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Focus on corporate culture and networks:

How automotive companies successfully coordinate their activities across borders

A survey of the automotive industry

A joint study conducted by ESCP Europe and Roland Berger

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EXECUTIVE SUMMARY

Many automotive companies have expanded beyond the borders of their home markets. Some, however, have paid too little attention to coordinating the resultant decentralized activities; and that is the reason why today's automotive managers acknowledge a significant need for action in this regard. The present study, which comprises **95 automotive companies**, investigates how firms successfully coordinate their activities across borders.

This study focuses on the **coordination of international development, production and marketing activities** – core functions in which automotive managers have repeatedly identified room for improvement. Six **coordination mechanisms** were studied: (1) centralization/decentralization of decision-making; (2) direct personal supervision; (3) bureaucratic coordination; (4) output coordination; (5) socialization and networks; and (6) informal communication. **Optimal coordination sets** for **development activities** rely on superior levels of output coordination and the superior use of socialization and networks. Successful coordination of **production activities** requires superior levels of bureaucratic and output coordination and, again, the superior use of socialization and networks. **Marketing activities** are best coordinated by applying superior levels of direct personal supervision and output coordination plus the superior use of socialization and networks. However, successful coordination also involves applying all relevant mechanisms at least to an average degree within the coordination set. Although the absolute level of each mechanism increases as activities become more geographically dispersed, the relative composition of successful coordination sets remains unchanged for all levels of decentralization.

In view of the findings of our study, we especially advocate the **greater use of socialization and networks** to successfully coordinate cross-border activities in the automotive industry. Suppliers and manufacturers should focus on establishing a corporate culture that connects the various units of a company, and on promoting networks to foster non-hierarchical information sharing between them. Since not all companies are yet taking advantage of these mechanisms, the study closes with a presentation of several tools and actions that are appropriate to strengthen coordination by leveraging socialization and networks.

The key findings and implications of our study are summarized in Figure 1.

Figure 1: Key findings and implications

- Successful coordination reflects the use of all relevant mechanisms at least to an average degree within an **optimal coordination set**
- Optimal coordination sets are **function-specific**:
 - Optimal coordination sets for **development** activities rely on superior levels of output coordination and socialization and networks
 - Successful coordination of **production** activities requires superior levels of bureaucratic coordination, output coordination and socialization and networks
 - **Marketing** activities are well coordinated by applying superior levels of direct personal supervision, output coordination and socialization and networks
- The absolute level of each mechanism has to be increased with rising decentralization, but the relative composition of the successful coordination set is **optimal for all degrees of decentralization**
- The function-specific optimal coordination sets share superior levels of **output coordination** and **socialization and networks**
- We particularly recommend strengthening socialization and networks by
 - **Establishing a corporate culture** that keeps the entire company together and
 - **Promoting non-hierarchical information sharing** between the company's various units

Source: ESCP Europe; Roland Berger

1. INTRODUCTION

Automotive companies have paid too little attention to the need to coordinate cross-border activities.

Fierce global competition is a characteristic trait of the automotive industry. Therefore, the ability of many car manufacturers and suppliers to compete depends heavily on the way they design their international value chains. One central aspect in designing a competitive value chain is the choice of the right locations. A number of factors can influence this decision. Key reasons to relocate production facilities, for instance, include the need to take advantage of low labor costs, satisfy local content requirements and/or overcome import restrictions. In the past – as also outlined in our "Automotive 2025 landscape" study – choosing optimal locations has clearly been the focus of internationalization decisions at automotive companies.

Ongoing growth in these companies' international activities confronts them with a new challenge, however: the challenge of effectively and efficiently coordinating activities that are spread around the globe. Coordination thus becomes a second key aspect of value chain design (see also Porter 1986). Decentralized activities must be carefully synchronized and aligned with the company's objectives. Some examples: Achieving a standardized and efficiently interacting production system is a key priority on COO's agenda, e.g. in order to ensure globally consistent quality levels. And introducing new products results in a "glocalization challenge" for responsible research and development executives, where global synchronization of the development process often becomes more important than just global presence.

The optimal coordination of international activities has become a crucial success factor.

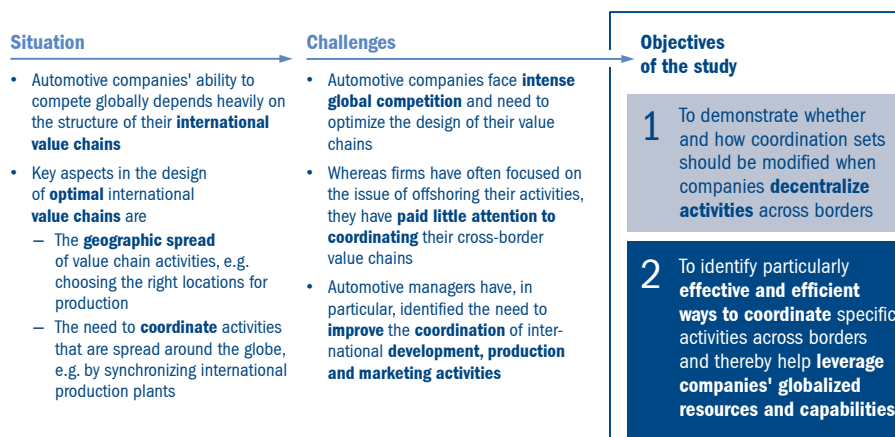
Experts agree that, up to now, many automotive companies have failed to properly coordinate their cross-border activities. Managers themselves admit that there is still a lot of work to be done in this area, in particular to improve the coordination of development, production and marketing, the industry's three core functions (Figure 2). A couple of years ago, Carl-Peter Forster, then-president of General Motors Europe, made the following astute observation (Schmid & Grosche 2008, p. 142):

"Automobile manufacturers cannot stay local. They need to increase their global presence. The big challenge in this regard is to keep the entire company together, while maintaining a sense of solidarity at the local level."

Given the significant need for action, the objectives of this joint study by ESCP Europe Business School and Roland Berger Strategy Consultants are:

1. To demonstrate whether and how coordination sets must be modified when companies decentralize specific activities across borders
2. To identify particularly effective and efficient ways to coordinate specific activities across borders and thereby help leverage companies' decentralized resources and capabilities.

Figure 2: While automotive companies have stepped up internationalization, many have so far fallen at the hurdle of coordination



Source: ESCP Europe; Roland Berger

Good coordination is achieved by simultaneously applying specific coordination mechanisms.

As a rule, coordination is required regardless of the degree to which activities are decentralized. Even if all activities are concentrated at a single site, a certain amount of coordination is still necessary. More complex cross-border value chain constellations naturally add to the challenges of coordination, however (Schmid & Grosche 2009, p. 12). In response, companies can choose from a variety of coordination mechanisms to harmonize their activities across borders. These mechanisms aim at coordinating a company's employees explicitly (directly) or implicitly (indirectly) and either personally or impersonally. They can be classified into six groups (Figure 3). The different alternatives are usually applied not in isolation, but in integrated sets (Harzing 1999, pp. 16-23).

Figure 3: Good coordination is achieved by simultaneously applying a set of different mechanisms

	Personal mechanisms		Impersonal mechanisms
EXPLICIT COORDINATION	Centralization/ decentralization of decision-making Decision-making responsibility is delegated to different units or positions within a company <i>Hierarchies, concentration of decision-making at headquarters, delegation of decision-making to subsidiaries</i>	Direct personal supervision Coordination takes place via personal contact between higher- and lower-ranking employees <i>Personal instructions passed on face to face or by phone/mail/e-mail</i>	Bureaucratic coordination Coordination is rooted in formal regulations that aim to steer employee behavior but are not linked to specific individuals <i>Written rules, instructions, programs, manuals</i>
	Informal communication Coordination bypasses formal hierarchic structures and official communication channels <i>Mutual assessment, personal feedback, occasional chats between employees</i>	Socialization and networks Socialization: Coordination is based on encouraging employees to share a common corporate culture <i>Values, vision, mission</i> Networks: Coordination is effected by promoting the (non-hierarchic) sharing of information through formal relationships <i>Task forces, cross-functional teams, management transfers</i>	Output coordination Coordination focuses on targeted outputs rather than specific employee behavior <i>Plans, goals, monitoring systems, reporting systems</i>

■ Examples

Source: Harzing (1999), Schmid & Grosche (2009), Kutschker & Schmid (2011) and our own empirical research

Explicit personal mechanisms

1. **Centralization/ decentralization of decision-making** describes the allocation of decision-making responsibility to different organizational units or positions within the company and is reflected in the hierarchy of the organization. The options range from full centralization of decision-making rights at headquarters to the granting of full autonomy to subsidiaries and other organizational units. For instance, it may be wise to let foreign development units operate autonomously so that vehicles can be adapted to local customer preferences.
2. **Direct personal supervision** aims to ensure that tasks are carried out in accordance with the company's goals. This mechanism is implemented within the framework of personal contact between higher- and lower-ranking employees. It includes a broad spectrum of personal instructions that can be given face-to-face or by phone, mail or e-mail. For example, a COO based at the company's headquarters may personally supervise the implementation of new production processes by a foreign subsidiary.

Explicit impersonal mechanisms

3. **Bureaucratic coordination** includes all formal regulations whose purpose is to guide and standardize the behavior of employees but that are not linked to specific individuals. Key examples include written rules, instructions, manuals and programs. For instance, standardized production systems that are established at all of a company's plants are an integral part of bureaucratic coordination in the automotive industry.

Implicit impersonal mechanisms

4. **Output coordination** focuses on steering the output realized by employees and organizational units, rather than prescribing exactly how employees and organizational units should behave. Output coordination can be implemented by defining plans¹⁾ and targets and by using monitoring or reporting systems. For example, automotive companies apply output coordination methods not only to optimize production processes, but also to sharpen the focus on results and improve the efficiency of their development activities.

Implicit personal mechanisms

5. The category **socialization and networks** comprises all mechanisms that foster the dissemination of common and fundamental information within the company. Socialization is a form of coordination that seeks to engender a common corporate culture shared by all employees. In particular, it encourages employees to adhere to the assumptions, values, norms and beliefs of the company and to practice its vision or mission. Socialization can, for instance, be fostered by formulating value statements in company documents and annual reports or on websites (see Example 1). Networks encourage non-hierarchic information dissemination across organizational units and among employees via the agency of formal relationships, for example by establishing task forces and cross-functional teams or by supporting management transfers.
6. **Informal communication** is another important coordination mechanism. It describes coordination that bypasses formal hierarchical structures and official communication channels by using tools such as mutual adjustment and personal feedback, for instance. Relevant information delivered in the framework of occasional or casual chats between employees is an important element of informal communication.

1) Plans may also be classified as bureaucratic mechanisms where they are used to guide employee behavior on a detailed level. In this study, however, our focus on a plan's objectives led us to see plans rather as an output mechanism (see also Harzing 1999, p. 22).

EXAMPLE 1:

"The Bosch Values" of German automotive supplier Robert Bosch

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1. In order to ensure dynamic development of our company and to guarantee long-term corporate success, we participate in shaping the changes in markets and technologies. By doing so, we provide our customers with innovative solutions and our associates with attractive jobs. We act result focused in order to secure growth and financial independence. With the dividends generated, the Robert Bosch Foundation supports charitable activities.

 2. We accept that our actions must accord with the interests of society. Above all else, we place our products and services in the interests of the safety of people, the economic use of resources, and environmental sustainability.

 3. We act on our own initiative, with an entrepreneurial but accountable spirit, and demonstrate determination in pursuing our goals.

 4. We inform our associates, business partners, and investors in a timely and open fashion of important developments within our company. This is the best basis for a trustful relationship.

 5. We view mutual fairness as a condition of our corporate success when dealing with each other and with our business partners.

 6. We promise only what we can deliver, accept agreements as binding, and respect and observe the law in all our business transactions.

 7. We are aware of our company's regional and cultural origins and at the same time regard diversity as an asset, as well as a precondition of our global success.

Source: <http://csr.bosch.com/content/language1/downloads/Bosch-Werte.pdf>

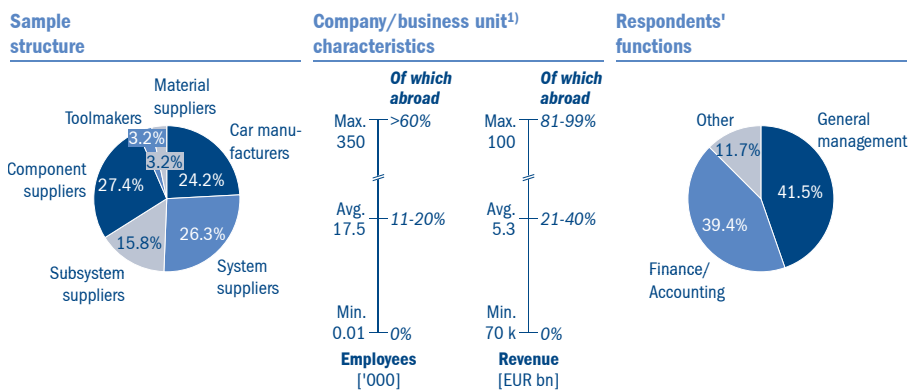
2. SURVEY DESIGN AND DATA ANALYSIS

95 car manufacturers and suppliers were investigated.

This study was conducted as a joint project by the Department of International Management and Strategic Management at ESCP Europe Business School in Berlin and the Automotive Competence Center at Roland Berger Strategy Consultants. We used a quantitative research design with a standardized questionnaire. Data was collected in spring and early summer 2010. The questionnaire was distributed to the CEOs, CFOs, Managing Directors or Presidents of all automotive companies and business units that are located in Germany and have more than ten employees.

A total of 1,812 companies and business units were approached.²⁾ 95 companies and business units completed and returned the questionnaires, giving us a response rate of 5.2%. This can be considered a good rate for a "cold call" mail survey. The respondent companies and business units consist mainly of car manufacturers, system suppliers, subsystem suppliers and component suppliers, although our sample also includes some toolmakers and material suppliers. The size of the companies in the sample ranges from purely national firms with 10 employees and annual revenue of EUR 70,000 to large multinational corporations with 350,000 employees and annual revenue of EUR 100 billion. More than 80% of the questionnaires were filled in by finance, accounting and general management executives. Figure 4 summarizes the key characteristics of the sample.

Figure 4: The study sample comprises 95 car manufacturers and suppliers



1) Since activities are usually coordinated by the headquarters of business units, this study was conducted at business unit level. Therefore, in some cases, the sample contains several business units from the same company, e.g. the passenger car and truck businesses of the same company, or different brands from the same car manufacturer

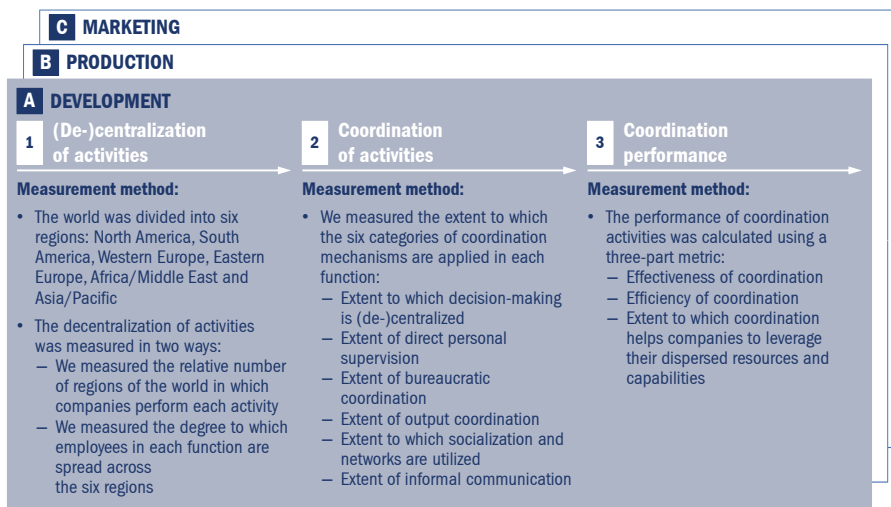
Source: ESCP Europe; Roland Berger

2) Since activities are usually coordinated by the headquarters of business units, this study was conducted at business unit level. Therefore, in some cases, the sample contains more than one business unit from the same company.

We analyzed the degree to which activities are decentralized, the way they are coordinated and the resultant coordination performance.

Our analysis consisted of three steps performed separately for the development, production and marketing activities of each company (Figure 5):

Figure 5: The companies were analyzed regarding the decentralization, the coordination of activities and the resulting coordination performance



Source: ESCP Europe; Roland Berger

Step 1:

To assess the change in coordination that accompanies greater **decentralization of activities**, we first had to capture the geographic dispersion of a company's activities. To this end, we divided the world into six regions: North America, South America, Western Europe, Eastern Europe, Africa/Middle East and Asia/Pacific³⁾. Configuration index CI_1 then measured the relative number of regions of the world in which a specific development, production or marketing **activity** is carried out ("active regions"). German car manufacturer Audi, for example, operates its own production sites in Western Europe, Eastern Europe and Asia/Pacific, giving it an index score of $CI_1=3/6=0.5$ for production. The more regions in which a company has specific activities, the higher the CI_1 value.

3) Mexico is assigned to the North America region. Eastern Europe includes all the former eastern bloc countries and Turkey. Western Europe comprises all the other European countries.

Our second configuration index, CI_2 , is derived from a Gini coefficient (a measure of statistical dispersion) and assesses the degree to which the **employees** who work in a given function are spread across the six regions of the world. For instance, a company that employs 50% of its production staff in Western Europe and 50% in the USA would have a CI_2 score of 0.2. The CI_2 score increases as employees become more widely dispersed across the six regions.

Step 2:

We then examined the extent to which companies apply the six categories of **coordination** mechanisms discussed above to coordinate development, production and marketing activities.

Step 3:

Finally, we analyzed the performance of companies' coordination activities. Overall **coordination performance** was calculated using an aggregate three-part metric.

We examined:

- > The effectiveness of coordination
- > The efficiency of coordination
- > The benefits provided by coordination in enabling companies to leverage their globally dispersed resources and capabilities

Based on these three steps, we were able to identify function-specific sets of coordination mechanisms that can be applied to good effect to coordinate a company's international activities.⁴⁾

4) To compare existing and recommended options for the coordination of geographically dispersed activities, we performed a series of latent class cluster analyses. This statistical method, a subset of structural equation modeling, is considered to be the state of the art of cluster analysis. Based on conditional probability distributions, it identifies homogenous segments in the sample. The Latent GOLD software package was used to perform the latent class cluster analyses.

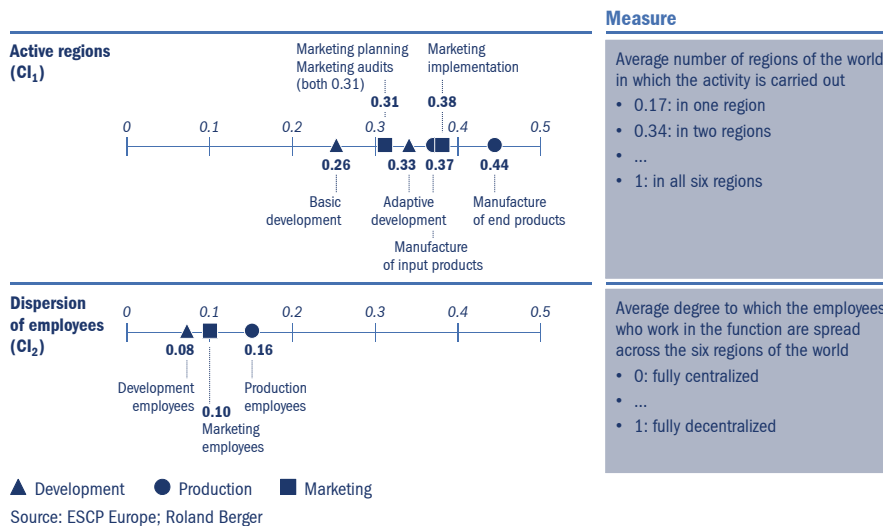
3. FINDINGS

A. Overview

The level of geographic decentralization varies significantly for development, production and marketing activities.

Based on the results for all companies in the sample, we calculated the average configuration indices for each activity. Figure 6 shows the outcomes and demonstrates that the level of geographic decentralization varies significantly for development, production and marketing activities.

Figure 6: The level of geographic decentralization varies significantly for development, production and marketing activities



Our analysis of **development activities** revealed that basic development is, in many cases, more heavily centralized than adaptive development. Whereas basic development is often focused in one region, adaptive development is frequently located in two regions. However, the very low CI₂ score indicates that most development employees – and hence most development work – is still located in a single region, which is normally the company's home region.

Production activities are much more heavily decentralized than development activities. Companies also decentralize the manufacture of end products more frequently than the manufacture of input products. Both activities are usually carried out in more than two regions. Indeed, the manufacture of end products tends to be based in an average of nearly three regions. Here again, however, a low CI_2 score indicates that the bulk of production is located in just a single region. Most production employees are based in Western Europe. In other words: German car manufacturers and suppliers, who account for the majority of the sample, (still) locate most of their production work in Western Europe.

The degree to which the companies in our sample decentralize **marketing activities** lies between the levels identified for development and production activities. Whereas marketing implementation is regularly based in more than two regions, marketing planning and marketing audits are carried out in less than two regions on average. Yet again, a very low CI_2 score demonstrates that the majority of marketing employees still work in one region, typically in a company's home region.

Overall, we can conclude that, although automotive companies are indeed internationalizing their activities, most value is still added in the company's home region in the majority of cases. While sales have been globalized to some extent, this is not the case for development, production and marketing activities. This finding raises a number of questions about what is often claimed to be a general trend toward globalization (see also Kutschker & Schmid 2011, pp. 159-215; Rugman 2005).

Automotive companies decentralize and coordinate their activities in different ways.

After analyzing the relative decentralization of activities, we then examined how car manufacturers and suppliers coordinate these activities across borders. Using latent class cluster analyses, we identified several categories of companies. These categories reflect different patterns in the decentralization and coordination of their activities. The sections that follow discuss the company categories identified for development (B), production (C) and marketing (D).










B. Development

Regarding the decentralization and coordination of development activities, three different categories of companies can be identified.

Three distinct clusters of development activities emerged in our analysis. These clusters reflect significant differences in company size (number of employees and revenue volume), the degree of international activity (share of employees and revenue outside the home country) and the pressure for global integration that companies perceive within their field of activity.

As Figure 7 illustrates, company category 1 represents all small firms that mainly operate on their domestic market and perceive little pressure for global integration. Their development activities are heavily centralized. Furthermore, these activities receive below-average coordination relative to our sample. This comparatively low level of coordination is accompanied by average coordination performance⁵).

Figure 7: Regarding the decentralization and coordination of development activities, three different company categories can be identified

	Increasing international presence →		
	Company category 1 (43 companies)	Company category 2 (19 companies)	Company category 3 (28 companies)
CHARACTERISTIC ATTRIBUTES	Small companies	Medium-sized and large companies	Large companies
• Pressure for global integration:	Below average	Average	Above average
• Degree of international activity:	Low	High	Very high
GEOGRAPHIC DISPERSION OF ACTIVITIES	 Centralized	 Slightly decentralized	 Heavily decentralized
COORDINATION OF ACTIVITIES	 Below average	 Below average	 Above average
COORDINATION PERFORMANCE	 Average	 Average	 Average

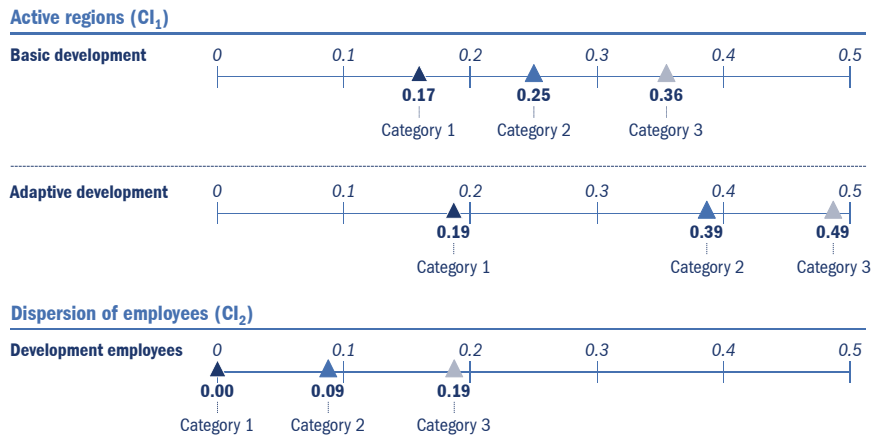
Source: ESCP Europe; Roland Berger

Company category 2 consists of medium-sized and large companies with a high degree of international activity and an average need for global integration. These companies have decentralized their development activities to a minor degree and coordinate them to a below-average extent, comparable to coordination at the level of company category 1. Company category 3 includes all large multinational companies that consider their environment to require very considerable efforts in the direction of global integration. These companies decentralize their development activities to a large extent and coordinate them to an extent that is significantly above average. This combination of strong geographic dispersion and intensive coordination is coupled with coordination performance that is considered to be average.

5) The pressure for global integration perceived by companies, the extent to which they apply the different categories of coordination mechanisms and their coordination performance were measured using several indicators. All indicators belonging to the same theme were then aggregated using factor analyses. As a result, a company category's scores for each theme are represented by factor values that can be interpreted as "below average", "average", and "above average" - always in comparison to the factor's mean value across the whole sample.

Figure 8 illustrates in detail to which degree development activities are decentralized in each of the three company categories. Not surprisingly, all categories reveal a higher level of decentralization for adaptive development than for basic development. This once again demonstrates that the adaptation of components, systems and vehicles takes place closer to local markets and customers than does basic development. Whereas both activities are (almost) completely concentrated in one region in company category 1 (most frequently in the company's home region), companies that represent the most decentralized category (category 3) locate them in two or even three regions. Company category 2 shows intermediary levels of decentralization for both basic and adaptive development.

Figure 8: The three categories differ significantly in the extent to which they decentralize development activities



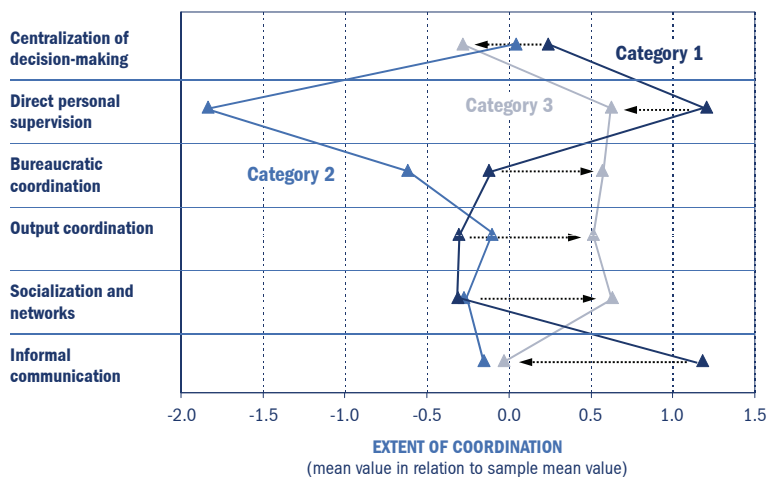
Source: ESCP Europe; Roland Berger

Decentralized development activities imply the greater use of bureaucratic coordination, output coordination and socialization/networks.

The results for all three company categories indicate that automotive companies increase the overall level of coordination as the decentralization of development activities increases. The coordination profiles in Figure 9 illustrate how the composition of the coordination set changes. Comparison of category 1 and category 3 reveals that the centralization of decision-making, the level of direct personal supervision and the level of informal communication decrease as development activities are more internationalized.

One reason is that personal communication becomes more difficult, the more a firm spreads its activities around the globe. Furthermore, it is often necessary to delegate decision-making responsibility to foreign units to avoid overloading the staff at head-quarters and to take due account of the specific requirements of foreign markets. Unlike category 1, category 3 reveals a considerably higher level of bureaucratic coordination, output coordination and the use of socialization and networks. It thus seems that companies use these coordination mechanisms partially to substitute for the former categories of coordination. Again, category 2 can be seen as representative of all companies that are in a state of transition. These companies have begun to decentralize their development activities. In doing so, they have reduced both the centralization of decision-making and the use of direct personal supervision and informal communication. Some of them have probably gone too far along this path.⁶⁾ However, the companies in category 2 have not yet stepped up either bureaucratic and output coordination or the use of socialization and networks compared to the firms in category 3.

Figure 9: Bureaucratic coordination, output coordination and socialization/networks all increase as development becomes more decentralized



Source: ESCP Europe; Roland Berger

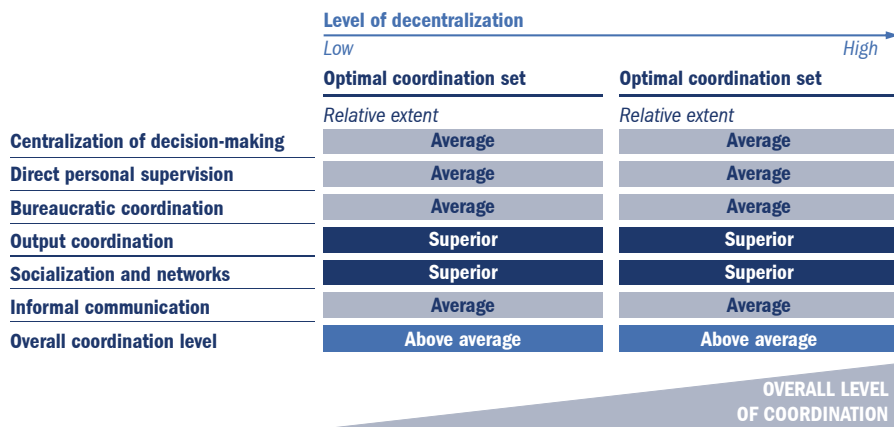
6) In light of the quantitative research design, it is inappropriate to draw additional conclusions. Qualitative interviews with experts would, for instance, be necessary to investigate the reasons for the low level of direct personal supervision and its impact on coordination performance.

Successful coordination of development activities relies on superior levels of output coordination and the greater use of socialization and networks.

Having examined the relationships between decentralization and the coordination of development activities that occur in business practice, we analyzed how coordination sets would have to be composed to maximize coordination performance. To do so, we isolated those companies in the sample that evidence the highest levels of coordination performance. As described above, coordination performance was calculated based on the effectiveness and efficiency of coordination and the extent to which it helps companies leverage their geographically dispersed resources and capabilities. Surprisingly, coordination performance is hardly influenced by the degree to which development activities are decentralized. Successful coordination of development activities apparently depends much more on the relative composition of the coordination set. In particular, it is rooted in a combination of superior levels of output coordination with the greater use of socialization and networks. These superior levels must in turn be combined with at least average levels of use of all the other coordination mechanisms. As a result, the overall coordination level reflected in the most successful set is significantly higher than the coordination levels inherent in less successful models.

The relative composition reflected in the optimal coordination set proves to be successful for all degrees of decentralization, irrespective of whether development activities are fully centralized or heavily decentralized. At the same time, the overall level of coordination increases as development activities become more heavily decentralized. This implies a comparative increase in the absolute level of each mechanism. Figure 10 illustrates these findings.

Figure 10: Superior output coordination and socialization/networks are key to successful development coordination









Source: ESCP Europe; Roland Berger

C. Production

Regarding the decentralization and coordination of production activities, two different categories of companies can be identified.

Two distinct models can be observed in the way the automotive industry decentralizes and coordinates its production activities. The first category of companies covers all small firms that engage in little or no international activity and that perceive little pressure for global integration. They have slightly decentralized their production activities and coordinate them to a below-average extent. The resulting coordination performance is perceived as below average and, thus, reveals room for improvement. The second category of companies represents medium-sized and large companies with a strong international presence that are confronted with substantial pressure for global integration. Accordingly, companies in this category have widely decentralized their production activities and coordinate them to a degree that is considerably above average. They also achieve a significantly above-average level of coordination performance. Figure 11 gives an overview of both company categories.

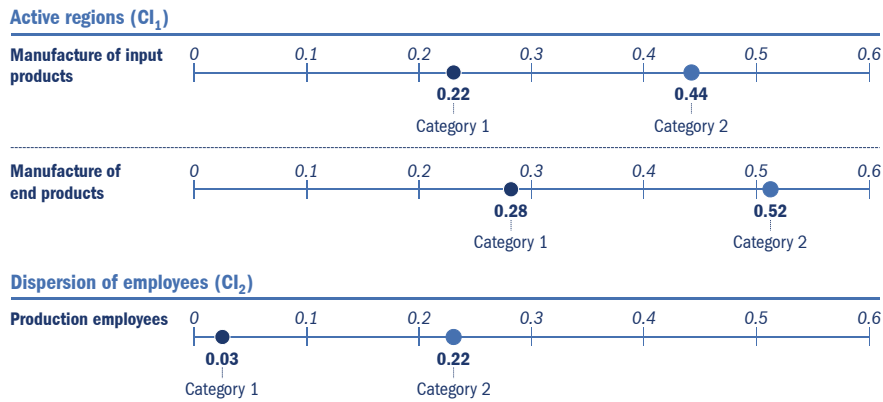
Figure 11: Regarding the decentralization and coordination of production activities, two different company categories can be identified

	Increasing international presence →	
	Company category 1 (36 companies)	Company category 2 (53 companies)
CHARACTERISTIC ATTRIBUTES	Small companies	Medium-sized and large companies
• Pressure for global integration:	Below average	Above average
• Degree of international activity:	Low	High
GEOGRAPHIC DISPERSION OF ACTIVITIES	 <i>Slightly centralized</i>	 <i>Heavily decentralized</i>
COORDINATION OF ACTIVITIES	 <i>Below average</i>	 <i>Above average</i>
COORDINATION PERFORMANCE	 <i>Below average</i>	 <i>Above average</i>

Source: ESCP Europe; Roland Berger

Figure 12 illustrates the degrees to which specific production activities and employment in production units are decentralized. Category 2 firms have significantly higher degrees of decentralization – for the manufacture of both input products and end products – compared to category 1 firms.

Figure 12: The two categories differ significantly in the extent to which they decentralize production activities

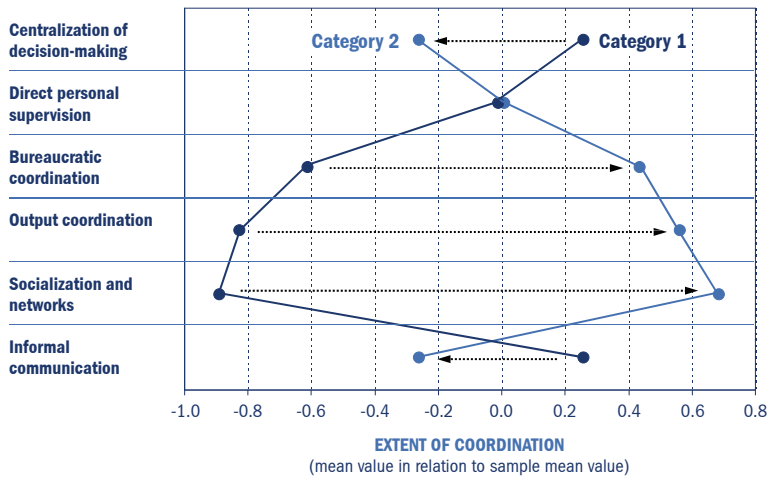


Source: ESCP Europe; Roland Berger

Decentralized production activities are accompanied by increased bureaucratic and output coordination and the greater use of socialization and networks.

Company category 1, which largely consists of companies with nationwide operations, primarily relies on centralized decision-making, direct personal supervision and informal communication to coordinate centralized production activities. By contrast, company category 2 emphasizes bureaucratic and output coordination, as well as leveraging socialization and networks to coordinate production activities. Accordingly, the heavier decentralization of production activities is accompanied by similar changes in the composition of the coordination set to those witnessed where development activities are more heavily decentralized. Figure 13 shows the coordination sets for both categories.

Figure 13: Bureaucratic coordination, output coordination and socialization/networks all increase as production becomes more decentralized

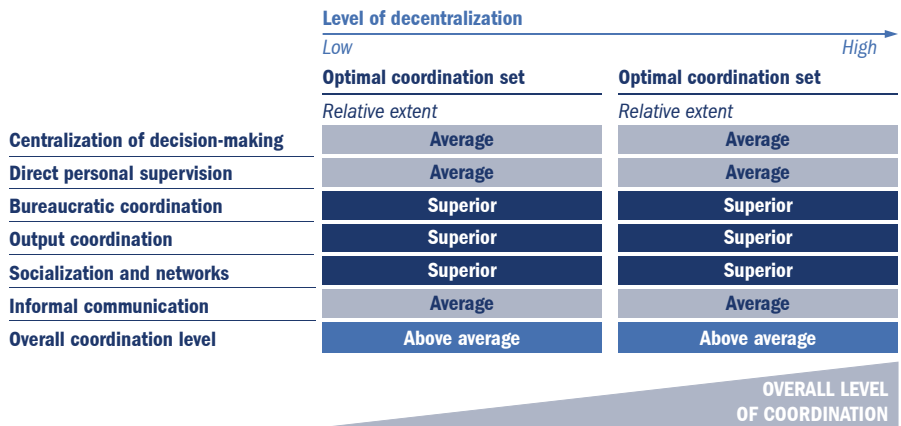


Source: ESCP Europe; Roland Berger

Successful coordination of production activities relies on higher levels of bureaucratic and output coordination and the superior use of socialization and networks.

We also identified optimal sets of mechanisms to successfully coordinate globally dispersed production activities. As we saw for development activities, the successful coordination of production activities too depends more on the composition of the coordination set than on the degree to which activities themselves are decentralized. However, the composition of the optimal coordination set for production activities differs from the one outlined for development activities. The optimal coordination of production activities is based on superior levels of bureaucratic and output coordination and the greater use of socialization and networks, combined with at least average levels for all other mechanisms. Bureaucratic coordination is thus of high relevance to the successful coordination of production, whereas it plays a minor role within the coordination of development. Again, the overall level of coordination is much higher in the optimal set for production activities than in less successful sets. As in the case of development activities, this relative composition holds true irrespective of the degree to which production activities are decentralized. Greater degrees of geographic decentralization are simply accompanied by the greater use of each mechanism in absolute terms. Figure 14 summarizes our results.

Figure 14: Superior bureaucratic/output coordination and socialization/networks are key to successful production coordination



Source: ESCP Europe; Roland Berger

D. Marketing













Regarding the decentralization and coordination of marketing activities, four different categories of companies can be identified.

Our study reveals a less clear-cut picture with regard to the decentralization and coordination of marketing activities, where four distinct categories of companies can be identified. Here again, category 1 represents small automotive companies that mostly operate on their home market and that hardly perceive any pressure for global integration. Their marketing activities are fully centralized and are coordinated to a below-average extent. Category 2 comprises small and medium-sized companies that are internationally active and perceive average pressure toward global integration. These companies have begun to decentralize their marketing activities and have increased the degree of coordination. Category 3 includes only three companies, all of which are small and medium-sized companies that are very active in the international arena.⁷⁾ Unlike category 2 firms, these companies perceive an above-average need for global integration and have heavily decentralized their marketing activities. However, they have not yet increased the level of coordination. Category 4 covers large companies that are also very active across borders and that perceive above-average pressure for global integration. These firms have widely decentralized their marketing activities and coordinate them tightly.

7) Although company category 3 represents only three companies, identifying them as a small but discrete cluster significantly improved the quality (discriminatory power) of the overall cluster model. The other clusters became more homogenous when the three "outlier" companies were carved out to constitute their own cluster.

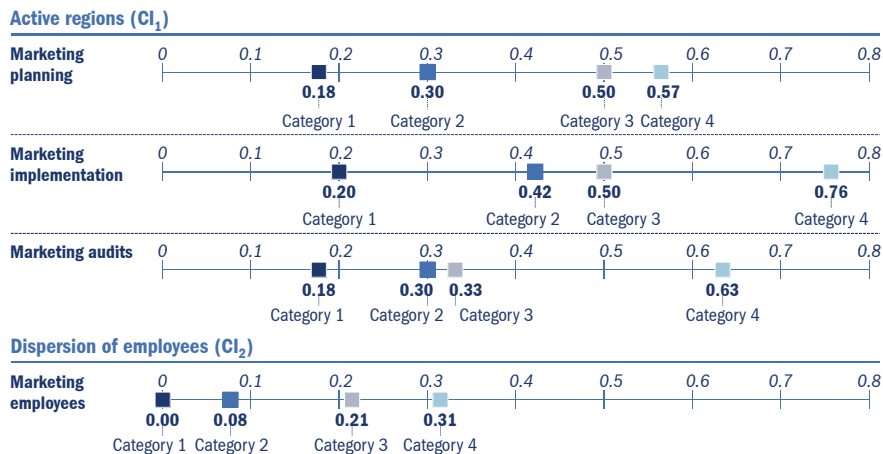
With the exception of category 3, all company categories demonstrate average levels of coordination performance. Category 3, which comprises only three "outlier" companies, departs significantly from this pattern, revealing below-average coordination performance. This decline in performance may be an initial indication that the chosen combination – advanced decentralization of marketing activities but with little coordination – may be inappropriate. Figures 15 and 16 show the four company categories and the relative degrees to which they decentralize marketing activities.

Figure 15: Regarding the decentralization and coordination of marketing activities, four different company categories can be identified

	Increasing international presence →			
	Company category 1 (53 companies)	Company category 2 (10 companies)	Company category 3 (3 companies)	Company category 4 (24 companies)
CHARACTERISTIC ATTRIBUTES	Small companies	Small and medium-sized companies	Small and medium-sized companies	Large companies
• Pressure for global integration:	Below average	Average	Above average	Above average
• Degree of international activity:	Low	High	Very high	Very high
GEOGRAPHIC DISPERSION OF ACTIVITIES	 Centralized	 Slightly decentralized	 Heavily decentralized	 Heavily decentralized
COORDINATION OF ACTIVITIES	 Below average	 Average	 Below average	 Above average
COORDINATION PERFORMANCE	 Average	 Average	 Below average	 Average

Source: ESCP Europe; Roland Berger

Figure 16: The four categories differ significantly in the extent to which they decentralize marketing activities

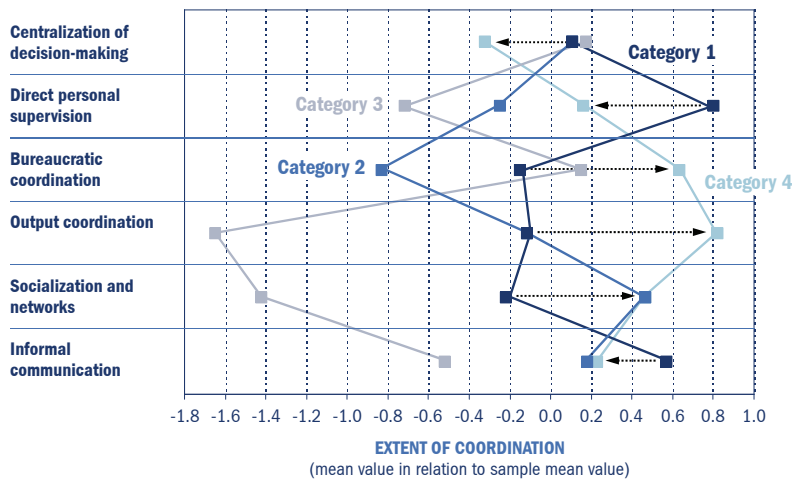


Source: ESCP Europe; Roland Berger

Decentralized marketing activities imply superior bureaucratic and output coordination and the greater use of socialization and networks.

The changes in the composition of the coordination set that can be observed when firms decentralize their marketing activities are similar to those that we have observed in relation to development and production activities. The heavier decentralization of marketing activities tends to be accompanied by lower levels of centralized decision-making, less direct personal supervision and less informal communication, but involves more bureaucratic coordination, superior output coordination and a stronger use of socialization and networks. Figure 17 demonstrates these changes by comparing categories 1 and 4. The other categories, categories 2 and 3, reflect intermediate positions.

Figure 17: Bureaucratic coordination, output coordination and socialization/networks increase as marketing becomes more decentralized



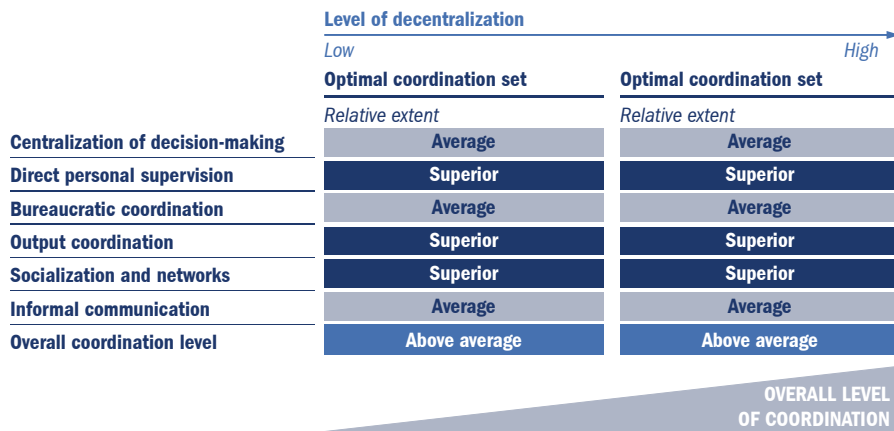
Source: ESCP Europe; Roland Berger

Successful coordination of marketing activities is based on superior levels of bureaucratic and output coordination and the greater use of socialization and networks.

Finally, we also analyzed how the coordination sets in marketing must be composed to optimally coordinate the relevant activities. Yet again, we found that successful coordination is hardly influenced by the degree to which activities are decentralized.

Unlike development and production, superior coordination performance in marketing results from a significantly superior level of direct personal supervision, an above-average level of output coordination and the greater use of socialization and networks. When combined with average levels for all other mechanisms, superior levels for these mechanisms lead to levels of coordination performance that are significantly above average. As in the case of development and production, the optimal composition of the coordination set proves successful irrespective of the extent to which marketing activities are decentralized. As the overall level of coordination increases when decentralization increases, this observation implies that the absolute levels of all mechanisms must be comparatively enhanced when marketing activities become more geographically dispersed. Figure 18 illustrates these findings.

Figure 18: Superior direct personal supervision, output coordination and socialization/networks are key to successful marketing coordination



Source: ESCP Europe; Roland Berger

4. IMPLICATIONS

Across all functions, superior coordination performance results from comparatively high levels of output coordination and the greater use of socialization and networks.

The optimal coordination sets identified by this study reveal important function-specific characteristics. The successful coordination of **development activities** relies on superior levels of output coordination and the greater use of socialization and networks. On the other hand, as illustrated in Figure 19, the optimal coordination of **production activities** also requires a superior level of bureaucratic coordination. And, besides superior levels of output coordination and socialization/networks, the successful coordination of **marketing activities** is characterized by a superior level of direct personal supervision. However, all optimal function-specific coordination sets have two things in common: superior levels of **output coordination** and the superior use of **socialization and networks**.

Figure 19: In all functions, successful coordination is linked to superior output coordination and socialization/networks

	Development	Production	Marketing
	<i>Relative extent</i>	<i>Relative extent</i>	<i>Relative extent</i>
Centralization of decision-making	Average	Average	Average
Direct personal supervision	Average	Average	Superior
Bureaucratic coordination	Average	Superior	Average
Output coordination	Superior	Superior	Superior
Socialization and networks	Superior	Superior	Superior
Informal communication	Average	Average	Average
Overall coordination level	Above average	Above average	Above average

Source: ESCP Europe; Roland Berger

Another major finding of our study merits special emphasis: Successful coordination always reflects the use of all relevant coordination mechanisms in **integrated sets**. Within the optimal function-specific coordination sets, each mechanism is applied at least to an average degree. It would therefore clearly be wrong to assume that firms can fully compensate for one or several coordination mechanisms by focusing solely on those categories in which they achieve superior levels. This observation is equally true for development, production and marketing activities.

Output coordination is common practice among automotive companies and is, for instance, effected by defining strategic and financial goals. Up to now, however, by no means all players in the industry have chosen to apply coordination mechanisms in the socialization and networks category. We therefore strongly recommend that companies pay more attention to the mechanisms in this category. The section that follows presents several examples and explains in detail how the use of socialization and networks can be strengthened in practice.

Coordination through socialization means nurturing a common corporate culture throughout the entire company.

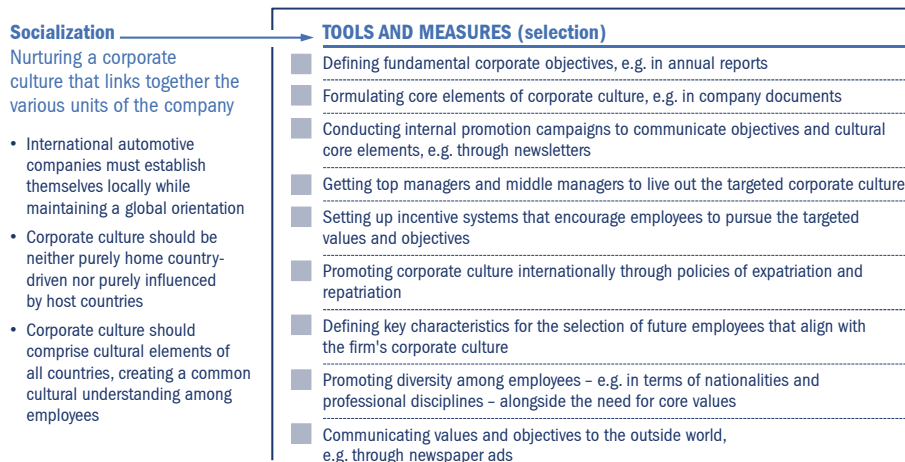
Using socialization as a coordination mechanism involves creating a corporate culture that connects the various units of a company. International automotive companies have to establish themselves on a local level while also incorporating a global perspective. Accordingly, corporate culture can neither be purely home country-driven (ethnocentric), nor purely influenced by host countries (polycentric). Instead, it should comprise cultural elements of various countries (geocentric) in order to create a common cultural understanding that is shared by all employees at headquarters and foreign subsidiaries alike (Perlmutter 1969; Schmid & Grosche 2008, pp. 141-143; see also Figure 20).

Here is a list of selected appropriate tools and measures for **coordination through socialization** (see also Schmid 1996, pp. 133-140; Sackmann & Böcker 2004; Welch & Welch 2006):

- > Defining and formulating fundamental corporate objectives, e.g. in company documents and annual reports or on websites
- > Defining and formulating the core elements of corporate culture, such as assumptions, norms and beliefs, in company documents and annual reports or on websites, for example
- > Conducting internal promotion campaigns to announce the company's fundamental objectives and cultural core elements, e.g. using claims, newsletters, leaflets and/or top management visits and presentations
- > Getting top managers and middle managers to represent the corporate objectives and the core elements of the firm's corporate culture in their everyday business decisions and actions
- > Installing incentive systems that encourage employees to pursue the corporate objectives and the corporate culture, for instance by establishing suitable bonus systems
- > Promoting the company's corporate objectives and culture internationally through appropriate employee expatriation and repatriation policies

- > Defining key characteristics for the selection of future employees that align with the firm's corporate culture
- > Promoting diversity among employees – especially among middle and top managers – in line with the firm's business (e.g. in terms of nationalities, cultures, gender and/or professional disciplines) alongside the need for core elements of corporate culture
- > Running publicity and advertising campaigns to communicate corporate objectives and cultural core elements to the outside world, e.g. through newspaper ads or TV spots.

Figure 20: Coordination through socialization means nurturing a common corporate culture



Source: Sackmann & Böcker (2004), Welch & Welch (2006), Kutschker & Schmid (2011)

Coordination through networks means promoting non-hierarchic information sharing across the company's various units.

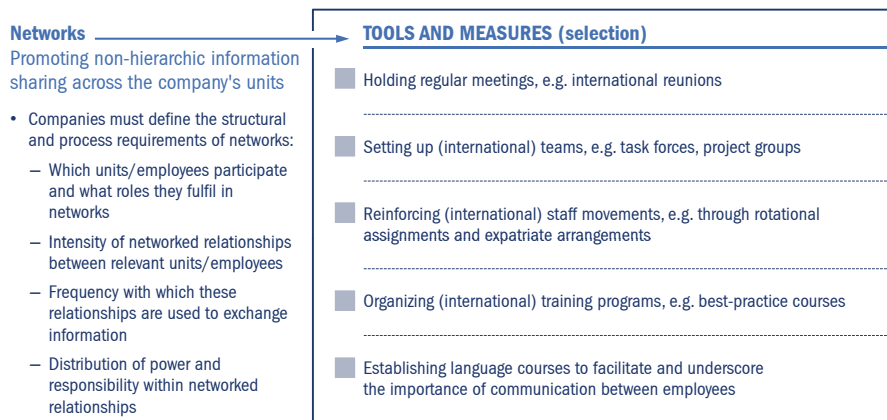
The purpose of networks is to promote non-hierarchic information sharing between the various units of a company. Accordingly, a company's units and employees are continuously supplied with important information of relevance to their field of activity. As the need arises, employees and units can then refer to this information in order to synchronize their activities in line with the company's goals. On a general level, companies must define four aspects of the structural and process requirements of specific functional networks (Figure 21).

They must determine (1) which organizational units and employees are to participate and what roles they are to fulfill; (2) the intensity of network relationships between the relevant units and employees; and (3) the frequency with which these relationships are used to exchange information. In addition, (4) power and responsibility must be distributed appropriately within the relationships (Renz 1997, pp. 89-91; Schmid, Schurig, & Kutschker 2002).

Useful tools and metrics for **coordination through networks** are:

- > Holding regular meetings with participants from relevant units, such as group-wide, regional and/or international reunions
- > Organizing (international) training programs, such as instructions on quality issues, courses on company-wide best practices and introductions to the latest technological improvements (see Example 2)
- > Setting up (international) project teams, such as task forces, committees, project groups and/or integrative departments
- > Reinforcing (international) staff movements through rotational assignments, expatriate arrangements, short-term assignments, and/or business travel arrangements, for example
- > Establishing language courses, as the importance of communication between employees increases in international networks.

Figure 21: Coordination through networks means promoting non-hierarchic information sharing between company units



Source: Renz (1998), Schmid & Grosche (2008)

EXAMPLE 2:
International training programs at Japanese car manufacturer Toyota

Training center	Toyota Institute		Global Production Center
Program	Global Leadership School	Management Development School	TPS Training
Objective	Develop executives who are capable of showing leadership from a global perspective	Train managers to systematically understand and implement Toyota's corporate culture as it relates to each function (e.g. production, marketing)	Train production employees to establish the Toyota Production System and thus realize the same level of efficiency and quality at all company plants
Content	Elements: > Enhanced leadership ability > Reinforced management knowledge and skills > Global human networking > etc.	Elements: > Production example: Understanding of the latest improvements in the Toyota Production System > Marketing example: Understanding of the latest marketing methods based on Toyota's corporate culture > etc.	Elements: > Processes in the Toyota Production System > Techniques in the Toyota Production System > Latest improvements in the Toyota Production System > etc.
Lecturers	> Toyota managers > Lecturers from business school and universities	> Toyota managers > Lecturers from business schools and universities	> Toyota production employees
Participants	Future global leaders from around the world	Middle management from around the world	Regional training for production employees from the specific region

Source: Based on Sackmann (2005, p. 30)

Figure 22 summarizes the key findings and implications of the study.

Figure 22: Key findings and implications

- Successful coordination reflects the use of all relevant mechanisms at least to an average degree within an **optimal coordination set**
- Optimal coordination sets are **function-specific**:
 - Optimal coordination sets for **development** activities rely on superior levels of output coordination and socialization and networks
 - Successful coordination of **production** activities requires superior levels of bureaucratic coordination, output coordination and socialization and networks
 - **Marketing** activities are well coordinated by applying superior levels of direct personal supervision, output coordination and socialization and networks
- The absolute level of each mechanism has to be increased with rising decentralization, but the relative composition of the successful coordination set is **optimal for all degrees of decentralization**
- The function-specific optimal coordination sets share superior levels of **output coordination** and **socialization and networks**
- We particularly recommend strengthening socialization and networks by
 - **Establishing a corporate culture** that keeps the entire company together and
 - **Promoting non-hierarchical information sharing** between the company's various units

Source: ESCP Europe; Roland Berger

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