

PORT AUTOMATION

THE VALENCIAPORTPCS WAY FORWARD

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Digital transformation — the use of technology to radically improve performance or reach of enterprises — is a hot topic for companies across the globe. Executives in all industries are using digital advances such as analytics, mobility, social media and smart embedded devices as well as improving their use of traditional technologies such as Enterprise Resource Planning (ERP) to change customer relationships, internal processes and value propositions. Other executives, seeing how fast digital technology has disrupted media industries in the past decade, know they need to pay attention to changes in their industries now.

DIGITAL FOUNDATIONS

Leading port operators are building a digital foundation that is providing dramatic improvements and meaningful business results, enabling the sector to handle a projected 400-million-ton annual increase in global port volumes, this according to the UNCTAD 2018 Review of Marine Transport. They are moving past decades of manual process tradition to a more agile, data-driven approach, with a keen eye on risk and security issues. While many believe the best way to modernize is to automate, beginning this transition before you thoroughly understand your current operational process can lead to

tragic- or at best very expensive- results. If your process is error-prone and inefficient, all you will do is automate these problems, leading to poorer performance. In fact, McKinsey's "The Future of Automated Ports Study", published in 2019, seems to confirm this. Nearly 40 cargo ports around the world are using some form of process automation, with the total investment cost an estimated \$10 billion. McKinsey projects that ports and terminal operators will accelerate spending to \$15 billion in the next five years.

The port industry is aware of this digital transformation process and it is always boosting automation, due to its dynamic performance. For example, the Port Authority of Valencia has just launched a tender for a new container terminal promoting a fully automated one.

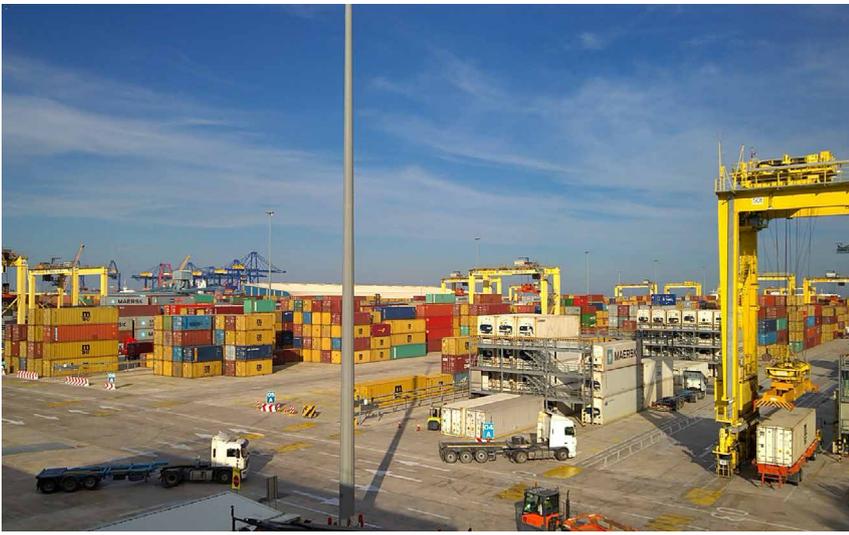
THE PORT COMMUNITY

In the port and transport sector, efficient management of information technologies is a key factor for competitiveness, given the vast amount of information that is produced and exchanged. For this reason, major European ports have developed a large number of systems that considerably enhance information management. Today, the Port Authority of Valencia has a series of tools intended to increase the competitiveness of

port community companies. Among these are electronic invoicing, automated gates, and our Port Community System (PCS), ValenciaportPCS, where more than 850 companies are linked on a digital platform.

International Port Community System Association IPCSA, defined a PCS as an open and neutral electronic platform that enables a smart and secure exchange of information between public and private stakeholders to improve the competitive position of seaport and airborne communities. A PCS should also optimize, manage and automate efficient port and logistics processes through a single presentation of data, linking transport chains and logistics. It is an effective, real-time, fast, focused, flexible and complex information system capable of improving efficiency at all stages of the cargo process in the unloading and loading of ships, customs clearance, port formalities, and delivery inside and outside the terminal.

Ports are key nodes in supply chains where physical and information flows and the requirements of transparency and identification of flows of goods are becoming increasingly complex. From ports, international supply chains can be structured based on the digitization of the supply and demand of logistics services and cargo information flows. Modern ports focus on



increasing the efficiency and effectiveness of supply chains, developing PCSs that support information on demand forecasting and level of response to orders, and minimising inventory costs.

Online monitoring and transparency are increasingly critical to the success of supply chains and ports. The modern scope of logistics entails greater complexity in port sector processes and a high number of stakeholders, which requires the innovation of port communication, information flows and documentation control.

The maritime supply chain has evolved in recent years, supported by information and communication technologies. This evolution has promoted a more intense integration of the port community and has imposed greater requirements on the provision of port services. Investment in IT for ports entails the adoption of paperless communication between members of the port community, integration with logistics partners and cooperation between different ports. This is a necessary step towards competitiveness that ports must take. PCS is the digital platform that enables networking between the public and private agents and entities involved in the ship and cargo services offered by ports, and whose main function is to digitize port operations

PCS DURING CRISIS

During the COVID-19 crisis, PCS, single window and other electronic exchange platforms have been critical elements of the digital infrastructure for the supply chain, including sea and air ports, trade facilitation and cross border logistical and administrative/regulatory processes. Five million messages a month, on average, were transferred through ValenciaportPCS during the COVID-19 crisis, allowing business run under normal standards.

Before COVID-19, most people had some degree of apprehension about robots and artificial intelligence (AI). Though their beliefs may have been initially shaped by dystopian depictions of the technology in science fiction, their discomfort was rein-

forced by legitimate concerns. Some of AI's business applications were indeed leading to the loss of jobs, the reinforcement of biases, and infringements on data privacy. Those worries appear to have been set aside since the onset of the pandemic as AI-infused technologies have been employed to mitigate the spread of the virus.

We have seen an acceleration of the use of robotics to do the jobs of humans who have been ordered to stay at home or who have been redeployed within the workplace. This trend I guess is unstoppable and when applied to port business it will act to promote AI and automated terminals, separately from new automated processes through the PCS.

On the other hand, Blockchain technology offers promising results, but overcoming the obstacles to widespread adoption remains a challenge, with the technology yet to reach enterprise maturity. Moreover, many existing solutions within supply chains are using blockchain for relatively simple use cases, while realising that there are numerous possible opportunities both within and adjacent to the supply chain, as blockchain is relevant in finance, food safety, insurance and multiple other industries. Therefore, we will be keeping an eye on this technology in order to keep our leadership in technology.

MORE THAN A DIGITAL PLATFORM

In summary, PCS, such as ValenciaportPCS, arrange a single-entry platform of data in a port for business-to-government messages and the business-to-business messages. Boosting the efficiency by providing digital, real time information to all players in the port. Now, in the new digital world, numerous ports of all sizes are following their digital lead, building digital ecosystems for all their stakeholders to exchange data. We cannot keep using recipes from the past. It is vital to look ahead to new developments like the need for global connectivity, which goes far beyond the scope of connecting the local community. Our end clients everyday more want to know real time information about their cargo, in one click.

ABOUT THE AUTHOR

Mar Chao is a civil engineer from the University of A Coruña and holds a degree in Law from Universitat Oberta de Catalunya. She also holds an MBA from the Caixanova business school (now, IESIDE). Mar was previously a general manager of the Reyser group. In the public sector, she has worked for the Port Authority of A Coruña, as head of service provision unit; and at the Port Authority of Vigo, as head of port operations division and the operating department. Between December of 2006 and March of 2009, Chao was the CEO of transports of the Xunta de Galicia, being adviser in the Port Authority of Ferrol and assuming the presidency of Ports of Galicia. She became head of commercial business development at the Port Authority of Valencia in 2017.

ABOUT THE ORGANIZATION

The Valencia Port Authority, under the commercial name of Valenciaport, is the public body responsible for the management and administration of three state-owned ports located along 80km on the eastern edge of the Spanish Mediterranean: Valencia, Sagunto and Gandía.

ValenciaportPCS is a neutral and open electronic platform that allows the intelligent and secure exchange of information between public and private agents in order to improve the competitive position of the Valencia Port Community. ValenciaportPCS optimizes, manages and automates efficient port and logistics processes through a single data transfer and connecting transport and logistics chains.

Ports will have to reach out much further into the hinterland and be connected to other seaports. We are in a connected world where the Network of Networks will be the future. Therefore, the next generation ValenciaportPCS is much more than a digital platform for port clients. On the contrary, it has to be connected to the IoT devices of the port, to the port call optimisation system in force, track and trace the full logistic chain, being linked to other platforms on blockchain, such as Tradelens and the Global Shipping Business Network.

Today, going digital is not an option, it is a must, and to reach that goal ValenciaportPCS is a great help.