14ᵗʰ INTERNATIONAL PORTS & CITIES CONFERENCE

6ᵗʰ November 2014

Executive Summary

1   INTRODUCTION & BACKGROUND

The format for the day included:
- A technical visit – Waterside Port Tour
- One plenary session in two parts – Smart port, smart city: how to match performance to challenges
- Conference conclusion and wrap up – Round table
- Official closing

2   PLENARY SESSION FIVE (PART ONE) – SMART PORT, SMART CITY: HOW TO MATCH PERFORMANCE TO CHALLENGES

The plenary session was led by Olivier Lemaire, General Manager of AIVP, France.

A smart port city requires a high level of collaboration between local authorities, port authorities, political leaders and city authorities, as well as citizens and business leaders. A smart port city must address the issue of sustainable development and identify the benefits and challenges experienced in port cities. For example, the need to change the method of trade in a port, when the port itself becomes defunct or their main role is no longer in use. The following case studies will give some insight into these situations.

Speaker: Jorge Martin Jimenez, Jefe del Area de Departamento de Calidad e Innovacion, Autoridad Portuaria de Baleares, Espana

Title: Platform for port innovations for ports of the Port Authority of the Balearic Islands

Jorge Martin Jimenez works with an innovation platform that includes new technologies. The platform was designed to *"identify opportunities for improvement of the port community; uniting, leading and supporting efforts towards innovation for their implementation."* The Port Authority is a public organisation managing five ports in Spain. There are approximately 400 companies working in and around the port, and the Port Authority realized it needed to find opportunities to lead and consolidate all efforts of innovation for the port. In the past, achieving a high level of innovation was performed by a few companies, with a high cost implication. As a result of globalization, more companies are innovating worldwide, and are sharing ideas in order to find solutions to port problems. Providing communication that would allow for the sharing of knowledge and ideas was the first goal of the platform, and was done through the offering of congresses, seminars and events that promoted communication. Goal two was to support the smart port concept, and generate ideas that facilitate port management. This was done in collaboration with the city to find solutions to the problems citizens faced in relation to the port. Goal three was to make available the benchmarking work of ports similar to those managed by the port authority in the search for ideas. Goal four was to identify innovation needs for problem solving or improvement to the activity of the port community, and goal five sought to generate work commissions with the participation of different agents implicated in a potential project. Goal six promoted projects of interest to the point community. The port authority put into

action the platform, as a tool to catalyse innovative ideas. The platform is an interactive website that presents various ideas and projects and promotes team work to further these ideas. Only when the idea is fully conceptualized, can they be made a reality. It is a community-driven initiative, in that all port involvement is welcomed.

Speaker: James Wang, Head and Associate Professor, Department of Geography, University of Hong Kong, China
Title: Hong Kong: Smart in a transition from a gateway port to a global supply chain management centre

Hong Kong is in a stage of transformation, with the regionalization of ports, Hong Kong Port finds itself no longer the major hub in the South China Seas or the Pearl River Delta region. In light of this transformation, Hong Kong needed to be smart about addressing these challenges as they move away from being a gateway port to a global supply chain management centre. Due to high costs associated with the transportation of cargo, less and less cargo is transported directly through Hong Kong harbour; they have lost their competitive advantage. Hong Kong has chosen to focus on the global supply chain and the value-add it can offer. The role that government plays in facilitating the global supply chain is crucial, and regulations, laws and infrastructure need to change in order to reflect this new environment. Wang suggests that Hong Kong needs to find and investigate a few representatives in the sector that may reveal the logistic advantages to be found in Hong Kong. Introducing new initiatives to facilitate the global supply chain aimed at value added processes is key. Additionally, establishing a set of key performance indicators to gauge the gateway effectiveness of global supply chains is important. Ultimately, when a port city turns into an expensive consumption region with little manufacturing and port activities become regionalized, one way of upgrading the port is to incorporate or embed all possible favourable elements, including institutionalized factors in the global supply chain.

Speaker: Jan Schreuder, Project Manager for <<e-harbours>> project, Municipality of Zaanstad, Netherlands
Title: <<e-harbours>>: Smart Energy in Harbour City Zaanstad

The <<e-harbours>> project is co-founded by the European Union and focuses on finding solutions to meeting energy goals and sustainability. According to Schreuder, clean energy is in the DNA of the region, as historically, it used small wind-turbines in the production of ship building. A smart energy network is needed that supports the energy transition and paradigm shift of supply and demand. A flexible "prosumer" (both a consumer and producer – usually a large business) of energy is required in a smart port setting. There are of course challenges that need to be addressed, such as resources, climate, cost implications and energy dependence on current energy supplies. Four possibilities were explored for implementing large scale smart energy networks, these included: improving capacity in the system for additional renewable energy; improvement in energy efficiencies that support savings; integration of electric mobility and less of a reliance on fossil fuels; and enhanced stability of the energy network, with greater energy security. The idea was to create "e-harbours", which would exploit the flexibility available in harbours (which are open 24-7) and engage with large end consumers who are able to respond to the energy issue. Key success factors in creating a successful <<e-harbour>> are related to an open energy market, a mix of housing and industry (in the vicinity of the

prosumer), buy-in from large prosumers, and focusing on the regions energy DNA (such as using wind turbines). Lessons learnt included the need for good governance, for social matters to be addressed (the port is a social community), and good stakeholder management based on trust, knowledge, and a shared interest.

Speaker: Nicolas Mat, Expert independent et chercheur doctorant, Ecole des Mines d'Ales, France
Title: The energy transition of Marseilles-Fos's port city, a concrete model of industrial ecology

Nicolas Mat presented a case study of the Port of Marseilles-Fos, which is symbolic as a port that has responded to spatial and functional developments linked to energy issues. He presented a research framework, which looked at changing the linear nature of anthropogenic systems. Industrial ecology has been a topic of the conference, as it is particularly relevant for port areas. The Port of Marseilles-Fos has been interested in this topic for over ten years, because industrial ecology proposes an alternative to the traditional thought that natural resources are unlimited, and in fact, many projects are being implemented globally, that deal with this issue. Marseilles-Fos, as a case study, is a good example of the disconnection that occurs between a port and a city. The port used to be situated in the centre of the city, but over time moved towards the outskirts of the city. This has led to a weakness in the port when faced with structural crises related to industrial and energy developments. Today the port is in a transition period and is the leader in France in terms of volume and traffic, which means it depends on the management of hydrocarbon and fossil fuels. In response to this, the port is working on a low carbon strategy, based on three pillars: energy efficiency, production of renewable energy, and industrial ecology, which promotes collaboration between port industries, the city, and agricultural communities. Developing a smart port city means better management and use of resources.

3 PLENARY SESSION FIVE (PART TWO) – SMART PORT, SMART CITY: HOW TO MATCH PERFORMANCE TO CHALLENGES

Speaker: James Crandles, Director, Planning and Development, Port Metro Vancouver, Canada
Title: Port Metro Vancouver's Port 2050 Initiative: Using Scenario planning as a tool to help adapt in a rapidly changing and uncertain world

The Port Metro Vancouver has a long term strategic vision with a number of plausible scenarios for development that enable the port city to be flexible. An important theme of the port is to work in collaboration with the communities around the port, which provides 98 800 jobs across Canada. There are 16 municipalities that are affected by the port, as it is a fast growing port with high projections for growth. The port itself is constrained by natural boundaries in the form of the ocean, mountains and the border of the United States of America. As growth areas will be in coal and petroleum, citizens are understandably concerned, and sustainable initiatives are being explored. How does one build a sustainable port? The 2050 strategic plans look to the next 40 years of development in the port city area. It had to consider what good growth means for both the port and all stakeholders. The objectives of the strategy was to deepen collective knowledge by

co-developing long range strategic plans that took into consideration different potential outcomes. The strategy involved working with a cross-section of stakeholders, from youth to government, researchers to port staff. A variety of methodologies were used to elicit information, with the emergence of four main stories that made sense for an anticipated future. These scenarios need to be revisited every few years in order to remain current and on-trend.

Speaker: Catalina Grimalt, Directora de Sistemas de Informacion, Autoridad Portuaria de Barcelona, Espana
Title: Technologies at the service of innovation in the Port of Barcelona

Technological solutions have played a vital role in transforming the Port of Barcelona into an efficient, value driven service provider, to both citizens and the area of logistics. A key focus in achieving this aim was to really consider the environment as an important aspect of the port. The services industry within the port is comprised of both providers directly linked to the port, and those that are offered by private companies. There are more than 500 companies working in the port – and it is one of the city's largest employer of citizens.

In order to become a smart port, offering value services to all clients, use of technology was crucial. Through technology, the transformation of public spaces into interactive services, could take place. Additionally, a response to environmental solutions that would lead to a sustainable port were investigated. Digitalization of workers and the inclusion of Cloud technology were introduced and opened up the port for innovative ideas. Grimalt mentioned the "internet of everything", a concept discussed earlier in the conference that allows the port to be constantly connected, and to rework their world based on real time feedback. Understanding the context of the port, before

implementing smart projects, has allowed the port to realise the importance of working together by mobilizing people to share a common vision. Decision making means engaging all stakeholders to find solutions that can take into account various opinions and experiences. Some of the smart realities at Barcelona Port include: a storm warning system, a smart PMS Service that manages ships, and an automated transport system that eases congestion and overcrowding. A smart port city requires community mobilization to formulate plans that allow participation of all stakeholders.

KEY FINDINGS OF THE PRESENTATIONS (PART ONE AND TWO)

- Collaboration and teamwork is vital in finding solutions that meet the needs of various stakeholders. Although, in some instances, the Port Authority may need to lead the process in order to gain momentum.
- Ports needs to be smart about addressing the challenges that come with a change in regular port activities, brought about by the regionalization of ports. One answer to these challenges are to move away from being a gateway port to a global supply chain management centre.
- When developing a smart port initiative, always be prepared. Connect and talk with various stakeholders in the port city setting, and view a smart port city in the context of its environment – there is no blanket approach.
- Researchers are important actors in the development of smart port cities.
- Technology is a crucial tool in transitioning traditional ports into smart ports. Technology allows for

streamlining of services and greater innovation in terms of sustainability.

Many ports have lost position with regards to carrying containers; what was the reason for Hong Kong choosing to move away from containers, rather than facing the competition?

The main reason is due to technological transfers of port operators, in terms of efficiency. In Hong Kong, nearby ports use the exact same technology that Hong Kong port does, but at a reduced cost. Hong Kong is the port in the region that is further away from the origin of the product (more so than any other port). If a client is moving large amounts of cargo, they will naturally go for the cheapest option, especially if the technology is the same. However, in Hong Kong's favour, is the fact that the perception that the port can handle transshipment better than the other ports, remains. And, Hong Kong is considered to be outside of China, which is preferable for some companies.

With regards to connectivity of Marseilles-Fos, the development of the city and the port, how do you manage the governance levels of using renewable energy?

It is an issue at a country level and part of the circular economy. Marseilles is a port city, and citizens need to start recognizing it as such. Once they realise that they too are part of the solution, it will be highly beneficial for all.

4   CONFERENCE CONCLUSION AND WRAP UP – ROUND TABLE

Led by Professor Carlos Moreno, Scientific Advisor of the President of Cofely Ineo from GDF SUEZ Group, France. Moreno asked questions to each of the presenters on the plenary discussion sessions.

Joining in on the Round Table discussion:

- James Crandles, Canada
- Francesco Oddone, Italy
- Olivier Hoarau, France
- Catalina Grimalt, Espana

How does the Port Metro Vancouver envisage links between what exists in Europe and America? Are there preferred relationships that allow the development of Vancouver? Question to James Crandles of Canada.

When the Port Metro Vancouver looked at its context, it was acknowledged that everything it does it local, but it must look to other regions for innovative ideas, such as sustainability in Rotterdam. Europe has a great deal to offer a young city like Vancouver. Look at the best and then apply it to best suit your own context.

How can city and port governance be an example to us all, regarding the difficulties of port plans on what's happening in the city, such as security? Question to Francesco Oddone, Italy.

Governance is central, as both port and city activities have an impact on the dynamics of a city as a whole. But governance is not managed by the city – it is managed by the port authority. The cultural dynamics are important to create positive links between two worlds – and it is a role that the port authority must play. In Genoa, there is a smart city association that involves various stakeholders. Principal actors are the port authority and the municipality, and together they need to find long term solutions. Genoa is an old port city and is limited by spatial confines. It was evident through presentations that there is competition between ports to be the gateway to a specific region – we are co-

competitors, and we share the same problems and challenges.

What is the relationship between the new port and the old port? How do you envision your port in 15 years' time? Question asked of Catalina Grimalt, Barcelona; James Crandles, Vancouver; Olivier Hoarau, France; Francesco Oddone, Italy.

In Barcelona, we have a port city with citizens living in the port. We have cruises, people and passengers, walking around the harbour. The area is being expanded and becoming more open to the public. On the other side, the logistics side, is behind a mountain – which acts as a shield – lessening noise pollution, etc. Environmental issues are key to consider. When the wind blows – there are allergies that are heighted. With regards to logistics – we are connected through the city and along other transportation lines.

If I were to look at Vancouver in 50 years, the word "harmonious" would describe us. Our port and city have grown up beside each other in a harmonious way, and opportunities that citizens see with the port are delivered, as well as the port delivering what the nation requires as well.

In Le Port, we are able to develop and amplify economic activities, strong relationships with Durban and other areas. I see Le Port city and the port itself, as a gateway for Africa in Réunion Island, and we are going to leave Réunion Island to go to Africa. The same for Asia. Le Port will be the nucleus for economic development to spread out in the southern hemisphere.

A smart city, is a term that can mean anything, but we are now starting to follow the right direction and hit the heart of the topic. In 15 years, we will have to eliminate the "stupid" things we did before, such as an excess of cement buildings. This is something that is important: to have a sustainable development in

the port and city. We need smart infrastructure for that, strong partnerships, and we must be active with associations.

Like everyone else, Barcelona Port wants to be the gateway of Europe as well – but I think there is space for everyone. There is a very human part of the harbour – we attract a lot of people, and I see a more integrated human activities in ports - for both locals and visitors. I think our port should be a gate for the south of Europe, whilst being respectful of the environment, and utilizing an automatized system.

CONCLUSION BY CARLOS MORENO

In conclusion, to develop a smart port smart city approach to development, ports and cities need to work together as they share and live in communal spaces. The challenges of ports are:

- Social
- Cultural
- Economic
- Ecological, and
- Resilience

Smart city innovations address challenges, such as social inclusion, technological innovation, and urban intelligence, all of which are related. It is evident, as presented by the many speakers at the conference, that there is light at the end of the tunnel, in terms of smart port cities. While there are challenges that need to be addressed, regarding sustainability, the environment and the negative economic contexts experienced across the globe, through the sharing of innovative ideas and case studies of actual implementation of plans, we are moving towards the realization of smart port cities across the world. Through technological advancements, and the "internet of everything", sustainable port and city structures can begin to be developed, which are flexible enough for future generations to tweak, according to their own needs.

Challenges that need to be considered, include:

- Security and the integration of ports and cities. How do we create open spaces that attract the public, without placing ports at a security risk?
- Increasing dialogue and participation of both ports and cities in the development of smart port city plans. The port cannot act without the input from a wide variety of stakeholders, which include: citizens, the port, the municipality, civil society, researchers, etc.
- The port and city interfaces are varied and are no longer one dimensional. The citizens of a city and the port are increasingly coming into contact with one another, how best this can be done to ensure it is a mutually beneficial relationship.
- The recognition that not all port cities are in a place where a large investment into technology and technological infrastructure can be implemented. Some port cities are still at the beginning phase: conversation and the development of relationships.
- Transformation and steps towards transformation are required of some ports – especially those that face a decrease in activity. How can ports change to suit the context in which they now operate under?
- Environmental degradation and non-sustainable practices by ports, need to be addressed and solutions sought. This might mean investigating new forms of energy and removing unsustainable practices from port and city life.
- Smart port cities need to be open, dynamic and creative in order to improve the quality of life for citizens and those that are directly, on indirectly, linked to the port.

Thanks to everyone who contributed and participated in the 14th International Ports and Cities Conference, 2014.

5 OFFICIAL CLOSING

Speaker: Edward Senzo Mchunu, Honourable Premier of the KwaZulu-Natal Province

On behalf of the city of Durban, eThekwini, thanks was given to AIVP for choosing Durban to host the conference. The province of KwaZulu-Natal commits to making sure its ports are on par with those in the rest of the world, and seeks to position its port cities as critical drivers of economic development and growth. Port cities need to spend more time focusing on developing policies that work for a changing global economy, and KwaZulu-Natal has responded to this by spending millions on improving road, rail and air transport facilities. A harmonious relationship between ports and cities are a challenge for the country of South Africa, as it redresses challenges of the past and tries to bridge the inequality gap that is so prevalent in the country. This conference has shown that the country is however on the right track to developing smart port cities, and is thankful for the sharing of knowledge and learning, which is so crucial to development.

Speaker: Jean Pierre Lecomte, President of AIVP, France

Mr Lecomte gave his thanks to all of the participants, to the host city and AIVP for a very successful conference.

6 CONCLUSION

Day four of the conference marked the closing of a successful and well hosted event. The plenary sessions focused on matching performance to challenges in the port city setting, and a round table was held by Professor Carlos Moreno that allowed for further insight into the experiences of smart port cities around the world.

Some key findings from the day, which were shared across many of the presentations, included:

Technology

- Technology is a crucial tool in transitioning traditional ports into smart ports. Technology allows for streamlining of services and greater innovation in terms of sustainability.

Collaboration

- Collaboration and teamwork is vital in finding solutions that meet the needs of various stakeholders. Although, in some instances, the Port Authority may need to lead the process in order to gain momentum.
- When developing a smart port initiative, always be prepared. Connect and talk with various stakeholders in the port city setting, and view a smart port city in the context of its environment – there is no blanket approach.
- Researchers are important actors in the development of smart port cities.

Trade/activities

- Ports needs to be smart about addressing the challenges that come with a change in regular port activities, brought about by the regionalization of ports. One answer to these challenges are to move away from being a gateway port to a global supply chain management centre.

Again, the importance of a solid relationship between port and city, in the development of a smart port city initiative, was highlighted as a means to ensuring a working relationship and activities that benefit both the port and the city.