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Methodology for launching a packaging rationalization project. An “action research” case in the industrial sector

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The main objective of this paper is to propose a methodology for launching a packaging rationalization project. In order to illustrate the interest of this proposal, the authors develop the case of an industrial company in Spain, adopting the “Action Research” approach. Packaging design has been studied especially in large companies belonging to the retail sector, but not in an industrial environment and a context of Small and Medium sized Companies. This situation justifies the selection of the company under analysis.

Keywords: Packaging; logistics; supply chain; industrial sector

1 Introduction

Packaging usefulness is not only related to the product protection, but also to the promotion of the product’s differentiation and the search for cost reduction in logistics. More recently, packaging design has been highlighted for its environmental importance in reducing raw material consumption and waste generation.

In this context, packaging should be considered as a system comprising three levels designed to comply with requirements of product design (mainly commercial, logistics and environmental). The implementation of these design requirements demands a holistic view of packaging, supply chain and product. This vision has promoted the approach "Packaging Logistics" (Saghir, 2002; Regattieri et al., 2019) and “Sustainable Packaging Logistics” (SPL; García-Arca et al., 2014).

Many authors highlight the difficulties in sensitizing companies regarding the repercussions of the decisions in packaging design from a multifunctional point of view. In this sense, the first steps for deploying SPL are critical, as good results are needed in order to transform the internal culture regarding packaging design

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and to promote future action according to an SPL approach. Packaging design in academic literature has been analyzed especially in large companies (particularly, retail or automotive companies). Many companies, mainly industrial and Small and Medium sized companies, are ignorant of how to start a packaging rationalization project.

2 Objectives

Thus, the main objective of this paper is to propose a methodology for launching a packaging rationalization project. Likewise, to illustrate the interest of this proposal, the authors develop the case of an industrial and medium sized company in Spain.

3 Methods

The authors propose a 4-step methodology based on a Deming circle (PDCA): Step 1. Structuring the process; Step 2. Search for packaging alternatives; Step 3. Validation, test and implementation; Step 4. Follow-up and Improvement. To develop the applied case, the authors have adopted an "Action Research" approach (Näslund et al., 2010; García-Arca et al., 2018). The empirical validation process was developed over almost 10 years in 2 stages.

4 Results

During the first stage, the cubic rate in packaging system increased by 12.5% with a costs reduction of 18.5% (an annual saving of 150,000 €). After 10 years of successfully working with the new system, the business context had changed; likewise, the packaging requirements had changed. Therefore, in a second stage, new changes in packaging were required (an additional annual saving of 60,000 €).

5 Conclusion

The paper presents and justifies a 4-step methodology for developing a packaging rationalization project. There are 3 key factors for success: a wide organizational perspective for defining packaging design requirements; the adoption of a measurement system to compare packaging alternatives; the creation of an improvement culture ("learning organization") that allows the new packaging system updated.

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