



Advances in technology, cost-effectiveness, functionality – port operating systems need all three, finds **John Bensalhia**

FINDING AN IDEAL software system hinges on a number of factors – the quality, the cost, and also the operating model of the port or terminal.

In some locations, the public port authority will continue to serve as a terminal operator – in which case, a port would be best served by both a port operating system (POS) and a terminal operating system (TOS).

The POS manages port-wide services and functions, including vessel traffic management, pilot services and tug services. The TOS meanwhile, manages cargo handling activities at the terminal under its jurisdiction. However, in ports where terminal operations have been privatised, it could be argued that authorities would be advised to invest in a POS, whereas terminal operators would be best served by a modern TOS.

Michael Schwank, president of Tideworks Technology, says that the cost-effectiveness of a TOS can be evaluated in two ways, “the ability of the TOS to help the operator a) reduce costs and/or b) increase volume by boosting productivity and/or improving customer service.

“These factors increase the overall return on investment of the TOS, and these are the primary goals of any TOS.

“Additionally, factors that affect the total cost of ownership over the life of the TOS need to be included in the evaluation of the TOS’ cost-effectiveness. Costs such as customisation, implementation and training, software support, Electronic Data Interchange (EDI), and system support can end up costing more than expected. We, as TOS providers, offer a complete package of reliable, cost-effective services to support the TOS over the long term.”

Julian Wright, marketing manager of Autostore/Central Systems & Automation Ltd, adds that the right system is largely dependent on teu throughput and what sort of additional services the port or terminal operator is looking for from their TOS. “There are entry-level systems on the market that are more cost-effective for the smaller terminals but for larger ones – 100,000 teu+ to as large as you want to go – you need a scalable, proven and robust software architecture with a level of database processing, typically Windows/Oracle, that can handle variable and very demanding information loads plus incorporate additional functionality modules for areas such as resource planning, rail planning, resource planning and warehousing.”

Mr Wright adds that the key selection criterion for a cost-effective solution is a system which has the

All systems go



HIGH FLYER: Autostore’s port-centric approach suits mid-range and above terminals, such as Immingham (pictured)

ability right from the off, to increase throughput, reduce labour costs, optimise the port estate footprint, and cut container dwell: in other words, focusing on optimising the financial bottom line.

Cotecna’s scanner group manager, Craig Hanford says that the same applies for port and terminal scanner choices: “No one port terminal is the same, though obviously they have similar objectives and processes. A key factor is always what the search criteria are, eg: fiscal, contraband or arms.”

Tideworks and Autostore from Central Systems & Automation are popular names for mid-range terminals and above. Autostore offers a total port-centric approach that incorporates warehouse management (WMS) and resource management (people and payroll). Mr Wright says: “We have arguably the first true, non-proprietary port-centric (TOS/WMS/Resource Management) application in the world that integrates the entire supply chain at the port-side – with Deutsche Bahn’s Port of Szczecin in Poland.”

Tideworks has found that the most enduring products are those that can provide a high breadth of functionality with the backing of a stable organisation which can provide cost-effective, long-term support to the customer. “It is as much about finding the right technology partner as it is about finding the right operating system,” says Mr Schwank. “The terminal operator needs a partner who will not only provide innovative software, but who also has the capability to integrate that software with various third-party technologies in order to provide the comprehensive solution the terminal seeks.”

Quality is key to the success of a good operating

Michael Schwank
Tideworks
Technology



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system. So what should customers look for when choosing the right product? “A quality operating system should be built on a proven, reliable technology platform,” says Mr Schwank. “The database component of the operating system must be robust enough to handle the anticipated volume of data and transactions. The system should have an intuitive user interface and get the user to the information s/he needs with minimal effort.”

Julian Wright
Autostore

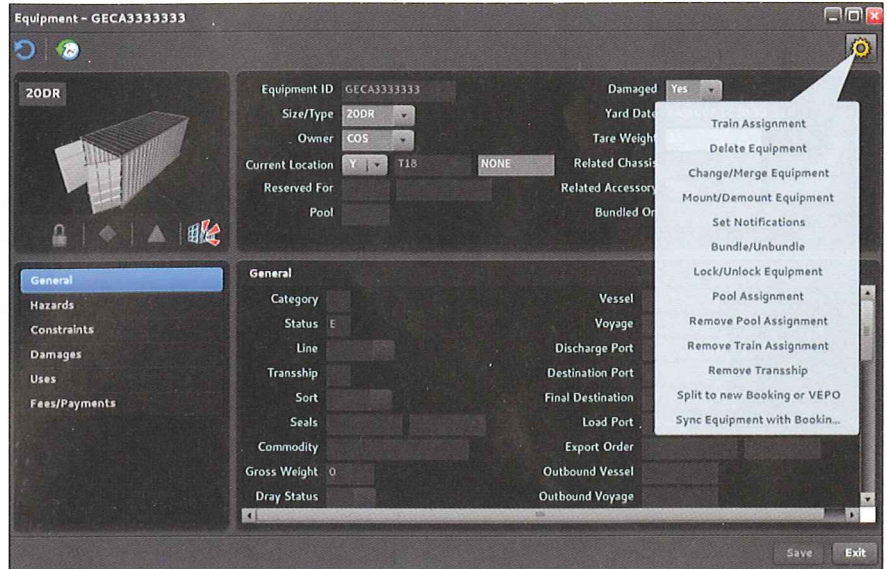


“You need a scalable, proven and robust software architecture with a level of database processing”

However, any efficient system depends on the operations crew. “Staff must be sufficiently trained and managed to be able to identify goods such as contraband, drugs, arms and explosives,” says Mr Hanford. “Staff are critical to the process. The human factor counts – but humans can have good days and bad days!”

So what of the performances of the TOS and POS? What are their capabilities? How do they integrate with each other? And are there instances in which they may not be the right solution? Taking each of these questions one at a time, it is possible for a traditional TOS to manage an entire port – although the system’s limits must be acknowledged. “As long as the TOS has the required scalability and processing power, it is possible,” says Mr Wright. “Autostore has a full port-centric capability that integrates warehousing and resource management with container and break-bulk terminal management. For instance, Autostore manages a network of eight ports on the Rhone river for Port of Lyon, France.”

Mr Schwank agrees that it is possible for a TOS to manage a whole port, but adds that Tideworks believes that the TOS would be better off separate from the realm of a POS because the two systems provide complementary, but distinct, functions. “Imagine fusing MS Word and MS Excel into a single



OPEN VIEWS: Tideworks finds that breadth of functionality is important among its customers

application. The result might work well for an accountant who also happens to be an author, but more likely it will end up diluting the capabilities of each product.

“From our perspective, it makes much more sense to build an interface between the TOS and POS where needed. In this way, each technology provider can stick to what they know best and the customer gets the best of both worlds.”

Mr Wright points out that the port operating system often is the TOS, interfacing directly into the port operator’s ERP or core business management systems. Commenting on the integration of a TOS with a POS, Mr Wright says that the possibility is best viewed on a case-by-case basis, as no two ports are the same. “The key concerns are software integration, core scalability and a strong functionality suite. As TOS increase in capability, we’ll see them be able to handle more and more tasks.”

Tideworks raises concerns over merging the two, and argues that the drawbacks outweigh the limited benefits. Mr Schwank adds that there are also circumstances where a POS may not be able to

handle a TOS job and vice versa. “Essentially, anywhere there is a ‘landlord – tenant’ relationship between the port authority and the terminal operator, or where terminal operations have otherwise been privatised: combining the two functions doesn’t benefit either entity. In these cases, the port authority and terminal operator operate independent of each other, and therefore, the functionality needed by each entity is markedly different.”

Mr Hanford comments further on potential mismatches. “In our experience, blanket contracts with a ‘one size fits all’ approach are often led at government level without the involvement of experts and people on the ground. This results in being stuck with equipment that is not used properly, or at all.”

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On trend with remote access and photo realism

THE FUTURE LOOKS bright for operating systems. For instance, recent step changes in graphics capabilities are driving a new generation of photo-realistic terminal representations where terminal operating system users can view terminal operations from various perspectives, such as the crane cab.

“Secure web-enablement is driving access-from-anywhere

capabilities,” says Julian Wright, marketing manager of Autostore/Central Systems & Automation Ltd. “This is great for improving customer service and real-time cargo location status all the way through the supply chain.”

Another key issue to bear in mind for future products – and also for technology solutions in general – is that the key for operating systems of

the future will be the ability to do more with less.

Michael Schwank, president of Tideworks Technology, comments: “We believe we will continue to see a migration from a ‘client-server’ approach to a ‘Software as a Service’ model, where the provider takes care of all the hardware and infrastructure required to provide the operating system to the customer

via the web. Additionally, automation and optimisation will continue to take on more importance to operators of all sizes, as they strive to increase productivity and reduce costs.

“The systems of the future will need to contain the complex business logic and algorithms needed to make this automation and optimisation work.”