

# The art of port transformation: positioning to meet marketplace challenges

Larry Lam, Chairman, Portek International Ltd, Singapore

Today, a number of factors are forcing regional ports and feeder ports to make essential decisions about whether they should upgrade their facilities or not. The primary reason is the 'cascade effect' caused by the introduction of mega-ships at the top of the container vessel hierarchy. These new 7,000- to 12,500-TEU vessels are displacing 4,000- to 6,000-TEU vessels and pushing them down one level in the hierarchy; and they, in turn, are pushing 2,000- to 4,000-TEU vessels down one level.

Thus, to accommodate large ships cascading downward in the hierarchy, there's an acute need for ports that can meet the new requirements of shipping lines. Regional and feeder ports must be prepared to configure themselves to accommodate larger vessels or risk being marginalised or dropped by shipping lines.

Creating capacity in a short period of time is difficult. Expertise is needed to quickly and efficiently execute the plan with no costly delays, waste, or missteps. The Portek Terminal Start Up and Management programme – TSUM – addresses this need. A good example of how TSUM works is provided by the port of Bejaia on Algeria's Mediterranean coast. It demonstrates how a multi-purpose port was transformed into a modern container operation in just 12 months.

## Module one: planning and development

At the onset, extensive market studies were conducted. These included studies of routes, needs of shipping lines, and hinterland infrastructure and logistics. From this, a marketing programme was developed and implementation began immediately.

Next, terminal layout planning began with computerised simulations where alternative throughput scenarios were examined to determine the optimum configuration for the terminal. From these, it became possible to identify and specify the equipment to acquire.

## Module two: terminal construction and equipment delivery

For Bejaia, construction was necessary to strengthen the quayside with steel-reinforced concrete to support the greater loads. Typically, we determine port construction needs – whether dredging, reclamation, quay and yard improvements such as structures and rail installations; then appoint contractors and oversee construction.

In upgrading Bejaia, we specified the equipment needed, issued tenders and conducted pre-purchase evaluations. Close



Computerised simulations are performed to determine equipment requirements and most efficient yard configuration



Civil engineering activities. Work begins on strengthening the quayside with steel-reinforced concrete



Specification, acquisition, delivery and installation of all equipment for the terminal



Before: A conventional multi-purpose port



supervision of selected manufacturers and sources ensured quality and adherence to specifications. For the quay and gantry cranes purchased, we handled all aspects from vessel sourcing to loading, lashing and delivery. Upon arrival, inspections and acceptance were followed by installation and operational tests.

### Module three: start up

The next step at Bejaia was the set-up and implementation of the IT system including a Container Terminal Management System (CTMS). A team of IT technicians was hired to install and connect all hardware and software to our specifications.

To attain the desired levels of efficiency, the next step was in training existing and new personnel. Our training is very vigorous and covers every aspect of terminal operations, maintenance, and safety procedures. For this, we brought in our team of operator-trainers to conduct training activities during the staff ramp-up period.

### Module four: terminal upgrades

As a part of the IT master plan for maximum throughput and efficiency at Bejaia, we automated the port's processes. This included a position determining system and a wireless data terminal system. At other port locations, we also implement character recognition system and a remote crane management system (RCMS).

At other ports, upgrades or replacements of panamax cranes may be needed. For cranes needing additional lift height, it's generally possible to increase from 26-metres to 30- or even 32-metres. Panamax cranes that reach 12- or 13-rows can generally be extended to 14- or 15-rows. In addition, crane operating speeds can be increased by replacing drives.



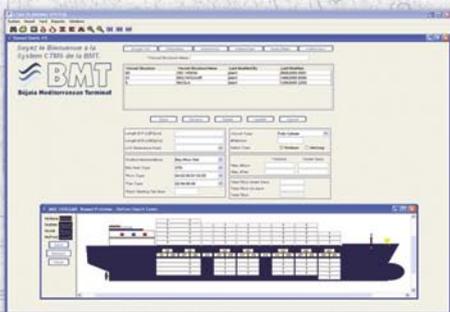
Bejaia was transformed from a multi-purpose port into a modern container operation in just 12 months.

### Module five: terminal management

At Bejaia, along with our task of transforming the port to modern container operations, we have a long-term concession for full operations of the terminal. To accommodate the needs of all types of owners including to pure financial investors, we offer terminal management service contracts where our involvement ranges from advisory to supervisory to full-time terminal management.

#### ABOUT THE COMPANY AND ENQUIRIES

Portek is a port specialist offering a full spectrum of equipment, services and solutions designed to enhance port productivity. For more information, please visit [www.portek.com](http://www.portek.com) or e-mail [enquiry@portek.com](mailto:enquiry@portek.com). To download a copy of the Portek Terminal Start Up and Management brochure, visit [www.portek.com/tsum.pdf](http://www.portek.com/tsum.pdf)



Automation of terminal equipment with all systems networked to central computer system

A fully-modernised, professionally-operated container port.  
Typical timeframe from starting point to fully operational is just 6-12 months

## Portek. Terminal Start Up and Management Program.

It's the fastest possible path to world-class productivity and profitability for container terminals.

Based on Portek's 21+ years of global experience in delivering port productivity solutions, the program consists of an integrated suite of service modules covering all aspects of terminal development. The modules are available separately or in combinations to suit particular needs.

From any starting point, from greenfield planning a new terminal, converting a terminal to container operations, or upgrading an existing container terminal; program modules encompass the full spectrum of development, construction, equipment acquisitions, and if desired, can encompass varying degrees of terminal operation and management services.

When you're considering the most efficient ways to take your port to the next levels of productivity, let's talk.

**PORTEK**  
KNOWLEDGE & SOLUTIONS IN PORT BUSINESS

[www.portek.com](http://www.portek.com) enquiry@portek.com Tel: +65 6873-1114

Download a Portek Terminal Start-Up and Management brochure at [www.portek.com/TSUM.pdf](http://www.portek.com/TSUM.pdf)