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INTEGRATION OF STRATEGIC PLANNING AND LIFE CYCLE MANAGEMENT: A DISCUSSION BASED ON A LITERATURE REVIEW

*Fabio Puglieri, Engineering School of Sao Carlos, University of Sao Paulo (USP), Brazil.**

Diego Iritani, Engineering School of Sao Carlos, University of Sao Paulo (USP), Brazil.

Aldo Ometto, Engineering School of Sao Carlos, University of Sao Paulo (USP), Brazil.

**Department of Production Engineering, Av. Trabalhador sao-carlense, 400, 13566-590, Sao Carlos/SP, Brazil. Email address: puglieri@usp.br*

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ABSTRACT

This paper aims to explore how Strategic Planning (SP) and Life Cycle Management (LCM) could be worked together, since both have similar concepts but they are not seen in an integrated way. A systematic literature review was carried out to identify researches that bring the integration of LCM and SP, and then SP activities and LCM practices were included in a relationship matrix to analyze where integration opportunities can be found. The results show that academic literature which brings business SP and LCM concepts together is still far away from maturity and new approaches need to be developed.

INTRODUCTION

Strategic Planning (SP) is known by several definitions. According to Fischmann and Almeida (1991), SP should be understood as a managerial technique to identify opportunities and threats, strength and weak points, defining the direction that an organization should follow. For Nolan, Goodstein and Goodstein (2008), SP is a critical management process for organizations, and it should guide its members towards a situation of desired future situation. Thus, in few words, SP is a management technique to create a long-term vision whereby an organization should follow aiming the creation of value and competitive advantage.

Similar to SP definitions, Life Cycle Management (LCM) also encompasses many concepts. One of the most accepted LCM definition comes from the United Nations Environment Program (UNEP). According to UNEP (2007, 2009), LCM is a business approach to improve the companies' sustainable performance aiming the long-term value creation in the whole life cycle, i.e., suggesting a holistic vision of the organization.

Although both concepts have similar goals, few researches have showed how SP and LCM can be applied together. For Valentine (2010), the fusion of the environmental knowledge into a framework for a functional SP needs more development, and according with Lubin and Esty

(2010) companies do not have a roadmap to guide their environmental strategies. In other words, literature lacks to present a comprehensive framework which proposes the integration between SP and environmental issues, including the LCM.

In this sense, considering the previous discussion above, this paper aims to present how LCM concepts and practices could be integrated with SP to provide better environmental business strategies to guide firms' activities. The next topic presents the methodological procedures assumed to elaborate this paper.

MATERIALS AND/OR METHODS

A systematic literature review was conducted according to the roadmap proposed by Conforto, Amaral, and Silva, (2011). This roadmap has as main characteristics: the research strings tests and refinements; the iterative processing of the results, with more detailed selection filters at each iteration; and the references by references search. The roadmap is composed by 3 stages (Inputs, Processing and Outputs) which includes objective definition, database selection, strings, and the inclusion of criteria definition, execution phase and results analysis. In this study, the string “("life cycle management" OR "lifecycle management") AND ("strategy" OR "strategic planning")” was applied in five databases (ISI Web of Science, Scopus, Compendex, IEEE Explore and Science Direct). By the use of this string, an amount of 1015 articles were found (counting all databases). Then, the duplicated articles were removed and the inclusion criterion, defined by “to present the integration of LCM practices in strategic planning process”, was applied. Finally, 6 articles that attend the inclusion criterion were fully analyzed and the integration of LCM practices into SP steps was extracted.

In order to identify potential interactions between SP and LCM, a relationship matrix was proposed. This relationship matrix consists in crossing the SP steps with the main LCM practices. The SP steps and LCM practices were found through a previous comprehensive literature review of SP and LCM. As result, seven major steps were identified for SP: strategy diagnosis, mission and vision statement, internal and external analysis (also known as SWOT analysis), strategy definition, strategy analysis, objective and goals, and strategy implementation. For LCM, environmental practices and approaches as Life Cycle Assessment (LCA) and The Natural Step Framework (TNS) were also identified.

RESULTS

SP comprises seven steps in general. First, top-management team has to identify which strategies are being adopted by the company, known by Strategic Diagnosis, followed by the Mission and Vision Statement. The third step consists in an Internal and External Analysis, mainly through the application of a SWOT analysis, which intends to identify strengths and weakness inside the firm, and the opportunities and threats in the whole environment, including the political and economic changes. Potential strategies are proposed (Strategy Statement), assessed (Strategy Analysis), and then measurable goals are defined (Goals Statement). Finally, the Implementation consists in the strategic plan deployment into tactical and operational plans.

The LCM practices which presented integration with SP steps were LCA and TNS framework. LCA is a quantitative technique which aims to assess environmental impacts through the whole product life cycle while TNS framework is built on the backcasting principle which intends to incorporate sustainability into strategic decision-making process. The Table 1 shows the main contributions identified in SLR related to SP steps. The Table 2 shows the relationship matrix.

Authors	LCM contributions for SP	SP Step
Lozano (2012)	Discusses the integration of LCM through the analysis of the sustainable life cycle from the backcasting concept (TNS).	• Internal and External Analysis
Ny et al. (2006)	This paper presents a sustainable LCA with the backcasting concept for firm's external analysis.	• Internal and External Analysis
Saur (2003)	Author suggests that top-managers need to incorporate LCM concepts in firm's mission and policies.	• Mission and Vision Statement
Sánchez, Wenzel e Jorgensen (2004)	Present an overview of LCM strategy adoption in organizations. This paper allows to evaluate the occurrence level of LCM practices in companies and the product chain.	• Strategic Diagnosis • Internal and external analysis
Rebitzer e Buxmann (2005)	Present streamlined LCA to support goals definition based on environmental impacts results.	• Goals definition
Seidel et al. (2011)	Propose a framework based on SWOT Analysis and streamlined LCA to analyze environmental impacts in the product life cycle. The framework also includes stakeholders analysis to identify possible partners. The authors highlight the communication of LCM strategy and projects across the company to establish a LCM culture.	• Mission and Vision Statement • Goals definition

Table 1. LCM contributions for SP steps

LCM practices	SP steps						
	1	2	3	4	5	6	7
Traditional Life Cycle Assessment			X				
Streamlined Life Cycle Assessment			X		X	X	
The Natural Step Framework			X	X	X		

Legend

- 1 Strategic Diagnosis
- 2 Mission and vision statement
- 3 Internal and external analysis
- 4 Strategy definition
- 5 Strategy analysis
- 6 Goals definition
- 7 Implementation

Table 2. Relationship matrix based on results showed in Table 1



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DISCUSSION AND CONCLUSIONS

Although SP and LCM are presented as two important management approaches to incorporate sustainability into business activities, and synergies are found between them, academic literature presents poor examples of how SP and LCM can be integrated together.

It is possible to conclude that new researches must be developed to incorporate life cycle concepts and practices in the strategic planning processes, allowing decision-makers to consider sustainability issues in the business strategic plan, and the firms' value chains.

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