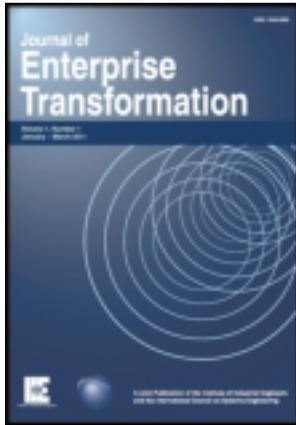


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### A Conceptual Framework for Evaluating New Business Opportunities for Corporate Diversification

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## A CONCEPTUAL FRAMEWORK FOR EVALUATING NEW BUSINESS OPPORTUNITIES FOR CORPORATE DIVERSIFICATION

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□ *This article provides a conceptual framework for evaluating new investment opportunities according to corporate portfolio strategies. The decision to venture into a new line of business is a strategic one and involves high risks due to tough competition. A systematic process is proposed for identification and evaluation of new investments for corporate diversification. The process consists of three main steps: the initial identification of investment opportunities, assessment of market attractiveness and elimination of unattractive opportunities, and evaluation of corporation competencies and capabilities against key success factors for each of the new businesses. Those alternatives that are related to the company's competencies are retained, and the rest are eliminated. An analysis of the main competitors in each area of business is performed next. Finally, the remaining alternatives are ranked based on a detailed analysis of their market attractiveness and chance of success. This framework, the outcome of practically motivated research, has been employed by an automaker before venturing into new lines of businesses. From 47 alternatives initially identified for the case study, 21 passed to the second step, and 10 were selected for detailed analyses. Finally, the six most attractive options were ranked for decision makers.*

**Keywords** Corporate portfolio management; Strategic investment analysis; Business venturing; Corporate diversification

### INTRODUCTION

Corporate diversification is a major aspect of corporate-level strategies chosen by a company to add new lines of business to the existing portfolio of business units (Thompson and Strickland, 2005). The main objective of diversification is to increase sustainable profitability and market power through greater sales volumes resulting from new products and new markets while hedging against various risks (Hitt, Ireland, and Hoskisson, 1998).

In the current market, companies continuously modify their portfolios to achieve better results. These changes lead companies to invest in some

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businesses and, in other cases, to divest in favor of new investment opportunities. Although these two decisions are both strategic, making the decision to venture into new investment alternatives is far more important. In the last decade, this general strategy has been associated with higher risk. Therefore, this tactic is not always effective in a competitive market, in part because all economies have become more interconnected and competitive as a consequence of globalization. For example, as Chinese industrial exports are surging in many countries, the diversification pace is slowing down in local industries. Furthermore, the maturation of technology in many industries, trade regulations, and other barriers to entry may increase the difficulty of developing new lines of businesses. Therefore, the selection of new investments and venturing options is of high importance, and, because of the consequences, these choices should be considered strategic decisions. This evidence shows the need for a systematic methodology to identify and evaluate new investment initiatives.

Existing methods for evaluating new investment development primarily discuss the impact of investing in new business lines on the company's success long after the investment decisions have been made (Lichtenthaler, 2005). Most existing methodologies are dedicated to descriptive research and attempt to identify the key variables for venturing or diversification. However, practical methods for identification and evaluation of new businesses have not been reported in the literature.

This article was motivated by an automaker's actual need for diversification. The main contribution of this research is that, unlike most existing research that adopts either a strategic view or a venture capitalist and entrepreneurial perspective, it focuses on developing and synthesizing a practical method that will encompass the venturing process from the generation of new business ideas to final assessments. The proposed method is a screening process for identifying and assessing new business opportunities for corporate diversification. After initial identification of new investment initiatives, the market attractiveness of different alternatives is assessed, and the unattractive options are eliminated. Then, a corporation's competencies and capabilities are assessed against the key success factors (KSFs) for each of the remaining alternatives. The alternatives that are not related to the company's competencies are eliminated. An analysis of the main competitors in each area of business is performed next. Finally, the remaining alternatives are ranked based on a detailed analysis of their market attractiveness and chances of success. The proposed model has been employed by an automaker planning to venture into new lines of businesses.

The rest of this article is organized as follows. The literature on corporate diversification is reviewed in the next section. The proposed methodology follows, and the case study is also detailed in tandem with the methodology. Finally, some conclusions and recommendations are presented.

## LITERATURE REVIEW

Corporate diversification has been a growing area of research in the last two decades. The topic has been widely and intensively studied by scholars from fields including industrial-organization economics, financial economics, organization theory, and marketing (Ramanujam and Varadarajan, 1989). In addition, this issue has been investigated from the perspectives of entrepreneurs and venture capitalists (MacMillan, Siegel, and Subba Narasimha, 1985; Shepherd and Zacharakis, 2002; Silva, 2004).

Although new investment alternatives are typically related to a business's current focus, new business alternatives can be categorized into three major groups:

- 1) unrelated diversification,
- 2) related diversification, and
- 3) existing value chain redesign.

Some researchers focus on diversification status and explore the performance differences associated with diversity profiles (Bettis and Mahajan, 1985; Christensen and Montgomery, 1981; Varadarajan, 1986; Varadarajan and Ramanujam, 1987).

The first group includes new business opportunities that are not directly related to a firm's existing capabilities and competencies. These types of investments are chosen largely due to their strong market attractiveness. Large corporations invest in such areas based on their capital, brand, and image. Related investments, in addition to their market attractiveness, are tied to the current capabilities and assets of a company. These types of alternatives are in alignment with the "resource-based" view of strategic planning and can be implemented by extending the existing capabilities to new businesses. Market attractiveness is less important for the third group. Instead, investing in the existing value chain is more strategic for the company's current business, and as a consequence, long-term profit is sought. Moreover, both the scale of investment and the level of risk taking are generally in descending order among the three categories.

Considering the three aforementioned categories of investment and their related amount of investment, levels of risk, and market attractiveness, Table 1 shows some examples of possible investment options for a sample automaker. The presented table was developed using logical inferences from the literature (Lichtenthaler, 2005).

Furthermore, studies on corporate growth strategies show that the level of investment risk declines with alternatives that are more closely aligned to the existing value chain (Fan and Lang, 2000). Therefore, diversification around the core business (concentric diversification) is recommended.

**TABLE 1** Examples of Investment Alternatives for an Automaker

Relationship to current lines of business	New options	Amount of investment	Level of risk	Market attractiveness and potential profit
Unrelated	Construction	High	High	High
Related	Extending from car seat to furniture industry	Medium	Medium	Medium-high
Related to the existing value chain	Power train	Medium	Low-medium	Low-Medium

Some researchers assert that most companies struggle to diversify profitably (Porter, 1996). Zook (2001) noted that 90% of companies' efforts to diversify outside of their core businesses have failed over the past decade. His research shows that concentric diversification has a higher success rate than other approaches.

Corporate diversification may enhance a firm's value in several respects. First, multi-divisional firms can operate efficiently by coordinating their specialized divisions. In addition, diversification can mitigate the underinvestment problem through an efficient allocation of assets by means of creating an internal capital market. Furthermore, diversification can help lower capital costs and increase capital-raising capacity because earning streams from diversified divisions have low correlations. Related diversification is also advantageous in building up economies of scope and scale by utilizing strategic assets.

However, diversification may damage a firm's value for several reasons. A diversified firm may engage in investment projects with a negative net present value (NPV) by making a poor use of the increased capital and cash flow. In addition, a multi-divisional firm may delay withdrawal from failed segments by allowing cross-subsidization. Moreover, multi-divisional firms may face greater costs of information asymmetry between headquarters and their divisions than those encountered by independent firms. Therefore, some studies find that diversified firms have lower valuation multiples than specialized firms. This is called the diversification discount. Hyland (2003) studied a sample of U.S. firms that were originally specialized and then became diversified. He did not find evidence of a long-term reduction in a firm's value as a direct result of diversification (Hyland, 2003).

Measurements of the degree of diversity are also observed in conceptual and empirical studies. The concept of diversity has attracted significant research interest. This topic is critical in industrial organization, finance, and management (Fan and Lang, 2000; Stein, 1997). The impact of diversity on organizational aspects, such as the structure, internal processes, and systems, were also studied in Ramanujam and Varadarajan (1989). Finally,

differences in the way diversified firms seek, obtain, and exploit synergies are often traced to their functional policies in areas including R&D, manufacturing, and marketing. The concept of “synergy” has also received special attention in some empirical studies (Lecraw, 1984; Wells, 1984). Song (1982) also tested the hypothesis that the skills and competence of the incumbent chief executive officer at a major firm are associated with his diversification strategy. However, the question of how diversification opportunities are formally or systematically identified and assessed is scarcely answered in the literature. The existing research on diversification primarily discusses the impact of business relatedness on company success from an ex-post point of view (Lichtenthaler, 2005; Shane, 2000; Zahra, 1999). The models presented in the literature have been proposed for the evaluation of single-option investment. Lichtenthaler (2005) presented a new methodology for the identification of new investment opportunities based on an identification process used at the Bosch Company over two years of study. However, systematic evaluation of the options has not been fully discussed.

Nevertheless, some prior research has analyzed new business idea generation and corporate diversification from a strategic management perspective. Some investigations have also attempted to model the decision-making process of venture capitalists and entrepreneurs, as well as their mental models and policies (MacMillan et al., 1985). Furthermore, the decision criteria used by venture capitalists in assessing the profitability of a new business are identified and verified in Shepherd (1999) and Shepherd, Ettenson, and Crouch (2000). Similarly, other authors have investigated and identified important factors for entering a new business from venture capitalists’ perspectives (Choi and Shepherd, 2004; Haynie, Shepherd, and McMullen, 2009). Bishop and Nixon (2006) also analyzed important criteria and variables used for generating new business ideas or self-related concepts.

However, to the best knowledge of the authors, most of the existing studies, either with a strategic view or entrepreneurial perspective, can be categorized as descriptive research in which the key variables are identified and their interrelationships are explored (e.g., Martin and Sayrak, 2003; Merino and Rodríguez, 1997). In this article, considering both strategic management and capital venturing paradigms, the main objective is to develop and devise a practical method that is applicable in the field of corporate diversification that can be employed when venturing into new businesses.

More specifically, the proposed model will have the following properties:

- easily understandable for different stakeholders in a large and diversified corporation;
- applicable in bureaucratic corporations with different layers of technical, financial, and managerial decision makers, which are different from entrepreneurial environments;

- promoting the cross-functional learning and group decision-making skills in a large firm.

Therefore, although an analysis of existing venture capitalist literature offers insights into the complexity of the venturing process, the internal nature of their decision-making process makes it less helpful to the development of a step-by-step guideline (Choi and Shepherd, 2004; Shepherd, Ettenson, and Crouch, 2000). Thus, the focus is more on the strategic management view while investigating the aforementioned criteria for venturing decision making. Another important reason behind the focus on the strategic management paradigm is that, in the present case study, the interest was not solely in unrelated diversification options, but rather those options that were related to the existing assets, capabilities, and competencies that were attractive for the company's top management. As a result, the proposed methodology could be interesting to those firms striving for such a multi-dimensional evaluation of investment alternatives.

## THE PROPOSED METHODOLOGY

In this section, a process approach is presented for the identification and evaluation of new investment alternatives, as shown in Figure 1. After the initial generation and identification of business alternatives, the alternatives are screened in each stage, and unattractive ones are eliminated. Due to the large number of alternatives and time and cost limitations, the first stage of screening is performed qualitatively based on experts' judgments. The evaluation of alternatives becomes more quantitative as the number of alternatives is reduced in the second and third stages. Stage two consists of two separate steps. A test of barriers to entry and an analysis of KSFs for each alternative are performed first. Then, the probability of success when entering into each new business and the level of compatibility between the company and the identified KSFs are estimated. In the second step, the remaining alternatives are appraised based on the firm's competitive position in relation to the major competitors in each business. Finally, after screening out all of the initiatives that are unattractive, the non-dominated alternatives advance to the third stage, where a more quantitative and thorough analysis is performed.

Figure 2 depicts how, after eliminating the initial options in the first two stages, those attractive alternatives with a high possibility of success are set for final assessment. The remaining alternatives are ranked based on two major groups of indices, namely market attractiveness and success probability, using a multi-attribute decision-making technique. In the following sections, each stage of the methodology is explained in greater detail.

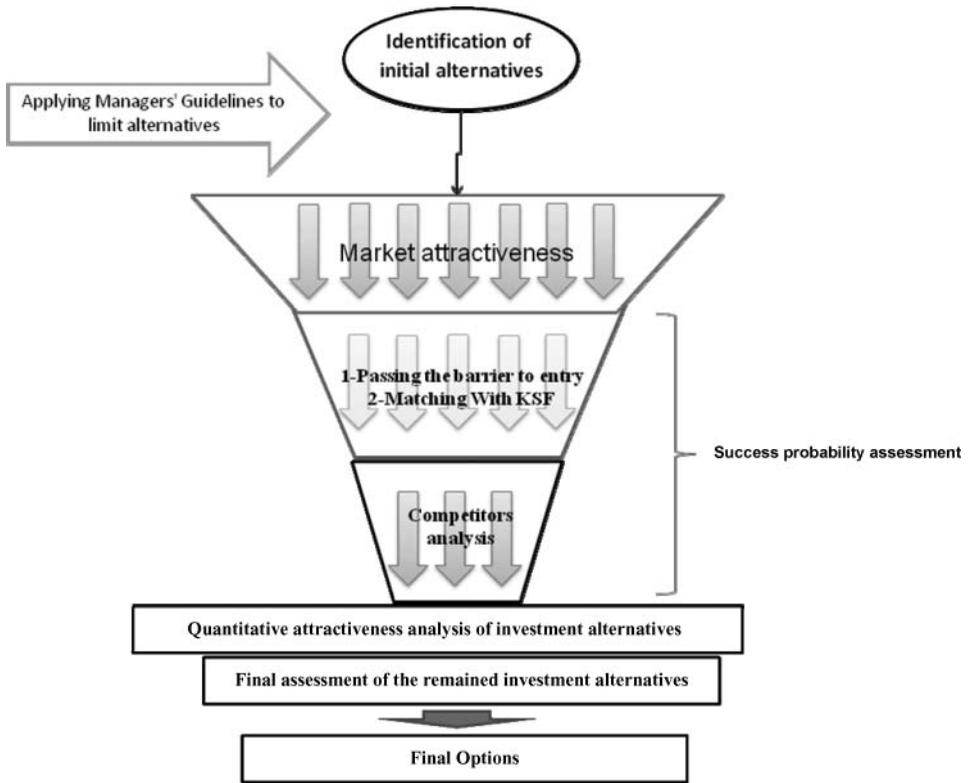


FIGURE 1 Process of identifying and evaluating new investment alternatives.

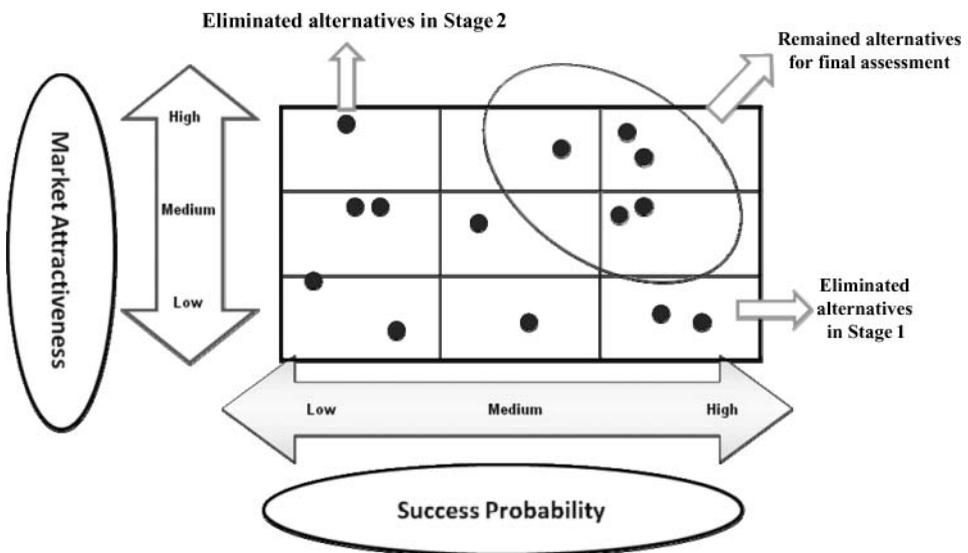


FIGURE 2 Main stages of the proposed methodology.

### Initial Identification of Alternatives

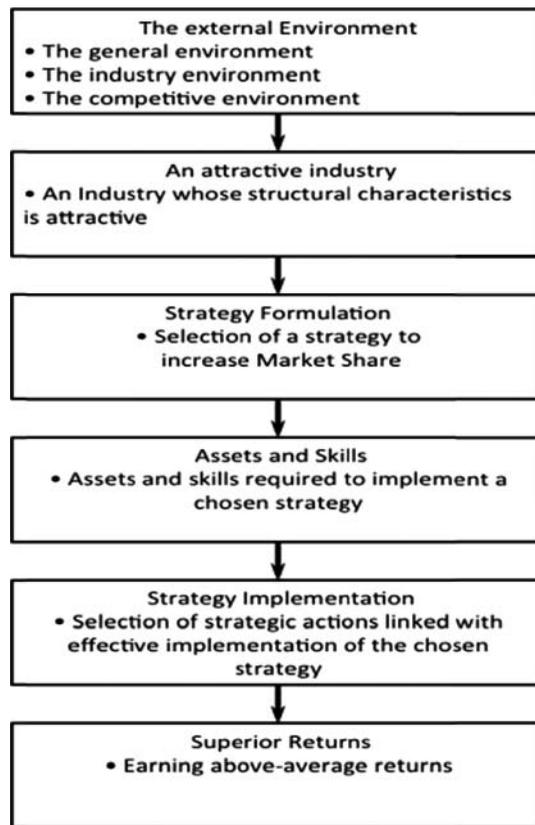
Undoubtedly, the most difficult stage of the methodology is the identification and recognition of new initiatives and potential alternatives for investments. Because of its dynamic nature, this step of the process cannot easily be structured and standardized as a method. Recent studies of the trends in the successful expansion and growth of large corporations show that these companies are not concerned with a systematic and integrative process for identifying new investment alternatives. (Lichtenthaler, 2005) Rather, they enter new markets and diversify their portfolios based on their business requirements and opportunities.

Due to the complexity of this problem and the large number of possible alternatives, the proposed methodology cannot guarantee the identification of all potential alternatives. Hence, some attractive alternatives may be missed. However, this methodology ensures that the final candidates chosen through this screening process are both desirable and successful.

The literature on opportunity recognition, including strategic perspectives, venture capitalists, and entrepreneurial views, highlights various approaches to generating new business ideas. According to the strategic management view, two major approaches have been reported for identifying new business alternatives: the “industrial-organization” view and the “resource-based” view. The industrial-organization model suggests that above-average returns are earned when firms implement the strategy dictated by the characteristics of the general industry and competitive environment. Figure 3 shows the steps of this model.

In contrast to the industrial-organization model, the resource-based model is grounded in the perspective that a firm’s internal environment, in terms of its resources and capabilities, is more critical to the determination of strategic actions than its external environment (see Figure 4). This view also suggests that a firm’s unique resources and capabilities should provide the basis for its strategy. The chosen strategy should allow the firm to exploit its core competencies with respect to the opportunities in the external environment (Hitt et al., 1998). Although these approaches have often been viewed as conflicting, some believe that they share a similar management philosophy and suggest that taking advantage of the potentials of both viewpoints is the best approach (Hax and Wilde, 2001).

Lichtenthaler (2005) indicated that generating investment ideas and alternatives, either systematically or non-systematically, requires mega-trend analysis and the identification of new existing opportunities in the market, as well as the capabilities, competencies, and future visions of a firm. His investigation at Bosch Company led to a general framework for identification of investment alternatives. In addition, he presented four strategies for identifying potential business alternatives based on two main factors: competence driven or market driven and direct or indirect search. The four



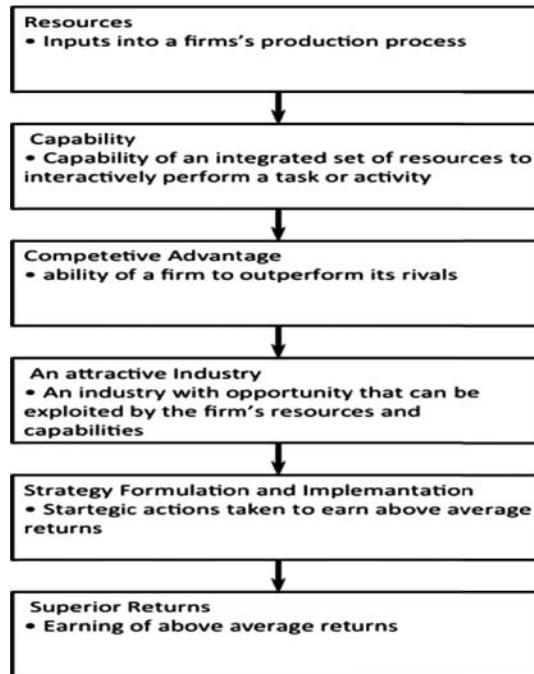
**FIGURE 3** Industrial organization model of superior return (Hitt et al., 1998).

main strategies for identification of new investment alternatives given by Lichtenthaler (2005) are as follows:

1. market-driven inside-out search,
2. competence-driven inside-out search,
3. market-driven outside-in search,
4. competence-driven outside-in search.

As a result, the identification process can be organized using three major factors, consisting of the corporation's future vision, knowledge about a firm's capabilities and competencies, and managerial guidelines concerning the nature of new business alternatives.

However, the literature offers different approaches. For example, drawing on a theoretical cause-and-effect logic, Sarasvathy (2001) presented a general structured framework for generating new ideas. Furthermore, from the literature of entrepreneurship and venture capitalists' decision models, creativity is given a central role in the opportunity recognition process



**FIGURE 4** Resource-based model of superior return (Hitt et al., 1998).

(Shane, 2003; Shane and Venkataraman, 2000). In addition, they believe that the entrepreneur himself should be involved in the process of opportunity identification and evaluation.

Therefore, as these examples suggest, different approaches can be used to identify new business ideas. However, as mentioned previously, the greater interest is in devising a strategic framework. This article takes a mixed approach, drawing on the industrial-organization perspective, the resource-based view, the model presented in Lichtenthaler (2005), and some guided brain-storming sessions with corporation's top managers and key stakeholders.

Using this mixed approach, a set of guidelines was first extracted from the literature and the company's vision. Then, these guidelines, as well as other directives, such as the company's capability list and the standard classifications of industries, were used in the brain-storming sessions.

Interestingly, the literature includes numerous attempts to identify important decision-making factors and initial guidelines for the identification and assessment of business investments to be used by venture capitalists and entrepreneurs. For example, Shepherd, Ettenson, and Crouch (2000) provided a set of important criteria for venture capitalists, employing the industrial-organization view as follows:

- timing,
- KSF stability,
- lead time,
- competitive rivalry,
- educational capability, and
- industry-related competence.

Similar work from a resource-based view is presented in Choi and Shepherd (2004), which focuses on the following:

- length of search period,
- attractiveness of financial market,
- length of lead time,
- knowledge of customer demand,
- enabling technology,
- managerial capability, and
- stakeholder support.

However, some studies, such as Zacharakis and Meyer (1998), indicated that no one can specifically determine which set of criteria and what kind of decision-making process are better than the others.

In this article, to actually implement the proposed methodology in an automobile company, the following elements of the company's vision were carefully studied:

- to become a world class automaker,
- to become the first choice of customers in the country, and
- to make strong alliances with global automobile companies.

After gathering the company's top management ideas, the following criteria were considered as some necessary guidelines for the initial identification of new business alternatives:

1. Being knowledge based
2. Having the potential for export
3. Being scalable
4. Being able to generate good cash flow
5. Being capable of generating other businesses
6. Conferring a comparative advantage for the business
7. Being close to the end customer

These criteria basically portray ideal business characteristics from a practical point of view and are not directly related to the later success of the opportunities. However, some of these criteria are in line with those suggested by

venture capitalists. Studies showed that some criteria used by venture capitalists are not related to the subsequent success of the business; therefore, they might be prone to personal biases (Zacharakis and Meyer, 1998). The success of a company in a new business depends mainly on its compatibility with the KSFs of the business and the company's competitive power, which can be assessed using the proposed methodology.

Having those criteria in mind, after reviewing Standard Industry Classification (SIC), categorizations and classification of industries in the local stock exchange, 47 initial business alternatives were identified in this case study. Next, the initial list of 47 new business alternatives was subjected to the screening process, as explained in the following sections.

### **Evaluation of Market Attractiveness**

In this stage, alternatives are screened, and those deemed unattractive are eliminated. The attractiveness of an alternative is an external concept and cannot be controlled by the corporation. This concept is one of the two important dimensions of corporate portfolio models. In this dimension, the key point is to determine the appropriate criteria for the evaluation of attractiveness. The rationale behind the order of two main views—industrial organization and resource based—in the assessment at the first stage is that if the attractiveness of the options is first assessed and unattractive options eliminated, then the corporation capabilities need not be assessed for every option, a process that consumes more resources than the first step.

Finding those factors for assessing the attractiveness of business options has been an interesting topic among scholars and practitioners. Porter's (1980) five forces model is a prominent model for describing the industry structure. In this model, the five major factors and sub-factors are analyzed to evaluate the industry attractiveness. Porter's model factors, as they have been used for this special case, require a relative comparison of the attractiveness among a large number of investment alternatives. Because the model must be customized, Porter's model has not been directly used. Thompson and Strickland (2005) proposed the following criteria for attractiveness evaluation:

- market size and projected growth rate;
- intensity of competition;
- emerging opportunities and threats;
- presence of cross-industry strategic fit;
- resource requirements;
- seasonal and cyclical influences;
- social, political, regulatory, and environmental factors;
- industry profitability; and
- industry uncertainty and business risk.

As another example, in the GE/Mc Kinsey matrix (Sejev, 1995), the following measures have been used as the attractiveness dimensions:

- market size,
- market growth,
- cyclical influences,
- competitive structure,
- barriers to entry,
- industry profit margins,
- environment factors,
- customer loyalty, and
- product differentiations.

Furthermore, in the ADL matrix (Sejev, 1995), the following measures have been used as the attractiveness criteria:

- market growth,
- relative industry profit margin,
- supplier bargaining power,
- threat of substitutes,
- threat of new entrants,
- competitive rivalry,
- buyer bargaining power,
- regulation impact,
- reputation,
- customer loyalty,
- staying power, and
- experience.

In all of the discussed models for evaluating attractiveness, factors of internal and external assessment have been used simultaneously. In addition, all of the existing models are designed for analysis of the current corporate portfolio (for example, customer loyalty and reputation in the ADL model [Sejev, 1995]). However, in the methodology presented in this article, because all of the alternatives are new lines of activities for the corporation, the attractiveness should be evaluated from a different view and with consideration of the company's local environment. Therefore, after analyzing the existing models and having discussion sessions with key company stakeholders, an attractive market is defined as a market with the following characteristics:

- has a large size and continuous and sustainable demand,
- has a long-term clear vision and high growth potential,
- has a short time to market,

- has a high intrinsic profit margin and
- has a positive regulation impact.

The procedure for finalizing the market attractiveness factors is not so straightforward. Rather, it is iterative and full of discussions for better mutual understanding and conflict resolution among different key stakeholders in a large automaker holding company, and the derived factors are not simple combinations of some initial factors extracted from the literature. In fact, these measures are the result of challenging discussions among different company stakeholders with different points of view, with initial feeds from the above-mentioned literature. As one can infer from the selected factors listed above, they reflect a variety of issues in the investment of the company and are as different as the opinions of the company stakeholders. For example, considering uncertainties and the fluctuations in governmental regulations, a group of pessimistic stakeholders were interested only in those options with short time to market, taking into account the effects of regulations in that specific industry. Meanwhile, some groups of key managers believe in long-term investment that considers the existing cash flow of the company and the life-cycle of existing products.

All of the above measures are clearly related to profit. In addition, considering the number of alternatives, there is concern about the possibility of gathering the required information for each alternative and having the experts and decision makers score them. At this stage, a team of experts who have information about the initial 47 alternatives can score each alternative based on the selected measures. After prioritizing the alternatives, the less attractive alternatives will be eliminated.

In the comparison and scoring methods for alternatives, the policy of major corporation decision makers must be considered. For example, conservative policy calls for alternatives that achieve the highest possible scores for all of the criteria, whereas non-conservative policy considers all possible choices, even those with low scores, with an equal probability of selection. Choosing each of these policies impacts the final result of the ranking.

In this article, because of the large number of alternatives, the simple scoring method has been used. After determining the standard range of scoring for the final calculation of the alternatives' scores, the simple additive weighting (SAW) method was used. Thus, each of the alternatives is scored separately with respect to each criterion. As an example, Table 2 shows the range for the scoring market growth criterion.

All criteria is then compared to each other to calculate the relative weight of each criterion. In the next step, the final score of each alternative is calculated based on the decision makers' policy (being conservative or non-conservative). The final score for each alternative is the sum of the alternative's weighted scores. Finally, after a Pareto analysis, alternatives with high scores will remain, and the others will be eliminated. It should be noted

**TABLE 2** Scoring Market Growth Criterion

Market growth percentage	Score
More than 15%	10
Between 10% and 15%	7
Between 10% and 15%	4
Less than 7%	1

that at this stage, the ranking among alternatives is not important, because the main objective of this stage is to eliminate the unattractive options. In this case study, from 47 initially identified alternatives, 21 alternatives passed this stage, and the others were eliminated.

**Assessing Success Probability in the Investment of the Attractive Alternatives**

Before this step, the unattractive alternatives have been eliminated. Then, as mentioned before, the investment alternatives will be assessed by the following criteria:

- barriers to entry to the new market,
- correspondence between industry KSFs and the corporation’s capabilities, and
- degree of competitive advantage for the corporation in comparison to major competitors.

This step of the methodology is derived from the resource-based view, and the final score of each alternative, using the three criteria above, shows the probability of success in that attractive investment option. As Figure 5 demonstrates, these three critical assessment points act like a chain in which the product of these three scores determines the probability of success of each investment alternative.

These three criteria cover two main logical steps in the investment process: entry into the new market and the ability to satisfy required KSFs of that business regardless of the other actors and, after that, the ability to compete with existing competitors in the new market. Then, in this methodology, these three assessment views are separated into two sequential filters. In the



**FIGURE 5** Three parts of evaluating the success probability.

first step, the score of each investment is computed with respect to the first two attributes, and subsequently, the comparative advantages over possible competitors are evaluated.

### **Passing Barriers to Entry and Matching Test with KSFs**

This stage consists of two steps. Considering the corporation's capabilities, the probability of passing barriers to entry for each alternative should be determined first, and then the degree to which the corporation satisfies KSFs will be determined.

Before executing this step, the following elements must be determined:

- the corporation's assets, capabilities, and competencies;
- the barriers to entry of each investment choice;
- the KSFs of each business alternative.

In the present case study, the barriers to entry are restricted to the following categories:

- legal and environmental conditions,
- financial barriers,
- required specific knowledge, and
- technology barriers.

The identification of the corporation's internal strengths may take a long time, and those strength factors that can be used in a new business must be the focus. For example, a company that has powerful distribution channels in the auto industry would consider this factor a good capability in a new business line in which the reliable distribution of final goods is a KSF. Based on the literature (Hitt et al., 1998), the strength factors of a firm can be classified into the following three levels of a hierarchy.

- *Resources*: Resources are inputs into a firm's production process, such as capital equipment, the skills of individual employees, patents, finance, and talented managers. Broad in scope, resources cover a spectrum of individual, social, and organizational phenomena. Resources alone do not yield any competitive advantage.
- *Capabilities*: Capabilities represent the firm's capacity to deploy resources that have been purposely integrated to achieve a desired end state. As the glue that binds an organization together, capabilities emerge over time through complex interactions between and among tangible and intangible resources.

- *Competencies*: Competencies distinguish a company competitively and reflect its personality. Competencies emerge over time through an organizational process of accumulating and learning how to deploy different resources and capabilities.

Typically, these factors can be identified in the documented results of organizational assessment models, such as the balanced score card (BSC) or European Foundation for Quality Management (EFQM). In addition, some templates and samples are used as a framework to identify these capabilities of the corporation (Hax and Majluf, 1996).

In the present case study, the company had employed the EFQM excellence model, and the corporation’s strength factors were identified after studying documents and conferring with specialists in the organizational excellence and strategic planning departments.

Determining barriers to entry and KSFs of each new industry is a difficult and time-consuming task. Because KSFs vary from industry to industry, many interviews with domain experts and examination of different information resources are necessary.

However, this procedure can be assisted by extracting these factors systematically using certain guidelines. For example, Table 3 suggests some common KSFs that are based on the nature of industry.

**TABLE 3** Common Types of KSFs (Thompson and Strickland, 2005)

Related KSFs	Type of industry
Scientific research expertise, product innovation capability, expertise in a given technology, capability to use Internet to conduct various business activities	Technology related
Low-cost production efficiency, quality of manufacture, high use of fixed assets, low-cost plant locations, high labor productivity, low-cost product design, flexibility to make a range of products	Manufacturing related
Strong network of wholesale distributors/dealers, gaining ample space on retailer shelves, having company-owned retail outlets, low distribution costs, fast delivery	Distribution related
Fast, accurate technical assistance, courteous customer service, accurate filling of orders, breadth of product line, merchandising skills, attractive styling, customer guarantees, clever advertising	Marketing related
Superior workforce talent, quality control know-how, design expertise, expertise in a particular technology, ability to develop innovative products, ability to get new products to market quickly	Skill related
Superior information systems, ability to respond quickly to shifting market conditions, superior ability to employ Internet to conduct business, more experience and managerial know-how	Organizational capability
Favorable image/reputation with buyers; overall low-cost; convenient locations; pleasant, courteous employees; access to financial capital; patent protection	Other types

**TABLE 4** Sample Form of Matching Test

Alternative name:					
Type of synergy with the current businesses:					
“Barriers to entry” analysis					
Legal barriers	Financial barriers	Knowledge barriers	Technology barriers		
Test of matching between KSFs and corporation’s capabilities					
	KSF1	KSF2	KSF3	....	KSF5
Capability 1					
Capability 2					
...					
Capability $n$					

After identifying corporation’s strength factors, including assets, capabilities, and competencies on one side and barriers to entry and KSFs of each alternative on the other side, the degree of correspondence between prerequisites for each alternative and the corporation’s conditions is determined individually. In Table 4, a sample of the evaluation form and its qualitative scoring method for an investment alternative is illustrated.

The following qualitative–quantitative procedure has been proposed for evaluating the success probability of entrance and compatibility of the corporation with KSFs. This step must be conducted using expert panels after detailed discussions incorporating different points of view. The following procedure will be run for each alternative.

1. Domain experts and decision makers discuss each of the identified barriers to entry factors. Each expert gives a score on a 1 to 10 scale with respect to all barriers to entry factors. Then, the average score of all of the experts will be computed, which will be shown by  $(p_k)$ , in which  $(p_k)$  is the index of investment alternative.
2. After discussion on each of the KSFs, as shown in Table 4, each score in each cell of the table  $(E_{i,j,k})$  indicates the degree of effects of the proposed strength factor  $i$  on the KSF  $j$  of alternative  $k$  according to the scale given in Figure 6.
3. For better interpretability of the scores, in the next steps, when comparing the corporation to other major competitors, the total score for each KSF over all of the strength factors  $(\sum_i E_{ijk})$  is limited to 30. The logic behind

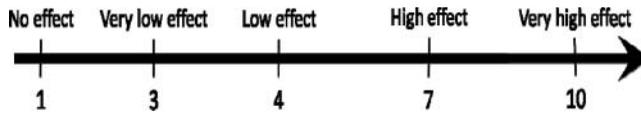


FIGURE 6 Score of different states.

this restriction is that if at least three strength factors with a very high effect on that KSF are identified for an alternative, it is assumed that the considered KSF will be satisfied.

4. The weight of each KSF ( $w_j$ ) will be calculated as follows. After pair-wise comparison between KSFs of each alternative and normalization of the scores, the importance of each KSF is determined using a number ranging from 0 to 1 in which the sum of weights will be 1.
5. After that, the following score will be computed, determining the degree of matching between corporation’s capabilities and each alternative’s KSFs as follows:

$$M_k = \sum_j \sum_i w_j \otimes E_{ijk}.$$

1. The final score of this stage that considers both the probability of passing barriers to entry and satisfying KSFs will be computed as  $SP_k = p_k \otimes M_k$ . The idea behind this multiplication of two scores is tied to the policy of decision makers. Using this method, only those alternatives that gain two high scores can pass this filter.
2. After computation of the final score for all alternatives, a set of alternatives will be eliminated according to Pareto analysis.

### Analysis of Competition

In this step, three to four major competitors in each market associated with the remaining alternatives are determined, and the competitive power of the corporation against its competitors will be assessed based on predetermined scores on each KSF.

The major competitors in each market (if any) will be selected based on two criteria: market share and growth trend in the last 3 years. Both existing and new competitors will be considered in the analysis. In this step, similar to the previous steps, domain experts will be interviewed to analyze the performance and the competencies of the selected competitors.

As shown in Table 5, to quantify the strengths and the competencies of each competitor on each KSF, the domain experts assign a score from a predefined range for that competitor according to the scale given in Table 6.

**TABLE 5** Sample Form of Relative Competitor Scoring Method

Degree of matching with each of KSFs					
Competitor 1	Competitor 2	Competitor 3	The corporation	Importance weight	KSF
				W1	KSF1
				W2	KSF2
				W3	KSF3
				...	...
					Total score

For the corporation under study, those scores on each KSF, which have been computed in the last step, after normalization in the range 0 to 10, will be placed in Table 5.

After the completion of scoring at this step, those investment alternatives for which the corporation ranks as first or second among the other competitors will remain for detailed analysis, and the other alternatives will be eliminated.

After identification of the initial investment alternatives through three steps of filtration, those alternatives that are attractive, have high potential to pass barriers to entry, are compatible with KSFs, and have an acceptable competitive position in their new markets have been selected; the others have been gradually eliminated. In the next section, the remaining investment alternatives will be analyzed in greater detail.

Almost all of the assessment methods described in the previous steps are qualitative. In this step, given the limited number of alternatives, a more quantitative analysis, particularly on the attractiveness of alternatives, can be performed. Among the different criteria for the assessment of attractiveness, one can apply those quantitative factors known as fundamental analysis criteria in the stock market theory. Using this group of criteria, investment analysts evaluate the attractiveness of investment options, regardless of short-term (day-to-day) fluctuations, using the structure of industry and a quantitative approach. In this case, based on the literature of fundamental analysis, availability of required data, and expert opinions, the following criteria are selected to quantitatively assess the remaining investment alternatives for the corporation under study:

**TABLE 6** Degree of Matching with KSFs for Each Competitor

No match	Low	Medium	High	Fully matched
0	1	4	7	10

- 1) market size,
- 2) marginal operating profit,
- 3) average market growth rate (future of market),
- 4) profit growth rate,
- 5) trends of average liquidity ratio (current ratio) of industry,
- 6) return on investment (ROI), and
- 7) time to market.

A comparison of these quantitative factors with those qualitative factors used in the first stage for assessing the market attractiveness shows that the two groups of measures have a similar direction (except positive regulation impacts), showing the attractiveness of the investment options both qualitatively and quantitatively. For example, market size, profit growth rate, and trends of the average liquidity ratio of industry are comparable to the first qualitative indicator, large size and continuous and sustainable demand. However, in the proposed method, the main idea is in the initial steps. Maximum stakeholder involvement and opinions are necessary, rather than a clear cut set of quantitative measures and a mechanical process. While progressing to the final stages with fewer options, more quantitative, clear-cut factors are used.

The above set of quantitative criteria will be considered in a multi-attribute decision-making model, which will be discussed in the next section.

### **Final Assessment Based on Attractiveness and Chance of Success**

As discussed previously, the issue of corporate diversification is related to both the concepts of strategic planning and the theory of investments. In fact, the internal analysis of the corporation's existing capabilities in the execution of new investments is the focus. For the analysis of external factors, particularly market attractiveness, the tools and techniques frequently used in financial analysis have been applied.

These two points of view construct the structure of the proposed methodology depicted in Figure 2.

In the final step, as illustrated in the upper right corner of Figure 2, the remaining alternatives are ranked based on two main criteria: attractiveness and success probability of investment. In this section, the feasibility and attractiveness tests are applied concurrently.

The scores of the alternatives in success probability are equal to their final scores in the success probability filter ( $SP_k = p_k \otimes M_k$ ). However, the attractiveness score of each alternative is computed quantitatively based on the seven fundamental analysis criteria presented above. The hierarchical structure of decision criteria is illustrated in Figure 7.

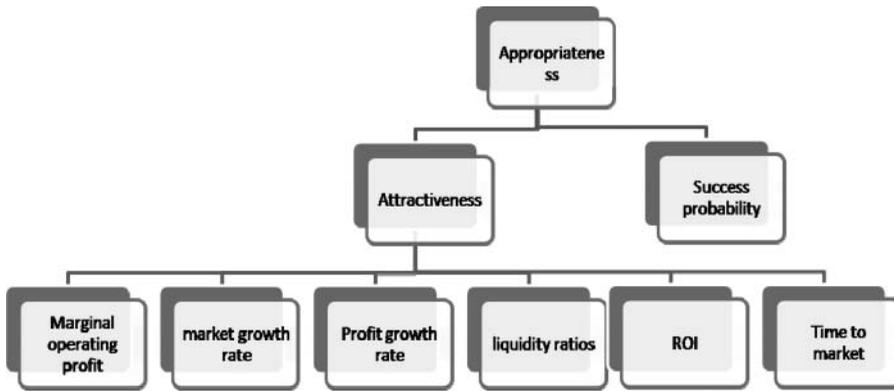


FIGURE 7 Hierarchical structure of final assessment attributes.

Because almost all of the alternatives have an acceptable level of attractiveness and feasibility in this step, the final decision must be made by executive management. Therefore, the method of ordinal ranking, based on the preferences of top managers, is suggested using the scores of all attributes. Determining the ordinal ranking of criteria to list the final investment options is sufficient. In other words, all of the alternatives are interesting, and only the preferences of top management will prioritize among them. For example, in the attractiveness criteria, each attribute emphasizes one aspect of investment. Potential growth considers a long-term profitability, whereas the liquidity ratio considers the amount of required average cash according to the nature of the business.

With respect to these conditions, a lexicographic method for ranking the alternatives based on attractiveness has been suggested. After determining the rank of alternatives based on attractiveness, one can plot them in a two-dimensional matrix, as shown in Figure 2.

The steps of the described lexicographic method follow.

1. Determine the ordinal ranking of attributes and sort them.
2. Rank alternatives based on their scores on the first ranking attribute.
3. If two or more alternatives have the same score on that attribute, rank them based on the second important attribute.
4. Follow this method until the ranks of all of the alternatives have been determined.

Using this sequential method, all of the investment alternatives will be plotted two dimensionally as a decision support system, although top management and investors are the final decision makers. The aim of this procedure is to systematically generate investment alternatives, to gradually eliminate the

improper ones, and finally, to gather some quantitative information, including their attractiveness and chance of success, to be able to rank the final investment opportunities.

## SUMMARY AND CONCLUSION

This article presents a systematic methodology to identify and evaluate new investment alternatives for a company that wants to venture into new businesses. Minimal research has been reported on identifying and making decisions on new investment initiatives for corporate diversification. The existing literature largely discusses the success of diversification cases from an ex-post point of view. The proposed methodology has been designed based on a screening process to filter out unattractive alternatives. The first filter is designed to roughly evaluate the market attractiveness of the new initiatives and to eliminate the unattractive ones. This methodology emphasizes the relationship between new investment areas and the company's existing businesses. An extensive survey of the literature shows that related diversification has a much higher chance of success. Thus, in the second step, corporation's competencies, capabilities, and assets are assessed against the KSFs for each of the remaining initiatives. The third filter is based on the analysis of the main competitors' power in meeting KSFs related to each area of business in comparison to the company's score obtained in the second step. Finally, the remaining alternatives are ranked ordinally based on a detailed analysis of market attractiveness. These alternatives are depicted using a two-dimensional model that allows the decision makers to choose among a few attractive alternatives with respect to their chances of success. This methodology has been developed and tested in collaboration with an automaker.

This study assumes that the company is not interested in dealing with unattractive investment options from the outset. In some situations, the company could possibly find an innovative way to make some businesses more attractive and then add them to the list of attractive options. One possible future work using the proposed framework would be adding this flexibility to the model.

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