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Manufacturing strategy formulation, leadership style and organisational culture in small and medium-sized enterprises

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Abstract

This study encourages an increased focus on managerial and organisational issues in manufacturing strategy formulation. The study investigates the relationship between manufacturing strategy formulation, leadership style and organisational culture in small and medium-sized enterprises (SMEs). Manufacturing strategy formulation is studied in three cases, and it is found that the formulation is different in each case. Leadership style is more visible than organisational culture in manufacturing strategy formulation in the case companies. Due to the small number of employees in SMEs, the top manager's decisions influence the whole organisation and the organisational culture. The leadership style and organisational culture are closely aligned in SMEs due to the managers and to the centralized decision-making.

Keywords

Manufacturing strategy, process, formulation, leadership style, organisational culture, SMEs, small firms

1. Introduction

Small and medium-sized enterprises (SMEs) are the backbone of any national economy and key drivers for economic growth. To sustain their competitiveness, it is essential that SMEs take advantage of their capabilities and support market requirements. In order to satisfy changing market requirements, companies must achieve superior production (Crowe et al., 2007). For SMEs, manufacturing is often crucial, and amongst the vast number of subcontractors manufacturing is a core competence. Despite this, it is mostly larger companies that are aware of the role of manufacturing as a competitive advantage and, therefore, work with manufacturing strategies.

Manufacturing strategy is usually divided into content and process. During the last two decades, research has mainly focused on the content of manufacturing strategies; fewer studies of the process of manufacturing strategies exist (Leong et al., 1990; Dangayach and Deshmukh, 2001; Barnes, 2002a, 2002b; Raymond and Croteau, 2006; Rytter et al., 2007; Brown et al., 2010; Kim et al., 2014; Chatha and Butt, 2015; Jagoda and Kiridena, 2015). The manufacturing strategy process describes strategy formulation and implementation. Manufacturing strategy formulation concerns different ways of aligning competitive priorities with decision categories, while manufacturing strategy implementation concerns the execution of the manufacturing strategies (Slack and Lewis, 2011). Formulation is essential, as it is a first step towards working with manufacturing strategies, but the area has received limited attention in SMEs (Barnes, 2002a, 2002b).

When manufacturing strategy formulation is described in theory, it is often in terms of manufacturing strategy frameworks (e.g. Skinner, 1969; Platts and Gregory, 1990; Miltenburg, 2005; Hill and Hill, 2009; Slack and Lewis, 2011). Manufacturing strategy formulation in manufacturing strategy frameworks is described as a structured and linear process (e.g. Skinner, 1969; Miltenburg, 2005; Hill and Hill, 2009). However, manufacturing strategy formulation is so much more than just a multi-stage framework, as it is also essential to consider how the strategy formulation should be carried out in terms of organisational and managerial issues (Platts, 1994; Löfving et al., 2014). Previous studies of strategy formulation (O'Regan and Lehmann, 2008) have stated that formulation on its own is unlikely to lead to enhanced performance and competitiveness, and needs awareness and alignment of the contextual influences of culture and leadership. The culture can be a source of competitive advantage as it shapes the context within which a company formulates its strategies (O'Regan and Lehmann, 2008). Leadership style plays a vital part in any company, but is even more important in SMEs, as their success often depends on personal management and leadership style rather than the practices that are used to manage the company (Cagliano and Spina, 2002; Daily et al., 2002; Hudson Smith and Smith, 2007; Ates et al., 2013; Taylor and Taylor, 2014). The leader and his/her leadership style have a determining influence on the behaviour and direction that SMEs adopt. However, there exist few studies on leadership style in SMEs (Franco and Matos, 2013). In this article we investigate the relationship between manufacturing strategy formulation, leadership style and organisational culture in SMEs. The purpose is to contribute towards a deeper understanding of manufacturing strategy formulation in SMEs, focusing on the role of leadership style and organisational culture. From this, two research questions are developed:

1. How does leadership style relate to manufacturing strategy formulation in SMEs?
2. How does organisational culture relate to manufacturing strategy formulation in SMEs?

This paper is organized as follows. First, the methodology is presented and the main research phases are described. Second, the literature on manufacturing strategy formulation, leadership style and organisational culture in SMEs is reviewed. Third, an appropriate theoretical framework for leadership style and organisational culture is provided. Fourth, empirical cases are described. Fifth, the relationship between manufacturing strategy formulation, leadership style and organisational culture is presented. Finally, the answers to the research questions are discussed, along with conclusions and suggestions for further research.

2. Research method

This research mainly uses case studies to collect empirical data (Yin, 2009). The empirical data were collected during two steps in a research project, which aimed to increase the use of manufacturing strategies in SMEs. Three manufacturing companies were selected based on replication logic (Eisenhardt, 1989). Two of the companies were SMEs (Company Casting and Company Aluminium) according to the definition by The European Commission (EC)¹, and the other was a small-to-medium-sized plant within an international

group (Company Automotive) (see Table 1 for more information about the companies).

[Insert Table 1 here]

A deeper understanding was required concerning manufacturing strategy formulation in the participating companies. Therefore, the initial step aimed at determining manufacturing strategy formulation *before* the companies participated in the research project. In the initial step data were mainly gathered through interviews with key respondents, complemented by documents and archival data (Yin, 2009). During the initial step, interviews were carried out with 17 key respondents (five at Company Automotive, five at Company Aluminium and seven at Company Casting). The respondents included the managing director, production manager, sales manager, production engineer, engineering designer, quality manager, etc. The interviews lasted between 1 and 2 hours. All interviews were transcribed for analysis.

The second step included manufacturing strategy formulation in the participating companies *during* their participation in the research project. Here the operations strategy matrix (OS matrix) by Slack and Lewis (2011) (see Figure 1) was introduced into the companies by the authors. OS matrix was chosen as a potential facilitator for the manufacturing strategy formulation, as it was considered simple and easy to understand. The authors played the role of educators and advisors in how to use the OS matrix. In this step data were collected by means of observations at meetings.

[Insert Figure 1 here]

Despite the fact that the formulation was facilitated by the fact that same people were using the same methods and tools in the different participating companies, the manufacturing strategy formulation was found to be different in the companies. During the formulation the authors noticed a difference in the leadership and organisational culture in the participating companies. These observations, together with evidence of contingencies in other research areas (e.g. Woodward, 1980; Pettigrew et al., 1989; Ghobadian and O'Regan, 2000; Donaldson, 2001; Bitici et al., 2006; O'Regan and Lehmann, 2008;

¹ Headcount <250, Turnover ≤ €50 million or Balance sheet ≤ €43 million, and not owned by another company to more than 25 % (European Commission, 2014)

Sousa and Voss, 2008), led the authors to study leadership and organisational culture more thoroughly in both theory and practice. Therefore, a retrospective study was initiated to answer the research questions for this paper.

As this investigation is a retrospective study, a theoretical framework has been applied after the case studies were conducted. Organisational culture and leadership style literature were reviewed, and an appropriate framework was selected to allow the authors to identify the organisational culture and leadership style throughout the manufacturing strategy formulation. To become more familiar with each case, collected data from each case study were read several times (Eisenhardt, 1989). The three cases were compared, and the differences and patterns observed were investigated to develop a better understanding of the manufacturing strategy formulation in SMEs and its relationship to organisational culture and leadership style. This process resembles Yin's (2009) pattern matching. The results from the cross-case analysis were compared with previous empirical research studies on manufacturing strategy formulation in SMEs (e.g. Swamidass et al., 2001; Barnes, 2002a, 2002b; Kiridena et al., 2009), and overall strategy formulation in SMEs (e.g. O'Regan and Lehmann, 2008; Ghobadian and O'Regan, 2000; O'Regan and Ghobadian, 2004).

3. Background literature

Manufacturing strategy

A strategy consists of the plan and the type of action needed to achieve defined objectives and company visions (Säfsen et al., 2007). This paper uses Slack and Lewis' (2011, p. 22) definition of manufacturing strategy: 'the total pattern of decisions that shape the long term capabilities ... and their contribution to overall strategy through the reconciliation of market requirements with [manufacturing] strategy'. These decisions should be strategic and thus reflect long-term perspectives, rather than operational day-to-day decisions, which often focus on solving short-term problems.

A manufacturing strategy is a functional strategy that can operate only in conjunction with other strategies, such as marketing, R&D and accounting (Säfsen et al., 2007). Functional strategies should be linked and coordinated with business strategies. If these strategies are not linked together, then the decisions made might not correspond to one another within each function or across functions, and the incongruity can lead to misdirection and obstruct the company in reaching its objectives (Hill and Hill, 2009). In the area of manufacturing strategy, it is common to distinguish between *content* – that is, what a strategy consists of; *process* – that is, how a strategy is formulated and implemented (Voss, 1995); and *context* – that is, the set of circumstances in which a business operates (Mills et al., 1995). In this article, the studied contextual factors are leadership style and organisational culture.

Leong et al.'s (1990) model is a typical manufacturing strategy content model. It identifies two major constituents of manufacturing strategy: competitive priorities and decision categories. Hill and Hill (2009, p. 61) also acknowledge these two key aspects of manufacturing strategy content in their definition of a manufacturing strategy as 'a series of decisions concerning process and infrastructure investment, which, over time, provide the necessary support for the relevant order-winners and qualifiers of the different market segments of a company'. To win orders, a company must understand their competitors in terms of the other companies' competitive priorities. A company must also identify the required performance. To understand competitive priorities, a company must understand the market, competitors' actions and customers' requirements (Slack and Lewis, 2011; Hilmola et al., 2015). A company must, therefore, make informed manufacturing decisions to support the relevant competitive priorities. The decision categories comprise the decisions a company makes in manufacturing.

Manufacturing strategy formulation in SMEs

Manufacturing strategy formulation can be defined as 'the practical process of articulating the various objectives and decisions that make up the strategy' (Slack and Lewis, 2011, p. 281). Manufacturing strategy formulation can also be considered as a continuous and intentional process of decision events (Pettigrew, 1997) or as a process comprising both structured and unstructured strategy formulation (Adam and Swamidass, 1992).

A vast number of studies on manufacturing strategy formulation have been carried out over the years (Maruchek et al. 1990; Platts, 1990; Swamidass et al., 2001; Barnes, 2000, 2002a, 2002b; Acur et al., 2003; Nielsen-Englyst, 2003; Rytter et al., 2007; Kiridena et al., 2009; Jagoda and Kiridena, 2015). A majority of these studies describe manufacturing strategy formulation without considering company size

(Maruchek et al. 1990; Platts, 1994; Swamidass et al., 2001; Rytter et al., 2007; Kiridena et al., 2009; Jagoda and Kiridena, 2015). The conclusions in these studies were thus often generalized to suit all kinds of companies. Some of these studies include SMEs as case studies, but without specifically focusing on the size aspect (Swamidass et al., 2001; Kiridena et al. 2009). Swamidass et al. (2001) illustrated examples of manufacturing strategy formulation in different companies in the UK, and one of the companies was an SME. Kiridena et al. (2009) described the actual manufacturing strategy process in case companies in Australia before identifying deeper structures such as initiation and realization. This study was inspired by Barnes's study (2002a). Barnes (2000, 2002a, 2002b) analysed manufacturing strategy formulation and implementation in SMEs in the UK. In Barnes (2000) the focus is on investigating implementation events in SMEs. The later empirical studies by Barnes (2002a, 2002b) addressed both formulation and implementation; the link between strategies and manufacturing objectives is emphasized in these studies. Barnes states that the case companies had a rational process for identification of manufacturing objectives, and that the production manager played a major role in translating the manufacturing objectives into decisions and actions. The findings from these case studies indicate that none of the companies investigated had a formal manufacturing strategy process, and only three of the companies described had formal strategy formulation.

There exist few studies of managers' participation or leadership styles in the manufacturing strategy formulation in SMEs. Barnes (2002a, 2002b) did not explicitly study the relationship between manufacturing strategy formulation and leadership style, nor specific leadership styles. Hence, he explained the importance of management in the formulation in SMEs in that powerful individuals led the manufacturing strategy initiatives in his cases. Kiridena et al. (2009) studied leadership styles as one of several contextual factors, and briefly described each company's leadership style. However, he did not find any leadership style patterns in his case companies, independent of number of employee in the company.

There is a substantial amount of research that seeks to explore the relationship between organisational cultures in a number of different areas in any organisation (see, for example, Handy, 1985; Ghobadian and O'Regan, 2000). There is less research that investigates the relationship between an organisation's culture and manufacturing strategy formulation in SMEs. There exists one study concerning the crucial inter-relationship between manufacturing strategy and organisational culture (Bates et al., 1995), but the number of employees was not considered. Bates et al. (1995) found that manufacturing strategy is influenced by the organisational culture. They also described the manufacturing strategy construct by using dimensions that show how well a manufacturing strategy is aligned with business strategy, and how well the strategy is implemented in the plant.

4. A theoretical framework for studying the relationship between manufacturing strategy formulation, leadership style and organisational culture

In order to analyse the case studies and study the relationship between manufacturing strategy formulation, organisational culture and leadership style in SMEs, the authors reviewed existing research on organisational culture and leadership style and synthesized this knowledge into an appropriate theoretical framework. This section does not aim at a comprehensive and critical review of the literature, but provides an overview of the literature behind the theoretical framework used.

Leadership style refers to the practices adopted by a leader and how the leader interacts with his or her employees (Burton and Obel, 1998). Leadership style influences time required to make decisions and to determine the level of delegation and control activities (Garengo and Bitici, 2007). Leadership style is one of the key aspects to understand organisational culture (Pheysey, 1993; Cameron and Quinn, 2011). An organisation's culture derives from its leadership, while culture influences development of its leadership (Bass and Avolio, 1993). Organisational culture can be defined as the basic assumptions and beliefs that the members of an organisation share, which influence how they perceive, think and act (Schein, 1985). Previous studies state that, as leadership style and organisational culture are aligned, they should be studied together (O'Regan and Lehman, 2008). This study will use the predefined framework by Pheysey (1993; see Figure 2) that aligns each leadership style with its respective type of organisational culture.

[Insert Figure 2 here]

Below is a description of Pheysey's (1993) leadership styles and organisational cultures. There are

similarities between some of these and Cameron and Quinn's (2011) organisational culture types. Therefore, Cameron and Quinn's (2011) identified culture types are partly included in the descriptions below.

4.1 Support culture

In support culture, commitment and teamwork are dominant attributes (Pheysey, 1993). Pheysey's support culture bears similarities to Cameron and Quinn's clan culture, in the sense that both have an internal focus and both value flexibility and individuality (Cameron and Freeman, 1991). The leader in the support culture is employee-oriented, caring and democratic (Figure 2; Bitici et al., 2006). He/she delegates to subordinates and persuades them to participate in the decision-making. The predominant leadership style in this culture is team builder (Cameron and Quinn, 2011), participative and democratic (Pheysey, 1993).

4.2 Role culture

This organisational culture has a pyramid-shaped hierarchical structure and focuses on logic and formal rules (Pheysey, 1993). The decision-making in this organisational culture is formal, and its leaders can only do what they are authorized to do (Bitici et al., 2006). Moreover, the employees are assigned a specific role or job. The predominant leader is an empirical expert who keeps track of all details in the organisation, contributes expertise (Figure 2; Bitici et al., 2006). Another leadership style in role culture is laissez-faire (Pheysey, 1993; Cameron and Freeman, 1991), which means 'let [them] do, let it be'. In this case, the leader is uninvolved in decision-making.

4.3 Power culture

The power culture is externally oriented, and control is the key word (Pheysey, 1993). According to Handy (1985), power and decisions are concentrated among a limited number of people. This culture can be found within small organisations or units rather than in large organisations (Handy, 1985). The predominant leadership styles are authoritative and autocratic (Figure 2), whereby leaders have the power to tell subordinates what to do (Pheysey, 1993).

4.4 Achievement culture

Achievement culture is both task and people-oriented (Pheysey, 1993). This culture bears some similarities to market culture (Cameron and Freeman, 1991), because both focus on achieving goals and competing in the market. However, market culture is more focused on the market than the achievement culture. Employees are motivated by, and committed to, tasks or goals, and their leaders encourage participation (Pheysey, 1993). Furthermore, the goals and targets of achievement-based organisations are mostly quantitative, and the leaders are focused on reaching these goals and targets (Bitici et al., 2006). The predominant leadership styles are consultative and rational-achiever (Figure 2).

4.5 Pheysey's framework applied in research studies within SMEs

Pheysey's framework was previously used in studies of performance measurement and organisational culture (Bitici et al., 2006) and as part of a contingency study of implementation of performance measurement systems in SMEs (Garengo and Bitici, 2007). The findings by Garengo and Bitici revealed no consistency between the companies in terms of the leadership style and organisational culture. Three of their case-study companies had a power culture before they implemented performance measurement systems, and, after the implementation, these three companies shifted more towards an achievement culture. Their fourth case-study company had a support culture. Previous research studies on organisational culture in SMEs do not agree on which the most common organisational culture in SMEs is. For example, Handy (1985) assumes that most SMEs have a power culture, while Hudson Smith and Smith (2007) argue that SMEs tend to have a culture similar to Pheysey's (1993) support culture (Figure 2).

5. Case studies

In this section, general descriptions of the companies and their manufacturing strategy formulation are presented. The empirical data were collected in two steps. The initial step aimed at an understanding of the manufacturing strategy formulation before participation in the research project, and the second

step included the manufacturing strategy formulation when participating in the research project. For each case, the formulation is described in some detail with emphasis on leadership style and organisational culture.

5.1 Company Aluminium

Initial step

Company Aluminium was one of two companies in a small group. The company's core competencies were described as profile bending, CNC-machining and welding. The company worked closely with a major aluminium extruder, which was also their supplier of raw material.

Company Aluminium was privately owned and had 110 employees. The two owners had positions as CEO and the financial manager. They were aware of the possible conflict of interest in being both owners and operational managers, and they tried to keep their two roles apart. After they purchased the company in 2006, a gradual organisational change took place:

“A new company spirit must grow when the company grows. Maybe not in the familiar spirit, but as an employee you must feel that this is a company that invests in you and makes you feel happy at work. The employees must be in focus. It is a matter of maturity regarding the employees that they also feel the new company spirit.” CEO and financial manager

The company had a formal business plan. The CEO and the financial manager updated the business plan annually, reviewed it on a quarterly basis and discussed it in the management team.

Second step

The CEO and the financial manager initiated participation in the research project and led the manufacturing strategy formulation. They involved the functional managers – that is, the manufacturing manager, HR manager and sales manager – in regular meetings where they discussed the progress of the manufacturing strategy formulation. According to the CEO and the financial manager, the functional managers discussed the progress and proposed further inputs, and they said ‘the climate in the board of managers is dynamic’.

The CEO and the financial manager decided that work with the OS matrix (Slack and Lewis, 2011) should be included in the annual assessment of the business plan. The managing director and financial manager quantified the decision areas against their performance objectives. They showed a proposal to the management team, who discussed and improved the proposal. Thereafter, the managing director and financial manager continued their work with quantifying the decision areas to understand what they needed to improve. The quantification of manufacturing strategy complemented the strategies and measurable targets, and, according to the owners, the manufacturing strategy should be part of the overall strategy.

Company Aluminium had a power culture, with a focus on output (see Figure 2). They actively defined and pursued goals and measurable targets, and the communication between the top management and the operators usually addressed short-term financial measures. Such a focus had caused the operators to be unaware of long-term manufacturing strategies. Another notable way that Company Aluminium exemplified the power culture was that the owners made strategic and tactical decisions and delegated operational decisions to the functional managers. The owners also encouraged the functional managers to participate in decision-making.

5.2 Company Automotive

Initial step

Company Automotive was a self-managing unit in a major company group. The company developed and manufactured automotive components for the automotive industry. It was a separate production unit and acted as a small company. They did not have much in common with the company group, apart from having some benefits from the sales resources. The unit had recently grown and in 2012 had 90 employees. Many of the operators had recently been hired from recruitment companies. The division manager had started up the unit and thus felt a major responsibility for its development.

At the company group level there were written corporate and business strategies that were updated annually and reviewed quarterly by the division manager and top management of the group. Company Automotive said that they followed informal strategies. The unit had an annual strategy meeting with the

management team, consisting of the functional managers (production manager, market manager, and engineering manager) and the division manager. Even though they did not have any written manufacturing strategy, an informal one existed.

Second step

The division manager and the production manager initiated the research project and the division manager led the manufacturing strategy formulation. He involved the production manager, the engineering manager, the sales manager and the quality manager in the formulation.

The purpose of the formulation for Company Automotive was to develop functional strategies and an overall business strategy. First, they discussed the existing formal business strategy; then they documented the informal business strategies. The formal and informal business strategies were congruent, but no one in the group really used the formal business strategy, applying instead the informal business strategy.

The next step was to formalize the functional strategies. This was done both individually and together in the group during a two-day workshop. The OS matrix (Slack and Lewis, 2011) was used at the workshop as a basis for understanding the competitive priorities as well as the decision categories. The outcome from these two days was 12 weeks of documented action plans for each process. As the final activity of the formulation, the division manager presented the business strategy and functional strategies to the employees.

The division manager controlled Company Automotive, leading it with a firm hand: he decided the directions for the future and delegated decision-making for short-term activities to the function managers. Company Automotive had clear power culture characteristics, focusing on the output (see Figure 2). Hence, the division manager controlled the unit, but also delegated and encouraged subordinates to engage in independent work and problem solving.

5.3 Company Casting

Initial step

Company Casting was a foundry, which made casting components, and was an autonomous company in a family-owned company group. The company was led by the CEO, who had been recruited to the company 10 years earlier. In the preceding three years the company had grown from 45 to 58 employees and increased its working hours from one shift to two. The culture placed strong emphasis on the people, due to the old 'works' mentality, focusing on its employees and their long-term commitment and employment. The tradition in the company was to have nothing in written form, '*as you then could be questioned*', according to the production planner. Company Casting had unwritten manufacturing strategies that were partly, and mostly implicitly, discussed among the managing director, sales manager and production manager.

Second step

The CEO initiated the manufacturing strategy formulation, involving the production manager, a production technician, the quality controller and the production planner, here called the production team. The CEO led the formulation, although he said that he actually wanted to delegate this to the production manager.

Company Casting began working with a couple of development activities, such as identifying their most important performance measures. The production team met every second week for six months to work with their development activities. Some of the activities were implemented between the meetings and reviewed and improved during the following meeting. At the meetings, the participants had time to discuss issues they usually did not discuss, as they usually did not have any meetings concerning overall production improvements. According to the CEO, 'it was good to hear the different views of the people and to open up this discussion'.

The CEO and the production planner tried to use the OS matrix (Slack and Lewis, 2011) but thought it was too difficult to use without a proper introduction.

Company Casting had a support culture (see Figure 2), and the managing director had a democratic and participative style, and cared about the employees. He tried to delegate responsibility for managing the formulation without success. He listened to and considered the employees' views, with the intention of involving them in decision-making. The managing director claimed that he would have more time to

focus on strategic issues if he involved his employees in operational decision-making.

5 Findings

Previous theories of organisational culture assert that SMEs have a power culture (Handy, 1985). More recent studies corroborate these theories (Garengo and Bitici, 2007; Hudson Smith and Smith, 2007), as they found no consensus in the organisational culture in SMEs. Garengo and Bitici (2007) studied the implementation of the performance measurement systems in four SMEs. At the beginning of the study, before the implementation of the performance measurement system, three out of the four had a power culture (see Figure 3). During the implementation of performance measurements systems, the organisational culture changed in their case companies. In this study, two of the three companies studied had a power culture, while the third had a support culture (see Figure 3). None of the companies in this study changed organisational culture or leadership style during the intervention. However, both Company Aluminium and Company Automotive had earlier work with organisational change; the owners of Company Aluminium tried to change the organisational culture when they acquired the company, and a new organisational culture emerged in Company Automotive when it was divided from the company group's organisational structure. In both these cases the companies' organisational cultures are closely aligned with the leadership styles of the managers.

[Insert Figure 3 here]

In previous studies about leadership styles in SMEs (Franco and Matos, 2013), as well as studies of strategy and manufacturing strategy formulation, there is no congruence in the leadership styles in SMEs (e.g. Bitici et al., 2006; O'Regan and Lehmann, 2008; Kiridena et al., 2009; Jagoda and Kiridena, 2015). Two of the managers in the case companies had an authoritative leadership style (see Figure 3). In a power culture, with an authoritative leadership style, managers tend to use 'carrot and stick' to motivate people (Pheysey, 1993). However, none of the case companies used 'carrot and stick' to motivate people. The managing director and financial manager of Company Aluminium were more prominent than the organisational culture. They also initiated the formulation and managed and set the directions for work. However, they discussed their work with the functional managers, since they delegated the operational work and decision making to them.

The managers in Company Aluminium and Company Automotive involved the functional managers in the manufacturing strategy formulation. Moreover, the managers in these companies delegated operational decisions to subordinates, which is rare among the more authoritative leadership styles (Burton and Obel, 1998); delegation and involvement of subordinates are mentioned in connection with the participative leadership style. The CEO in Company Casting had a participative leadership style (see Figure 3) and focused on the employees. According to Pheysey (1993), the participative leadership style persuades subordinates to participate in decision making, which is exactly what the CEO of Company Casting did.

The CEOs in the three case companies had central roles in manufacturing strategy formulation. All three CEOs initiated and led the test of the analytical tool in the second step. The production managers in the three companies were involved in the tests of the analytical tool in the second step, but none of them were *responsible* for the testing. Who was responsible for the tests and manufacturing strategy formulation had a great impact on the outcome and process of the tests, especially in Company Aluminium and Company Automotive. This verifies earlier research on the relationship between leadership style and strategy formulation (O'Regan and Lehmann, 2005; Daily et al., 2002) and the importance of the leader in SMEs (Daily et al., 2002).

The choice of participants also seems to be aligned with leadership style and organisational culture, because the two companies with a power culture involved the functional managers, while the company with the support culture involved the production team. The focus in Company Aluminium and Company Automotive was on major parts of the organisation instead of only production. In Company Casting, on the other hand, the CEO decided to include only production in the testing of the analytical tool in the second step, which affected the outcome of the manufacturing strategy formulation. The managing director of Company Casting said that it was natural to invite the production team, as the formulation considered production issues. Moreover, the CEO did not invite the market function, because he wanted the production team's view of production, not the market function's view. Company Casting focused on operational details, while Company Aluminium and Company Automotive discussed both strategic issues and operational issues that might support the strategies.

Different leadership styles may affect the formalization of manufacturing strategy formulation. Previous studies on SMEs state that strategy formulation often is characterized by informal processes. Empirical findings concerning the formalization of the strategy formulation differed in the two steps for the three companies studied. Before the intervention, Company Aluminium had a formal strategy formulation. Company Automotive had a formal strategy formulation at the overall strategy level in the company group, but a less formal strategy formulation in the unit. The managers in these two companies had an authoritative leadership style. Company Casting, where the manager had a participative leadership style, had less formal strategy formulation. During the intervention, the companies moved towards a more formal structure as they gained more experience from formulating manufacturing strategies. The differences can be related to the varying leadership styles, as well as the managers' different experiences of manufacturing strategy formulation.

The three companies studied had slightly different manufacturing strategy formulations due to their differing organisational and managerial issues – such as participation – even though they all took similar steps to formulate the manufacturing strategy. One explanation for this difference is the differences in the leadership styles and organisational cultures.

6 Discussion

The companies studied seem to have either an output-oriented focus or an employee-oriented focus (see Figure 3). The organisational culture might be related to the market and competitive conditions. For example, Company Automotive and Company Aluminium were competing in more exposed markets. Company Casting had been quite free from competitors until the last couple of years. Therefore, it had not been important for Company Casting to focus on output, which was clear when they began their formulation and realized that they did not know with whom they were competing. In a more competitive environment it is more important to know the requirements of the market, which is mirrored in the organisational culture.

The two output-oriented companies (see Figure 3) had either written business strategies or business plans, and discussed both long-term strategies and short-term activities in the management team. Company Casting, which had a more employee-oriented culture, had no written strategies before the intervention, and they focused on the operational details during the intervention. Whether a company uses written strategies might be related to its maturity and might also be related to organisational culture and leadership. However, strategic maturity needs to be investigated further to understand the relationship better.

Previous studies of leadership style in SMEs (Bitici et al., 2006; O'Regan and Lehmann, 2008, Franco and Matos, 2013), as well as the empirical findings in this study, show that there is no one specific leadership style in SMEs. The empirical findings indicate that managers have an overall leadership style, with influences from other styles.

Bridge et al. (2009) asserted that one characteristic of SMEs is centralized decision making, where an individual or a small group often makes the majority of decisions. Our findings support this assertion, because the managing director and the board of managers were involved in the formulation. Even when the production staffs were involved in the formulation, the decision-making was centralized to the top managers. This can partly explain the relationship between organisational culture and manufacturing strategy formulation in this study. The decision-making is centralized to one or a few individuals, so their personality and leadership style are more visible. However, the culture permeates the whole organisation, even the managing director and the board of directors, but it is difficult to delineate where leadership ends and organisational culture takes over in an SME.

Centralized decision-making can also be seen in who initiated and led the manufacturing strategy formulation in the companies studied. In this research, the managing director (CEO, division manager, etc.) initiated and led both strategy and manufacturing strategy formulation. None of the production managers initiated or led the manufacturing strategy formulation but they were all part of the team. Who is responsible for manufacturing strategy formulation in SMEs is contrary to findings from previous studies on manufacturing strategy formulation in larger companies (Maruchek et al., 1990; Kiridena et al., 2009), where manufacturing strategy formulation was initiated and led by the production manager while the CEO and/or the managing director formulated the overall strategies. One of the major differences between the SMEs in this study and larger companies described in literature seems to be who initiated and was responsible for the manufacturing strategy formulation.

There is evidence that culture is related to manufacturing strategy (Bates et al., 1995), but no evidence

exists that cultures are closely related to all parts in the strategy process, that is, of formulation and implementation. Bates et al. (1995) studied manufacturing strategies and organisational cultures and found that the relationship between them was closer in certain organisational cultures. However, Bates et al. (1995) noticed that well-defined manufacturing strategy was developed from a formal strategic planning approach, which is not the case in this study. Our research indicates that organisational culture may not play an equally vital part of the formulation as leadership style, because decision-making is centralized due to the small number of employees in the companies studied. To analyse the relationship between culture and manufacturing strategy formulation further, more research needs to be carried out in more SMEs.

This research study does not aim to find a superior leadership style or the organisational culture that leads to superior strategy formulation. We also do not assume that there is a best way of formulating manufacturing strategies. This position is assumed because Johnson et al. (2008) found evidence that there is no single preferable style of strategic leadership for all scenarios. They conclude: 'it has been recognized, therefore, that there is no one right way in which strategies are developed' (Johnson et al., 2008, p. 417). Instead, managers must face the challenge of recognizing the potential benefits of their particular strategy formulation.

7 Conclusion

To sustain their competitiveness in the current business environment, characterized by globalized markets, competition, technology and innovation, SMEs must formulate business and manufacturing strategies that allow them to meet these challenges. However, to deploy the strategies successfully, the main characters involved in the strategy process are, first and foremost, the leaders. The behaviour, actions and attitudes of the leaders will determine the leadership style adopted.

It is logical to suppose that leadership style and organisational culture are related to manufacturing strategy formulation in SMEs. However, until now, this relationship has not been confirmed empirically, and this was the main goal of this study. Our purpose was to understand manufacturing strategy formulation, focusing on the roles of leadership style and organisational culture. Therefore, manufacturing strategy formulation in three SMEs was studied.

Based on the results of this study, we conclude that the leadership style is more visible than organisational culture in manufacturing strategy formulation in SMEs. Due to the small size of SMEs, the top managers influence the whole organisation and the organisational culture. The leadership style and organisational culture are closely aligned in SMEs due to the managers and to the centralized decision-making.

Based on the empirical findings, we also conclude that there is no single specific leadership style followed by SME managers. Different leadership styles were found to influence manufacturing strategy formulation differently. We noticed that the leadership styles in the companies studied were closely related to the operationalization of manufacturing strategy formulation. We also noticed that both leadership style and organisational culture were related to participation in manufacturing strategy formulation. This study provides some evidence of the differences in manufacturing strategy formulation that arise from different leadership styles and organisational cultures. This study also strengthens earlier research about personalized management as one main characteristic of SMEs.

This research does not aim to identify whether one leadership style or organisational culture leads to more successful manufacturing strategy formulation in SMEs than another. Instead, it has investigated the different leadership styles and organisational cultures that exist in SMEs and discussed whether leadership styles and organisational culture are related to the manufacturing strategy formulation in SMEs. This had not been done previously and is therefore to be deemed a new contribution to our understanding of manufacturing strategy theory. Besides an understanding of manufacturing strategy formulation and leadership styles in SMEs, our study contributes to making SMEs aware of the potential influence their leadership style can have on manufacturing strategy formulation.

From a theoretical perspective, this study contributes to the on-going debate on contingencies in operations management (Sousa and Voss, 2008) by investigating leadership styles and organisational culture in the manufacturing strategy formulation process.

There are limitations in this study, but there are also many possibilities for future research. One limitation is the small number of companies studied, which makes it difficult to generalize the findings. Another limitation is the research's focus on manufacturing strategy formulation, and not specifically leadership style and organisational culture. The organisational culture can, in general, also be difficult to assess, due

to its complex nature (Cameron and Freeman, 1991). No specific data considering leadership style and organisational culture were gathered, but the authors followed the companies studied for three years, and were in close contact with the managing directors. To understand the relationship between leadership style and organisational culture in SMEs and the relationship of these to manufacturing strategy formulation, further research focusing on these areas needs to be carried out in a greater number of SMEs. This work also opens up the possibility for further research on the relationships between strategic maturity, market conditions, organisational culture and leadership, and for further assessment of the theoretical framework and its suitability in increasing the competitiveness of SMEs.

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Tables and Figure

Table 1. Characteristics of the case companies

Case companies			
	Aluminium	Automotive	Casting
No of employees (2012)	110	90	58
SME (acc. to EC)	yes	no	no
Ownership	Independent, privately owned	Dependent	Dependent, group owned by a family
Year of company foundation	Around 1950	2000	17 th century
Year the current owner purchased the company	2006	2002	1991
Year the CEO /division manager applied for his/her position	2006	2000	2003

Figure 1. The Operations Strategy matrix (Slack and Lewis, 2011).

Figure 2. Organisational culture aligned with predominant leadership styles. Based on Pheysey (1993, p. 154).

Support culture (employee-oriented) <i>Predominant leadership styles:</i> Participative Democratic Existential team builder Delegate	Role culture (logic-oriented) <i>Predominant leadership styles:</i> Laissez-faire Empirical expert Sell	Power culture (output-oriented) <i>Predominant leadership styles:</i> Authoritative Autocratic Tell	Achievement culture (mixed task- and people-oriented) <i>Predominant leadership styles:</i> Consultative Rational achiever
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Figure 3. Position of the companies in the Swedish study in Pheysey's (1993) model.