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THE IMPACT OF CULTURAL RESEMBLANCE ON MANAGEMENT CONTROL OF SUPPLIER RELATIONS: LONGITUDINAL EVIDENCE IN THE AUTOMOTIVE INDUSTRY

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ABSTRACT

This study explores the impact of cultural resemblance on the management control system (MCS) of supplier relationships. Although MCSs are contingent on situational characteristics and this contingency fit is associated with good performance, it remains unclear whether cultural resemblance between manufacturer and supplier contributes to the speed of MCS change, so that temporary misfits due to changing circumstances are less likely to occur. To illustrate this effect of cultural resemblance on MCS dynamics, we perform a twofold longitudinal case study of similar automotive manufacturer-supplier relationships that differ with respect to cultural resemblance. Findings show that in case of high cultural resemblance, the speed of increasing the level of management control is higher. That way, upcoming contingency changes are appropriately anticipated by an increase in the level of management control, already before contingencies actually change. Consequently, a MCS misfit and potential decreasing operational performance are avoided. Oppositely, in case of low cultural resemblance, adjusting the MCS to changing circumstances requires more time. This leads to a temporal MCS misfit that contributes to escalating operational difficulties, until the MCS is changed. Furthermore, the case data show three mechanisms by which cultural resemblance enhances management control according to earlier findings in the literature: increased communication on the initiative of the supplier, proper information exchange and trust enhancing signals. Finally, our findings show that the manufacturer influences supplier decision making to install a manager of the manufacturer's choice and that way influences the supplier's culture.

Keywords: Management control; Trust; Performance; Organizational culture; Competing Values Framework; Supplier relationships; Manufacturing; Contingency theory; Case research; Automotive

INTRODUCTION

This study explores the impact of cultural resemblance on the management control of supplier relationships. Management control systems (MCSs) are contingent on situational characteristics and this MCS fit is associated with good performance (Donaldson, 2001). Consequently, it is worthwhile to investigate variables that influence the speed of MCS change, so that temporary misfits due to changing circumstances are less likely to occur (Kamminga & van der Meer-Kooistra, 2007; van Veen-Dirks, 2006). Since the buying firm's MCS is the material artefact of its underlying organizational culture (Rousseau, 1990), organizational culture might be such a variable (Harrison & McKinnon, 1999). Yet, despite calls for further research on the role of this variable in MCS design, studies on organizational culture, especially in inter-organizational relationships (IORs), are scarce (Chenhall, 2003; Scheytt & Soin, 2006; van der Meer-Kooistra & Vosselman, 2000). This paper aims to fill that research gap. In particular, we focus on the degree to which a supplier's culture resembles the buyer's culture. In strategic alliances, cultural differences between interacting parties may negatively influence performance (Dekker, 2004; Ireland, 2002; Kale et al., 2000). Yet, whether this influence is associated with an impact on MCS dynamics remains unaddressed. Therefore, the aim of this paper is to illustrate whether the degree of cultural resemblance between buyer and supplier affects the MCS fit in times of changing contingencies.

To that end, we propose a theoretical contingency framework, set up from the position of the buyer. First, this framework visualizes the associations between contingency variables influencing risks, and management control techniques governing these risks (Das & Teng, 2001; Dekker, 2004). Second, the framework includes the dynamic association between a contingency fitted MCS and operational performance (Donaldson, 2001). More specifically, we propose that if a supplier is incapable of dealing with changed contingencies, a misfitted MCS temporarily aggravates performance, until the MCS is changed towards a design fitting the changed contingencies and risks and therefore contributing to performance. Third, the framework represents the impact of supplier cultural resemblance on the MCS. Provided that we take on the position of the buyer, this variable is defined as the degree to which a supplier culture is hierarchical or developmental and resembles a developmental buyer culture. Whether an organizational culture is hierarchical or developmental depends on the organization's preference for the values control versus flexibility and external focus versus internal focus of the Competing Values Model (Quinn, 1988; Quinn & Kimberly, 1984; Quinn & Rohrbaugh, 1983).

Supported by this conceptualization of organizational culture, we propose that supplier cultural resemblance is associated with a MCS that changes fast enough to fit changed contingencies and that way contributes to operational performance.

We study this proposition for supplier relations in a less studied phase of the supply chain, namely manufacturing (Cooper & Slagmulder, 2004; Langfield-Smith & Smith, 2003; Scannell, Vickery & Dröge, 2000). As organizational culture is found to affect the management control of outsourced *service* providers (van der Meer-Kooistra & Vosselman, 2000), we propose that this variable also impacts the MCS of suppliers performing outsourced *manufacturing activities*. More specifically, this paper presents a twofold in-depth longitudinal case study of "manufacturer-supplier relationships" (MSRs) between a Volvo Cars facility (VCG) and two of its high value-added just-in-sequence module suppliers, that are similar except for the degree of cultural resemblance to VCG. Case research is strong in illustrating the impact of MCS fit on performance, because it allows studying an extensive MCS of individual supplier controls (Ittner et al., 1999; Dekker, 2004). As culture needs to be observed more than measured (Schein, 1996), a case study makes it possible to move beyond static quantitative cross-sectional studies and explore the dynamics of MCSs and organizational culture in all its richness (Baskerville, 2003; Harrison & McKinnon, 1999; Henri, 2006). To structure and interpret the longitudinal data in relation to our theoretical framework, we use the temporal bracketing and variance research methods (Rowe, Birnberg & Shields, 2008). Finally, the automotive industry suits our case research, because that sector is characterized by high levels of component outsourcing and extreme competitive pressure. As a result, manufacturers initiate continuous improvement projects with suppliers, which require appropriate MCSs to organize and manage the relation (Alford, Sackett & Nelder, 2000; Carr & Ng, 1995; Scannell et al., 2000).

The case findings confirm our theoretical proposition by illustrating the impact of resembling organizational cultures on the timing of MCS changes and hence the fit-performance association. In case the supplier's culture resembles VCG's culture, upcoming contingency changes are appropriately anticipated by increased management control, before the contingencies actually change. Consequently, a MCS misfit and potential decreasing operational performance are avoided. Oppositely, if the supplier's culture differs from VCG's culture, adjusting the MCS to changing circumstances requires more time. This leads to a temporal MCS misfit that contributes to escalating operational difficulties, until the MCS is changed.

Furthermore, the case data show three mechanisms by which cultural resemblance enhances management control according to earlier findings in the literature: increased communication on the initiative of the supplier, proper information exchange and trust enhancing signals. Finally, one of the MSRs shows a very specific management control technique, namely deliberately influencing supplier decision making to install a manager of VCG's choice and that way influencing the supplier's culture. As these findings benefited from conceptualizing organizational culture via the Competing Values Model, our study demonstrates the usefulness of applying this model for describing organizational culture in qualitative studies (Bhimani, 2003).

The remainder of this paper is organized as follows. In the second part, we provide a thorough literature study to explain and motivate the research question. The third part proposes a theoretical contingency framework, which guides the case analysis. In the fourth part, we briefly discuss the details of the case methodology. The fifth part forms the actual case study and describes how VCG's MCS on two module suppliers evolved during periods of changing contingencies. In the sixth part, we discuss these findings. Finally, we conclude this paper by summarizing the main findings and highlighting some avenues for further research.

LITERATURE STUDY

Organizational culture is important to the business community, because it affects all aspects of organizational interaction, intra-organizational as well as inter-organizational (Henri, 2006). On the one hand, enhanced globalization made companies develop multi-national operations in offshore entities with different cultures (Chenhall, 2003). On the other hand, increased global outsourcing made every firm establish relations with suppliers from different countries with different organizational cultures (Harrison & McKinnon, 1999). Consequently, better cultural understanding results in better supply chain performance (Whitfield & Landeros, 2006). Nevertheless, research into organizational culture has been limited, so that this variable is very promising to study (Chenhall, 2003).

Culture is often defined as the shared values, beliefs and assumptions that shape and guide social systems and communication processes (Schein, 1985). Prior research, mainly focusing on the difference between US and Asian cultures, found that differences in these values impact characteristics of MCS design, like the degree of formality in monitoring and evaluating (e.g. Snodgrass & Grant, 1986; Ueno & Wu, 1993; Vance, McClaine, Boje & Stage, 1992). Like national culture, organizational culture refers to shared values, beliefs and

assumptions in organizations that shape and guide human behaviour and its artefacts (Zammuto & Krakower, 1991). These artefacts are all visible structures and procedures that result from a firm's culture, such as the MCS (Rousseau, 1990; Scheytt & Soin, 2006).[1] Consequently, organizational culture influences the design and use of formal (or mechanistic) management controls (Chenhall, 2003). For example, Henri (2006) finds that firms of the flexibility dominant culture type use more performance measures and use these measures to focus organizational attention, support strategic decision-making and legitimate actions to a greater extent than firms of the control dominant culture type. Also informal (or organic) controls are affected by organizational culture, because these controls are grown out of shared values and norms that are shaped by frequent interaction, meetings and management attitude (Merchant, 1998; Ouchi, 1979). For example, trust appears higher in firms of the flexibility dominant culture type than in firms of the control dominant culture type (Ellonen, Blomqvist & Puumalainen, forthcoming).

Given that a manufacturer's MCS on a supplier is affected by the manufacturer's culture, the supplier's culture, in particular the degree of resemblance to the manufacturer's culture, might impact the functioning of the MCS. Indications for this proposition result from prior alliance research. Indeed, studies found that cultural differences make an alliance difficult or impossible to manage (de Rond, 2003; White & Lui, 2005). Conversely, shared values positively influence the level of trust between alliance partners (Gulati, 1995; Luo, 2002). Furthermore, cultural differences between alliance partners may negatively influence performance (Dekker, 2004; Ireland, 2002; Kale et al., 2000). Yet, these results all relate to organizational culture effects in (strategic) alliances. Hence, the effect of organizational culture on MCS design in other types of IORs, like MSRs, remains unaddressed (Chenhall, 2003; Scheytt & Soin, 2006). Nevertheless, also MSRs require an appropriate MCS design, on which organizational culture has an important effect, which justifies further study (van der Meer-Kooistra & Vosselman, 2000). Furthermore, prior alliance research addressed the effect of cultural differences on MCS design and performance separately. However, MCS design

[1] By defining a company's MCS as an artefact of the organizational culture, we consider culture and control to be different, yet related, constructs. However, some scholars look upon organizational culture differently, namely as part of the MCS. For example, Merchant (1998) speaks of *cultural control* to refer to a specific type of management control, built on the organizational culture and similar to what Burns & Stalker (1961) describe as *organic control*. Nevertheless, the influencing role of organizational culture on management control, as defined in our paper, is widely accepted. Chenhall (2003), for example, defines culture, both national and organizational, as an important contingency variable influencing *both organic and mechanistic controls*, besides inter alia technology and strategy. Also empirical studies like Henri (2006) and Ellonen, Blomqvist & Puumalainen (forthcoming) on the impact of organizational culture on management control, consider these constructs separately.

also affects performance, depending on the degree of fit on situational characteristics (Donaldson, 2001).

More specifically, contingency theory proposes that a fit of the MCS design and situational contingencies, such as task uncertainty and environmental uncertainty, results in higher operational performance, whereas a misfit decreases performance (Donaldson, 2001).[2] Although this association forms the underlying assumption of contingency studies on inter-organizational MCSs (Dekker, 2004; Kamminga & van der Meer-Kooistra, 2007), empirical evidence on the validity of this assumption is limited. Furthermore, there is little research on variables that influence the speed of MCS change, so that temporary misfits due to changing circumstances are less likely to occur (van Veen-Dirks, 2006). Yet, this research is justified, as a MCS misfit and associated decreasing operational performance might harm any manufacturer, until the misfitted MCS is changed towards a more appropriate design (Dekker, 2004; van Veen-Dirks, 2006). Therefore, any manufacturer is interested in variables contributing to the avoidance of such a performance decrease by preventing a MCS misfit. Organizational culture, in particular the degree of supplier cultural resemblance to the manufacturer's culture, might be such a variable due to its impact on the functioning of the MCS (Harrison & McKinnon, 1999). Hence, further study is required on what role organizational cultural resemblance plays in the MCS fit-performance association (Harrison & McKinnon, 1999; Henri, 2006).

The preferable method for such research is an in-depth qualitative case study, for three reasons. First, the relationship between MCSs and organizational culture can not be depicted as a simple matter of cause and effect (Henri, 2006; Scheytt & Soin, 2006). Second, case research copes with two important concerns on prior accounting studies using Hofstede's (1984) values (Baskerville, 2003; Chenhall, 2003; Harrison & Mckinnon, 1999).[3] On the one hand, Hofstede observes culture from the outside, which challenges mainstream social sciences that try to understand culture by being within. On the other hand, Hofstede's value

[2] This paper uses Donaldson's (2001) categorization of contingency theory elements. As a result, our study assumes a contingency approach to fit instead of a congruence approach, which are two very different approaches to fit with respect to the link between fit and performance (Gerdin & Greve, 2004). More specifically, the congruence approach assumes that a MCS fit on contingencies is the result of a natural selection process. Consequently, only the best performing firms survive and are therefore observable at any point in time. As there are no low performers, the congruence approach has no interest in the link with performance. The contingency approach, however, assumes that both high and low performers exist, because more or less successful MCS fits occur for extended periods of time. Hence, the goal of the contingency approach is to study performance fluctuations that depend on the interaction between the MCS and its situational contingencies (Gerdin & Greve, 2004; Luft & Shields, 2003).

[3] Although previous accounting studies used Hofstede values to measure national culture, we argue that the concerns mentioned here are valid for any study on culture, including organizational culture.

dimension conceptualization does not allow anchoring of culture in time, so that dynamics remain unexplored. Consequently, more qualitative research is called for that moves beyond static quantitative cross-sectional studies and explores the dynamics of MCSs and organizational culture in all its richness (Baskerville, 2003; Harrison & McKinnon, 1999; Henri, 2006). Third, prior survey research on the inter-organizational MCS fit-performance association was unable to study extensive MCSs with formal and informal control techniques on individual suppliers (Anderson & Dekker, 2005; Ittner et al., 1999).[4] Consequently, more case research is called for that investigates this association in practice.[5] As we are not aware of any case study that investigates the associations between organizational culture, MCS design and performance in MSRs, our paper answers both research calls by means of an in-depth longitudinal case study of two MSRs.

THEORETICAL FRAMEWORK AND RESEARCH PROPOSITION

To illustrate the impact of organizational cultural resemblance on MCS dynamics in practice, we propose a theoretical contingency framework for supplier relations in the manufacturing phase of the supply chain, which can be found in figure 3.1.

Insert Figure 3.1 About Here

On the left hand side of the framework we include supplier cultural resemblance, which represents the degree to which the supplier's culture resembles the manufacturer's culture. Despite our in-depth qualitative case study, our research requires a model of organizational culture to effectively compare two cultures and assess the degree of cultural resemblance. Therefore, we conceptualize organizational culture by means of the Competing Values Model (CVM) (Quinn, 1988; Quinn & Kimberly, 1984; Quinn & Rohrbaugh, 1983), a model suited for representing organizational culture (Howard, 1998) and used in earlier

[4] Ittner et al. (1999) and Anderson & Dekker (2005) study and find the MCS fit-performance association by means of a survey. Yet, both surveys only investigate a limited set of management control techniques. Ittner et al. (1999) focus on supplier selection and monitoring, the latter being captured by supplier certification and face-to-face contact. Anderson & Dekker (2005) look at formal management control in the form of the supply contract. Moreover, both studies acknowledge the limitation of only reflecting average inter-organizational practices instead of closely examining individual supplier controls.

[5] The only case studies looking into the fit-performance association are van Veen-Dirks (2006) and Heikkilä (2002). Yet, van Veen-Dirks' (2006) study on the alignment between production environment characteristics and MCS design remains within the boundaries of one organization and is based on complementarity theory. Conversely, Heikkilä (2002) does study IORs, but focuses on customer relations; in particular the demand chain structures that fit specific customer situations.

accounting studies of Bhimani (2003), Dunk & Lysons (1997) and Henri (2006). Despite its limited use in management control research, this model is appropriate for organizing and interpreting a wide variety of organizational phenomena, such as values, organizational forms and decision-making effectiveness (Quinn & Kimberly, 1984). Hence, it must be clear that we do not use the CVM to quantitatively measure organizational culture, but to represent organizational culture, while taking into account its richness and dynamics via case research. That way, we follow Bhimani (2003), who first describes a cultural change programme and new process based target costing system qualitatively, i.e. based on interviews and archival data, and later interprets these findings *in terms of* the CVM.

In essence, the CVM assumes that different organizational cultures do not result from different sets of values, but from different emphases on a limited set of values. These values are grouped in two dimensions with two competing values at the poles. These dimensions should not be interpreted as a dichotomous split between the values at the pole, but as a continuum of these values (Henri, 2006). The first dimension consists of *control* versus *flexibility* and represents a firm's preference for control, stability and order versus a preference for flexibility, change and spontaneity. That way, it involves a continuum from mechanistic to organic processes (Quinn, 1988).[6] The second dimension comprises *internal focus* versus *external focus* and represents the continuum of a company's focus on activities occurring within the firm versus outside the firm. An internally-oriented firm expends resources to optimize existing operational equipment and practices. An externally-oriented firm, on the other hand, scans the environment to assess relative strengths and weaknesses vis-à-vis competitors, suppliers and customers, and makes changes to the firm accordingly (McDermott & Stock, 1999). The two dimensions result in four types of organizational culture: hierarchical (control & internal focus), group (flexibility & internal focus), developmental (flexibility & external focus) and rational (control & external focus). As each type is an ideal, a firm has a combination of different cultures, although one type may be dominating the others (Quinn, 1988; Quinn & Kimberly, 1984; Quinn & Rohrbaugh, 1983). Therefore, we refer to the notion of *dominant type* in order to capture the *position* of an organization in the CVM (Henri, 2006). For example, an organizational culture of the

[6] A similar distinction is made with respect to management control (Burns & Stalker, 1961). In particular, "mechanistic controls rely on formal rules, standardized operating procedures and routines", while "organic systems are more flexible, responsive, involve fewer rules and standardized procedures and tend to be richer in data" (Chenhall, 2003, p. 131-132). Hence, the MCS of organizations with a control culture is likely to be characterized by a strong emphasis on mechanistic formal controls, while the MCS of organizations with a flexibility culture is likely to be characterized by a strong emphasis on organic informal controls (Henri, 2006).

hierarchical dominant type most closely resembles the hierarchical ideal type because of a *large* focus on control and internal activities, *and* only a *small* focus on flexibility and external parties. That way, the *dominant type* positioning makes it possible to compare organizational cultures that are qualitatively studied from the inside instead of measured from the outside. A second advantage of the *dominant type* positioning is the possibility to integrate cultural dynamics. As the value dimensions are continuums, a change in culture can be modelled as a change in dimension positions and a shift from one dominant type to another. Yet, as the dominant type terminology would overload our argumentation, it is dropped in the remaining of this paper. Still, all organizational cultures should be interpreted as dominant types.

Despite the clear advantages of qualitative research mentioned previously, this methodology limits a full study of the CVM. More specifically, a twofold supplier relationship study of a single manufacturer confines our investigation to two culture types. The first one is the manufacturer's culture, while the second one is a substantially differing supplier culture, of which the influence can be contrasted to the influence of a resembling supplier culture. As a qualitative study benefits most from cases diverging as much as possible, a comparison between two culture types differing on both value dimensions seems most suited. Consequently, the most appropriate comparisons are hierarchical versus developmental and group versus rational. From these comparisons, the one between hierarchical and developmental culture already demonstrated its ability to shed more light on different perceived success of a new management accounting system in the study of Bhimani (2003). Therefore, we opt for the same two culture types, of which the developmental type is chosen as manufacturer culture. This choice is based on the expectation that the influence of different degrees of supplier cultural resemblance on a developmental manufacturer's MCS is larger than on a hierarchical manufacturer's MCS. Hence, we define supplier cultural resemblance as the degree to which a supplier culture is hierarchical or developmental and resembles a developmental manufacturer culture.

The constructs in the centre of the framework visualize the associations between contingency variables influencing risks, and management control techniques governing these risks.[7] The degree to which the level of management control fits the level of risks is conceptualized by means of the degree of fit construct. MSRs are subject to performance risk

[7] In the model, all contingencies interactively determine both risk types (cf Kamminga & van der Meer-Kooistra, 2007; van Veen-Dirks, 2006). As a result, the model simultaneously depicts the associations between contingencies, risks and management controls.

and relational risk. Performance risk is the probability of the supplier interrupting the supply chain and damaging the common goal. This goal is manufacturing as many products of the order book as possible, on time, with good quality and at the lowest possible cost. Relational risk implies the probability of the supplier acting opportunistically by not openly communicating or minimizing operational snags (Das & Teng, 2001). These risks are increased by four contingencies. First, task uncertainty relates to the complexity and added value of both the delivered product and its operational processes (Woodward, 1965). Second, task interdependence refers to the degree to which sequential subactivities of the value chain have been split up and made dependent on each other (Dekker, 2004). Third, environmental uncertainty regards general market uncertainties and uncertainty about unknown future contingencies (Langfield-Smith & Smith, 2003). Fourth, relational stability aim concerns the manufacturer's aim of continued future interactions with the supplier to build bilateral commitment (Cooper & Slagmulder, 2004). MCSs contain two types of control, namely formal and informal control techniques (Langfield-Smith & Smith, 2003). Formal controls are explicitly set up to coordinate the MSR and include outcome controls and behaviour controls. Outcome controls involve the measurement and evaluation of operational outcomes against pre-defined targets. Behaviour controls concern specifying, monitoring and evaluating compliance with pre-specified planning, procedures, rules and regulations (Dekker, 2004; Merchant, 1998; Ouchi, 1979). Informal controls are not explicitly designed, but are grown out of shared norms and values (Merchant, 1998; Ouchi, 1979). Especially trust building has emerged as an important informal control instrument in inter-organizational MCSs (e.g. Dekker, 2004). Sako (1992) distinguishes three types of inter-organizational trust building, namely building contractual, competence and goodwill trust.[8] Besides trust building, MSRs are governed by clan control (Ouchi, 1979). Based on shared norms, values and a common goal, suppliers are motivated to achieve that goal (Das & Teng, 2001) because of inter-organizational social pressure exerted by the manufacturer (Bijlsma-Frankema & Costa, 2005; Speklé, 2001).

[8] Contractual trust is based on the expectation that the supplier will keep promises and comply with agreements made, whether these are contractually stipulated or not. Competence trust concerns the expectation that the supplier possesses the necessary technical and managerial competences to deliver the order as agreed. Goodwill trust regards the expectation that the supplier shares an open commitment, with the willingness to perform activities that are beneficial to the MSR, but possibly neither in the supplier's interest nor required by the contract (Sako, 1992).

To incorporate the fit-performance association, we add operational performance on the right hand side of the framework. Since product quality is emphasized more than timeliness and cost as supplier evaluation criterion (Waters-Fuller, 1996), we use this performance indicator to evaluate operational performance. In particular, we measure product quality by its most important evaluation metric in MSRs, namely percentage of defects (Gunasekaran, Patel & McGaughey, 2004). In automotive industry, this KPI is expressed in "parts per million" (PPM), i.e. the number of products claimed to be defective by the manufacturer out of one million products delivered (Lowe, Deibridge & Oliver, 1997). The arrow to performance depicts the fit-performance association. A MCS fitted on MSR contingencies and risks is associated with good operational performance. Conversely, provided that the supplier is incapable of dealing with changed contingencies, a misfitted MCS is associated with poor operational performance (Kamminga & van der Meer-Kooistra, 2007; van Veen-Dirks, 2006). However, since that kind of misfit over time results in escalating control problems, further damaging operational performance (Dekker, 2004), such misfitted MCS is changed towards a more suitable design (van Veen-Dirks, 2006). These dynamics are also captured by the fit-performance arrow and further justify our choice for a longitudinal case study. In essence, we assume that MCSs are equilibrating and return to a stable situation after being disturbed (van Veen-Dirks, 2006)[9]. In contingency terminology, this change is called "Structural Adaptation to Regain Fit" or "SARFIT" (Donaldson, 2001): provided that the supplier is incapable of dealing with changed contingencies, a misfitted MCS only *temporarily* aggravates performance, *until* the MCS is *changed* towards a design fitting the changed contingencies and risks and therefore contributing to performance.

Finally, the arrow from supplier cultural resemblance to MCS represents our research proposition: supplier cultural resemblance is positively associated with the speed at which the MCS changes, so that the MCS keeps (or quickly regains) its fit in case of changing contingencies. Indeed, White & Lui's (2005) survey on alliances in the construction industry provides significant evidence that cultural differences between partners make the alliance more difficult to manage. In particular, an organization will expend significantly more

[9] Consistent with economics theory, contingency theory largely depends on the assumption of equilibrium, stipulating that organizations utilize the MCS best suited for the MSR, i.e. the MCS fitting the MSR's risks. Yet contrary to economics, contingency theory assumes that also misfits occur for extended periods of time (Luft & Shields, 2003). Obviously, the outcome of such a misfit could be the end of the IOR. Yet in that case, the change towards a MCS fitting the new level of risks does not occur. Consequently, this kind of "equilibrium" without MCS dynamics is not interesting for our research. Therefore, we abstract from the possibility that the manufacturer changes suppliers. In terms of research methodology, this abstraction is put into operation by studying a MSR in an industry, in which manufacturers are not inclined to switching suppliers *during* the manufacturing phase.

managerial time and effort on interacting with a partner, which is very different in terms of organizational culture, in order to avoid or mitigate effects of miscommunication and conflict (White & Lui, 2005). Transposing these findings to a MSR setting learns that a difference in cultural resemblance between manufacturer and supplier is associated with a difference in time and effort needed to control the supplier. More specifically, more supplier cultural resemblance increases the speed of extending management control, because the manufacturer can evaluate suppliers with cultural similarities faster (Bierly III & Gallagher, 2007). That way, time is saved, which otherwise would be lost on trying to understand why people act the way they do (Aquilon, 1997). As time has become an important source of competitive advantage in manufacturing industries, a lot of emphasis is put on high awareness of time requirements and rapid decision making (Bierly III & Gallagher, 2007; Heikkilä, 2002; Stalk, 1988). In contingency terminology, this advantage means that when a MCS misfit is changed faster, performance picks up more quickly (Donaldson, 2001).

RESEARCH METHODOLOGY

Case study research

An explanatory case study (Yin, 2003) suits studying our research proposition, as it involves refining existing inter-organizational management control theory from a dynamic perspective. More specifically, our case research seeks "to establish the plausibility of a specific theoretical perspective by demonstrating its capacity to illuminate some previously unappreciated aspect of management accounting practice" (Keating, 1995, p. 69). Indeed, the goal of this study is to refine inter-organizational management control theory by illustrating the impact of supplier cultural resemblance on the dynamics of MCS design in MSRs.

Several inter-organizational management control case studies (e.g. Bhimani, 2003; Cooper & Slagmulder, 2004; Dekker, 2004; Kamminga & van der Meer-Kooistra, 2007) demonstrate that MCS design can be adequately investigated by means of case research. Furthermore, organizational cultures, subsequent behaviour of companies and the influence on the functioning of the MCS are very complex. Therefore, an in-depth study is needed to discover how different parties respond to a situational change and whether organizational culture has any effect on that response. Bhimani's (2003) work clearly demonstrates this, as mainly the qualitative evidence provide insight in the actual reasons behind the influence of culture on perceived accounting system success, which was found by means of a survey. This observation not only justifies the choice for a case study, but also forms the reason why more

of this research is requested (e.g. Chenhall, 2003; Dekker, 2004; Henri, 2006; Langfield-Smith & Smith, 2003; Scheytt & Soin, 2006; van der Meer-Kooistra & Vosselman, 2006).

As theory refinement needs a clear theoretical starting point combined with openness to discover unexpected findings (Keating, 1995), we proposed a theoretical contingency framework to guide the data collection, but simultaneously used data collection techniques allowing sufficient openness. The collected data was longitudinal, because such data can reflect changes in MCS design and operational performance, which are needed to illustrate the impact of supplier cultural resemblance on the dynamics of the fit-performance association (Luo, 2002). Only by means of a longitudinal study, we are able to answer the call for more research on MCS dynamics (Anderson & Dekker, 2005; Dekker, 2004; 2007; Ittner et al., 1999; Scannell et al., 2000; van der Meer-Kooistra & Vosselman, 2000).

Like most inter-organizational studies, the unit of analysis is one dyadic relation between manufacturer and supplier (van der Meer-Kooistra & Vosselman, 2006). Dyer & Singh (1998) explicitly propose this "relational view", focusing on the manufacturer-supplier dyad, as opposed to the "industry structure view" and "resource based view", when analyzing cooperative strategy and sources of inter-organizational competitive advantage. Furthermore, we analyzed the relation after the manufacturer had decided to outsource the manufacturing activity. In other words, we addressed neither the make-or-buy decision nor related commercial negotiations, but collected data from the start of production onwards.

Case company selection

The selection of the case companies was influenced by two selection concerns: theoretical suitability and open and flexible access to senior management.

First, we chose the Belgian Volvo Cars Gent (VCG) production facility of the Swedish Volvo Cars Corporation (VCC) as manufacturing case company. On the one hand, we chose automotive, because this industry is considered a trendsetter in supplier relationships (cf Womack et al., 1990). Due to the high level of component outsourcing, extreme competitive pressure and resulting continuous improvement projects with suppliers, this sector needs appropriate MCSs to organize and manage supplier relations (Alford et al., 2000; Carr & Ng, 1995; Scannell et al., 2000). Furthermore, our research regarding MCS dynamics requires a MSR that heavily changes and is not terminated due to potential unsatisfactory supplier performance. The manufacturing phase of an automotive supply chain fulfils this need. For example, the manufacturing and delivery processes of suppliers drastically change, when a manufacturer starts producing a new car model. Moreover, manufacturer facilities are not

inclined to switch suppliers because of a lack of capacity and sufficient supply quality at potential replacing suppliers. On the other hand, we chose VCG, because exploratory interviews learned that this manufacturer is considered a "best practice" by financial analysts, suppliers and umbrella organizations. For example, with respect to suppliers' capability for build-to-order, VCG's supplier park was evaluated best in a comparative case study, also including supplier parks of e.g. Ford, General Motors and Audi (Howard, 2006). In addition, VCG was subject to extremely changing supplier relations due to the introduction of two extra car models. Furthermore, VCG's culture is of the developmental type with a focus on flexibility and external parties. Besides theoretical suitability, exploratory interviews with VCG management showed remarkable openness, interest in the research topic and willingness to cooperate.

Second, we chose the production facilities of two of VCG's first-tier module suppliers as supplying case companies.[10] Besides willing to participate, these high value-added just-in-sequence[11] suppliers met our theoretical suitability requirements. In particular, the suppliers are similar with respect to the four contingency variables, while they are very different with respect to their culture. More specifically, one supplier's culture is of the developmental type, resembling VCG's culture, while the other's culture is of the hierarchical type. That way, our choice enables us to adequately investigate the effect of high and low supplier cultural resemblance on MCS dynamics, while keeping contingency effects on the MCS constant. Obviously, these contingencies must considerably change over the period under study, so that we can study the effect of supplier cultural resemblance on MCS dynamics following a contingency change. Yet, the change in contingencies has to be similar for both suppliers under study to preserve a constant external effect over time. The introduction of two extra models at VCG met these requirements, as both suppliers faced similar changes in their situational characteristics.

[10] For reasons of confidentiality, we call these production facilities "Supplier Automotive Gent 1 (SAG1)" and "Supplier Automotive Gent 2 (SAG2)". The mother company headquarters are referred to as "Supplier Automotive 1 (SA1)" and "Supplier Automotive 2 (SA2)". Concerning the delivered product, it suffices to know that both suppliers deliver a high value-added module. Examples of such modules supplied to VCG are seats, cockpits, engines, fuel tanks, bumpers, exhaust systems, door modules and wheels. For the same reason, the case description only refers to "X", "Y" and "Z", instead of people's full last names.

[11] In order to reduce stocks and preserve maximum flexibility at VCG, components are delivered both just-in-time (JIT) and in-sequence. Just-in-time delivery means delivery when the car, for which the components are intended, has come onto VCG's final assembly line. In-sequence delivery implies delivery in the same order as the cars on VCG's production line. Suppliers delivering just-in-time and in-sequence are also called just-in-sequence (JIS) suppliers.

Data collection

The data gathering consisted of 21 semi-structured interviews with high level managers of VCG, SAG1 and SAG2. Interviews were held in three rounds between February 2006 and December 2007. First, all VCG managers involved with suppliers were interviewed, including responsibles for quality, logistics, logistic engineering, material planning, IT, HR and purchase. That way, we got a general impression of VCG, its suppliers and its MCS. Second, we interviewed SAG1 and SAG2 management. In particular, we asked them to describe the history of the VCG-SAG relation. As a result, we got the suppliers' impression of the relation with VCG, its history and its MCS, in the form of retrospective data. Third, we re-interviewed high level VCG managers specifically involved with both suppliers for several years. After asking them the same question, they added their view to the retrospective data of our study. Table 3.1 provides an interview data summary, describing the organization and position of the interviewees, the number of interviews, the duration of the interviews and the interview dates.

Insert Table 3.1 About Here

The interviews aimed at building a trusting relation and developing a dialogue with the interviewees, which permitted them to discuss their own concerns. All interviews were tape recorded electronically and structured by an interview protocol with open-ended questions, based on the theoretical framework. This approach allowed covering all framework constructs (i.e. theory attachment), while at the same time preserving openness for new findings (i.e. theory detachment). Interviews lasted between three quarters of an hour and two hours and a quarter, with an average duration of approximately one hour and twenty minutes. Afterwards, all taped interviews were transcribed and sent back to the interviewees for feedback and final approval. The feedback was transcribed as well. Interview transcripts were written in prose, as to avoid offending interviewees by literally transcribing their words on a very sensitive topic. Furthermore, by writing in prose, we were able to immediately write out certain parts of the interview that were not entirely clear on the tape. As the interviewees approved the final transcript, we received absolute certainty on the written documents and all interpretations made during transcribing.

Data analysis

The data analysis followed a structured iterative approach. Already during interview transcribing, a first analysis was performed by highlighting parts of the transcript and writing down comments and related personal ideas.

Then, both transcripts and personal notes formed the basis for a second analysis, which was completely done by hand. This analysis started with writing the case studies, for which all transcript extracts were ordered chronologically. The most important techniques to enhance theoretical sensitivity during the coding process were asking questions (who?, what?, when?, where?, why? and how?) and making comparisons (Strauss & Corbin, 1999). Also the tape recorder was used, to capture facts and findings coming up during the analysis. As with interviews, these tapes were transcribed and further studied. The coding process resulted in a document, containing an elaborate sample of ordered longitudinal data, which was used for writing up the case studies.

The coding of organizational culture required a specific approach, because our theoretical framework and therefore also our case study take on the research position of the manufacturer. This manufacturer knows its own organizational culture from the inside, but can only asses a supplier's culture from the outside by considering supplier behaviour, resulting from the supplier's cultural values. Yet, several supplier characteristics are associated with supplier culture and indicative for supplier behaviour (Burton & Obel, 2004). Hence, from a contingency point of view, the manufacturer might use the following contingencies as an adequate means to assess a supplier's culture: structure[12], size[13], ownership[14] and nationality[15]. The more a supplier is structured as a bureaucracy, larger,

[12] Structure refers to the degree to which a supplier's organization is structured as a bureaucracy (cf Perrow, 1970), which is characterized by a well defined authority hierarchy and high formalization, i.e. a large preference for rules and regulations (Burton & Obel, 2004). The more a supplier is structured as a bureaucracy, the more its underlying cultural focus lies on control and internal processes (Burton & Obel, 2004; Zammuto & Krakower, 1991).

[13] A supplier's size is positively associated with the level of procedure formalization and control sophistication. In addition, larger suppliers have a management style that is less personal and entrepreneurial and are less willing to cooperate with external parties. Consequently, large suppliers' cultures are characterized by a greater focus on control and internal processes than on flexibility and external parties (Burton & Obel, 2004; Chenhall, 2003; Miller, 1987; Park & Ungson, 1997; Shan & Hamilton, 1991).

[14] Privately owned suppliers have a different culture compared to publicly owned suppliers. Family firms are often in the business for generations and have developed sound relationships with all stakeholders. Furthermore, family firms put less pressure on short term performance, so that the adoption of good long term investments stays assured. So in terms of the CVM, a privately owned supplier is likely to prefer a developmental culture with a focus on external stakeholders and flexibility towards future performance increasing opportunities (Padgett & Mukherjee, 2006; Stein, 1989).

[15] A supplier's country of origin is associated with its organizational culture. When supplier headquarters are located in a country with strong uncertainty avoidance and high power distance, i.e. the two cultural values predominantly affecting organizational structure (Hofstede, 2001),

publicly owned and from a country with strong uncertainty avoidance and high power distance, the more the associated supplier culture is of the hierarchical type. To illustrate VCG's usage of these contingencies, table 3.2[16] provides a sample of exemplary interview quotes out of our case data. Following our manufacturer research position, we use the same contingencies to assess SAG1's and SAG2's culture in terms of the CVM. Given the insights on a supplier's culture, a comparison with the manufacturer's culture, also in terms of the CVM, determines the degree of supplier cultural resemblance.

Insert Table 3.2 About Here

Finally, we used the temporal bracketing and variance research methods to structure and interpret the case data in relation to the contingency framework (Langley, 1999; Rowe et al., 2008). Temporal bracketing means dividing the time length of a longitudinal case study into time periods, so that there are continuities of events within a time period and discontinuities of events between time periods. That way, temporal bracketing is suited for making comparisons of organizational change between time periods. The variance (or synthetic) method implies transforming original data from a story with events to a collection of variables that synthesize critical components of the events. These variables are the variables from our theoretical framework, which allow analyzing how change in an independent variable, i.e. MCS fit on risks, causes change in the dependent variable, i.e. operational performance (Langley, 1999; Rowe et al., 2008).

The case study and following discussion were approved for publication by VCG, SAG1 and SAG2, without having to make changes.

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the supplier has a preference for a strong bureaucracy with high formalization in a strict hierarchy. Hence, the associated supplier culture is of the hierarchical type with a focus on internal control (Aquilon, 1997; Burton & Obel, 2004; Lachman, Nedd & Hinings, 1994).

[16] When interviewees refer to "Volvo", they actually mean "Volvo Cars Gent" or (as we put it in the text) "VCG". The indication "[*number]" refers to a certain supplier, which name is not mentioned for reasons of confidentiality. Yet, for clarity, we provide the characteristics of these suppliers: [*1] = supplier with hierarchical structure, large, publicly owned, American; [*2] = supplier with horizontal structure, small, privately owned, German; [*3] = supplier with hierarchical structure, large, publicly owned, American; [*4] = supplier with horizontal structure, small, privately owned, Belgian; [*5] = supplier with hierarchical structure, large, publicly owned, American.

CASE STUDY

The case study section of this paper contains four parts. First, we describe VCG. We highlight organizational characteristics and behaviour, define VCG's culture, and present VCG's resulting supplier MCS. Second, we introduce two module suppliers with different cultural resemblance to VCG. We discuss the characteristics used by VCG to assess their culture and resulting behaviour. Third, we indicate to what extent the introduction of two new Volvo models changed the contingencies of both supplier relations. Based on the difference in supplier cultures, we propose different MCS dynamics. Fourth, we present the analyses of these dynamics, as result of the temporal bracketing and variance on actual case data.

Volvo Cars Gent

Volvo Cars Gent (VCG) was set up in 1965 as the largest assembly unit of Volvo Cars Corporation (VCC), a Swedish automotive OEM that produces cars since 1927. In 1999, VCC became part of the Premier Automotive Group, including Jaguar, Aston Martin and Land Rover, owned by Ford Motor Company, the world's third largest car manufacturer. In 2005, VCG employed 5.025 people, had a turnover of about €4,2 billion and produced 258.479 cars. VCG's organizational structure is horizontal and the counterpart of a bureaucracy with an authority hierarchy in vertical levels. This structure is associated with VCC's Swedish nationality, as Sweden is characterized by low power distance and uncertainty avoidance. In Sweden, people are considered equal, which results in a preference for empowerment and collaboration in a horizontal structure. For example, a VCG superior leading a team is called "a coach" to stress his stimulating and supporting, rather than controlling, role. Furthermore, the Swedish culture is a "we" culture, in which friendships are established; also in business. In these friendships, honest open communication and mutual cooperation are preferred above avoiding uncertainty and refusing unselfish assistance. VCC's size sustains bringing this culture into the company. Despite being part of Ford's Premier Automotive Group, VCC remains a relatively small autonomous company with only two major production facilities. As a result, VCG formalization is limited and does not hinder the entrepreneurial spirit of employees at all levels, who freely interact with colleagues and coaches at VCG, VCC *and* suppliers.

Based on these characteristics, VCG's culture most closely resembles a developmental culture with a high focus on flexibility and external oriented values. Naturally, some focus on

flexibility is obvious in an automotive setting with high flexibility requirements due to numerous model variants, fluctuating demands and continuous product and process changes. Yet, VCG's high focus on flexibility is visible in how the OEM deals with these requirements, namely by valuing empowerment. Instead of severely controlling employees, VCG grants them decision-making power to solve process changes and problems themselves based on their own expertise and lots of collaboration. As a result, VCG strongly values fairness, which means that employees are not penalized for making a mistake, but evaluated based on their behaviour in trying to resolve it. When employees openly communicate, quickly solve the problem and work on avoiding it in the future, VCG congratulates them with their way of action and does not punish them. In other words, VCG believes in human relations and values a spontaneous flexible response to situational changes at all company levels more than lower level obedience to control from the top.

The same flexibility orientation holds for VCG's just-in-sequence[17] suppliers. Instead of considering these supplier relations to be strictly business and focusing on the own internal operations, VCG largely focuses on external suppliers in search of continuous collaboration. The OEM finds that manufacturer and suppliers strive for a common goal, which is manufacturing as many products of the order book as possible, on time, with good quality and at the lowest possible cost. As a result, VCG considers the suppliers as part of the "Volvo family" and openly communicates with them on both difficulties and possible improvements. This supplier interaction occurs not only individually, but also jointly via the "Suppliers Team Volvo Cars" (STVC). The purposes of this supplier team, which meets monthly, are creating openness and sharing competencies, by the exchange of information and real life experiences, in order to improve the performance of all parties. As the STVC is actually run by the suppliers, VCG signals her place is *among* suppliers *instead* of *above* them.

Nevertheless, these suppliers are subject to a considerable amount of management control. Yet, this control bears the stamp of VCG's culture. With respect to formal control, VCG frequently checks up on supplier outcome by means of several quality and logistic KPIs, of which parts per million is the most important. Furthermore, the OEM controls supplier behaviour by means of a syllabus (agreements regarding basic routines of operational business), frequent supplier follow-up and supplier company visits.

[17] In order to reduce stocks and preserve maximum operational flexibility at VCG, components are delivered both just-in-time (JIT) and in-sequence. Just-in-time delivery means delivery when the car, for which the components are intended, has come onto VCG's final assembly line. In-sequence delivery implies delivery in the same order as the cars on VCG's production line. Suppliers delivering just-in-time and in-sequence are also called just-in-sequence (JIS) suppliers.

Although these controls reflect VCG's mechanistic control, they are influenced by VCG's focus on flexibility. For example, whether VCG imposes a penalty for causing a line stop (standard formal procedure) is always first negotiated with the supplier and then based on an assessment of the supplier's response to the issue. The empowerment and corresponding fairness values that underlie this behaviour towards suppliers correspond to VCG's values towards employees. Concerning behaviour control, VCG not only visits suppliers for control purposes, but also for collaboration. This cooperation coincides with open information sharing from VCG and the suppliers in order to stimulate flexible problem solving and creative continuous improvement based on *both* parties' expertise.

Yet, VCG's organic preferences are even more visible in the importance attached to informal supplier control; more specifically, trust building and clan control. First, VCG builds contractual trust based on prior positive experiences, so that the OEM trusts suppliers to execute oral and written agreements. Second, VCG also trusts suppliers to possess the necessary competences to deliver the goods as required and act on changes or improvements as promised. This competence trust is primarily built on past performance and suppliers' process certifications. Third, VCG continuously builds goodwill trust, i.e. the trust that the supplier openly and honestly communicates (even potential) delivery problems, which impact VCG and other JIS suppliers. This trust is increased by frequent interaction, and resulting bonds of friendship, with supplier managers, some already working with VCG for more than ten years. During this interaction, VCG continuously shares and promotes its norms and values, so that supplier managers are trusted to know that VCG values honest open communication more than opportunistic problem concealment. In addition, familiarity with the common goal and VCG's norms and values driving that goal makes suppliers feel related to VCG, like in a team or clan. Consequently, every supplier manager faces negative personal feelings, when confronted with (opportunistic) mistakes harming that goal. As JIS suppliers face daily operational snags requiring problem solving, they are highly subject to this social pressure. On top of these bi-directional informal controls, VCG uses the STVC to effectively structure the clan, so that both informal controls are strengthened and extended towards all JIS suppliers. By means of socializing activities like a joint lunch, the STVC magnifies bi-directional trust and creates multi-directional trust among all JIS suppliers. The STVC also builds trust via frequent information and knowledge sharing, joint decision making and joint problem solving. Based on this trust, VCG and the suppliers quickly and openly work on solutions for problems by helping each other, instead of placing blame and negotiating penalties.

Additionally, the STVC clan strengthens VCG's social pressure on suppliers, because important supplier errors are reported and discussed at STVC meetings. The presence of all suppliers, towards which supplier managers are accountable, increases potential negative personal feelings and that way also the level of social pressure.

In sum, VCG's MCS shows the OEM's focus on flexibility and external suppliers. This MCS benefits from a resembling supplier culture that leads to corresponding behaviour. For example, VCG's STVC would not work without the willingness of suppliers to open up facilities during visits and share technical and managerial knowledge. In the next section, we introduce two module suppliers with a different degree of resemblance to VCG's culture.

Module suppliers SAG1 and SAG2

SAG1 and SAG2 are two suppliers delivering high value-added modules from a facility in VCG's supplier park. Their production processes involve complex core competences, which add considerable value to the modules. Because of JIS delivery, their interdependence with VCG is high. If one supplier disturbs the continuous delivery flow, not only VCG but also other JIS suppliers suffer. In addition, both suppliers must be highly flexible due to pull production and heavily fluctuating automotive demand. Together with the risk of VCG being closed down or VCC Purchase resourcing the module, this demand fluctuation results in high environmental uncertainty for the suppliers. Yet, as VCG is aware that the interdependence considerably impacts performance, the OEM strives for long term relational stability with both suppliers. Contrary to the supply relations with VCG that are similar, SAG1 and SAG2 have very different cultures, which VCG assesses by addressing their characteristics as described below.

The Belgian module supplier SAG1 was founded in 1996 as the joint venture of two automotive suppliers entering a new, yet related, business, in response to VCG's decision to outsource the particular module. One year later, the Belgian plant manager, Mr Z, had set up four similar companies supplying the same module to other OEMs, so that a mother company, SA1, was founded. In 2005, SA1 produced modules in 19 facilities world wide, with about 1.000 employees; despite the impressive growth rate, still a very small scale in automotive. All these years, SA1 has been led by Mr Z. Although he never owned SAG1 or SA1, he considers SA1 to be his own and receives full autonomous decision making power to act as SA1's owner. Consequently, SA1 resembles a privately owned company and Mr Z's business attitude completely permeated SAG1. That attitude is one of friendly relationships with lots of

spontaneous bi-directional communication and collaboration at *all* levels with SA1 *and* VCG. As a result, SAG1 is part of a horizontal company structure, despite Belgian culture's high level of power distance and uncertainty avoidance. Hence, SAG1 has full responsibility for the organization of current production processes and the planning of upcoming project changes. Naturally, SA1 highly influences SAG1 production, for example with respect to continuous improvement, but always in a climate of bi-directional collaboration and agreement. Especially Mr Z frequently visits SAG1 personally to offer assistance, since SA1 headquarters are located near SAG1 and Mr Z feels highly connected as SAG1's original plant manager. That way, he makes sure that SAG1's flexible focus on its customer VCG is adequately supported by SA1 at all times. In sum, SAG1's culture most closely resembles a developmental culture.

SAG2, however, has a completely different culture. This supplier was set up in 2000 as the production facility of SA2, a global American automotive supplier founded in 1943 and quoted on the American stock market. In 2005, SA2 operated 79 facilities in 25 countries on six continents with approximately 19.000 employees. Despite the American culture of medium power distance and uncertainty avoidance, SA2's structure is a bureaucracy with a hierarchy and high formalization, in which SAG2 only has responsibility for production and delivery according to strict rules and procedures imposed by SA2. This means that functions like finance and HR are centralised and that SAG2's plant manager only concentrates on budgeting and reporting. Furthermore, the SAG2 production process is designed and installed by SA2 engineers without SAG2 involvement. Taken together, these characteristics point at a hierarchical culture, focusing on controlling current processes, instead of responding flexibly to operational difficulties and improvements, initiated by external collaboration and often in need of financial investments.

Contingency changes

The previously described JIS supply relations refer to the situation in 2005. Yet, these circumstances followed a considerable change in contingencies in 2004. Before 2004, VCG operated in two shifts, manufacturing around 150.000 cars per year of two models (Volvo S60 and V70) on the P2 platform. In 2004, VCG started production of two extra models (Volvo S40 and V50) on another platform, P1. This substantially changed JIS supply relations. First, the level of task uncertainty increased, because production volume almost doubled (to around 250.000 cars per year), production activities became more complex, headcount increased and a third night shift was introduced. Second, task interdependence heightened due to an

explosion of model variants and a considerable increase in JIS supply flexibility. Third, fluctuating demands for four Volvo models added to the level of environmental uncertainty. This demand dependence followed the extended production capacity for two models of which commercial success was uncertain. This uncertainty put additional pressure on operational performance, so that suppliers were inclined to keep operational difficulties in-house and solve snags themselves. VCG's vulnerability towards this kind of opportunistic behaviour augmented. As JIS suppliers started to play a more important role in VCG's supply chain, the automaker's striving for long term relational stability increased. Consequently, suppliers' fear for retaliation, resulting from disclosed opportunism, reduced. In other words, the two extra models substantially changed situational characteristics and increased performance and relational risk of JIS supply relations. Hence, in order to preserve the MCS fit, VCG's level of management control must be increased.

Dependent on the degree of supplier cultural resemblance, we expect this MCS change to differ. As SAG1's developmental culture corresponds to VCG's culture, we expect VCG's MCS on SAG1 to need less time to adjust to changing circumstances. Oppositely, SAG2's hierarchical culture substantially differs from VCG's developmental culture. Hence, we expect VCG's MCS on SAG2 to need more time to adjust.

Case analysis of relation dynamics

The case data concerning SAG1 and SAG2 were bracketed into time periods based on changes in the influencing variables, i.e. the level of contingencies, risks and the MCS. The substantial increase in the level of contingencies and risks demarcates periods 1 and 2, while different changes in the MCS demarcate periods 2 to 6. To facilitate within and between period comparisons of the different variables, the following analyses are organized by headings corresponding to the time periods. Consistent with the variance method, we interpret the case events in terms of the variables in the theoretical framework in order to compare the variables. Figure 3.2 and figure 3.3 show a timeline that summarizes the results for each variable per time period from 2003 to 2006 for SAG1 and SAG2 respectively. Notice that performance is expressed in average parts per million (PPM) over the period under consideration. The level of this quality measure is visualized by means of a graph at the bottom of each figure. The high-low categorization in the tabular part of the figure results from comparing the average PPM with a pre-defined target.

Insert Figure 3.2 & 3.3 About Here

SAG1

Period 1 (September 1996 – December 2003)

From the start of production in 1996, SAG1 showed a consistently positive performance level. As VCG's values of an open collaborative focus on JIS suppliers fitted Mr Z's business attitude and SAG1's culture, SAG1 responded by developing (personal) relationships that allowed the sharing of information at all company levels and the building of trust. Mr Z and SAG1 felt part of the "Volvo family", which resulted in bi-directional collaboration. For example, when VCG experienced substantial difficulties with a newly designed automatic pallet transportation system for SAG1 modules, SAG1 proposed to help redesign the delivery system, despite full VCG responsibility for logistics. In particular, SAG1 assisted in designing a new system that included automatic truck loads via a "carpet"[18], automatic transport at VCG via a conveyor bridge and additional labels by SAG1. It must be clear that these changes required considerable financial investments from SAG1, especially for the carpet. Yet, Mr Z readily offered assistance and considered the investment obvious, given his strong relation with VCG. Hence, during the period 1996-2003, SAG1 became entirely aimed at satisfying all VCG needs as quickly as possible, irrespective of the cost.

These cultural values and corresponding behaviour made VCG built high competence and goodwill trust. For example, SA1 set up a department that collected difficulties of a certain JIS production unit, quickly proposed a solution and then distributed both problem and solution to all SA1 facilities. The same approach held for continuous improvement. When a process or product amelioration was realised at a certain JIS facility, this improvement was always shared with all JIS units via SA1. When a potential improvement was developed centrally, SA1 always first consulted VCG. Yet, when VCG approved the innovation and SAG1 implemented it, SA1 spread it to other JIS units. Based on the open relation with SAG1, VCG was familiar with this approach and therefore trusted SAG1 to perform to the

[18] This "carpet" is a kind of platform on which SAG1 places finished modules in-sequence. The carpet is electrically motorised and automatically loads the modules into a truck. At VCG a similar carpet is installed that automatically unloads the truck. As the modules are in-sequence, they are directly transported by a conveyor bridge to the module build-in station of the VCG assembly line.

best of their ability at all times and to openly communicate both internally with SA1 and externally with VCG. For example, when SAG1 adapted the outbound stock balance, VCG was informed and asked for their approval. Besides trust building, also social pressure was considerable present, especially on Mr Z. Mr Z and Mr X, a VCG supplier expert, developed a personal friendship, which resulted in the joint creation of the STVC together with two other supplier plant managers. As Mr Z even chaired the STVC for about one and a half years, it must be clear that his support, and therefore his susceptibility to social pressure, were very high.

VCG's formal controls mainly focused on outcome KPI's (primarily PPM) and compliance with delivery rules and regulations drawn up in SAG1's syllabus.

Period 2 (January 2004 – March 2005)

To preserve a MCS fitting the increased level of risk, resulting from the contingency changes in January 2004, VCG had to raise the level of management control. With respect to formal control, VCG set up cross-functional workgroups one and a half year upfront to control the VCG-SAG1 interface (e.g. information exchange and logistics) and make sure the supplier would be capable of handling the new module supply. The main type of information for this project phase behaviour control was an electronic flowchart (Excel file) clarifying the project phases and formulating related questions, to which the supplier had to provide the answer. In addition, the supplier also had to score the progress on every question, ranging from green (question completely in order; no further sub-questions to or from VCG/VCC) over orange (question not in order; issues need to be dealt with or sub-questions need to be answered; yet no problem considering phase deadline) to red (question not in order and some problem; e.g. answer to (sub-)question unknown or insufficient information available). Every month, the supplier plant manager had to deliver an update of the flowchart to VCG and VCC. When a question was marked red, VCG/VCC addressed the supplier on this problem during the next "launch readiness review" meeting at VCG. The problem was discussed and a solution was agreed upon. Hence, the flowchart's main goal was informing VCG/VCC engineers of the supplier's project preparation progress and status. Yet, for this behaviour control to work properly, the supplier's answers and scores had to honestly reflect reality. At SAG1, this was not an issue, as the supplier strongly valued open communication and even considered the flowchart a very helpful tool for the *own* planning and project follow-up. Consequently, a green score on a flowchart question regarding employee training on new procedures really meant that SAG1 had communicated all new procedures and trained all (new) employees

involved. That way, VCG effectively controlled the VCG-SAG1 interface during the project phase.

SAG1's open relationship with lots of interaction created opportunities for VCG to exercise additional behaviour control on SAG1's internal production processes. During the project phase, SAG1 regularly invited VCG and VCC managers to SAG1 to explain *and discuss* how changes to internal processes were made. To that end, SAG1 management really anticipated VCG questions and prepared the answers in advance. Also VCG shop floor employees were invited to SAG1, as SAG1 considered it important for them to know SAG1 activities and meet SAG1 employees, with whom they would interact.

Mr Z and some SA1 managers always attended these visits, to show SA1's attention for the upcoming changes. Despite substantial extra costs, these changes were implemented in two phases, because SAG1 considered the risk of a complete line change too high. In addition, SAG1 installed extra production capacity to cope with interruptions, which always occur when production processes are radically changed. Furthermore, SAG1's plant manager attended monthly VCC and SA1 R&D meetings. As a result, this manager already responded to potential production difficulties during the design phase and received VCC information first hand as quickly as possible. That way, he was best positioned to assist SA1 and supervise SAG1's new production lay-out, so that all operational processes and procedures supported production of the new modules. Moreover, SAG1 management even anticipated on serious failures harming VCG delivery. An illustrative example was the installation of an extra carpet to load trucks. Until 2004, SAG1 only possessed one carpet, so that in case of a carpet failure VCG delivery would inevitably halt. Due to the changed contingencies, SAG1 managers *themselves* assessed the risk of stopping the VCG line due to a carpet failure as unacceptably high. Therefore, they demanded SA1 financial resources for an additional carpet. As Mr Z was aware of the highly interdependent production environment and the social consequences of a VCG line stop on SAG1's management and their reputation, he almost instantly granted SAG1 the resourced needed. So, without an actual carpet failure having caused a VCG line stop in the past, SAG1 installed an additional one, only to prevent VCG delivery from suffering from a potential carpet failure in the changed circumstances. Taken together, these signals built additional competence trust, on top of the considerable level VCG developed in the past.

Hence, VCG's MCS *immediately* followed the increase in risk based on behaviour control and trust building *actually* taking place *before* the contingencies changed. That way, VCG preserved a MCS fit, which was expected to sustain SAG1's performance based on the

framework. And indeed, after the start of production, SAG1's new module delivery did not run into substantial problems, so that its performance level remained outstanding.

Period 3 (April 2005 – …)

Following the 2004 situational changes and resulting difficulties at certain JIS suppliers (other than SAG1), VCG extended its basic formal control on SAG1 to fit the new production environment. Although already implemented in practice, the following extensions were confirmed in 2005: registration and evaluation of two logistic KPIs, namely line stop minutes (i.e. number of minutes that a supplier causes stoppage of the VCG assembly line) and dropped cars (i.e. number of cars dropped from VCG's line planning, because a supplier is unable to deliver the requested part), strict application of the penalty system (including the negotiation policy) and more frequent supplier outcome and behaviour follow-up. Combined with the very high level of informal control, VCG used these extended formal controls to govern the high level of risks. Hence, consistent with theoretical expectations, SAG1 retained its excellent performance.

SAG2

Period 1 (January 2000 – December 2003)

From the start of production in 2000, SAG2 was an exemplary supplier with performance well above target. VCG's MCS appeared to fit the supplier's risk with basic KPI (primarily PPM) follow-up, a clear syllabus and a substantial level of competence trust, mainly based on previous good performance. VCG's goodwill trust, however, was low. On the one hand, SAG2's start-up and production did not create large problems, for which open and honest communication combined with collaborative problem solving were needed. On the other hand, SAG2's plant manager was completely unknown to VCG, as he was only sent on secondment from another SA2 facility and did not engage in STVC meetings. Because of limited interaction, VCG neither got the opportunity to share norms and values, nor establish personal relationships with SAG2 management, so that also social pressure possibilities were limited. Because nothing disturbed SAG2 delivery, VCG left the supplier alone.

Period 2 (January 2004 – June 2004)

Following the contingency and risks increase in January 2004, VCG had to raise the level of management control to preserve a MCS fit. However, neither formal nor informal controls were considerably heightened. With respect to formal controls, VCG did set up cross-functional workgroups and required SAG2 to report project progress by means of the

electronic flowchart, but got deceived. While SAG2's information provision to the workgroups and SAG2's answers and scores on the flowchart questions told VCG that all necessary changes were made and issues were getting solved, the supplier actually neglected implementing the changes. Furthermore, the supplier neither communicated the changes in the organization, nor trained the employees. The fact that SAG2 did not participate in the design and implementation of the new production system, but simply received all installations from SA2 engineers, contributed to this negligence. SAG2 managers, for example, had no contact with SA2 engineers, not to mention the VCC R&D department. Consequently, VCG approved an operational plan that did not reflect reality, and that way missed out on additional project phase behaviour control. Furthermore, VCG considered SAG2 to be manageable by a less experienced quality engineer based on the competence trust in SAG2.

However, VCG did not receive any signals that SAG2 would be able to effectively handle the heightened supply requirements. For example, VCG did not get the impression that SA2 had worked hard to prepare SAG2. SA2 engineers had implemented the new production system at SAG2, successfully produced a couple of test modules, but then left. VCG neither received news about an extra production or quality engineer to ensure production quality in the new substantially more complex production system. In fact, SAG2 communication was limited to the strictly necessary and did not include inviting VCG to SAG2 and discussing the upcoming changes with all people involved. Thus, VCG had no grounds to build additional competence trust in justification of lower project workgroup thoroughness and the appointment of a young quality engineer. VCG's goodwill trust and social pressure possibilities on SAG2 were not heightened either and remained low. Hence, VCG's MCS did not follow the increase in risks and evolved into misfit. Based on the framework, we expect this situation to deteriorate SAG2's performance, which is exactly what happened. After the start of production, SAG2 struggled to fulfil the agreements made during the project phase and damaged VCG's competence trust.

Period 3 (July 2004 – August 2004)

VCG responded by installing extra outcome controls, like third party inspection and taking a picture of every module. Furthermore, behaviour control sharpened by daily supplier company visits of a VCC/VCG team led by a VCG expert, Mr X. This team aimed at collaboratively solving snags during supplier review meetings. Nevertheless, VCG's collaborative behaviour control was hampered by SAG2's opportunistic behaviour. Instead of responding openly and honestly to VCG concerns and accepting the assistance offered, SAG2

management initially kept VCG staff away from the issues. By continuously telling problems were taken care of, while in reality multiple issues remained, the plant manager further damaged goodwill trust. Moreover, SAG2's poor performance made it clear that the supplier already deceived VCG during the project phase by distorting information. This deception carried on, until VCG monitored every detail of SAG2's output and operational process. Those controls proved VCG's remaining competence trust undeserved, as SAG2 was unable to improve. Instead, all middle level managers quit, leaving the plant manager to handle the situation alone. Finally, this manager also lost VCG's contractual trust by continuing to promise solutions, while in reality VCG kept suffering.

Period 4 (September 2004 – December 2004)

At that time, Mr X demanded active involvement from SA2. As a result, SAG2 got a new interim plant manager from another facility and operational assistance. That way, VCG tried to reinstall a sufficient level of trust in SAG2, because as long as the level of informal control did not fit the heightened level of risk, the framework predicted difficulties to remain. As the first plant manager was replaced by a new interim plant manager, who received SA2 assistance and initial VCG trust, performance was expected to pick up. Besides heightened informal control, the extra outcome controls and daily supplier visits were retained to contribute to the renewed MCS fit. Nevertheless, the new plant manager was unknown to VCG, so that his starting level of trust, based on previous interaction and reputation, was minimal. In addition, he only became *interim* manager, rendering social pressure unsuited as control instrument. Moreover, the fact that he only became *interim* plant manager reflected that he did not like being detached to SAG2. In other words, VCG only restated little trust in SAG2, so that the informal control insufficiently fitted the increased risks and continuing difficulties could be foreseen. Indeed, despite a slight performance increase and improved VCG access to SAG2's shop floor, SAG2's performance progress was too slow. Especially the interim plant manager turned out to prefer addressing symptoms with technical solutions instead of investigating causes together with VCG. This even worsened certain operational issues. Consequently, also this plant manager quickly lost VCG's trust and left, leaving the VCG-SAG2 relation astray once again.

Period 5 (January 2005 – March 2005)

However this time, Mr X acted differently by choosing and promoting a plant manager himself, in particular Mr Y, who VCG knew very well. Because of his outstanding relationship with VCG, he started with high levels of trust and VCG back-up in putting

pressure on SA2. In addition, his managing attitude fitted VCG's goal of tackling problem causes instead of symptoms in an open and collaborative way. In terms of management controls, VCG increased the level of trust and social pressure by *installing* a plant manager in which the starting levels of these controls were sufficiently high to fit the MSR's risk. First, VCG reinstalled contractual trust, because the manufacturer was confident Mr Y would not make promises that he could not keep. Second, VCG knew he would openly communicate problems, prohibiting him from keeping promises made, because he had never acted opportunistically before. Third, VCG was familiar with Mr Y's management style and desire to look for problem causes together, which contributed to their competence trust. Although he had to prove this type of trust during the first period of his appointment, joint problem solving was a genuine issue with previous plant managers, contributing to the inability to create a turnaround. Fourth, Mr Y was more aware of SAG2's impact on VCG production and more familiar with VCG norms and values than previous plant managers. Many years of experience, a personal relationship with VCG managers (e.g. Mr X) and a good reputation made Mr Y sensitive towards social pressure. Moreover, the STVC now played a role of importance as well. SAG2's first plant manager was only sent on secondment and did not engage in STVC meetings, while the second one was too occupied trying to restructure SAG2 and not interested in the STVC due to his temporary statute. Mr Y, however, already consistently participated in overall STVC meetings and chaired the IT workgroup. That way, the STVC contributed to VCG's trust in Mr Y and increased social pressure of both VCG and JIS suppliers. These heightened informal controls fitted the high risk for the first time and formed the reason to deliberately choose Mr Y. Hence, the framework predicted performance to improve, which it rapidly did. Within months of Mr Y's appointment and much quicker than anyone could have imagined, SAG2 realised a considerable turnaround.

Period 6 (April 2005 – …)

Consequently, VCG rapidly cut back formal controls. In fact, VCG lowered all extra controls from the moment SAG2 showed substantial improvements, building sufficient competence trust. Hence, formal control was put back to basic control resembling the period 2000-2003; yet slightly extended, as VCG continued registering line stop minutes and dropped cars, reiterated the penalty system and kept supplier outcome and behaviour follow-up more frequent due to the new production environment. The level of informal control, however, was many times higher, with high levels of trust building and social pressure. As

VCG used this combined MCS to govern risks in the new production situation, SAG2 regained its outstanding performance already one year later.

DISCUSSION

Previous case findings confirm our theoretical propositions. First, VCG's developmental culture strongly influences the supplier MCS, as suggested by Chenhall (2003) and Scheytt & Soin (2006). More specifically, VCG's MCS shows the OEM's focus on flexibility and external suppliers by means of organic influences on formal controls, an important role for informal controls and the installation of the STVC, which builds a clan and extends informal control to all JIS suppliers. Second, the functioning of the MCS benefits from a resembling supplier culture, which supports propositions of Harrison & McKinnon (1999) and Henri (2006). When module supply contingencies and risks increased in 2004, VCG's MCS needed to follow this increase in order to preserve a MCS fit, associated with good operational performance. VCG's MCS on SAG1, a supplier with a similar culture, changed very rapidly, contrary to the MCS on SAG2, a supplier with a hierarchical culture. In fact, VCG's MCS on SAG1 was heightened during the project phase *before* the start of production, so that the risk increase in January 2004 was *immediately* subject to more control. Oppositely, SAG2's MCS only grew about six months *after* the production start-up and then needed six more months and three attempts to get fitted on the new situation. That way, our case confirms alliance research findings of White & Lui (2005), associating this timing difference with a difference in partner's cultural resemblance. Third, the case clearly shows *how* high cultural resemblance contributed to VCG's speed of MCS change. As argued by Bierly III & Gallagher (2007), VCG was able to evaluate SAG1 *earlier* than SAG2, i.e. during the project phase, by means of three *mechanisms* that enhance management control. Although these mechanisms result from our case data, they correspond to earlier findings in the literature, which supports their external validity.

First, VCG's external focus resulted in increased behaviour control by means of setting up cross-functional workgroups and requiring the supplier to communicate via an electronic flowchart. The fact that the supplier plant manager filled in the flowchart himself followed VCG's focus on flexibility. As SAG1's developmental culture resulted in honest answers and even appreciation for the flowchart's usefulness, VCG successfully increased behaviour control on SAG1. SAG2's hierarchical culture, however, resulted in answers and scores that did not reflect reality. That way, VCG failed to increase behaviour control on

SAG2. In other words, SAG1's resembling culture heightened the effectiveness of VCG-SAG1 communication by reinforcing *proper information exchange* towards VCG's flowchart control technique. A similar positive influence of cultural resemblance on the level of behaviour control is proposed by Aquilon (1997) and Luo (2002).

Second, VCG was able to increase behaviour control on SAG1's internal processes due to *increased communication.* Although also this effect of cultural resemblance is documented in the literature by Chen, Chen & Meindl (1998) and McAllister (1995), our results add that not VCG, but *SAG1* took the *initiative* for the increased communication. Because of its developmental culture, SAG1 offered opportunities to strengthen the open personal relationship with VCG by inviting VCG managers and shop floor workers. During these visits, VCG met SAG1 and SA1 managers, who showed and discussed upcoming changes and instantly answered expected VCG questions. So besides socializing, VCG controlled SAG1 activities and made suggestions for improvement by interacting with well informed supplier employees at the supplier facility, which are VCG's preferred circumstances. SAG2, however, did not invite VCG personnel to the supplier facility during the project phase, as SAG2's hierarchical culture did not focus on VCG involvement and VCG did not demand such visits.

Third, VCG's trust building in SAG1 and SAG2 substantially differed. Consistent with prior literature (Das & Teng, 1998; Luo, 2002), VCG built more trust in SAG1 based on SAG1's resembling cultural values. This cultural resemblance eased cultural blending, so that socialization between VCG and SAG1 was strengthened and values and norms were shared more easily. The resulting inter-organizational familiarity helped building trust. Similar insights can be found in the literature. For example, Gulati (1995) finds that lower cultural inconsistency between alliance partners leads to less equity based alliances with more trust. For MSRs, this means that VCG will have more confidence in its ability to predict supplier behaviour, if both parties' cultures are more resembling (Bierly III & Gallagher, 2007; Park & Ungson, 1997). In the VCG-SAG1 relation, this confidence resulted from several competence *trust enhancing signals*. Supported by SAG1's large focus on VCG and resulting interaction, these signals confirmed that the supplier was willing to invest in the relation (van der Meer-Kooistra & Vosselman, 2004). SA1, in particular the "owner" Mr Z, provided SAG1 with considerable attention and financial resources to cope with unforeseen difficulties and to keep monthly contact with VCC's R&D department. So besides enhancing behaviour control, SAG1's cultural resemblance facilitated trust building (Luo, 2002). From SAG2, however, VCG did not receive any signals to increase trust. In fact, when SAG2 got into a position to

signal competence, i.e. when there was full running production and SAG2 ran up against the first difficulties, SAG2 damaged VCG's competence trust by showing a lack of preparation and learning capacities. The same holds for VCG's low level of goodwill trust, which entirely evaporated when SAG2 acted opportunistically by refusing timely communication and openness on issues that VCG wanted to discuss.

Taken together, VCG's MCS on SAG2 was not changed at the start of production, so that it got into misfit and contributed to a decrease in performance, as proposed by the theoretical model. Indeed, comparing SAG2's degree of MCS fit and performance provides considerable evidence of the fit-performance association, underlying previous inter-organizational MCS studies like Dekker (2004). In 2004, SAG2 struggled after starting module production and delivery for two new extra Volvo models. As VCG's MCS no longer fitted SAG2's heightened risks, the MCS aggravated performance, so that operational difficulties seriously escalated. As a result, VCG changed the MCS design towards a design fitting the level of risks. Supported by the new contingency fit, operational performance rapidly picked up. Therefore, we conclude that the VCG-SAG2 relation effectively illustrates the fit-performance association. That way, we support earlier findings of Ittner et al. (1999) and Anderson & Dekker (2005), stipulating that a MCS fitting situational characteristics benefits performance. Nevertheless, our longitudinal data on several periods refine their findings with respect to the actual dynamics of the fit-performance association. Operational difficulties followed a MCS misfit resulting from changed contingencies, while operational improvements only set in when the MCS fitted the new situation. Furthermore, the evolution from MCS misfit to MCS fit did not occur immediately, but took VCG several attempts.

VCG's final attempt implied actively and deliberately influencing supplier decision making to install a plant manger of their choice, in particular Mr Y, who VCG already trusted highly because of many years of experience and STVC involvement. In addition, Mr Y was susceptible to social pressure due to his personal relation with VCG managers, good reputation and active involvement in the STVC. That way, we conclude that VCG created an adequate environment for the turnaround by specifically choosing Mr Y and instantly installing an informal control level that fitted the new situation and revived SAG2's performance. A close examination of our data learns that this informal control increase via Mr Y coincided with Mr Y initiating a *change* in SAG2's culture. As head of SAG2, Mr Y lowered SAG2's hierarchical structure. To that end, he eliminated the level of shop floor team leaders and started to frequently visit the shop floor himself to discuss issues directly with shop floor workers. These changes are associated with Mr Y managing SAG2 like it was his

own company. Mr Y worked day and night to resolve recurring problems and to search for their causes in open collaboration with SAG2 shop floor workers and VCG staff. Previous SAG2 plant managers neither put in that much effort, nor allowed large VCG involvement due to a different management style. This style complied with SA2's tight job description, which was in line with SA2's American culture. Mr Y, however, was well aware of the difference between SA2's culture and his own business attitude. Therefore, he deliberately reacted against SA2's cultural influence and shielded SAG2 from it as much as possible. VCG's pressure on SA2 to finally resolve SAG2 production difficulties and to support Mr Y in changing SAG2 helped Mr Y to successfully introduce his values in SAG2. To that end, he pushed through his business attitude on his new group of middle level managers. That way, Mr Y initiated a shift in SAG2's culture from a hierarchical culture towards a developmental culture. Thus, assisted by the CVM conceptualization of organizational culture, our case demonstrates *cultural dynamics*, on which further study was called for by Baskerville (2003) and Harrison & McKinnon (1999). Furthermore, our data confirm that the relation between organizational culture and management control is not a simple matter of cause and effect (Henri, 2006; Scheytt & Soin, 2006). In fact, we find that VCG's MCS influenced the degree of SAG2's cultural resemblance by adapting the supplier's culture via its plant manager Mr Y.

Still, this influence on SAG2's culture was the result of a substantial difference in organizational culture, on which VCG had no control.[19] Indeed, given VCG's developmental culture, the OEM was lucky to work with a developmental supplier as SAG1, but just as well had bad luck to work with a hierarchical supplier as SAG2.[20] Consequently, the awareness of the influence of supplier cultural resemblance on the speed of MCS increase might have helped VCG. Indeed, comparing SAG2 and SAG1 MCS dynamics illustrates that SAG2's lack of control was associated with SAG2's low cultural resemblance. Given awareness of this association, VCG managers might have responded by anticipating slower MCS dynamics when contingencies changed and installing additional management control.

Yet, to that end, VCG first needed to be aware of their own values, the values on which the suppliers relied and resulting differences, as proposed by Ireland (2002) and

[19] VCG lacked this control, because the OEM was not responsible for supplier choice, on which the VCC purchase department decided. Consequently, VCG had no other choice than to work with the supplier appointed by VCC and deal with its organizational culture.

[20] Based on previous case study and case analysis, it might seem that we have a preference for a developmental culture with open collaboration, linked to a relatively small scale privately owned horizontal organization. Yet, that is not the case. The point at issue is that VCG has a developmental culture and therefore a specific MCS with certain behaviour towards suppliers. Depending on whether the supplier's culture resembles VCG's developmental culture, this MCS will change faster. Thus, given VCG's developmental culture, VCG's MCS is better off with a supplier like SAG1, which has a resembling developmental culture.

confirmed by Henri (2006). VCG employees considered themselves as a family, also with respect to suppliers, on which they strongly focused via the STVC. A supplier like SAG1, with a resembling culture, responded to this behaviour by acting as part of the family. A supplier like SAG2, with a different culture, thought of VCG as the customer, which was not allowed to get involved in the supplier's functioning. Assessing this kind of supplier values would have benefited VCG's awareness of cultural differences. In that respect, our case confirms the usefulness of applying the CVM for describing organizational culture (cf Bhimani, 2003; Henri, 2006). Based on the CVM model, we were able to clearly distinguish the difference in cultural resemblance between SAG1's developmental culture and SAG2's hierarchical culture, compared to VCG's developmental culture. That way, VCG managers have a specific means to assess a supplier's degree of cultural resemblance.

Besides demonstrating the need for VCG awareness on a supplier's cultural resemblance, the SAG2 case also shows the importance of VCG awareness on the role of informal control, especially in times of important changes. During SAG2's problem escalation, VCG managers were not sufficiently aware of the fact that they needed to heighten informal control on SAG2 by *reinstalling* more trust and *installing* social pressure. Despite VCG emphasising the reliance on personal relations and informal control, they really ignored this part of their MCS on SAG2. Consequently, they needed two unsuccessful attempts and faced increasing delivery problems, before they effectively increased informal control on SAG2 via its plant manager to fit the level of risks. So, without awareness on the reliance on informal control, the importance of increasing informal control is underestimated, either when contingencies drastically heighten risks or when the supplier damages trust by making errors or acting opportunistically. Furthermore, this awareness needs to be present at all levels of manufacturer and supplier management interacting with each other. Only that way, informal control, especially trust building, will not result in time losses when difficulties arise. As argued in the literature (Bierly III & Gallagher, 2007; Heikkilä, 2002; Stalk 1988), these time losses must be avoided to stand up to the fierce competition in the current economic (automotive) environment.

CONCLUSION

This paper contributes to the inter-organizational management control literature by exploring the impact of cultural resemblance on the management control of manufacturer-supplier relationships. Although MCSs are contingent on situational characteristics and this contingency fit is associated with good performance (Donaldson, 2001), it remains unclear

which variables contribute to the speed of MCS change, so that temporary misfits due to changing circumstances are less likely to occur (van Veen-Dirks, 2006). Further research on these variables is justified, as a MCS misfit and associated decreasing operational performance might harm any manufacturer, until the misfitted MCS is changed towards a more appropriate design (Dekker, 2004; van Veen-Dirks, 2006). Organizational culture, in particular the degree of supplier cultural resemblance to the manufacturer's culture, is proposed to be such a variable due to its impact on the design and use of the MCS (Chenhall, 2003; Harrison & McKinnon, 1999; Merchant, 1998; van der Meer-Kooistra & Vosselman, 2000). Also in strategic alliances, cultural differences between interacting parties make the alliance difficult to manage (de Rond, 2003; White & Lui, 2005) and may negatively influence performance (Dekker, 2004; Ireland, 2002; Kale et al., 2000). Hence, further research is called for on the role of organizational cultural resemblance in the MCS fit-performance association (Harrison & McKinnon, 1999; Henri, 2006), especially for other types of IORs, like MSRs, for which this type of research remains scarce (Chenhall, 2003; Scheytt & Soin, 2006). The preferable method for such research is a qualitative case study, aiming to obtain an in-depth insight into the case companies' cultures and compare the impact of different degrees of supplier cultural resemblance on the dynamics of MCS design in times of changing circumstances (Anderson & Dekker, 2005; Chenhall, 2003; Henri, 2006; Scheytt & Soin, 2006).

Therefore, we studied changes in two similar high value-added just-in-sequence MSRs that differ with respect to cultural resemblance in the manufacturing phase of the supply chain, relatively under-explored in the inter-organizational management control literature (Cooper & Slagmulder, 2004; Langfield-Smith & Smith, 2003). More specifically, we investigated the relations between a Volvo Cars facility (VCG) and two module supplier facilities (SAG1 and SAG2) in the automotive industry, characterized by competitive pressure and continuous improvement (Carr & Ng, 1995). To refine inter-organizational management control theory, we proposed a theoretical contingency framework including the dynamic associations between supplier cultural resemblance, MCS design, degree of MCS fit on contingencies and risks, and operational performance. The real contribution of our case study followed from its longitudinal design, because only this design allowed effectively exploring the impact of cultural resemblance on the timing of MCS changes and the impact of fit on performance in the course of time, following a severe contingency change. The theoretical proposition was that supplier cultural resemblance is positively associated with the speed at

which the MCS changes, so that it keeps (or quickly regains) its fit in case of changing contingencies.

Our longitudinal data, which are structured and interpreted by means of the temporal bracketing and variance methods (Rowe et al., 2008), provide substantial evidence supporting this theoretical proposition. The functioning of VCG's MCS benefited from a resembling supplier culture, as proposed by Harrison & McKinnon (1999) and Henri (2006). As SAG1's culture resembled VCG's culture, upcoming contingency changes were appropriately anticipated by increased management control during the project phase, before contingencies actually changed. Consequently, the higher level of management control immediately fitted the risks increase at the start of production and contributed to sustaining good performance. Oppositely, SAG2's culture differed from VCG's culture, so that adjusting SAG2's MCS to the changing circumstances required more time. In particular, SAG2's level of management control only grew about six months after the start of production and then needed six more months and three attempts to get fitted on the new situation. As proposed, the resulting MCS misfit contributed to escalating operational difficulties, until VCG changed the MCS. In sum, this twofold case study illustrates the substantial impact of resembling organizational cultures on the timing of MCS changes in MSRs and therefore supports prior alliance research findings of White & Lui (2005). In addition, the VCG-SAG2 relationship provided considerable evidence of the dynamic fit-performance association, as assumed by e.g. Dekker (2004). By showing that operational difficulties followed a MCS misfit, while operational improvements only set in when the MCS fitted the new situation, we support and refine earlier findings of Ittner et al. (1999) and Anderson & Dekker (2005).

Furthermore, the case clearly showed how high cultural resemblance contributed to VCG's speed of MCS change. As argued by Bierly III & Gallagher (2007), VCG was able to evaluate SAG1 *earlier* than SAG2 based on three management control enhancing *mechanisms.* Although these mechanisms result from our case data, they correspond to earlier findings in the literature, which supports their external validity. First, VCG increased behaviour control on SAG1, because SAG1's resembling developmental culture led to *proper information exchange* towards VCG's flowchart control technique (Aquilon, 1997; Luo, 2002). Conversely, SAG2's hierarchical culture led to answers and scores that did not reflect reality. Second, SAG1's resembling developmental culture made the supplier invite VCG managers and shop floor workers to control SAG1 activities and make suggestions for improvement. Consequently, VCG's behaviour control on SAG1's internal processes was increased due to *increased communication* (Chen et al., 1998; McAllister, 1995) *on the*

initiative of the supplier. Third, VCG built more trust in SAG1, the supplier with resembling culture, consistent with prior literature (Bierly III & Gallagher, 2007; Das & Teng, 1998; Gulati, 1995; Luo, 2002; Park & Ungson, 1997). To that end, VCG received several competence *trust enhancing signals* (van der Meer-Kooistra & Vosselman, 2004) due to SAG1's large focus on VCG and resulting interaction.

Finally, the VCG-SAG2 relation showed a very specific management control technique, namely deliberately influencing supplier decision making to install a new plant manager (Mr Y) of the manufacturer's choice and that way influencing the supplier's culture. The first finding made us conclude that VCG created an adequate environment for SAG2's turnaround by specifically choosing Mr Y and instantly increasing the level of informal control to fit the new situation. The second finding learned that Mr Y initiated a shift in SAG2's culture from a hierarchical culture towards a developmental culture. In other words, VCG's MCS influenced the degree of SAG2's cultural resemblance by shifting its culture via its plant manager. That way, our case demonstrated cultural dynamics, as called for by Baskerville (2003) and Harrison & McKinnon (1999) and confirmed that the relation between organizational culture and management control is not a simple matter of cause and effect (Henri, 2006; Scheytt & Soin, 2006). Obviously, these findings benefited from conceptualizing organizational culture via the CVM, as this model clearly distinguished SAG1's developmental culture and SAG2's hierarchical culture and allowed culture to shift by means of the notion of dominant types. That way, our study contributes to the literature by demonstrating the usefulness of applying the CVM for describing organizational culture in qualitative studies, as proposed by Bhimani (2003).

Besides researchers, also manufacturer management might use the CVM and associated supplier characteristics as a mean to assess supplier cultural resemblance. Yet, to that end, managers first need to be aware of the importance of such assessment. Undoubtedly, this awareness forms an important lesson of this study for VCG and other manufacturers. In particular, they should be aware of the influence of supplier cultural resemblance on the speed of MCS dynamics, in case contingencies change. That way, slower MCS changes can be anticipated and responded to by installing additional controls. To that end, the manufacturer needs to be aware of the own values, the values on which the suppliers rely and resulting differences, as proposed by Ireland (2002) and confirmed by Henri (2006). Finally, the SAG2 case also shows the importance of awareness on the role of informal control, especially in times of important changes. During SAG2's problem escalation, VCG managers were not sufficiently aware of the fact that they needed to heighten informal control on SAG2, so that

they needed two unsuccessful attempts and faced increasing supply problems. Hence, only by being aware of the reliance on informal control, this control type, especially trust building, will not result in time losses when difficulties arise.

Although the case study method was specifically chosen for its methodological qualities for studying the dynamics of an extensive MCS, we acknowledge studying only two supplier relationships of one manufacturer hampers generalizing our findings. First, it is uncertain whether a different manufacturer, whether or not with a differing culture, would lead to similar results. For example, it remains unclear whether manufacturers without a supplier team, which provides the opportunity to build personal relations with supplier managers, are able to choose supplier managers to their advantage. Second, we have no idea to what extent our findings hold for other types of MSRs than the two high value-added JIS MSRs in our case. Third, theoretical suitability made us chose two MSRs that extremely diverged with respect to supplier cultural resemblance, so that a comparison would lead to substantially different insights. Yet, at the same time, these extreme MSRs might not be representative for other MSRs. Fourth, we do not exactly know to what extent the learning curve impacted the performance of SAG1 and SAG2 when contingencies changed. Before the changes in 2004, SAG1 successfully completed a start-up in 1996 and a new Volvo model introduction in 2000, while SAG2 only successfully completed the start-up in 2000. Also the turnaround of SAG2 performance in 2005, after Mr Y took over, might be influenced by organizational learning. Fifth, we abstracted from previous supply chain phases, like procurement and R&D, so that it remains unclear to what extent these supply chain phases impact the supplier relationships during manufacturing. Nevertheless, the limited generalizability immediately offers a first avenue for future research, which could compare our findings to other MSRs between other companies, both in the automotive industry and others like consumer electronics.

A second avenue for further research might be to design a real-time longitudinal case study, instead of a retrospective case like in this paper. Although finding access to study contingency changes, MCS dynamics and potential operational difficulties at the moment of occurrence will probably be a big challenge, the advantage is clear. Real-time data, especially from interviews, are more accurate. Although our study's data came from both VCG and supplier managers, and were triangulated with performance data, we admit that managers' opinions on events were probably biased two years after the events occurred. Moreover, the retrospective research design prohibited us from interviewing the initial SAG2 managers, so

that their perceptions on the events were not available. A real-time study could cope with these limitations.

A third avenue for further research could investigate the effect of cultural differences between other culture types of the CVM. Our study focused on the comparison between hierarchical and developmental culture, following its explicative power in the study of Bhimani (2003). Hence, whether comparisons between other culture types, like group versus rational or group versus developmental, fit our theoretical model and lead to similar results remains unknown. Moreover, this future research stream might benefit from introducing a completely different conceptualization of organizational culture, for example based on the "Organizational Culture for Diversity Inventory" (OCDI) (Cooke and Szumal 1993; Whitfield & Landeros, 2006), and investigate whether this conceptualization leads to different results.

Fourth, further research might take on the position of the supplier, contrary to this paper's position of the manufacturer. Insights from a culture assessment from within the supplier, instead of an assessment from the outside, might shed more light on the role of cultural resemblance in MSRs. For example, prior research found that buyer and supplier have different perceptions about their relationship (John & Reve, 1982). In case that perception difference also concerns each other's culture, it might influence MCS dynamics.

A fifth research avenue could examine the impact of supplier cultural resemblance on the level of risks. This theoretical association was not included in our model due to our conceptualization of risk, namely *objective* risk, inherent in a given MSR and influenced by four supply contingencies (Das & Teng, 2001). This objective risk is not associated with supplier cultural resemblance. Yet, *subjective* risk, i.e. the manager's estimate of objective risk (Das & Teng, 2001), might be. Because of a lower level of supplier cultural resemblance, the manufacturer might perceive the level of risks higher, given the same level of contingency variables. By way of illustration, consider the VCG-SAG2 relationship in 2004. Assuming that VCG was sufficiently aware of the cultural differences (which in reality was not the case), VCG might have perceived SAG2 as unable to adequately cope with changes imposed by the manufacturer, which would have increased perceived performance risk (McAfee, Glassman & Honeycutt Jr., 2002). In addition, VCG might have perceived SAG2 as unable or unwilling to openly interact and communicate with VCG, which would have augmented perceived relational risk (Luo, 2002). It must be clear that our study was unsuited to investigate the association of supplier cultural resemblance and perceived risks, as we examined events as objectively as possible after they occurred. Our focus lied on inherent risks only, in order to gain an understanding of the existence of these risks in the absence of

any management controls (cf Anderson, Christ & Sedatole, 2006). Nevertheless, the association between supplier cultural resemblance and subjective risks is worth studying, maybe by means of a survey, which could ask manufacturer staff to grade their perceived risks on a (e.g. seven-point) Likert-scale. Subsequently, this survey would allow a quantitative analysis of the potential mediating impact.

A sixth and final avenue for further research might examine other potential MCS influencing variables not addressed in this study. Two of those variables might be relationship length and fair benefit sharing, already proposed to be influential by Dekker (2004), Gietzmann (1996), Tomkins (2001) and van der Meer-Kooistra & Vosselman (2000).

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FIGURE 3.1

Theoretical contingency framework for MCS design of MSRs

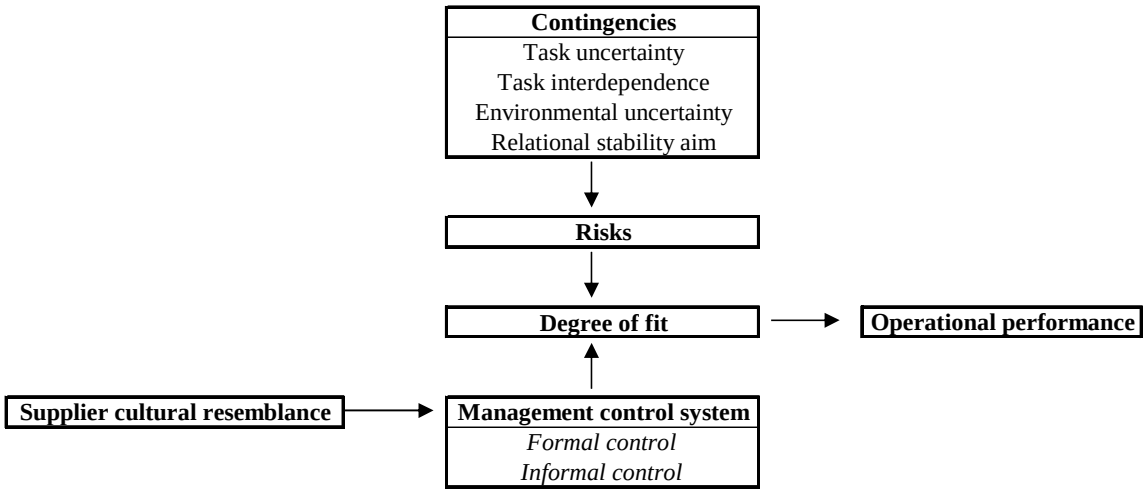

TABLE 3.1

Interview data summary

Organization	Interviewee	Number of interviews	Duration (in min.)	Date
VCG	Engineering Director & Material Planning & Logistics Manager	1 (joint)	122	8/02/2006
	Supply Chain Control & Coordination Manager	2	55; 62	10/02/2006; 29/05/2006
	Logistic Engineering Manager	1	68	10/02/2006
	Supplier Support & Purchasing Manager	3	92; 95; 137	15/02/2006; 18/04/2006; 21/11/2007
	Material Planning Manager	1	73	15/02/2006
	Supplier Quality Assurance Manager	2	44; 96	15/02/2006; 29/05/2006
	Human Resource Manager	1	50	15/02/2006
	Finance Manager	1	47	15/02/2006
	IT Manager	1	67	13/03/2006
SAG1	CEO SA1	1	68	17/12/2007
	Plant Manager	1	67	17/12/2007
SAG2	Plant Manager	3	106; 74; 116	13/03/2006; 18/04/2006; 26/11/2007
	Human Resource Manager	1	51	29/03/2006
	Quality Manager	2	125; 121	29/03/2006; 18/07/2007

TABLE 3.2

Exemplary interview quotes concerning contingencies associated with supplier culture

Contingencies	Interview Quotes (Source: VCG managers)
Structure	At [*1], the organization is ordered in pillars with a hierarchy. The JIS facility is put in one pillar or another, for example in the pillar Operations, next to the pillar Purchase and the pillar Sales. So, when something hurts in the other pillar, the JIS facility has no hold on that. At [*2], however, people say: "Your business is Volvo. Everything you need to do for that purpose, you must do. Do you have to go to Sweden? Go to Sweden. Do you have to go to Germany? Go to Germany. Do you have to call a supplier to your shop floor? Do that. Do whatever it takes." So, when the plant manager has some arguments, people listen to him. [...] Such approach is impossible in a pillar organization with a clear hierarchy. In such organization, the JIS facility is a small grain in the big block of Operations; not to mention that the facility would go to the block of Purchase or Sales. The JIS facility has little or no meaning. At [*2], however, a plant manager is a business manager, who has his business and has authority over it. He receives freedom of enterprise. […] The plant manager receives more opportunities to think out-of-the-box; out of his current system. In a pillar organization, a plant manager is only expected to be occupied with the JIS facility's current operations.
	Sweden is flat. The reason for that is that Swedish companies aim for a horizontal structure, in which everyone is equal before the law. […] Volvo fits between the Swedish and Belgian culture and is therefore flat. Just like in family firms, there is a quicker flow of information and a quicker building up of relationships.
	American companies are very hierarchical; German companies a bit less, although all the big ones follow the American pattern. That leads to a climate, in which the last link, the JIS facility, is considered a necessary evil to supply modules. So, people are avoiding that link as much as possible. At [*2], the reasoning is different: "If we install a JIS facility, we are going to make some kind of customer service centre of it. Our quality, our engineering and our support to the JIS facility will be enormous. That way, we are going to set up our satellite facility, positioned nearest to the customer, as good as possible."
Size	The supplying small and medium-sized enterprises of fifteen years ago now belong to big multinationals. That has little effect on local operational relations that still go by the same contacts, but has a huge effect on the settlement of potential difficulties, to which costs are attached. While previously such problems could be settled locally, those conversations are now held via a different structure. And in a large unwieldy organisation, it can take weeks or months to get through the organization and arrive at the right person.
	Volvo, me included, feared that this approach with fantastic service would change, now that we had to work together with a gigantic American organization. We expected that when Volvo would now have a question, [*3] would not answer with a simple "No". Still, we expected they would analyse the question, look what was in the contract, check up on what they had originally committed and verify whether they now fulfilled those commitments.
	A couple of JIS facilities belong to large American groups, which are even larger than Volvo. Consequently, these local facilities must implement the standard application of the group. Volvo can not ask a lot from those suppliers, because they follow their own path and, that way, try to shield off their territory. They do not want to learn from the smaller suppliers and do not allow the smaller suppliers to learn from them. Yet, this goes against the philosophy of the supplier team, which purpose is to make all suppliers cooperate as a group.
Ownership	A family firm has a broader picture. Furthermore, people in a family firm meet personally and frequently keep in touch with each other. For example, [*2] holds a yearly general assembly in Germany. [...] The conclusion was that they want to be a combination of the strength of a professional international multinational with the characteristics of a family firm, namely speed of work and openness in culture.

	If I am in a meeting with a family firm, there will always be someone of the family present; or at least someone who has something to say in the family. That gives the signal to the customer: "This is how it will be. Yes, we are going for it." That is the message. And that works faster. That leads to more flexibility, because the culture and structures are there to support it.
	Previously, [*4] was a family firm. […] The family characteristic led to the fact that Volvo only had to call the owner to get something done on a certain issue. In that case, everything had to give way to Volvo and everything immediately had to be put in order for the customer Volvo. That service was allowed to cost anything. Dealing with Volvo's issue became first priority, without any discussion.
Nationality	Apparently, national culture plays a role in the organizational culture of the local JIS facility and its mother company. Another factor potentially influencing organizational culture is the size of the organization. Such factors influence the organizational culture and that culture influences the speed at which the relation can switch to a friendly relation. […] As a result, our relation is smoother with a German family firm than with a big French multinational.
	The art of situational leadership fits in a culture like the Swedish one, which also influences Volvo and where an executive is called "coach". That signals: "we together". In American companies, there is no situational leadership, but domination. There, an executive is called "boss". That signals: "you alone". […] An American supplier will usually choose the business approach. The supplier only verifies an outside question by means of the contract. And when the question is judged as not their responsibility, the case is closed. A Swedish supplier, however, rather chooses the friendly approach. So, when a question enters the company, the supplier will only be satisfied when there is a solution for the question. For the supplier, it does not matter whether the question is their responsibility or not.
	[*5] is the house of distrust, while Volvo aspires the complete opposite. At Volvo, any employee can take decisions. At [*5], one needs five signatures of the top management. The reasons for that are the fact that [*5] is a very large organization and the fact that [*5] is an American organization, which only works by the rules. According to me, [*5] has loads of people writing books full of rules. […] Volvo, however, employs the consultation model with cooperation and helping each other.

FIGURE 3.2

High cultural resemblance VCG-SAG1 MCS fit and performance consequences over time

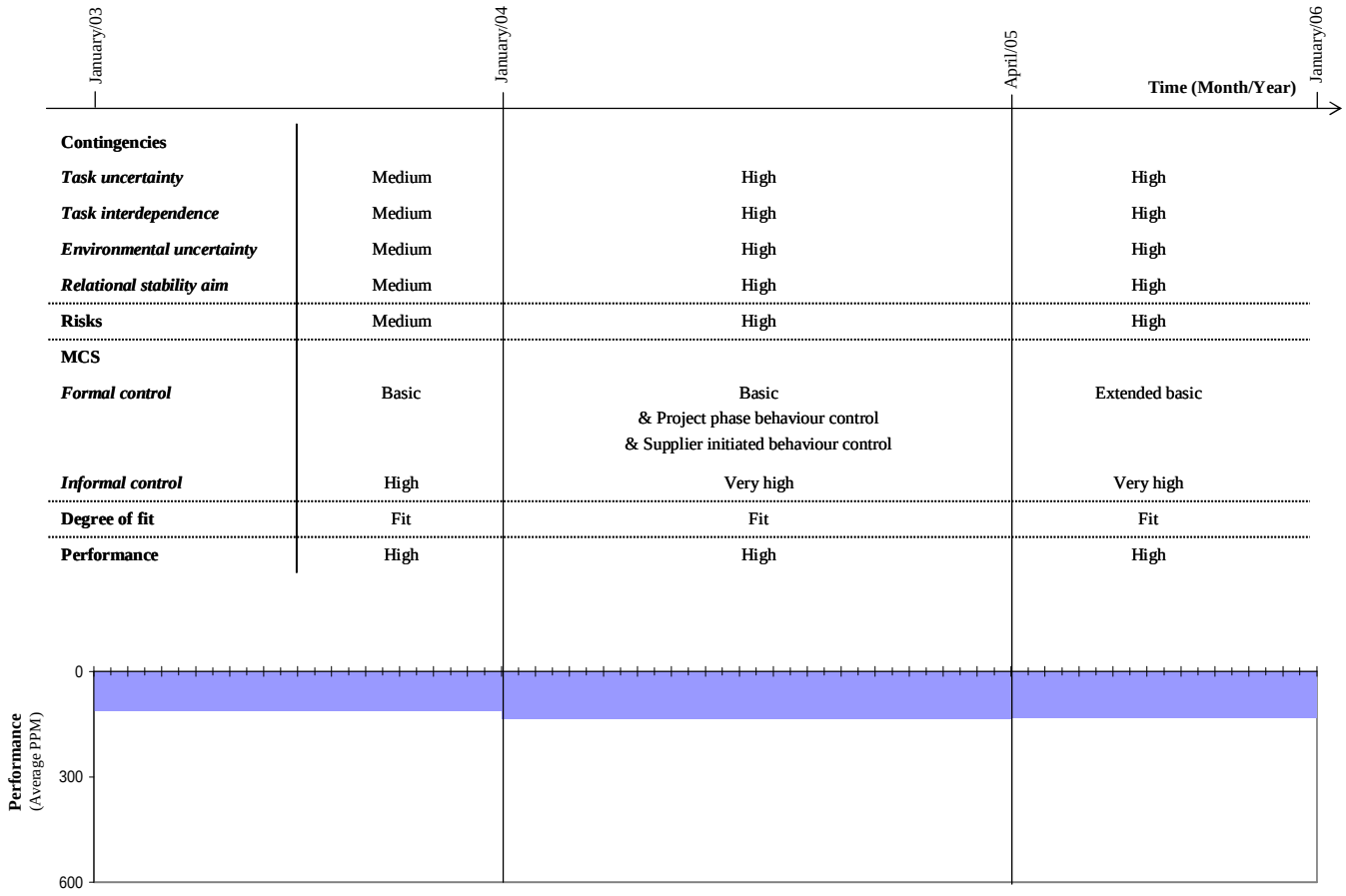

FIGURE 3.3

Low cultural resemblance VCG-SAG2 MCS fit and performance consequences over time