

## **ABSTRACT**

New supply chain management methods using radio frequency identification (RFID) and global positioning system (GPS) technology are quickly being adopted by companies as various inventory management benefits are being realized. For example, companies such as Nippon Yusen Kaisha (NYK) Logistics use the technology coupled with geospatial support systems for distributors to quickly find and manage freight containers. Traditional supply chain management methods require pen-to-paper reporting, searching inventory on foot, and human data entry. Some companies that prioritize supply chain management have not adopted the new technology, because they may feel that their traditional methods save the company expenses.

This thesis serves as a pilot study that examines how information technology (IT) utilizing RFID and GPS technology can serve to increase workplace productivity, decrease human labor associated with inventorying, plus be used for spatial analysis by management. This pilot study represents the first attempt to couple RFID technology with Geographic Information Systems (GIS) in supply chain management efforts to analyze and locate mobile assets by exploring costs and benefits of implementation plus how the technology can be employed.

This pilot study identified a candidate to implement a new inventory management method as XYZ Logistics, Inc. XYZ Logistics, Inc. is a fictitious company but represents a factual corporation. The name has been changed to provide the company with anonymity and to not disclose confidential business information. XYZ Logistics, Inc., is a nation-wide company that specializes in providing space solutions for customers including portable offices, storage containers, and customizable buildings.