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AN IMPLEMENTATION OF ENVIRONMENTAL FRIENDLY MULTI REGIONAL PACKAGING AND LOGISTICS SOLUTIONS FOR SEMI-FINISHED GOODS

JAIME VILLAFUERTE
Advanced Manufacturing Technology
Jabil, St Petersburg
Florida 33716, USA
jaime_villafuerte@jabil.com

ABSTRACT

In order to take advantage of the global economy, manufacturing companies have developed a complex and an extended supply chain which includes manufacturing components or parts in LCCs (low-cost countries) and shipping them to factories near to their consumer market for final assembly, customization and distribution. These activities involve several different organizations that follow widely different approaches in logistical management. In order to sustain the long shipment distances in different geographic regions, (i.e. China-Mexico-US-Europe), handling & environmental conditions & shipping modes (Air vs Ground vs Sea); suitable, flexible and economical packaging solutions are required. This flow of semi-finished goods usually requires packaging materials such as carriers (i.e. wooden pallets) and moisture inhibitors (i.e. desiccants) to protect the goods. Competitive pressures, environmental consciousness, customer awareness and legislative requirements have driven manufacturers to review business practices and redesign solutions that are environmentally friendly, as well as help reduce costs in the long run. The author of this paper will present an experience where "non-traditional" packaging is used as an economical and environmental friendly solution to globally transport goods between multiple facilities.

INTRODUCTION

Industrial or inter-plant packaging is intended for the handling & protection of parts or semi-finished goods when they are transported among manufacturing facilities. Traditional solutions for inter-plant packaging include but are not limited to wooden pallets, corrugated boxes, foam, desiccants, plastic bags and other materials.

As it generally occurs with the final packaging, industrial packaging such as customized foam trays, desiccants and plastics bags are disposed once the goods are received in their final destination. Wooden pallets may be reused for a

short period of time or recycled. However as the flow of semi-finished goods is only in one direction, the excess of wooden pallets is discarded along with other low cost materials to garbage silos or burners.

According to the US EPA, the United States Environmental Protection Agency, annual generation of municipal solid waste in the United States has increased from 88 million tons in 1960 to 236 million tons in 2003 [1]. Containers and packaging made up almost one third of those 236 million tons. The waste generated by the industrial processes involved in the packaging supply chain dwarfs municipal waste. Industry in the United States is reported to create 7.6 billion tons non-hazardous waste each year [2]. This situation has forced more than 25 countries to define environmental packaging design requirements and in 30 countries to require package reporting and advanced disposal fees to companies [3]. In addition, the average growth rate for containers and packaging through 2010 is projected to be 1.8 percent annually, more than any other product category [4].

From an economic perspective, although inter-plant packaging serves a critical role in the movement of goods; it represents additional cost for companies in the packaging material itself, the space and process needed for its disposal. In this context, a review of inter-plant packaging solutions can be a source of cost reduction with direct impact to companies' bottom line as well as allow the companies to comply with the environmental requirements.

While companies frequently look to reduce costs using lower cost parts and improving their process, inter-plant packaging has been one of the more overlooked areas. The focus of this paper is to discuss the innovative inter-plant packaging solution explored and implemented by the service provider with significant cost reduction using an environmental friendly approach.