



# The impacts of the integrated logistics systems on electronic commerce and enterprise resource planning systems

Stephen M. Rutner <sup>a,\*</sup>, Brian J. Gibson <sup>b</sup>, Susan R. Williams <sup>c</sup>

<sup>a</sup> *Department of Marketing and Logistics, University of Arkansas, Fayetteville, AR 72701, USA*

<sup>b</sup> *Department of Aviation Management and Logistics, Auburn University, Auburn, AL 36849, USA*

<sup>c</sup> *Department of Information Systems and Logistics, Georgia Southern University, Statesboro, GA 30460, USA*

---

## Abstract

The growth of the supply chain concept has required logistics organizations to improve the flow of information both internally and externally. The increased information requirements have facilitated an integration of logistics information systems (LIS) and supply chain information systems in many companies. The increasing use of electronic commerce and enterprise resource planning and other LIS tools and techniques will shape the business process for the foreseeable future. Companies should understand their options and their impacts when making decisions to support their supply chain systems.

© 2003 Elsevier Science Ltd. All rights reserved.

*Keywords:* Logistics; Supply chain management; Information systems; LIS; SCIS; ERP

---

## 1. Introduction

There has been a steady growth of information systems in inventory management, production, and logistics. This paper reports the results of a recent longitudinal study into the use of logistics information systems (LIS). The survey results reported herein highlight an increasing use of LIS and its ability to link functional areas of business. Additionally, the paper examines the role of two information system tools—electronic commerce (EC) and enterprise resource planning (ERP)—that had not been investigated in previous editions of the study. Information regarding the respondents' EC and ERP adoption sequences, use of key subsystems, and relationships with integrated logistics systems are presented.

---

\* Corresponding author.

*E-mail addresses:* [srutner@uark.edu](mailto:srutner@uark.edu) (S.M. Rutner), [bgibson@business.auburn.edu](mailto:bgibson@business.auburn.edu) (B.J. Gibson), [rebstock@gasou.edu](mailto:rebstock@gasou.edu) (S.R. Williams).

To accomplish these tasks, the paper is divided into six sections. Following the introduction, a brief literature review provides insight into the issues of LIS adoption and integration. Other key sections provide insight into the study methodology, survey respondent profiles, and major findings. Limitations of the study and future opportunities for analysis are also provided. Finally, a conclusions section summarizes the key points of the research.

## **2. Previous research**

LIS has been a major area of study in the logistics and operations areas for more than 25 years (House and Jackson, 1976; Lambert et al., 1978; Williams et al., 1998; Whipple et al., 1999). Issues relevant to the current research include: the usage rates of LIS tools, integration of logistics and LIS, emerging LIS technologies, and LIS adoptions patterns. Key works in each relevant area are discussed below.

A variety of researchers have examined the usage rates of various LIS tools. A number of these studies were conducted approximately every five years since 1975 (Gustin, 1984, 1993, 1995; Rutner et al., 2001). This stream of research provided the framework for the current study and includes a number of relevant findings. Each study is much like a company's financial statement. The study provides a "snapshot in time" of the current LIS tools in use as well as identifying future possible trends. For example, each study identifies the usage rates of approximately twenty-five LIS subsystems. This series of studies provides the plan for not only the theoretical portion of the study, but also the actual design of the longitudinal portion of the questionnaire used in this study. Finally, a number of additional studies help to frame the overall LIS research by identifying the various programs, data collection elements, and previous usage rates to ensure that all of the traditional elements of a LIS are included within this study (Waller, 1993; Langley et al., 1988; Kling and Grimm, 1988).

An additional related area of examination is an evaluation of the ability to integrate logistics and LIS throughout the organization. The Gustin et al., research focuses on the impact of logistics integration as compared to the adoption and success of LIS within an organization. They present numerous significant findings based on the adoption of various LIS application tools and the level of logistics integration (Gustin et al., 1995). They specifically asked the level of integration of logistics throughout the respondents' organizations. They identify that the companies that have a higher level of logistics integration throughout the firm are also likely to be using more LIS systems.

Since the first part of the research is based on the previous research, there are additional opportunities to examine newer trends and IS areas. Therefore, a current trends in LIS section is included to address emerging issues. Recent studies of IS tools help the researchers identify new systems and methods that deserve examination. The previous (Gustin et al., 1995) research could not incorporate all of the advances since their last study. Various more recent studies discuss new types of supply chain management tools (Harrington, 1997), inventory related software (Maclead, 1994; Forger, 1999), functional execution systems for logistics and operations (Smith et al., 1998), and transportation and distribution software suites (Anonymous, 1998). Two other topics also receive extensive attention in the current trends literature—ERP (Bradley et al., 1998; Shaw, 1998; Piturro, 1999; Bradley et al., 1999a) and EC (DeCovny, 1998; Bradley et al., 1999a,b; Witt, 1999;

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات