

**THE DELPHI ORACLE'S POTENTIAL IN EMERGING MARKETS: THE CASE OF
INDIA'S AUTOMOTIVE INDUSTRY IN 2020**

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Abstract:

Managers of international enterprises are increasingly challenged by uncertainty and equivocality in their decision-making. This is particularly the case for emerging markets: Political and economic shocks; fast and non-linear institutional change; varying legal frameworks and law enforcement; as well as little familiarity with these environments increase not only the uncertainty about current and potential developments but also equivocality about how to interpret these developments as they might interrelate with each other. In this paper, we discuss how Delphi studies as a research method can be used to overcome challenges and uncertainty of dynamics associated with emerging markets. Although the Delphi study has been well advanced not only through studies on international research topics, its full potential remains to be unveiled. We integrate quantitative and qualitative analysis processes in a Delphi-based scenario approach to demonstrate its effectiveness for practitioners and researchers who aim to gain an in-depth understanding of the institutional context of industry/country combinations. We exemplify the application of our approach by analyzing the small car automotive industry and its institutional context in India in 2020.

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INTRODUCTION

The rise of emerging markets at the beginning of the 21st century is one of the most influential and discussed economic and social phenomena in recent management literature. These emerging markets are characterized by rapid economic growth combined with the liberalization and adoption of free-market principles (e.g. Hoskisson, Eden, Lau, & Wright, 2000). Due to the high level of saturation of many industries in developed markets, companies headquartered in these markets have little choice but to enter emerging markets. Attracted by the enormous growth potential, multinational as well as domestic corporations need to invest substantial efforts into understanding how they can best benefit from the developments of the rapidly expanding emerging markets

The business environment in emerging markets is particularly different from the relatively stable political, social and economic environments in developed markets that many multinationals are primarily accustomed to (Jackson & Deeg, 2008). Several scholars have shown that environmental conditions and institutions in emerging markets are less stable than in developed countries (e.g. Hoskisson et al., 2000; Luo, 2004; Peng, Wang, & Jiang, 2008).

Whereas stable institutions decrease the uncertainty of investments and the management of operations in a given market (Chung & Beamish, 2005; Meyer & Rowan, 1977; Meyer, Estrin, Bhaumik, & Peng, 2009; Peng, 2003; Peng et al., 2008), drastic and frequent changes in the institutional context or “institutional upheaval” (Newman, 2000: 602) leave organizations wandering in the wilderness (Peng, 1994). Less stable institutions in emerging markets can cause

frequent changes in governmental regulations, tax laws, foreign direct investment (FDI) regulations, business practices, competition, or market conditions.

Yet, changes in environmental conditions are difficult to identify and interpret such as political change, technological adaptations to local market conditions, or general environmental changes and, subsequently, the complexity of the interrelatedness of the different institutional changes. These factors apply particularly with respect to investments into and management of operations in international markets (Egelhoff, 1991; Hansen, 2002; Kim & Mauborgne, 1995; Roth, 1995). Especially foreign managers are confronted not only with varying business environments but also with a “liability of foreignness” (Zaheer, 1995: 341). Such unfamiliarity with a market’s characteristics is rooted in differences of key factors such as governmental regulations, customer habits, market conditions, and cultures (cf. Birkinshaw, Toulan, & Arnold, 2001). Thus, today’s emerging markets particularly challenge decision makers since surrounding conditions are not only varying but also dynamically evolving. Western – but also local managers – have difficulties in gathering and interpreting required information in and for emerging markets.

Hence, decision makers are confronted with high uncertainty and equivocality regarding current and future developments in the institutional context of an emerging market: Western managers cannot expect to conduct business operations in emerging markets in the same manner as in their traditional markets (Khanna, Palepu, & Sinha, 2005). Emerging markets have to be seen as more than just “new markets for (...) old products” (Prahalad & Lieberthal, 1998: 69-70) and thus require managers to adapt the firms’ operations while they are wandering in the wilderness themselves.

Prior research has underlined the impact of institutions on market characteristics and managers' decision making (cf. Jackson & Deeg, 2008; Khanna et al., 2005; Peng, 2003), and institutions in emerging markets not only affect daily operations and long-term organizational planning but also increasingly shape the strategy and performance of firms (Hoskisson et al., 2000; Peng, Sun, Pinkham, & Chen, 2009; Wright, Filatotchev, Hoskisson, & Peng, 2005). Since institutional changes can induce both risks and opportunities, managers need to assess emerging developments in their surrounding institutional environment at an early stage.

For example, the dynamic capability view of the firm argues that organizations have to be able to quickly recognize – if not even predict – critical changes in their environment and to adapt their capabilities accordingly in order to achieve superior operational performance (Eisenhardt & Martin, 2011; Teece, Pisano, & Shuen, 1997). The necessity to recognize important changes in the environment, “to sense and to seize opportunities” (O'Reilly & Tushman, 2008: 192), increases the demand for gathering and interpreting future-oriented information. Therefore, a future-orientated focus appears rather suitable than relying solely on extrapolation of historical sales data. As Peng et al. (2008: 921) state, the key question becomes, “how to play the game when the rules of the game are changing and not completely known?”

In order to successfully deal with the increased complexity, interdependencies and dynamics that are inherent in emerging markets' institutional context, senior executives require not only an accurate picture of today's market situation but also information about the potential future business environment(s). It is essential to think about alternative futures particularly as emerging markets do not necessary develop in a linear, predictable way. Hence, an analysis not only of the current but especially of the future institutional context from a political, economic, social and technological perspective seems crucial for long-term success.

The literature concerned with conducting such studies proposes different approaches, including Delphi panels (Delbecq, Van de Ven & Gustafson, 1986), scenario development (Gausemeier, Fink & Schlake, 1998; Quade & Boucher, 1968), stakeholder analysis (Nutt, 1982), or nominal group techniques (NGT) (Delbecq & Van de Ven, 1971). These approaches improve the information level of decision makers with respect to future outlooks. Prior studies also confirm that a managers adequate information level influences effectiveness of decision-making and firm performance (e.g. Griffin & Hauser, 1996; Moenaert & Souder, 1990). Ottum and Moore (1997) observe that the commercial success of business development is strongly influenced by the access to and application of market information. This access supports companies in identifying changes in their environments in the early stages and in preparing proactively for new markets (Frishammar, 2005; Galliers, 1987).

The objective of our paper is to present a systematic approach how to obtain a better understanding of the dynamically evolving institutional context of an industry/country combination in order to increase the managerial effectiveness in strategic decision making. The approach supports managers not only in identifying emerging changes in a complex environment but also in understanding the interdependence between different institutions. Furthermore, it provides insights on relevant antecedents and consequences of such changes, allowing for an *a priori* integration of relevant information into strategic decision-making. Following Nielsen & Thangadurai's (2007:160) perception, we build upon the Delphi Method, which is considered to be "an underutilized tool that offers much promise, particularly for inquiries aimed at global business forecasting (...), and delving more deeply into significant causes, conditions, and catalysts of international activity".

In the remainder of the paper, we discuss how the Delphi methodology can be used to overcome challenges of dynamics associated with emerging markets. Our Delphi-based scenario approach enables to analyze not only how an industry in an emerging market may look like in the future but also to understand the interdependence of different institutions – that is, to finally better understand how institutions matter in a specific industry/country context. This is of particular interest as a profound explanation of ‘how institutions matter’ remains to be identified in various contexts (cf. Jackson & Deeg, 2008; Meyer & Peng, 2005; Peng et al., 2008; Wright et al., 2005).. First, we discuss the theoretical background for emerging markets depicting upon institutional theory, induced challenges through institutional change and suggest a research framework for such challenges. Subsequently, we introduce the methodology for our Delphi-based scenario approach. We then draw on the results of a Delphi study, in which 43 local experts participated, to demonstrate the value of our framework: We present a systematic approach to identify how scenarios for India’s small car industry segment might look like by 2020 and how different institutional aspects might be interrelated and affect potential outcomes.

THEORETICAL BACKGROUND

Research Framework: Integrating Delphi and Scenario Planning into Institutional Analysis

In the case of emerging markets, managers have to make use of various sources for acquiring information regarding institutional contexts as market- and other research-agencies might not be as well established as in Western countries – or might not be in place at all (Khanna & Palepu, 1997; Khanna et al., 2005). For example, managers emphasize informal sources of information through strengthened social ties with managers from buyers, suppliers, or government officials (Li, Poppo & Zhou, 2008). In essence, “managers form networks and ties to obtain access to scarce resources and information and reduce uncertainty” (Li, Poppo & Zhou, 2008: 385). These

managerial ties are “executives’ boundary spanning activities and their associated interactions with external entities” (Geletkanycz and Hambrick, 1997: 654). Often, they serve as channels for transmitting information that is not publicly available yet (Boisot and Child, 1996). Consequently, interaction and communication with various entities – persons internal and external to an organization – takes up a major role to acquire information in emerging markets, especially due to information asymmetries rooted in the dynamics of a business environment.

In this paper, we make use of an extended version the Delphi method as “a structured, group-based information-sharing method (...) that encourages in-depth communication about the nature of things” (Nielsen & Thangadurai, 2007: 150-151). Delphi has proven especially supportive to managers who are challenged by environmental uncertainty (Hartman, Lundberg, White, & Barnett, 1995; Ziglio, 1996). As a research method, Delphi has also proven its effectiveness particularly when only limited and diverse information on a topic is available (Czaplicka-Kolarz, Stanczyk, & Kapusta, 2009; Linstone & Turoff, 1975; Riggs, 1983; Rowe, Wright, & Bolger, 1991). Similarly, its effectiveness becomes apparent in our focal research since managers in emerging markets are particularly challenged through incomplete information about their relevant business environment.

Although the Delphi method has been used in studies on international research topics and has gained recognition as a sound research method across disciplines, its full potential remains to be unveiled in the area of international research (Nielsen & Thangadurai, 2007). For our research, Delphi is an appropriate research method as it is “well-suited to the global research horizons” (Nielsen & Thangadurai, 2007: 150). In order to highlight the potential of the method, we apply Delphi to demonstrate how it can be modified to account for uncertainty and equivocality rooted in dynamic changes in the institutional context of emerging markets.

We integrate scenario planning in our analysis framework as an accepted method to identify possible futures that need to be considered by decision makers (Alsan, 2008). When managers assume emerging trends and changes in the environment, they are more likely to increase environmental scanning and information collection activities (Hartman et al., 1995). Yet, decision makers should not solely rely on extrapolating past experiences into the future (e.g., sales data) since information from past events may miss important weak signals for elementary changes in the future (McKenzie, Woolf, Winkelen & Morgan, 2009). Gonzalez (1992) argues that information about possible future environments is crucial as they significantly affect strategic planning activities. Blanning and Reinig (2002) argue that in rapidly changing environments or in environments which are easily perceptible to change, it is essential to analyze how those possible changes can impact business. Since emerging markets do not necessarily develop in a linear and predictable way, managers need to reflect alternative futures and how they might occur to make effective investments into financial and human resources. Thus, there is a strong need not only to identify but also to comprehensively investigate weak signals or arising trends (Vecchiato & Roveda, 2011). Scenario planning as an aid to analyze drastically changing environments is considered to be crucial for the preparation of strategic responses at an early stage (Czinkota & Ronkainen, 1997). It supports managers to identify key environmental developments and its effects on the corresponding business areas (Miller & Waller, 2003).

While an identification of potential developments and description of scenarios leads to reduced uncertainty, an in-depth understanding of how such developments and thereby induced effects might occur, leads to reduced equivocality. In this paper, we present a twofold approach to systematically account for both challenges: uncertainty and equivocality. On the one hand, we integrate possible developments along the political, economic, socio-cultural, and technological

(PEST) dimensions of a specific industry/country environment into our framework. By structuring the analysis around the PEST framework, we take into account the important role of institutions for the development of industries in emerging markets (Hoskisson et al., 2000; Wright et al., 2005). Considering the fact that institutional risks and dynamics are higher in emerging markets than in most developed countries, an integration of institutional aspects in the analysis of emerging markets seems crucial (Chung & Beamish, 2005).

Furthermore, we examine the activities of relevant stakeholder groups potentially influencing or directly leading to a specific future environment and account therefore for equivocality in our research framework (cf. Forbes, 2007). We use the stakeholder approach (Duncan, 1972) to identify the relevant enablers for the political, economic, socio-cultural, and technological dimensions of the industry analyzed. A stakeholder analysis is a powerful information processing aid when decision makers experience volatile and instable environments or the necessity to innovate; or when an organization has to respond to change (Hartman et al., 1995). Within the scope of our analysis, we study how relevant stakeholders of an Indian industry might act to enable or inhibit specific developments. To ensure a comprehensive approach, we base our analysis on Duncan's (1972) framework but take an industry, instead of a company perspective. Customers, suppliers, competitors, governments, and society at large are thus key stakeholders.

METHODOLOGY

Delphi can be defined as a method to structure group communication so that individuals can effectively respond to complex problems in multiple rounds (Linstone, Turoff, & Helmer, 2002). Due to the conduction of several rounds in the survey process, the accuracy of Delphi results is perceived superior to those in comparatively unstructured interacting groups (Rowe & Wright, 1999).

One of the key advantages of the approach is that it allows the participants to think independently and express well-considered opinions (Czinkota & Ronkainen, 2005). We adopt a modified version of the conventional, consensus-seeking Delphi technique (Linstone & Turoff, 1975) and let industry experts exchange information and knowledge in an anonymous online-panel process. This is particularly viable for our panel of experts, because it not only avoids confrontation but also inhibits various side effects such as dominating leaders or prejudiced credibility of participants based on personality and organizational status (Tersine & Walter, 1976). The objective is to evaluate whether or not an agreement (i.e. consensus) exists among the participants on the questions under review. To do so, the experts are asked to assess an online individualized questionnaire consisting of statements about the future of the small car automotive industry in India.

The statements are presented in form of projections that describe possible future political, economic, social, or technological outcomes of India's small car automotive industry or activities of relevant stakeholders. As recommended by Nielsen and Thangadurai (2007), we integrated quantitative and qualitative methods to enhance the strength of the conventional Delphi approach. In our case example, the industry experts assessed twenty projections in terms of probability (0-100 %), impact (5 pt. Likert-scale) and desirability (5 pt. Likert-scale) of each projection's occurrence regarding the small car automotive industry in India in 2020.¹ In addition, participants provided written arguments to support their quantitative estimates along the three dimensions for each projection. Besides each projection's probability of occurrence, we integrated the dimension 'impact' to affirm the relevance of the according projection for the industry, while the third

¹ Likert scale ranges from 1 (very low) to 5 (very high) for both impact and desirability.

dimension was integrated to eliminate a potential desirability bias (cf. Windschitl, Smith, Rose, & Krizan, 2010).

Once the experts evaluated the respective projection under review, they received an immediate feedback on how other experts assessed the probability, impact, and desirability. Thus, experts were informed whether or not they matched with the group opinion. In any case, experts were given the opportunity to check the arguments provided by other experts. Through the provision of this structured feedback and exchange of information, the experts had the opportunity to also consider aspects that were perceived as relevant by other experts. In addition, experts could reassess their initial estimate for each of the three dimensions, if desired. Through this anonymous process of exchanging information and knowledge, opinion consensus between the experts was evaluated and used as an adequate substitute for direct empirical evidence (Dalkey & Helmer, 1963).

Institutional Context Analysis

In order to develop institutional context projections relevant for decision makers, we had to identify factors considered to shape and influence an industry's future. In our case example, we pursued two different processes: First, intensive desktop and database research was conducted to spot 'hot topics' in the institutional context of the Indian small car automotive industry. Within the scope of this research, industry reports, scientific journals, and newspaper articles were studied. Second, six experts for the Indian small car market with diverse backgrounds were identified and invited to discuss the most relevant and important factors that might influence the institutional context of the small car automotive industry in India. The identified factors were then prioritized according to their perceived relevance for the small car automotive industry in

India. Finally, the relevant factors had to be transformed into projections – the main elements of the final ‘questionnaire’.

Development of Projections

Similar to other established research methods, the design and development of the survey questionnaire directly influences validity and reliability of research results. Consequently, we followed rigid research practices while developing our study projections. We tried to avoid any ambiguity in the formulation or conditional statements (Loveridge, 2002; Salancik, Wenger & Helfer 1971). After each development stage, external experts from different research institutes separately checked and validated the content of the projections (Turoff, 1975). Their input helped to eliminate minor understanding and interpretation issues in the specific context of India.

We developed two different types of projections: eight ‘outcome projections’ and twelve ‘enabler projections’. The eight outcome projections describe how the political, economic, social, and technological context of a small car automotive industry in India may look like in 2020. Structuring these eight projections around the four dimensions of the PEST framework ensured a comprehensive and holistic environmental analysis (Wilson & Gilligan, 2005).

The development of the eight outcome projections was based on eight questions. Two questions each were developed to evaluate each PEST dimension (Table 1). For example, in order to analyze how the possible political environments will look like in 2020, two projections were designed to address the following two central questions: (1) What is the most important business development incentive from the government for this industry? And (2) what is the most important governmental regulation restricting the development of this industry? The questions evaluate two aspects: on the one hand to identify the most important business driver from a

political perspective and, on the other hand, what kind of restrictions are most important for the growth of this industry (cf. Table 1). The combination of both projections in a scenario matrix allows us to evaluate what kind of extremely polarized environments could occur.

Insert Table 1 about here

Likewise, we developed two projections to analyze how a possible economic, social, and technological environment will look like in 2020 (cf. Table 1). The last two questions, for example, were evaluated to identify which technological factors might be the most decisive from a rather virtual perspective on the one hand, and from a rather physical perspective on the other hand (cf. Table 1). Such an approach is especially useful in emerging markets where either physical infrastructure or knowledge and experiences are missing often. India, as an intellectually rich and leading IT country with massive transportation infrastructure problems, serves as an interesting example for such a situation.

Insert Table 2 about here

Based on the eight outcome projections, we created four scenario matrices. Each of the matrices addresses one of the four PEST dimensions and provides an adequate basis to study the industry's future. Based on the development of the eight outcome projections and the creation of the four scenario matrices describing relevant aspects of the PEST environments for the focal industry in 2020, the stakeholder approach is used to create another perspective focusing on the conditions necessary to enable or prohibit the developed scenarios ('enabler projections').

Our industry experts were asked to consider reasonable stakeholder activities that would positively or negatively influence the likelihood of occurrence of the potential scenarios defined by the outcome projections. For example, the experts considered what the different stakeholder groups could do so that small car buyers receive fiscal incentives by a reduced ‘Goods and Service Taxes’ (GST) and/or to not only standardize emission regulations for the automotive industry throughout India only, but make them comparable to Europe, too (i.e., the outcome projections P01 and P02 turn into reality).

As a result of the combinations of the four scenario matrices with the five stakeholder groups, we identified the most relevant activities per stakeholder group, which were considered to have a significant effect on one or several of the scenario possibilities. Thus, we were able to identify and select – at least – the two most important activities for each stakeholder group.

Two additional perceptions were used to flexibly reflect the potentially higher importance of any of the stakeholder groups for this industry. In our case example, we assigned one additional projection to both the government and the suppliers as the potentially most influential stakeholder groups from an enabler perspective. We then transformed the identified stakeholder activities into twelve future projections, applying the same development standards as for the outcome projections. Table 3 provides an overview of the final enabler projections.

Insert Table 3 about here

Selection of Experts

The selection and participation of appropriate experts in Delphi studies is crucial and significantly influences the reliability and validity of the research results (Møldrup & Morgall, 2001; Tersine & Riggs, 1976; Welty, 1972). Furthermore, a sufficiently high number of participating experts is required in the Delphi survey process. We targeted to have at least 30 experts in our survey – an adequate panel size for Delphi studies (Parentè & Anderson-Parentè, 1987; Skulmoski, Hartman & Krahn, 2007).

We applied an extensive search process for experts in India's automotive industry who exhibit particular expertise and interest in the small car market and/or similar segments. Our search for appropriate panelists was extended on industry practitioners, academics, consultants and government officials who work in automotive related positions in India. Within the scope of the intensive search for potential panelists, we were able to identify 103 experts that met our requirements. These experts worked as executives and experts in companies, governmental or non-profit organizations. Subsequently, the identified experts were contacted via telephone and electronic mail, informed about the research project, and invited to take part.

43 experts participated in the survey and completely filled out the questionnaire resulting in a response rate of approximately 42 percent. The average work experience of participants in the respective fields of activities was more than 14 years.

ANALYSIS PROCESS AND CASE STUDY RESULTS

We conducted a multistage process to analyze our quantitative and qualitative panel data in order to create valid and purposeful future scenarios and to unveil the interdependence of institutional aspects affecting the Indian small car industry. The study results discussed in the following are the basis for subsequent investigations: While the scenario development reduces uncertainty

about how a future small car industry might look like in India, the interdependence analysis reduces equivocality through a better understanding of how the various institutions affect the industry and are mutually inter- or independent. For the former, we invited industry representatives and academics to scenario development workshops in India. For the latter, we conducted a correlation analysis between the enabler and outcome projections to identify interdependencies, which were then re-assessed with respect to their logical plausibility.

Quantitative Assessments

Table 4 provides an overview on the quantitative assessments of the experts for the twenty projections. Analyzing the quantitative assessments, it is especially interesting to study columns six (IQR) and seven (CV).

Insert Table 4 about here

We observe that experts could not achieve consensus on ten out of 20 projections as they exhibit interquartile ranges (IQRs) larger than 20 percent (De Vet, Brug, Nooijer, Dijkstra & Vries, 2005; Hahn & Rayens, 1999; Scheibe, Skutsch & Schofer, 1975). Consequently, the experts have very different opinions in assessing the probability of occurrence for the ten projections with $IQRs > 20$. However, we observe a convergence (CV) in 19 out of 20 projections, but the strength of convergence was mostly very moderate, as indicated by the average value of -3.7 percent. Notwithstanding the fact that the experts could only achieve consensus on 10 projections and convergence rates were relatively low, the quantitative findings of our Delphi survey are of high value: The findings underline the importance of thinking in terms of scenarios and of considering more than just one possible future. As the results indicate, different possible

futures for the (small) car automotive industry in India are imaginable for the experts. Consequently, to increase effectiveness of long-term decisions, managers have to not only analyze whether their assumptions and strategies are compatible with one but rather with a number of different possible futures.

Qualitative Arguments

In addition to the quantitative assessments of the study projections, we collected a large pool of arguments provided by the participating experts for each of the 20 projections. In total, they provided 457 written statements to explain why they consider certain projection characteristics as being likely or unlikely; having high or low impact; or high or low desirability. We systematically studied the provided statements and aimed at classifying them according to their content. To do so, three members of the research team coded the experts' written statements following an open coding process (Corbin & Strauss, 1990). Subsequently, the results of the coders' findings were compared, showing an inter-coding difference of 12 percent. Disagreements on the given codes were discussed and eliminated in the research team. This detailed analysis of the qualitative data was necessary to obtain an even better understanding of factors that will drive and shape the future of the (small) car automotive industry in India compared to simply interpreting the quantitative data received through the Delphi survey process. Moreover, the qualitative data collection provided a profound basis for the following detailed scenario constructions.

Scenario Development

As a next step of our data analysis process, we developed specific future scenarios for the (small) car automotive industry in India. Burt et al. (2006) argued that the PEST analysis is of limited help only in understanding the environment if the framework is used too generically. According

to them, single PEST projections should not be considered in isolation. Therefore we used the projections of our PEST framework and combined them to create four scenario matrices (Burt et al., 2006). While the x-axis was used to consider the occurrence (right-end) and non-occurrence (left-end) of the first projections of the PEST dimensions, the y-axis represented the occurrence (upper-end) and non-occurrence (lower-end) of the corresponding second projection of the respective political, economic, socio-cultural, or technological environment. As a result, four matrices with four scenario quadrants had to be analyzed in detail.

We then used the projection and the large pool of collected expert arguments to create purposeful stories about how the contextual environment of India's (small) car automotive industry could unfold over time (van der Heijden, Bradfield, Burt, Cairns & Wright, 2002) along the PEST dimensions for each of the five stakeholder groups. In order to ensure scientific rigor in the scenario development process, we invited local industry experts to a scenario development workshop in Bangalore, India. The workshop participants received an executive summary of the Delphi survey in advance to become familiarized with the study's purpose. During each of these workshops, the industry experts developed scenario texts based on the results of the Delphi survey and their industry knowledge. The scenario texts were discussed among academics and the industry representatives and, finally, checked for inconsistencies. The results of the political scenario matrix are presented exemplary in Figure 1.

Insert Figure 1 about here

By creating such structured storylines it was possible to picture, identify, and think about the situation for each stakeholder group in each scenario in 2020 (cf. Burt et al., 2006). Decision

makers can utilize the different scenarios to check if their organization is able to cope with the described situations in 2020 or what kind of adaptations or innovations are required to optimally prepare for the scenarios they consider as relevant. Senior executives will therefore be able to identify weaknesses and strengths of their strategies and improve the compatibility of their current business model for the new market situations (Fink, Schlake & Siebe, 2000). Thereby, managers of India's (small) car automotive industry are less challenged by uncertainty regarding how the market might look like in 2020.

Analysis of Institutional Interdependence

For the interpretation of the twelve enabler projections, we pursued a similar approach: First, each member of the research team received the quantitative results and arguments provided by the experts for further analysis. Second, each team member coded the qualitative arguments and interpreted the quantitative results. Third, coherent projections for every stakeholder group were merged in order to detect probable future action patterns of each stakeholder group. Fourth, results were discussed within the research group and differences in interpretation eliminated. Last, purposeful storylines were created based on the qualitative data from the survey for each projection's probability, impact, and desirability. Integrating the experts' pro and contra arguments for each projection's three dimensions, the detailed stakeholder analysis provides an overview of how stakeholders may behave and act in the future in order to enable or prevent specific scenarios.

Correlation Analysis

As a next step of our analysis, we aimed to quantitatively identify direct relationships between future stakeholder activities and possible outcome scenarios. A more precise understanding of the relationships between the various stakeholder activities and outcome projections leads to a better

understanding of India's (small) car market and supports an in-depth risk management and decision-making about required investments. Hence, we conducted a correlation analysis calculating the correlation coefficients between enabler and outcome projections. The results are presented in Table 5.

Insert Table 5 about here

We studied the indicated relationships and analyzed whether the correlations were logical in the context of a potential (small) car automotive industry in India. Most of the identified interdependencies were consistent with the industry experts' arguments provided for the respective enabler and outcome projections in the Delphi survey. In addition, we observed in several discussions that for industry experts most of the identified correlations exhibited reasonable relationships with respect to their content. As an example of how to interpret and benefit from such a correlation matrix, Table 6 describes the relationship between the outcome projection T02 and the six enabler projections CuE2, SuE1, CoE2, GoE1, GoE2, and GoE3, exemplifying how these projections of India's (small) car market might enable or prohibit each other. Managers of India's (small) car automotive industry can assess such interrelations at an early stage to support their interpretation of emerging trends and developments which are considered to influence the occurrence of a future scenario in 2020 – thereby reducing equivocality for decision makers.

Insert Table 6 about here

CONCLUSION

Emerging markets, such as India, are considered to provide remarkable growth opportunities in diverse industries in the future. The number of multinational companies entering these promising markets upholds. Yet, companies are likely to fail if they do not take the uniqueness of foreign environments into account (Cavusgil & Zou, 1994). Substantial adaptations or business model innovations are required to successfully operate in emerging markets (Cavusgil & Zou, 1994; Gupta & Haiyan, 2007; London & Hart, 2004).

Since emerging markets are characterized by high levels of uncertainty and instability (Hoskisson et al., 2000), it becomes more difficult for managers to obtain, analyze, and verify information about the relevant institutional context within which they have to make their decisions (Luo, 2007). The local conditions challenge managers exhibiting high uncertainty and equivocality because these markets are mostly characterized by institutional instability or dynamics, a lack of transparency in governmental decision making, and mostly a relative absence of legal frameworks in comparison to industrialized countries (Hoskisson et al., 2000).

Institutional changes in emerging markets can lead to “fundamental and comprehensive changes introduced to the formal and informal rules of the game that affect organizations as players” (Peng, 2003: 275). Since environmental conditions and institutions in emerging markets often are less stable compared to developed countries (e.g. Hoskisson et al., 2000; Luo, 2004; Peng et al., 2008), managers need to broaden their search for information about the local business environment. In this respect, social ties take up a major role for managers as informal funnels to retrieve information that might not be publicly available yet (Li, Poppo & Zhou, 2008). Through the interaction and communication with various entities, it appears likely that dialogue partners have access to some information that could fill another’s knowledge gap, *et vice versa*.

The importance for managers to comprehensively assess the local institutional context arises from the fact that “institutions directly determine what arrows a firm has in its quiver as it struggles to formulate and implement strategy” (Ingram & Silverman, 2002: 20). In order to evaluate the respective business environment and to identify required adaptations for a company effectively, it becomes necessary to systematically analyze the current and future institutional context of an industry in the emerging market of interest.

In this paper, we presented how Delphi-based scenarios and further analyses can be used in a structured way to investigate how scenarios might look like and how different institutions are likely to depend on each other’s actions.. In past research, Delphi itself has proven its effectiveness particularly when only limited and diverse information on a topic is available (Czaplicka-Kolarz, Stanczyk, & Kapusta, 2009; Linstone & Turoff, 1975; Riggs, 1983; Rowe, Wright, & Bolger, 1991). We developed a modified version – following Nielsen & Thangadurai (2007) – and integrated both qualitative and quantitative data to collect a variety of expert opinions about possible futures and institutional interdependencies. We developed two different types of projections: The outcome projections were structured around political, economic, socio-cultural, and technological (PEST) dimensions; and the stakeholder-based enabler projections analyzed relevant activities of five key stakeholders groups including consumers, competitors, suppliers, government, and the society at large. Through the application of quantitative and qualitative analysis methods we demonstrated how Delphi can be used to reduce uncertainty and equivocality in the case of managers’ decision making in emerging markets.

By familiarizing oneself with different scenarios that frame how particular political, economic, social, and technological aspects of relevance might look like in the future, the uncertainty associated with current and future conditions of an institutional context can be reduced. In our

case example, the results can be used by decision makers in the automotive industry to develop robust and flexible business model innovations and resource investment strategies to adapt to different scenarios.

By illustrating how different stakeholder groups influence possible future scenarios, one can achieve a better understanding about how institutions might interrelate in a specific industry/country combination. Managers can direct their attention towards observing the institutions of interest and their respective developments. Through the reduced equivocality, decision makers increase their chances of drawing correct conclusions on which developments in the institutional context affect each other and how these might increase or decrease the probability of specific scenario outcomes.

Limitations and Suggestions for Future Research

The proposed study approach has some limitations. First, there are numerous factors that are relevant for the further development of a specific industry in a specific country. However, there are limitations in terms of time constraints among the experts as well as the necessity to narrow the focus to the major drivers only in order to keep the level of complexity of the survey at a reasonable level. We have tried to identify the relevant elements of the political, economic, socio-cultural, and technological environment through literature research and expert interviews and applied a stakeholder approach to identify the most relevant aspects for the enabler projections.

Second, the analysis of not yet existent issues is even more subject to the perceptual input of the participating experts since it is difficult to triangulate their insights with other sources of information. We have tried to reduce this problem by selecting a diverse range of experts and by

applying different forms of interactions with various experts (i.e., interviews, expert panel and workshops) to reduce the problem of common method bias in this study.

In any case, we believe that the approach developed and the demonstrated case example provide interesting avenues for further research which address not only emerging market topics. Starting with the Delphi-based scenario development, our approach can be extended through a cross-impact and consistency analysis. Within the scope of this analysis, relationships between and consistency of the 16 outcome scenarios can be analyzed in order to reduce the absolute number of possible scenario combinations along the PEST framework – as of now 256. Thus, it will become more visible whether specific scenarios in one of the four industry environments increase or decrease the likelihood of other scenarios occurring in other industry environments.

Referring to the Delphi approach itself, the implications of the analyzed quantitative and qualitative data from our approach supports Delphi's usefulness to address topics of "global research horizons" (Nielsen & Thangadurai, 2007: 150). The approach presented is a first step; but we see enormous potential in the Delphi oracle: "Researchers are challenged to explore and expand research frontiers, to forecast critical issues in the global environment, and to think creatively about problems and the processes required to understand them" (Nielsen & Thangadurai, 2007: 160).

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TABLES

Table 1: DEVELOPMENT OF OUTCOME PROJECTIONS

Political dimension

- (1) What is the most important business development incentive from the government for this industry?
- (2) What is the most important governmental regulation restricting the development of this industry?

Economic dimension

- (1) What is the most important criterion determining the major players of this industry?
- (2) What is the most influencing criterion regarding the relationship between the major business partners of this industry?

Socio-cultural dimension

- (1) What is the most important trend in the society for this industry?
- (2) What is the most important buying criterion for the major consumer groups of this industry?

Technological dimension

- (1) What is the most important soft (knowledge) technology for this industry?
- (2) What is the most important hard (infrastructure) technology for this industry?

Table 2: OUTCOME PROJECTIONS

Political projections for 2020

- PO1 The GST for small cars in India is a third of the tax rate for all other kinds of passenger cars
- PO2 The emission regulations in all regions of India are the same as in Europe

Economic projections for 2020

- EO1 Foreign automotive OEMs have more than a 75% market share of the small car segment in India
- EO2 Each automotive OEM has its proprietary domestic supplier network in India

Socio-cultural projections for 2020

- SO1 Small cars are only socially accepted as a means of transportation if they fulfill the strictest emission standards in India
- SO2 The only buying criteria for small cars in India is their “TCO” (Total Cost of Ownership = Purchase Cost + Maintenance Cost – Resale Value)

Technological projections for 2020

- TO1 The education system in India provides sufficient engineers with advanced innovation capabilities in automotive core technologies (engine, materials, etc.)
- TO2 The development of new small car concepts for India and major transportation infrastructure development projects in India are strongly aligned

Table 3: ENABLER PROJECTIONS

Customer projections for 2020

- CuE1 More than 90% of the current and potential buyers of small cars in India perceive their safety to other passenger cars as equal
- CuE2 Current or potential buyers of small cars in India perceive public transportation as a convenient alternative in 90% of the Metros and Tier1-3 Cities in India

Supplier projections for 2020

- SuE1 The domestic automotive supplier base (Tier 1-3) has gone through a substantial consolidation process increasing the average turnover of a supplier compared to 2010 by the factor 4
- SuE2 Domestic automotive suppliers in India prefer foreign automotive OEMs operating in India over domestic OEMs due to higher global market volumes and potential growth opportunities
- SuE3 Domestic automotive suppliers in India invest continuously into their technological upgrading and are technologically at par with their European, US or Japanese competitors

Competitor projections for 2020

- CoE1 The automotive associations in India and the Government of India (GOI) have established public-private partnerships to establish research centers of excellence for all major automotive technology areas
- CoE2 All OEMs selling small cars in India serve clearly differentiated consumer groups

Government projections for 2020

- GoE1 The GOI provides 100% tax deductions on export profits
- GoE2 The GOI has established a powerful governmental organization that regulates all environmental matters of the production and consumption life cycle of small cars
- GoE3 The GOI is actively implementing a total mobility strategy integrating individual and public transportation as well as related infrastructure investments

Society projections for 2020 for 2020

- SoE1 The Indian society has accepted that more flexible labor laws support the economic growth of the country in general and increased the wealth of blue-collar workers in particular
- SoE2 The Indian society is very sensitive towards any kind of pollution through individual or corporate mobility requirements

Table 4: QUANTITATIVE RESULTS FOR THE 20 PROJECTIONS

Projections		EP	I	D	IQR	CV
Political						
P01	Reduced Tax Rates (GST) for small cars	46,02	3,40	3,33	32,50	-0.05
P02	Harmonization of Emission Standards	46,86	3,44	3,60	30,00	-0.05
Economic						
E01	Foreign Dominance	58,49	3,35	2,88	40,00	-0.03
E02	Exclusive Supplier Networks	51,86	3,51	3,05	35,00	-0.03
Social						
S01	Green Society	44,02	3,35	3,53	20,00	-0.01
S02	Reasonable Cars	59,07	3,37	2,91	25,00	-0.05
Technological						
T01	Local High-Tech Engineers	53,58	3,98	4,02	42.50	-0.02
T02	Mobility Infrastructure	47,79	3,44	3,70	22.50	-0.00
Customers						
CuE1	Safety Perception	52,67	3,42	3,37	10,00	-0.09
CuE2	Convenient Public Transport	46,28	3,70	3,60	30,00	-0.05
Suppliers						
SuE1	Supplier Consolidation	58,79	3,58	3,65	20,00	-0.01
SuE2	Foreign OEM Focus	53,47	3,33	3,14	17.50	-0.01
SuE3	Technological Upgrading	48,26	3,60	3,81	20,00	-0.03
Competitors						
CoE1	Centers of Excellence	54,14	3,70	3,93	15,00	-0.08
CoE2	Differentiated Customers	37,21	3,23	2,95	25,00	-0.05
Government						
GoE1	Export Promotion	44,30	3,70	3,49	25,00	-0.01
GoE2	Environmental Organisations	49,26	3,49	3,44	20,00	-0.06
GoE3	Integrated Multimodal Transport	42,21	3,49	3,72	20,00	-0.04
Society						
SoE1	Labor Laws	47,79	3,51	3,33	12.50	-0.06
SoE2	Pollution Attitude	41,28	3,30	3,60	20,00	-0.01

EP: Probability of occurrence (0-100%); I: Impact (5 pt. Likert scale; 5=very high); D: Desirability (5 pt. Likert scale; 5=very high); IQR: Interquartile range; CV: Convergence

Table 5: CORRELATION MATRIX

		PO1	PO2	EO1	EO2	SO1	SO2	TO1	TO2
CuE1	Pearson Corr.	0,23	0,18	-0,39**	0,07	0,32*	-0,32*	-0,09	-0,23
	Sig. (2-tailed)	0,14	0,26	0,01	0,63	0,03	0,03	0,57	0,13
CuE2	Pearson Corr.	-0,13	0,54**	0,01	0,15	0,35*	0,17	0,54**	0,43**
	Sig. (2-tailed)	0,42	0,00	0,94	0,33	0,02	0,29	0,00	0,00
SuE1	Pearson Corr.	0,17	0,03	0,20	0,08	-0,05	0,15	0,20	-0,29
	Sig. (2-tailed)	0,27	0,84	0,21	0,61	0,75	0,33	0,20	0,06
SuE2	Pearson Corr.	-0,32*	-0,01	0,29	-0,12	0,17	0,42**	-0,11	0,32*
	Sig. (2-tailed)	0,04	0,94	0,06	0,43	0,27	0,01	0,47	0,03
SuE3	Pearson Corr.	0,26	0,32*	0,16	0,08	0,02	0,14	0,66**	0,32*
	Sig. (2-tailed)	0,10	0,04	0,32	0,62	0,88	0,38	0,00	0,04
CoE1	Pearson Corr.	-0,25	0,01	-0,10	0,03	-0,01	0,06	0,16	0,15
	Sig. (2-tailed)	0,10	0,93	0,51	0,85	0,94	0,71	0,32	0,32
CoE2	Pearson Corr.	0,00	0,41**	-0,11	0,12	0,46**	-0,14	0,29	0,32*
	Sig. (2-tailed)	0,99	0,01	0,50	0,44	0,00	0,39	0,06	0,03
GoE1	Pearson Corr.	-0,22	0,03	0,04	0,25	0,20	0,15	-0,24	0,24
	Sig. (2-tailed)	0,15	0,86	0,81	0,10	0,20	0,34	0,12	0,11
GoE2	Pearson Corr.	0,36*	0,50**	-0,07	0,07	0,13	0,16	0,51**	0,22
	Sig. (2-tailed)	0,02	0,00	0,65	0,63	0,41	0,29	0,00	0,16
GoE3	Pearson Corr.	0,26	0,53**	0,19	0,20	0,14	0,25	0,33*	0,42**
	Sig. (2-tailed)	0,10	0,00	0,22	0,19	0,36	0,11	0,03	0,00
SoE1	Pearson Corr.	-0,10	0,22	-0,13	0,02	0,31*	-0,14	0,24	0,12
	Sig. (2-tailed)	0,51	0,15	0,42	0,88	0,04	0,38	0,12	0,46
SoE2	Pearson Corr.	0,31*	0,08	-0,13	-0,26	0,55**	-0,28	0,08	-0,01
	Sig. (2-tailed)	0,04	0,60	0,40	0,09	0,00	0,07	0,62	0,92

*. Correlation is significant at the 0.05 level (two-tailed)
 **. Correlation is significant a the 0.01 level (two-tailed)

Table 6: EXAMPLE OF INTERRELATED ENABLER AND OUTCOME PROJECTIONS

Relationship between T01 and enabler projections CuE2, SuE3, GoE2, GoE3

The education system in India has developed fairly well in recent years. Especially in the area of Information Technology, India's university graduates are increasingly recognized for their know-how and innovativeness. Yet, in the area of mechanical engineering and other relevant areas for the automotive industry, huge potential remains to be unveiled in order to support the development of a competitive domestic manufacturing industry.

In the short-term, the Government of India (GOI) is tempted to introduce tax deductions on export profits to continue 'flooding' the international market with low cost (elementary quality) Indian cars. To compete in the international market in the long-term, domestic automotive suppliers need to put enormous efforts in technological upgrading in order to become technologically at par with their European, American, or Japanese competitors (SuE3).

In addition, a technological upgrading of the domestic automotive industry becomes mandatory because the GOI follows a sustainable total mobility strategy to face two major challenges: environmental pollution and a severe traffic situation. In order to reduce CO₂ emissions, the GOI raises emission regulations to European standards (PO2) and establishes an organization that regulates all environmental matters regarding production and consumption life cycle of small cars (GoE2). As a countermeasure for congestion, the GOI invests considerably in infrastructure projects and even integrates public and individual transportation in metropolitan areas (GoE3).

By and large, the GOI will do everything necessary to prevent a potential shortage of the required engineers / engineering skills since this might be the one and only hindrance for developing towards a (small) car market hub in India (TO1).

FIGURES

Figure 1: POLITICAL SCENARIO MATRIX

