

The relationship between SCM and business strategy. A Delphi study in Latin America

Carlos Raúl Arredondo

Professor and researcher. Postgraduate Studies, Director. Pontificia Universidad Católica Argentina. Buenos Aires. Argentina. ORCID: [0000-0002-5978-2727](https://orcid.org/0000-0002-5978-2727).

José A. Alfaro-Tanco

Full Time Professor of Management. University of Navarra. Pamplona. Spain. ORCID: [0000-0001-8502-974X](https://orcid.org/0000-0001-8502-974X).

carlos_arredondo@uca.edu.ar, jalfaro@unav.es

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Abstract

The aim of this research is to identify the factors that influence the implementation of supply chain management (SCM) strategy in Latin America countries. More specifically, we focus on the study of the degree of SCM strategy involvement into the design of business strategy through the analysis of the following aspects: organization culture, incentive programs for managers, internal alignment, and segmentation. These aspects are evaluated at a firm level of analysis in order to understand how the internal organization gives way to a correct SCM implementation. The authors use a Delphi Methodology on a panel of 13 Latin American experts in SCM and logistics in order to validate a set of SCM constructs that represent different aspects of integration and that should be presented as SCM strategy aspects in the definition of the business strategy of the firm. As a result, the differences in the experts' opinions regarding the proposed constructs clearly indicate that even the constructs have to be included into the SCM strategy, there is still much to be defined in terms of SCM strategy and how SCM participates in the Business Strategy and thus, clear guidelines must be proposed to enable its proper operationalization. To deepen the phenomenon of SCM as a fundamental part of the strategy of the company and thus analyze in detail the conditions that must be taken within the organization for its further operationalization are a still pending innovative approach in the matter. This study permits to develop a useful framework as a guide to involve SCM strategy into business strategy.

Key words

Delphi, Supply Chain Management Strategy, Business strategy, Segmentation, Culture, Internal alignment, Incentives.

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Only a strategic approach of SCM derived into subsequent tactical decisions and operational implementation will provide the benefit that promises

1. Introduction

Supply Chain Management (SCM) is a discipline of management that can be seen in different ways. However, only a strategic approach of SCM derived into subsequent tactical decisions and operational implementation will provide the benefit that promises (Ballou, Gilbert & Mukherjee, 2000; Cooper, Ellram, Gardner & Hanks, 1997; Mentzer, DeWitt, Keebler & Min, 2001). We emphasize the strategic nature of SCM and the importance to be considered in this way. Most research on SCM focuses on the relation among organizations within the supply chain; but scarce literature exists that addresses the issue of internal conditions that allows proper management of the supply chain out of the borders of the organization (Cooper et al., 1997) or how SCM strategies should be aligned with the business strategy (Houé & Guimaraes, 2017)

The purpose of this paper is to explore how, if this happens, SCM strategy is taken into account when the organization delineates its business strategy (Bag, Gupta & Telukdarie, 2018) and how that conditions should be met internally within the organization and then successfully implemented at tactical and operational levels. The main aim of this research is to identify, understand and propose the factors that influence the implementation of the SCM strategy inside the organization.

We explore on a set of constructs, at firm's level, that we defined as critical to be considered as the first steps for a successful implementation of a SCM strategy. While not considering the strategic level any effort that the organization wants to make in the area of SCM will hardly get satisfactory results in the medium and long term.

We identified seven constructs to be considered; these constructs are the analyzed aspects to be evaluated in order to understand how the internal organization, through the defined strategy guidelines defined at a business strategy level, gives way to a correct SCM implementation.

We try to answer the following questions that guide us to the modeling of these constructs.

- Is SCM about logistics, operations or business?
- To what degree is the SCM strategy present and how is it entailment with the business strategy?
- How the culture influences in the grade of engagement?
- How far the SCM strategy seeks to achieve a better performance of the chain although its results arise outside the boundaries of the organization, but within the chain?
- Is the segmentation criterion at the SCM strategy level present?
- To what extent different areas within the organization are aligned with the SCM strategy?
- How the incentive programs for managers are aligned whit the strategy SCM's decisions?
- Which is the role and profile of the Supply Chain Manager?

An extensive questionnaire of 61 questions, (see Annex N° 1), covering necessary aspects to analyze the constructs above mentioned, was designed inside the context of a two round Delphi methodology on a panel of 13 experts selected from academy, consulting and practice with strong Supply Chain Management and Logistics experience in different countries of Latin America. The questionnaire was previously validated by 3 experts to ensure that the questions were correctly asked and that there was no bias from the researchers in how to ask the questions.

The achieving up to now convergent responses indicates that the method guides to a positive and enriching interaction of the whole panel. Nevertheless, we found controversy on the expert panel in different aspects while coincidences on others.

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2. Methodology

A Delphi method approach was applied. This methodology has been chosen considering the nature of the investigation. Delphi has proved consistency when the problem under study is complex and/or has not been grounded (Grisham, 2009); or with the aim of describing or delimitating when the evidence is insufficient, unpublished, excessive or controversial. Delphi is also an effective, efficient and flexible research method when exploring new concepts –where there is incomplete knowledge about a problem or a phenomenon. Delphi is the desirable choice when the problem does not lend itself to precise analytical techniques but can benefit from subjective judgments on a collective basis; when the individuals needed to contribute to the examination of a broad or complex problem have no history of adequate communication and may represent diverse backgrounds with respect to experience or expertise (Linstone & Turoff, 2011). It can be used when there is incomplete knowledge about a problem or phenomena (Skulmoski, Hartman & Krahn, 2007). The method has been used continuously as a technique for prediction and consensus in contexts of uncertainty, and in situations where it is not possible to have recourse to other techniques which are based on objective information (Landeta, Barrutia & Lertxundi, 2011).

While the Delphi is typically carried out as a quantitative technique (Rowe & Wright, 1999), it can be well applied as a qualitative technique. Qualitative research is interpretative in the sense that the

Table 1
Definition of Constructs

#	Construct	Definition	Reference
1	Degree of participation of SCM strategy in the business strategy	It indicates if the SCM strategy take part of the business strategy. Is determined by the existence of SCM strategic initiatives formally included in the business strategy document. This construct has a directed relation to all the other constructs.	(P. K. Chen, 2011; Cheng & Grimm, 2006; Gonzalez-Loureiro, Dabic & Kiessling, 2015)
2	Criterion to guide segmentation of providers and customers	It defines, from the strategy, the guidelines related to SCM so that managers can define the segmentation criterion for the relationship with customers and suppliers. Tries to capture the criterion with which managers' group clients and suppliers according to the level of cooperation/collaboration, coordination or simply transactional.	(Ahmed, Kristal, Pagell & Gattiker, 2017; Segura & Maroto, 2017)
3	Culture of the organization	It reflects how the cultural conditions of the company, its greater or lesser compatibility with the culture of customers and suppliers, influence the relationship with them.	(Cadden, Marshall & Cao, 2013; Cannon, Doney, Mullen & Petersen, 2010; Ueltschy, Ueltschy & Fachinelli, 2007)
4	Distribution of benefits along the chain's criterion	It shows the strategic guidelines that enable managers to work with some customers and suppliers to achieve greater chain efficiency regardless of the link where efficiency occurs. Indicates if from the business strategy managers are enabled to work collaboratively with clients and suppliers to make the chain more efficient even if the result does not occur in the company.	(Cachon & Lariviere, 2005; Leng & Parlar, 2009; Zhang, Yin, Zhang & Nie, 2014)
5	Internal alignment of all the firm's areas that participate in the SCM strategy	Indicates the degree of coordination and internal collaboration between areas to contribute to a better chain efficiency. Analyzes in what degree the different areas of the company work collaboratively looking for the best efficiency of the company and the chain.	(Chen, Mattioda & Daugherty, 2007; Kahn & Mentzer, 1996; Van Hoek, Ellinger & Johnson, 2008)
6	Coherence between strategic SCM'S alignment and incentive program for managers	It determines if, according to what was established in the strategy, incentive system for managers is coherent and seek to promote efficiency inside the company, collaboration among areas, and in the chain beyond the company itself.	(Dencker, 2009; Holmstrom & Milgrom, 1994; Prendergast, 2008)
7	SCM manager's role and profile	It shows the principal functions of the SCM manager, his/her position in the company structure (staff, operative function), and his/her profile, the greater or lesser importance of soft and/or hard skills.	(Lambert, García-Dastugue, & Croxton, 2008)

Many experts believe that the goal is to achieve better performance of the company only

researcher is interested in how the social world is interpreted, understood and experienced; the researcher is flexible and sensitive to the social context within which the data was collected; and qualitative research is about producing holistic understandings of rich, contextual and detailed data. (Skulmoski et al., 2007). The qualitative researcher attempts to make sense of or interpret the phenomena in terms of the meaning the participants place on them (Creswell, 2007).

Delphi method has been used too in SCM (Darkow, Foerster & Von der Gracht, 2015; Garcia Reyes & Giachetti, 2010; Gardas, Raut, Cheikhrouhou & Narkhede, 2019; Melnyk, Lummus, Vokurka, Burns & Sandor, 2009; Ogden, Petersen, Carter & Monczka, 2005; Wolf & Pickler, 2012) but not so much with the aims associated to this study.

As it can be seen, the status of SCM development meets the conditions mentioned above which make the application of the methodology Delphi is plausible for the purposes of this investigation.

The nature of Delphi may be characterized as a method for structuring a group communication process so that the process is effective in allowing a group of individuals, as a whole, to deal with a complex problem; while a three round Delphi is typical, single and double round Delphi studies have also been completed.

For the selection of the panel it was decided a combination of experts from different fields and profiles, thereby three (3) scholars, five (5) consultants and five (5) practitioners were summoned from or with experience in different Latin American countries like Colombia, Ecuador, Argentina, Chile, Uruguay; the reason of resorting to this mixture was based on the need to acquire a complete view from the theoretical to the practical application, though all the results were analyzed as a whole. Table 2 shows the profile of the panel.

Table 2
Panel profile

#	Type	Countries that know at SCM level	Sectors with experience
1	Consultant	Argentina - Brazil - Germany	Multiple sectors
2	Consultant	Argentina - Uruguay	Multiple sectors
3	Consultant	Argentina - Uruguay - Colombia	Multiple sectors
4	Consultant/Scholar	Colombia	Multiple sectors
5	Consultant/Scholar	Spain - Brazil - Argentina	Multiple sectors
6	Scholar	Argentina - Brazil - United States - United Kingdom	Multiple sectors
7	Scholar	Argentina - Chile - United States	Multiple sectors
8	Practitioner	Argentina - Uruguay - Paraguay	Mass consumption
9	Practitioner	Ecuador	Retail - Industry
10	Practitioner	Argentina	Retail - Consumer goods
11	Practitioner	Argentina - Germany	Automotive
12	Practitioner	Argentina - Chile	Retail - Industry
13	Practitioner	Argentina	Industry

There exists a slight convergence to the concept of “chain efficiency” over the focus on the company efficiency exclusively

A form was sent to each of the experts who were asked to answer all questions for which a six-level Likert scale was used. An even scale was used to avoid the tendency to respond in neutral form considering experts have enough experience to adopt a specific position (Croasmun & Ostrom, 2011). In addition to the responses according to the aforementioned scale was asked to make the explanations and/or comments they considered could enrich each answer although these were not mandatory. Experts were encouraged on this issue as that would make more enriching the next stage in which experts could read the comments of their colleagues before returning to answer the questionnaire.

The next step was the definition of a matrix relating the general topics, constructs and questions we wanted to be answered. Based on it, the questions were defined and located within the matrix to ensure that there were no questions out of context or missing questions as it can be seen in Table N° 3. The 61 questions were presented as statements that allowed respond according to the options set in the defined Likert scale.

Table 3

Matrix relation between questionnaire and constructs

#	Definition of constructs	Question related to the construct
1	Degree of participation of SCM strategy in the business strategy	1; 2; 3; 4; 5; 6; 9; 10; 11; 59; 60; 61
2	Parameters to guide segmentation of providers and customers' criteria	22; 23; 24; 25; 26; 27; 28; 29; 30; 31; 32; 33; 34
3	Culture of the organization	12; 16; 17; 27; 28
4	Distribution of benefits along the chain	13; 14; 15; 18; 19; 20; 21
5	Internal alignment of multiple areas that participate in the SCM strategy	7; 8; 35; 36; 37; 38; 39; 40; 41
6	Incentive program for managers.	53; 54; 55; 56; 57; 58
7	Role of SCM manager	42; 43; 44; 45; 46; 47; 48; 49; 50; 51; 52

It is important to highlight the rigorous work that was done, both in the process of information to the experts as well as in previous meetings with each of them. In addition to the above, monitoring and constant communication throughout the process allowed a 100% response in the two Delphi rounds conducted; we obtained the thirteen responses in each of both rounds.

3. Empirical study

Delphi has a very interesting characteristic that provide enriched information about the phenomena under study; this empiric methodology is a combination of qualitative and quantitative methods. Indeed, a statistical analysis can be made based on the responses of the panel with the strong objective of determining the convergence or not of the different opinions of the panel while a deep information about the phenomena can be obtained from the explanations or justifications to each response expressed by the experts; thus the quantitative part of the study can be considered as a complementary support to the enriched information provided by the qualitative analysis. The result of a Delphi study, in principle, should be more than a statistical group response (Landeta Rodriguez, 2002).

Experts say that there should be a moderate degree of participation of SCM strategy in business strategy

As explained in the previous chapter the panel was formed by 13 experts among practitioners, consultants and scholars with strong influence and knowledge about the topic in question in Latin America.

The number of experts was decided considering the work of Dalkey (1969), cited by Landeta Rodríguez, where a minimum of seven experts was enough to obtain a reduced group error. In fact the use of thirteen experts produces a mean group error of 0,58 which is acceptable (Landeta Rodríguez, 2002, pag. 60, 61). We consider an expert an informed person with experience and a privilege knowledge (Landeta Rodríguez, 2002). This kind of experts with the required characteristics is very scarce due to the incipient of the discipline in this region. Another inconvenience was ensuring that experts follow the process to the end and prevent defections. Taking into account these restrictions and previous experiences on Delphi we decided that a 13 experts' panel was methodologically acceptable. To consider if a candidate could be part of the panel the following aspects were considered: level of knowledge, degree of affectation by the consequences of the study object, facilitative capacity and degree of motivation (Landeta Rodríguez, 2002).

Though the common number of rounds is three, to the extent that we find convergence after the second round we understood that a third round was not going to change the trend so we preferred to keep 100% of the answers we had obtained in the second round. With these considerations, supported by the methodology that allows to finish the process after two rounds (Day & Bobeva, 2005; Grisham, 2009) if there is convergence and taking into account that the effort that we would request to the experts was not justified and would surely generate desertions, we decided to finish in the second round (Reefke & Sundaram, 2018).

3.1. Sample and sources of information

As we said, seven constructs were defined, aiming to show, in some way, the grade of maturity in the relation between business strategy and SCM strategy, the main focus of this investigation. The constructs help understanding how this strategy of SCM, born under the business strategy umbrella, allows a way of its further operationalization too (Simamora, Aiman & Subiyanto, 2016); thus understanding how the internal organization gives way to a correct SCM's implementation. These constructs clearly show the focus of the investigation; convinced that SCM is about relations outside the frontiers of the company, it is not a contradiction at all that the first focus is inside the organization.

The questionnaire's design allowed us a full quantitative interpretation of the opinion of the experts. The last three questions were included *ex-professo* trying to understand the whole vision the experts have in relation with SCM

3.2. Delphi 1st round

The results of the first round allowed to interpret a row opinion since experts had not interact yet while it formed the basis for the subsequent analysis of convergence.

To carry the experts to the relationship between strategy and SCM, the first group of questions was aimed to understand their opinion regarding the business strategy; consensus on the role it plays in business strategy was obtained. The consensus vanished when the SCM strategy was included; specifically, the question N° 8 showed an important divergence while n° 7 showed consensus; experts are aligned when SCM is an inside the organization issue but they do not share the same view when SCM goes outside its frontiers.

The next set of questions included collaboration and overall efficiency in the short/long term; exists good consensus around the benefits of a long term relationship within some customers/

**For experts,
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not clear
parameters
to guide SCM
segmentation**

providers although some experts differ, regarding the short term benefits (lower consensus); however, the panel does not seem to share their views on the distribution of the benefits that could be achieved from the SCM strategy. The divergence of views on this strategy aim of SCM is surprising; many experts believe that the goal is to achieve better performance of the company only, which would contradict one of the basic strategic concepts of SCM. We also find contradictions in the experts since questioned about the benefit that the strategy should look for in the whole chain, there is a strong positive consensus. In the same way, in this first round experts do not agree sharing or not the benefits that occur in the chain regardless of the company where they are generated. This last point is critical, not find consensus shows a way of seeing the SCM that directly contradict the principle of collaboration that should be present in the SCM strategy.

Experts agree that there should be a concept of segmentation on both clients and suppliers, the experts' opinions diverge when asking if this segmentation criterion has to be defined at the strategic level or differs for different areas of the company.

Indirect involvement of some customer/suppliers in defining the company strategy would be important by most experts; this would indicate a degree of maturity about seeing the SCM beyond the borders of the organization.

Affinity, as part of the culture, seems not to be a clear issue in the opinion of several experts on the panel; nevertheless, they agree that exist other conditions besides cultural one when segmenting.

In relation to the "internal" SCM and its relation with different areas of the company, especially with logistics and procurement, the answers, though, don't show a strong consensus. Experts agree that different areas of the company have responsibilities in delineating the strategy of SCM, nevertheless they tend to limit the scope of SCM to areas strongly related with procurement and logistics with scarce participation of other areas like finance, RRHH or marketing as examples.

Another issue considered, related to the SCM, is the incentive programs for managers. Experts agree about the importance of aligning the incentive programs with the strategy of SCM trying to avoid incentives to focus on the objectives of the areas in an isolated form, thus contributing to the overall performance of the business. However, alignment with goals beyond the borders of the organization does not seem to have consensus among experts; while they agree that the incentives must be aligned with the strategy of SCM, again, it does not seem that the overall efficiency of the chain is a priority.

To understand which has to be the profile of the SCM manager we asked the experts, they agree about the importance of the existence of a SCM manager but in all the cases focusing his/her functions on the internal integration; none of them made reference to interaction outside the boundaries of the organization itself. Remarkable was the lack of consensus in relation with the relation between SCM manager and logistics and purchasing manager; the majority in the panel considers that purchasing and logistics managers must depend on the first; lesser consensus as to the existence of both (logistics/purchasing and SCM) in the organization. After a moderate consensus, it does not seem that the functions of SCM manager should be purely operating as to which should not be in charge of operations; however, the consensus becomes greater when they state that the SCM manager should be a support (staff) manager and even more consensus that its main function should be internal and external coordination.

Companies manage an internal culture that is part of their informal organization and should influence decisions on SC

3.3. Delphi 2nd round

As it can be expected, the 2nd round seeks convergence. The anonymous interaction among experts is the key of this methodology; each expert analyzes its own response, the rest of the panel responses and provides a new answer with the corresponding new justification.

The convergence of each answer was considered in order to understand how experts agreed, dissented or changed their mind in the interaction with the rest of the panel through their answers; the convergence and deviation of each answer is shown in Annex 1.

In the first group of questions, experts reinforce their answers due to a higher concentration (convergence) of their opinions. In the block of questions that refers to the SCM strategy and specifically in the internal/external participation, the second round shows a convergence achieving a high degree of consensus on the importance of external integration of the company.

About collaboration, again this round leads to consensus; specifically, exists a slight convergence in favor to the concept of “chain efficiency” over the focus on the company efficiency exclusively.

The next group of questions was focused on benefit distribution along the chain. Although the consensus is not absolute and there is dispersion in some specific issues, the situation of convergence is presented again in this round. Experts tended to agree on the redistribution of profits arising from the collaboration; the specific question of defining the strategy willingness to cooperate but the benefit is not produced in our company experts have not been radical in their answers and while converged, did a major turnoff. In the specific case of the definition of segmentation criterion, no convergence was achieved; some experts do not believe that segmentation criterion should be defined at a strategic level rather according to specific needs of some areas while others do consider to a greater or lesser extent.

Regarding the participation of suppliers/customers in the firm strategy, SCM experts repeat the opinion of the first round: strong consensus indirect participation and greater dispersion when direct participation in the SCM strategy arises. Cultural conditions, specifically affinity conditions between supplier and customer have a different view among experts; they have not generated convergence in the second round; instead they continue agreeing that SCM strategy should consider other criteria. The internal SCM, the relation among different areas is still, in this second stage, with different criteria between experts, in general, they maintain their opinions with a consequent low convergence; experts largely agree that there are multiple areas to be part of the strategy of SCM. The relationship between SCM strategy and logistics efficiency is the goal for many experts while it is not for others, it cannot be observed convergence at this point as a consequence of a great variability in the responses.

On the set of questions related to incentive systems it can be seen that experts generally maintain their original answers with a small convergence (less variability); they maintain the importance of aligning incentive systems with SCM strategy; they agree that incentives have to be geared towards achieving chain efficiency more than just the company's one; finally, they reject the generation of incentive tied to area objectives.

At last, the role of the SC manager is a non-convergence issue; experts maintain their initial opinion about the functions and profile of the manager of SCM.

Greater affinity derived from sharing aspects of organizational culture should facilitate collaborative relationship between them

4. Results

Based on the result of the Delphi process it can be inferred that exists a strategic vision of SCM; experts concur, though not with a high degree of convergence, on how important is SCM strategy as part of the business strategy; after the Delphi process, the panel reached a convergence on the purpose of external integration (with suppliers and customers) as one of the objectives of SCM even though the internal alignment is considered, probably, more important than the latter. Up to this point, beyond any differences that do not point the focus of research, came to a first conclusion on the strategic nature of SCM and the necessity to be part of the overall business strategy.

Therefore, experts agree the strategic nature of SCM, then can provide an answer to our first construct “degree of participation of SCM strategy in the business strategy”: Experts say there should be a moderate degree of participation of SCM strategy in business strategy, but it has to be present.

Segmentation is not a clear issue for the experts; most of them do not consider segmentation as critical at a strategic level so it was difficult to define or perceive parameters for segmentation; experts refer that it is important to segment but in almost all cases have referenced the classical segmentation criterion on which the procurement area segments according to its own criterion and marketing area as mostly commercial basis; several experts refer to the fact that SCM segmentation criterion should continue commercial segmentation; besides there is not clear parameters to guide a SCM segmentation. This is a problem that should be analyzed in greater depth since from segmentation criterion at the strategic level should emerge guidelines (parameters) to be taken into account so, at tactical and operational level, the different areas define the conditions of interaction with suppliers and customers; this situation is in our opinion one of the points in the delineation of SCM strategy most influential as a parameter of its operationalization and at the same time probably the less developed.

Then, to answer the second construct “parameters to guide segmentation of providers and customers” experts didn’t give a clear explanation on this issue.

The following construct aims to understand the influence of the cultural aspects of the organization; companies manage an internal culture that in many cases is part of their informal organization and should influence decisions on SCM. The affinity that may exist between companies that interact with each other is given by the culture of these organizations and should be a high impact factor in the relationship. Greater affinity derived from sharing aspects of organizational culture should facilitate collaborative relationship between them. Experts do not believe that the cultural conditions have a high degree of importance or influence strategic decisions on SCM; however, many consider cultural affinity contributes to the relationship but is not determining. From this experts’ point of view, it could be interpreted that there is still a strong conceptual bias towards a more operational SCM oriented closer to outcomes that to a SCM with a strategic approach seeking collaborative relationship focused on long-term results for the chain and then, as a result, improved profitability for the company. The answer to the third construct “culture of the organization” again indicates a light focus on a strategy vision despite experts take into account the culture as a factor to be taken in account.

Then “the culture of the organization” is not seen by experts as a key element that influences the strategy alignments of SCM.

Many experts consider cultural affinity contributes to the relationship but is not determining

The next construct, distribution of benefits, indicates on one side a low consensus though a slight convergence in favor of the concept of benefit of the chain while the majority of the panel believes that the exclusive benefit of the company would not be above achieving mutual benefit. (questions number 13, 14 and 18, 19), confirming the postulate chain efficiency and not just the company although some experts still consider to some extent the concept of profitability for the company exclusively. In the same way there is convergence and low variability in reference to the concept of distribution of benefits regardless of which company they occur; this would indicate that experts agree on the concept of collaboration that should be aligned with the previous concept of benefit in the chain, however, the former shows less consensus than the latter.

Therefore, the construct “benefit distribution along the chain” would indicate that SCM’s strategy should be geared to the benefit of the chain as a whole even irrespective of the company in which it occurs on the basis of a redistribution of it.

Analyzing the answers related to internal alignment it can be observed a symmetrical view of the panel in the relation procurement/SCM and logistics/SCM; in the same way they agree that SCM emerges from an evolution of the procurement/logistics areas; this idea of linking SCM with supply and logistics, rooted in several of the experts, leads to a significant divergence of opinion when they were asked if SCM strategy should be approached from a perspective of logistics efficiency, the ghost of logistics is always present when talking about SCM. Derived from the functions that should have the manager of SCM emerges that experts do not agree that the internal alignment is an important condition for proper implementation of the strategy of SCM. In the same way, there is no agreement as to the coordination of activities outside the borders of the company; several experts do not believe the SCM manager should be involved in issues related to chain coordination, while many others do believe so; experts too believe that is imperative for the SCM manager having skills in hard sciences like logistics or procurement and less important skills in soft disciplines. This would indicate once again bias towards a SCM experts oriented operating efficiency as core and not as a result of a strategy based on the relationship with the members of the chain; experts do not believe the SCM manager principal function is to achieve internal alienation nor the external one, but on the other side practically all experts agree that multiple areas have to participate in the SCM strategy.

Then “internal alignment of all areas that participate in the SCM strategy” is a confusing construct that has to be studied deeper because of the contradictions revealed by analyzing different questions related.

The sixth construct “incentive programs for managers” again showed contradictions in the answers related to this issue. Clearly we found a strong consensus that incentive programs have to be aligned with business strategy and SCM strategy; nevertheless, experts are not completely agreeing with the concept of aligning incentive with internal alignment for better performance nor internal alignment for chain performance. Moreover, the question of whether incentive systems should align with the results of each area, the expected negative response did not occur. Understanding the difficulty of obtaining results when managers do not have a real incentive (economic or otherwise) to carry out the guidelines issued by the business strategy or the strategy of SCM, it cannot be expected results according to them. In fact, some experts consider important an incentive program measured through the performance of a specific area. This difficult to produce an internal alignment aimed to obtain better performance of the organization as a whole, even more, results of efficiency in the chain is almost impossible.

Culture of the organization is not seen by experts as a key element that influences the strategy alignments of SCM

Then “incentive program for managers” incentive not seem to be directly linked to obtaining a major performance of the company or the chain.

At last, the seventh construct defined, guide us to the role of the SCM manager; 10 questions related to this construct were made to experts; they coincided on the importance of a SCM manager but analyzing the SCM manager functions exists great consensus that logistics and/or procurement managers have to report to him/her showing the tendency to link SCM with operations and therefore putting it aside somehow from the strategic function. Experts do not agree that the manager of SCM has to do with internal alignment or external coordination, nor that their role is supportive; low convergence and a high dispersion in this subject are observed. Questions 51 and 52 show contradiction in the experts, themselves and not between them, since they agree in both answers favorably, in other words, there is convergence and low variability in affirming that the manager of SCM must have soft qualities like negotiation, coordination and relationship, but also in that it is indispensable to dominate hard areas such as logistics, purchasing and supply.

About “the role of the SCM manager” we can assure that there is no consensus about his/her role and profile.

5. Discussion

Analyzing 1st and 2nd round the results show a considerable grade of convergence in various issues. Exist two factors to be taken in account and that has to be analyzed; on the one hand the variability in the responses of the experts that can be seen through the deviation in each of the answers; on the other hand, the degree of convergence obtained after the second round. The first factor seeks to interpret the degree of maturity that has SCM; the second has two readings, on the one hand the permeability of experts to the views of their colleagues, suggesting indirectly the need for more theoretical development while on the other hand contributes to the convergence of opinion that underpin the interpretation of the constructs derived therefrom.

Though the grade of convergence was not strongly marked we interpret that the convergence gives us information about the phenomena; convergence shows the low maturity level while deviation indicates experts are not completely agreeing with basics concepts of SCM.

They were presented to the experts three conceptual definitions of SCM, three completely different visions, a purely logistical orientation, a definition involving SCM within the scope of operations and a business-oriented definition; convergence was absolute in the third case, all the experts agreed that the business vision is the one that is consistent with SCM.

As a first consequence it would seem SCM has to do with business more than with operation, not only within the organization, as indicated by the definition by consensus. However, when we try to shape the constructs to validate this business vision we found opinions that are not consistent with this vision of business. Analyzing the other two answers referred to the SCM vision it can be explained the partial contradictions; though the strategic/business appear to be indisputable, the results of the operational and logistics view show some experts with a bias to the operational and in a lesser extent to the logistics view of the SCM. This dichotomy would explain the contradictions that arise in some of the survey questions and in consequence would reinforce the low grade of maturity SCM has in Latin-America.

Internal alignment is an important condition for proper implementation of the strategy of SCM

6. Managerial implications

Understanding the dynamics of Supply Chain Management from the point of view of the internal organization, provides real tools so that the executives of the companies can understand how the organization should be aligned from the strategy to obtain results in the genuine relationship with the other members of the chain.

The analyzed constructs and the effect they have for a beneficial coordination of the chain can be a guide for companies to be more efficient together, defining the levels of coordination/cooperation that can be achieved with suppliers and/or clients; understanding the internal aspects that they should consider previously.

7. Conclusions

To achieve its objectives, i.e. identification of SCM strategy key constructs', the research addressed key issues concerning the area of business strategy and SCM strategy.

The use of the Delphi methodology in the strategic analysis of SCM has allowed experts to interact with their knowledge and opinions and through the level of consensus and dissent obtained in some of the topics providing an important contribution to the objective of the research here addressed

The methodology has also allowed to show the maturity of SCM in Latin America. As it is clear from the previous chapter "Results" diversity of opinions from experts on some key issues and the low degree of consensus highlights the need for further work on the subject. In this sense, the use of the Delphi methodology is thus amply justified by the contribution provided when there is incomplete knowledge about a problem or phenomena (Skulmoski et al., 2007).

The set of questions that were formed as a guide to achieve the first approach in the delineation of the seven constructs chosen to analyze the SCM, its relationship with organizational strategy and how to carry it later implementation, allowed understanding how such constructs behave.

As conclusion, we can say. First, from a theoretical perspective, the research expanded knowledge in the area by bringing to the surface relevant aspects of the strategic dimension of SCM that was hitherto overlooked or not properly considered. It takes the initial steps towards the definition of a framework to present SCM in strategic terms in the field of business strategy. More specifically, on the basis of a recognized scientific method, this framework will provide significant indications of how SCM strategy should be presented in the definition of business strategy. The structured perspective of the framework will facilitate understanding and will allow the deconstruction of complex issues concerning the way SCM strategy has to do with business strategy into specific issues such as those comprising the constructs presented. Second, the applications of the framework will provide a guide for managers to align the SCM strategy with the business; managers will have a clear orientation on the segmentation criterion on which they will take different definitions in SCM; they will receive a clear message through correct systems of incentives to act on the overall efficiency of the company and the chain. Third, and probably most important, it will shed light on the strategic importance of SCM and on the importance of delineating a correct SCM strategy that guide managers to a correct operational implementation.

The differences in the experts' opinions regarding the proposed constructs clearly indicate that there is still much to be defined in terms of SCM and about the conditions that allow

All the experts agree that the business vision is the one that is consistent with SCM

companies to make the strategy of SCM defined at the level of business strategy and thus can be clearly defined guidelines to enable its proper operation.

8. Limitations and next steps

The result of this investigation has shown the need to deepen the aspects considered here. Applying a single methodology leads to a limitation of the results obtained, so it is proposed to validate the model by applying other methodologies (surveys, case method) that allow a greater consistency to the one obtained here. In another vein, this research has analyzed the link between the business strategy and SCM in general. In this sense, it is proposed as next research steps to study the issue in specific segments which will allow understanding whether the behavior is maintained or not in different types of industries.

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Annex 1

Delphi Questionnaire

#	Question	FIRST ROUND		SECOND ROUND		Dif. Dev.	% Dev.
		Mean	Dev.	Mean	Dev.		
1	Every company should do a formal “strategic planning of the business”	5,46	0,78	5,54	0,78	0,00	0%
2	Within the process of “strategic planning of the business”, the guidelines for the definition of the “SCM strategy” should be established.	5,38	0,87	5,62	0,51	0,36	42%
3	The “SCM strategy” must always be aligned with the “strategic planning of the business”.	5,85	0,38	5,85	0,38	0,00	0%
4	The processes of “strategic planning of the business” are more formal in multinational companies than in the local ones.	4,62	0,96	4,77	0,6	0,36	38%
5	The processes of “strategic planning of the business” become more formal with the growth of the company.	4,92	0,95	5,15	0,38	0,58	61%
6	It is critical for the companies to formulate a “SCM Strategy”.	5,08	0,95	5,00	0,82	0,14	14%
7	The definition of “SCM strategy” is related to the internal integration (the different areas of the company) and/or external integration (suppliers and clients) of the business.	5,85	0,38	5,85	0,38	0,00	0%
8	The definition of the “SCM strategy” is related with the external integration (suppliers and clients) of the business.	4,5	1,74	5,77	0,44	1,30	75%
9	The “SCM strategy” must be defined only by the company’s management.	2,38	1,04	2,38	1,33	-0,28	-27%
10	The “SCM Strategy” is defined differently according to the size of the company.	3,92	1,5	3,92	1,38	0,12	8%
11	The “SCM Strategy” is defined differently if the company is local, Multi Latin (a multinational company within Latin American countries) or multinational.	3,62	1,66	3,92	1,12	0,55	33%
12	The company’s culture affects the content of the “SCM Strategy”.	5,31	1,18	5,38	1,12	0,06	5%
13	The “SCM Strategy” must strive to improve the efficiency (this could mean a betterment in profit, image, customer service, etc.) exclusively for the company.	2,77	1,69	2,46	1,13	0,56	33%
14	The “SCM Strategy” must strive to improve the efficiency (this could mean a betterment in profit, image, customer service, etc.) for the chain or at least a dyad (supplier-customer relation).	4,92	1,44	5,38	0,77	0,67	47%
15	In the “SCM Strategy”, indicators must be defined in order to measure objectively the best efficiency of the company or the chain.	5,46	1,33	5,69	0,85	0,48	36%
16	The collaboration with (some) suppliers and customers generates better profitability to the business in the short term.	4,38	1,19	4,08	0,76	0,43	36%
17	The collaboration with (some) suppliers and customers generates better profitability to the business in the long term.	5,62	0,65	5,77	0,44	0,21	33%
18	The “SCM Strategy” must search for mechanisms that enable a relationship with suppliers and customers, in order to improve the efficiency of the company exclusively.	2,77	1,59	2,46	1,45	0,14	9%
19	The “SCM Strategy” must search for mechanisms that enable a relationship with suppliers and customers, in order to improve the global efficiency of the chain/service to the consumer (either one or both)	5,31	1,18	5,38	0,77	0,41	35%

Annex 1 (continued)

Delphi Questionnaire

#	Question	FIRST ROUND		SECOND ROUND		Dif. Dev.	% Dev.
		Mean	Dev.	Mean	Dev.		
20	The guidelines that allow to redistribute the results by the efficiencies achieved in the chain must be defined by the “SCM Strategy”.	4,46	1,45	5,00	0,71	0,74	51%
21	The will to contribute or not with suppliers/customers in order to achieve efficiency in the chain, even though it is not done in the company, must be defined in the “SCM Strategy”.	4,15	1,14	4,54	1,2	–0,05	–5%
22	Companies must relate with all suppliers and customers in the same way.	1,77	1,36	1,69	1,38	–0,01	–1%
23	Companies must apply supplier segmentation criteria when they define their “SCM Strategy”	5,46	1,13	5,38	1,39	–0,26	–23%
24	Companies must apply customer segmentation criteria when they define their “SCM Strategy”	5,38	1,12	5,77	0,44	0,68	61%
25	Within the “SCM Strategy”, each company must clearly differentiate with whom to collaborate, with whom to coordinate and with whom to only make transactions (arm length).	5,46	1,13	5,85	0,38	0,75	67%
26	Companies must segment in order to differentiate with which companies they transact exclusively (arm length), coordinate or cooperate on their external relation inside the “SCM Strategy”.	5,5	0,67	5,62	0,65	0,02	4%
27	When applying segmentation criteria related to SCM, companies must take into consideration the cultural conditions of “affinity” with suppliers.	4,46	1,2	4,38	1,04	0,15	13%
28	When applying segmentation criteria related to SCM, companies must take into consideration the cultural conditions of “affinity” with customers.	4,15	1,41	4,31	1,03	0,37	27%
29	The defined segmentation in the “SCM Strategy”, as well as the “cultural conditions”, takes other criteria into consideration.	5,62	0,51	5,54	0,78	–0,27	–53%
30	The segmentation of suppliers/customers must respond to criteria/objectives that are not necessarily related to the “SCM Strategy”, but rather with objectives of other specific areas of the company.	4,31	1,32	4,15	1,34	–0,03	–2%
31	Some suppliers must participate directly in the definition of the “SCM Strategy” of the company.	3,85	1,28	4,00	0,82	0,46	36%
32	Some customers must participate directly in the definition of the “SCM Strategy” of the company.	3,62	1,33	3,62	0,87	0,46	34%
33	Some suppliers must participate indirectly in the definition of the “SCM Strategy” of the company.	5,08	0,95	5,00	0,82	0,14	14%
34	Some customers must participate indirectly in the definition of the “SCM Strategy” of the company.	4,85	1,28	5,23	0,73	0,56	43%
35	SCM is the evolution of logistics and/or purchases and supplying.	3,77	1,42	4,00	0,82	0,61	43%
36	SCM and logistics are similar functions or are very related in the companies.	2,92	1,61	2,62	0,96	0,64	40%
37	SCM and purchases/supplying are similar functions or are very related in the companies.	3,08	1,8	2,85	1,34	0,46	25%
38	The area of logistics and/or purchases must be the only ones to take part in the design of the “SCM Strategy”.	1,38	0,77	1,15	0,55	0,21	28%

Annex 1 (continued)

Delphi Questionnaire

#	Question	FIRST ROUND		SECOND ROUND		Dif. Dev.	% Dev.
		Mean	Dev.	Mean	Dev.		
39	The area of logistics and/or purchases must have the biggest influence/importance in the design of the “SCM Strategy”.	2,77	1,36	2,08	0,95	0,41	30%
40	Multiple areas must participate in the design of the “SCM Strategy”	5,62	0,87	5,54	0,97	-0,1	-11%
41	The companies that formulate “SCM Strategy” must do it from the perspective of achieving logistic efficiency.	2,46	1,45	2,92	1,44	0,01	1%
42	Companies must have a SCM manager, in the case of smaller companies, a manager responsible for this function.	4,85	1,34	4,69	1,18	0,16	12%
43	The decisions related to SCM, must be distributed between several departments.	2,54	1,45	2,46	1,33	0,12	8%
44	The logistics manager must report to the SCM manager.	4,85	1,28	4,92	1,12	0,17	13%
45	The purchases/supplying manager must report to the SCM manager.	4,77	1,3	4,92	0,95	0,35	27%
46	The SC manager must report to the manager of some operative area (purchases, supplying, logistics or other).	1,92	1,5	1,38	0,65	0,85	57%
47	There must be a logistics manager and a SCM manager coexisting in the same company since they have different functions.	3,69	1,55	3,69	1,55	0,00	0%
48	The SCM management is operative (it is in charge of the operations or in charge of some operations).	2,46	1,56	2,23	1,64	-0,08	-5%
49	SCM is functional support area (staff) that has as main function to achieve internal alienation.	3,15	2,03	3,00	1,96	0,08	4%
50	SCM is functional support area (staff) that has as main function to achieve the coordination of external activities with suppliers and customers.	3,15	2,03	2,62	2,06	-0,03	-1%
51	The SCM manager must be more capable in the negotiation, coordination, relation (soft or of management) areas, rather than being capable in the logistics, supplying or purchases areas.	4,85	0,8	4,85	0,38	0,43	53%
52	A SCM managers must have knowledge about the logistics, purchases and supplying areas.	4,08	1,19	4,08	1,04	0,15	13%
53	The incentive systems for directors and managers must help align the objectives of the different areas of the company, in order to achieve better efficiency of the company.	4,92	1,44	5,31	0,85	0,59	41%
54	The incentive systems for directors and managers must help align the objectives of the different areas of the company, in order to achieve better efficiency of the chain.	4,38	1,71	4,92	1,26	0,45	27%
55	The incentive systems for directors and managers must be oriented so that each department/area is able to achieve as much efficiency as possible within its department/area.	2,92	1,5	3,15	1,28	0,22	14%
56	Within the “SCM Strategy”, is primordial to take decisions oriented to achieve the internal integration/alignment of the different departments/ areas.	5,46	0,66	5,62	0,51	0,15	23%

Annex 1 (continued)

Delphi Questionnaire

#	Question	FIRST ROUND		SECOND ROUND		Dif. Dev.	% Dev.
		Mean	Dev.	Mean	Dev.		
57	The incentive systems for directors and managers must be aligned with the objectives stated by the “strategic business planning”.	5,62	0,65	5,85	0,38	0,27	42%
58	The incentive systems for directors and managers must be aligned with the objectives stated by the “SCM Strategy”.	5,46	0,66	5,62	0,51	0,15	23%
59	SCM takes all of the logistics competences and presents them in a “superior” way, highlighting every logistic process that is part of the supply chain.	2,54	1,33	2,62	1,45	–0,12	
60	SCM understands that the processes go beyond the borders of the company but maintain the focus in the operational processes (purchase, logistics, demand forecast, etc.) that is, an operative integration of the whole supply chain with focus in the obtainment of benefits within the company.	3,62	1,39	3,54	1,20	0,19	
61	SCM emerges by understanding that the “business” processes are strongly interrelated internally within the company and along the entire value chain equally, beyond the company.	5,69	0,48	6,00	0,00	0,48	

1 - Full Disagreement; 2 - Strong Disagreement; 3 - Partial Disagreement; 4 - Partial Agreement; 5 - Strong Agreement; 6 - Full Agreement.