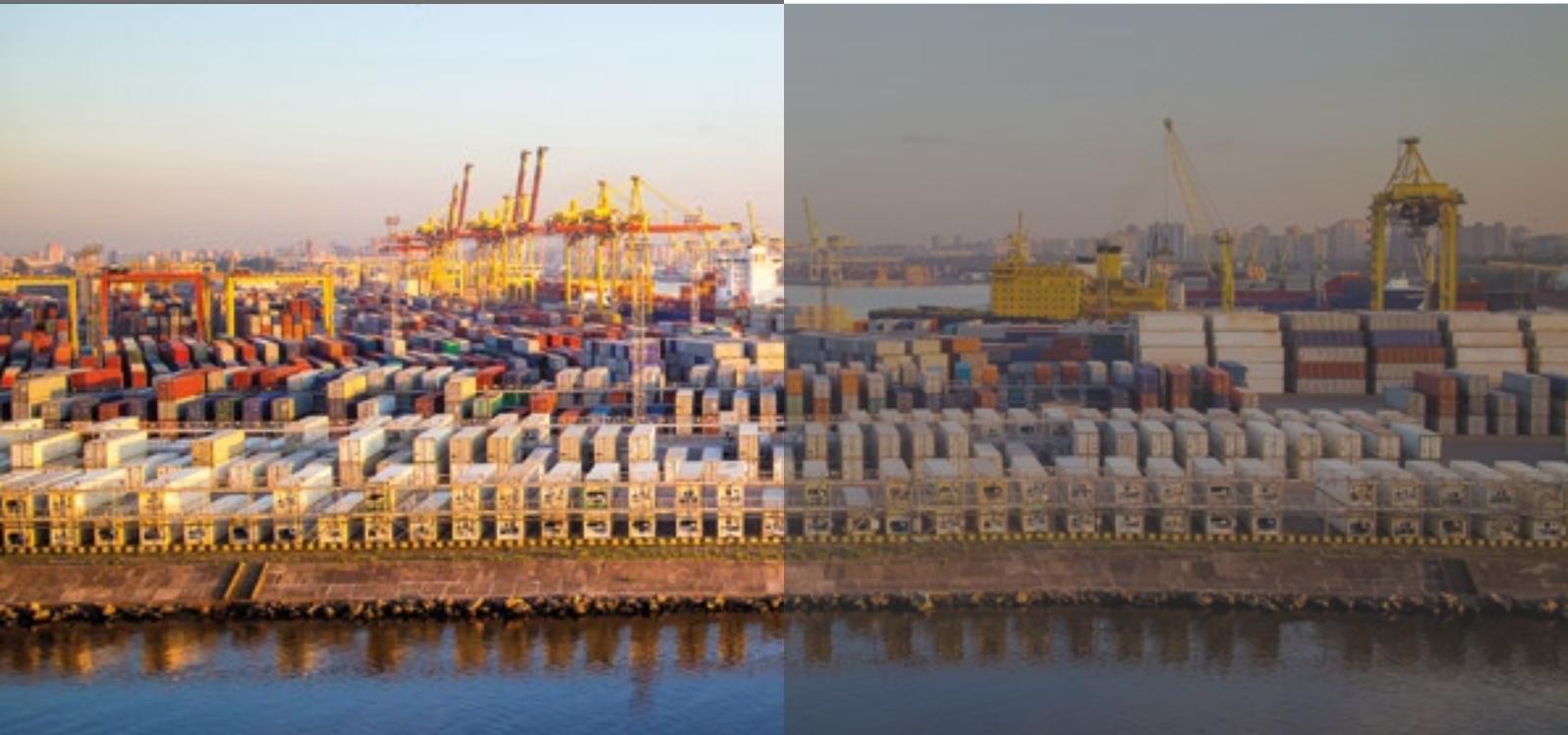


CHESSCON ensures operational TOS planning and offers realistic training sessions



Project report for Transnet Port Terminals



The South African company Transnet SOC Limited is the national company for goods transport and goods turnover. The subsidiary company Transnet Port Terminals operates seven seaport terminals on the coast of South Africa on its behalf, including Africa's largest container terminal. It is located in the port of Durban and is the terminal with the highest container throughput; its overall capacity is 3.6 million TEU per year.



Proving necessity of investment requests

Transnet Port Terminals is using the software solution CHESSCON from AKQUINET for nine years already. The Capacity Planning Group based in the headquarter has to evaluate investment requests from the terminals and has to confirm their necessity for each case. If it is not clear from the figures out of the request, the team simulates scenarios to get more detailed ones. Thus CHESSCON Capacity and Simulation modules dynamically calculate alternatives for investment decisions, such as purchasing new cranes and other equipment.

“We are using CHESSCON for our strategic planning for many years already. We have it integrated into our terminal development and decision taking process for any major terminal project – be it new equipment, terminal expansion or even new terminals.” He adds: “My team is doing most of the simulation ourselves and for complex cases and new items we can always count on the knowledge and experience from the CHESSCON team”.

Quote from team leader Previn Govender



Securing TOS installations and updates

Some four years ago Transnet Port terminals decided to use CHESSCON Virtual Terminal to secure the TOS upgrades. Before going live with a new release, this will be tested by the emulation software until a secure rollout to operation is guaranteed.

Improving operational processes

But this is not the end of the story. Jointly Transnet Port Terminals and akquinet discussed how CHESSCON modules, which have primarily been used for strategic investment planning and software tests to date, may support tactical and operational planning? How can they provide a sound basis for making operational decisions in daily business? In the process, Professor Holger Schütt and Norbert Klettner illustrated three dimensions that may become relevant for Transnet.

1

TOS training with CHESSCON Virtual Terminal

Only experienced doctors perform open-heart surgery. A terminal's heart, which is called the terminal operating system (TOS), should also be operated by experts, because incorrect decisions can quickly cost many thousands of dollars. So how should new employees be trained in advance and become Grandmaster of terminal operations? The training sessions offered in the TOS are helpful ways of learning how to operate all the system's functions. However, users cannot use these sessions to train for complete and dynamic scenarios in their own terminals. The CHESSCON Virtual Terminal module let them simulate the operation towards the TOS entirely in their own terminals' dynamic scenario. When they do so, they operate the TOS as they usually would, and the additional CHESSCON module runs the operation

and makes the static approach dynamic. That way, all the results of their decisions are immediately visible.

In the TOS training, CHESSCON can also be used to practice problematic situations like a crane breakdown so employees can train and avoid making serious mistakes later on. The CHESSCON Virtual Terminal module can be incorporated into all common TOS solutions like Navis' Sparcs und N4, TSB's CATOS, TCS' MACH and RBS' TOPX.

One participant's TOS training experience: We could compare standard strategies using the Virtual Terminal.

For instance, if we use a different pooling configuration in the TOS, what does this do? How to react on equipment problems or bad planning in operation?

2

Educated decision making with CHESSCON Shift Preview

The second dimension of CHESSCON's operational process support for terminals concerns the actual results of the TOS planning. If a planning is created there, CHESSCON allows employees to go through individual scenarios for the planning, thus visualizing time- and cost-related effects within minutes for a whole shift. The OOE (overall equipment effectiveness – KPI) determined and aggregated based on simulating the planned shift from the TOS can thus be broken down into individual factors like the use of an additional crane or equipment utilization.

If there are disruptions and problems, the CHESSCON Shift Preview module can be used to immediately determine the best countermeasures. At many terminals, decisions are often made under pressure in such situations. Experience and intuition usually form the basis for making decisions. Facts can help people make these decisions thanks to this module.

3

Increasing visibility and foresight in the yard with CHESSCON Yard View

In addition to cranes and equipment, distances and the time needed to overcome them are important parts of terminal operations. Where are the containers for rail and truck? How far away are the containers from the ship? What is the cargo distribution? What distances do I need to cover to completely load the train and how many shifters will occur during the operation? Being able to factor appropriate estimates of the time needed for these distances into operational planning in terminals often requires a lot of experience. Thus yard management and visibility of the result can be improved using the module CHESSCON Yard View.

One participant's experience with visibility and foresight in the yard: The Yard View can be used to visualize the effect of twin transports (one device transports two containers from the ship to the yard) for subsequent railway operation at a glance and without carrying out additional simulations.

The lesson is clear: Besides the strategic planning and securing the TOS operation more and more tactical and operational tasks will be supported by simulation and emulation technology. Terminal's staff in the control room will get into the position to improve their planning skills and thus will increase the efficiency of the whole terminal.



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