14ᵗʰ INTERNATIONAL PORTS & CITIES CONFERENCE

4ᵗʰ November 2014

Executive Summary

1 INTRODUCTION & BACKGROUND

The format for the day included:

- The official opening ceremony speeches by:
  - James Nxumalo, Mayor of Durban eThekwini Municipality, South Africa
  - Jean Pierre Lecomte, President of AIVP, France
  - Tau Morwe, Chief Executive Officer of Transnet National Ports Authority, South Africa
  - Lindokuhle Mkhize, Manager of Port Planning and Development Infrastructure Department, Transnet National Ports Authority, South Africa
- Two key note speeches by:
  - Professor Carlos Moreno, Scientific Advisor of the President of Cofely Ineo from GDF Suez Group, France. Title: The smart port city: reconciling the ambitions of the city and the port.
  - Markus Wissman, Head of Smart + Connected Communities Europe, Middle East, Africa and Russia Cisco Systems. Title: The internet of everything transforms Hamburg into a smart city.
- Three plenary sessions:
  - Session 1 – Building a smart port city for today and tomorrow
  - Session 2 – Tools and good practices to build the smart port city
  - Session 3 – Durban, a competitive port and a dynamic city in the Indian Ocean

2 OFFICIAL OPENING CEREMONY SPEECHES

Speaker: James Nxumalo, Mayor of Durban eThekwini Municipality, South Africa

James Nxumalo, Durban's city mayor, welcomed all to the 14ᵗʰ International Ports and Cities conference, held for the first time in South Africa, in the city of Durban. The theme of this year's conference is: Smart Port Cities and speaks to the cooperation and collaboration required for all port cities to meet the demands of global economic development.

For Durban, as a port city, the potential for South Africa's ocean economy, has been initiated through Operation Phakisa, which will help government to reach a 5% economic growth by 2019. The Port of Durban is South Africa's busiest port, generating 60% of the countries revenue. Operation Phakisa, coupled with the port expansion project with Transnet, positions Durban strategically to be beneficiaries of the Blue Economy. In addition, South Africa is ideally positioned to place Durban on the map as a gateway port to both SADAC countries and the global trade route. There are opportunities in Africa's offshore oil and gas industry, and maritime manufacturing, which will allow small and medium enterprises to assume their rightful role in the countries job creation process.

Speaker: Jean Pierre Lecomte, President of AIVP, France

AIVP welcomed everyone to the 14th International Ports and Cities Conference, and thanked all involved in making the conference happen. Special thanks was given to eThekwini Municipality, Transnet, the KwaZulu-Natal province, the Indian Ocean Observatory, and all other sponsors.

Over 40 countries and 100 port cities were represented at the conference, coming together to share knowledge and experience of living and working in a port city. This is the second time a conference has been held in Africa, with Dakar, Senegal hosting the event in 1995. The AIVP network in Africa has expanded considerably, with 16 African and Indian Ocean countries as members. Durban joined in 1998, and three years ago submitted a proposal to host this conference, which they won. *"We are all very happy to discover and visit your port and city."*

The questions of this conference was how we can ensure sustainability in port cities, while addressing climate and pollution challenges. AIVP believes that we already have part of the answer, and through collaboration with ports and cities, can showcase innovations that are already being implemented, that can promote sustainability, job creation and improve quality of life for all, while ensuring economic growth. Technology is one aspect of innovative solutions, and we look forward to sharing these ideas and plans with all members present.

Speaker: Tau Morwe, Chief Executive Officer of Transnet National Ports Authority, South Africa

Tau Morwe from Transnet, as a partner in this AIVP conference event, welcomed all guests.

The National Ports Authority, is one entity within Transnet, and through market demands, Transnet is in a seven year period of spending billions of Rands on new infrastructure to improve both rail and port activities.

Creating sustainable relationships with cities in which Transnet operates and in communities where they are based, is a key priority for the National Ports Authority. In terms of the National Ports Act, a responsibility is to ensure transformation in the port sector, and to open up the ports to sections of the community that were historically limited from participating in port activities.

Transnet is proud to be associated with the conference, and hope that its members from the Authority, use the conference as a learning platform to understand the role of ports, as regards to the communities and cities in which they operate.

On behalf of Transnet, Morwe, welcomes all and invites them to enjoy the warmth of Durban city.

Speaker: Lindokuhle Mkhize, Manager of Port Planning and Development Infrastructure Department, Transnet National Ports Authority, South Africa

A port is a masterpiece of engineering, and should be able to stand the test of time – to be flexible enough to allow future generations to adapt it to meet their future needs. There are of course many drivers, barriers and enigmas to adaptability and flexibility when trying to achieve one city vision. For Transnet, a transport company with five operating divisions, a key focus in achieving this vision is the delivery of integrated services. The core vision is to create a system of ports, seamlessly integrated in the logistics networking that is jointly and individually self-sustainable through delivery. One important way of doing this is to ensure that both the city and the port works together to create a common vision, with tangible projects that have milestones that can be tracked.

Although security is a real concern for the port, the People's Port concept is an initiative that seeks to make the port more accessible to the common man, so that they can enjoy the port for both business and leisure. Port integration is necessary. Walk-in centres, within the boundaries of the port, bring the port to the people – which is essential from an education perspective, in that careers related to this area of study must be promoted and encouraged. Durban, as a leading port in South Africa, has worked closely with the community to make the port a public space, which can been seen in our Wilson Wharf precinct.

In addressing climate change, Transnet is looking to ensure that its infrastructure can withstand climate change predicted, and whether these structures are indeed suitable – and if not, how to make them flexible and adaptable. This flexibility speaks to ensuring that future generations are able to adapt to meet their own needs.

In short, Transnet wants to ensure that they facilitate trade within ports, creating new business opportunities and promoting economic growth. Job creation is key to alleviating poverty in an economic downturn, and Transnet believes that innovative solutions are requires as, one *"can't be in today's job, with yesterday's method, for tomorrow's business."*

KEY FINDINGS OF THE PRESENTATIONS

- There are opportunities in Africa's offshore oil and gas industry, and maritime manufacturing, which will allow small and medium enterprises to assume their rightful role in the countries job creation process.
- Access to education in the maritime sectors is vital for South Africa to develop their maritime industry in a positive and sustainable way – a skilled workforce is the backbone of this industry.

- Collaboration between ports and cities is crucial – citizens of a port city must be included in port planning in order to foster good relations and a learning experience.
- When designing a port city strategy, it must be flexible enough to allow for future generations to adapt the plans to their own needs.

3 KEY NOTE SPEECHES

Two key note speakers addressed the audience, promoting the idea of a smart city concept, for the first time on a public platform. A roundtable discussion followed the key note speeches, addressing areas of interest and concern.

Speaker: Professor Carlos Moreno, Scientific Advisor of the President of Cofely Ineo from GDF Suez Group, France
Title: The smart port city: reconciling the ambitions of the city and the port

A smart port city is made up of geographical, cultural, economic and social spaces. Through utilizing urban intelligence, smart cities can be created that improve the quality of life for those who live there because urban intelligence lives through its citizens (not software, computers or maths formulae). The city is a place in which public and private spaces are shared. Maritime space is one of the important spaces in a port city – they are links between coastal and inland spaces. Port cities are not homogenous; they are varied and face their own challenges. There are some similarities, but these must be understood in its own context, when designing interventions and solutions.

A city is a holistic entity that is impacted upon by many external and internal factors. Smart cities are aware of these challenges, and learn from others who have managed to address these issues. There are three main areas that need to be considered: social inclusion,

technology, and urban intelligence. How can cities harness their natural environment for energy (land, sea, wind) and protect the environment? What is urban life in light of technology and how do citizens use it to address the five main challenges: social, cultural, economic, resilience, and ecological? We need to be a "human" city for ourselves and future generations.

Speaker: Markus Wissman, Head of Smart + Connected Communities Europe, Middle East, Africa and Russia Cisco Systems
Title: The internet of everything transforms Hamburg into a smart city

Seven years ago, the city of Hamburg started to look at how they could create smart and connected communities, and in the last two years, identified the need for the *internet of everything,* which has had a huge impact on cities today. The aim was to use the internet of everything to address challenges facing cities, such as social demographics, the environment and the economy. As cities continue to grow, 700 million will be urbanised in 10 years; cities will face many challenges in coping with their expansion.

Currently, half of the population is connected to the internet, with an anticipated 13.5 billion devices connected in the next few years. By 2020, 50 billion devices will be connected (and not just computers and cell phones). This results in a massive increase of data – the question is: what do we do with it all? With analytics, this data can be turned into information and intelligence helping us to make better decisions, be more productive, plan better and give us a more enriching experience. A smart city builds a digital architecture on top of its physical architecture. If everything is connected to one infrastructure, it can introduce multiple vertical solutions that removes the penchant of multiple departments working in silo. Intelligent design is aware of its environment and lets the user know what to do, for

example, in a congested city, a parking application linked to the central system, can let a driver locate a vacant parking.

This has been the experience in Hamburg; the creation of one common infrastructure that connects all aspects of the city, on a wireless nexus. This includes waste bin collection to traffic lights and security cameras, helping to reduce traffic, increase parking revenue, and improve security. A smart city requires visionary leadership, global open standards, smart regulations, public-private partnerships and new ecosystems that include government.

KEY FINDINGS OF THE PRESENTATIONS

- Urban intelligence, as provided by involved citizens, is vital in the creation of a smart port. Challenges must be considered (social, cultural, economic, resilience and ecological), and urban intelligence be used to address these challenges.
- A smart city requires one intelligent operating system that connects all facets of city life, as this ensures cohesion, with the added benefit of recouping lost revenue. The importance of the internet and connectivity in the building of a smart city, cannot be discounted.

4 PLENARY SESSION ONE – BUILDING A SMART PORT CITY FOR TODAY AND TOMORROW

The aim of the plenary session was to discuss the concepts and ideas raised by the key note speakers. The panel comprised of:
- Edouard PHILIPPE, Maire, Mairie du Havre, France
- Carlos Moreno, Conseiller Scientifique du President, Cofely INEO – GDF Suez, France
- Markus Wissman, Head of Smart + Connected Communities Europe,

- Middle East, Africa and Russia Cisco Systems
- Rigobert Ikambouayat Deka, Directeur General, Office Des Ports Et Rades Du Gabon, Gabon (represented by a colleague)
- Vojko Obersnel, Mayor, Rijeka City, Croatia
- Moshe Motlohi, Port Manager, Port of Durban, Transnet National Ports Authority, South Africa

The session was led by Edouard PHILIPPE mayor of the City of Le Havre, France.

Philippe led the discussion by noting that a smart city has a high quality of life, is open and efficient in the way it deals with the exchanges on a local and global level and has a port that is open to citizens to enjoy.

Challenges experienced by port cities include issues of climate change and increasing urbanisation, and it must be noted that we do have the tools that help to reorganise the city to respond to all eventualities. A city that is connected means that people are always looking to each other and brings accountability into daily living. The aim is to create a smart city that is not a danger to the freedom and liberty to its inhabitants.

THEMES EMERGING FROM THE QUESTION AND ANSWER SESSIONS

Smart cities: What is a smart port city and do port cities have specific benefits, assets, challenges than other cities?

Moreno stated that the container trade goes through port cities, so it is an economical notion that is at the heart of port cities. A smart city is not simply a marketing concept – it must be a real transformation. There is no one model of a port city – some are situated in the heart of the city, while others lie on the outskirts. Each is adaptable and must be reinvented through redevelopment. A big challenge is governance and the division between the port and the city itself. Now there is an opportunity to mix the two to bring about real transformation.

For Obersnel, the relationship between the port and the city is important. The port activity in Rijeka is one of the most important economic activities of the city. Due to globalisation and IT technology, there is little choice but to redevelop. For a country like Croatia, local self-governance does not have any direct influence on the port. The port is usually managed by the state agency who gives concessions to operators. However, if all stakeholders understand that they are all working towards the same goal, these issues can be resolved. The port does have good relationships with the port authority and have started many projects together. One can't develop a smart city, with good public transport, parking and all the other elements mentioned, if the port is not included in all these activities. All mayors of port cities should acknowledge that the port has important economic benefits, and there is need to find a way to live in, cooperate with, and develop the city together.

Would you say that Rijeka is ahead of other cities in Croatia because it is a port city?

Obersnel would not confirm that to be true, but stated that Rijeka is the biggest port city in Croatia and is used for the whole south-east of Europe. The port is a leader when the implementation of new technology, such as IT, in concerned.

What are the different steps required when managing a port in terms of smart services, such as traffic control, regulation of access to the point, relations with the citizens?

In the case of South Africa, Motlohi mentioned that one cannot ignore the historical context that the current port authority inherited. For South Africa, before the concept of smart cities can be adopted, the issue of stakeholders must

be addressed – there are many with varying interests and expectations. Transnet has to find ways to help businesses in the port by taking them into the future of a smart port. Strong partnerships between neighbouring ports is vital. South Africa cannot move ahead developmentally while leaving neighbouring African ports behind – as that will impact on service delivery. Other issues to consider are the fears that some may have at a smart port – will automation of services lead to job losses? Additionally, while South Africa is on par with other international cities in terms of technology, there is no doubt that it falls behind in many respects.

The representative of Libreville believed that West Africa shares the vision of a smart port and smart city, but it will be difficult to implement. A common vision is required that combine both urban and port policies that are integrated through a consultative process. Currently, Libreville port has a recreational centre that was built without consultation with the municipality or the citizens. In fact, the port itself was not consulted, and views were not expressed. This was done from a top-down approach. In order to implement a smart city concept, there needs to be a common vision in the way that both port and city are managed.

Does smart city development and the opening of ports, rely on the development of new technology, by increasing the accessibility to ports? Or perhaps with the digitalisation of our world, we are putting up even bigger walls?

Wissman felt that from a citizens' perspective, increasing access to the port needs to be done to some extent. In Hamburg, citizen services to attract tourists and citizens was good for awareness of the port. From a technology point of view, solutions – called augmented reality, can be applied (for example by placing an iPad near a ship, the ships information is transmitted straight to the iPad). There are multiple technologies in ports that increase the experience for tourists and citizens. In

Hamburg this is the case, a digital signage wall was implemented when the Queen Mary arrived, allowing citizens to welcome the vessel and passengers. It increases citizens experience of the port, therefore, technology is an enabler.

Would one of you want to comment on the increasing isolation of the ports in light of technology?

The representative from Libreville acknowledged that technology is vital – in some ports there is a system and that is useful for the population because amongst the population there are tourists, fisher men and women and the port can identity what is occurring on the maritime route. The system allows the port to assist these citizens where necessary (e.g. when stranded out at sea). This creates a link between the population and the port. For many citizens, the port is a closed entity, through technology, the port is opened to them and involves them in various activities that generate an understanding of the port and its activities.

Moreno noted that globalisation and urbanisation of life has led to an increase in security, on a global scale. IT has accelerated security – there is a movement to secure spaces and in this century there is an opportunity to have a "melting pot", even if there is a physical barrier, and there is an opportunity to meet together, to have a citizen vision. The participation of citizens in port activities is important, so that there is pride in cultural heritage.

How can we have a port that is active and has involved citizens?

Moreno noted that there must be consolidation of various aspects, tourism, economics, culture, etc. This can happen through information exchange and through the addressing the youth, who carry the change for the next ten years or so. There should be place to exchange information beyond election campaigns, communicate as a

population and introduce technologies in a conscious manner.

What are your expectations from the implementation of a smart port city, and what is the main component to consider for this implementation?

For Obersnel, cooperating and solutions are key. The implementation of a system to develop a smart city and port must involve all activities on which the port influences the city. One of the biggest problems is security, including the security of free access into the port. A solutions may be to organise specific open days of the port for citizens and tourists.

In South Africa, a shared vision is vital in order to embrace the idea of a smart city and a smart port, using the technology and infrastructure that is currently available (such as Facebook and Twitter). The various stakeholders should also be open to others who bring new systems to the interface. Crucially, for South Africa, how does it obtain the architecture of the IT system that allows ports and cities to interface in this way? Citizens should understand, even though living in the hinterland, that a port city is important and offers benefits for all. In addition, port cities often deal with the brunt of port city challenges (such as traffic congestion), that other cities do not deal with.

Where does each port city start with this process?

Africa is not in the same stage of development as other port cities in the world. There must be other solutions, such as committees who try to work with the harbour on problems at the front of the port. First, there needs to be community dialogue that addresses challenges faced, then technology can be brought into the picture. Right now, good governance is a priority over technology once that has been achieved, a smart port city can follow.

- Port cities are not homogenous – each has an individual context that must be considered. Some are at more advanced stages, whilst others are at the stage of laying a foundation for a future smart port city.
- A shared vision is essential between all stakeholders from ports to municipalities, citizens to tourists.
- Technology is an essential component of creating a working smart port city environment. Technology allows the integration of many elements into one system – reducing the silo effect that seems to dominate so many working environments.
- While the intention of a smart port city is to include the citizens, the issue of security of a port must still be acknowledged and solutions found that allow for both public and private access.

5 PLENARY SESSION TWO: TOOLS AND GOOD PRACTICES TO BUILD THE SMART PORT CITY

Objective of the plenary session was to give the floor to speakers for seven minutes to share with the audience a concrete experience linked to the theme Smart Port Cities.

The session was led by Olivier Lemaire, General Manger AIVP, France.

Speaker: Jin Yu, Deputy Director of Transportation Planning Division, Ningbo Municipal Port Administration Bureau, Ningbo, China
Title: The smart supply chain management system in Ningbo Port

Ningbobo Port is one of the top ten ports in the world. In order to improve operational

efficiencies, the port began to invest in a smart port approach. In 2005, the Ningbo E-Port was constructed, covering all procedures, such as inspection, declaration, insurance, invoicing and online inspection declaration. Both imported and exported goods can be cleared on the E-Port. Ningbo Port EDI centre platform was upgraded in 2007 and the procession production management system was operating successfully.

The automatic identification system, with the application of GPS technology, make the port production scheduling management and monitoring visualisation. Ningbo Port had also constructed a collaborative business operation system that provides a unified collaboration business platform for related companies, and greatly strengthens the communication and collaboration with various business units, which improves work efficiency. By 2010, the 4PL market was built, which is the first e-commerce company in the logistics industry of China.

Speaker: Hele-Mai Metsal, Head of Infrastructure Development Department, Port of Tallinn, Estonia
Title: Smart port in Port of Tallinn

The focus on the presentation was on the smart innovations in the management of passenger flows. It was a complex project launched in 2014. The Old City Harbour in the Port of Tallinn is the main gateway to Estonia and Tallinn. It is a terminal for both passenger and cargo vessels – in 2013, 9.2 million passengers came into the port, and this is set to rise. This meant that the port had to come up with solutions to manage traffic congestion.

With the initiation of the Smart Port project, a key deliverable is the implementation of a new electronic multipurpose check-in system for both passenger cars and cargo trucks. There

are currently four operations working out of two terminals in the harbour. Each have their own check-in procedures and kiosks that impacts on making the passenger experience more friendly and expedient. Additionally, the port has a lack of space and has to find ways to expand, so have chosen to expand vertically, rather than horizontally. The intention of the Smart Port project is to make the port experience better for all stakeholders involved in port activities (from passenger to cargo) by ensuring that all systems connect and cross over for better use, and by maximising on existing resources.

Speaker: Jari Huhtaniemi, Architect – City Planning Department, West Harbour Project, Helsinki, Finland
Title: Helsinki, smart solutions for an urban passenger port

Huhtaniemi is from the City Planning Department and works in close cooperation with the Port of Helsinki. The question emerged as to what the port wanted to achieve, in terms of smart solutions for urban passengers; they wanted to change user behaviour in the existing urban infrastructure. The cargo harbour was relocated to the east, so that it would be nearer to the city centre. In 2030, they estimate that as many as 10 million passengers will come through this new residential area. City infrastructure is limited due to a lack of space, so the question is: how can the smart port city change passenger behaviour, rather than alter infrastructure? The answer may lie in less vehicles being brought into the new residential area. Can the sharing of public transport, shared cars and bikes, be the key to an increase in passengers?

An upcoming study will focus on the Baltic Sea region and will investigate whether this can become a common place to market together,

creating a common user-face, regarding sea travel. Additionally, it is possible to reroute freight traffic, so that it does not interfere with passenger routes and the city centre? The controlling of traffic, to and from the port, is being investigated and through the use of technology, the potential to rule port traffic, rather than be ruled by it, is on the cards. By changing human behaviour, the smart port city can adapt to a limited infrastructure.

Speaker: Simon Carpenter (replaced Barbara Fluegge), SAP, Switzerland
Title: Digitalising a port city's ecosystem – game changing on a global scale

As the population continues to grow, trade and consumption will increase. The workforce is set to change, and through the interconnectivity of social media, the world and its inhabitants are constantly under surveillance. There has never been a better time to use technology to develop smart cities and smart port cities.

Sharing and collaborating are necessary, and allow a new and innovative ideas to emerge that can serve a multitude of stakeholders. The port is the anchor tenant of any large information system that can be used to attract major players, and connect them to each other. The intention is to take in data from as many different sources as possible (weather, traffic flow, etc.) and feed it back to people as real-time information (on tablets, cell phone applications, etc.), that aids in creating more streamlined and interdependent systems. In Hamburg, the port tries to connect every mode of transport, in and out of the harbour. This reduces fuel bills, creates less congestion and provides a better experience for all. In order to make this happen, information was gathered from various sources, pulled into the "cloud", where registered players can access the information on their mobile devices.

The port taking the initiative to drive this project has reached out to all stakeholders to join in and participate, as generators or consumers of data. It is in everyone's interest

to join in – regardless of the level they are playing at.

Speaker: Annik Dirkx, Spokeswoman, Port of Antwerp, Belgium
Title: The Port of Antwerp application

In response to security concerns that were having a negative impact on the experiences of citizens to the Port of Antwerp, the port designed an application that can be downloaded onto phones and other interfaces. The application is an interactive platform for interested citizens who would like to learn about, and explore, the Port of Antwerp. The application contains information on the port itself, has a quiz to challenge people to show their knowledge of the port, whilst also increasing knowledge, and gives visitors various route options, should the choose to walk, bike, or drive around the port. Through user interaction, the application is constantly developing to create a better user experience. The creation of the application cost around 60 000 euros.

Speaker: Simon Bosschieter, Managing Director, Holland Container Innovations Nederland B.V, Netherlands
Title: Folding containers, an economic and environmental plus

The presentation showcased the innovative design of a new collapsible shipping container that should solve space issues experienced at ports around the world. It is the first certifiable, foldable container, which mimics the exact proportions and strength of a traditional container. In light of the fact that almost 20% of shipping is in fact air (and can be up to 40% inland), there is need for a collapsible container that can be folded down when empty. Stacked on top of each other, four containers will take up the space of one traditional container. The foldable container can create up to 50% saving on transportation

in the hinterland, and reduce the CO_2 footprint by 15%.

Speaker: Annekatrien Verdickt, Architecte, Tetra Architecten BVBA, Belgique
Title: "Material flows" – combine recycling and a logistics hub with urban integration

Many port cities in the world, have experienced diminishing economic activities, and in some cases, port territories are converted into new city districts. This has not been the case in Brussels, where the changing of the areas around the waterways, has in fact not led to reduced economic activities.

The Material Flows project, has built a visitors centre in one of the ports, located at the point where the city meets the port zone. In Brussels, however, the canal goes through the city – so the area in which building it taking place, is right in the middle of the city. It is a very advantageous location, and public opinion enabled the project to go ahead. There is a park, and businesses dealing with construction materials, around the canal. The project was conceptualised by obtaining all the building materials from the maritime way. Waste is brought back to the village and given in for recycling – a new ecological system was implemented in Brussels. Innovative design was also used in the building of the roof, to create an ecological system. It generates solar electricity that is used for the vehicles and fleets, and any surplus is used by the city. Water collection allows the project to supply their own water for agriculture, and natural air vents are used in the architecture. All of these innovative designs have led the project to win an international prize for sustainable development.

With regards to SAP, in the African environment, are there windows that will enable us to orient African ports and cities through the experience that Mr Carpenter spoke about in Hamburg.

SAP is very active on the African continent; in South Africa, Cape Town, Johannesburg, and Tshwane all run on aspects of SAP. The company works closely with Transnet, who also use SAP. In Africa, SAP are currently focused on getting rid of the friction that emerges around infrastructure and logistics, and are focusing on infrastructure, on public sector environment, banking and natural resources.

KEY FINDINGS OF THE PLENARY SESSION

- Smart port cities don't only need new infrastructure and technology, they should maximise on existing resources to initiate change and development.
- Changing human behaviour is the key factor to smart cities and ports that are limited by space and infrastructure constraints.
- Using intelligence captured from various sources, it is possible to create one streamlined system that benefits all players.

6 PLENARY SESSION THREE: DURBAN, A COMPETITIVE PORT AND A DYNAMIC CITY IN THE INDIAN OCEAN

The third plenary session was dedicated to Durban and the Indian Ocean Zone.

The session was led by Annick Miquel, Directeur General, Observatoire Villes Ports Ocean Indien, France.

Speaker: Antoine van Iseghem, Charge d'études, Observatorie Villes Ports Ocean Indien, France

Title: The dynamics at play in the Indian Ocean in terms of projects linked to the transformation of waterfronts situated at the port/city interface

The issue of waterfronts and their relation to port cities is the aim of this study being undertaken at the Indian Ocean Observatory. The goal of the study is to emphasise the extension and displacement of ports, and to look at the relationship between waterfronts and ports, whilst reporting on impacts of various port cities, and how they are related in the Indian Ocean region. There are 18 waterfront redevelopment projects, representing 10 port communities, in the study. Half of these projects deal with the reconversion of ports and will ultimately change the nature of the port. In reality, some of these developments are in actuality in opposition to one another – depending on who is doing the redevelopment (public or private enterprises). A common strategy is therefore required that combines all elements, whilst addressing opposing views and opinions.

There are three models in the study area: liberal, reasoned and recovering of existing infrastructure. The liberal model strategy looks at tourism and leisure activities as new income for ports. The reasoned model looks at integrating the site in the city in favour of the local population, and the last model depends on the port itself, is in favour of the local population and seeks to attract visitors.

Speaker: Teresa Ganho Pereira de Athayde, Charge d'études, Observatorie Villes Ports Ocean Indien, France

Title: The tuna fishing industry in the South-Western Indian Ocean – what factors determine industry choice of port communities?

This study was requested and approved in general assembly by the members of the Indian Ocean Observatory. The Indian Ocean is home to large pelagic fish resources, and is the least overexploited of the world's oceans. Pelagic fish supplies have great economic importance, in particular for Indian Ocean coastal countries. It provides food security and economic development for poor port communities.

Fishing activities in this region are conducted by traditional multi-sector artisanal fishing, as well as by local and foreign industrial fishing vessels that use modern technologies. There is often conflict between these actors. Artisanal fisheries are often displaced by much larger mechanised operations, as well as by illegal fishing operations. Different economical approaches need to be adopted by the various actors. A number of models exist: subsistence, predation, interdependence and symbiosis – each implying different activity levels and socio-economic benefits for port communities of the region.

Port communities should expect an increase in employment and artisanal skills, however many don't and won't benefit due to a lack of space and infrastructure to carry out services. They need to work on these areas in order to take full advantage. Additionally, they should look into ship repair activities, as this has huge economic potential and creates active participation.

Speaker: Zeph Ndlovu, General Manager: KZN Operations, Transnet, South Africa.
Title: Durban, a competitive port and a dynamic city in the Indian Ocean

The ecosystem of co-existence that exists between the South African government Department of Enterprise, the province of KwaZulu-Natal and Transnet, is very important. The Port of Durban is incredibly busy, with Maydon Wharf being the most competitively active. Competitiveness is a result of desiring to be the gateway capital for investment, and economic development and growth is critical.

The port performs a specific function in facilitating trade and boosting growth and creates economic value that translates into employment. By nature, ports are special clusters for innovation, research and development. The port needs to be flexible with how it handles cargo, acts as an intermodal form of transport, and deals with globalisation, risk management, and cost containment challenges. Transnet believes that the Port of Durban is able to respond to the challenges faced by many ports today, and continues to work towards developing Durban into a smart port city in the Indian Ocean.

Speaker: Paul Sessions, Transport Economist, eThekwini Transport Authority, South Africa
Title: eThekwini integrated freight and logistics strategic framework and action plan

Durban, as a major port in South Africa, faces freight and logistics challenges that impact upon the city of Durban. There is huge movement of cargo between Durban and Johannesburg, mostly travelling by the major road networks. The city and the port have grown together and rely on each other – 60% of the city's economy relies on the freight economy, with 415 000 jobs deriving from freight and logistics activity.

A major challenge for Durban is the road congestion that is a direct result of freight coming in and out of the harbour. Accidents caused by trucks have both an impact on the wellbeing of citizens, as well as negatively impacting upon the economy. The central issue behind this is that as the Port of Durban has grown, the current capabilities and capacities of services has not grown with it. In light of this problem, a strategic framework and action plan was developed to provide solutions. The vision of eThekwini is that by 2030, Durban will be Africa's most caring and liveable city. Therefore, the city must start responding to the freight and logistics issues that plague the city. Five key programmes have been designed that focus on: infrastructure, operations, land-use, policy and regulation, and support programmes. By 2030, Durban wants to be the freight and logistics gateway into southern Africa, providing a world class service with the least impact upon its citizens.

Speaker: Sanabelle Ebrahim and Mikhail Peppas, Academic and Journalist with Integrated World, South Africa
Title: Revitalising Durban's Bayside esplanade – port with a green heart

The intention of the Green Heart City Movement is to revitalise the semi-used Durban eco-scape; the gardens which run alongside Margaret Mncadi Avenue that overlooks the Port of Durban. Green Heart Boulevard would provide citizens with a public space on which to stroll or bike and enjoy the many activities, such as artists, pavement poets, and penny-whistle players. There is a plan to construct a giant green heart sculpture that would tower above the embankment, and would be visible from sea and sky. As a relatively unused public space, such a redevelopment would attract both tourists and locals to enjoy the good weather Durban enjoys, and visit the Maritime Museum, the yacht mole and Wilsons Wharf. Proposed activations include adventure trips on the narrow gauge railway line that feature art and environmental workshops on the Fun Train, a BayWide BookBarge, and SanKofa Book Bridge spanning the city port.

THE QUESTION AND ANSWER SESSIONS

There was no time for a question and answer session.

KEY FINDINGS OF THE PLENARY SESSION

- Collaborative relationships are key to ensuring sustainable and mutually

beneficial port city programmes and projects.

- Many port cities might have unused or underutilised public spaces that can be redeveloped to entice and include the public into engaging more with port life and activities.
- Solutions to challenges, such as freight and logistics, must be developed in order to mitigate the impact of transport congestion and road accidents that are experienced due to the increase in volume of port transportation.
- The importance of encouraging a common port-city strategy cannot be emphasised enough.

7 CONCLUSION

The 14th World Conference Ports and Cities was held in Durban (eThekwini Municipality) and was officially opened by the Mayor of Durban, James Nxumalo. Mr Nxumalo expressed the city's enthusiasm at hosting the conference, and at being able to participate in such a learning and sharing experience. These sentiments were echoed by the president of AIVP, Jean Pierre Lecomte, by sharing the vision of the organisation; to expand its network and see more port cities benefiting from its activities and shared knowledge.

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

Technology

- A smart city requires one intelligent operating system that connects all facets of city life, as this ensures cohesion, with the added benefit of recouping lost revenue. The importance of the internet and connectivity in the building of a smart city, cannot be discounted.

Trade/activities

- There are opportunities in Africa's offshore oil and gas industry, and maritime manufacturing, which will allow small and medium enterprises to assume their rightful role in the countries job creation process.

Collaboration

- Collaboration between ports and cities is crucial – citizens of a port city must be included in port planning in order to foster good relations and a learning experience. A shared vision is essential between all stakeholders from ports to municipalities, citizens to tourists.
- Urban intelligence, as provided by involved citizens, is vital in the creation of a smart port. Challenges must be considered (social, cultural, economic, resilience and ecological), and urban intelligence be used to address these challenges.

Social

- Access to education in the maritime sectors is vital for South Africa to develop their maritime industry in a positive and sustainable way – a skilled workforce is the backbone of this industry.
- While the intention of a smart port city is to include the citizens, the issue of security of a port must still be acknowledged and solutions found that allow for both public and private access.
- Changing human behaviour is the key factor to smart cities and ports that are limited by space and infrastructure constraints.

Infrastructure/space

- When designing a port city strategy, it must be flexible enough to allow for future generations to adapt the plans to their own needs.
- Smart port cities don't only need new infrastructure and technology, they should maximise on existing resources to initiate change and development.
- Port cities are not homogenous – each has an individual context that must be considered. Some are at more advanced stages, whilst others are at the stage of laying a foundation for a future smart port city.
- Many port cities might have unused or underutilised public spaces that can be redeveloped to entice and include the public into engaging more with port life and activities.
- Solutions to challenges, such as freight and logistics, must be developed in order to mitigate the impact of transport congestion and road accidents that are experienced due to the increase in volume of port transportation.

In closing, collaboration between all stakeholders involved in port cities, is crucial for smart port city initiatives to be truly successful. Much can be learnt through dialogue and the sharing of knowledge and experience in port cities around the world. While each port city has its own unique context, many share similar experiences and situations.