



# PORT DEVELOPMENT AND INVESTMENT: DIGITALISATION AND THE ROLE OF THE PCS

Richard Morton, Secretary General, International Port Community Systems Association (IPCSA)

Digitalisation is gathering pace across the maritime sector – and not before time. As far as ports are concerned, a strong commitment to digital solutions is vital in order to remain competitive. In fact, dealing with the COVID-19 pandemic has reinforced the importance of having digitalisation at the core of successful operations.

What does this mean for port development and investment? Master planning has traditionally been an exercise focusing on infrastructure needs and developments over the next 10 or 20 years, or more. Master planning for a digital world does not have that luxury of time! IT infrastructure needs analysing and updating far more regularly – perhaps as often as every six months.

A digitally-savvy port needs dedicated, in-house IT teams with the expertise to en-

sure that their systems are up to date with technology – and that they are meeting the evolving needs of all users, across public and private sectors.

This is not as simple as blockchain today, AI tomorrow. Ports operate in an increasingly interconnected world, so it is also vital that everyone talks the same ‘language’, i.e. uses the same core data standards. What’s the use of the most up-to-date technology if no one’s systems can talk to each other?

Port Community Systems (PCS) have always been digital pioneers, and they are still driving forward with increasingly innovative solutions that deliver efficient operations, speed up cargo flows, reduce bottlenecks, eliminate congestion and increase visibility for all in the supply chain.

Among our members, the Port of Los Angeles, Polski PCS and Trieste Port Authority have all worked hard to develop and refine systems that truly match the needs of their ports, terminals, users and – notably – stakeholders and operations well outside the ‘traditional’ port environment.

## WIDENING THE CONNECTIONS: TRIESTE

In a restructuring of Italy’s ports system in 2016, the Port Authority of Trieste took on a much wider remit, as a ‘Port System Authority’.

Project manager Alberto Cozzi explained: “In our case, we are now controlling two ports – Trieste and Monfalcone – as well as two inland terminals, a shunting company and 52% of the local industrial development agency.”



## “WHAT’S THE USE OF THE MOST UP-TO-DATE TECHNOLOGY IF NO ONE’S SYSTEMS CAN TALK TO EACH OTHER?”

– Richard Morton



This structure shapes the activities and ambitions of Trieste’s PCS. “When the PCS started, it was dedicated to the Port of Trieste – but more and more it has to be integrated with Monfalcone and the rail terminals,” said Cozzi. “Something specific to Trieste is that our market is not just northern Italy; because of our location, our market is Germany, Austria, the Czech Republic and Slovakia. That is also why we are very much an intermodal port, being connected to rail terminals in many parts of Europe.”

Through the PCS, Trieste is building connections with railway operators and terminals across borders. A system of interoperability with Austria’s rail operator, introduced in 2019, is a good example. “When a train from Austria enters the port, we have all the information about it – the train’s composition, what is in each wagon, and so on. The same information is available when the train leaves the port.”

A similar system has been developed with rail terminal operations in Budapest, Hungary. “It is the first time we have had a system with a rail terminal so far away from us; if it works well, we have built a framework which we can replicate for other terminals,” said Cozzi.

Meanwhile, PCS functionalities have been added for the buffer areas for excess trucks and trailers within Trieste’s Freeport status. Trucks moving between the buffer areas and the port are monitored by the PCS by way of road cameras to ensure there is no undue delay which might indicate opening or tampering with goods along the ‘corridor’.

Now Trieste PCS is developing an app for truck drivers to book their slot at the port for delivering or collecting containers, to avoid congestion or queues outside the port gates; work is also under way with motorway op-

erator Anas to develop a system to provide advance warning on motorway signs if there is any kind of hold-up at the port.

Trieste is a global port and all those involved must remember they are part of global supply chains, Cozzi said. “How can you improve the attractiveness of the port? Work to become more integrated in global supply chains!”

### HIGH DEMAND: LOS ANGELES

The Port of Los Angeles has been busy – that would be an understatement. There has been plenty of publicity about delays in delivering cargo at the port, the direct result of extremely high demand for all manner of imported goods in combination with issues caused by Covid-19.

However, Eric Caris, the Port of LA’s director of cargo marketing, has said it is important to emphasise that the marine terminals have been successfully handling record volumes. The Port of LA’s PCS, called the ‘Port Optimizer™’, has a crucial role in helping to keep those volumes moving.

“The terminals are all very busy, with vessels laying at anchor,” he SAID. “Yes, the terminals are all busy and there is a level of frustration of people not able to pick up their boxes. But we are handling record volumes and record gate volumes. Cargo is moving.”

The port rolled out an incentive programme rewarding shipping lines that outperformed the market, but on the condition that eligible shipping lines provide data into the Port Optimizer™. The port does not only want volume – it wants cargo to move in the most efficient way possible, Caris said. “The way to do that is to make the relevant data available through the Port Optimizer™, providing transparency and visibility for all those involved in moving the cargo, whether by road, rail or water.”

In specifying, implementing and further

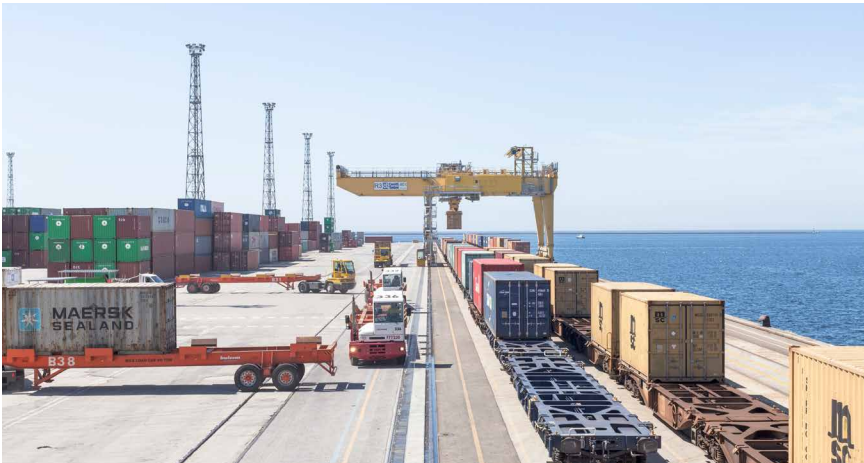
developing the Port Optimizer™, the Port of Los Angeles is taking a broad outlook in terms of connectivity. “When we first put our digital strategy together, we wanted to provide a tool that would help all stakeholders in the supply chain to manage their business better,” says Caris. “It became clear that we needed a digital tool that made all the data available in one place.

“First this had to do with cargo visibility – knowing what is coming our way in terms of cargo type and size, whether local or intermodal, and so on. Following on from this, it would then allow chassis providers to plan ahead, and railroads could also use this information to make sure the railcars are positioned in the right place at the right time. And shippers can track a particular box to find out if it has been cleared/discharged/outgated, where it is now, and so on.”

Developed by Wabtec Corporation, the Port Optimizer™ system has been steadily rolled out for use by beneficial cargo owners (BCO), chassis providers, truckers, railroads, terminals and shipping lines. Use of the PCS is not compulsory but there are strong incentives for doing so.

“Shipping lines will typically create a ‘peel-off’ stack of containers for big importers, to avoid digging out boxes from many stacks,” said Caris. “Through the Port Optimizer™, if the trucking company or cargo owner was able to assign trucks early on before the vessel arrives, and the terminal has visibility to that, then the terminal could even create peel-off piles by trucking company.”

The system incorporates road, rail and marine elements. Not only does it allow better visibility and predictability, the PCS also allows users to download and analyse aspects of their operations later on, to identify where improvements can be made.



**“OUR MISSION IS TO BUILD A TRUE PORT COMMUNITY SYSTEM, NOT A PORT SYSTEM; WE WILL ENGAGE THE COMMUNITY IN BUILDING IT.”**

- Andrzej Zelek

The Port Optimizer™ includes The Signal, which gives an advanced view compared to the previous week or year. A recent addition has been ‘Return Signal’, which gives the trucking community the ability to see, in one place, which terminals are accepting empty containers for which shipping line, reasons why empties are not being accepted and historical data for billing and other processing.

Much more is planned – a key objective is to create a central, universal truck booking system. This would enable a truck operator to book all necessary slots in one place, instead of visiting separate terminals’ websites. “This is a complex challenge but it is where APIs can come into place,” said Caris.

**COMMUNITY-CENTRIC: POLSKI PCS**

Analysis was crucial in developing a Port Community System for Poland – but being customer-centric was the key factor, said Andrzej Zelek, CEO of Polski PCS.

The creation of a unified PCS for the ports of Gdansk, Gdynia and Szczecin and Świnoujście – with all of their differences – was a crucial element of the Government’s plans for port development to 2030.

Firstly, Zelek emphasised the neutrality advantage of a PCS: “Our objectivity enables us to avoid conflict and competition, and support everyone. Secondly our focus was on finding out what the port needed, what customers were looking for, whether there were issues with Customs or car shipments or rail services, for example. There were different points for everyone – each stream had different challenges.

“Customer-centricity was put into practice. We asked companies operating in the port area about their digital infrastructure and plans. We never said ‘we want to do’ – we asked them, ‘what do you think can be improved?’ We didn’t want to replace any system they had in place that was working well – we were there to integrate and work with their systems.”

This approach gained the trust and confidence of the parties in the discussions, he says.

Determined to learn from others, Zelek explained: “We looked at the solutions created in other successful PCSs – how they built the tech and how they use the system. We wanted to copy best practice and avoid making any mistakes that others may have made. Overall, the aim was system-to-system integration, replicating and reusing data and minimising the input of data, while integrating with Poland’s new Customs systems.”

Many stakeholders had different views on what a PCS should be, he says. “We were providing something that didn’t exist at all in the country, and it was important to explain what was needed and what could be delivered.”

Polski PCS was launched with functions such as ship handling/entry, stay/departure, and admin and procedures around ship agency, pilots, tugs, and transshipment. Early successes showed containers being cleared in just a few minutes, when previously the process might have taken hours or even several days.

Currently, PCS sees the potential of solutions similar to those for ports serving inland terminals within the country. It is worth noting that Poland is becoming an important hub for south and west European countries, handling east/west shipments and a high number of rail services. The solutions provided by the PCS can increase the attractiveness of Polish ports, said Zelek. He is clear that the real-time information and visibility provided by the PCS can help shippers and all stakeholders in the supply chain. “Shipments, trucks and other transport can be booked and planned in advance, with certainty. When you wait for the answers from Customs and you are not sure if you have to wait two hours or two days, how can you be precise with your schedule for the truck?”

This year Polski PCS is releasing new transshipment and export modules, which will deliver VAT efficiency and related cash flow advantages. “Our goal is to increase the movement of goods in the ports, for the benefit of all,” said Zelek. “Our mission is to build a true Port Community System, not a Port System; we will engage the community in building it.”

**ABOUT THE AUTHOR**

Richard Morton has been Secretary General of the International Port Community Systems Association (IPCSA) since its beginnings as a European organisation in 2011. As an expert in trade facilitation and the exchange of electronic information, Richard is in demand across the globe as an adviser and speaker. He is a member of the Experts Committee of the APEC E-Commerce Business Alliance and an Expert at UN/CEFACT.

**ABOUT THE ORGANISATION**

IPCSA is an international association of sea and air port community operators, sea and air port authorities and single window operators that is recognised across the globe for providing advice and guidance on the electronic exchange of information across borders and throughout the whole supply chain. The association has nearly 50 members from across the globe who handle the exchange of information for Business to Business, Government to Business and Government to Government processes and facilitate the smooth cross-border movement of goods. This equates to the electronic exchange of information relating to more than 500 million TEU movements and 10 billion tonnes of cargo for air, sea and land transport – estimated to be in excess of 50 billion million exchanges every year.