IPCSA

International Port
Community Systems
Association

IPCSA Foresight workshop #2 "Dealing with unpredictability in a predictable fashion"

EXECUTIVE SUMMURY

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I Introduction

What does the future hold for Port Community Systems, Single Windows and the ports and shipping sectors they serve? Potential scenarios and their implications for business were examined by participants in the second of three Foresight workshops organised by the International Port Community Systems Association (IPCSA).

The intensive two-day workshop, held in Casablanca, was hosted and sponsored by Morocco's Single Window operator, Portnet. **Youssef Ahouzi, CEO of Portnet**, said: "We were very happy to host this important Foresight workshop. This followed the first Foresight workshop held in Dubai, which explored the dynamics and drivers of change, discovering issues and understanding high-impact uncertainties. In this second workshop, we had a very intensive investigation of various scenarios, with excellent insights which helped us to consider how businesses can stay relevant and develop services for customers."

The workshop was facilitated by **Will Sambrook of Akenham**, using the Copenhagen Institute for Futures Studies' (CIFS) Strategic Foresight framework. On day one, the format took critical issues identified from the Dubai workshop, encouraging participants to explore these potential scenarios, evaluate their implications for business in the light of current global tensions and the rapid pace of change, and build pictures of 'potential futures', said Sambrook. On day two, the focus was on identifying strengths, weaknesses, opportunities and threats from the scenarios that could make the biggest impact on PCS and Single Window operators, and gather ideas and proposals for strengthening operations to deal with these challenges. "We discussed what these changes would mean to us as organisations – that makes it very real," he said.

Javier Gallardo, Chairman of IPCSA and CEO of Portic (Spain), said: "The Foresight workshop led to some very intensive discussions and debates as we tried to anticipate what is going to happen and how it will be important for our industry. We don't know where we will arrive because the world is unpredictable, but we worked to explore different potential scenarios and evaluate probabilities."

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Day 1 "Responding to Unexpected Challenges and Presenting the Critical Issues in Global Trade and Logistics"

Day I of the IPCSA Foresight Workshop commenced with a focus on crisis preparedness before transitioning to the formal presentation of nine critical issues impacting global trade and logistics.

2.1. Blackouts and Beyond: Responding to Unexpected Challenges

The workshop initiated the day with a presentation by Javier Gallardo, IPCSA Chairman/CEO of Portic, who used the recent power blackout in Spain and Portugal as a practical example to discuss managing unexpected challenges. The core message underscored that **strategic approaches, including robust contingency plans, are paramount** over reliance on technology. Effective management strategies highlighted included maintaining focus, separating facts from emotions, clear communication, and continuous learning. The discussion revealed the profound challenge of securing reliable information, noting that the absence of internet during the blackout prevented the spread of "fake news," making trusted sources like radio essential. Participants expressed concerns regarding the widespread **over-reliance on technology**, suggesting that society adopt more traditional preparedness methods, as current disaster recovery plans often fail to address prolonged infrastructure unavailability.

2.2. Presentations of the 9 Critical Issues

The remainder of Day I introduced nine critical issues, each defined by two opposing future polarities:

1. **Access to Information/Ownership of Data:** This issue explores the tension between restricted data sharing (due to privacy, security, and potential monetization) and open data sharing necessary for efficiency and innovation. Portbase adopted a **hybrid model** where essential operational data remains freely accessible, while specific datasets can be controlled and monetized by the owners.

2. **Means of Transport:** Polarities ranged from the dominance of traditional transport (maritime, air, rail, road) with ports acting as **facilitators**, to the emergence of newer means (drones, hyperloops) where ports evolve into **orchestrators**. Significant concern was raised regarding the potential for **monopoly behavior** and loss of neutrality resulting from major carriers acquiring ports and terminals.

3. **Digital Designs vs. Transport of End Products:** The discussion centered on 3D printing, highlighting a potential "hybrid model" where raw materials ('dust') are shipped for local assembly. Experts emphasized that mass manufacturing remains unfeasible due to cost. A crucial risk is the potential lifting of the **WTO duty moratorium** on e-commerce, which would impose tariffs on the electronic transfer of 3D printing designs and constrain global development.

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4. **Technological Advancement:** Riasat Ali highlighted the accelerating pace of change driven by AI, Digital Twins, and the "revolution" of **quantum computing**. Key coping strategies involve integrating IT and OT systems, **upskilling the workforce**, and maintaining a proactive cybersecurity posture.

5. **Data Governance and Ownership:** This issue addresses balancing **Regulated Transparency** with Unregulated Use. Governments were defined as **custodians** of data, not owners. Practical examples, such as the Asian supply chain, illustrated how unregulated environments lead to severe data degradation, creating an "absolute nightmare" for customs clearance.

6. **New Financial Settlement Order/Rules:** The focus was the profound transformation of the financial system. Polarities described either the continuation of the traditional system anchored by Dollar hegemony or a fragmented, multipolar system reliant on regional financial zones and a strengthened real economy. Uncertainty exists regarding the management of volatile tariffs and the potential redefinition of an "asset" to include resources like water or critical minerals.

7. **Energy & Resources:** Uwe Liebschner argued that this issue must encompass water, raw materials, and skilled labour, not just electricity costs. High costs drive production fragmentation. The immense and growing energy demands of AI were noted as a critical environmental and cost conundrum.

8. **Policy/Regulation:** Mona Swoboda presented the tension between a **Predictable Globally Regulated** framework (stability, lower costs, efficiency) and an **Uncertain Open Market** (fragmented regulations, protectionism). Geopolitical situations drive trends toward "reshoring" or "friendshoring", necessitating policy flexibility to support digitalisation.

9. **Global Trends in Maritime Logistics:** Jan Hoffmann outlined positive long-term trends in Trade Facilitation alongside the crucial negative trend of **emissions from shipping**. Future transitions include energy shift, vertical integration, volatile tariffs, and further digitalization. The underlying critical question remains: **Is there a trade-off between controls and trade facilitation?**

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Day 2: Strategic Response and Future Adaptation

Day Two of the IPCSA Foresight workshop, focused on "Responding to scenarios: SWOT," centered on evaluating the implications of the identified future scenarios for Port Community Systems (PCS) and Single Window operators, culminating in the development of strategic responses using the TOWS matrix.

I Key Discussion Points and Conclusions:

1. **PCS Core Strength: Trust and Neutrality:** A fundamental conclusion across the groups was that the primary strength of PCS operators is their **trusted and neutral** position, backed by strong governance experience in stakeholder engagement. This asset can be leveraged to guide governments and provide certainty to shipping lines in uncertain times (David Roff, Uwe Liebschner).

2. **The New Casablanca Model (Technology Dimension):** Group 3 introduced a crucial concept: integrating a **Technology Dimension** (e.g., AI, cybersecurity) on top of the scenarios. This model emphasizes that technology accelerates both opportunities and risks, requiring organizations to apply proactive cybersecurity postures across all potential futures (Uwe Liebschner, Riasat Ali).

3. **Strategic Opportunities for PCS:** Participants identified significant new business opportunities by leveraging existing strengths (Uwe Liebschner, Javier Gallardo). These include shifting toward providing high-level **consultancy/advisory services** beyond local communities, acting as a **facilitator of innovation** for smaller companies, offering **cybersecurity as a service** to the port community, and developing dedicated lines of business in **security, safety, and sustainability**.

4. **Addressing Vulnerabilities and Stagnation:** A key weakness identified was the potential for **stagnation** in stable periods (e.g., *Driving Miss Daisy* scenario). To counter this threat, PCS operators must continually invest in staff training, innovation, capacity, and technology, utilizing foresight to avoid being disrupted by agile competitors (David Roff).

5. **Partnership and Critical Infrastructure:** A significant conclusion regarding external threats (especially government regulation) was the need to deepen **Public-Private Partnerships (PPP)** and promote PCS operators' role as **critical infrastructure** (Uwe Liebschner, Nico De Cauwer). This recognition could lead to governmental support, funding, or investment for infrastructure and cybersecurity. Riasat Ali suggested this concept extends to **Public-to-Public (P2P)** cooperation in government-backed environments.

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II Responding to Scenarios: SWOT Analysis

The second day of the workshop, facilitated by **Will Sambrook**, focused on responding to the scenarios developed on Day One using the Copenhagen method. The objective was to evaluate existing organizational strengths, weaknesses, opportunities, and threats (SWOT) against these potential futures, followed by applying the TOWS matrix to prioritize strategic actions.

Will Sambrook provided guidance on the methodology, explaining that groups would first vote on which scenarios to keep working on. The discussion would then pivot to identifying strengths and weaknesses against the scenarios, and subsequently looking at how to convert strengths into opportunities or address weaknesses. He noted that this process allows organizations to leverage information gathered throughout the foresight journey, even data from scenarios that are not ultimately selected for the deeper dive.

Group Nr. 1 Scenario Presentation

Presented by David Roff, Industry expert, CIF Consulting Limited

Group 1 worked on the polarities of **Policy and Regulation** (Globally Regulated vs. Uncertain Open Market) and **Trade Flows** (No Change to Routes/Modes of Transport vs. Changes to Routes/Modes of Transport). The group clarified definitions, considering whether movements were domestic versus global, and noting the relevance of customs, volume, and guarantees for non-EU ports.

Scenario Title	Policy/Regulation	Trade Flows	Characteristics
Driving Miss Daisy	Globally Regulated	No Change	Opportunities exist to optimize the supply chain, and current big players maintain the status quo. Investment is low-risk and stable. Disadvantages include a risk of market stagnation and a lack of access for new players.
The Big Short	Uncertain Open Market	Changes to Routes	This reflects current disruptions (e.g., US tariffs) and provides a great space for innovation. It creates an environment for businesses prepared to take risks and offers new business models for PCS and others outside the status quo.
Moneyball	Globally Regulated	Changes to Routes	Predictable framework with route changes (e.g., carbon tax, Suez/Panama rerouting). This opens up new opportunities, such as for ports on different trade sides (like Valencia and Barcelona) to become transshipment hubs. There is an adaptable role for PCS, especially concerning "just in time" logistics. The group identified this as the **most likely outcome**.
Casablanca	Uncertain Open Market	No Change	This scenario suggests a "wait and see" approach, focusing on core business models due to nervousness, and a lack of opportunity for some.

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Group Nr. 2 Scenario Presentation

Presented by Magdalena Rzeczkowska, Deputy Chair of the Federation of Polish Entrepreneurs

Group 2 focused on **Means of Transport** (Traditional vs. Newer Means) and **Trade Flows** (New Rules vs. No Change in Rules).

Scenario Title	Trade Flows	Means of Transport	Characteristics
Business as Usual (B)	No Change in Rules	Traditional Modes	Represents a stable economic growth pattern, but there are no incentives to develop or change, which might stop the trend toward efficiency.
Economic Opportunities Regional Development (A)	New Rules	Traditional Modes	Driven by regionalization trends, fragmentation of the market economy, and possibly climate change. New markets emerge, requiring adaptability. While the change is not disruptive, infrastructure capacity and scalability must increase.
Efficiency New Opportunities (D)	No Change in Rules	Newer Means	Technological incentives, sustainability, or infrastructure constraints drive the adoption of newer means. This allows for performance optimization and provides more time to adapt, but resistance to change may cause actors to lose competitiveness.
Disruption or Market Demand Supplement (C)	New Rules	Newer Means	Represents urgency and high demand, forcing rapid innovation in transport and infrastructure. Technology develops faster than regulation. Companies need strong financial capacity, flexibility, and robust business continuity plans.

Discussion on Group 2 Scenarios Houmed Mohamed Ali, Chief Operating Officer, Djibouti Port Community Systems, emphasized that necessity, such as the COVID-19 pandemic, often forces people to embrace digitalization when they might otherwise hesitate to use new technologies. **Nico De Cauwer, Secretary General, IPCSA,** noted that "the more you will use technology, the more you will shift from scenario B to scenario A".

Group Nr. 3 Scenario Presentation

Presented by Uwe Liebschner, Customs Lead, IPCSA/ Kale Logistics Solutions

Group 3 worked on **Access to Information/Data** (Limited Access vs. Open Data Sharing) and **Trade Flows** (Increased Regional Trade/Changing Routes vs. Highly Globally Integrated Trade). The group introduced a "new dimension" to the scenarios: the impact of technology, dubbing their approach the "new Casablanca model".

Scenario Title	Data Access	Trade Flows	Characteristics
Trump Scenario (A)	Limited Access	Regional Trade	Strong regional networks; investment is local. Faster transport within the region. Risk of "blind proudness," where low-quality domestic products with strong branding are accepted.
Global Shields Controlled and Guarded (B)	Limited Access	Globally Integrated	Domination by big companies, often dictating pricing. Free Trade Agreements (FTAs) are used to bilaterally overcome

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		Trade	data access obstacles. Risks include lack of efficiency and flexibility.
Smart Regions/Sustainable Scenario (C)	Open Data Sharing	Regional Trade	Liberal economic politics (e.g., creating a single market like the EU). Fosters environmental sustainability and circularity. Higher transparency and trust are created. Risks include stopping innovation due to satisfaction with the region ("blind proudness") and limited self-development.
Hyperconnected/Post-Trump Era (D)	Open Data Sharing	Globally Integrated Trade	Global trade facilitation. Strong innovation due to access to global data. Competition drives pricing. Threats include heightened cyber security risks due to openness, and less sustainability due to long transport distances.

The New Technology Dimension The technology dimension was placed on top of all scenarios. **Riasat Ali, Group IT Services Manager of RAK Ports,** explained that without the latest technology and innovation, things can be slowed down. While new technology facilitates and speeds up processes, it simultaneously opens organizations to severe threats, such as cybersecurity risks.

Regional Perspective and Uncertainty Magdalena Rzeczkowska noted that participants tend to focus on the world they are comfortable with (like the liberal, global world), but the current world order is in flux, and the return to the pre-disruption state is "really unlikely" (Will Sambrook). **Javier Gallardo, IPCSA Chairman/CEO of Portic,** pointed out that whether a scenario is "best" or "worst" depends entirely on the business perspective, noting that PCS systems have sometimes leveraged limited access to information to develop their systems.

PCS Strengths, Weaknesses, Opportunities, and Threats (SWOT)

Following the scenario review, the discussion shifted to a general SWOT analysis for Port Community Systems and Single Window operators.

Category	Key Findings (Group 1 and Group 3)	Speakers/Details
Strengths (S)	**Trusted and Neutral:** This was identified as a common, defining strength across all scenarios, fostering resilience and a good reputation. **Governance:** Extensive experience in managing stakeholder engagement and agreeing on data rules is a core strength. **Technology/Process Knowledge:** Capability in technology, legal/regulatory compliance (data protection, ICS), and a full understanding of the overall logistics process flow. **Flexibility:** Strong abilities in flexibility and change management.	David Roff, Uwe Liebschner, Steve Lamb
Weaknesses (W)	**Data Quality:** The issue of "shit in, shit out" was raised, prompting debate over whether PCS can truly impact the data quality provided by other actors. **Financial Resources:** Availability of financial resources is a weakness, particularly concerning different ownership structures (private, shared, public). **Planning Difficulty:** In uncertain environments (like *Casablanca* / Brexit), it is difficult to plan roadmaps and innovate, forcing reactivity.	Uwe Liebschner, David Roff
Opportunities (O)	**Data Protectionism:** The global trend toward data protectionism can be leveraged by the **network of trusted networks** to provide global data access when competitors are restricted. **Cybersecurity as a Service:** PCS expertise in securing IT infrastructure can be	Uwe Liebschner, David Roff

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	monetized as a service provider. **New Services/Revenue:** Developing innovation (AI/ML) and offering data centers/cloud services to the community. **Policy Aggregation:** Policy changes can create opportunities to provide national services and aggregate more data.	
Threats (T)	**Security:** Broad security threats, including high volumes of **cybersecurity attacks** (e.g., DBH experiences 30,000 attacks per day) and physical security. **E-Government/Regulation:** Governments might take over services traditionally provided by PCS operators. **Trade Route Changes:** Changes in routes (like the Red Sea or Panama) can reduce local port volume and cause customers to be lost. **Labor:** Unavailability of skilled labor is a threat. **Data Protectionism:** If data is too restrictive or requires extensive effort to extract, it threatens business.	Uwe Liebschner, David Roff

IV Strategic Response using the TOWS Matrix

The final exercise of Day 2 applied the TOWS matrix, aiming to leverage strengths to maximize opportunities (S-O), use strengths to minimize threats (S-T), address weaknesses to capitalize on opportunities (W-O), and address weaknesses to reduce threats (W-T).
Group 1 TOWS Analysis (Focusing on S-O, W-T, W-O, S-T)

Group 1 TOWS presented by David Roff, Industry expert, CIF Consulting Limited

Strategic Alignment	Strategy/Action	Scenario Context
Strength (S) vs. Opportunity (O)	**React Quickly and Leverage Trust:** PCs should react quickly to disruption, leveraging trust and neutrality to provide accurate ETA and **data provenance** (e.g., during the Suez Canal disruption).	Moneyball / The Big Short
Strength (S) vs. Opportunity (O)	**Guide Government Agencies:** Leverage the neutral position, knowledge, and experience to guide government agencies based on data insights (e.g., providing advisory services related to complex regulation like Brexit).	The Big Short
Weakness (W) vs. Threat (T)	**Invest to Avoid Stagnation:** To avoid the weakness of stagnation and the threat of disruption from competitors, PCs must invest in **training staff, innovation, capacity, and technology**, utilizing foresight (analogous to the Blockbuster/Netflix scenario).	Driving Miss Daisy
Weakness (W) vs. Opportunity (O)	**Neutral Advisor in Regulation:** Utilize key knowledge and diversity of stakeholders as a neutral advisor in shaping regulation. Work with the community to **apply influence on external controls** (e.g., challenging governmental double taxation on imported containers).	Casablanca

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Group 2 TOWS Analysis (Focusing on S-O and S-T)

Presented by Uwe Liebschner, Customs Lead, IPCSA/ Kale Logistics Solutions

Group 2 developed strategies focused on moving beyond traditional service delivery models.

Strategic Alignment	Strategy/Action	Details/Speaker
Strength (S) vs. Opportunity (O)	**Professional Consultancy/Advisory:** Extend consultancy services beyond the local maritime port community to include processes, data flows, and automation for logistics in hinterland connections and dry ports. This requires promoting the PCS's expertise and moving away from the perception of being merely a port service provider.	Uwe Liebschner
Strength (S) vs. Opportunity (O)	**Facilitator of Innovation:** Create new business lines by stepping out of the narrow environment, such as acting as a **Security Service Provider** for the entire port's IT side, leveraging existing skills.	Uwe Liebschner
Strength (S) vs. Opportunity (O)	**Security, Safety, and Sustainability Line:** Use data expertise to provide services ensuring security, safety, and sustainability for port companies, such as surveillance and measuring carbon footprint. Use managed services to leverage innovation (like machine learning) for small and medium companies that cannot afford it otherwise.	Javier Gallardo
Strength (S) vs. Threat (T)	**Public-Private Partnership (PPP) Promotion:** Actively promote PCs as attractive partners to governmental entities, especially by emphasizing their role as **critical infrastructure**. Being recognized as critical infrastructure could lead to government funding and support for cybersecurity and infrastructure.	Uwe Liebschner, Nico De Cauwer
Strength (S) vs. Threat (T)	**Public-to-Public (P2P) Partnerships:** In regions where the port authority and operator are government-backed, foster P2P cooperation with departments like Customs, Police, and Municipalities. PCS can serve as a **trusted, neutral party** to consolidate data and offer data exchange services sought by government agencies.	Riasat Ali, Nico De Cauwer

The final reflection by **Will Sambrook** underscored the key takeaways: PCs are viewed as a trusted advisor with good provenance of data, capable of leveraging this asset during times of stability and instability. However, it is crucial that stakeholders recognize the PCS as a trusted partner *at the point of decision making*, rather than merely a data provider, to maintain relevance

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