

Title of Diploma Thesis

Determination of Container Managing/Handling System at the Container Terminal of Thessaloniki's Port after its Expansion

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Academic Year

2015-2016

ABSTRACT

The use of intermodal containers in maritime transport started in 1960. Their use spread rapidly resulting to their consolidation in the maritime transport system. Today, approximately 90% of non-bulk cargo handled on a global scale is transported by containers stacked on transport ships.

The revolution occurred with the appearance of containers in the maritime transport system, created the urgent need for the creation of new port facilities and/or for the upgrade of existing ones; in this way, container terminals in a port have been developed towards the efficient serving of the containerships as well as the efficient management and handling of the containers.

The number of trading containers at the container terminal of Thessaloniki's port follows an increasing trend over the past years. Moreover, the demand forecasting for the coming years implies an even greater increase in the number of handled trading containers.

Therefore, it is crucial that the port of Thessaloniki upgrades and improves the existing facilities of the container terminal. According to the corresponding port's development plan, new projects are required including the purchase and the installation of new transport and storage container equipment, so it can respond to the new trading volume of containers.

In the present thesis, two different systems for managing/handling (transportation/storage) trading containers in the container terminal of Thessaloniki's port are proposed and compared. In order to compare the proposed systems, three criteria are used:

- The annual terminal capacity, i.e. the maximum number of containers that can be handled in the storage area of the container terminal per year,
- The total annual cost of the vehicles used at each system and
- The economic evaluation of the proposed systems. This evaluation presents a useful tool supporting the decision making process regarding one or more investment plans.

These criteria are applied to both the proposed managing/handling systems and after a comparative presentation of the corresponding results, the most efficient system is selected.

Keywords: Intermodal container, Management, Handling system, Container terminal.