

DYNAMICS OF THE EVOLUTION OF THE STRATEGY CONCEPT 1962–2008: A CO-WORD ANALYSIS

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The aim of this paper is to extend recent reflection on the evolution of strategic management by analyzing the field's object of study: strategy. We show how the concept of strategy has formed the backbone of the development of strategic management as an academic field and how consensus regarding it has evolved in the academic community during the stages of its historical development. We also address changes in the structure of the definition as it evolved through the growth of internal consistency, the centrality degree of the key terms that have shaped it, and how this evolution fostered the emergence of new research topics during the development of the discipline. Copyright © 2011 John Wiley & Sons, Ltd.

INTRODUCTION

To understand the essence of any concept, it first must have a clear definition. To understand the essence of the strategic management field, we must have a historical perspective on its central concept: strategy. Scholars in this discipline recognize that its emergence as an academic field of research began in the early 1960s.

Language supplies the foundations for the emergence of a particular identity shared by members of a scientific community (Whorf, 1956), and is likewise important in understanding a field as complex as strategic management. Unfortunately, the absence of a broad, comprehensible, and shared vocabulary is an obstacle that this field has still not managed to overcome. The lexicon of strategic management is internally inconsistent and tends to

be confusing, even for the cognoscenti (Leontiadis, 1982).

The problem of semantics affects not only strategic management but also is particularly severe in the field of management in general (Koontz, 1961). Indeed, as Koontz (1980) indicates, one of the greatest obstacles to untangling the intricacies of management in general and of strategy in particular has been and still is the problem of semantics. Many authors in the field of management and its counterparts, among them strategy, have tended to use common terms in different ways. Often, the possibility of arguing about basic problems is limited by the meaning of key terms.

Strategic management has grown rapidly since its emergence as an academic field and today is quite diverse (Ketchen, Boyd, and Bergh, 2008). Ketchen *et al.* (2008) point out that, despite its wide diffusion and the application of central models and concepts, there are many definitions of the strategy concept and strategic management, most of which lack an integrating nature. Although strategy is one of the most taught and studied concepts, it is paradoxically also one of the least understood.

Keywords: strategic management; strategy concept; social network analysis; co-word analysis; strategy evolution

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In short, the literature regarding strategic management comprises a large amount of subject matter and topics that for many are fragmented and lack a coherent identity (Ketchen *et al.*, 2008).

Chaharbaghi (2007) points out that the scope and abundance of the literature, together with the variability of the perspectives and vocabulary employed, make what seems to be a central problem in the case of strategy a secondary matter. Pfeffer (1993) accentuates the fact that the different divisions of the *Academy of Management* often give prizes for the formulation of new concepts but not for the study or rejection of concepts that have already been invented. Koontz's (1980) view that we are still far from achieving a general acceptance of the meaning of key concepts and terms still holds true. As Nag, Hambrick, and Chen (2007: 935) point out, 'strategic management represents a case of an academic field whose consensual meaning might be expected to be fragile, even lacking.' It is commonly upheld that the strategic management field appears fragmented and lacks internal consistency.

Undoubtedly, the central concept of the field of strategic management is strategy. It is a concept that also suffers from the semantic problems in question. Some years ago, Andrews (1980) warned that many variations could be detected in the use of the vocabulary of strategy both in the business world and in academia. For Evered (1983), strategy is a favorite word in the field of management despite the ambiguity caused by the lack of a consensual definition of the term. Hambrick and Fredrickson (2001) point out that 'strategy' has become such a broad term that it is used to mean almost anything. More recently, Markides (2004) stated that the absence of a sufficiently agreed upon definition of strategy has led to the emergence of new terms that have added confusion and a state of disagreement among both scholars and managers.

These authors, among others who refer to the strategy concept, point to the existence of the following gaps in the literature: 1) scarce knowledge of the regularities and patterns in the historical evolution of the definition of the strategy concept in the field of strategic management as an academic discipline; 2) great diversity in the definitions of the strategy concept, leading to ambiguity and a lack of consolidation of the lexicon used; 3) ambiguity as to what can be considered the

essence of the strategy concept; 4) absence of studies investigating the evolution of consensus among scholars surrounding the strategy concept; 5) lack of analysis of the structural evolution of the strategy concept; and 6) absence of evidence as to the influence of the evolution of the strategy concept in the development of strategic management as an academic discipline. This situation is a problem that is hindering the optimum development of strategic management as a research field.

Some academics consider that science does not require consensus (Cannella and Paetzold, 1994; Kuhn, 1996; Pfeffer, 1993). Mintzberg (1987: 11) supports the theoretical diversity surrounding the field of strategic management and argues that: 'The field of strategic management cannot afford to rely on a single definition of strategy, indeed the word has long been used implicitly in different ways even if it has traditionally been defined formally in only one. Explicit recognition of multiple definitions can help practitioners and researchers alike to maneuver through this difficult field.'

In our view, the level of consensus shown by a scientific community as regards the definition of a concept denotes the degree of progress of a discipline. At the same time, we recognize that a certain lack of consensus also fosters the development of the field. This is especially important if the concept we are referring to is the object of study of the field itself.

In the specific context of strategic management, the above mentioned authors refer to the lack of consensus as to the definition of the strategy concept. Thus, Leontiades (1982) considers that it is time to take a fresh look at the basic definitions before the language of strategic management and business policy becomes so rooted that it will become impossible to reverse. Likewise, Bowman, Singh, and Thomas (2002) pose the need to improve precision in the definition and measurement of the concepts relevant to the development of the field. As Markides (2004: 5) points out: 'Despite the obvious importance of a superior strategy to the success of an organisation and despite decades of research on the subject, there is little agreement among academics as to what strategy really is.' A historical review of the definitions used for the strategy concept shows that not only do they differ due to the diversity of terms employed in them but also in terms of their central underlying ideas.

In short, we believe that all of the above arguments provide evidence of the need for scholars of strategic management to work toward a common shared language that will allow us to know its essence as a science. This will facilitate the development of the field and its research methods and lead to its progress as a scholarly discipline. To frame one approach would be beneficial, but fully achieving a single completely agreed-upon definition of the field might not be a realistic expectation at present. Our aim in this paper is to make progress in that direction.

Recently, different studies have analyzed the evolution and development of strategic management as a scientific discipline using diverse quantitative techniques. Thus, studies have been carried out on the definition of the field itself (Nag *et al.*, 2007), and on its intellectual structure both through the most relevant articles (Ramos-Rodríguez and Ruiz-Navarro, 2004; Furrer, Thomas, and Goussevskaya, 2008), the most relevant authors (Nerur, Rasheed, and Natarajan, 2008; Furrer *et al.*, 2008), and the predominant research lines and topics (Furrer *et al.*, 2008). However, we believe that a quantitative analysis of one of the essential elements that comprise a discipline's main *raison d'être* is still missing, that is, its object of study: the strategy concept. Nag *et al.* (2007) point to the importance of heeding a fundamental question: what is strategic management? We consider that this reflection is also pertinent to the concept of strategy.

Although different studies have attempted to make a comparative analysis of the strategy concept (Hofer and Schendel, 1978; Bracker, 1980; Evered, 1983; Barney, 1997; Grant, 2008), a common trait of these studies is that they essentially carry out descriptive and qualitative analysis of reduced sets of definitions of strategy ranging over diverse time spans. In this paper, we thus make an attempt to extend reflection regarding the field of strategic management. The objectives of this paper are: 1) to study the evolution of scholarly consensus as regards the strategy concept; 2) to study the evolution of the term 'strategy' within the field of strategic management and the changes that have taken place in its structure throughout the different stages of its historical development.

To reach these objectives, we have made a quantitative analysis of a broad set of 91 definitions of strategy over a long period of time (1962–2008). This will allow us to identify a consensual definition of the strategy concept, both implicit and

explicit, as well as to analyze the evolution of the concept over time, in a way similar to what Nag *et al.* (2007) did for strategic management.

To do this, we have deconstructed selected definitions in order to identify the nouns, verbs, and adjectives used. Using co-word analysis, we have tried to identify the key conceptual elements both for the whole period analyzed and for each of the three stages into which the full time period was divided. This has enabled us to extract the essential terms of the concept of strategy and to measure what consensus exists in this respect in the scientific community.

LITERATURE REVIEW

One way to become aware of the nucleus of the meaning of a concept is to examine the context in which it was named for the first time (Evered, 1983). The word strategy comes from the Greek word 'strategos,' which strictly means 'general in command of an army' (*stratus*: army, *ag*: guide). The first modern authors to relate the strategy concept to business were Von Neumann and Morgenstern (1947) in their book '*Theory of Games and Economic Behavior*.'

The study of strategy as a term associated with management began to materialize during the 1950s, when the Ford Foundation and the Carnegie Corporation funded research into the curricula of schools of business administration. A synopsis of this research, the Gordon-Howell Report (1959), recommended extending business administration studies to include a final course in an area called 'business policy' (Certo and Peter, 1997). Prior to this time, academic interest in the subject was limited and there was no established research tradition.

Courses on business policy that had formed part of the curriculum of several business schools in the pre-war period were redesigned and given new emphasis. Adding to the organization of the development of this program was the impetus of sponsorship by 40 universities. Furthermore, the management of many internal company programs was added to the growing list of formal courses offered to prepare managers for the design of business policy (McNichols, 1977). At the same time, Peter Drucker (1954), in his book '*The Practice of Management*,' offered a first definition of strategy related to the field of management. This

definition can be considered the first since the one contributed by Von Neumann and Morgenstern (1947) essentially has an economic dimension.

At the beginning of the 1960s, the concept of strategy emerged from the outcry over the need to help managers (particularly general managers) translate the chaos of events and decisions they faced on a daily basis in an orderly way to evaluate the position of the firm within its environment (Porter, 1983). In the decade from 1960 to 1970 these elements led to the beginning of a process of theoretical construction around the term 'strategy' in the business field. Herrmann (2005) considers this to be the first era of ferment in strategic management as a discipline. This stage was characterized by the appearance of diverse definitions that tried to approximate what should be understood by 'strategy.' Many authors devoted a section in their papers to analyzing the term and proposing their own definitions, which favored an increase in the number of meanings of the term 'strategy' in nascent strategic management and generated the assortment of definitions that remain with us today.

After Drucker's (1954) first definition, the pioneers in addressing strategy as a management term were Chandler (1962), Ansoff (1965), and Learned *et al.* (1969). These works came to form the theoretical basis of the field of strategic management and as such are considered classics in the field. Before the formal articulation of the definition of the strategy concept and the intellectual apparatus that this provided, the discussions of business policy cases at Harvard University were exercises in the search for the central matters that a firm has to deal with (Porter, 1983).

The appearance of new definitions proposed by different authors led to great diversity in the definitions of strategy. This diversity is the result of both the different terms used and the central ideas of what each author considers the essence of the concept to be. Thus, some authors highlight the orientation toward the selection of long-term goals and the choice of programs or plans for achieving them as fundamental elements of the strategy concept (Learned *et al.*, 1969; Andrews, 1971; Ackoff, 1974; Shrivastava, 1986) through the proper allocation of resources (Chandler, 1962; Schendel and Hatten, 1972; Harrison, 1999).

For their part, other authors stress the definition of the actions, plans, programs, or orientations need to attain certain objectives (Glueck, 1976; Hofer and Schendel, 1978; Summer, 1980; Hatten

and Hatten, 1988; Venkatraman, 1989; Pearce and Robinson, 1994; Griffin and Singh, 1999; Hambrick and Fredrickson, 2001; David, 2003; Hill and Jones, 2005; Grant, 2008). Strategy as a way of linking a firm to its environment is a principal element in other important definitions (Katz, 1970; Miles and Snow, 1978; Mintzberg, 1979; Jemison, 1981; Stoner, 1982; Miller and Friesen, 1984; Chrisman, Hofer, and Boulton, 1988). Some of the other ideas present in the numerous definitions are competitive advantage and company performance as an essential element of strategy (Porter, 1996; Barney, 1997; Bowman *et al.*, 2002; Hitt, Ireland, and Hoskisson, 2003).

Whereas one group of authors considers strategy a process through which the firm makes decisions with a view to meeting its objectives (Uyterhoeven, Ackerman, and Rosenblum, 1973; Steiner and Miner, 1977; Moskow, 1978; Quinn, 1980; Van Cauwenbergh and Cool, 1982; Thomas, 1984; Smith, Arnold, and Bizzell, 1988; Whittington, 1993; Certo and Peter, 1997), others conceive of it as a set of rational techniques for making certain decisions in the firm (Beverley, 1967; Knights and Morgan, 1991; Fry and Killing, 1995). The idea of change, be it in the environment or in the company, also appears to be important in the strategy concept (Newman and Logan, 1971; Michael, 1973; Ginsberg, 1988). Finally, some definitions can be considered more eclectic, as they attempt to integrate several of the above ideas as an essential part of the strategy concept (Thompson and Strickland, 1987; Conner, 1991; Menguzzato and Renau, 1991; Hax and Majluf, 1997; Johnson, Scholes, and Whittington, 2005; Guerras-Martin and Navas-Lopez, 2007; Nag *et al.*, 2007).

This diversity gave rise to the need for studies to analyze and compare the different existing definitions. The first study appeared in Hofer and Schendel (1978, Table 2.2), which analyzed 13 definitions of authors who approached the conceptualizing of the term in the 1960s and 1970s. This study led to the beginning of the changeover from the term 'business policy' to the term 'strategic management' to define the field.

Bracker (1980, Table 1) analyzed the evolution of the strategy concept based on 17 definitions formulated up until then, nine of which coincide with those used by Hofer and Schendel (1978). Besides analyzing the historical development of the definition, Bracker (1980) posed the need to carry out epistemological studies to elucidate the

essence of the term within strategic management, and called on academics to seek its maturity as an academic field of study.

Evered (1983) analyzed 12 definitions and was unique in studying the definition of the strategy concept from three different perspectives: military, management, and futurist. Based on the results obtained from his analysis, he set out the most influential definition in each field and then proposed a new one for each of the perspectives in question. Barney (1997, Table 1.1) analyzed nine definitions, establishing the regularities among them, and proposed a new definition based on this analysis. Finally, Grant (2008, Table 1.1) analyzed five definitions, and like the preceding authors proposed a new definition.

These five studies coincide in that: 1) after carrying out an analysis they propose a new definition for the strategy concept that involves some sort of synthesis; and 2) the comparison of the definitions proposed in the five studies shows an absence of consensus. The main difference among these studies is that they do not use the same definitions as the source of their analysis, which has to do with the choices made by each of the authors as well as the incorporation of new definitions that gradually appeared in the literature over the years.

Despite their relevance and contributions to the development of strategic management, the above mentioned studies have the limitation of using a small sample of definitions, considering the large number that exist in the historical period in question, and they analyze the evolution of the definition during a specific stage of its historical development, making a subjective and qualitative analysis of the essential elements of the different definitions. This approach makes it difficult to obtain a general image of the historical development of the strategy concept, the precise identification of the strength of consensus regarding its definitions, and how its structure has changed from the time it was introduced until today.

Given all these reasons, a quantitative approach based on bibliometrics seems advisable, as it will permit a more detailed analysis of the strategy concept and its evolution. This paper, thus, differs from the previous studies mentioned above in that: 1) a longer time frame is used (1962–2008), 2) more definitions (91) are analyzed, and 3) methods and techniques that are employed are quantitative.

As a result of the above, in this paper we attempt to answer the following research questions: 1) how

has the scholarly consensus as regards the strategy concept evolved over time?; 2) how has the term 'strategy' evolved within the field of strategic management and what changes have taken place in its structure throughout the different stages of its historical development?; 3) what would be the essence of the concept of strategy?; and 4) how are the changes in the evolution of the centrality degree of the main terms in the definitions related to, and how have they influenced, the evolution of the key terms in the main journals on strategy?

METHOD

In order to attain the objectives posed, we established the definition of the strategy concept as the unit of analysis and selected a set of 91 definitions (see Table 1) formulated between 1962 and 2008, inclusive, segmented into three stages in order to analyze their historical evolution. For this study, we have chosen content analysis, combining consensus analysis and co-word analysis with social network analysis techniques. The use of content analysis in organization studies has been growing in the course of the past 25 years. Content analysis assumes that groups of words reveal underlying themes, and that co-occurrences and co-absences of keywords can be interpreted as reflecting associations between the underlying concepts. We decided to use content analysis for the following reasons: 1) it provides a replicable methodology to access deep individual or collective structures; 2) it has analytical flexibility; 3) it allows the rich meaning associated with organizational documents to be combined with powerful quantitative analysis; 4) it is a well established and effective approach to the study of the intellectual structures of research fields, and 5) the intellectual influence on a field is indicated by authors' works that have been highly cited in that field (Duriau, Reger, and Pfarrer, 2007; Zhao and Strotmann, 2008a).

Then, we employed consensus analysis (Cohen, 1960), a technique to determine the level of consensus between pairs of analyzed definitions, co-word analysis (Callon, Law, and Rip, 1986; He, 1999), a bibliometric technique to analyze the evolution of the structure of the concept by means of the inclusion index of key terms, and social network analysis to study the evolution of the internal

Table 1. Definitions used in the study and their origin

Stages	SOURCES			
	Books		Journals	
	Strategy	General	Strategy	General
Stage 1 (23 definitions)	Chandler, 1962 : 13; Beaufre, 1965; Ansoff, 1965 : 103; Cannon, 1968 : 9; Liddell-Hart, 1968; Learned <i>et al.</i> 1969 : 15; Steiner, 1969 : 34; Katz, 1970 : 195; Andrews, 1971; Newman and Logan, 1971 : 70; Uytterhoeven <i>et al.</i> , 1973 : 9–10; Michael, 1973; Paine and Naumes, 1974 : 7; McCarthy, Minichiello, and Curran 1975 : 19; Glueck, 1976 : 3; McNichols, 1977 : 9; Steiner and Miner, 1977 : 19, see also p. 17	Beverley, 1967 : 4–3; Ackoff, 1974 : 29; Von Clausewitz, 1976 : 177; Rosinski, 1977	Schendel and Hatten, 1972 : 100; Carson, 1972	
Stage 2 (36 definitions)	Hofer and Schendel, 1978 : 25; King and Cleland, 1978 : 8; Moskow, 1978 : 10; Miles and Snow, 1978 : 261; Schendel and Hofer, 1979 : 516; Summer, 1980 : 37; Rumelt, 1980; Quinn, 1980 : 7; Grant and King, 1982 : 4; Higgins, 1983 : 3; Thompson and Strickland, 1987 : 4; Hatten and Hatten, 1988 : 1; Smith <i>et al.</i> , 1988; Fredrickson, 1990; Teece, 1990; Menguzzato and Renau, 1991 : 84	Miller and Friesen, 1984; Schendel and Cool, 1988	Bracker, 1980 : 221; Jemison, 1981 : 633; Van Cauwenbergh and Cool, 1982 : 247; Galbraith and Schendel, 1983 : 156; Evered, 1983 : 70; Thomas, 1984 : 140; Smircich and Stubbart, 1985 : 724; Mintzberg and McHugh, 1985 : 161; Shrivastava, 1986 : 371; Chrisman <i>et al.</i> , 1988 : 414; Lieberman and Montgomery, 1988 : 49; Ginsberg, 1988 : 559; Venkatraman, 1989 : 946; Summer <i>et al.</i> , 1990 : 371; Venkatraman and Prescott, 1990 : 4; Conner, 1991 : 122; Knights and Morgan, 1991 : 251	Mintzberg, 1979 : 25
Stage 3 (32 definitions)	Dess and Miller, 1993 : 4–5; Whittington, 1993 : 2; Rumelt, Schendel, and Teece, 1994; Pearce and Robinson, 1994 : 4; Barney, 1997 : 27; Fry and Killing, 1995 : 20; Hax and Majluf, 1997 : 24; Collis and Montgomery, 1997 : 5; Certo and Peter, 1997 : 40; Bartlett and Ghoshal, 1998; David, 2003 : 11; Hitt <i>et al.</i> , 2003 : 9; Johnson <i>et al.</i> , 2005 : 10; Hill and Jones, 2005 : 5; Guerras-Martin and Navas-Lopez, 2007 : 40; Grant, 2008 : 17	Bounds <i>et al.</i> , 1994; Johns, 1996 : 534; Stoner, 1982 : 206; Griffin and Singh, 1999 : 186; Harrison, 1999 : 321; Wordsmyth Dictionary (taken from Grant 2008)	Levinthal and March, 1993 : 95; Porter, 1996 : 75; Eisenhardt, 1999 : 65; Oliver, 2001 : 7; Hambrick and Fredrickson, 2001 : 50; Bowman <i>et al.</i> , 2002; Prahalad and Krishnan, 2002 : 33; Kogut, MacDuffie, and Ragin, 2004 : 114; Markides, 2004 : 9; Nag <i>et al.</i> , 2007 : 944	

consistency and centrality of the key terms making up the definition of the strategy concept in the stages studied.

The methodological process is described based on five essential stages: 1) identification of the unit of analysis; 2) deconstruction of the definitions; 3) creation of families of words or conceptual elements; 4) completion of a consensus analysis; and 5) performance of a co-word and centrality analysis.

Step 1. Unit of analysis

Recent studies in the field of strategic management and its evolution (Ramos-Rodríguez and Ruiz-Navarro, 2004; Furrer *et al.*, 2008; Nag *et al.*, 2007; and Nerur *et al.*, 2008) have used the article or its key words as the unit of analysis in order to study the intellectual structure of strategic management as well as its authors and most relevant contributions. But none of them posit the concept of strategy itself as the unit of analysis, and that is precisely what we do in this study. This choice can be justified in that, although the 'strategic management' field has had several names since its inception (business policy, strategic planning), a single word has always been used in order to define its object of study: 'strategy.' When making their definitions, the different authors use words in common or different words (nouns, verbs, and/or adjectives) but they always refer to a single concept, the concept that constitutes the central axis of the discipline.

Two important elements were taken into account in order to make a suitable selection of the definitions: (1) the time frame of the study, and (2) the criteria for the inclusion of the definitions analyzed.

Step 1.1 Study time frame

Previous papers in this area have differed in the choice of time frame for their study. For example, Ramos-Rodríguez and Ruiz-Navarro (2004), as well as Nerur *et al.* (2008), study 21 years of scholarly production published in the *Strategic Management Journal* (SMJ) (1980–2000), segmented into three stages. Furrer *et al.* (2008) take into account 26 years of scientific studies published in the *Academy of Management Journal* (AMJ), *Academy of Management Review* (AMR), *Administrative Science Quarterly* (ASQ), and SMJ

(1980–2005) segmented into five stages. Nag *et al.* (2007) study a 21 year time frame of articles on strategic management in the SMJ, AMJ, AMR, and ASQ (1980–2000), segmented into five stages. All of them take 1980 as their first year of reference, determined to a great extent by the appearance in that year of the top reference journal in the field, SMJ (Ronda-Pupo and Guerras-Martin, 2010).

However, the concept of strategy has been used unequivocally since the beginning of the 1960s, and was used as a key term in the nascent academic field of strategic management. In our study, we therefore take as a time frame the 47 years between 1962 and 2008, which covers the entire history of the field. This time frame is segmented into three stages of approximately 15 years each: 1962–1977, 1978–1992, and 1993–2008. This 15 year range is considered suitable since it represents a significant segment of time that has witnessed the stages of growth and maturity of an academic discipline (Nerur *et al.*, 2008).

Step 1.2 Criteria for choosing the definitions used in the study

The following criteria were used to decide on the set of definitions to be included in the study (see Table 1). In the first place, definitions were selected based on a set of source works that have studied the strategy concept as unit of analysis: Hofer and Schendel (1978: Table 2.2); Bracker (1980: Table 1); Evered (1983); Barney (1997: Table 1.1); and Grant (2008: Table 1.1).

Secondly, definitions were selected based on other source studies not directly related to the strategy concept but which include, in one way or another, the most influential authors and articles in the field. In the search for these definitions we did not necessarily take into account the works cited, but rather those in which an explicit definition of strategy appears from the relevant authors of those studies. These source studies are: Ramos-Rodríguez and Ruiz-Navarro (2004, Table 2); Nag *et al.* (2007, Appendix A); Furrer *et al.* (2008, Tables 3 and 4); and Nerur *et al.* (2008, Table 1).

Third, definitions were selected based on a search of databases of articles that either include an explicit definition of the strategy concept or that pose the following question, 'What is strategy?' in the title or abstract.

Fourthly and finally, we selected definitions of the strategy concept from recognized textbooks

not already included in the previous criteria, but which include an explicit definition of strategy and/or a chapter or section on the concept of strategy. In this case, given that the textbooks chosen could not be found hierarchically structured in any database, this choice had something to do with convenience and opportunity. The criteria applied in this case were identification, availability/access, and relevance.

In order to assess the relevance of these studies, we took into account the citation index, which is calculated as the quotient of the number of citations and the number of years between publication and 2009, in a way similar to that used by Furrer *et al.* (2008), although in this case using Google Scholar as a source instead of the *Journal of Citation Reports (JCR)*, since the former includes journals and books that do not appear in the latter.

Some observations must be made as regards the application of the above criteria. In some cases, we included implicit definitions of the strategy concept based on an explicit definition of strategic management or strategic planning. With respect to other references and/or authors of the above sources, we did not find either an explicit or implicit definition of the strategy concept and therefore they were not included in the study.

The time frame of 1962–2008 was strictly adhered to, so that some definitions appearing in the sources outside this time frame were not included in the study. Such is the case of the definitions of Von Neumann and Morgenstern (1947) and Drucker (1954), which appear in Bracker's (1980) source work. When more than one definition appeared by the same author or group of authors, we took the most explicit one, or the one with the higher citation index. Finally, in the case of books with more than one edition, we chose the edition available.

As a result of the criteria applied, of the 91 selected definitions of the strategy concept, 36 are in agreement with the first, 34 with the second, three with the third, and 18 with the fourth criterion. Furthermore, 62 of the definitions come from books, 50 of which are about strategy and 12 about general management, whereas 29 come from journals: 28 journals about strategy and one regarding general management. As a result of this selection process, 23 definitions were included in the first stage, 36 in the second, and 32 in the third.

Step 2: Deconstruction of definitions

The aim of deconstructing each definition is to extract the key terms used by the authors, assuming they highlight the central ideas of the strategy concept. It will, thus, be possible to identify and analyze the essence of the concept and trace its structural evolution throughout the stages studied.

Nouns and verbs are the most frequently used text units in exploratory content analysis (Carley, 1993). Here we shall also take into account the adjectives included in each definition of the strategy concept. This choice makes it possible to show the structural evolution of the concept not only in terms of essence (nouns) but also in terms of the action accompanying it (verbs) and the characteristics that distinguish or qualify it (adjectives).

Step 3: Creation of word families

According to Chrisman *et al.* (1988), all classifications are composed of categories, which are sets of entities sufficiently similar to each other and sufficiently different from other sets that are separately delimited and named. In a way similar to Furrer *et al.* (2008), we identified a high number of terms in the 91 definitions and observed that the majority of the terms (more than 60%) only appear in one definition (see Table 2). Therefore, to facilitate the analysis, the terms resulting from the deconstruction of the definitions studied (nouns, verbs, and adjectives) were grouped into families of words or conceptual elements (Appendices 1a, 1b, and 1c) (Nag *et al.*, 2007; Furrer *et al.*, 2008).

The following criteria were taken into account when building the word families: 1) words that can clearly be grouped into one category—example: firm, company, organization; and 2) words that when they are used in a specific context, because of the word they modify, can be included in one category or another—example: gerunds that can be used as verbs or nouns ('deciding' can be classified as a verb or as a noun: 'decision').

Step 4: Consensus analysis

The objective of this step is to determine the level of consensus between each pair of definitions in order to evaluate the evolution of agreement regarding the definition of the strategy concept throughout its historical development. This step consists of three stages.

Stage 1) Creation of a two-mode matrix

To carry out consensus analysis, we must first build a two-mode matrix locating the conceptual elements as unit of analysis (rows) and the definitions as variables (columns). Generating a matrix using conceptual elements provides an appropriate control of time in the measurement of pairs because we do not compare definition versus definition (coauthor analysis) but term versus term instead (co-word analysis). The matrix is coded using dichotomous variables: 1 if the conceptual element is present in the definition and 0 if it is absent.

Stage 2) Creation of a contingency table for each pair of definitions

Using the two-mode matrix input information, we build contingency tables for each pair of definitions. The aim of these tables is to use the result as input for the calculation of the Kappa index (Cohen, 1960). The contingency table includes the different situations in the two-by-two comparisons of the definitions: whether the key term appears in the two definitions being compared, whether it appears in one but not in the other, and whether it does not appear in either one. To control for time when calculating the size of the pool for creating pairs for calculating Kappa index, we used reverse procedure exploration in a way similar to Noyons and Van Raan (1998), but using the interactions between the conceptual elements of the definition of strategy.

Stage 3) Calculating the Kappa index for consensus

The Kappa coefficient is used in this case to measure the degree of consensus between two definitions. It was originally proposed by Cohen (1960) to determine the degree of agreement in the case of two raters or two methods and was generalized for the case of more than two raters by Fleiss (1971). The Kappa index is calculated by taking as a reference a 2×2 table (the contingency table explained in Step 2) drawn up for each pair of definitions using the following formula:

$$K = \frac{p_0 - p_e}{1 - p_e},$$

where P_0 is the degree of agreement observed and P_e is the degree of agreement expected randomly.

In the case of perfect agreement, the degree of agreement is 1. Thus, $1 - P_e$ represents the possible range of agreement not attributed to chance.

The expected degree of agreement P_e is as follows: according to the contingency table, the likelihood that the first definition contains the key term can be estimated as f_1/n , whereas the corresponding probability that the second definition contains the same term is estimated as c_1/n . If the two definitions are considered to be independent, then the probability that the same key term coincides in both definitions will be the product of the probabilities (independent events).

If we apply the same reasoning, there is a probability that there will be agreement between the two definitions when they do not use the same key term. Therefore the probability of agreement between the two classifications would be the sum of both values:

$$P_e = \frac{f_1 \times c_1 + f_2 \times c_2}{n^2}.$$

To calculate the Kappa index, it is necessary to build as many contingency tables as pairs of definitions to be analyzed. The calculated index is compared with the values obtained in a table with the strata in relation to the margins proposed by Landis and Koch (1977) to determine the degree of consensus on a scale that ranges from poor to almost perfect, with different intermediate degrees of consensus in-between.

Step 5: Co-word analysis

Co-word analysis is one of three general approaches in information science for showing the evolution of socio-cognitive structures from a set of documents. Co-word, like co-citation analysis (Chen, Ibekwe-SanJuan, and Hou, 2010) and co-author analysis (Zhao and Strotmann, 2008b), uses co-occurrence and co-absence patterns of pairs of objects (e.g., words, nouns) in a corpus of texts to identify the relationship between ideas within the subject areas presented in such texts.

Generally, co-word studies are carried out by exploring the co-occurrence and co-absence of key words that appear in the titles or abstracts of texts. In the present study, we use co-word analysis for the first time to analyze the structure of the definition of a concept. To do so, we analyzed nouns, verbs, and adjectives separately and create

word families for each lexical classification (see Appendices 1a, 1b, and 1c).

Prior studies have employed this technique to discover the development of knowledge in a scientific field (He, 1999), to map it (Peters and Van Raan, 1993a, 1993b; Kopcsa and Schiebel, 1998), and to trace its intellectual structure (Coulter, Monarch, and Konda, 1998). This technique uses a matrix of the co-occurrence of key words as input information (Salton and McGill, 1983; Leydesdorff, 1997). To code the matrix, we used the values that were the result of calculating the inclusion index (Callon *et al.*, 1986) of each pair of key terms. The inclusion index allows us to determine the hierarchy existing among the conceptual elements that make up the structure of the definition of the strategy concept. The formula for calculating the inclusion index is: $I_{ij} = \frac{C_{ij}}{\min(C_i, C_j)}$ where: I_{ij} is the number of definitions in which the pair of key terms appears (M_i and M_j); C_i is the frequency of occurrence of the key term M_i in the group of definitions; C_j is the frequency of occurrence of the term M_j in the group of definitions; and $\min(C_i, C_j)$ is the minimum of the two frequencies C_i and C_j . Another technique that can be used to normalize the matrix is the cosine index ($C_{ij}/\text{Square root of } (C_i \times C_j)$) (Salton and McGill, 1983; Leydesdorff, 2008).

Once the co-occurrence/co-absence matrix was built, we used social network analysis techniques to determine the degree of centrality (*closeness*) of the key terms and based on this information we then traced the evolution of the structure of the definition of the strategy concept in the three stages studied. In the field of management, social network analysis has been used and developed by Burt (2001, 2007, 2008). It has likewise been used in studies dealing with strategic alliances (Gulati, 1998; Gulati, Nohria, and Zaheer, 2000; Zajac, 1998; Kogut, 2000).

The measure of centrality is understood as a set of algorithms calculated in each network. It enables us to know the position of the vertex inside the network, as well as its structure. The measure of centrality used in this study is closeness centrality. This election is justified because our networks are undirected and this measure of centrality allows us to obtain the centrality of every key term related to the distance to all other key terms in the network (Nooy, Mrvar, and Batagelj, 2005).

In order to subsequently analyze the results obtained, we carried out two types of action. First, the location of the key terms. Given that the vector centrality (closeness) values obtained for each key term lie within a range of 0.00 to 0.95, this range is stratified into three segments or thresholds. The first threshold includes the key terms that pertain to the network periphery, with vector centrality (closeness) values between 0.00 and 0.31. The second threshold includes the key terms that pertain to the network semi-periphery, with vector centrality (closeness) values between 0.32 and 0.63. Finally, the third threshold includes the key terms that belong to the core of the network, with vector centrality (closeness) values between 0.64 and 0.95. Once each key term is located in the corresponding threshold according to its vector centrality (closeness) value, its evolution is traced in relation to the changes in position it undergoes throughout the stages being studied. The results of the centrality analysis based on the co-word technique are represented graphically using the *Pajek* software package (Batagelj and Mrvar, 1998). To do so, we used the vector command of *Pajek* and partition is carried out by intervals selecting 'selected thresholds' and then it is energized using the Kamada Kawai technique (Kamada and Kawai, 1989).

ANALYSIS AND DISCUSSION

Deconstruction of definitions

We obtained 472 different terms after deconstructing the 91 definitions. Of these, 239 were nouns, 148 were verbs, and 85 were adjectives. Appearing in only one definition were 60.25 percent of the nouns, 60.14 percent of the verbs, and 61.18 percent of the adjectives (see Table 2). This shows a large dispersion of the terms used to define strategy and the percentages obtained are similar to those found by Furrer *et al.* (2008), who reported that approximately 65 percent of the key words of the articles they reviewed appeared only once. These results may be due to a search for singularity and/or copyright conditions. This diversity and dispersion of terms hinders both semantic clarity as well as the level of consensus and identity in the scientific community as regards the strategy concept. It furthermore negatively affects the progress of the discipline and its consolidation as a research field within the strategic management area.

Table 2. Frequency distribution of the key terms by lexical classification

	Nouns		Verbs		Adjectives	
	Number	%	Number	%	Number	%
Appears in one definition	144	60.25%	89	60.14%	52	61.18%
Appears in two definitions	35	14.64%	29	19.59%	15	17.65%
From two to five definitions	33	13.81%	24	16.22%	11	12.94%
From six to 10 definitions	19	7.95%	5	3.38%	6	7.06%
From 11 to 20 definitions	5	2.09%	0	0.00%	0	0.00%
Appears in more than 20 definitions	3	1.26%	1	0.68%	1	1.18%
Total	239	100.00%	148	100.00%	85	100.00%

Table 3. Frequency distribution of nouns 1962–2008

N°	Conceptual elements	Stages						Overall	
		n = 23		n = 36		n = 32		n = 91	
		Stage 1	%	Stage 2	%	Stage 3	%	No.	%
1	Firm	13	56,52%	22	61,11%	19	59,38%	54	59,34%
2	Goals	15	65,22%	16	44,44%	12	37,50%	43	47,25%
3	Process	8	34,78%	14	38,89%	16	50,00%	38	41,76%
4	Actions	12	52,17%	12	33,33%	11	34,38%	35	38,46%
5	Dimensions/characteristics	4	17,39%	16	44,44%	15	46,88%	35	38,46%
6	Environment	7	30,43%	19	52,78%	7	21,88%	33	36,26%
7	Resources	7	30,43%	13	36,11%	12	37,50%	32	35,16%
8	Planning	13	56,52%	12	33,33%	5	15,63%	30	32,97%
9	Decision making	7	30,43%	6	16,67%	7	21,88%	20	21,98%
10	Performance	1	4,35%	8	22,22%	10	31,25%	19	20,88%
11	Managers/owners/stakeholders	0	0,00%	7	19,44%	11	34,38%	18	19,78%
12	Time frame	2	8,70%	7	19,44%	7	21,88%	16	17,58%
13	Competition	2	8,70%	6	16,67%	7	21,88%	15	16,48%
14	Behavior	5	21,74%	2	5,56%	6	18,75%	13	14,29%
15	Business	2	8,70%	5	13,89%	5	15,63%	12	13,19%
16	Change	3	13,04%	5	13,89%	2	6,25%	10	10,99%
17	Methods	3	13,04%	3	8,33%	3	9,38%	9	9,89%
18	Internal organization	0	0,00%	4	11,11%	1	3,13%	5	5,49%
19	Control	1	4,35%	2	5,56%	1	3,13%	4	4,40%
20	Industry/market	0	0,00%	2	5,56%	2	6,25%	4	4,40%
	Total	105	4,57	181	5,03	159	4,97	445	4,89

Descriptive analysis of the nouns, verbs, and adjectives found

The 239 nouns found were grouped into 20 conceptual elements (Appendix 1a), as shown in Table 3. The mean number of nouns per definition increases throughout the three different stages, indicating ever greater complexity in the definitions. It was also observed that this growth in nouns was related to greater specification of the characteristics of strategy. It is significant that the frequency of the term ‘goals’ decreases whereas the term ‘performance’ has sustained growth. This

shows that strategy changed its central focus from obtaining the firm’s goals to improving its performance.

The term ‘environment’ grows and declines in a way consistent with the pendulum model of Hoskisson *et al.* (1999). The term ‘planning’ presents an abrupt drop, consistent with the evolution of the field from strategic planning to strategic management. ‘Competition’ also displays a continued increase, which is consistent with the development of competitive strategy during the 1980s. Finally, the term ‘managers/owners/stakeholders’

Table 4. Frequency distribution of verbs 1962–2008

N°	Conceptual elements	Stages						Overall	
		n = 23		n = 36		n = 32		n = 91	
		Stage 1	%	Stage 2	%	Stage 3	%	No.	%
1	Achieve	13	56,52%	13	36,11%	12	37,50%	38	41,76%
2	Formulate	9	39,13%	9	25,00%	6	18,75%	24	26,37%
3	Relate	2	8,70%	10	27,78%	10	31,25%	22	24,18%
4	Initiate	2	8,70%	6	16,67%	9	28,13%	17	18,68%
5	Decide	6	26,09%	4	11,11%	6	18,75%	16	17,58%
6	Compete	1	4,35%	9	25,00%	5	15,63%	15	16,48%
7	Improve	0	0,00%	6	16,67%	9	28,13%	15	16,48%
8	Analyze	3	13,04%	5	13,89%	6	18,75%	14	15,38%
9	Implement	2	8,70%	8	22,22%	3	9,38%	13	14,29%
10	Manage	2	8,70%	6	16,67%	5	15,63%	13	14,29%
11	Use	5	21,74%	3	8,33%	4	12,50%	12	13,19%
12	Assign	4	17,39%	3	8,33%	4	12,50%	11	12,09%
13	Guide	0	0,00%	6	16,67%	5	15,63%	11	12,09%
14	Execute	3	13,04%	3	8,33%	4	12,50%	10	10,99%
15	Provide	3	13,04%	4	11,11%	3	9,38%	10	10,99%
16	Implicate	2	8,70%	2	5,56%	4	12,50%	8	8,79%
17	Maintain	0	0,00%	2	5,56%	4	12,50%	6	6,59%
18	Permit	0	0,00%	2	5,56%	2	6,25%	4	4,40%
19	Change	0	0,00%	3	8,33%	1	3,13%	4	4,40%
20	Need	0	0,00%	0	0,00%	3	9,38%	3	3,30%
21	Control	0	0,00%	2	5,56%	0	0,00%	2	2,20%
	Total	57	2,48	106	2,94	105	3,28	268	2,95

also increased continuously throughout the three stages.

Although the results shown in Table 3 cannot be compared directly with the essential conceptual elements of strategic management obtained by Nag *et al.* (2007, Table 5), given the different form of measurement used, certain parallels between them can be observed. Thus, nine of the first 11 conceptual elements in our Table 3 are directly related to the seven elements that these authors found. Strategic initiatives are equivalent to our terms ‘actions’ and ‘planning.’ Internal organization would include both ‘process’ and ‘internal organization’ as such. Performance is the equivalent of our ‘goals’ and ‘performance’ and environment is equivalent to our ‘environment’ and ‘industry/market.’ Also, the concepts of ‘managers and owners,’ ‘resources’ and ‘firms’ appear at the top of our ranking. Nevertheless, there are two exceptions: appearing in the first 11 places on our list are ‘decision making’ and ‘dimensions/characteristics’ associated with the strategy concept, the latter being a kind of catch-all category that includes terms such as ‘fit,’ ‘cohesion,’ and ‘situations,’ among others.

The 148 verbs found were grouped into 21 conceptual elements (Appendix 1b), as can be seen in Table 4. As regards the use of verbs, the number of verbs used per definition can be seen to grow from one stage to the next, confirming the idea expressed regarding the nouns that over time the definitions have become broader and more complex. The verb ‘achieve’ is the only one showing prominence in all three stages. The verbs ‘compete’ and ‘relate’ have high values in the second stage. This is consistent with the emergence of strategic management and the importance afforded to the firm-environment relationship. ‘Relate’ has increased continually and places second in importance in Stage 3. ‘Initiate’ has also grown continually, which could be related to the growth of *entrepreneurship* as a subfield of the discipline. ‘Formulate’ decreases in each stage but is still important because of its frequency, whereas ‘analyze’ increases with each stage.

In Stage 1 there is a predominance of the verbs ‘achieve’ and ‘formulate,’ which is consistent with the name ‘strategic planning’ that characterized this moment of the discipline. In the remaining two stages, the verbs ‘achieve’ and ‘relate’ are

Table 5. Frequency distribution of adjectives 1962–2008

N°	Conceptual elements	Stages						Overall	
		n = 23		n = 36		n = 32		n = 91	
		Stage 1	%	Stage 2	%	Stage 3	%	No.	%
1	Importance	12	52,17%	7	19,44%	10	31,25%	29	31,87%
2	Characteristics	5	21,74%	15	41,67%	7	21,88%	27	29,67%
3	Organization	3	13,04%	12	33,33%	6	18,75%	21	23,08%
4	Context	1	4,35%	12	33,33%	2	6,25%	15	16,48%
5	Intention	1	4,35%	6	16,67%	5	15,63%	12	13,19%
6	Adequacy	2	8,70%	5	13,89%	4	12,50%	11	12,09%
7	Time	2	8,70%	6	16,67%	3	9,38%	11	12,09%
8	Quantity	4	17,39%	1	2,78%	4	12,50%	9	9,89%
9	Detail	2	8,70%	3	8,33%	4	12,50%	9	9,89%
10	Relation	2	8,70%	2	5,56%	5	15,63%	9	9,89%
	Total	34	1,48	69	1,92	50	1,56	153	1,68

Table 6. Results of the calculation of the consensus coefficient between each pair of definitions

Level of analysis	Kappa statistic	Strength of consensus	Stages					
			Stage 1		Stage 2		Stage 3	
Global	<0.00–0.40	Low consensus	185	97.36%	188	98.94%	189	99.47%
Detailed	<0.00	Poor	145	76.32%	97	51.05%	95	50.00%
Detailed	0.00–0.20	Slight	32	16.84%	71	37.37%	69	36.32%
Detailed	0.21–0.40	Fair	8	4.21%	20	10.53%	25	13.16%
Global	0.41–1.00	High consensus	5	2.64%	2	1.06%	1	0.53%
Detailed	0.41–0.60	Moderate	4	2.11%	1	0.53%	0	0.00%
Detailed	0.61–0.80	Substantial	1	0.53%	1	0.53%	1	0.53%
Detailed	0.81–1.00	Almost perfect	0	0.00%	0	0.00%	0	0.00%
Total			190	100.00%	190	100.00%	190	100.00%

dominant, characterizing the actions relating to the achievement of both organizational goals and resources, and the relation of the firm to its environment. All of this characterizes strategic management and establishes the emergence of the resource-based approach.

We grouped the 85 adjectives found in the definitions into 10 conceptual elements (Appendix 1c), as shown in Table 5. The evolution of the use of adjectives shows that the ones predominating in the definitions in Stage 1 are those that highlight the importance of strategy and strategic decisions in the nascent field of strategic management. In Stage 2, adjectives referring to the context and the organization were mainly used, showing the predominance of the firm-environment relationship in this stage and the transition from strategic planning to strategic management. Finally, in Stage 3, the dominant adjectives were those related to the

importance of strategy, as well as those referring to the organization and those describing or qualifying characteristics of strategy, which is consistent with the growth in the use of nouns that define the characteristics of strategy in Stages 2 and 3.

Consensus analysis

Below we present the outcome of the evolution of the level of consensus regarding the definition of the strategy concept during the three stages in question using the Kappa index and Landis and Koch (1977) margins (see Table 6) comparing definitions two by two.

From the results shown in Table 6, we can deduce mixed evidence about the evolution of consensus over the three stages analyzed. We thus divided the consensus analysis into two levels: overall and detailed. The overall level refers to

the consensus behavior regarding the definitions located in one of the two possible overall categories: 'low consensus' and 'high consensus.' The detailed level refers to the consensus behavior within each overall category, according to the levels specified by Landis and Koch (1977), and which range from 'poor' to 'almost perfect.'

On the overall level, we can observe a large preponderance of the 'low consensus' category, since it includes the great majority of the comparisons. Although the percentage is relatively stable above 97 percent, it even increases slightly from one stage to another. Thus, 97.36 percent are located in this stratum in the first stage, 98.94 percent in the second stage, and 99.47 percent in the third stage. The opposite occurs in the 'high consensus' category, since the number of pairs of key terms shows a stable decrease from one stage to the other. In the first stage, 2.63 percent were located in this category, in the second stage this decreased to 1.05 percent, and in the third stage to 0.52 percent. This result complements the findings of the study presented by Boyd, Finkelstein, and Gove (2005), who maintain that less mature fields have weaker levels of consensus among researchers.

Despite this general impression of a situation of consensus that remains the same or even decreases slightly, if we observe more closely what is happening in the overall category of 'low consensus,' we can see that the trend is somewhat different. Thus, a clear decrease in the number of pairs of key terms can be observed in the 'poor' stratum: in the first stage it is 76.32 percent, in the second stage it decreases to 51.05 percent, and in the third stage it decreases to 50.00 percent.

The 'slight' stratum shows an irregular, but increasing, trend: whereas in the first stage it is 16.84 percent, in the second stage it rises sharply to 37.37 percent, and it decreases slightly in the third stage to 36.32 percent. The 'fair' stratum shows stable growth from one stage to the next: in the first stage it is 4.21 percent, in the second stage it increases to 10.53 percent, and in the third stage it increases to 13.16 percent. These results show that there is a clear trend toward the 'slight' and 'fair' levels, which represent constant improvement in the level of consensus existing between the key terms used in the definitions, although remaining within the category of 'low consensus.'

A detailed analysis within the 'high consensus' category did not yield relevant results given the scarcity of pairs of key terms included in it. Thus,

in the 'moderate' stratum, the first stage begins with 2.11 percent, which decreases in the second stage to 0.53 percent, and decreases in the third stage to 0.00 percent. The 'substantial' stratum maintains a stable trend with a value of 0.53 in the three stages, and there is no pair of key terms in the 'almost perfect' stratum.

The results obtained as to consensus regarding the strategy definition provide mixed evidence that locates the strategic management discipline as a young research field that at the same time is progressing toward greater consistency, thus extending the conclusions reached in the research of Boyd *et al.* (2005), who found similar results when studying the publishing and outcomes levels.

Although the increase in the values occurs within the 'low consensus' category, we observe a pattern of behavior that is not static, but rather moves in a sustained way from one level toward others of greater consensus. Thus, if this pattern of evolution in the consensus among authors as regards the definition of the strategy concept is maintained, in the coming years we can expect the amount of pairs of key terms located in the 'low consensus' category to decrease, and the amount in the levels of the 'high consensus' category to increase. Nevertheless, this evolution will be slow and will depend upon the consolidation of the key terms prevailing in the current definitions. Once this stage is reached, the discipline could arrive at a more advanced stage of consolidation than it has now, with a denser network of academics and researchers and the existence of clearly identified schools of thought. This will help the discipline progress as an academic research field.

Centrality analysis

The centrality degree shows the evolution of the influence that the key term has in its location in each of the stages studied. The dynamics of the evolution of the key terms in the structure of the definition of the strategy concept throughout the three stages analyzed shows four trends:

- 1) Terms whose degree of centrality grew progressively over the three stages: 'resources,' 'performance,' 'business,' 'industry/market,' 'managers/owners/stakeholders,' and 'control.' The terms in this trend evolved and turned into subfields of research within the field of

strategic management, as a result of the beginning and rapid increase of scientific research regarding them, whereas this did not occur with those showing an irregular trend or those which remained stable, since investigation into them did not increase significantly.

- 2) Terms whose degree of centrality increased in the second stage and remained stable in the third stage: 'firm,' 'actions,' 'characteristics,' 'planning,' 'process,' and 'goals.' These terms served as the foundation for the nascent theoretical corpus of strategic management. As they evolved, they became the platform for the transformation of strategic planning into strategic management.
- 3) Terms that started out with a certain degree of centrality that increased in the second stage and decreased in the third: 'environment,' 'internal organization,' 'time frame,' and 'change.' These terms, which are important, remain in the network structure but they did not evolve toward becoming particular research topics and they place as topics independent from those that maintained stable growth over the three stages.
- 4) Terms that began with a certain degree of centrality that decreased in the second stage and increased in the third stage: 'decision making.'

Figures 1 to 3 show the network structure of the definition of the strategy concept in each stage studied and the position of the key terms in the three zones of the network.

Figure 4 depicts the evolution of the position of the terms making up the definition of the strategy concept over the three stages studied, identifying three different areas according to their degree of centrality in the network. As can be seen, the core of the network remained relatively stable over the three stages, although the structure of this area shows some changes in the position of the terms. The most significant changes observed in the core were as follows: the term 'firm' remains as the central term over the three stages, confirming it as the object of study of strategic management as a field of research. The term 'resources' moves from the semi-periphery to the core in the second stage and from fourth place to second place in the third stage, in which it evolves into a new subfield of research within the discipline. 'Characteristics' moves from the semi-periphery to the core in the second stage and remains stable during the third stage. Finally, the term 'environment' moves from second place in the first two stages to fourth place in the third stage, thus losing a certain amount of importance although it remains at the core of the network.

Most of the changes take place in the semi-periphery, where the amount of terms increased

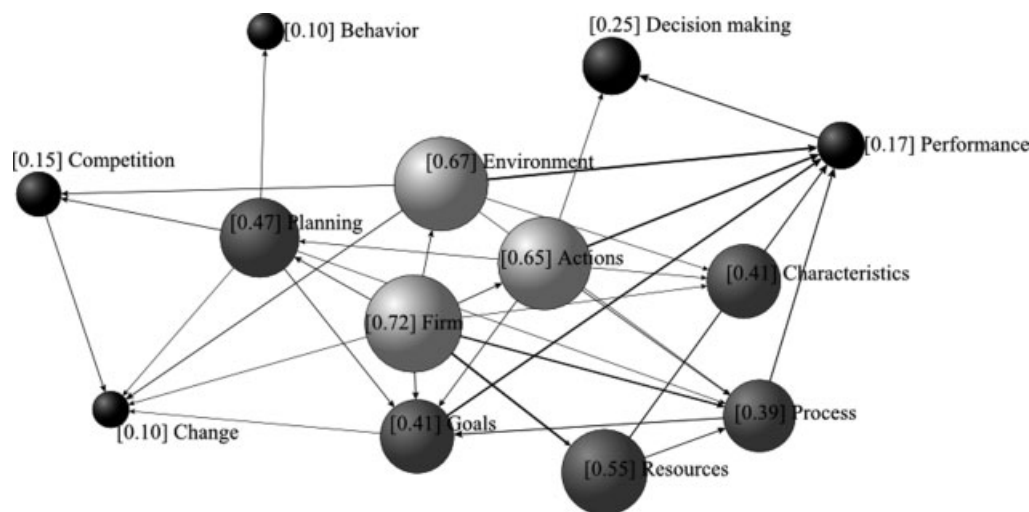


Figure 1. Image of the structure of the definition of the strategy concept during Stage 1. Note: The variation in vertex color is related to the position in the network: light gray = core; dark gray = semi-periphery; black = periphery. The value of each vertex is its centrality degree. Terms with centrality degree equal to zero are omitted. The thickness of lines is related to the inclusion index values of the linked key terms

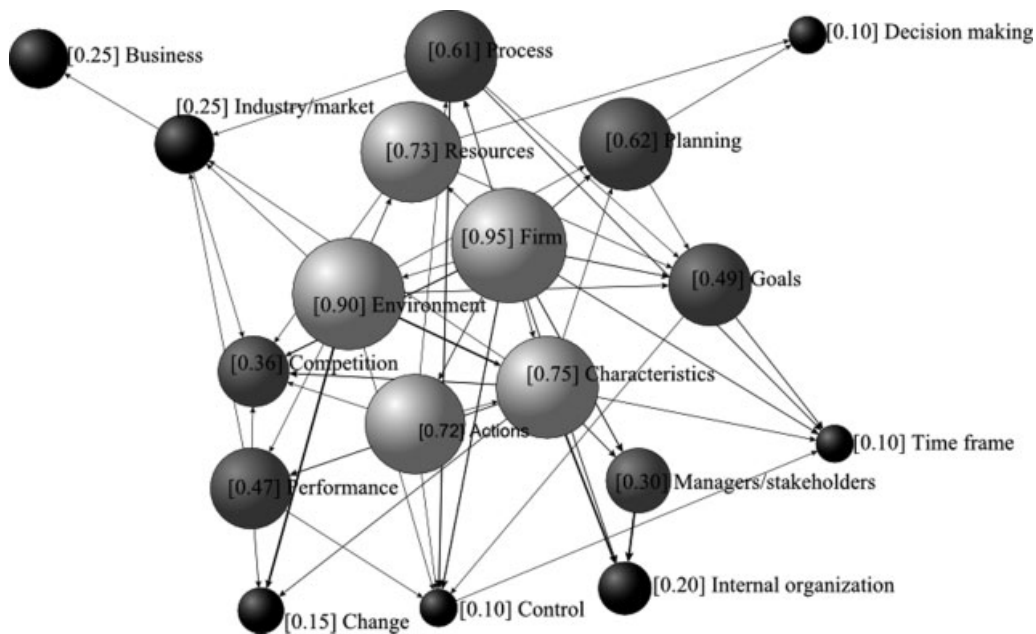


Figure 2. Image of the structure of the definition of the strategy concept during Stage 2. Note: The variation in vertex color is related to the position in the network: light gray = core; dark gray = semi-periphery; black = periphery. The value of each vertex is its centrality degree. Terms with centrality degree equal to zero are omitted. The thickness of lines is related to the inclusion index values of the linked key terms

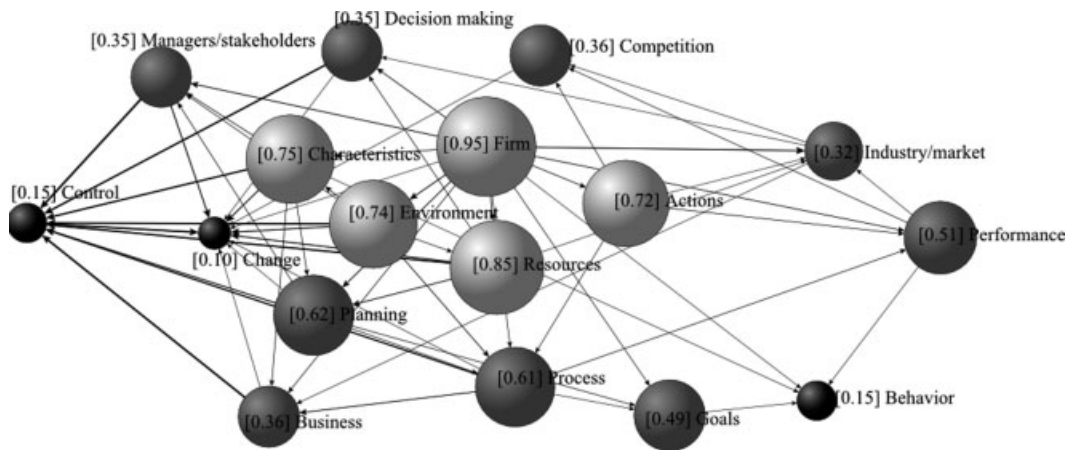


Figure 3. Image of the structure of the definition of the strategy concept during Stage 3. Note: The variation in vertex color is related to the position in the network: light gray = core; dark gray = semi-periphery; black = periphery. The value of each vertex is its centrality degree. Terms with centrality degree equal to zero are omitted. The thickness of lines is related to the inclusion index values of the linked key terms

during the three stages studied. The term making the most important qualitative leap was 'performance,' which in the second stage moved from the periphery to the semi-periphery and during the third stage gained a better position within the same area. This term became a research subfield within the discipline.

Another term showing a significant evolution is 'competition,' which like 'performance' moved from the periphery to the semi-periphery and its position is consolidated in the third stage. It also turned into a subfield of research, especially during the 1980s. The terms 'industry/market,' 'decision making,' 'managers/owners/stakeholders,' and

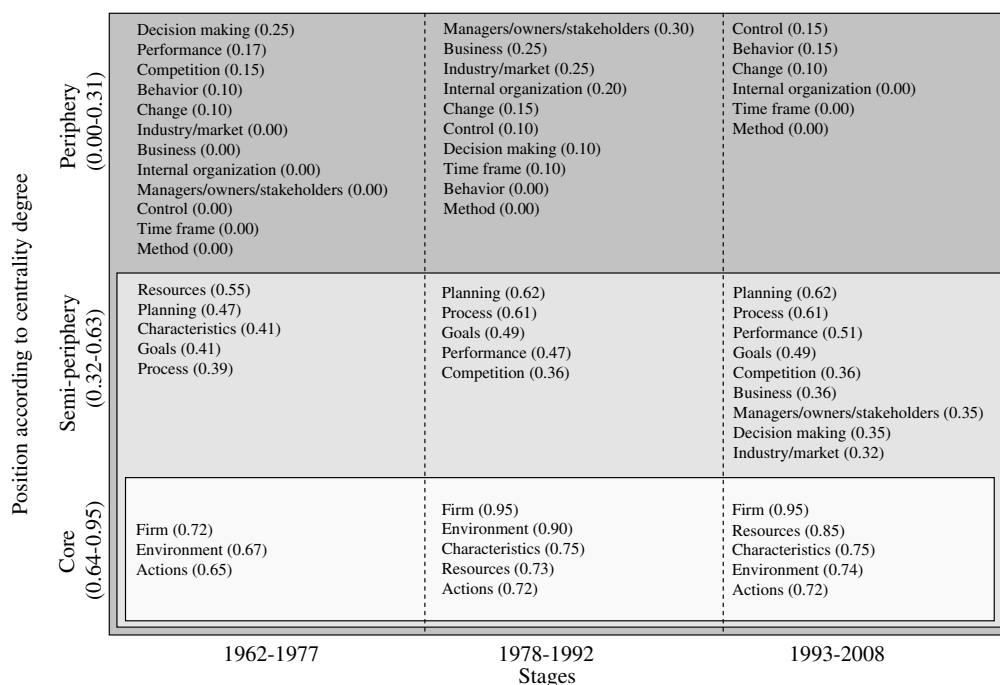


Figure 4. Evolution of the position of the key terms comprising the definition of the strategy concept over the three stages studied.

Note: The variation in vertex color is related to the position in the network: light gray = core; dark gray = semi-periphery; black = periphery. The value of each vertex is its centrality degree. Terms with centrality degree equal to zero are omitted. The thickness of lines is related to the inclusion index values of the linked key terms

‘business’ move from the periphery to the semi-periphery and consolidate their position in this area in the third stage.

The periphery area behaves in the opposite way to the semi-periphery, that is, over the three stages there is a decrease in the number of terms in this area. In the first stage there were 12 terms in this position, in the second, 10, and in the third, six. The main term in this area is ‘control,’ which shows a stable growth in its degree of centrality and although it remains in this area it also became a subfield of research in this discipline. The fact that the number of terms decreases in the periphery and increases in the other two areas shows that during its evolution, the structure of the definition of the strategy concept tends toward closer relations among the terms used and greater internal coherence.

Evolution of the network over the three stages

A two-step process was used to study the evolution of the network of the strategy concept definition obtained for each stage studied. The

first step consisted of determining the indices of density, clusterability, and connectivity of the network (Table 7), and the second step consisted of determining the indices of similarity, dissimilarity, influence, and provenance (Table 8).

Density refers to the number of lines in a network and reflects the internal coherence or strength of the relations among its members. It is calculated by dividing the total present relations by the total possible relations. The general description of the evolution of the network by stages shows that the level of density increased from one stage to the next and there was an abrupt change between the first and second stages. This shows that the

Table 7. Evolution of the network of the definition of the strategy concept regarding the density, clusterability, and connectivity indices

Indices	Stage 1	Stage 2	Stage 3
Density	0.43	0.73	0.76
Clusterability	0.35	0.42	0.43
Connectivity	0.72	1.00	1.00

Table 8. Results of the calculation of the similarity, dissimilarity, influence, and provenance indices

Dissimilarity index			Similarity index		
Area	Stage 1 vs 2	Stage 2 vs 3	Area	Stage 1 vs 2	Stage 2 vs 3
Core	2.25	2.00	Core	0.88	1
Semi-periphery	3.00	0.29	Semi-periphery	0.66	0.71
Periphery	2.20	0.38	Periphery	0.09	0.75
Influence index			Provenance index		
Area	Stage 1 vs 2	Stage 2 vs 3	Area	Stage 1 vs 2	Stage 2 vs 3
Core	3.50	3.00	Core	3.8	0
Semi-periphery	3.00	3.60	Semi-periphery	2.4	3.4
Periphery	2.66	2.2	Periphery	1.91	1.9

strategy concept gained internal coherence over time.

Clusterability reflects the distance or similarity between the members of the network and their capacity to group together. This indicator shows a trend similar to that of density, meaning that the passing of time has facilitated the grouping of the terms into different categories or strata. This element is related to the appearance of research subfields, which came into being and evolved, such as the resource-based view of the firm. The connectivity index increased from the first to the second stage, and after that all the terms in the network appear connected to each other, making the network structure a complete structure, that is, no term appears in isolation.

Calculations of the similarity and dissimilarity indices of the networks during their evolution by stages show that in the three areas—core, semi-periphery, and periphery—the dissimilarity index decreased, whereas the similarity index for each position increased over the three stages, the most significant rise being that of the periphery, which increased from 0.09 to 0.75.

The influence index in the core and semi-periphery increased from one stage to another, that is, the degree of continuity in these positions remained stable, whereas it decreased in the periphery in the third stage. The reason for this is that several key terms evolved to the semi-periphery during this last stage.

The provenance index for the core decreased from the second to the third stage. In the semi-periphery it increased from the second to the third stage, whereas it remained stable in the periphery. This result shows that the terms ‘resources,’ ‘performance,’ ‘industry/market,’ ‘competition,’

‘business,’ ‘managers/owners/stakeholders,’ and ‘control’ became research lines in their own right during the historical evolution of the structure of the definition of the strategy concept.

Another interesting aspect to analyze is whether, when the centrality degree of the key terms in the definition increases from one stage to the next, the centrality degree of these key terms also increases in the articles published in *SMJ*, *AMJ*, *AMR*, and *ASQ*. If so, this would be evidence that the changes in the structure of the definition influence the evolution and development of scholarly output regarding strategy. The journals cited above were chosen because they are among the most influential in the field, have the highest impact factors according to the 2009 JCR data, and have been used as a source in similar studies (Nag *et al.*, 2007; Furrer *et al.*, 2008).

The following steps were taken to conduct this analysis: first, we selected the key terms from each area of the network structure whose degree of centrality increased progressively over the three stages. These were: ‘resources,’ in the core; ‘performance,’ ‘industry/market,’ ‘managers/owners/stakeholders,’ and ‘business’ in the semi-periphery, and ‘control’ in the periphery.

Second, we calculated the centrality degree of each of these terms in the abstracts of articles published in *SMJ*, *AMJ*, *AMR*, and *ASQ* in Stages 2 and 3. These stages were chosen because in our Stage 1, *SMJ* had not yet come into existence and we believe that this journal should be taken into account given its great influence over the creation and development of the scholarly community of strategic management (Ronda-Pupo and Guerras-Martin, 2010). To calculate the centrality degree of the key terms in the articles of

the journals chosen for comparison, we used the Web of Science to download records of all articles published in these journals during Stages 2 and 3. We chose 'savedrecrecs' as the record format and saved the file in 'field tagged (plain text)' format. The co-occurrence matrix of the key terms for each stage of each journal was normalized using the cosine index (Salton and McGill, 1983; Leydesdorff, 2008); subsequently, using Pajek V software, 1.28 we calculated the centrality degree for each key term in the articles published in each of the journals during each stage analyzed.

Third, we compared the results of the evolution of the centrality degree of the terms chosen in the definition of strategy with the evolution of the centrality of such terms in the articles of the four journals chosen (see Table 9).

The results show that the centrality degree of each of the key terms in the articles published in the journals *SMJ*, *AMJ*, *AMR*, and *ASQ* increased from one stage to the next in line with the increase from one stage to the next of centrality degree of each of the key terms in the definition of strategy. This outcome shows that these key terms have contributed to creating a convergence of researchers toward them and have, thus, favored the emergence of new research subfields in the discipline. It also shows that the development of the strategy definition has been closely linked to the evolution of the discipline.

To analyze the relation between the centrality degree and the level of consensus, we calculated the Pearson correlation coefficient between the two variables. The results show that there is a highly

significant correlation between the two variables, with an r value of 0.635 (correlation significant at level 0.01, two-tailed).

FINDINGS

The terms 'firm,' 'environment,' 'actions,' and 'resources' make up the nucleus of the definition of strategy. Nevertheless, we have to take into account the combined importance of the terms 'goals,' and 'performance.' Therefore, it could be affirmed that the essence of the strategy concept is *the dynamics of the firm's relation with its environment for which the necessary actions are taken to achieve its goals and/or to increase performance by means of the rational use of resources*. The stability in the nucleus of the definition during the three stages shows that the lexical configuration of the definitions of the concept incorporated new terms seeking singularity and specificity in the new definitions that have gradually appeared.

The stable increase in the values of the centrality degree of the term 'resources' throughout the three stages studied is significant; it shows how this term came to define a new area of study in the field with the appearance of the resource-based view of the firm. During the first stage, it showed lower centrality values at a time when the work introducing it was influential (Penrose, 1959), and then a strengthening in the second stage (Wernerfelt, 1984) that became consolidated in the third stage after the publication of the relevant article from Barney (1991).

Table 9. Evolution of the key terms that increased their degree of centrality during the stages studied in relation to the four most influential journals

	Definition		<i>SMJ</i>		<i>AMJ</i>		<i>AMR</i>		<i>ASQ</i>	
	Stage 2	Stage 3	Stage 2	Stage 3	Stage 2	Stage 3	Stage 2	Stage 3	Stage 2	Stage 3
Resources	0.73	0.85	0.86	1.00	0.67	1.00	0.00	0.88	0.17	1.00
Performance	0.47	0.51	0.86	1.00	1.00	1.00	0.20	1.00	0.50	1.00
Industry	0.25	0.32	0.86	1.00	0.33	1.00		0.63	0.17	0.86
Market	0.25	0.32	0.86	1.00	0.33	1.00	0.20	0.75	0.17	0.86
Business	0.25	0.36	0.86	1.00	0.17	1.00	0.20	1.00	0.33	1.00
Managers	0.30	0.35	1.00	1.00	0.67	1.00	0.20	1.00	0.33	1.00
Owners	0.30	0.35	0.00	0.75		1.00		0.50		
Stakeholders	0.30	0.35	0.14	0.88		0.86		0.63		0.71
Control	0.10	0.15	0.86	0.88	0.50	0.86	0.00	0.63	0.33	1.00

Note: Blank space indicates that the term does not appear in the journals in that stage.

Table 10. Correlation of terms that showed a stable increase in their degree of centrality over the three stages

Area	Key terms	Area					
		Core	Semi-periphery				Periphery
		Resources	Performance	Industry/ market	Business	Managers/ owners/ stakeholders	Control
Core	Resources		0.810	0.998*	−0.968	1.00**	−0.826
Semi-periphery	Performance			0.846	−0.637	0.813	−0.339
	Industry/market				−0.950	0.998*	−0.789
	Business					−0.967	0.941
	Managers/ owners/ stakeholders						−0.823
Peripehry	Control						

* Level of significance of the correlation at the 0.05 level (2-tailed); ** level of significance of the correlation at the 0.01 level (bilateral).

In the second stage, the centrality degree of the term ‘characteristics’ rose, showing a tendency to define the strategy concept based on a set of characteristics associated with it. Authors were, thus, seeking differentiation from preceding definitions, although this result can also have its origin in copyright-related issues. The increase in the centrality values of this term moved it from the semi-periphery to the core of the network during the second stage and then it remained in this position during the third stage.

The term ‘performance,’ which in the first stage was located in the network periphery, moved to the semi-periphery in the second stage, and its centrality degree increased significantly and in a stable way, making it a central term in the strategic management field and a key element in strategy’s object of study. Something similar occurred with the term ‘competition,’ which in the second stage moved from the periphery to the semi-periphery and increased its centrality degree, which remained stable in the third stage. The term ‘industry/market’ moved from the periphery to the semi-periphery in the third stage and maintained a stable growth in its values of centrality over the three stages. It is also a topic that has become more important as regards the scholarly production generated around it.

The term ‘control,’ though located in the periphery throughout all three stages, showed increasing values of centrality during this same time span. This term became the focal point of research in the field starting with the work done by Kaplan and

Norton (1996) in the 1990s, and the term reached its top centrality value also at this time, in Stage 3 of our study.

Several terms moved like a pendulum, although two different types of behavior are noted. A first group of terms showed centrality values that were high in the first stage, decreased in the second stage, and again rose in the third stage. This is the case of ‘behavior’ and ‘decision making.’ A second group shows the opposite trend, that is, terms that have lower centrality values in the first stage that rise in the second stage and then decrease in the third stage. This is the case of ‘environment,’ ‘internal organization,’ ‘change,’ and ‘time frame.’

The last trend can be seen in the conceptual element ‘method,’ which maintained a centrality value of 0.00 in all three stages. This term’s low level of centrality is related to the low frequency with which it appears in the definitions.

Comparison of the position of the conceptual elements in the network structure during each stage by means of the similarity index shows that throughout its evolutionary dynamics, the strategy concept has gradually progressed through the consolidation of its structure based on the terms located at its core and the incorporation of new terms that have gained centrality in the structure and have become specific topics within the field.

The analysis of the structure of the definition based on the centrality degree of its key terms during the three stages of its evolution shows how

the terms that increased their centrality degree in a stable way turned into research subfields of the discipline. This evolution did not necessarily bear a relationship to the position the term occupied in the network.

The level of consensus and the centrality degree have significantly influenced the evolution of the strategy definition. The centrality degree is significantly related to consensus ($r = 0.635$, significant at an alpha level of 0.01). This may be the result of an implicit convergence or consensus among authors when they follow certain underlying central ideas in the structure of the strategy definition. This element can also favor the forming of invisible schools of thought around the research lines that have gradually emerged based on the evolution of the concept within the strategic management field.

The findings of our study lead us to affirm that consensus is an important element in the development of the strategic management field (Boyd *et al.*, 2005). They also show that the variable representing the centrality degree of the key terms in the definition of a concept can be useful for prognosticating and assessing how a discipline is moving forward and the levels of consensus around it.

The parallel growth in the centrality degree of the key terms in the structure of the strategy definition and in the articles published in the journals *SMJ*, *AMJ*, *AMR*, and *ASQ*, shows the influence of the evolution of the strategy definition on the development of the discipline in general and particularly on the forming of new research subfields within it.

In order to determine the relation among the terms showing a stable increase in their degree of centrality in the three areas of the network structure over the three stages of the study, a Pearson's correlation was conducted (see Table 10).

The term 'resources' (core) has a significant relationship with the terms 'industry/market' ($p < 0.05$) and 'managers/owners/stakeholders' ($p < 0.01$) (both in the semi-periphery). The terms 'industry/market' and 'managers/owners/stakeholders,' located in the semi-periphery, are significantly related to each other ($p < 0.05$). This result shows that terms are related to each other only in the core and the semi-periphery, whereas the term located in the periphery does not show any relation to each other.

CONCLUSIONS

Since the definition of strategy proposed by Alfred Chandler in 1962, the level of consensus among scholars as to that definition has moved slowly from values indicating poor consensus to others showing slight and fair levels of consensus. However, a stable and sustained movement from one stratum to another can be observed, and therefore we can presume that over the next few years the consensus will move to more significant levels if the current trend is maintained. In general, we can affirm that the results obtained are consistent with those of previous studies in the field of strategic management.

While the terms 'firm,' 'environment,' 'actions,' and 'resources' make up the core of the definition of strategy, it is significant to highlight how the focus has shifted over time from achieving the firm's goals to improving its performance. The analysis of the main terms used by authors has allowed us to propose a consensual definition about the essence of the strategy concept that can be stated as *the dynamics of the firm's relation with its environment for which the necessary actions are taken to achieve its goals and/or to increase performance by means of the rational use of resources*.

Despite the low level of consensus among scholars regarding the strategy concept, it has been at the center of the emergence, development, and dissemination of the field of strategic management. The study reveals that the evolution of the internal cohesion of the key terms in the structure of the definition gave rise to the forming of new research subfields, which favored the rapid propagation of the field and an enrichment of its theoretical corpus.

As new research lines or subfields began appearing, there was an increase in scholarly production regarding such subfields in the main journals of reference and in the frequency with which the terms related to these subfields appeared in the most influential articles. The increase in the values of both these variables influenced the increase in the degree of centrality of the key terms related to these research lines in the structure of the definition of the strategy concept.

One contribution of this study is the use of co-word analysis as an alternative for the study of the structure of concepts through definitions, which is new in Scientometric studies. This approach has proved to be effective for this analysis, although

it was necessary to overcome the limitation of the diversity of terms by creating word families based on each lexical classification. It also served as a basis on which to segment time into stages. This procedure has allowed us to verify that the increase in the centrality degree of the key terms in the structure of the definition of the strategy concept has a highly significant relation to the increase in the level of consensus regarding it.

The methodology created for the analysis of the strategy concept can be used to study the evolution of concepts in other disciplines. Our findings open up new topics for research, such as the study of the influence of business schools on the development of the strategy concept, the identification of the presence of invisible schools of thought based on authors who have proposed definitions of the strategy concept, and which of these are most influential. It would also be interesting to complement this work with a more in-depth analysis of the nouns, verbs, and adjectives found, as well as the underlying relations among them. This would allow us to analyze whether the low degree of consensus is related not only to the diversity of the terms used but also to the core idea underlying each definition and whether there is some relation between the terms used and the core idea.

Finally, as we were expecting a higher degree of consensus during the last stages of the evolution, an important question remains unsolved: what are the reasons for that low level of consensus? Two subsequent questions arise. First, is a high level of consensus necessary for the development of the discipline? Second, is the great number of terms used in the definitions the cause for that low consensus? And if so, then what are the reasons for such a diversity of terms?

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REFERENCES

- Ackoff R. 1974. *Redesigning the Future*. Wiley: New York.
- Andrews K. 1971. *The Concept of Corporate Strategy*. R.D. Irwin: Homewood, IL.
- Andrews K. 1980. *The Concept of Corporate Strategy (revised edn)*. R.D. Irwin: Homewood, IL.
- Ansoff IH. 1965. *Corporate Strategy: An Analytic Approach to Business Policy for Growth and Expansion*. McGraw Hill: New York.
- Barney JB. 1991. Firm resources and sustained competitive advantage. *Journal of Management* **17**(1): 99–120.
- Barney JB. 1997. *Gaining and Sustaining Competitive Advantage*. Addison-Wesley: Reading, MA.
- Bartlett CA, Ghoshal S. 1998. *Managing Across Borders: The Transnational Solution* (2nd edn). Harvard Business School Press: Boston, MA.
- Batagelj V, Mrvar A. 1998. Pajek—program for large network analysis. *Connections* **21**(2): 47–57.
- Beaufre A. 1965. *An Introduction to Strategy*. Praeger: New York.
- Beverly MO. 1967. Establishing policy. In *Handbook of Business Administration*, Maynard HB (ed). McGraw Hill: New York: 4-3–4-13.
- Bounds G, Yorks L, Adams M, Ranney G. 1994. *Beyond Total Quality Management: Toward the Emerging Paradigm*. McGraw Hill: New York.
- Bowman EH, Singh H, Thomas H. 2002. The domain of strategic management: history and evolution. In *Handbook of Strategy and Management*, Pettigrew A, Thomas H, Whittington R (eds). Sage: London, UK: 31–51.
- Boyd BK, Finkelstein S, Gove S. 2005. How advanced is the strategy paradigm? The role of particularism and universalism in shaping research outcomes. *Strategic Management Journal* **26**(9): 841–854.
- Bracker J. 1980. The historical development of the strategic management concept. *Academy of Management Review* **5**(2): 219–224.
- Burt RS. 2001. Attachment, decay, and social network. *Journal of Organizational Behavior* **22**(6): 619–643.
- Burt RS. 2007. Secondhand brokerage: evidence on the importance of local structure for managers, bankers, and analysts. *Academy of Management Journal* **50**(1): 119–148.
- Burt RS. 2008. Information and structural holes: comment on Reagans and Zuckerman. *Industrial and Corporate Change* **17**(5): 953–969.
- Callon M, Law J, Rip A. 1986. *Mapping the Dynamics of Science and Technology: Sociology of Science in a Real World*. Macmillan: London, UK.
- Cannella AA Jr, Paetzold RL. 1994. Pfeffer's barriers to the advance of organizational science: a rejoinder. *Academy of Management Review* **19**(2): 331–341.
- Cannon JT. 1968. *Business Strategy and Policy*. Harcourt, Brace & World: New York.
- Carley K. 1993. Coding choices for textual analysis: a comparison of content analysis and map analysis. *Sociological Methodology* **23**: 75–126.

- Carson I. 1972. The big leap in corporate planning. *International Management* **27**(4): 25–28.
- Certo S, Peter JP. 1997. *Dirección Estratégica* (3rd edn). McGraw Hill: Madrid, Spain.
- Chaharbaghi K. 2007. The problematic of strategy: a way of seeing is also a way of not seeing. *Management Decision* **45**(3): 327–339.
- Chandler A. 1962. *Strategy and Structure: Chapters in the History of American Industrial Enterprise*. MIT Press: Cambridge, MA.
- Chen C, Ibekwe-SanJuan F, Hou J. 2010. The structure and dynamics of co-citation clusters: a multiple perspective co-citation analysis. *Journal of the American Society for Information Science and Technology* **61**(7): 1386–1409.
- Chrisman JJ, Hofer CW, Boulton WR. 1988. Toward a system for classifying business strategies. *Academy of Management Review* **13**(3): 413–428.
- Cohen J. 1960. A coefficient of agreement for nominal scales. *Educational and Psychological Measurement* **20**(1): 37–46.
- Collis DJ, Montgomery CA. 1997. *Corporate Strategy. A Resource-Based Approach*. McGraw Hill: Boston, MA.
- Conner KR. 1991. A historical comparison of resource-based theory and five schools of thought within industrial organization economics: do we have a new theory of the firm? *Journal of Management* **17**(1): 121–154.
- Coulter N, Monarch I, Konda S. 1998. Software engineering as seen through its research literature: a study in co-word analysis. *Journal of the American Society for Information Science* **49**(13): 1206–1223.
- David FR. 2003. *Strategic Management: Concepts and Cases* (9th edn). Prentice Hall: Upper Saddle River, NJ.
- Dess G, Miller D. 1993. *Strategic Management*. McGraw-Hill: New York.
- Drucker P. 1954. *The Practice of Management*. Harper and Row: New York.
- Duriau VJ, Reger RK, Pfarrer MD. 2007. A content analysis of the content analysis literature in organization studies: research themes, data sources, and methodological refinements. *Organizational Research Methods* **10**(1): 5–34.
- Eisenhardt KM. 1999. Strategy as strategic decision making. *Sloan Management Review* **40**(3): 65–72.
- Evered R. 1983. So what is strategy? *Long Range Planning* **16**(3): 57–72.
- Fleiss J. 1971. Measuring nominal scale agreement among many raters. *Psychological Bulletin* **76**(5): 378–382.
- Fredrickson JW. 1990. Introduction: the need for perspectives. In *Perspectives on Strategic Management*, Frederickson JW (ed). Harper Business: New York; 1–8.
- Fry JN, Killing JP. 1995. *Strategic Analysis and Action* (3rd edn). Prentice-Hall: Scarborough, Canada.
- Furrer O, Thomas H, Goussevskaia A. 2008. The structure and evolution of the strategic management field: a content analysis of 26 years of strategic management research. *International Journal of Management Reviews* **10**(1): 1–23.
- Galbraith C, Schendel D. 1983. An empirical analysis of strategy types. *Strategic Management Journal* **4**(2): 153–173.
- Ginsberg A. 1988. Measuring and modelling changes in strategy: theoretical foundations and empirical directions. *Strategic Management Journal* **9**(6): 559–575.
- Glueck WF. 1976. *Business Policy, Strategy Formation, and Management Action*. McGraw Hill: New York.
- Gordon RA, Howell JE. 1959. *Higher Education for Business*. Columbia University Press: New York.
- Grant JH, King WR. 1982. *The Logic of Strategic Planning*. Little, Brown: Boston, MA.
- Grant RM. 2008. *Contemporary Strategy Analysis* (6th edn). Blackwell: Oxford, U.K.
- Griffin RW, Singh JB. 1999. *Management (Canadian edn)*. Houghton Mifflin: Toronto, Canada.
- Guerras-Martin LA, Navas-Lopez JE. 2007. *La Dirección Estratégica de la Empresa. Teoría y Aplicaciones* (4th edn). Thomson-Civitas: Madrid, Spain.
- Gulati R. 1998. Alliances and networks. *Strategic Management Journal*, April Special Issue **19**: 293–317.
- Gulati R, Nohria N, Zaheer A. 2000. Introduction to special issue: strategic networks. *Strategic Management Journal*, March Special Issue **21**: 203–215.
- Hambrick DC, Fredrickson JW. 2001. Are you sure you have a strategy? *Academy of Management Executive* **15**(4): 48–59.
- Harrison EF. 1999. *The Managerial Decision-Making Process* (5th edn). Houghton Mifflin: Boston, MA.
- Hatten KJ, Hatten ML. 1988. *Effective Strategic Management: Analysis and Action*. Prentice Hall: Englewood Cliffs, NJ.
- Hax A, Majluf N. 1997. *Estrategias para el Liderazgo Competitivo*. Ediciones Granica: México City, México.
- He Q. 1999. Knowledge discovery through co-word analysis. *Library Trends* **48**(1): 133–159.
- Herrmann P. 2005. Evolution of strategic management: the need for new dominant designs. *International Journal of Management Reviews* **7**(2): 111–130.
- Higgins JM. 1983. *Organizational Policy and Strategic Management: Text and Cases* (2nd edn). Dryden Press: Chicago, IL.
- Hill CW, Jones GR. 2005. *Administración Estratégica. Un Enfoque Integrado* (6th edn). McGraw-Hill: Santa Fé, México.
- Hitt MA, Ireland RD, Hoskisson RE. 2003. *Strategic Management. Competitiveness and Globalization* (5th edn). Thomson-South Western: Mason, OH.
- Hofer CW, Schendel D. 1978. *Strategy Formulation: Analytical Concepts*. West: St. Paul, MN.
- Hoskisson RE, Hitt MA, Wan WP, Yiu D. 1999. Theory and research in strategic management: swings of a pendulum. *Journal of Management* **25**(3): 417–456.
- Jemison DB. 1981. The contributions of administrative behavior to strategic management. *Academy of Management Review* **6**(4): 633–642.
- Johns G. 1996. *Organizational Behavior* (4th edn). Harper Collins: New York.

- Johnson G, Scholes K, Whittington R. 2005. *Exploring Strategy: Text and Cases* (7th edn). Pearson Education Limited: Harlow, UK.
- Kamada T, Kawai S. 1989. An algorithm for drawing general undirected graphs. *Information Processing Letters* **31**(1): 7–15.
- Kaplan RS, Norton DP. 1996. *The Balanced Scorecard: Translating Strategy into Action*, Harvard Business School Press: Boston, MA.
- Katz RL. 1970. *Cases and Concepts in Corporate Strategy*. Prentice-Hall: Englewood Cliffs, NJ.
- Ketchen DJ, Boyd BK, Bergh DD. 2008. Research methodology in strategic management: past accomplishments and future challenges. *Organizational Research Methods* **11**(4): 643–658.
- King WR, Cleland DI. 1978. *Strategic Planning and Policy*. Van Nostrand Reinhold: New York.
- Knights D, Morgan G. 1991. Corporate strategy, organizations, and subjectivity: a critique. *Organization Studies* **12**(2): 251–273.
- Kogut B. 2000. The network as knowledge: generative rules and the emergence of structure. *Strategic Management Journal*, March Special Issue **21**: 405–425.
- Kogut B, MacDuffie JP, Ragin C. 2004. Prototypes and strategy: assigning causal credit using fuzzy sets. *European Management Review* **1**(2): 114–131.
- Koontz H. 1961. The management theory jungle. *Journal of the Academy of Management* **4**(3): 174–188.
- Koontz H. 1980. The management theory jungle revisited. *Academy of Management Review* **5**(2): 175–187.
- Kopcsa A, Schiebel E. 1998. Science and technology mapping: a new iteration model for representing multidimensional relationships. *Journal of the American Society for Information Science* **49**(1): 7–17.
- Kuhn TS. 1996. *The Structure of Scientific Revolutions* (3rd edn). University of Chicago Press: Chicago, IL.
- Landis JR, Koch GG. 1977. The measurement of observer agreement for categorical data. *Biometrics* **33**(1): 159–174.
- Learned E, Christensen R, Andrews K, Guth W. 1969. *Business Policy: Text and Cases*. Irwin: Homewood, IL.
- Leontiadis M. 1982. The confusing words of business policy. *Academy of Management Review* **7**(1): 45–48.
- Levinthal DA, March JG. 1993. The myopia of learning. *Strategic Management Journal*, Winter Special Issue **14**: 95–112.
- Leydesdorff L. 1997. Why words and co-words cannot map the development of the sciences. *Journal of the American Society for Information Science* **48**(5): 418–427.
- Leydesdorff L. 2008. On the normalization and visualization of author co-citation data: Salton's cosine versus the Jaccard index. *Journal of the American Society for Information Science and Technology* **59**(1): 77–85.
- Liddell-Hart BH. 1968. *Strategy*. Praeger: New York.
- Lieberman MB, Montgomery DB. 1988. First-mover advantages. *Strategic Management Journal*, Summer Special Issue **9**: 41–58.
- Markides C. 2004. What is strategy and how do you know if you have one? *Business Strategy Review* **15**(2): 5–12.
- McCarthy DJ, Minichiello RJ, Curran JR. 1975. *Business Policy and Strategy: Concepts and Readings*. Irwin: Homewood, IL.
- McNichols TJ. 1977. *Policy Making and Executive Action* (5th edn). McGraw-Hill: New York.
- Menguzzato M, Renau JJ. 1991. *Dirección Estratégica de la Empresa: Un Enfoque Innovador del Management*. Ariel: Barcelona, Spain.
- Michael DN. 1973. *On Learning to Plan and Planning to Learn*. Jossey-Bass: San Francisco, CA.
- Miles RE, Snow CC. 1978. *Organizational Strategy, Structure, and Process*. McGraw Hill: New York.
- Miller D, Friesen PH. 1984. *Organizations, A Quantum View*. Prentice-Hall: Englewood Cliffs, NJ.
- Mintzberg H. 1979. *The Structuring of Organizations*. Prentice-Hall: Englewood Cliffs, NJ.
- Mintzberg H. 1987. The strategy concept I: five Ps for strategy. *California Management Review* **30**(1): 11–24.
- Mintzberg H, McHugh A. 1985. Strategy formation in an adhocracy. *Administrative Science Quarterly* **30**(2): 160–197.
- Moskow MH. 1978. *Strategic Planning in Business and Government*. Committee for Economic Development: New York.
- Nag R, Hambrick DC, Chen MJ. 2007. What is strategic management, really? Inductive derivation of a consensus definition on the field. *Strategic Management Journal* **28**(9): 935–955.
- Nerur SP, Rasheed AA, Natarajan V. 2008. The intellectual structure of the strategic management field: an author co-citation analysis. *Strategic Management Journal* **29**(3): 319–336.
- Newman WH, Logan JP. 1971. *Strategy, Policy and Central Management*. South-Western: Cincinnati, OH.
- Nooy W, Mrvar A, Batagelj V. 2005. *Exploratory Social Network Analysis with Pajek*. Cambridge University Press: New York.
- Noyons ECM, Van Raan AFJ. 1998. Monitoring scientific developments from a dynamic perspective: self-organized structuring to map neural network research. *Journal of the American Society for Information Science* **49**(1): 68–81.
- Oliver RW. 2001. Real-time strategy: what is strategy, anyway? *Journal of Business Strategy* **22**(6): 7–10.
- Paine FT, Naumes W. 1974. *Strategy and Policy Formation: An Integrative Approach*. Saunders: Philadelphia, PA.
- Pearce JA II, Robinson RB Jr. 1994. *Strategic Management. Formulation, Implementation, and Control* (5th edn). Irwin: Burr Ridge, IL.
- Penrose ET. 1959. *The Theory of the Growth of the Firm*. Wiley: New York.
- Peters HPF, Van Raan AFJ. 1993a. Co-word-based maps of chemical engineering. Part I: representations by direct multidimensional scaling. *Research Policy* **22**(1): 23–45.
- Peters HPF, Van Raan AFJ. 1993b. Co-word-based maps of chemical engineering. Part II: representations by

- combined clustering and multidimensional scaling. *Research Policy* **22**(1): 47–71.
- Pfeffer J. 1993. Barriers to the advance of organizational science: paradigm development as a dependent variable. *Academy of Management Review* **18**(4): 599–620.
- Porter ME. 1983. Industrial organization and the evolution of concepts for strategic planning: the new learning. *Managerial and Decision Economics* **4**(3): 172–180.
- Porter ME. 1996. What is strategy? *Harvard Business Review* **74**(6): 61–78.
- Prahalad CK, Krishnan MS. 2002. The dynamic synchronization of strategy and information technology. *MIT Sloan Management Review* **43**(4): 24–33.
- Quinn JB. 1980. *Strategies for Change*. Irwin: Homewood, IL.
- Ramos-Rodríguez AR, Ruiz-Navarro J. 2004. Changes in the intellectual structure of strategic management research: a bibliometric study of the *Strategic Management Journal*, 1980–2000. *Strategic Management Journal* **25**(10): 981–1004.
- Ronda-Pupo GA, Guerras-Martin LA. 2010. Dynamics of the scientific community network within the strategic management field through the *Strategic Management Journal* 1980–2009: the role of cooperation. *Scientometrics* **85**(3): 821–848.
- Rosinski H. 1977. *The Development of Naval Thought*. Naval War College Press: Newport, RI.
- Rumelt RP. 1980. The evaluation of business strategy. In *Business Policy and Strategic Management* (3rd edn)., Glueck WF (ed). McGraw Hill: New York; 359–367.
- Rumelt RP, Schendel D, Teece D. 1994. *Fundamental Issues in Strategy: A Research Agenda*. Harvard Business School Press: Boston, MA.
- Salton G, McGill MJ. 1983. *Introduction to Modern Information Retrieval*. McGraw-Hill: New York.
- Schendel D, Cool K. 1988. Development of strategic management field: some accomplishments and challenges. In *Strategic Management Frontiers*, Grant JH (ed). JAI Press: Greenwich, CT: 17–31.
- Schendel D, Hatten KJ. 1972. Business policy or strategic management: a broader view for an emerging discipline. Paper presented at the Academy of Management National Meeting, August 1972, Lafayette, IN.
- Schendel D, Hofer CW. 1979. *Strategic Management*. Little, Brown: Boston, MA.
- Shrivastava P. 1986. Is strategic management ideological? *Journal of Management* **12**(3): 363–377.
- Smircich L, Stubbart C. 1985. Strategic management in an enacted world. *Academy of Management Review* **10**(4): 724–736.
- Smith GD, Arnold DR, Bizzell BG. 1988. *Business Strategy and Policy*. Houghton Mifflin: Boston, MA.
- Steiner GA. 1969. *Top Management Planning*. Macmillan: New York.
- Steiner GA, Miner JB. 1977. *Management Policy and Strategy: Text, Readings and Cases*. MacMillan: New York.
- Stoner JA F. 1982. *Management* (2nd edn). Prentice Hall: Englewood Cliffs, NJ.
- Summer C. 1980. *Strategic Behavior in Business and Government*. Little, Brown: Boston, MA.
- Summer C, Bettis RA, Duhaime IH, Grant JH, Hambrick DC, Snow CC, et al. 1990. Doctoral education in the field of business policy and strategy. *Journal of Management* **16**(2): 361–398.
- Teece D. 1990. Contributions and impediments of economic analysis to the study of strategic management. In *Perspectives on Strategic Management*, Frederickson JW (ed). Harper Business: New York; 39–80.
- Thomas H. 1984. Strategic decision analysis: applied decision analysis and its role in the strategic management process. *Strategic Management Journal* **5**(2): 139–156.
- Thompson AA, Strickland AJ. 1987. *Strategic Management: Concepts and Cases* (4th edn). Business Publications: Plano, TX.
- Uyterhoeven HE, Ackerman RW, Rosenblum JW. 1973. *Strategy and Organization: Text and Cases in General Management*. Irwin: Homewood, IL.
- Van Cauwenbergh A, Cool K. 1982. Strategic management in a new framework. *Strategic Management Journal* **3**(3): 245–264.
- Venkatraman N. 1989. Strategic orientation of business enterprises: the construct, dimensionality, and measurement. *Management Science* **35**(8): 942–962.
- Venkatraman N, Prescott JE. 1990. Environment-strategy coalignment: an empirical test of its performance implications. *Strategic Management Journal* **11**(1): 1–23.
- Von Clausewitz K. 1976. *On War (Volume 1)*. Kegan Paul: London, UK.
- Von Neumann J, Morgenstern O. 1947. *Theory of Games and Economic Behavior*. Princeton University Press: Princeton, NJ.
- Wernerfelt B. 1984. A resource-based view of the firm. *Strategic Management Journal* **5**(2): 171–180.
- Whittington R. 1993. *What is Strategy and Does It Matter?* International Thomson Business Press: Boston, MA.
- Whorf BL. 1956. *Language, Thought, and Reality: Selected Writings*. MIT Press: Cambridge, MA.
- Wordsmyth Dictionary*. Taken from Grant's. 2008. *Contemporary Strategy Analysis* (6th edn). Blackwell: Oxford, U.K.: 17.
- Zajac EJ. 1998. Commentary on 'alliances and networks' by R. Gulati. *Strategic Management Journal*, April Special Issue **19**: 319–321.
- Zhao D, Strotmann A. 2008a. Evolution of research activities and intellectual influences in information science 1996–2005: introducing author bibliographic-coupling analysis. *Journal of the American Society for Information Science and Technology* **59**(13): 2070–2086.
- Zhao D, Strotmann A. 2008b. Information science during the first decade of the Web: an enriched author co-citation analysis. *Journal of the American Society for Information Science and Technology* **59**(6): 916–937.

APPENDIX 1a

Noun families

Conceptual elements	Key terms
Actions	Actions, strategy, strategies, strategic alternatives, guidance, courses/sequence of actions, guideline, economic alternatives, trade-offs, way, proposals, measures, initiatives.
Behavior	Shared meanings, behavior, attitudes, power, willingness, conflict, commitment, concern, expectations, attempt, efforts, awareness, engagement.
Business	Product, service, scope, business, range of businesses, attributes (of product/service), multimarket activities.
Change	Change, shifting.
Competition	Competition, competitors, competitive advantages, advantage, rival, lead, move, competitive approaches, competitive position, organizational intelligence, organization's position, posture, war, opponents.
Control	Scorecard, evaluation, tests of consistency, application-portfolio scorecard.
Decision making	Decision making, organizational decisions, strategic choice, choices, series of decisions, alternatives, decision, types of problems, series of actions.
Dimensions/ characteristics of the strategy	Dimensions, components, types, gestalt, system, whole, characteristics, appearance, relationship, interactions, direction, profile, cohesion, essence, match, mismatch, fit, mutual adjustment, mediating force, issues, subjects, reasons, questions, appropriateness, challenge, intensity, consistency, integration, cohesiveness, circumstances, situations, desires, conception.
Environment	Environmental interactions, socioeconomic/sociopolitical environment, changing environment, internal and external environments, external and internal forces, threats, constraints, opportunities, strategic forecast, dynamic, scene, world.
Firm/organization	Firm, company, enterprise, corporation, organization, organizational terms.
Goals	Goals, objectives, purpose, concepts (of the company), mission, ends, principles, attainment, pursuit.
Industry/market	Industry, industry structure, industry dynamics, market place, needs of markets, market introduction, clients.
Internal organization	Multifunctional units, function, infrastructure, basis, activities, operations.
Managers, owners, and stakeholders	General managers, senior management, line managers, administration, managers, stakeholder, govern, entrepreneur, general management, employees, top executives, headquarters, individuals, specialists.
Method	Framework, techniques, method, tool, art, task, work.
Performance	Performance, sustainability, success, failure, profit, result, value, risk, costs, rents, viability, organizational adaptation, outcomes, effect, efficiency, effectiveness.
Planning	Planning, policies, network of policies, programs of action, plans, pattern, blueprint, rules, guides, cues, streams.
Process	Formulation, implementation, process, analysis, selection, sustain, coordination, generation, creation, identification, exploitation, translation, determination, adoption, several steps, calculation, allocation, utilization, disposition, use, acquisition, relation, combination, search, definition, response, quest, management process, configuration.
Resources	Resources, resource audit, corporate resources, resource deployments, capacities, capabilities, means, competences, core competences, skills, potentialities, sourcing choices, material, people, finances, shortcomings.
Time frame	Time, long-term, long-range, timed sequence, forward-looking, present, future, agenda, time horizon.

APPENDIX 1b

Verb families

Conceptual elements	Key terms
To achieve	To achieve, to fulfill, to reach, to attain, to pursue, to accomplish, to ensure, to carry out, to aim, to assure, to get.
To allocate	To allocate, to dispose, to configure, to acquire.
To allow	To allow, to enable, to permit.
To analyze	To analyze, to calculate, to examine, to characterize, to explore, to consider, to detail, to regard, to seek, to understand, to formalize, to appreciate.
To change	To change, to renew, to shift.
To compete	To compete, to position, to meet, to erode, to face, to avoid, to render, to respond, to anticipate, to cope with, to delay.
To control	To control, to evaluate.
To decide	To decide, to choose, to select, to adopt, to take.
To formulate	To define, to determine, to design, to forge, to formulate, to establish, to draft, to shape, to compose, to state.
To guide	To guide, to answer, to focus, to find, to concern, to help, to indicate, to pose, to picture, to translate, to tend.
To implement	To implement, to do, to make, to execute, to run.
To imply	To reflect, to embody, to represent, to entail, to imply, to affect.
To improve	To develop, to improve, to maximize, to minimize, to make up, to gain, to enhance, to leverage, to have, to go.
To initiate	To start, to spark, to arise, to emerge, to create, to initiate, to build, to generate, to set, to settle, to undertake.
To maintain	To maintain, to sustain.
To manage	To manage, to lead, to marshal, to involve, to embrace, to govern, to communicate.
To need	To need, to require, to want.
To perform	To perform, to produce, to occur, to operate, to result, to solve, to be.
To provide	To provide, to serve, to facilitate, to offer, to deliver, to distribute, to give.
To relate	To relate, to match, to adapt, to adjust, to approach, to co-align, to combine, to coordinate, to mismatch, to respect, to unify, to integrate, to deal with.
To use	To use, to utilize, to exploit, to apply.

APPENDIX 1c

Adjective families

Conceptual elements	Key terms
Adequacy	Proper, inappropriate, coherent, cohesive, consistent, favorable.
Characteristics of the strategy	Applicable, balanced, challenged, competitive, complex, different, existential, new, strategic, viable, satisfactory, centered.
Context	Environmental, internal, external, socioeconomic, sociopolitical, outside, uncontrollable, economic.
Detail	Comprehensive, overall, detailed, specific, broad, holistic, variety.
Importance	Important, basic, major, critical, unique, primary, central, core, fundamental, definitive, necessary, required, main, requisite.
Intention	Directional, rational, intended, deliberate, emergent, systematic, oriented, planned, logical, intelligent, desired.
Organization	Organizational, organized, managerial, transfunctional, military, multifunctional.
Quantity	Infinite, multiple, several, individual, massive.
Relation	Interrelated, mutual, relative, integrated, contingent, unified, shared, coordinated.
Time	Current, forward-looking, anticipated, continual, continuous, repetitive, present, future.