

## Chapter 5.23

# The Factors Influence Suppliers Satisfaction of Green Supply Chain Management Systems in Taiwan

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### ABSTRACT

This study investigated user satisfaction when a new interorganizational information system (green supply chain management system; GSCMS) was introduced to a supplier by a leader in the Taiwan electronic industry. GSCMS providers, according to the requirements of the supplier network leader, trained the representatives of suppliers. All suppliers of two sample vendors (manufacturers of electronic products) were surveyed. Five putative influencing factors were

considered: perceived usefulness, perceived ease of use, training, computer anxiety, and computer self-efficacy. We find four factors significantly affect user satisfaction. The results show that the training provided by focal vendors will influence the satisfaction of users. Next, the anxiety and uncertainty experienced by users decreases when they acquire more knowledge about the operation of the new GSCMS. Finally, user satisfaction can be increased by designing the functions and interfaces of a GSCMS in accordance with the user perceptions of usefulness and ease of use,

moreover, implications and suggestions are also discussed.

## INTRODUCTION

European Union (EU) RoHS Directive relates to restrictions of the use of certain hazardous substances in electrical and electronic equipment, and states that from July 1, 2006, all electrical and electronic products imported into the EU must be proved not to contain six certain hazardous substances. The Ministry of Economic Affairs of Taiwan assesses that around 44 types of Taiwanese electrical and electronic products (which are exported to the EU) will be impacted by these restrictions. The directive will directly influence over 30,000 companies and annual trade of around NT\$ 250 billion in Taiwan (i.e., 2.45% of the GDP), and indirectly influence over NT\$ 400 billion annually (Epoch Times International, 2005). In order to facilitate the export of products to Europe, Taiwanese companies that export electrical and electronic products have embarked on implementing green supply chain management systems (GSCMSs) in order to conform to the new requirements.

Park and Krishnan (2005) point out that effective supply chain management can lower development and procurement costs, spur innovation, increase flexibility, and speed up product development. The function of a GSCMS is to ensure that all electrical and electronic products will conform to the relevant environmental controls before they are exported. The implementation of GSCMS by Taiwanese companies that export electrical and electronic products is therefore expected to be an important and necessary weapon to maintain their global competitiveness.

Generally, an electronic product was composed of a large number of raw materials that provided by many different suppliers, the formats of substances examination reports of each raw material may also be different. In the past, to obtain

a substances report of an electronic product, manufactures (dominant network vendors) have to contact each raw material supplier individually and ask them to deliver their substance examination reports. Then, the focal vendors integrate all substance examination report of each raw material into a substance report of an electronic product manually. The whole process is complex, time-consuming, and easy to make mistakes to endanger the results. Besides, if there were any tiny changes on substance examination reports, the whole process will be run again.

GSCMS is a Web-based interface, which integrates with the bill of material (BOM) of dominant network vendor. This means that the GSCMS could easy obtain all the raw materials of an electronic product from the BOM. The vendors will set up an account and a password for each supplier that enables them to access the GSCMS. Once the supplier login the GSCMS, they will see a list of all raw material and requirements that they have to provide the substance examination reports and relevant information. The suppliers can upload or manage their substance examination reports online immediately. Besides, they can also search and trace all the substance examination reports status confirmed by the vendor. As long as the substance examination reports are in the valid period, they can be repeatedly used. Furthermore, GSCMS also save every substances examination reports, suppliers can download their former reports, and modify the formats to fit with other dominant network vendors' requirements. After all the substance examination reports of each raw material are entered by their supplier, the vendors can calculate the substance of their electronic products easily and accurately.

Dominant network leaders can use their superior bargaining power in an interorganizational information system to increase their competitive advantage as well as to secure supplier benefits by streamlining interorganizational processes. In Taiwan, a GSCMS is mainly constructed by focal vendors in the electrical and electronic industry,

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