamwork

Introduction
Since the emergence of lean production (Womack et al., 1990) there has been an ongoing discussion on the role of teams in the manufacturing industry, and later also within the service sector (Sederblad, 2004; van den Broek et al., 2004). Thompson and Wallace (1996) identify a polarity between two traditions; semi-autonomous work groups with a strong position in Scandinavia (Berggren, 1992; Sandberg, 1995) and lean production (Adler and Cole, 1993; Macduffie, 1995a; Macduffie, 1995b; Womack et al., 1990). But as Thompson and Wallace recognize, “even in the Swedish heartland of humanistic organization, the automotive sector reveals a full repertoire of production strategies” for working towards “leaner” organizations (1996: 104).

In order to overcome the polarity of rival blocs, Thompson and Wallace (1996) developed a three-dimensional model of teamwork. This consists of technical, governance and normative aspects of teams, and is supported by the wider sense of organizational governance, which was later recognized as “support systems” (Findlay et al., 2000). The team dimension model was further developed by exploring the normative dimension (Findlay et al., 2000), adjusted to the service sector and call centres (van den Broek et al., 2004), and also expanded with a fourth dimension, customer service (Richards et al., 2012). In a recent publication, the team dimension model was highlighted as an important analytical tool by which to understand the role of teamwork in working life (Marks and Richards, 2012).

Despite the comprehensive application of the model, the role of support systems is underdeveloped; identified as the organization’s decision-making process, training and development, industrial relations and selection, reward and appraisal (Findlay et al., 2000). In this article the relation between one of these support systems - industrial relations - and the
dimensions of teamwork will be investigated. The case company has similarities to the company in the original study; Volvo (Thompson and Wallace, 1996), as it is located in another “heartland of humanistic organizations”; Norway, and thus the industrial relations are quite similar to the situation in the original study. The research question is thus how does industrial relations influence teamwork?

**Literature review**
Teamwork is connected to debates on workplace democracy (Emery and Thorsrud, 1976), higher levels of performance (Banker *et al.*, 1996; Rolfsen and Langeland, 2012; Womack *et al.*, 1990), better learning opportunities, more flexibility and better working conditions; but it is also related to means for control (Barker, 1999; Sewell, 1998; Sewell and Wilkinson, 1992) and increased use of rigid routines (Baldry *et al.*, 1998). Within the context of lean production, teams are especially relevant in terms of being responsible for continuous improvements activities (MacDuffie, 1997).

As mentioned in the introduction, there has been a polarization in the literature between teams within lean production and within the semi-autonomous tradition. The origin of autonomous teams can be traced back to the “discovery” of such teams in British coal mines (Trist and Bamforth, 1951). In Norway, field experiments were carried out during the 1960s (Emery and Thorsrud, 1976), as a means for increased productivity and quality of work life, but also to enable industrial democracy (Qvale, 1976). The work was highly ideological, and grounded in an attempt to advance participatory democracy in the workplace (Pateman, 1970).

Following Thompson and Wallace’s (1996), the current paper will apply the team dimension model, which identifies three dimensions: technical, governance and normative. The model covers most of the possible aspects of teamwork, and is widely used in case study analysis. The technical dimension deals with functional flexibility, continuous improvement and learning capacity, and will usually represent the managerial interest in implementing teams in the first place (Findlay *et al.*, 2000). Increased job rotation and the integration of new tasks, such as maintenance, is a typical example of developments within the automotive industry (Rolfsen and Langeland, 2012) as is the integration of continuous improvement activities or “Kaizen” (Farris *et al.*, 2009).

The governance dimension concerns the extent to which power is delegated to teams, the selection of team leaders, and the relationship between the team and the wider organizational
governance, which is often conceptualized as autonomy. To distinguish autonomous teams from “ordinary” teams, one often refer to the level of tasks and responsibilities delegated to the team (Dankbaar, 1997; Moldaschl and Weber, 1998). The first model to describe the level of autonomy was introduced by Gulowsen (1971), and later developed further, and includes decisions on working methods, production goals, recruitment, use of overtime, leadership functions, job rotation, quality control, maintenance and machine set-up (Murakami, 1997; Rolfsen and Langeland, 2012).

In the normative dimension, the focus is on employee identification with organizational goals, attitudes and behaviours (Thompson and Wallace, 1996). This dimension was further investigated by Findlay and colleagues (Findlay et al., 2000), who identified corporate socialization, the creation of team players and self-socialization as three of the lenses which involve the normative dimension. In addition, peer pressure was later included as an important aspect of the normative dimension (van den Broek et al., 2004).

Support systems were recognized as important in the original work: Thompson and Wallace (1996) emphasized that configurations of teamwork will vary significantly according to the broader social and organizational context, management decision systems and industrial relations. In relation to the study of Volvo in Sweden, the history of collaborative industrial relations was especially emphasized as having a potential influence on teamwork (Thompson and Wallace, 1996). The role of a strong union and its interest in teamwork in Sweden was also highlighted by Sederblad in his review of new forms of teamwork (Sederblad, 2004).

In Norway, as in Sweden, labour unions have a strong position and interest in teamwork, and the historical development in the two countries is quite similar. The so-called Norwegian model has its roots in the 1935 “National Main Agreement” between the social partners (similar to the 1938 “Saltsjö-agreement” in Sweden). Important elements of the agreement are collective bargaining, worker representation on company boards, and labour-management partnerships. Collective bargaining in this context is no different from the practice in other countries, though worker representation on company boards, which became a part of the legislative system in 1973, is somewhat unusual in an international context. The third element is labour-management partnerships. Several empirical examples in the literature (Adler, 1995; Adler et al., 1998; Kochan et al., 2009; Rubinstein, 2001a; Rubinstein and Kochan, 2001) highlight the various aspects of partnership, especially the struggle to balance between negotiation and cooperation, which is identified as a balance between “boxing” and “dancing”
(Huzzard et al., 2004). There are indications that close partnerships are easier within an industrial context were the union has a strong position, which is the case in the context of the present study. A strong, legalized, national position, as in the Scandinavian countries, can create a level of trust and confidence that makes it easier to become involved in participation activities at the company level (Huzzard and Nilsson, 2004; Rolfsen, 2011). Within the Norwegian model, it is also widely accepted that there is a mutual connection between various types of participation, which are recognized as “broad participation” (Toulmin and Gustavsen, 1996).

The present research addresses the following question: How does industrial relations influence teamwork? The question can be further developed at this stage, with reference to the three elements of the National Main Agreement. The first element, collective bargaining, can have an influence at an overall level. Organizational elements will often be a part of the agreement; this is especially true of elements that aim for increased intrinsic motivation. However, this will be on a national, general level, and less relevant in particular companies. Therefore, the present study will not focus on collective bargaining. The second element, representation on the board, can have an influence on teamwork through overall strategic discussions regarding organizational development, so this element will be included. Representation on the board is a distinctively Norwegian practice; in other countries, work councils can serve as a parallel. This study will thus refer to representation more generally, as “local representation”; at company level. The third element of partnership is probably the one that has the highest potential to influence everyday practice, decisions and how teamwork is interpreted by members of the organization. The research question can thus be developed in the following way: How does local representation and labour-management partnerships influence the three dimensions in the team dimension model?

**Methodology**

The empirical investigation follows a case study design. Case study designs aim to provide a deeper description and understanding of a social phenomenon in a particular context. They usually aim to build new theory, rather than to test a predefined hypothesis (Eisenhardt, 1989). Cases are typically sampled because they exhibit some unexplored phenomenon. The goal is to provide a rich description of the social scene, to describe the context in which events occur, and also to determine the extent to which existing theories help us to understand the case or require modification (Eisenhardt and Graebner, 2007). This particular case was
chosen because it is unique: the company has used teamwork for a long period of time, and has a strong tradition for local representation and partnership. Following Starbuck (1993), it is suggested that the extraordinary nature of this case will contribute to important perspectives of the nature of teamwork.

Empirical data was collected for this particular purpose using different techniques, as a part of various research projects, over ten years. This work is part of a larger research project for which longitudinal data is available. Table 1 gives an overview of the available data:

<table>
<thead>
<tr>
<th>Year</th>
<th>Research project</th>
<th>Data gathered</th>
</tr>
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<tbody>
<tr>
<td>1991-1993</td>
<td>PhD-project.</td>
<td>• Interviews: 35</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Participation in 4 meetings about teamwork</td>
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<td></td>
<td></td>
<td>• Observation of production process over 2 days</td>
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<td></td>
<td></td>
<td>• Survey with 291 respondents on lean and teamwork</td>
</tr>
<tr>
<td>1996-1997</td>
<td>Research project on productivity and organization</td>
<td>• Interviews: 12</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Participation in 3 meetings about teamwork</td>
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<tr>
<td>2006 – present</td>
<td>Research project on technology and organization</td>
<td>• Interviews: 10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Observation studies</td>
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<td></td>
<td></td>
<td>• Informal meetings and discussions</td>
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<tr>
<td></td>
<td></td>
<td>• Seminars on teamwork</td>
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<tr>
<td>2011 – present</td>
<td>Research project on lean production and organization</td>
<td>• Interviews: 120</td>
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<tr>
<td></td>
<td></td>
<td>• Observation studies</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Formal and informal meetings on teamwork and lean</td>
</tr>
<tr>
<td>2012</td>
<td>Specific retrospective interviews</td>
<td>Interviews: 5 specifically for the particular purpose of this study.</td>
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</tbody>
</table>

In sum, the empirical data is rich and can be used for many purposes. When working on this particular article, relevant interviews, field notes and documents were selected, and these were supplemented with several interviews during October 2012, which placed an emphasis on teamwork. The findings and interpretations were discussed with key informants.

**Case study**

The company is a car supplier with about 800 employees. More than 95 percent of its blue-collar workers are unionized, and the union has a strong position, even in Norwegian terms. Starting from a revolutionary agenda in the 1930s, the union began to cooperate with
management after 1945. Union representatives are involved in strategic discussions, have an influence on important decisions, and cooperate with management both formally and informally. When it comes to implementing teamwork, the union has had a proactive role. There are three members on the board of directors who represent workers.

**Introduction of teamwork**

In the mid 1980s, the company started to reorganize production according to demands from their main customer, Volvo. The introduction of teamwork was considered important, since it was inspired by Volvo’s experiments, as well as similar experiments in Norway. In the introduction phase, a group consisting of an equal number of managers and union representatives worked to investigate how teamwork could be implemented. The group was led by a union representative, and supported by a researcher who had previously worked in the context of industrial democracy. The groups investigated the level of autonomy, the role of team leaders, and what tasks the teams would be responsible for *(report and minutes from the group, 1995-96, retrospective interview with three of the members, June 2012)*.

Before the teamwork was implemented, however, the company changed owners and the process was postponed. Then a new CEO who had previously worked for Volvo was appointed. The union considered him as being receptive to teams, and in their first meeting, they handed over the group report. The issue was also put on the agenda in board meetings. After some consideration, teamwork was introduced on all levels as an integrated part of the company’s production system. With more advanced machinery and a higher level of automation, maintenance became increasingly important as a means for improvement activities. In contrast to typical Japanese traditions, improvement activities were taking place in the ordinary production teams instead of off-line. One team won a national competition for being the best “Kaizen-team” in the country, and team activity was characterized by enthusiasm both from workers, managers and union representatives.

In 2009, the company changed owners again, and became a part of an international car supplier with its own production system to which they had to adapt. Teamwork was not part of the new production system. The current situation is that teamwork is not emphasized by the top management, and has not been for the last four years; though team activities are still present on the shop floor. Teams are responsible for production and quality, as well as maintenance and set-up of, and change of tools. Also, emphasis on improvement activities is still high. In the following, the current teamwork activities will be described according to the
three dimensions introduced above, and the ways in which representation and partnership has had an influence will be examined.

The technical dimension of teams
The technical dimension of teams relates to functional flexibility, continuous improvement and learning capacity. The current situation on the shop floor is that job rotation is mainly organized by the teams themselves in a systematic manner; only in extreme cases is the rotation schedule not followed (field report, August 2012). Job rotation is not part of the current production system, but the practice has survived nonetheless:

“We do full rotation in our team. Change of tools, quality, being on the line, driving the truck, everything. We rotate every hour.” (Operator, June 2012)

In some areas, there is less job rotation, mainly due to a lack of competence and high turnover of personnel:

“The whole department works as a team, and it works well. The operators decide day to day activities. We partly use job rotation, we are trying, but with new operators it is difficult, the level of competence is not good enough yet.” (Process engineer, October 2012)

“We try to rotate the jobs. But lack of training is a problem, at this point in time there can be weeks working on the same job, because only two of us are capable in the foundry.” (Operator, October 2012)

The overall picture is that job rotation varies between departments, but is recognized as important by most of the informants, because it increases the overall understanding, flexibility and learning capacity within the company (interviews with 86 respondents, October 2012). Lack of training and high turnover are mentioned as prohibiting elements. Union representatives have encouraged job rotation as a tool for mutual learning and a means of creating better working conditions. An example is the extrusion department, of which the team leader is a former union representative. He stresses the importance of rotation because, in his opinion, it enhances well-being, reduces sick leave, and increases involvement, competence and participation (interview with team leader, November 2012). He emphasizes his background as a “union man” as the reason for his beliefs, and he collaborates closely with the department union representative to increase the level of job rotation.
Another important aspect within the technical dimension is improvement activities. These used to be very prominent in the previous production system. Today, fewer people are working in each team, however, improvement activities have survived to varying degrees:

“It works here, because we are rather experienced with improvement work. In the new production system it is less focused than in the old system, but we have done it so much, it is a part of our “nature”. I used to work with improvement full time, and I still continue most of the same practices used within my previous job.” (Operator, October 2012)

In other parts of the production process, improvement work is less organized, and is left more to each team member:

“We do work with improvement, as much as we want to, we can come up with all kinds of suggestions whenever we like.” (Operator, October 2012).

Most people do work with improvement activities, but claim that it should be given a higher priority; as under the previous system. The shop floor still has whiteboards and signs on display which outline the “old” tools, and these are still in use (Field notes, July and October 2012).

During the last year, some of the working methods for improvement have been reintroduced, partly due to initiatives from union representatives, workers and team leaders. These methods are now integrated and will be reintroduced on the shop floor during 2013 (Interview with management group, January 2013).

To summarize, both job rotation and improvement work are part of the daily procedures, but to a lower degree than previously. Union representatives and union and team leaders in various departments have worked to increase the level of both practices.

The governance dimension of teams
The governance dimension concerns the extent to which power and decisions are delegated to teams, this is often exemplified as autonomy. Within the case company, teams are involved in decisions about work methods, production goals, recruitment, job rotation schedules, maintenance and tool changes, which are important decisions that distinguish autonomous teams from “ordinary” ones. The teams are also partly responsible for improvement activities in terms of deciding which methods to use, and setting up schedules for implementation.
The first decision is connected to the working methods and the level of standardization of tasks. A high level of standardization will necessarily imply a lower level of autonomy. Within the industry in which the company operates, tasks are highly standardized due to the lean production system. However, the teams are involved in the development of standards. Compared to other companies, the possibility of influencing the standards is high. Seen from both operators’ and union representatives’ points of view, being involved in developing standards promotes autonomy and makes a positive contribution to their work environment (Interview with operators, November 2011, June 2012).

The second decision involves quantitative and qualitative productivity goals. To a large extent, this is decided by customer orders; however, the teams are involved in some of the internal production goals. The third decision relates to who should belong to a team. This is a managerial decision, but the shift leaders, who are blue-collar workers, are asked for their opinion as well. With regards to overtime and extra shifts, autonomy is limited, as is the question of who should take care of team leadership functions. When it comes to job rotation schedules, however, the teams have a high level of autonomy, and the team leaders do not interfere in decisions unless they are asked to. On a weekly basis, the teams decide how to carry out their tasks and rotation plans. The amount of work related to quality control, maintenance and machine set-up is high, and certain methods must be followed; here the teams organize the activities by themselves. If they need help from maintenance personnel, they ask for it.

The level of autonomy is considered to be high according to the informants, especially concerning work methods, job rotation, maintenance and changing tools. The autonomy is emphasized by managers, operators and team leaders as an important reason for success:

“It is really important that we can be responsible ourselves in order to be successful. Because then people start to be engaged and really enthusiastic about the improvement work” (Operator, June 2012).

“It should be the workers who are using these tools; there is no doubt about that. They need to be familiar with them, they are their tools.” (Team leader, October 2012)

The level of autonomy was an important discussion point in the original review on teamwork by the group of managers and union representatives of the case company. Following negotiations, a high level of autonomy was granted, however, the term “goal-oriented teams”
was used, indicating that the company’s overall production goals were superior to autonomy. This mutually accepted result serves as the basis for the level of autonomy today.

**The normative dimension of teams**
Within the last dimension, the focus is on employee identification with organizational goals, attitudes and behaviours (Thompson and Wallace, 1996); in this case, the identification with teamwork is the focus, and this is strong among team members. Most of the respondents wanted to be able to have more focus on improvement activities, job rotation and training than the current situation allows. The overall ways of working do not differ greatly from those used during the previous period, but it is considered hard to develop further without strong support from the overall organization:

“We cannot just work on improvement all by ourselves from the bottom-up, we need someone from top management endorsing it, finding it interesting, helping us to develop it further and giving us some rewards when we are successful.” (Operator, November, 2011)

As one of the operators stated, by being involved in improvement work, people feel appreciated, as though their efforts mean something; in addition, it is “basically fun” to be involved. Emphasis was placed on one particular symbol of reward that existed in the previous system: when a team had reached a certain level of improvement they were taken to dinner with one of the top managers. This was an important way in which to spread enthusiasm among the team members.

Another issue was that two union representatives served as trainers in continuous improvement, and thus created a strong notion of participation. Teamwork and improvement are thus closely connected with strong appreciation for participation. Union representatives have been important in a collective process of interpreting the various aspects of technical and governance dimension as those of participation and industrial democracy. (*Interview with union representatives, November 2011 and June 2012*)

**Discussion and conclusion**
The research question in this study relates to how local representation and partnership influence the dimensions of teamwork. The original group that reviewed and suggested how teamwork could be implemented consisted of an equal number of managers and union representatives, and their negotiations resulted in a high level of autonomy, but an emphasis
on production goals as superior. This group shaped the way the teams are conceptualized today. Important influence from industrial relations took place during this phase. Of special importance is the way autonomy was defined and practiced as the definition of teamwork. This definition has never been challenged, and serves as an example of how representation and partnership had an influence on the governance dimension of teams.

The next influence has been that teams have been brought back onto the agenda several times, despite shifting management and owners. Union representatives, and also coalitions of local representatives and team leaders, have activated and reactivated teamwork as an important and appreciated practice. At an overall level, the issue has been discussed by the board, at the behest of union representatives. The re-introduction has been connected to job rotation and improvement activities, which is a part of the technical dimension. The original definition of teams as autonomous teams was not challenged, but connected with the technical dimension and certain practices. For example, the high level of autonomy in improvement practices has been taken for granted, and different from other findings where “Kaizen” has served as a purely bureaucratic practice (Adler and Cole, 1993).

Teamwork has a strong ideological foundation associated with values of industrial democracy; the normative dimension. The union has advocated these values, and shaped the overall understanding of teamwork as “democratic”, and other ways of interpretation has not been allowed. Teamwork has been pictured as a part of the unions “fight” for a democratic and decent work life over the years, also in the union’s own official history (Holmen and Wang, 2005). Thus, an interpretation among workers that teamwork is a managerial tool has not been possible or accepted. This finding contrasts other studies, where normative control supporting teamwork is found to be promoted by management (Barker, 1993; Sinclair, 1992) and serving as a means for control. One way of interpreting this finding is that the first review done in the joint group serves as a common “model” of teamwork. There is no signs of any attempt to challenge the notion of “teamwork” as autonomous teams with responsibility and connected to values of industrial democracy, serving as an example of a “model monopoly” (Braten, 1973). This is an interesting point of reflection, which highlight the importance for a union to be involved when new organizational practices are introduced in order to have an influence.

Summing up, industrial relations has influenced the introduction and modelling of teamwork (the governance dimension), bringing teams back onto the agenda through certain work
practices (the technical dimension), and by advocating and shaping teamwork as representing values of industrial democracy (the normative dimension). These dimensions have mutually influenced each other, but the initial modelling of teamwork is seen as the most important. An important implication is to emphasize participation in the introduction of new practices in order to have and influence on how they are to be understood, interpreted and practiced.

Representation and partnership are the two elements of industrial relations highlighted in this study. Local representation is, in this case, exemplified by worker representation on the board of directors in line with the Norwegian arrangement. In a European setting, representation in work councils will be a parallel situation. The connection between representation in work councils and promotion of teamwork has been investigated to some extent, indicating that work councils can lead to a more positive attitude towards teamwork, and a more extended use of it (Addison and Schnabel, 1997; Frege, 2002), which confirms these findings. A study of a German company concluded that teamwork was introduced as an agreement between the management and work council, and the version of teamwork was consider to be democratic (Murakami, 1999), for instance by elected team leaders, and thus introduced a third level of representation (Murakami, 2000). The findings of the present study confirms this, and also support studies conducted in Sweden which emphasize the connection between local representation and teamwork (Sederblad, 2004). Importantly, this connection is only relevant if the teamwork is organized in a way that enhances industrial democracy, and also that ensures teamwork is interpreted as a democratic tool by the union, which happened because the union had an influence on the initial shaping of teamwork. Past studies highlight examples where teamwork has been introduced purely as a management control system, with resistance from the local union and without involvement in shaping teamwork arrangement teamwork (Rinehart et al., 1997).

The other element of industrial relations which was important for survival of teamwork in the case company is the labour-management partnership. This is similar to extended experiments on partnership and teamwork conducted in the US (Adler et al., 1998; Rubinstein, 2001a; Rubinstein and Kochan, 2001), where teamwork was introduced with cooperation between managers and proactive, strong unions. However, none of these teamwork arrangements lasted long, due to internal conflicts both in the union and the overall corporation (Rubinstein, 2001b).
This paper contributes to the literature on teams by highlighting the industrial relations as an important support system for teamwork. Further research could focus on the other parts of support systems and the influence they have, in relation to areas such as training, recruitment and appraisal systems.

An important question remains; which is whether this scenario would have been possible within another system of industrial relations. First, the tradition for cooperation at a company level is important, but also at a national level, where partnership is promoted. Second, the union is a strong actor due to national support. Third, the national ideological tradition for autonomous teams serves as a background for the normative dimension. These three points are closely related to Murakami’s (2000) findings comparing the introduction of teamwork in the UK and Germany; the union in the UK rejected teamwork, while the German union “used the management’s plan to enhance workers’ participation on the shop floor” (Murakami, 2000: 41). As Murakami points out, the main difference can be understood as relating to the influence of the unions’ power position. In Germany, as in Norway, representation and participation has legal support, and thus a high level of institutional security.
Literature


