

# **Main Issues of Container Terminal Automation and Development Strategy in Korea**

Sung-Woo Cho(swcho@kunsan.ac.kr)

Kunsan National University

## **Abstract**

Robotics and smart ports, which are part of the fourth industrial revolution, are becoming reality. Singapore and China operate automated container terminals as well as Europe and the US. The automation container terminal currently in operation is in the early stage of establishing complete unmanned operation by utilizing the top level quay crane (Q/C), AGV (Automated Guided Vehicle), and ASC (Automated Stacking Crane). The automation container terminal is required to cope with the ultra large container ship (24,000TEU class) and to handle it quickly and safely. Despite the advantages of automated container terminals, such as labour cost, power cost, and environmental cost reduction, there are difficulties that cannot easily be changed.

Various issues such as labour switching, development of new technologies, utilization and convergence of developed technologies, stabilization of technology and social acceptance should be discussed and solved in order to be an automated container terminals. Busan Port in Korea, which is the fifth largest port in the world, is still in the level of yard automation, so urgent technology development and application are needed. The paper introduces an overview of current advanced container terminal automation worldwide. The paper explains critical equipment and technological issues of an automated container terminal operation. We provide the critical success factors for the installation of automated container terminal in conclusion.

**Keywords:** *Automation, Port, Container Terminal, Development Strategy*

## **Biography**

Dr. Cho is currently an associate professor at the Department of International Logistics in Kunsan National University. In 2011, he earned his Ph.D. in business administration from Sungkyunkwan University in S. Korea. His research area is port logistics, international logistics, supply chain management, and organizational culture. In recent years, he has been studying large-sized vessels, futuristic container terminals, port automation, port security, and business feasibility.