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BUSAN International Port Conference 2024

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Ports in Unity : Connecting Continents

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BIPC 2024

BUSAN INTERNATIONAL PORT CONFERENCE 2024

제12회 부산국제항만컨퍼런스

Sep. **24** (Tue) - **25** (Wed), 2024 | BPEX

Program Book

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12:40 - 13:30 Luncheon

Program Book

BIPC 2024 Photo

DAY 1 Survey

DAY 2 Survey

Session 1. Global Container Shipping

[Moderator] Eung-hyuk LEE, International Logistics Director, Busan Port Authority

Moderator

Eung-hyuk LEE

International Logistics Director, Busan Port Authority

Biography

Mr. LEE Eung-hyuk has been International Logistics Director of Busan Port Authority(BPA) since 2018.

Since he joined BPA in 2005, LEE has worked at such various departments as Port Marketing(2005~2011), Logistics Planning(2011~2012), International Affairs(2013~2014), and Overseas Business Development(2016~2018).

With his experience and expertise in port and logistics area, he participated in notable international conferences as a speaker including IAPH Mid-term Conference 2014 in Sydney, European Sea Ports Organization(ESPO) in Gothenburg 2014, Asian Ports Business Forum in Kobe 2018 and FIATA (Fédération Internationale des Associations de Transitaires et Assimilés) World Congress in Busan 2022 and recently presented at the Shanghai PAR(Port Authorities Roundtable) in Sep 2023 on the topic of "What has changed in Post-Covid19 Container Shipping and its Lessons to Port"

Mr. LEE completed two years of architectural engineering at Korea University and graduated from the same university in 2003 with a B.A. in English Literature. In 2015, he earned Master's degree in Shipping, Trade & Finance from Cass Business School in London, UK.

Born in 1976, he got married in 2008 and has twin boys of 10 years.

Speaker

Lars JENSEN

CEO, Vespucci Maritime

Biography

Lars Jensen is CEO of Vespucci Maritime, and is a well-known analyst and thought leader providing expert assistance in strategic decision making and analysis in the wider container shipping industry.

Lars has been an independent consultant working with clients globally for 12 years. Prior to that, Lars worked 12 years with Maersk, hereof 6 years as Chief Analyst, 1 year as CEO of the online carrier Youship and 2 years as director of the e-Commerce portfolio.

Lars was the author of the book "Liner Shipping 2025" which to a significant degree predicted many of the changes currently gathering pace in the industry and how carriers, terminals, ports, shippers and forwards should navigate these changes to emerge successfully.

Lars is Director and co-founder of LinerGame which provides a hands-on training game teaching the workings of the container shipping sector using models made from Lego bricks.

Lars has a Ph.D. in theoretical physics from the University of Copenhagen from 1998 and a Graduate Diploma in Business Administration from Copenhagen Business School from 2003

Global Container Shipping

Keywords: Global Container Shipping

Global Container Shipping is once again in the midst of major upheaval. This should not be seen as an exception – it should instead be seen as a new normality.

There are multiple large scale forces which will be reshaping container shipping in not only the coming years but also the coming decades. These forces will make navigating the industry difficult – but also filled with both threats and opportunites.

The major forces we are faced inlude geopolitical changes, decarbonization efforts, an increased focus on supply chains as a national security issue, changes in sourcing patterns, consolidation, emergence of new container players, automation and AI.

As these forces become stronger it is not just the container shipping lines which have to change and adapt. All stakeholders in the container supply chain need to adapt if they want to thrive – this includes ports, terminals, cargo owners, freight forwarders as well as the many supporting industries surrounding the industry.

This presentation will focus on the major threats and opportunities as well as how stakeholders need to prepare themselves for the changes.

Speaker

Hua Joo TAN

Consultant, Linerlytica

Biography

Tan Hua Joo is the co-founder of Linerlytica, a research and information platform for the global container shipping market. He has been involved in the container shipping industry since 1995, having held senior positions in leading container shipping, container leasing, container ship owning and liner market research companies. Mr. Tan graduated in 1995 with a BA in Politics, Philosophy and Economics from Oxford University. He received an MBA from Stanford University in 2004.

Container Shipping Market Outlook 2025

The Red Sea crisis provided an unexpected bonus for the container shipping market in 2024, as vessel diversions to the Cape route, increased port congestion and a rebound in cargo demand absorbed all of the 3m TEU of new capacity added in the last 12 months. Freight rates and charter rates remain elevated through 2024 with the tight market conditions expected to persist as long as the Red Sea crisis is unresolved.

However, competition amongst container shipping lines will intensify in 2025, with the formation of new shipping alliances involving Gemini and THE Alliance carriers expected to cause significant market disruptions. All of the main carriers are continuing to pursue strategies aimed at growing their operating scale, which will put them in direct competition as the fight for market share escalates.

The speaker will discuss how the competitive landscape for the container shipping market will evolve in the coming year as the carriers push ahead with their new growth plans.

Special Lecture : Circular Economy

Circular Economy

[Speaker] Thanos PALLIS, Professor, University of Piraeus

Speaker

Thanos PALLIS

Professor, University of Piraeus

Biography

Thanos Pallis is Professor of Port & Maritime Economics & Policy at the University of Piraeus, Greece, He is the co-director of Porteconomics.eu, and the Vice-Chair of the global Port Performance Research Network (PPRN). At the University of Piraeus, he directs the Integrated Port Economics and Management Laboratory.

Thanos is a member of the International Association of Ports & Harbours (IAPH) 's Risk & Resilience Committee and Cruise Committee, for which he co-authors the IAPH-WPSP World Ports Tracker. He has worked in shaping ports and maritime logistics. His portfolio includes consultancy and advisory work on all continents and studies for international organisation such as the OECD, the United Nations (UN), UNCTAD, the European Commission, national governments, and ports and destinations. Thanos served as General Secretary for Ports & Port Policy in Greece and Secretary General of MedCruise (2013-17), the association representing more than 100 cruise ports in 20 countries. In December 2023 he concluded a major project for Circular Flanders (Belgium) on ports and the circular economy.

From 2018 to 2022 he was the President of the International Association of Maritime Economists (IAME). He currently serves as a member of the IAME Council. He was a Fulbright Scholar at Columbia University, US and the scientific director of the Jean Monnet Action in European Port Policy (2003-2018). In 2023 he was included in the 2% of the world's most cited researchers in the realm of transport & logistics. He co-authors the book Port Economics, Management and Policy (Routledge 2022).

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Circular Economy

Keywords: Circular Economy (CE) and ports, port development, sustainability strategies

The presentation will focus on the concept of circularity, the role and potential of ports in implementing circular economy principles, and the overall impacts of CE on seaport ecosystems. Seaports play a crucial role in global trade and economic development. As sustainability concerns gained traction, the circular economy has emerged as a transformative concept that redefines traditional linear supply chain practices by adding feedback mechanisms.

The Circular Economy (CE) emphasizes reducing waste and promoting resource efficiency through recycling, reusing, and remanufacturing. Its principles, namely reduce, reuse, recycle, and remanufacture, align well with the port industry's objectives to minimize environmental impact, conserve resources, minimize its footprint, and optimize operations. These principles promote a closed-loop system, encouraging seaports to adopt sustainable practices and rethink their role in emerging circular global supply chains. Thus, there is a need to properly assess and contextualize the expected benefits of CE principles for ports. CE presents a paradigm shift for seaports, transforming them into actors more actively involved in sustainability and resource efficiency. By addressing the challenges and seizing the opportunities, seaports can establish themselves as vital contributors to a circular global economy, promoting resilience and sustainability.

The presentation aims to analyze current practices, development trends, challenges, opportunities, and initiatives adopted by seaports worldwide to transition toward a more sustainable and resilient system. It provides an evidence-based perspective of the circular port concept by looking at realistic prospects concerning terms that might otherwise be unsubstantiated. The scope is to understand the dimensions of the CE on ports and maritime supply chains, the transformation from linear to circular economics principles, the motives and impediments towards circularity, and how ports can play a role in setting circular supply flow principles in terms of materials, energy, land, and waste management. This informs the second goal, which is an analysis of the key parameters of CE implementation strategies – including suggestions for adjustments of port governance practices.

Session 2. AI in Ports : Automation & Autonomous

Moderator & Speaker

Adolf K.Y. NG

Professor, BNU-HKBU United International College

Biography

Prof. Adolf NG is Chair Professor and Dean of the Faculty of Business and Management of the BNU-HKBU United International College, China. He received his BA (Hons) and MPhil from University of Hong Kong and PhD from University of Oxford. He excels in the research and teaching of transportation economics, climate change adaptation planning, transportation infrastructure planning and management, institutional and organizational change, and global supply chains. His works are highly influential, for instance, he has been on Elsevier's List of Top 2% Scientists worldwide since its first release. He has served as a Council Member of the International Association of Maritime Economists (IAME), as well as the Associate Editor of the world's leading academic journal in maritime research, namely Maritime Policy & Management.

PortEdge: AI-Driven Sustainable Workload Coordination for Smart Port Operations

Keywords: Sustainable Workload Coordination, Smart Port Operations, Large Language Models

The integration of AI in ports is increasingly reliant on edge-cloud networks, which serve as the essential infrastructure for deploying intelligent applications that demand both energy efficiency and rapid processing. Traditional approaches often depend on static resource information, limiting their adaptability to the dynamic environment typical of port operations. This paper introduces PortEdge, a novel framework designed to optimize workload coordination by considering both application-level requirements and energy consumption during the deployment of AI tasks in ports. The core innovation of PortEdge is its use of Reinforcement Learning with Human Feedback (RLHF), inspired by human-in-the-loop methodologies, to enhance both processing speed and energy efficiency. Real-world evaluations show that PortEdge significantly outperforms existing methods, marking a major step forward in the implementation of sustainable and intelligent port operations.

Speaker

Hans-Christoph BURMEISTER

Head of Department, Fraunhofer

Biography

Dipl.-Wirtsch.-Ing. Univ.
Hans-Christoph Burmeister
Head of Department "Sea Traffic and Nautical Solutions"

Hans-Christoph Burmeister is heading the Department 'Sea Traffic and Nautical Solutions' at Fraunhofer-Center for Maritime Logistics and Services CML in Hamburg, Germany, which he joined in 2011. Fraunhofer CML conducts professional contract research for private and public sector clients in the maritime industry, including ports, terminal operators, shipping companies and logistics service providers and his department is focused on evaluating and optimizing safety and efficiency of sea traffic as well as developing innovative ship navigation solutions and maritime technologies. Additionally, he is the Director of the Fraunhofer Innovation Platform for Smart Shipping at Novia University of Applied Sciences FIP-S2@Novia.

Besides his activities in industrial research projects, Hans-Christoph Burmeister coordinated the internationally known European research project MUNIN on unmanned vessels from 2012 to 2015 as well as the Autonomous Navigation Test-Bed development for Daewoo Shipbuilding & Marine Engineering from 2015 to 2016. Thereby, his main focus was on COLREG-compliant collision avoidance algorithms. 2016 he furthermore initiated as technical coordinator the European Maritime Simulator Network EMSN as well as afterwards its Asian sibling APMSN. Currently he is amongst others the dissemination coordinator in the European Horizon-Project AUTOFLEX about unmanned inland vessels and driving force behind the application of Mixed Reality Technology for shore-based navigational assistance, as e.g. for remote pilotage or remote tug operations, which he demonstrated live in 2021 and 2023.

His academic background is industrial engineering, where he holds a diploma from the University Erlangen-Nürnberg writing his diploma thesis in the area of Operations Research about "pick-up and delivery problems with time windows". Besides his work for Fraunhofer, he is currently finalizing his doctor thesis at Hamburg University of Technology on "Development and Assessment of Autonomous Navigation Systems".

Maritime Autonomy and its Impact on Future Ports

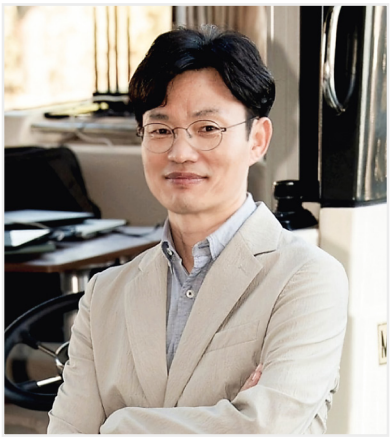
Keywords: Maritime Autonomy, Ports, Digitalization, Inland Shipping, Remote Pilotage

Autonomous Maritime Systems are emerging not just in research but did gradually find their way into industrial applications and commercial products within the last decade. Besides gradually improvement, this emerging technology will have significant impacts on ports and its operations in the future. Starting from an industrial survey conducted among European ports investigating their interest and expectations towards such systems, this presentation will outline the current state of two relevant use cases for ports and how the future waterside operation could look like.

First, the case of unmanned barges for connecting major ports to its hinterland by smaller, currently underutilized channels and inland waterways will be introduced, as investigated by the European Horizon Project AUTOFLEX. This includes insights on transport market effects by maritime autonomy, but also highlights potential changes with regards to a modernization of (overaged) inland waterway vessels, if it shall be used for better and sustainable hinterland traffic.

Secondly, the potential of remote-control solutions for executing port pilotage operations from ashore to improve pilots' occupational safety is outlined and results from recently executed trials for shore-based situational awareness by the help of mixed reality technologies is given.

Speaker



Do-hyeong LIM
CEO, Avikus

Biography

Lim Dohyeong, CEO of Avikus, a subsidiary of HD Hyundai Group, has been serving as CEO from 2021. He joined HD Hyundai Heavy Industries as a researcher in the Dynamics Research Lab in 2000, and has served as the head of the Dynamics Research Department, the head of the Digital Technology Research Center, the head of the Autonomous Navigation Research Department, and a visiting scholar at Ohio State University.

He received his Ph.D. in mechanical engineering from Seoul National University, and he completed his bachelor's and master's degrees at Seoul National University and KAIST, respectively.

Commercialization Status of Autonomous Navigation Solution

Keywords : MASS, Autonomous navigation, Collision avoidance control, GHG reduction

Recently, a mobility revolution based on artificial intelligence technology has been unfolding on land. Notably, there have been remarkable technological advancements in the field of autonomous vehicles, with Level 4 autonomous taxis becoming commercially available. Additionally, Advanced Driver Assistance Systems (ADAS), a lower-level autonomous driving system, are now integrated into almost all recently manufactured vehicles, revolutionizing vehicle safety and convenience. Meanwhile, Maritime Autonomous Surface Ships (MASS) have been relatively recently proposed, with attempts at commercialization underway, and the International Maritime Organization (IMO) is aiming to develop standards for implementation by 2028. This paper introduces the autonomous navigation technology under development by HD Hyundai Group and its current state of commercialization. Through operational examples, it highlights the value that lower-level autonomous navigation technology, as opposed to fully autonomous navigation, can bring to the industry. Furthermore, the paper examines the technical, regulatory, and societal challenges that the industry must collaboratively address for the early commercialization of autonomous navigation technology, with a focus on safety and environmental aspects.

Panel

Seouri KOO Sung

Senior Terminal Process Manager, LBCT

Biography

Seouri Sung is a seasoned professional in the maritime industry with nearly a decade of experience. She began her career in 2014 as an Import Coordinator for a freight forwarding company, gaining valuable logistics and supply chain management expertise.

In 2015, Seouri joined Long Beach Container Terminal, contributing significantly to the Middle Harbor Redevelopment Project. She played a key role in the 2016 Pier E go-live, testing terminal operating systems and training ILWU longshoremen.

Currently, as a Senior Terminal Process Manager in the Operations Development Team, Seouri optimizes terminal processes and enhances operational efficiency. Her efforts have been instrumental in handling the complex demands of modern maritime logistics.

Seouri holds a Bachelor of Science degree in Applied Management from Grand Canyon University. Her academic background and extensive industry experience position her as a knowledgeable leader in maritime operations.

Seouri Sung's dedication and expertise make her a valuable asset to the Long Beach Container Terminal and the maritime community.

Long Beach Container Terminal – Industry Leader of Innovation and Technology

Long Beach Container Terminal (LBCT LLC) is a portfolio company of Macquarie Asset Management located in the Port of Long Beach since 1980. We are constantly striving to maintain our status as one of the most efficiently operated terminals in North America. As part of this commitment to excellence, LBCT is an industry leader of innovation and technology, continuously seeking to increase efficiency, protect our environment along with the safety of our valued employees and the surrounding communities while striving to enhance our customer service experience. In partnership with the Port of Long Beach, we have worked hard to develop a new state-of-the-art facility combining two aging container terminals into one of the world's most technologically advanced and greenest facilities in the world. The project, commonly referred to as the Middle Harbor Redevelopment Project is the largest of its kind in North America. LBCT currently can handle in 3.5 million TEUs, along with servicing the largest container vessels in the world, without growing our environmental footprint. Our strong commitment to our valued business partners, our customers, our employees, and the community is a key driver to our future success.

Session 3. Ports : Success & Future Collaboration

[Moderator] Thanos PALLIS, Professor, University of Piraeus

Moderator

Thanos PALLIS

Professor, University of Piraeus

Biography

Thanos Pallis is Professor of Port & Maritime Economics & Policy at the University of Piraeus, Greece, He is the co-director of Porteconomics.eu, and the Vice-Chair of the global Port Performance Research Network (PPRN). At the University of Piraeus, he directs the Integrated Port Economics and Management Laboratory.

Thanos is a member of the International Association of Ports & Harbours (IAPH) 's Risk & Resilience Committee and Cruise Committee, for which he co-authors the IAPH-WPSP World Ports Tracker. He has worked in shaping ports and maritime logistics. His portfolio includes consultancy and advisory work on all continents and studies for international organisation such as the OECD, the United Nations (UN), UNCTAD, the European Commission, national governments, and ports and destinations. Thanos served as General Secretary for Ports & Port Policy in Greece and Secretary General of MedCruise (2013-17), the association representing more than 100 cruise ports in 20 countries. In December 2023 he concluded a major project for Circular Flanders (Belgium) on ports and the circular economy.

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Speaker

Jens MEIER

President of IAPH(International Association of Ports & Harbors) & CEO of HPA(Hamburg Port Authority)

Biography

Jens Meier (58) has been CEO of the Hamburg Port Authority (HPA) since 2008. With more than 25 years of experience in the port, logistics, finance and IT sectors, the computer science graduate is a recognized leader in the maritime industry. His previous professional positions include board positions at Fiege Holding, the tts Group, Systematics AG (later EDS) or Soft-ware Design & Management AG (Ernst & Young Group). Jens Meier, elected IAPH Vice President for Europe in 2019, served in this capacity at the International Association of Ports and Harbors (IAPH) for a four-year tenure, during which he also assumed a temporary vice-presidency for Africa. He was elected IAPH President in summer 2023 and has been in office since November of the same year. He is a frequent speaker with a large media outreach, in particular on future maritime affairs and in the area of digitalization. With regard to his voluntary commitment, Jens Meier is a founding board member of the Hamburger Informatik Forum e.V. (Hamburg Informatics Forum). He is also a member of several supervisory boards and boards of trustees. From 2015 to 2018 he served as president of Hamburger Sport Verein e.V. (HSV).

Ensuring Professional Workforce in a More Innovative, Automated and Sustainable Port

Keywords: Economic Sustainability

The port industry stands at a crossroads of innovation and sustainability, facing challenges that demand creative solutions. As we navigate these waters, we must remember: "It is better to light a candle than to curse the darkness." This philosophy guides our approach to three key areas: workforce management, talent acquisition, and sustainable automation. In addressing workforce shortages, ports are increasingly turning to automation, digitalization, and artificial intelligence. These technologies serve as beacons, illuminating pathways to enhanced efficiency and allowing for the strategic redeployment of human resources. At the Hamburg Port Authority, we've implemented AI systems for streamlining approval processes and deployed robotic systems for high-risk inspection tasks, demonstrating the potential of technology to boost both productivity and safety. The challenge of recruitment in our diverse industry requires equally innovative strategies. We've embraced self-service HR systems and reimagined our workspaces to foster collaboration. Our focus on young professionals and the employee exchange programs with other ports exemplifies our commitment to nurturing talent and fostering global knowledge exchange. Looking to the future, we envision "conscious" factories and supply chains, where sustainability and automation intertwine. This concept emphasizes maximizing capacity opportunities through adaptive systems, leveraging big data and agile supply chains to anticipate and mitigate risks. As we implement these changes, we're witnessing a ripple effect across the maritime industry. Ports receiving investments from ESG-minded stakeholders are incorporating sustainable policies into their supply chain management, contractor relationships, and decision-making processes. This holistic approach to ESG factors is reshaping our industry, moving us towards a more sustainable economy. The path forward requires collective action and shared innovation. As port authorities, we must consider our role in creating "conscious" supply chains and contributing to a more efficient, sustainable, and resilient global maritime industry. By lighting these candles of progress - in workforce management, recruitment, and sustainable automation - we illuminate the way to a brighter future for ports worldwide.

Speaker

Sam CHO

Commissioner, Port of Seattle

Biography

Sam Cho was elected to the Port Commission in 2019 and Commission President in 2023. Cho is the son of immigrants who immigrated from South Korea to the United States through the Port of Seattle in the 80's. He is the youngest and first person of color to become Commission President since the founding of the Port in 1911.

Driven to help shape the economy of the future, Commissioner Cho's career has spanned from government and emerging start-ups to established companies in the tech and sustainability space.

Commissioner Cho currently serves as Director of Strategic Initiatives in the Office of Seattle Mayor Bruce Harrell. He also held positions as an analyst at the US Department of State, as a Legislative Assistant to both a Washington State Senator and a member of the United States Congress, and served as a political appointee under President Barack Obama. Prior to his election to the Port, Commissioner Cho was the founder and CEO of Seven Seas Export, an international trading company that exported over 2.5 million pounds of eggs to various countries throughout the Asia-Pacific.

Commissioner Cho earned his Master of Science in International Political Economy from The London School of Economics and his Bachelor of Arts in International Relations from American University.

His priorities as a commissioner include creating economic opportunity, promoting environmental sustainability, equity, diversity, and inclusion, and ending human trafficking.

Port of the Future - Collaboration Success on Sustainability

Keywords: sustainability, decarbonize, collaboration, innovation

The port of the future will be efficient and clean, leading the race to the top with decarbonized operations and the latest technology in an increasingly fast-paced sector. Port of Seattle leadership have set an ambitious goal to be the greenest, most energy efficient port in North America; decarbonizing Scope 1 and 2 emissions by 2040 and Scope 3 emissions by 2050 or sooner. The Port cannot achieve these goals alone. Port of Seattle Commissioner Sam Cho will share examples of how the port has collaborated successfully on multiple levels—with the City of Seattle, regionally with port competitors, and most recently with the largest cruise lines in the world—to lead on shared sustainability goals and innovative solutions.

Speaker

Noel HACEGABA

Chief Operating Officer, Port of Long Beach

Biography

Dr. Noel Hacegaba is the Chief Operating Officer of the Port of Long Beach, North America's second-busiest container port. He is responsible for managing the Port's day-to-day operations, including commercial services, engineering, finance & administration, human resources, planning & environmental affairs and strategic advocacy.

In recent years, Dr. Hacegaba led the Port's response to the global supply chain disruptions, directing the Port's Business Recovery Taskforce and coordinating with industry, labor and government partners to keep cargo moving.

Dr. Hacegaba is also leading the development of the Port's digital initiative known as the Supply Chain Information Highway, which seeks to close the gap on the lack of visibility and data sharing in goods movement by enabling end-to-end visibility and coast-to-coast connectivity.

In total, Dr. Hacegaba has more than 26 years of public and private sector experience spanning a variety of industries. Prior to joining the Port, he managed $200 million in contracts for a Fortune 500 company.

Dr. Hacegaba is a graduate of the University of Southern California (USC), where he earned degrees in economics (BA and MA), business administration (BS) and planning (MPL). He earned his doctorate in public administration from the University of La Verne. Dr. Hacegaba is also a Certified Port Executive (CPE) and earned the Port Professional Executive (PPX) and Port Professional Manager (PPM) professional designations offered through the American Association of Port Authorities (AAPA).

Dr. Hacegaba serves on the Board of Directors of the Intermodal Association of North America, where he previously presided as Chairman. He also serves as Treasurer of the Coalition for America's Gateways and Trade Corridors Board of Directors, as Chairman of AAPA's Professional Development Board, as Vice Chair of the USC Kendrick Global Supply Chain Institute and on the Boards of the Marine Exchange of Southern California, Containerization and Intermodal Institute and the University of Denver Transportation and Supply Chain Institute.

Building the Port of the Future

As a port authority, the Port of Long Beach's success depends largely on strategic partnerships and various forms of formal and informal collaboration with port stakeholders, including customers and industry, labor, government and community partners. The forms and extent of collaboration grew significantly in 2004, when the Port of Long Beach developed and introduced its trailblazing Green Port Policy, which served as a framework for various strategies and actions the Port would undertake to reduce emissions and mitigate the impact of port operations on surrounding communities. Shortly thereafter, the Green Port Policy evolved into the Clean Air Action Plan (CAAP), which established the most aggressive goals for emissions and carbon reduction of any port in the world. Since 2006, the Port of Long Beach has collaborated with public and private sector partners to implement the CAAP and this has resulted in dramatic reductions in diesel particulate matter (-91%), nitrogen oxides (-63%) and sulfur oxides (-97%) during the same time period that container volumes increased by 36%. With the cooperation of our industry, labor and government partners, the Port of Long Beach is now on track to reach zero emissions cargo handling equipment by 2030 and zero emissions trucks by 2035 and remains a global leader in operational excellence and customer service. This transition to zero emissions operations represents one part of our quest to build the port of the future, which will be sustainable, resilient, agile, secure and value chain-enhancing. In addition to transitioning to zero emissions operations, the Port of Long Beach is upgrading its physical and digital infrastructure, expanding its rail capacity, densifying and electrifying its terminals, investing in hydrogen production and distribution and catalyzing the generation of renewable offshore wind power to help meet the goal of 25 GW of offshore wind by 2045 in the State of California. As the Port of Long Beach continues to transform its operations, it is also investing in workforce development by upskilling and reskilling the workforce for the jobs of the future and collaborating with academic and higher education institutions to create a pipeline and career pathways for port-related jobs. By taking a holistic and collaborative approach, the Port of Long Beach is literally building the port of the future.

Speaker

Gerardo LANDALUCE

Chairman, Algeciras Bay Port Authority

Biography

ACADEMIC AWARENESS

Graduate in Law from the University of Granada.
Master in International Management at the ESADE Business School in Barcelona.
Diploma in Senior Management of Leading Companies and Institutions (ADEL), San Telmo Business School.

PROFESSIONAL EXPERIENCE

- Vice President of Private Banking in the international area of Banco Español de Crédito (BANESTO) in Miami and New York.
- In 1996, he joined the Port Authority of the Bay of Algeciras (APBA), assuming responsibilities for strategy, business development, commercial and communication. Until the current appointment as Chairman in 2019, he has been Deputy Director General of Development and Commercial of the APBA, member of its Steering Committee and of the Navigation and Port Council of the Bahía de Algeciras port.
- Representative of the Spanish Port System in the Logistics and Intermodality and Industry Committee of the European Sea Ports Organization (ESPO).
- Member of the Executive Committee of the Mediterranean Ports Association (Medports).
- Teaching collaborator of the Master in Maritime Port Management of the University of Cádiz as well as the Master in Port Management and Planning and Intermodality of the Port Campus of Puertos del Estado.
- Regular speaker at conferences and seminars in the maritime, port and logistics field at national and international level.
- Recognition of Security forces and State forces:
  1) Cross of Police Merit with White Distinction of the National Police Corps (September 2021)
  2) Cross with White Distinction of the Order of Merit of the Civil Guard (September 2021)

Enhancing Global Connectivity : Algeciras Port's Best Practices and Future Collaboration Prospects

The Algeciras Port Chairman Mr. Gerardo Landaluce will present his vision and best practices at the Busan International Port Conference (BIPC) in the session "Ports : Success & Future Collaboration" which will be focuses on identifying future collaboration opportunities between port leaders, to enhance global port operations worldwide.

Algeciras Port, strategically located in the Strait of Gibraltar, is the 4th largest port in Europe by total throughput, exceeding 100 million tons for the last eight consecutive years. It has been one of the fastest-growing ports in Europe in recent decades and during the pandemic, maintained stable traffic due to its efficiency and strategic position in global trade. Currently, amid the Red Sea Crisis, Algeciras Port acts as a key platform to stabilize disruptions in Asia-Europe flows.

Mr. Landaluce will explore the initiatives and innovative practices behind Algeciras Port's strategy:

Global Partnerships: Ports are now recognized as strategic assets for their countries, for global production-logistics chain stability and for generating new green maritime corridors for the industry. Consequently, a robust network of international collaborations is essential. Integration and cooperation with our Port Community for commercial purposes, is essential to achieve these goals.

Infrastructure Development: Significant infrastructure investments have driven Algeciras Port's growth. Mr. Landaluce will detail recent projects that expand capacity and connectivity. He will also highlight the updated role of ports as strategic energy assets for the coming decades to facilitate the transition towards a net zero energy eco-system.

Technological Advancements: Innovation drives Algeciras Port's strategy. Mr. Landaluce will explain how the port uses cutting-edge technologies both in the seaside (PMS – Port Management System) and the landside (PCS-Port Community System), including automation and digitalization, to optimize operations. These advancements have increased throughput and improved cargo handling efficiency. In 2023, Algeciras continued to be Europe's most efficient port, supported by the Container Port Performance Index (CPPI) and Standard & Poor's Global Consultants, ranking it as the number 10 performer worldwide.

Sustainable Development, the Green Strategy: Algeciras Port and its Port Community are committed to environmental sustainability. Mr. Landaluce will discuss the port's integration of green technologies and eco-friendly practices, which have significantly reduced its carbon footprint while enhancing operational efficiency. This balance of economic growth and environmental responsibility, with the collaboration of port stakeholders, could serve as a model.

In conclusion, Mr. Landaluce presentation will underline Algeciras Port's achievements and its proactive approach to international cooperation. The port's evolution story reflects its strategic vision and operational excellence and invites other ports to collaborate for mutual growth and prosperity in the maritime trade sector to face future common challenges.

Speaker

Tiger HUANG

Senior Director, Taiwan International Ports Corporation

Biography

Huang has more than 20 years of experience in port and container operation business. He previously worked in shipping liners such as Hanjin Shipping and Wan Hai Lines, and is well experienced in international container operation-related businesses.

He later joined TIPC and hold various positions, including Terminal Manager of Container Terminal of Kaohsiung Port and General Manager of PT. Formosa Sejati Logistics (subsidiary company of TIPC in Indonesia).

He currently holds the position as Senior Director of Port Business Department and Investment Department in TIPC headquarter. He is mainly responsible for port rate regulations, major commercial contracts, marketing promotions, management of subsidiaries, offshore wind power and business evaluation of pioneering energy sources such as wind power, solar photovoltaics, wave energy and hydrogen energy, master planning the new energy business layout of TIPC.

The Development and Opportunity of Alternative Energy in Taiwan Ports

Taiwan International Ports Corporation (TIPC) is marching into the 12th year since our establishment in 2012. TIPC was restructured from harbor bureaus and we operate 7 international commercial ports in Taiwan.

As a state-owned enterprise, TIPC holds the mission of promoting national policies. As Taiwan proactively promoting offshore wind power in recent years, TIPC has invested in infrastructures including quays, land reclaim, and road improvements in the ports of Taipei and Taichung, providing the lands and facilities for offshore wind power operations. TIPC have also invited relevant domestic and overseas companies to the ports, provided turbine pre-assembly and localized manufacturing area, assisted operation and maintenance service, and talent cultivation, all to build the offshore wind power industry cluster. Under the policy of national energy transition, TIPC will continue to play an important role in meeting the needs of clean energy and renewable energy development. In the future, ports will be important locations for the receiving, storage, transfer, and even production and processing of LNG, hydrogen energy and related renewable energy, becoming the strong foundation on which to promote national policies.

To summarize, the speaker will share the development and opportunity of alternative energy industry in Taiwan ports, such as offshore wind power, hydrogen energy and other pioneering energy technologies.

Speaker

Jordi TORRENT

Head of Business Strategy, Barcelona Port Authority

Biography

Jordi Torrent is currently the Strategy Director of the Barcelona Port Authority. In this position he has developed the Port's IV Strategic Plan which has adapted the Port's strategy and objectives to the latest global and regional trade and logistics trends. He is particularly involved in the intermodal sector, and has designed and implemented initiatives in this field, such as the development of PPP projects of inland terminals and rail services in Spain and France. He has been involved in the Port, logistics and rail sectors for 15 years.
Jordi Torrent is also Managing Director of the company B2B Logistics Busan Barcelona Hub, and member of the board of directors of several societies managing intermodal terminals in Spain and France.
He is Secretary General of Medports.
He represents the Port of Barcelona in various international organizations, such as WPCAP, and ESPO.

He holds a Law Degree from the Autonomous University of Barcelona and a Master Degree on International Affairs from the University of Barcelona. He has also an advanced Management program from ESADE Business School.

Busan – Barcelona : Lessons learned from an Innovative Partnership

Historically the port of Barcelona has worked with various port authorities across the world. From Latin America, where we supported the creation of Port Community Systems and Quality plans in ports in Argentina and Mexico, to the Middle East and China. Recently the port of Barcelona and its various agencies have worked together with port authorities and port communities in Northern Africa (Algeria, Tunisia and Morocco for instance) in developing joint training programs for different profiles of port professionals.

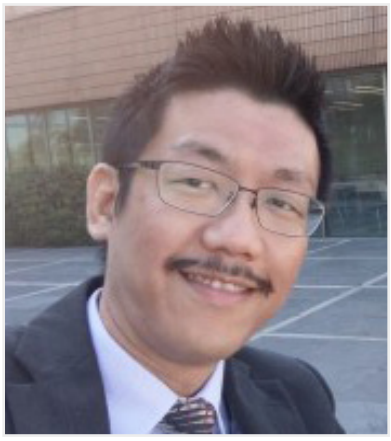
The cooperation between the port of Busan and the Port of Barcelona is however something unique and goes several steps further. The cooperation between two advanced port authorities has developed into some kind of integration for certain activities. We work often as if we were a single port authority.

The creation of a joint company (51% of shares from Busan and 49% from Barcelona) with the support of the two countries ministries has as its main objective to promote trade exchanges between the two countries and assist Korean companies exporting into Southern Europe (Spain but also France, Italy and Andorra for instance) in their logistics and distributions processes.

The results of this cooperation are extraordinary so far. Imports from Busan to Barcelona increased by almost 50% in 2023. Direct shipping services between the two ports have doubled since the cooperation started. The two ports have also assisted in the development of industrial projects in Barcelona's hinterland by Korean manufacturers.

A presentation on the background, present and future of the main tool of the cooperation between the two ports: B2B Logistics Busan Barcelona Hub.

Speaker



Samuel SOO

Regional Director(Korea&Japan), MPA Singapore

Biography

Samuel is currently the Regional Director (Japan & Korea) at the Maritime and Port Authority of Singapore (MPA), where he works with Japanese and Korean stakeholders to deepen their engagement with Singapore's maritime sector and identify new opportunities for collaboration.

Before that, he was Senior Deputy Director (Marine Services) and oversaw the departments planning for use of alternative marine fuels in Singapore, regulating the bunkering industry, and licensing of harbour craft.

Samuel started his career in the Singapore Government in 2008 with the Sea Transport Division in the Ministry of Transport, and then joined the MPA in 2012, where he has worked in various roles. He was also posted as First Secretary (Maritime) at the High Commission of the Republic of Singapore in London, where he served as one of Singapore's liaison officers to the International Maritime Organization (IMO).

Samuel was trained as a naval architect and also holds a Master of Engineering in Earth System Science and Technology from Kyushu University, Japan.

Maritime Singapore's Decarbonization Efforts

As the maritime industry seeks to decarbonize, ports and maritime centres will have a key role in supporting this transformation. Our ambitions for the sector must be supported by actions, and on its part, Singapore is actively pursuing decarbonization through a range of initiatives and partnerships with ports around the world.

Session 4. 3D(Digital, De-carbon, Diverse) Strategies for Port of Busan

[Moderator] Young-ran SHIN, Professor, National Korea Maritime & Ocean University

Moderator

Young-ran SHIN

Professor, National Korea Maritime & Ocean University

Biography

Dr. Youngran SHIN is a Professor in the Graduate School of Global Logistics at KMOU(National Korea Maritime & Ocean University) in South Korea. She currently serves as the Head of the Department of Shipping and Port Logistics at the Graduate School of Global Logistics, KMOU. Additionally, she is the vice-director of RIS(Regional Innovation System) Smart Port Logistics Group, which is supported by the Ministry of Education. She graduated with BA in Shipping Management from KMOU in 2001 and was awarded a PhD from KMOU in 2008. Prior to the current position, she worked as a Research Fellow at Nanyang Technological University in Singapore, a full-time lecturer at Pusan National University and Dongeui University, and a researcher at the Korea Maritime Institute.
She has published over 50 papers in KCI academic journals and international journals (SSCI), covering topics such as shipping marketing, supply chain management, sustainable management, ESG, social responsibility (CSR), and the sharing economy (SE). In addition, she serves as a board member of the Korea Ocean Business Corporation and has previously been a board of Port Commissioners for the Busan Port Authority.

Presenter

Hye-jin SEO

Student, Dong-Eui University

A Study on the Making and Utilization of Eco-Friendly Pallets using Marine Garbage in Busan Port

Keywords: ESG, Upcycling

ESG management means that a company pursues sustainable development in consideration of environmental protection, social responsibility, and transparent management structure, which aims to create social value and fulfill its responsibilities in the long term. Recently, the marine plastic waste problem has emerged as a serious environmental problem around the world, and Busan Port is directly experiencing this problem as a representative port in Korea.

To effectively deal with this, we intend to create an upcycling pallet using marine plastic waste collected from the Busan Port area by linking ESG management and upcycling.
Since marine plastic waste has a high degree of pollution, it is possible to secure the same quality as conventional plastic by using chemical recycling methods, and even if recycled repeatedly, the physical properties do not deteriorate, increasing the possibility of resource circulation.

The durability problem, which emerges as a problem with recycled plastic, is designed with a Truss structure that has been proven to be relatively high specific strength through four tests.
In order to build a pallet pool system, RFID tags are inserted into plastic injection and riveted to the product to lay the foundation for the operation of the pallet pool system.

Finally, the pallet full system is made in the order of "paret delivery – cargo release – pallet collection."
This makes it easier to manage pallets by allowing the required quantity to be used in accordance with fluctuations in the volume of goods, not generating idle pallets at customers, and returning them to the KPP distribution center close to the destination.

As a result, by operating the marine waste upcycling pallet pool system, it is possible to provide a positive image of a port that fulfills its social responsibilities and to create sustainable employment. In addition, by using recycled materials, resources can be preserved by reducing the amount of waste, and by optimizing the path of movement of pallets using IoT sensors, transport efficiency can be increased and transportation costs can be reduced.

Presenter

Young-sang PARK

Student, National Korea Maritime & Ocean University

Reconsideration of Rail Logistics of Port : Development and Optimization of Jinhae New Port

Keywords: Rail-Logistics, Optimization, iOT

The presentation attempts to draw up a plan for Busan Port to become a next-generation smart port. And for this purpose, it presents the railway logistics which has combined with fourth industrial(4I) technology such as iOT and A.I.

Busan Port is the world's seventh-largest port in container volume and second-largest in transshipment volume. But problems such as the pursuit of competitive port and the technology gap with the world class ports are being raised.

This presentation conceptualized Jinhae new port that combines rail structure and 4I technology to present alternatives. As a result of the study, it can be seen that this kind of logistics has strengths in the areas of unmanned and computerized, and can be occupied significant market share as a view of smart port development.

Presenter

Ji-yun CHOI

Student, National Korea Maritime & Ocean University

Busan Port, Strengthening Port Sanitation and Safety through the Introduction of an Empty Container Disinfection System

Keywords: ESG and sustainable economy

If a damaged container is transported without inspection, the driver must request a replacement, causing delays of 30 minutes to 5 hours. Drivers often clean or repair containers themselves, taking 0-160 minutes, averaging 32.52 minutes, creating inefficiency. Untrained in container management, drivers risk introducing invasive species or viruses, as seen with the red fire ant incident at Busan Port. Improperly sanitized containers can harbor pathogens, endangering subsequent shipments. Prolonged storage at ports increases the spread of invasive species.

To address this, we propose a container disinfection system at Busan Port to enhance hygiene and safety. The system will automatically clean, disinfect, and insecticide containers at terminal perimeters, improving efficiency, worker conditions, and preventing ecosystem damage and virus spread. The facility includes clamps to lift containers, sprinklers for cleaning, and disinfectant sprays, aiming to complete disinfection quickly.

This system will significantly improve ESG management by enhancing social value and corporate sustainability, protecting public health, and improving corporate image. By preventing the spread of invasive species and pathogens, it will contribute to the overall safety and environmental health of the region.

Our proposal focuses on an automated cleaning and disinfection system at the perimeters of container yards in Busan Port. This system will address several critical issues: the inefficiency of current manual cleaning processes, the lack of specialized training for drivers, and the risk of invasive species and pathogen spread. The automated system will include advanced technologies for lifting, washing, and disinfecting containers, ensuring all potential contaminants are effectively removed.

The anticipated benefits include reduced delays in container transport, improved working conditions for drivers, and enhanced environmental protection. By investing in this technology, Busan Port will set a new standard for port hygiene and safety, positioning itself as a leader in sustainable port management. This initiative aligns with global trends in ESG practices, emphasizing environmental stewardship, social responsibility, and governance in business operations.

Moreover, the automated disinfection system will reduce the need for manual labor, decreasing the time and effort required for container maintenance. This will lead to significant cost savings in the long run, making the system not only environmentally but also economically beneficial. The improved sanitation standards will attract more business to Busan Port, enhancing its competitiveness on the global stage.

In summary, the implementation of a container disinfection system at Busan Port is a strategic investment that will improve operational efficiency, protect the environment, and support sustainable growth. It represents a forward-thinking approach to port management, ensuring that Busan Port remains a safe, efficient, and competitive hub for international trade.

Presenter

Van Roi HO
Student, National Korea Maritime & Ocean University

AI Cargo Recognition and Management at Busan Port Smart Logistics Center

Keywords: Artificial intelligence, Smart Logistics, Cargo Recognition, Computer Vision

Efficient and accurate cargo detection is crucial for the operational success of handling equipment in warehouse environments. This research presents a novel support system for forklifts at the Busan Port Smart Logistics Center, leveraging advanced computer vision techniques, specifically the YOLOv8 (You Only Look Once version 8) model, to enhance cargo detection capabilities. Our approach involves the development of a comprehensive computer vision pipeline that includes image preprocessing, real-time object detection using YOLOv8. The YOLOv8 model processes visual data and extracts relevant features, enabling the system to handle various cargo types with high accuracy.

The proposed system seamlessly integrates with the warehouse management system (WMS), allowing real-time communication and data exchange. This integration enables accurate counting and management of products for pick-up, significantly contributing to inventory control and order fulfillment. The system also supports real-time updates to the WMS, ensuring synchronized operations and timely responses to dynamic warehouse conditions. Extensive experiments were conducted using a diverse set of warehouse scenarios to evaluate the system's performance.

In conclusion, the integration of the YOLOv8 model into forklifts offers a promising solution for enhancing warehouse automation at the Busan Port Smart Logistics Center. The proposed system not only boosts the accuracy and efficiency of cargo detection but also enhances the overall productivity and effectiveness of warehouse operations. By enabling precise inventory management and streamlined workflows, this comprehensive approach contributes significantly to the realization of a fully automated warehouse system. Furthermore, the system's scalability and adaptability to various warehouse environments make it a versatile tool for optimizing productivity and operational effectiveness across the logistics industry.

Session 5. Special Session by Korea Maritime Institute

[Moderator] Sang-hei CHOI, Vice President for Research, Korea Maritime Institute

Moderator

Sang-hei CHOI

Vice President for Research, Korea Maritime Institute

Biography

Dr. Choi received the B.S. degree in civil and environment engineering from Korea University, Seoul, South Korea, in 1992.
In 1995, Dr. Choi joined the Korean Maritime Institute, South Korea, since then, he has been involved in numerous research projects including development & operation of supply chain, port and logistics policy and related nation R&D.

Currently, he is in charge of the vice president of research department at the Korea Maritime Institute, overseeing research in the maritime, fisheries, shipping, port and logistics sectors. Externally, he serves as an expert member of the National Science and Technology Advisory Committee and a member of the National Logistics Policy Committee.

Speaker

Seok-woo CHOI
Director, Korea Maritime Institute

Biography

Dr. Seok-woo Choi serves as the Director of the Port Demand Analysis Research Division at the Korea Maritime Institute (KMI), a leading government-affiliated research organization under the auspices of the Prime Minister's Office of South Korea. He earned his Ph.D. in Statistics from the University of Illinois at Urbana-Champaign, specializing in mathematical statistics with a focus on quantile regression and non- or semi-parametric statistics.

Since joining KMI, Dr. Choi has spearheaded a range of research initiatives centered on port policy and operations, port demand analysis, and the national blue economy. His work is pivotal in shaping strategies that enhance port efficiency and contribute to the broader economic framework.

Global Port Infrastructure Competitive Index

Keywords: Container Terminal, Port Infrastructure, Competitive Index

The Global Port Infrastructure Sufficiency Index (PISI) was developed in 2019 under the framework of the Korea Maritime Institute (KMI) to measure whether global container ports are providing an adequate level of infrastructure services to enhance customer satisfaction. In Phase 1, the index was developed and evaluated targeting Korean domestic container ports, and a system for evaluating global ports was established. Subsequently, in Phase 2, the first pilot test was conducted on global container terminals in collaboration with the United Nations Conference on Trade and Development (UNCTAD). The PISI is composed of three elements: Punctuality, Safety and Security, and Digitalization. Punctuality is measured based on AIS data, while Safety and Security, and Digitalization are assessed by port experts (stakeholders) through structured questionnaires. The results of the first pilot were published in November 2023 and can be found on the UNCTAD website. Meanwhile, PISI is currently progressing with Phase 3, aiming to enhance reliability and usability of the index by addressing various issues identified during the first pilot and conducting a second pilot test.

Speaker

Na-young LEE

Senior Researcher, Korea Maritime Institute

Biography

Researcher Lee Na-young, born in 1988, got a master's degree in statistics from Sungkyunkwan University in 2013 and majored in economics at Pusan National University (Doctoral Candidate). She worked at the Korea Maritime Institute for 10 years, focusing on predicting port cargo volume, analyzing domestic and international container trade, calculating service indicators, analyzing the impact of ports on global supply chains, and tasks relate to concerning port classification. In particular, the KMI is the designated organization under the Port Act responsible for predicting cargo volume each year and supporting the formulation of port policies by monitoring cargo volume and analyzing factors influencing changes in it in the mid to long term.

Global Port Productivity

Keywords: Container Container port, berth productivity and port competitiveness

Ports are a key infrastructure that requires large amounts of capital input and have a significant impact on a national economy. So much so that inefficient operation of ports and terminals will lead to a big waste of social goods.
In particular, the longer a ship calls at the terminal, the higher the cost it needs to pay for. Therefore terminal's productivity is a important consideration not just for shipping companies in selecting ports and terminals but also for port operators.
I think amidst of this intensifying competition, it is necessary to evaluate the efficiency of ports and terminals in a continuous but immediate manner to derive efficiency improvement factors in a short time. Specifically, as container ships become larger, it is important to secure competitiveness for large container ships. Accordingly, this study will examine the trends in berth productivity indicators, a representative measure of container competitiveness, focusing on large container ships by region, country, and port.

Speaker

Seong-hyun CHO
Researcher, Korea Maritime Institute

Biography

Seong-hyun Cho (1994) received his bachelor's and master's degrees in logistics from Inha University. He has been working at the Korea Maritime Institute since 2021, and has been working in the Port Demand Analysis Research Division for three years, where he has been conducting cargo volume forecasting and monitoring. His recent research interests include estimating air pollution emissions using AIS data, estimating port congestion, and analyzing port cancellation patterns.

AIS Based Port Throughput Estimation

Keywords: AIS Data, Ports with Limited Statistical Data, Berth Time, Waiting Time, Port Throughput Estimation

Accurate port throughput data, along with investment analysis and forecasting, is essential for the stable development and operation of ports. However, obtaining accurate data is challenging for certain ports with limited statistical data, such as those in North Korea, the South Pacific, the Caspian Sea, the Black Sea, and Africa. This study aims to address this gap by developing a methodology to construct key port statistics using Automatic Identification System (AIS) data.

In recent years, countries have been expanding overseas port development projects and official development assistance (ODA) projects, and Korea has been actively promoting such projects, with the amount of ODA aid increasing at an average annual rate of 7.0% from 2015 to 2022. For the continued promotion of these projects, it is essential to establish basic statistics for port development and operation, but it is difficult to obtain accurate statistics for some ports, such as North Korea's port statistics, which rely on old data from the 1990s. Therefore, this study proposes a method to build comprehensive statistics for ports that lack statistical data by utilizing AIS data.

The main steps of this study are as follows. First, we presented the current status and limitations of statistical data for ports of limited data, and identified what data can be constructed using AIS data. Second, we summarized and developed a methodology that can be applied to such ports. Specifically, it was divided into three areas: ship arrivals and departures, port service statistics (berthing time and waiting time), and cargo statistics. Third, empirical analysis was conducted by applying the developed methodology to selected ports. Specifically, we presented the ship types, specifications, and arrival and departure status of ships calling at Port of Suva in Fiji, Port of Apia in Samoa, and Port of Nampo in North Korea in 2022, and estimated the average berthing time and waiting time of ships. In addition, we estimated and validated the port volumes. In particular, the volume estimation model showed a high correlation of more than 90% for containers, liquids, and general cargo at Apia Port.

By presenting a methodology for constructing port statistics using AIS data, this study aims to contribute to policy-making and research on port development in regions with insufficient statistical data, such as North Korea and Pacific Island ports, and to support effective data-driven port development strategies. The results of this study are expected to be used as a basis for supporting port development needs of governments and companies in developing countries and for future inter-Korean port logistics cooperation projects.

Session 6. Ports Gathering : Adapts & Advances on Decarbonization (By BPA & ADB)

[Moderator] Yeşim ELHAN-KAYALAR, Advisor, Asian Development Bank

Moderator

Yeşim ELHAN-KAYALAR
Advisor, Asian Development Bank

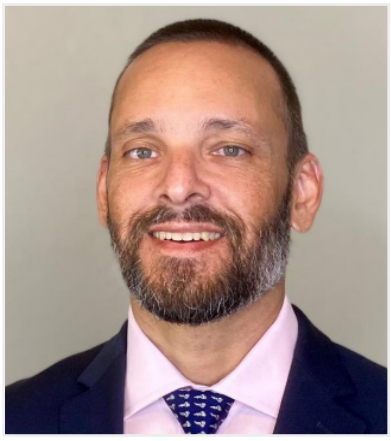
Biography

Yesim Elhan-Kayalar, Advisor
Office of the Chief Economist
Asian Development Bank

Yesim Elhan-Kayalar is an economist with more than 32 years of work experience in the development sector and academia in 30 countries. She has worked at national and regional levels to create long-term development solutions in public sector management, infrastructure, and finance sectors. During her tenure at ADB, she has held senior positions, including as Country Director for Georgia, where she led ADB's country development strategy and portfolio during 2015-2019. She has served on corporate committees for ADB's gender, governance and public finance policy and interventions. In her current role as Advisor to the Chief Economist of the Asian Development Bank, Elhan-Kayalar specializes in knowledge and policy solutions for high-impact development assistance in Asia and the Pacific.

Elhan-Kayalar holds a PhD in economics from the University of California; qualifications in finance and management from Harvard University, University of Michigan, and National University of Singapore.

Speaker



R. Duncan MCINTOSH

Senior Regional Maritime Specialist, Asian Development Bank

Biography

R. Duncan McIntosh, PhD
Senior Regional Maritime Specialist
Emerging Areas Group
Transport Sectors Office
Asian Development Bank

As the Senior Regional Maritime Specialist at ADB, Dr. Robert Duncan McIntosh leads ADB's Maritime Decarbonization Initiative and designs regional strategies for ports connectivity, maritime trade efficiency, green ports, and maritime decarbonization in the Asia-Pacific region. Prior to ADB, he directed the Pacific Islands Global Ocean Observing System and coordinated the Pacific regional hub of the Global Ocean Acidification Observing Network at the Secretariat of the Pacific Regional Environment Programme. He has taught Marine Affairs at the University of Rhode Island, developed climate services at the University of Hawaii, and single-handedly sailed across the Pacific Ocean. He holds a PhD in Marine Affairs from the University of Rhode Island, a master's in Meteorology and Physical Oceanography from the University of Miami, a bachelor's in Physics from Vanderbilt University, and a conjoint appointment as Senior Lecturer at the University of Newcastle, Australia.

Asian Development Bank's Maritime Decarbonization Initiative

Keywords: Development Finance, Asia-Pacific, Maritime Decarbonization

Asia and the Pacific is the frontline in the battle against climate change, and the Asian Development Bank is scaling up climate finance and introducing innovative solutions to cut greenhouse gas emissions and invest in climate adaptation in the region. As the region's Climate Bank, ADB is planning a new Flagship Maritime Decarbonization Initiative to expand investments in greening the maritime sector and to develop a pipeline of bankable projects that address the significant GHG emissions from maritime transport and facilitate a just transition to sustainable and resilient maritime infrastructure for ADB's member countries.

Speaker

Stephen METRUCK

Executive Director, Port of Seattle

Biography

Stephen P. Metruck

Executive Director

At the helm of a world-class economic engine in a dynamic region

As executive director of the Port of Seattle, Steve Metruck leads a county-wide special purpose government responsible for providing trade, travel, and logistics services to one of the most diverse and fastest growing regions in the United States.

The Port operates Seattle-Tacoma International Airport (SEA) – one of the nation's largest and best-connected airports – and owns or operates facilities for cruise, commercial fishing, grain terminals, recreational marinas, and commercial real estate. SEA Airport expects to serve 52 million passengers in 2024. A major international gateway, SEA will have 53 services to 33 international destinations on 28 different airlines by the end of 2024.

The Port also operates one of North America's largest maritime cargo shipping gateways through The Northwest Seaport Alliance, a joint effort with the Port of Tacoma.

Metruck has guided the Port through transformative capital programs, including the opening of the new International Arrivals Facility at SEA and development of a Maritime Innovation Center.

Metruck is also a recognized leader in the global effort to transition port-related industries from fossil fuels. In collaboration with industry and port leaders in the United States and Canada, Metruck initiated the formation of the Pacific Northwest to Alaska Green Corridor First Movers Group, the first ever global effort to explore decarbonization of a cruise corridor. Metruck is currently leading the Port to expand shore power to its third and final cruise berth, part of a harbor-wide Port electrification strategy for facilities and operations.

Metruck leads with an emphasis on ethics, financial stewardship, and a culture of respect. With Commission support, Metruck created the port's first-ever Office of Diversity, Equity and Inclusion, ensuring that the department director sits on his executive leadership team. The Port weaves equity throughout its organization. Metruck has charged all divisions to expand opportunity equitably through Port policies and programs.

Metruck leads 2,135 employees, manages $617 million in annual operating expenses, and guides a $5.2 billion five-year capital improvement plan in 2024. Hundreds of individual private employers operate on Port facilities, expanding the economic impact of the Port. Regionally, Port operations support over 121,000 jobs and $38 billion in business revenue.

Distinguished leadership career in the public sector

Metruck came to the Port of Seattle following a 34-year career with the United States Coast Guard, retiring as a Rear Admiral (Upper Half). Having previously served as Captain of the Port in Seattle, he has experience across a diverse range of operations and executive-level assignments on both coasts, the Great Lakes, and the Gulf of Mexico.

Education

Bachelor's degree, Ocean Engineering, U.S. Coast Guard Academy
Master's degree, Public Administration, Harvard University, John F. Kennedy School of Government

Fellowships and special assignments

Board of Governors, World Trade Center Seattle
Seattle Metropolitan Chamber of Commerce Board of Trustees, Seattle Metropolitan Chamber of Commerce Executive Committee
Senior Fellow, George Washington University Center for Cyber and Homeland Security
U.S. Coast Guard Liaison to the U.S. Mission to the United Nations in New York City
Congressional Fellow to Senator John F. Kerry of Massachusetts

Decarbonizing a Successful Cruise Port : Lessons learned from the Port of Seattle

Keywords: sustainability, decarbonize, emissions, cruise

The Port of Seattle operates a successful cruise business as the largest homeport on the west coast of the United States with equally ambitious sustainability programs and goals, including a policy requiring all cruise ships to connect to shore power by 2027.
The Port will share the different steps it is taking to decarbonize its operations by 2040 with a focus on: developing and implementing strategies that identify, track, and reduce emissions across port operations; making investment priorities; and building relationships to successfully implement sustainability measures.
Finally, the Port will close with lessons to date from its latest project working to identify the next step in fully decarbonizing shipping by 2050—a multi-country, multi-state zero emission green cruise corridor.

Speaker

Roger WU

Director, Port of Long Beach

Biography

Roger Wu is Director of Business Development in the Commercial Services Bureau for the Port of Long Beach, California. He was appointed to the post in May 2020 by the Long Beach Board of Harbor Commissioners, governing body for the Port, having served as Acting Director since October 2018. He reports to the Bureau's Managing Director.

Mr. Wu joined the Port in 2007 as Marketing Manager in the Trade Relations Division, the previous name of Business Development, with the added responsibilities of Acting Manager of Tenant Services from November 2011 until the position was filled in early 2013. He was named Manager of Commercial Trade, Ocean Carriers, in June 2014 before moving up to Assistant Director in September 2014.

As Director, Mr. Wu is responsible for maximizing revenue opportunities for the Port by developing business attraction strategies and through close relationships with ocean carriers, cargo owners, terminal operators, labor and supply chain partners.

During his tenure as Manager of Commercial Trade, Ocean Carriers, Mr. Wu focused on building and maintaining working relationships with the shipping lines that move millions of containers annually through the Port of Long Beach. He also gathered industry market statistics and provided research and reports to the Harbor Commission and management. With their guidance, he worked with ocean carriers to attract their business.

As Acting Manager of Tenant Services, his responsibilities included maintaining contact with the Port's tenants and lease holders, providing customer service and problem resolution, enforcing and administering the Port Tariff, and managing the Port's Clean Truck Program and the Green Flag Program.

Mr. Wu has more than 20 years of experience in the shipping industry. Prior to coming to the Port, he worked for seven years with NYK Line, first as a Marketing/Pricing Analyst and then as a Sales Representative, responsible for major accounts in Los Angeles, Orange, San Diego and Riverside counties as well as in Phoenix. NYK Line is one of the world's leading shipping companies.

Earlier in his career, he also worked with Evergreen America Corporation (now Evergreen Shipping Agency) and supervised cargo operations for EVA Air.

Mr. Wu holds a bachelor's degree in Economics from the University of California, Irvine, and a master of arts in Global Logistics from California State University, Long Beach.

Decarbonization and Digitalization

Keywords: Decarbonization, Digitalization

"Decarbonization" and "Digitalization" are two words widely discussed in the shipping industry. Both are also key areas ports around the world are working independently or collaboratively. Digitalization can support decarbonization by providing critical data needed to monitor, track, inform, forecast and research efforts. Guided by the Clean Air Action Plan, the Port of Long Beach understands the importance of growing commercially and generate jobs while reducing Port-related air pollution and health risks. We also know that we cannot work on decarbonization efforts in a vacuum. Therefore, the Port established Green Shipping Corridor partnerships with Singapore MPA and Shanghai SMTC. Supply Chain Information Highway, the Port's digitalization project, was created based on lessons learned from the 2020-2022 global supply chain disruptions. The development roadmap includes data optimization, cargo visibility, inter-operability and expandability. We believe the platform can greatly complement decarbonization by utilizing the digitalized nature of the platform and "operationalize" various aspects of the effort. Two examples will be shared with audience to highlight how digitalization can support efficiency and decarbonization. The Port's decarbonization and digitalization development is on-going and we hope to share and discuss with partners during BIPC.

Speaker

Jeong-hum YEON

Port R&D Director, Busan Port Authority

Biography

Director Yeon Joung-hum majored in logistics engineering system at the Korea Maritime University and obtained a master's degree and a Ph.D from the same graduate school.
Since then, he has worked as a consultant at Arthur D. Little and as a researcher at the Busan Institute, and has worked in Busan Metropolitan City for 15 years as a specialized deputy director in the maritime and port fields.
Currently, he is charging as the director of port R&D department at the Busan Port Authority and is carrying out various national R&D tasks such as crane automation, transshipment cargo transfer equipment, and digital twins necessary to grow Busan Port into a global smart port.

Piezoelectric Energy Harvesting at Busan Port : Progress and Prospects

Keywords: piezoelectric, port energy, ESG

Due to the impact of global environmental regulations such as IMO, the port's energy source is shifting from existing fossil fuels to eco-friendly energy such as electricity and hydrogen electricity. The use and proportion of electric energy in ports is increasing significantly, but renewable electric energy sources to replace them are ineffective except for solar power.
Piezoelectric power generation developed a technology that uses the characteristics of the port, that is, cargo vehicles continue to enter and exit the port for cargo transport, and generates electricity using the pressure generated when these vehicles step on the piezoelectric power module.
By analyzing the operating characteristics of cargo vehicles, an optimized power generation environment is found, and R&D efforts are being carried out for commercialization by calculating the amount of electricity generated.
In addition, through localization of piezoelectric devices, price competitiveness was secured and a stable supply system was established.
In this presentation, the concept, core technology, and field test results of piezoelectric power generation are presented comprehensively, and future tasks that need improvement are explained.

Panel

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