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# SYSTEMIC APPROACHES TO UNDERSTAND ENTREPRENEURSHIP AND STRATEGIC MANAGEMENT

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## ABSTRACT

The article aims at demonstrating the contribution potential of a systemic conceptual approach and a systemic methodological approach that are useful for research on entrepreneurship and strategic management, especially in small and medium

enterprises (SMEs). The use of those approaches is illustrated with real application into research seeking to explain how shared vision form and evolve in directors' teams that administrate SMEs, a topic in great need for research. The conceptual approach is based on the concepts of vision and learning and uses soft system

thinking. The methodological approach is qualitative and brings together grounded theory and critical period analysis in combination with systemic perspective as strategy for theorizing from data on processes. The results show the potential of these approaches to conduct more research.

**Keywords:** learning, entrepreneurship, strategic management, small and medium enterprises (SMEs), soft system methodology, and vision

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# INTRODUCTION

Even a work not clearly based on systems theory, like Normann's study (1985), describes strategic management according to a typically systemic process of organizational learning and promotion of development. The author states that strategies develop and occur as part of a process comprising at least three key sub-processes that happen in a simultaneous and interrelated way (negation of the "sequence myth" in strategy), namely formulation of a vision, actions oriented by that vision, and interpretations and thinking guided by the actions and their results. As the process is repeated, the vision becomes clearer, new actions are taken, thinking is fuelled, and so on. For Normann (1985), the image of a spiral that evolves through time is an excellent reflection of the strategic change based on these three key sub-processes stimulated and oriented by vision.

This kind of learning process involving strategic action that changes reality to accomplish an evolving shared vision is central to this article, which aims at demonstrating the contribution potential of a systemic conceptual approach based on soft system thinking and of a systemic methodological approach to the research in entrepreneurship and strategy. This may be especially valuable to research either subject separately, or their intersection, considering the need for research on topics such as learning in owner-managed small firms (Jones, Macpherson and Thorpe 2010), entrepreneurial learning (Wang and Chugh 2014), and strategic entrepreneurship (Hitt *et al.* 2001, 2002, 2011; Ireland *et al.* 2001)<sup>1</sup>.

The practical application of the conceptual and methodological approaches described here took place in a study of small and medium enterprises (SMEs). Those enterprises raised our interest for different reasons: their socioeconomic relevance; the need for research on their activity and reflection system involving strategic management and entrepreneurship; and the fact that the vision, a systemic concept that still needs to be more deeply studied, has appeared to be more relevant and presents itself more intensely and clearly in these organizations. As we can see, vision is in the intersection of entrepreneurship, strategy, learning and soft system thinking. Nevertheless, it is rarely treated following a perspective with all these same intersections, which makes such perspective promising and raises even more our interest for using it.

SMEs are commonly seen as organizations with simple structures and "only one head" (only one director), as suggested by one of the organizational configurations described by Mintzberg (1996). That point of view, coherent with the "one-man show" perspective, prevails in entrepreneurship and SME studies and integrates the tradition of seeing the creation and subsequent direction of organizations as processes conducted by only one person, the owner-manager or entrepreneur. A paradigm was thus established

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1. Hitt *et al.* (2001, 2002, 2011) and Ireland *et al.* (2001) understand strategic entrepreneurship as activities in the organization to simultaneously obtain competitive advantage and explore opportunities. The effort aiming at opportunities is seen as the part of entrepreneurship within the intersection strategy-entrepreneurship. However, one cannot deny that obtaining competitive advantage usually requires the creation of innovation and differentiation, which gives a very relevant function to main aspects of entrepreneurship also within the strategy part.

in entrepreneurship and SME studies, considering vision as something that emanates from one sole owner-manager, neglecting that many organizations, including SMEs, have more than one owner-manager forming a directors' team since their creation. Therefore, to focus on a more restricted research topic with even more need for studies, one could search for answers to the following research question: *how does the vision shared in a directors' team that administrates a SME form and evolve?*

To attain the objective of this article, the following sections present the real application of a combination of two systemic approaches—one, conceptual and the other, methodological—in a research developed to answer this question. The application demonstrates the contribution potential of both approaches and hopefully will inspire solutions for other researches. As the text will show, the study of the learning of directors' team in the entrepreneurial process is important to answer the question. Hence, other potential contributions of this article concern overcoming the need for better understanding collective entrepreneurial learning, as highlighted by Wang and Chugh (2014).

## VISION AND SYSTEMIC LEARNING IN THE DIRECTORS' TEAM OF SMES

Vision is so relevant and determining in SMEs mainly because, in these organizations, strategic process, entrepreneurship, and administration as a whole are not very elaborate regarding the use of administrative techniques, formality, and analytical methods—largely due to the lack of resources such as personnel, financial, and knowledge (Lima *et al.* 2013). This reality imposes the use of vision as the central strategic orientation, considering the condition of the other strategic orientations: mission is basically the reason for the existence and operation of organizations while objectives and goals tend not to be well developed in SMEs because of their management informality and resource poverty. Vision is a resource within directors' reach and is well-adjusted to the need for flexibility imposed by the fragility and uncertainties faced by SMEs. It is also related to the prevalence of synthesis, intuition, and judgment concentrated in the directors' ability in the context of small organizations with little formal, sophisticated, and rational-analytic administration.

In that sense, in Filion's (1988, 2004) studies based on SSM (Checkland 1999), the vision of these businesses' directors and the interpersonal relationships that lead to the development of such vision are seen as foundations and essential promoters of the entrepreneurship they conduct. A number of other studies, mostly in French, also point out the decisive role played by vision in the development of SMEs (for example: Allali 2005; Carrière 1991; Cossette 1996; Filion 1991, 2004; Mintzberg, Ahlstrand, and Lampel 2005; Wyer and Mason 1998). Those studies frequently highlight the preponderance of owner-managers, the lack of resources, and the need for flexibility as determinants of the determining character of vision in these small organizations. However, the authors cited in this paragraph do not approach directors' teams. Hence,

their contribution has to be complemented to explain the formation and evolution of those teams' shared vision in SMEs.

The definition of vision used in this article was proposed by Fillion (1991, 2004) as a mental image of the intended future concerning the space that one intends to fill with his/her products in the market, as well as of the necessary organization to reach that point. Shared vision, in turn, is an image created and shared by different individuals of a future to be accomplished related to those same elements (Lima 2004). According to Fillion (1991, 2004), vision is a persistent, realist, and achievable image of the intended future, based on knowledge developed by the directors on the market, the business opportunity to be exploited, and the market niche aimed at. Furthermore, from the same perspective, vision is also guided by certain clarity enjoyed by directors in contemplating the resources to be allocated and how the business should be structured to achieve its main components.

Working to establish a detailed understanding of entrepreneurship and strategic management in SMEs, we had to create a descriptive model for the development of SMEs' shared vision. To do so, we identified in SSM a promising choice, which led us to an organizational learning model without the limitation of being prescriptive like the approach proposed by Senge (1990). The next sections are helpfully describing the creation of such model.

## Learning and vision as a base for strategic management and entrepreneurship

A theory of entrepreneurship needs a theory of learning because entrepreneurship is a process of learning (Minniti and Bygrave 2001: 7). The same could be said about strategic management (Gladstein and Quinn 1985; Jones, Macpherson and Thorpe 2010; Lima *et al.* 2013; Mintzberg and Waters 1985; Normann 1985). Using SSM (Checkland 1999), it is possible to develop a simple model that describes fundamental aspects and dynamics of entrepreneurship and strategic management of organizations according to a learning process. First, however, it is necessary to identify the components of CATWOE (*Customers, Actors, Transformation Process, Weltanschauung, Owner(s) and Environmental Constraints*). According to Checkland (1999), this is a precondition for creating the model. The CATWOE elements are the core components of a process of change that takes inputs, transforms them and produces new forms of outputs. In CATWOE, the *Customers* are the victims or recipients of the transformation output; the *Actors* are the people who carry out the transformation; the *Transformation Process* is the process that changes inputs into outputs; the images (*Weltanschauung*), also called 'worldviews', are subjective articulations used by individuals to understand reality; the *Owner(s)* is the person who has the power to start or stop the transformation process; and the *Environmental constraints* are factors such as laws and competition that can impact upon the transformation process.

The need for compatibility between the organization and its context respecting constraints is a basic premise in strategic management, and

was highlighted in contingency theory studies by seminal authors such as Lawrence and Lorch (1969) and Thompson (1967), who regard organizations as open systems which continuously try to adapt. Strategic management plays a central role which consists in carrying on decisions and activities that guide the organization's progress within its context. Because that context is dynamic and constantly changing, strategic management determines the organization's ability to innovate and explore the opportunities available (something that greatly determines the entrepreneurial capability of the organization), and change accordingly.

The activities of organizations operating in the same market, as they attempt to obtain the same resources, generate competition because those resources are limited, as assumed by basic economic principles. In other words, organization directors' (the *Owners* of the transformation process) efforts to ensure survival and prosperity are beneficial to their own organization, but may generate losses for others—and vice-versa. This kind of inter-organizational influence, as the organization's activities in its context themselves, can generate responses and counter-responses from competitors and non-competitors, and fuel the ongoing process of change for both the entities (organizations, individuals, etc.) and the context in which they operate (Emery and Trist 1965). Organizations, including SMEs, must deal with these dynamics in order to function and develop.

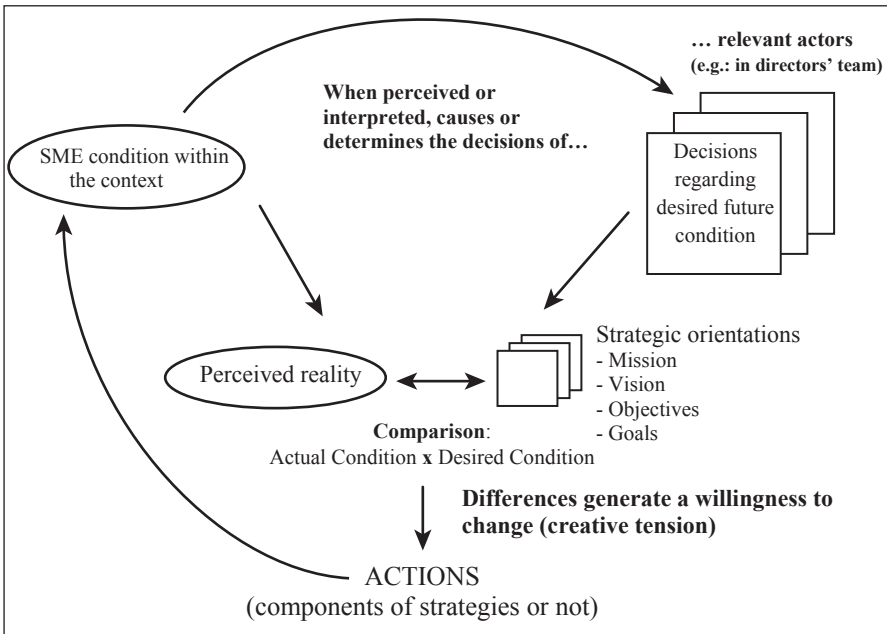
## A systemic model for entrepreneurship and strategy according to CATWOE

The CATWOE components can now be identified from the above descriptions. The transformation process (T) is the core purpose, i.e. the learning and change required to make sure the SME develops in harmony with its context and achieves its strategic orientations over time. The customers (C) are the SME itself, which is the beneficiary of T, and the competitors, which undergo T. The actors (A) and the owner (O) are the owner-managers and directors' team (if any) responsible for applying, controlling, starting and stopping T. There are at least three environmental constraints (E): competition, limited resources and the dynamics of change. To obtain the *Weltanschauung* (W), we would need to examine specific SMEs in more detail. However, following our interest of offering a descriptive model for SMEs in general, we cannot include particular characteristics of one or few SMEs in the model; the omission of W is indeed necessary. In identifying the CATWOE elements, it becomes clear that the organization (a SME in the specific case here), as a system, is both the beneficiary and the object of the transformation (T) generated by the strategic management subsystem. It transforms itself and benefits itself.

The basic notions of SSM (Checkland 1999) are helpful in modeling and describing learning related to strategic management and entrepreneurship. One of these notions is an element representing the decision made by the owner-managers concerning the desired future condition that will guide the transformation process. This is the equivalent of decisions concerning

strategic orientation elements—mission, vision, objectives and goals—strategy and entrepreneurial activities being regarded as means of achieving them.

The use of CATWOE offers the model shown in Figure 1.



**Figure 1. SME system's learning related to entrepreneurship and strategic management**

According to the literature we are using and that sustains Figure 1, the perception of entrepreneurship and strategic management as learning processes is in line with the complexity, instability and uncertainty currently faced by organizations. Gladstein and Quinn (1985) had already understood that: directors must deal with ambiguity and, in the beginning, have only a vague idea of the solutions to a given problem; the notion of cyclic strategic learning allows for improvisation and scarcely structured solutions, both of which may evolve over time to more elaborated solutions and form strategic streams of action eventually leading to emergent strategies. Additionally, according to them, even improvisation and scarcely structured solutions can lead to renewal of the strategic orientations. According to the model, we can add that this renewal makes adjustments in entrepreneurial and strategic actions necessary.

As Figure 1 suggests, relevant actors perceive and consider the SME's situation, including its context and strategic/entrepreneurial condition in relation to that context and the desired future considered. The knowledge developed may generate new or refocus existing decisions, with impacts on the strategic orientations—and also on strategic and entrepreneurial actions. In this cyclic and iterative learning process, strategic decisions, decision elements, new elements of image (*Weltanschauung*) regarding perceived reality, practice and/or context changes may change the strategic orientations, or cause

them to be discarded in favor of others. The same applies to strategies. In the specific case of shared vision in the directors' team, for example, our empirical data, as described in the following sections, show that those aspects make it evolve over time. It may change, for example, from an embryonic vision to a fully-developed vision, or an existing vision may be replaced by a new one, depending on the learning, thinking and activities of the directors who support and shape it under the influence of their interpersonal relationships—being the influence between (among) directors in the directors' team (if any) a very important one, particularly in SMEs, where the directors' preponderance is greater than in larger companies.

The preponderance of directors, who generally are owner-managers in SMEs, and their relationships are core aspects to understand how the vision shared in a directors' team forms and evolves depending mainly of these actors.

Associated to the methodological approach described in the following section, the systemic conceptual approach presented here helped to explain the development of the shared vision of directors' teams in SMEs in our research with four Brazilian and two Canadian enterprises.

## RESEARCH METHODS COMPATIBLE WITH A SYSTEMIC APPROACH

As Yin (2009) explained, case studies are appropriate when the research question involves "how?" or "why?" to describe or explain a phenomenon respecting contextuality and specific characteristics of each case. Precisely, our research values contextuality and is descriptive and explanatory of the phenomena discussed, using case study methodology. In general, case studies can be understood as studies of at least one case, which is a limited system to be understood—a definition that does not exclude any technique of data collection (Langley and Royer 2006). One of its strengths is the production of a detailed historical description of a topic to be used as basis for data analysis (Given 2008), so it is possible to organize data in critical periods of a chronology of events related to the studied phenomenon. This helps to better understand and analyze data regarding organizations' processes (Langley 1999) and advances data analysis toward results from each period separately and comparatively. In this kind of temporal decomposition, each period can be taken as one analysis unit to test, reinforce, and broaden knowledge (Langley 1999).

The rarity of papers available on directors' teams of SMEs and on the vision shared by co-directors (members of a directors' team) in this type of organization is an important barrier to the use of hypothetical-deductive methods in studies on the topic. Hypothetical-deductive studies presuppose the availability of a consistent body of previous research on the topic to formulate consistent and well-supported hypotheses to test.

The methods used followed mainly Eisenhardt's proposals (1989) to the construction of theory on the studied phenomenon based on replicative case

research according to concepts of the grounded theory (Glaser and Strauss 1967; Strauss 1987). The proposals are inductive, but suggest starting field research with some possible constructs to understand the studied phenomenon. Eisenhardt (1989) recommends avoiding theory before data collection and analysis. In that respect, in our research, we adopted an intermediary approach between Eisenhardt's (1989) and Yin's (2009) ideas. Yin (2009) emphasizes the development of theoretical framework as preparation before data collection, following a more deductive approach. The advantage of the intermediary approach is that it brings, from the beginning, more precision on the direction to be taken in the research in comparison with research without the initial theoretical framework. Using theory before data collection resembles the situation of a business in which initial efforts are made to determine which useful resources (theoretical contribution, in a study) are available and how to use them in achieving the intended future (answering the research question taking advantage of available contributions). In business, those efforts help in developing the vision more clearly and feasibly, at the same time that some progress is already made while gathering resources to achieve it.

According to the intermediary approach between Eisenhardt's (1989) and Yin's (2009) recommendations, we developed a preliminary theoretical framework and some possibly *a priori* constructs. The theoretical framework was improved as data collection and analysis advanced until their final shape, presented in a thesis and publications. Some possibly *a priori* constructs were dismissed due to inconsistency with the reality of the studied phenomenon. Other constructs were further developed throughout the research and gradually incorporated to the set of results.

Eisenhardt's non-linear model of research in eight steps was used: getting started (definition of research question, possibly *a priori* constructs, neither theory nor hypotheses—recommendation not used), selecting cases (specified population, theoretical—and not random—sampling), crafting instruments and protocols (multiple data collection methods, qualitative and quantitative data combined, multiple investigators), entering the field (overlap data collection and data analysis, including field notes, flexible and opportunistic data collection methods), analyzing data (within-case analysis, cross-case pattern search using divergent techniques), shaping hypotheses (iterative tabulation of evidence for each construct, replication—not sampling logic—, searching evidence for “why” behind relationships), enfolding literature (comparison with conflicting literature, comparison with similar literature), reaching closure (theoretical saturation when possible).

Also from the intermediary approach between both authors, selection criteria were defined to compose the set of cases of SME, and a semi-structured interview plan was created for data collection. The interview script was developed so that flexibility could be protected, allowing for adjustments with the inclusion and removal of topics as certain data stood out during data collection for each case. We did not go as far as establishing in detail, before data collection, a set of pre-defined codes for data analysis as Yin (2009) recommends. One reason for that decision was the lack of literature with knowledge about the studied processes.

With the multiple case study method, we sought invariants and variants comparing the different SME cases studied, developing research answers not limited to just one case. Consequently, results tended to have higher explanatory potential.

## Theoretical sampling

In a qualitative study based on grounded theory, sampling procedures and data collection follow an emerging dynamics called theoretical sampling (Eisenhardt 1989; Glaser and Strauss 1967; Strauss and Corbin 1998). Aiming at inductive theorizing, the researcher must pay attention to the explanatory potential of concepts and to the way their dimension and relationship to other concepts vary (Eisenhardt 1989; Glaser and Strauss 1967; Strauss and Corbin 1998).

Therefore, theoretical sampling retains each case according to the contribution it could make to the study in reaching theoretical saturation, consistency, and high explanatory potential. Theoretical saturation is the fulfillment, with content obtained from data, of the conceptual categories developed throughout the research which are considered important and sufficient to answer the research question. In that sense, cases that do not contribute or that contribute too little should be dismissed in favor of those that contribute significantly.

Strauss and Corbin (1998, p. 201) define theoretical sampling as follows:

*Data gathering driven by concepts derived from the evolving theory and based on the concept of “making comparisons”, whose purpose is to go to places, people, or events that will maximize opportunities to discover variations among concepts and to densify categories in terms of their properties and dimensions.*

Another precaution taken in sampling was to use some selection criteria related to the cases and to the informants of each case, bearing in mind the research questions and other specificities of the research. For example, considering that the research concerned SMEs, we made sure that all businesses retained in the sample properly fit the adopted definition of SME. We also ensured that all SMEs were actually managed by a directors' team. Having access to people (directors and others) that actually participated in the evolution of the studied phenomenon was also essential, not only in choosing SMEs to be studied, but also in choosing people who could provide data. Other sampling criteria were: variety of geographical location to understand the phenomenon in different contexts and lifetime of the organizations to make sure that they had enough history for relevant phenomena.

Table 1 describes the sample.

Group	SME (condition in life cycle) Creation / location	Directors' team # members / type	Employees In the year of the interviews	Industry
TECHNOLOGICAL	<b>WK Sistemas</b> (Successful SME – stable maturity) 1984 / South of Brazil	<b>3</b> (mixed: familiar- non-familiar)	<b>65</b>	IT (software in account- ing and management). www.wk.com.br
	<b>Microvet</b> (Successful SME – dynamic growth) 1989 / Southeast of Brazil	<b>2</b> (family: wife-husband)	<b>15</b>	Biotechnology – production of autoge- nous swine vaccines / veterinary and micro- biological services. www.microvet.com.br
	<b>Theratechnologies</b> (Successful SME – maturity, growth) 1993 / Montreal – Canada	<b>3</b> (non-familiar, with board)	<b>60</b>	Pharmaceutical biotech- nology – research and production of medicines for human beings. www.theratech.com
CLASSICAL SMEs	<b>Alpha</b> (fictitious name) (Successful SME – stable maturity) 1989 / South of Brazil	<b>2</b> (non-familiar)	<b>400</b>	Production of clothes for men and women in <i>private label</i> systems (prêt-à-porter).
	<b>Paulienne</b> (Successful SME – dynamic growth) 1986 / Southeast of Brazil	<b>4</b> (familiar: parents and children)	<b>98</b>	Production of pajamas and other clothes to sleep (prêt-à-porter). www.paulienne.com.br
	<b>Poitras Design</b> (affected by persistent and grave financial problems, this SME was diluted after its assimilation as a division of a bigger SME in the end of 1990. The enterprise resulting from the fusion bankrupted in 1995). 1987 / Montreal – Canada	<b>3</b> in 1989 (non-familiar, with board in 1990)	<b>10</b> in 1989-1990 (interviews in 2000 and 2001, and a deep documentation analysis)	Design and production of high quality clothes (subcontracting producers) for women and men. About the work of the main director and designer: www.jeanclaudepoitras.com

Table 1. The SMEs studied

## Using critical period analysis

Critical period analysis is similar to temporal bracketing, one of the theorizing strategies described by Langley (1999), because it takes chronology of relevant events as a basis to organize and analyze data. The use of critical periods was particularly favorable in identifying invariants in relevant data in within-case analysis, and especially in cross-case analysis. It made possible

to replicate data analyses in different timeframes for each SME case, separately. Afterwards, cross-case analysis enabled replication of analysis procedures to identify invariants among the cases. As a result, a set of explanations was obtained, including texts, theoretical models, graphs, and charts that were valid for all cases.

Combining grounded theory and critical period analysis brings together the high accurateness and attention to details from grounded theory, which prioritizes theorizing closely related to details of empirical data, and the possibility of replication in different timeframes for each case. Sequential replications are favorable to a consistent and valid theorization to explain the phenomenon in different circumstances and times. Furthermore, they help to overcome the difficulty pointed out by Glaser and Strauss (1967) in transferring emergent results from specific and detailed circumstances to a more general form of valid theorizing for the different situations approached in the research, as Langley (1999) also said.

## A systemic research approach

The methods presented in this article evolved mostly systematically in their application details, which also conformed to a systemic approach. According to Ackoff (1981), such approach subverts the Cartesian order, which starts with the analysis and ends with synthesis. The systemic approach starts with synthesis and then moves on to analysis. It is structured on three activities: identifying a whole (system), a part of which one intends to explain<sup>2</sup>; explaining the behavior or the properties of the whole<sup>3</sup>; explaining the behavior or the properties of the aimed part according to its role in the whole<sup>4</sup>.

The use of the systemic approach in our research highlighted the necessity of starting the research with a synthesis of relevant contributions from the literature and with the development of possible *a priori* constructs to set an initial theoretical framework. After that, it applied procedures to deal with details to obtain data, analyze them, and generate results. Finally, when closing the research, it promoted a return to the synthesis considering the results under the light of the similar and conflicting literature available.

Proceeding like that reinforces the attention usually paid to literature review as the starting point of a study. However, it is not very common to invest much energy into comparing results to the similar and conflicting literature after a detailed data analysis, in spite of Eisenhardt's recommendations (1989) to do so. It is equally uncommon to reconsider the behavior and properties of the aspects raised in the research taking into consideration partial and/or final results produced. Such reconsideration, as well as the comparison

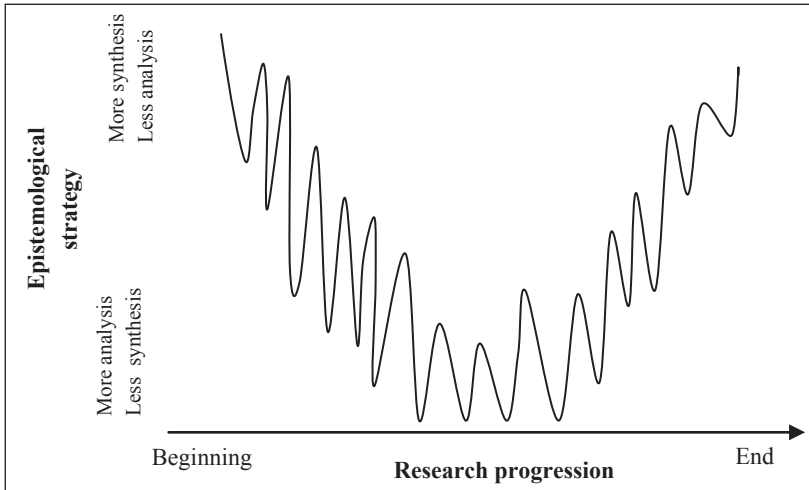
2. In our study, the combination of entrepreneurship and strategic management of each SME is taken as a system, and the part to be explained is the development of the shared vision of the SME's directors' team.

3. This task, in which synthesis prevails, was conducted during the literature review and the development of the theoretical framework of our study.

4. This phase, in which analysis becomes prevalent, was carried out in our study mainly during the discussion of each research result in relation to the whole (the combination of entrepreneurship and strategic management of the SMEs).

with the literature, characterizes an additional phase of synthesis at the end of the research—which goes beyond Ackoff’s description (1981) of the systemic approach—as shown by Figure 2 describing the research progression as an “almost as a U” process (according to the curve shape resembling the letter U).

The progression “almost as a U” favors the conformity to two essential aspects of the systemic approach: contextualization and consideration of the globality of the studied phenomenon. Both aspects happened at the beginning and at the end of the research.



**Figure 2. Progression “almost as a U” of the research**

Figure 2 represents an example of variations between the synthesis and analysis poles that can be found in the use of the epistemological strategies described in this article. Those strategies are useful not only to explain what is researched, but also to go further in producing knowledge. Fluctuations between the synthesis and analysis poles (causing the waves of the line in the figure) depend on different aspects that can happen intermittently forward and backward in the research process: definition of research bases (objectives and ontological, epistemological, methodological and theoretical choices), literature review, data collection, data analysis, detailed investigations on the conceptual categories of data analysis (with or without the help of data analysis software), development of different models useful to answer the research question (models with data synthesis, partial results, and final results), and presentation of research results with comparisons to the literature. Another aspect that also causes fluctuations is the typical trend in research to review and rethink the study as a whole in different moments taking into consideration intriguing and promising elements identified.

## Data collection

Data collection procedures consisted mostly of interviews with key informants of the sample SMEs recorded in cassette tapes or MP3 format. People accessed were those whose experience and initiative influenced the most the development of the co-directors' shared vision. According to our theoretical framework, this development results from organizational learning, which depends mostly on the co-directors' role—justifying their choice as key informants. Their interviews were complemented with interviews with employees and with documents and publications, when available.

## Data treatment and analysis

The audio records of the interviews were prepared to be analyzed with the aid of the Atlas-ti software, specialized in qualitative data analysis with audio, image and text files (Muhr 1991, 1995; [www.atlasti.com](http://www.atlasti.com)). Interviews were transcribed and uploaded to the software to be dissected using data codification and categorization according to the grounded theory (Glaser and Strauss 1967; Strauss 1987). Some secondary interviews went through the process without transcription, directly in .mp3 files dissected with the software.

Data that were not obtained from interviews (those from newspaper and magazine articles, pictures, information available on the Internet, and internal reports, newspapers or documents) were not digitalized for analysis with Atlas-ti. They were mainly used to validate interviews through triangulation. The most relevant data identified were organized and presented in the research report as texts, charts, and schemes to describe preliminary and, progressively, final results of the six cases. Case descriptions show the evolution of the businesses and shared visions through time, highlighting critical periods and context elements related to the development of the co-directors' shared vision for each SME. Those steps were taken not only to obtain the research results, but also to present clearly to the reader the analysis process and the derivation of results from them.

Using procedures for within- and cross-case analysis, the cases were organized in two groups: "technology SMEs" and "classic SMEs". The distinction made it possible for one group to be used as reference for comparative analysis of the other, which is especially important for cross-case data analysis. Comparative analysis is the main intellectual resource for researchers who use qualitative research methods based on grounded theory (Tesch 1990). The organization of cases in two groups also made it possible for the analysis to respect specificities of processes of both groups.

Both the within- and the cross-case data analyses required the development of a variety of analytical solutions ranging from the definition of codes (that arose partly from the theoretical framework, by deduction, and partly from the data themselves, by induction) to the creation of models representing intermediary and final results. Initially, with those solutions, we confirmed an obvious idea: shared NEV (new elements of vision) promote the formation and development of a shared vision by the SME's co-directors. Then, decreasingly

obvious intermediary results took shape, such as the notion that shared NEV are subjectively generated by co-directors under the effect of the influence factors (IF) shown in Table 2 and Figure 3 during the interaction of those people among themselves, with people from their network, and with their respective and shared realities.

Shared IF and NEV were initially treated as codes for analysis, but they stood out as the most important of the codes to answer the research question. Ensuring the consistency of the analysis procedures, the codes were defined as exemplified in Table 2. In the report that described the research, the presentation of the code list with definitions structured and facilitated the understanding of research details for us and readers of the final research report.

<b>INFLUENCE FACTORS (IF)</b>	<b>DEFINITIONS</b>
<b>Strategic conversation</b>	Expression of the relationship between two or more people, in which one can communicate his/ her ideas, opinions, vision, and images to the other concerning the strategic issues of a specific organization.
<b>Manner</b>	One or more person's way of thinking and acting that reflects his/her personal characteristics, especially interests, preferences, profile, and personality.
<b>Individual images</b>	Aspects of someone's subjectivity that determine the way he/she perceives and understands reality. Images include the person's humor, attitude and intentions underlying the perception process. These elements may shape his/her way of thinking as well as his/her initiatives and decision-making.

**Table 2. Some of the most important codes (renamed "influence factors"—IF)**

The most important set of codes was identified and used in the within-case analysis of each critical period analyzed. Figure 3 exemplifies different critical periods related to the most relevant events in the formation and development of the co-directors' shared vision. In the figure, one can identify the most important IF of each critical period. The model is a simplification of the original one used for case analysis of the SME Microvet, a Brazilian biotechnology business which produces autogenous swine vaccines.

The big arrow in Figure 3 represents the formation and development of the co-directors' shared vision along the time. Inside the arrow, each small chart represents one critical event related to one of the different types of change in the shared vision that helped explain its formation and development: conception, broadening, development, redirection, instability, reduction, and blockage. The big charts under the arrow describe context elements and characteristics of important events, changes in the shared vision, and the most important IFs related to each critical period.

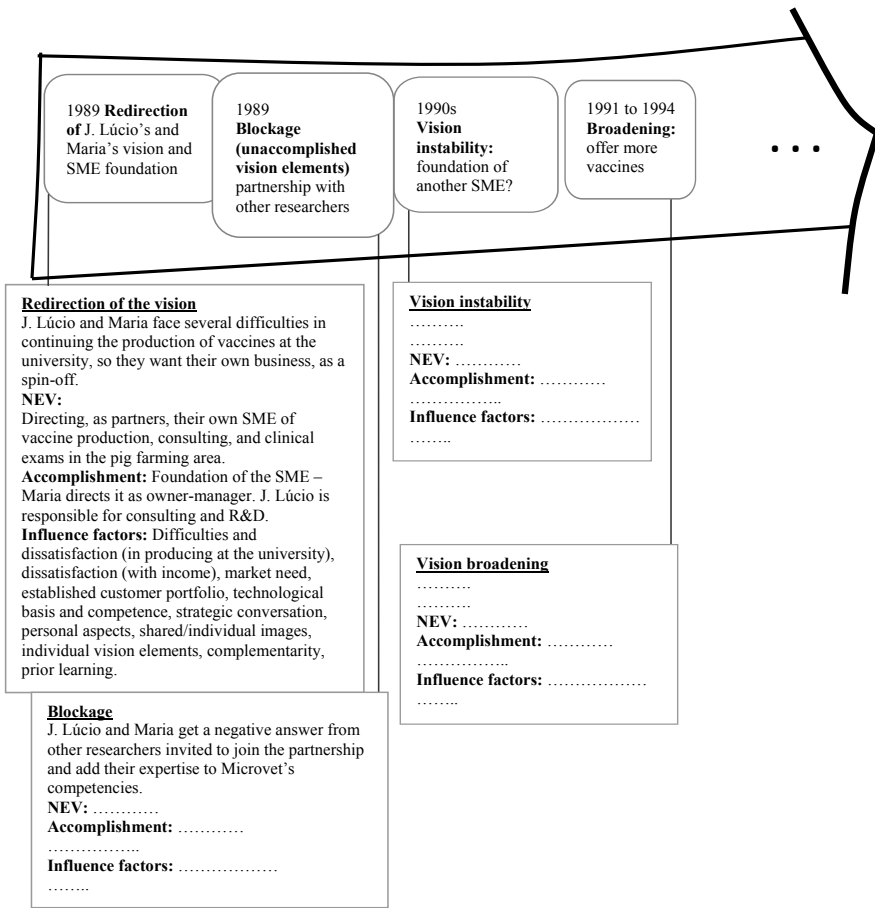


Figure 3. Example of critical period analysis scheme (Case Microvet—www.microvet.com.br)

<b>TYPES OF VISION CHANGE</b>
<b>Conception:</b> creation of a new vision or elements of a new vision.
<b>Broadening:</b> inclusion of new elements of vision (NEV) to an already-existing vision, so that its dimension is enlarged. Example: adding the intention to sell new products into the vision related to the range of products.
<b>Development:</b> inclusion of new elements of vision (NEV) to a vision, improving its accomplishment. Example: integrating the intention to perfect quality control to the vision related to production.
<b>Redirection:</b> total or partial dismissal of an existing vision and adoption of a new vision or new elements of vision (NEV).
<b>Instability:</b> shake in vision due to events that made directors uncertain about the future predicted for the business.
<b>Reduction:</b> dismissal of certain vision elements, limiting the directors' vision scope.
<b>Blockage:</b> failure in accomplishing some dimensions or the entirety of a vision.

Table 3. Typology of vision changes

The detailed analysis of mutual relationships between the main IF and the shared NEV generated by co-directors indicated three categories of IF: essential (IF-1), fundamental (IF-2), and auxiliary (IF-3). IF-1 are the identified IF that interfere with all types of shared vision changes studied in each case and that appear in all SME cases in the sample. They are the IF whose action most fully explains the studied phenomenon and include: strategic conversation, manner, individual images, shared images, and individual vision elements. IF-2 are the IF that have a regular relationship with a specific set of shared vision change types, but not with all types. This relationship is repeated for the same set in the different SME cases. They are: opportunity recognition, competences, and market needs. IF-3 are the IF without regular relationship with specific types of shared vision changes. They are related at times with some types of shared vision changes, and at other times with other types, but they appear repeatedly in the different SME cases studied. They are: previous learning, dissatisfaction, difficulties, previous experiences, and complementarity of co-directors.

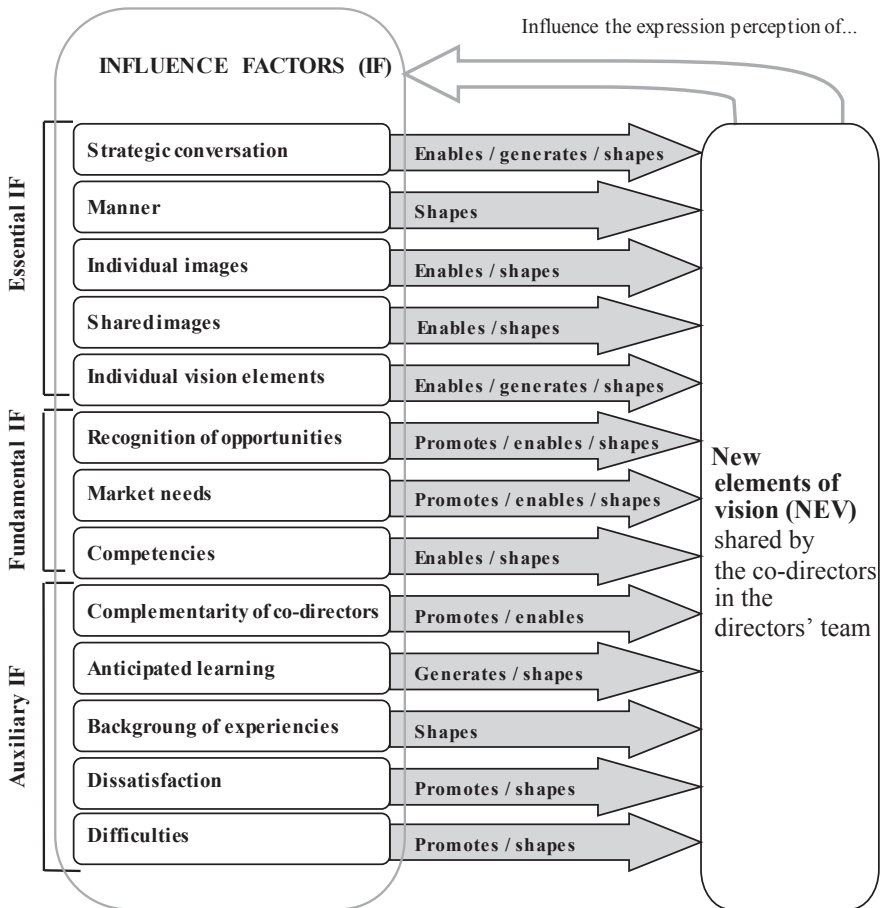


Figure 4. Creation of shared NEV in all SMEs of the sample

Finally, the comparison of different schemes representing the interactions between IF and shared NEV for each case resulted in a sole scheme (Figure 4), explaining the creation of shared NEV for all SME cases in the sample.

In the data analysis process, the types of relationship between codes were also defined. Such definition was necessary to ensure, during the entire data analysis, a uniform understanding of the meaning of each type of relationship. Both the definition and its consistent use are essential in qualitative data analysis to ensure validity and accuracy in attributing codes to data and in considering their relationship in models that support theorization from data, as in figure 4.

The relationships of the IF with shared NEV in Figure 4 are succinctly outlined and defined in Table 4.

RELATIONSHIP	DEFINITIONS
Promotion	The IF is a stimulus for NEV (and may start them); however, the absence of this IF does not necessarily prevent the existence or expression of NEV.
Generation	The IF actively contributes for the formation of NEV.
Shaping	The IF influences NEV giving shape to its components. NEV in this relationship vary as the shape and/or content of the IF varies.
Enabling	The existence of the IF is a condition for the existence of NEV. Without the IF, the NEV in question tend not to exist or to express.
Hindrance	The IF makes the creation and/or accomplishment of NEV difficult or even impossible, implying that the absence of the IF would facilitate the formation and/or accomplishment of the NEV.

Table 4. Definition of the relationships of IF with shared NEV

## Results

The main result was the identification and characterization of the strategic conversation process. It is responsible firstly for the creation of the shared vision in the directors' team, and secondly for its existence and renewal through time in the SMEs, which generally are very informal organizations, even functioning without written support for administrative decisions and intentions. One of the directors interviewed offers an emblematic explanation:

*We are capable of maintaining the intention of realizing our projects through time, but without any written support. As we don't have anything regarding formality in our company, the intention lives in our mind. We talk about our projects during the whole year, so we maintain them vivid in our minds. (Mário Lúcio—co-director in the SME Paulienne).*

In strategic conversation, the co-directors respect the activity and the competence domain of one another, and each individual participates in strategic conversation making contributions mainly connected to the intersection of both domains. This way, each co-director participates mainly in the part of his/her competence domain that best supports the activities he/she does in his/her directive functions. Another statement is illustrative: 'We meet very often to dialogue. We have to make the most important decisions together because we are partners. This is the case for investments. If they are related to production, it's me who knows better what is necessary. It's the same when the theme is related to his activity domain.' (One of the two co-directors of the SME Alpha).

According to the results, the coherence between the co-directors' shared vision and reality depends very much on the complementarity among co-directors and, more precisely, on the complementarity of their activity and competence domains explored in strategic conversations. As the unsuccessful Poitra Design case revealed, lack of knowledge and competence in a necessary domain may originate unrealistic contents in strategic conversations, which contributes to the formation of a deficient shared vision and the taking of entropic actions.

In the research report, findings were illustrated with different systemic graphic models representing the relevant processes and emphasizing their dynamic, relational, and evolving nature. Under the light of those results, strategic conversation constitutes a central process for entrepreneurship, strategic management, and organizational learning, as it is a basis for shared vision development.

## CONCLUSIONS

Systemic conceptual approaches and systemic methodological approaches are not very common in academic literature in entrepreneurship and strategy, especially combined. This uncommon combination generated important contributions to the study presented here. It proved to be a synthetic, dynamic, and relational way to understand reality, appropriate to consider the relational and evolving nature of phenomena that are continuously influenced by multiple and changing constructors and contextual factors. The combination integrates other characteristics from the open and soft system approaches, making it possible to understand how entrepreneurship and strategic management make SMEs co-evolve guided by their purposes and shaped by their contexts. A central element for that is the concept of learning, which has wide analytical value, exploited in many disciplines. Learning is dynamic by nature and implicitly integrative (Dodgson 1993, Leavy 1998), in addition to emphasizing continual renewal and being concerned with multiple level of analysis (Leavy 1998).

Both approaches with their conceptual and methodological foundations, models, and charts presented in this article were essential resources not only to set relevant theoretical bases to decode reality, but also to organize and clarify ideas and data to obtain the answer to the research question. Organization

and clarity were not only searched to make possible the researcher's work, but also to simplify its presentation to readers. In qualitative studies, researchers commonly face great complexity and high volumes of data—especially when dealing with a neglected but important phenomenon. In this context, obtaining organization and clarity is a challenge.

Among the contributions of our research are those regarding a descriptive and systemic approach to entrepreneurship and strategic management, necessary in explaining these systemic processes involving vision and learning in SMEs in face of the predominance of prescriptive and rational models. Moreover, the methodological combination of the two theorizing strategies here presented—grounded theory and critical period analysis—can also be useful to other researchers.

Furthermore, the typologies, concept definition lists, and models developed in the research are other possible contributions for future studies. They could be particularly helpful for researchers who are interested in doing studies similar to ours. Among the models, we highlight Figure 3, which describes the formation and development of a shared vision of the directors' team, detailing the critical period analysis. In other studies, that model could inspire the use of critical period analysis in theorizing based on data related to processes linked to vision or even other subjects in entrepreneurship and strategy. Among the definition lists, we draw attention to the tables describing the main IF (Table 2) and the relationships between IF and NEV (Table 4), a typology of those relationships. Another typology, the vision changes typology (Table 3), introduces into entrepreneurship and strategy some support for vision analysis according to seven types of changes.

Our models consider possibilities of systemic learning in contact with other people and/or in the practice that directly transforms reality under a great variety of possible influences on shared vision and learning itself. For this reason, these models can eventually be useful applied in a large spectrum of studies approaching learning in entrepreneurship and strategic management. Apparently, the future studies could use traditional concepts regarding learning in an intra-firm perspective—such as apprenticeship and learning by doing, used by Oyeleran-Oyeyinka (2004)—or even using less traditional concepts in an inter-firm perspective—such as learning networks and capabilities, used by Bessant, Kaplinsky and Morris (2003). In this latter perspective, our contributions would certainly be more appropriate to understand what happens in each of the organizations in learning collaboration, considering learning aspects coming from other organizations as input from the context into each organization's learning process.

The results of this article have practical implications for research and SMEs. In research, the interchanging movements between synthesis and analysis (“almost as a U” model) in qualitative research tend to be more common than a quick consideration could suggest. Intuitively speaking, it seems natural that a researcher progresses in data analysis frequently comparing details of data analysis to a large panorama of the data she/he has trying to make sense of possible research results. This practice is recommended, for example, by the seminal work of Miles and Huberman (1994), very frequently cited in qualitative studies. Nevertheless, this practice can be improved and its benefits can

be increased if it is applied in an intentional soft-system way, which clearly integrates principles valuing concepts such as contextuality, realism, projective thinking, flexibility, and interconnectivity.

Regarding practice in SMEs, if the concepts above are beneficial for a researcher to understand entrepreneurship and strategic management in SMEs, they are also likely to improve directors', consultants' and policy makers' comprehension and action regarding the same processes in the organizations, even if these actors use simpler ways to understand and transform things. This is useful for practice in and about organizations as already highlighted in previous contributions proposing and describing interpretive systems approaches (Ackoff 1999; Checkland 1999; Jackson 2000). Frequently synthesized in the use of models to explain processes, the approaches take subjectivity and learning as fundamental capabilities used by actors to understand and construct their social reality. The CATWOE model (Figure 1) exemplifies this modeling strategy.

Initially proposed to model particular action and thinking situations, the CATWOE modeling was conceptually applied in this article to represent the learning process in entrepreneurship and strategic management of SMEs in general. However, to become more useful in the detailed reality of different sets of SMEs, it has to be more fully applied in future studies focusing specifically on validating and refining what Figure 1 anticipates. This way, new research could focus on specific regions and industries to identify, for example, patterns of *Weltanschauung*, SME conditions in their context, or on the establishment of strategic orientations and directors' reality perception as bases to propose better initiatives and policies. In a country where the support to SME is frequently criticized for inefficiency, lack of realism and resource waste, like Brazil, this type of research could be very welcome, especially if it is truly connected to support improvement.

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