

Case Study on Application of Satellite System Based Vehicle Tracking Technology in Logistics Industry in Sri Lanka

UDARA THENNAKOON and NISHAL SAMARASEKERA

University of Moratuwa, Moratuwa, Sri Lanka

udarathennakoon95@gmail.com

Abstract

Logistics operations are becoming more advanced with demand for responsive and reliable integration of complex dispersed suppliers, manufacturers and distribution centres. Freight transport facilitates material flow among these supply chain strata in logistics operations. In order to have successful freight transport, there should be greater visibility for freight movements, cross-organizational connectivity with real time synchronization and seamless information sharing. Absence of these requirements may cause issues such as lack of security of cargo, difficulty to optimize and schedule routes, shipment delays and lack of proper communication. If it is possible to reduce the communication gap between vehicles and operational personnel, these issues would be reduced considerably. Remote vehicle tracking is one of the solutions that can reduce this gap. With the improvements and cost reductions in GPS (Global Positioning System) technology and wireless communication, telematic systems which connects wireless communication with sensor-based monitoring and location tracking software based on GPS have been widely initiated in current freight operations globally. GPS is the most popular version of the GNSS (Global Navigation Satellite System) used by the global logistics industry. As a country which plays a pivotal role in the global logistics industry, it is timely that Sri Lanka adopts this advanced technology. Several local companies have already initiated GPS based vehicle tracking with the primary objective of fraud detection. Apart from fraud detection, there are many other applications of GPS vehicle tracking technology which are used globally to increase operational efficiency while reducing unnecessary costs. It will be a significant value addition, if these applications can be adopted locally. This research is an in-depth study, of how GNSS technology is applied

in the logistics industry of Sri Lanka to overcome the complexities and issues in freight logistics, using a case study research approach. Further, this study elaborates how GPS technology can be integrated with other technologies, thus generating valuable information for better decision making in freight transport operations. As a key finding of the study a framework on utilizing GPS technology in the logistics industry in Sri Lanka is proposed so that future GPS users in the logistics industry can use this to gain better return on investment.

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