

## **Defining improvement areas of packaging system and logistics**

*It is practical to understand the requirements of products towards packaging and logistics and define the improvement areas regarding packaging system and logistics. The requirements are compared with current conditions then the critical points of the packaging system and logistics are defined for further improvement.*

Products contain different chemical, physical and sensorial characteristics as well as shelf life specifications. Also, they are sold in different countries worldwide, which determine their various requirements towards packaging and logistics. The limited types of primary packaging, and similar storage and transportation conditions for all delivery routes, are not able to fulfill the diverse requirements of the products.

To define the products' requirements, a representative product with severe issue regarding packaging or logistics need to be selected. It is necessary to propose a practical mapping protocol to facilitate the selection. Then to address the supply chain study on the selected product.

The mapping protocol is built to map the variations of sensitive vitamins, unsaturated fatty acid and other components that have negative effects on sensorial attributes and physical stability. It also includes the basic information of products and the data resources.

Packaging plays essential functions which impact the product design, manufacturing, transportation, distribution, warehousing and marketing functions of a firm; conversely, these functions are determined by the requirements from product development and logistics aspects.

From a strategic perspective, a supply chain study can perform as a building block for further decision making. By measuring the performances of the current supply chain in a qualitative way, all the relevant details are presented, which enables the author to see through the appearance to perceive the essence of improvement possibilities.

It is necessary to recognize packaging and logistics as an integrated system and to explore the interactions between different packaging levels and logistics activities in this study, in order to define the improvement spaces to ensure that packaging and logistics fit each other.

The packaging system, packaging-related logistics activities, supply chain structure, delivery routes, transporters, temperature and humidity control, lead time are the key points for consideration. In the end, the improvement areas are defined in packaging handleability, lead time reduction and temperature control enhancement.