



Third Hemispheric Conference on Port Security: Boosting Efficiency through Secure Operations

AUTOMATION IN PORTS: *SECURITY IMPLICATIONS*



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Inter-American
Committee on Ports

Member States

1. Antigua & Barbuda
2. Argentina
3. Bahamas
4. Barbados
5. Belice
6. Bolivia
7. Brazil
8. Canada
9. Chile
10. Colombia
11. Costa Rica
12. Cuba
13. Dominica
14. Ecuador
15. El Salvador
16. Granada
17. Guatemala
18. Guyana



19. Haiti
20. Honduras
21. Jamaica
22. Mexico
23. Nicaragua
24. Panama
25. Paraguay
26. Peru
27. Dominican Republic
28. St. Kitts and Nevis
29. St. Lucia
30. St. Vincent & the Grenadines
31. Suriname
32. Trinidad & Tobago
33. United States
34. Uruguay
35. Venezuela



Inter-American Committee on Ports

1. Political Dialogue



Only permanent inter-governmental forum at the highest level to promote the development of the maritime sector in the region.

2. Capacity Building



Promote and improve management and technical capabilities of port officials.

3. Technical Assistance



Assist Member States on issues or specific projects upon request.

4. Active Collaboration with the Private Sector



Promote win - win partnerships with private sector in the maritime industry to develop projects.



 Argentina

Honduras 

 Antigua y Barbuda

CIP Secretariat 

Logistics, Innovation and Competitiveness

Port Protection and Security

Sustainable Port Management and Environmental Protection

Public Policy, Legislation and Regulation

Tourism, Inland Ports and Waterways, Ship Services and Navigation Safety

SR, Gender Equality and Empowerment of Women

 Panama

 Barbados

 Mexico

 Honduras

 Uruguay

 Peru

 Brasil

 Guatemala

 Chile

 Paraguay

 Guatemala

Associate Members / Strategic Partners





SCHOLARSHIPS AND CAPACITY BUILDING PROGRAM

Increase since 2013 in:

469%

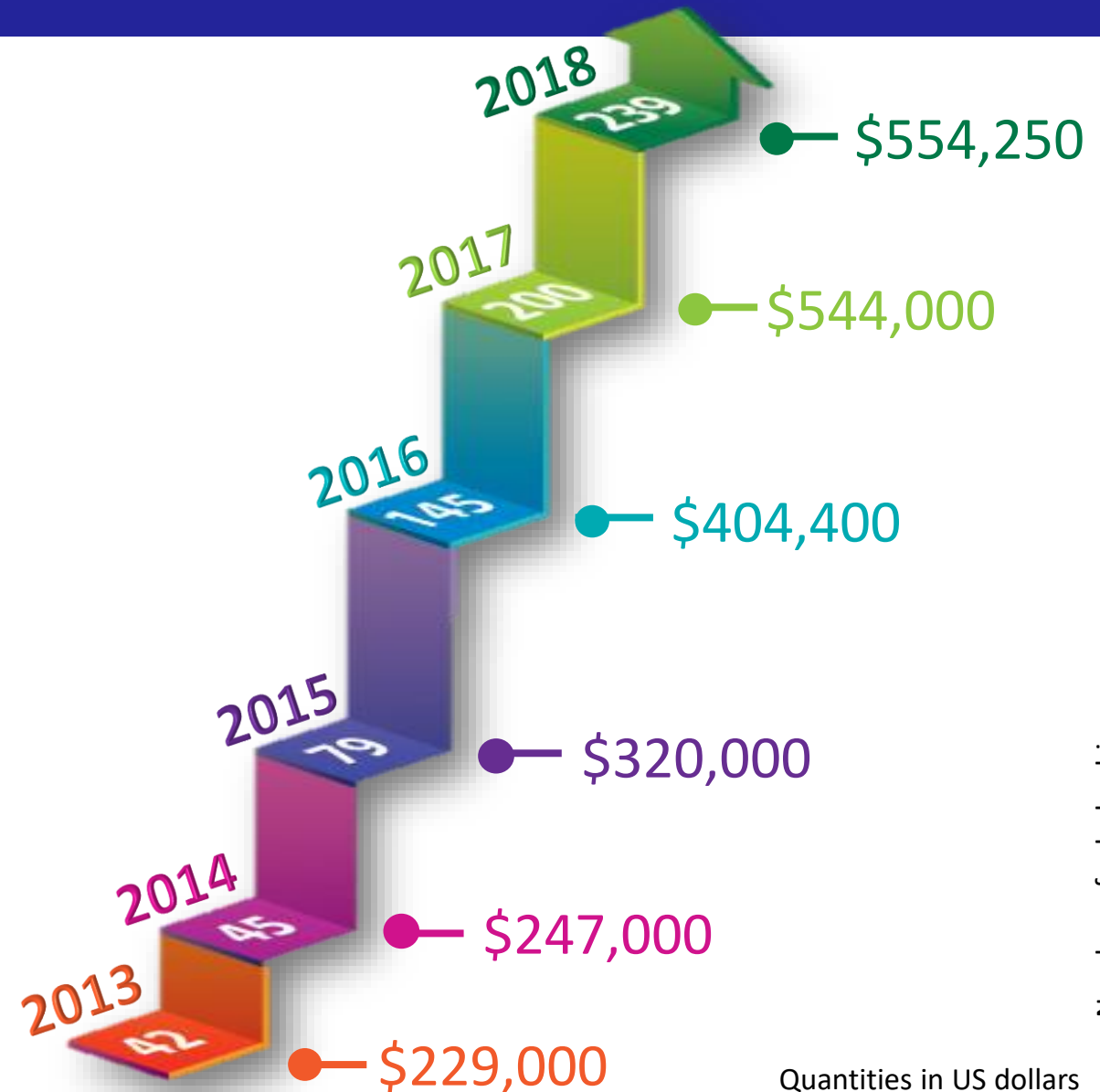
the number of scholarships

133%

the amount of certified courses offered

142%

the value of the program





Scholarships July 2018 - September 2019

281

**Scholarships
July 2018 –
September 2019**

30

**Member
States**

\$741,251

**USD total value of the
281 scholarships**

16

**Certified profesional
courses**

2

**Technical profesional
workshops**

2

Masters





Hemispheric Events

july 2018 – july 2019

612 Port Officials

from

Exposed to successful practices in **5 hemispheric events** in collaboration with the national port authorities that preside over the TAGs

32 Member States



With the participation of international experts from:





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Competitiveness, Port Automation and Security Implications



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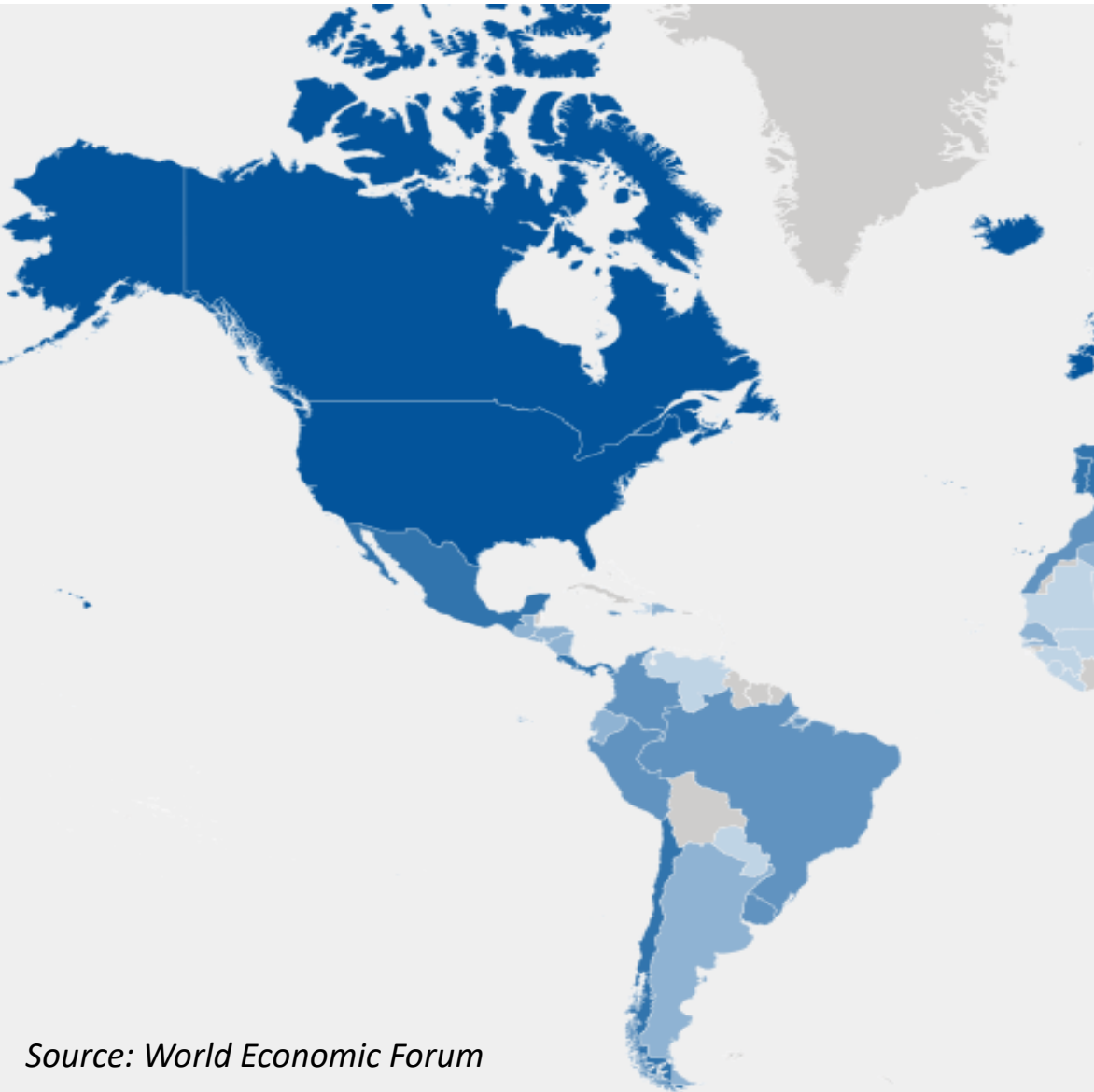
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Global Competitiveness Map 2017-2018



Latin America and the Caribbean

Global Competitiveness Report 2017-2018

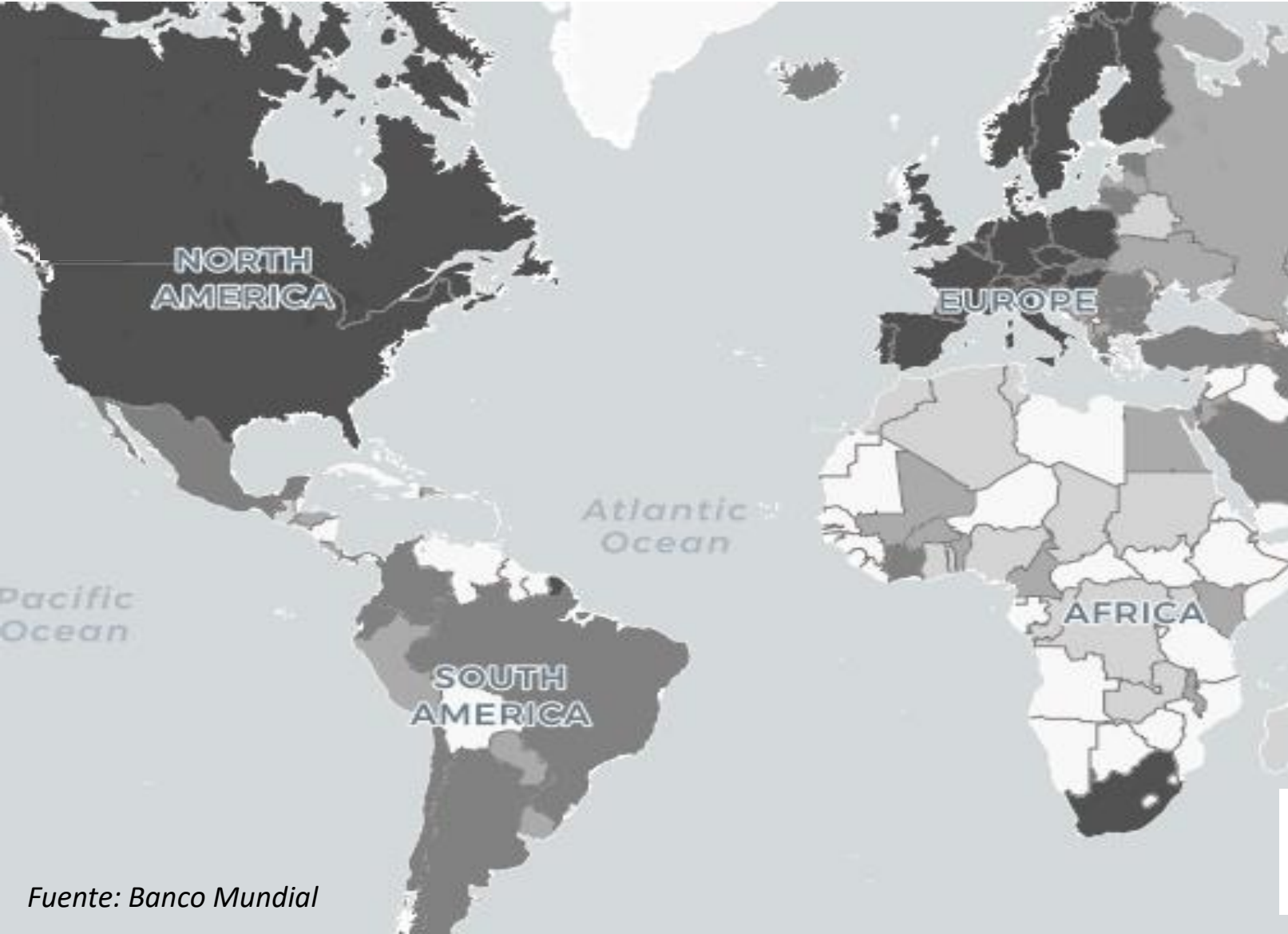
Global rank

Chile	33
Costa Rica	47
Panama	50
Mexico	51
Colombia	66
Jamaica	70
Peru	72
Uruguay	76
Brazil	80
Trinidad and Tobago	83

Source: World Economic Forum



Logistic Performance Index, LPI-LAC 2018



Country	LPI Ranking
Germany	1
USA	14
Canada	20
Chile	34
Panama	38
Mexico	51
Brazil	56
Colombia	58
Argentina	61
Ecuador	62





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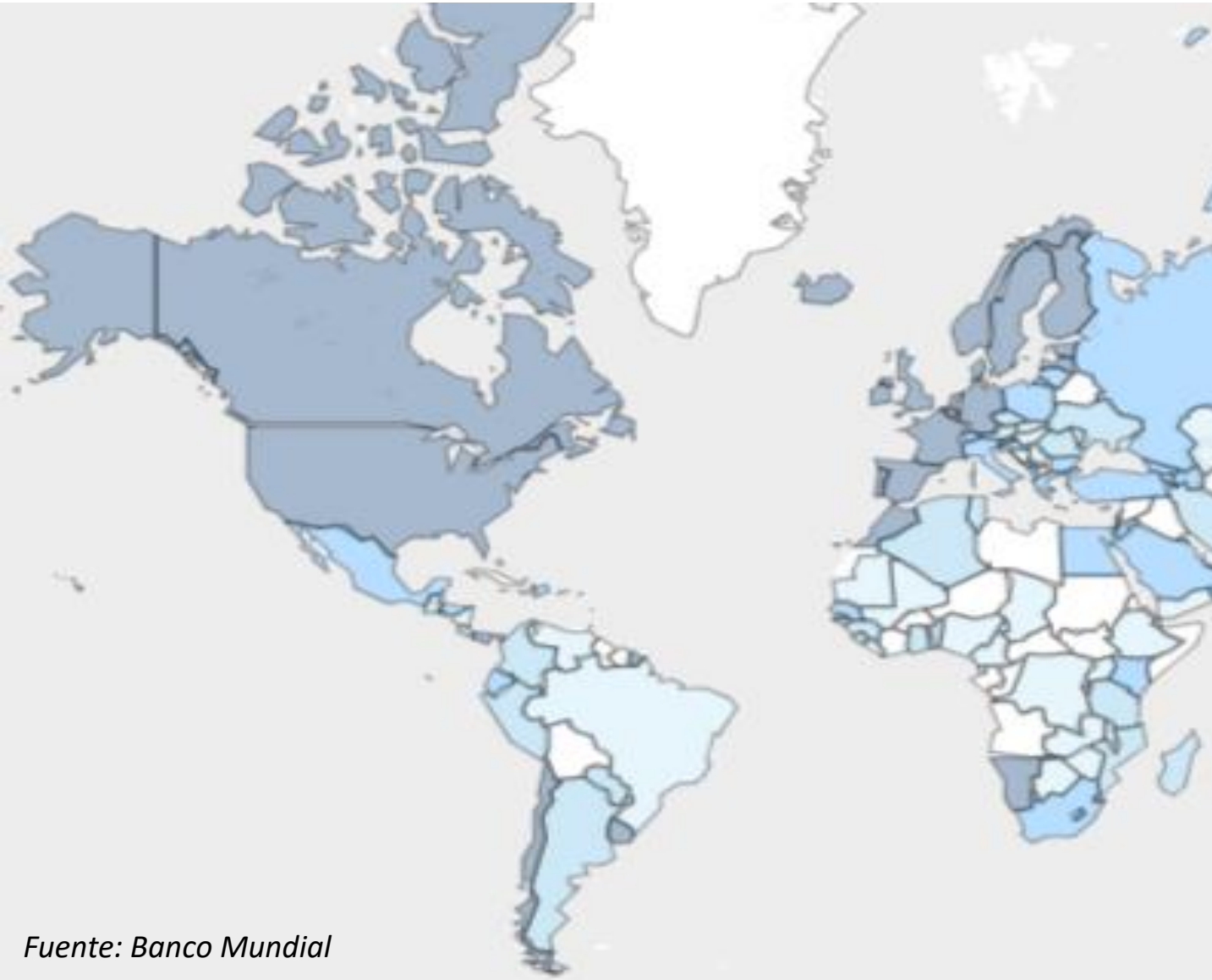
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Quality of Port Infrastructure 2017



Country	Quality
Panama	6.2
USA	5.8
Canada	5.4
Jamaica	4.9
Dominican Republic	4.8
Honduras	4.4
El Salvador	3.4
Guatemala	3.6
Costa Rica	3.4
Nicaragua	3.1



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RANKING TOP 5

#1 Colón Panamá : 4.32

#2 Santos: 3.83

#3 Manzanillo Mexico: 3.07

#4 Cartagena: 2.86

#5 Balboa Panamá : 2.52

PORT RANKING: TOP 20 LAC 2018

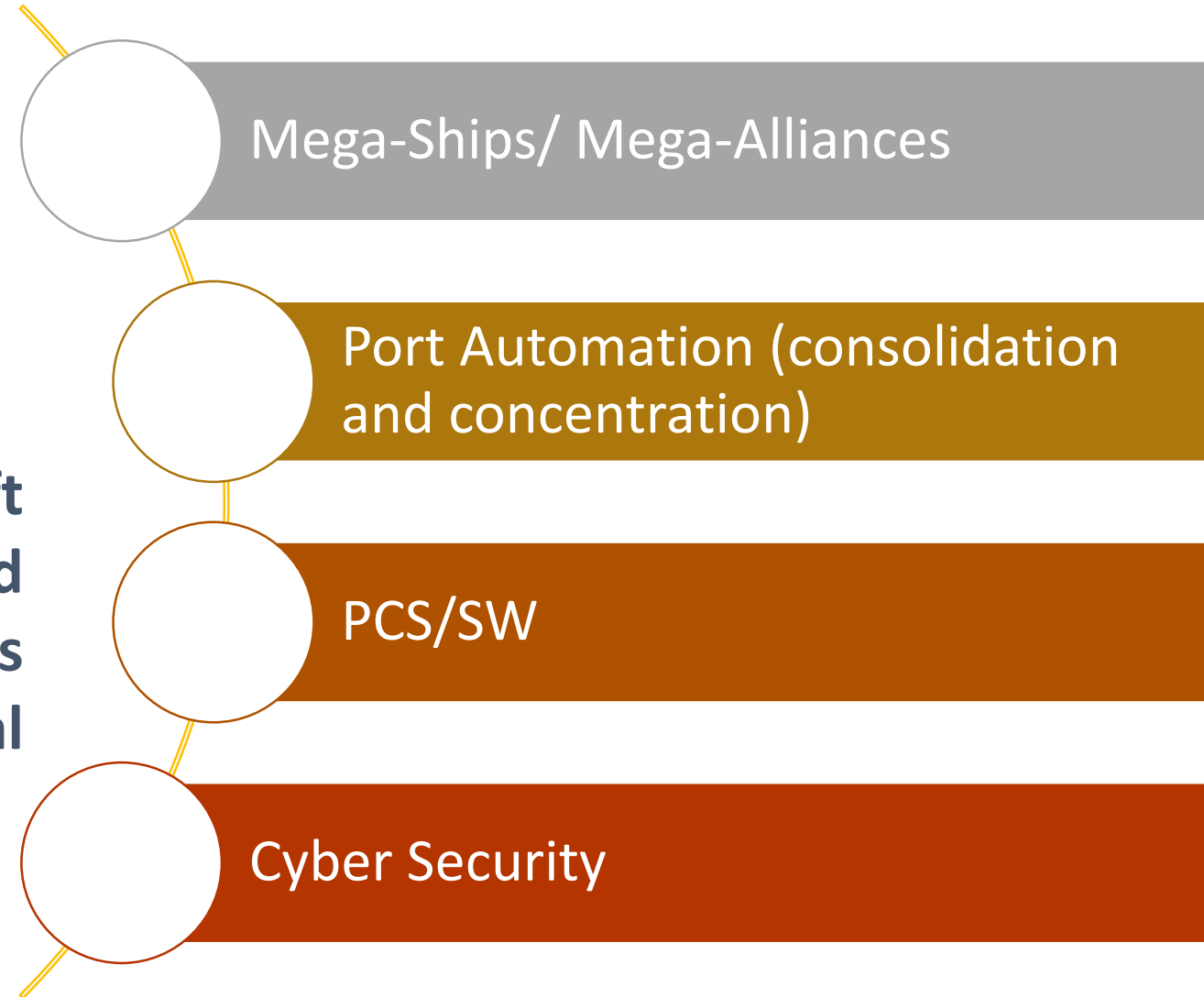




Trends in World Container Ports



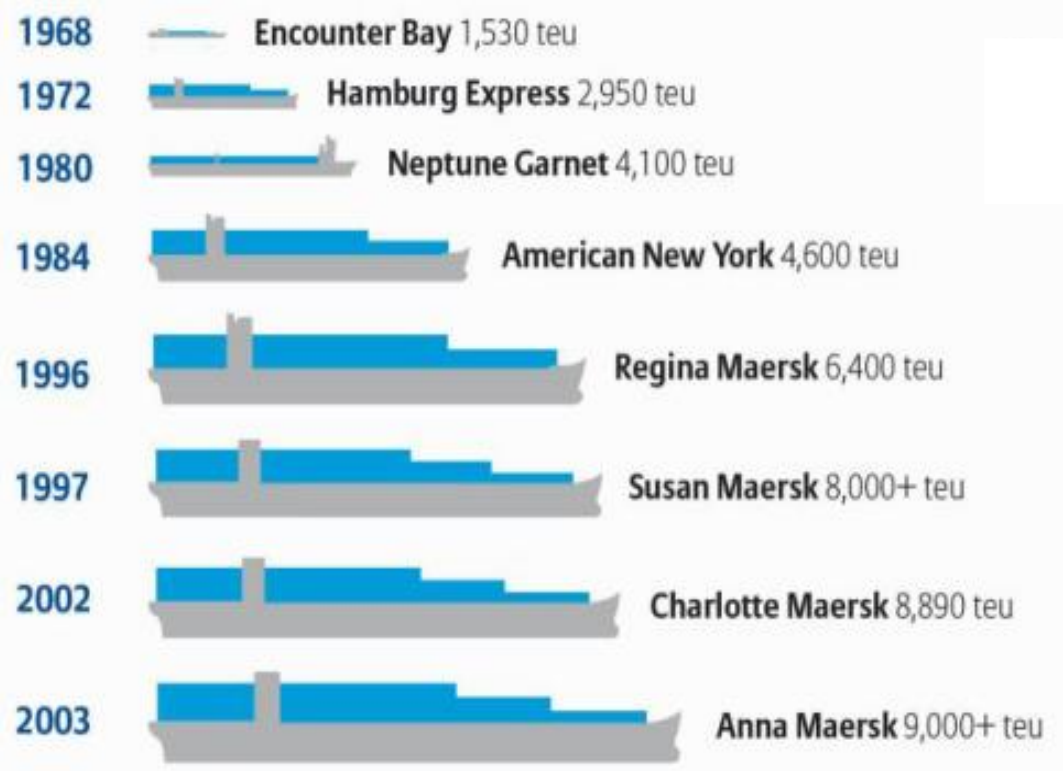
Ports must invest in hard and soft (digital) technologies to modernize and to successfully overcome the challenges created by the new paradigms in global commerce .



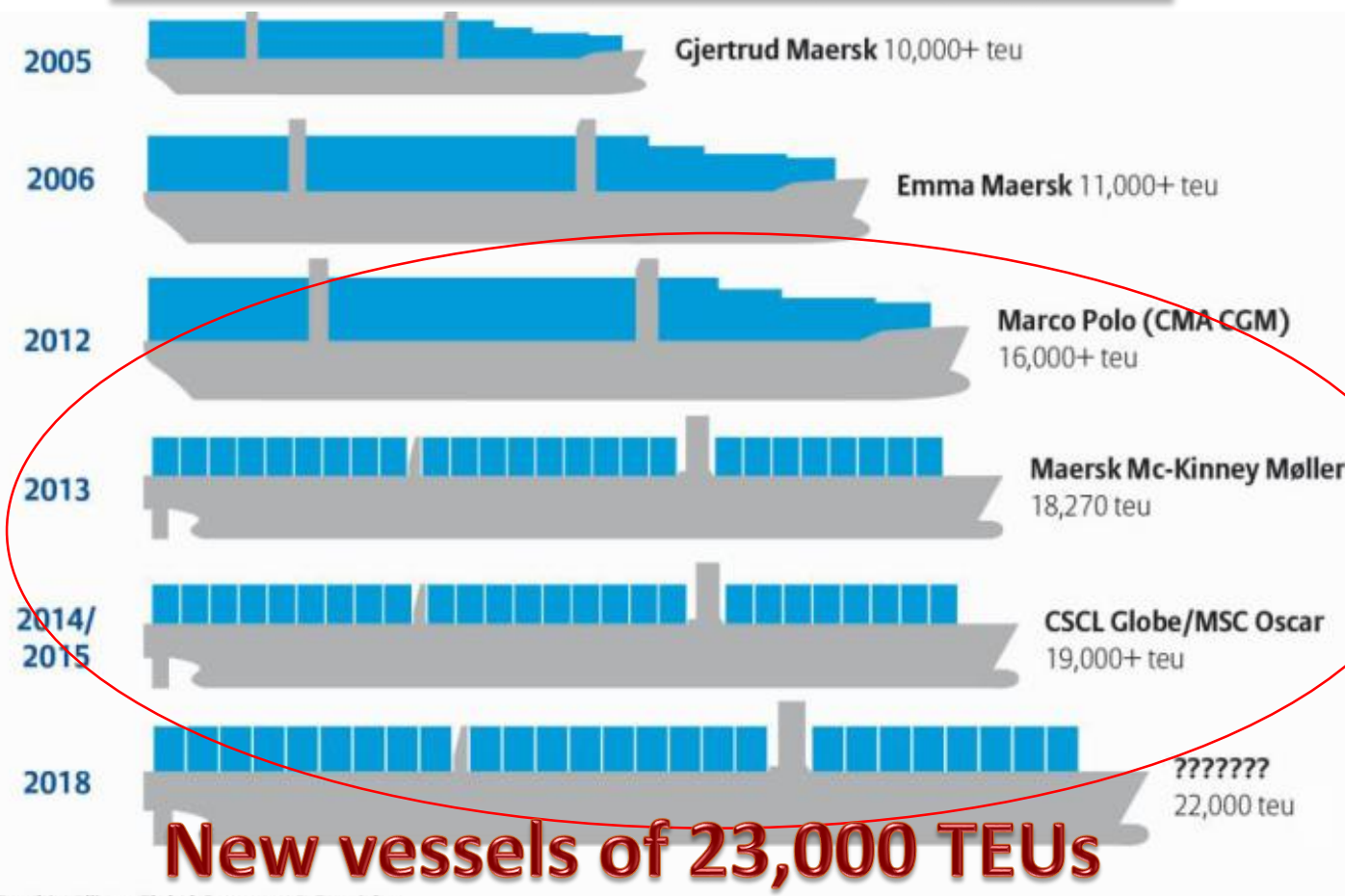


MEGA VESSELS TRENDS

50 years of Container Ship Growth



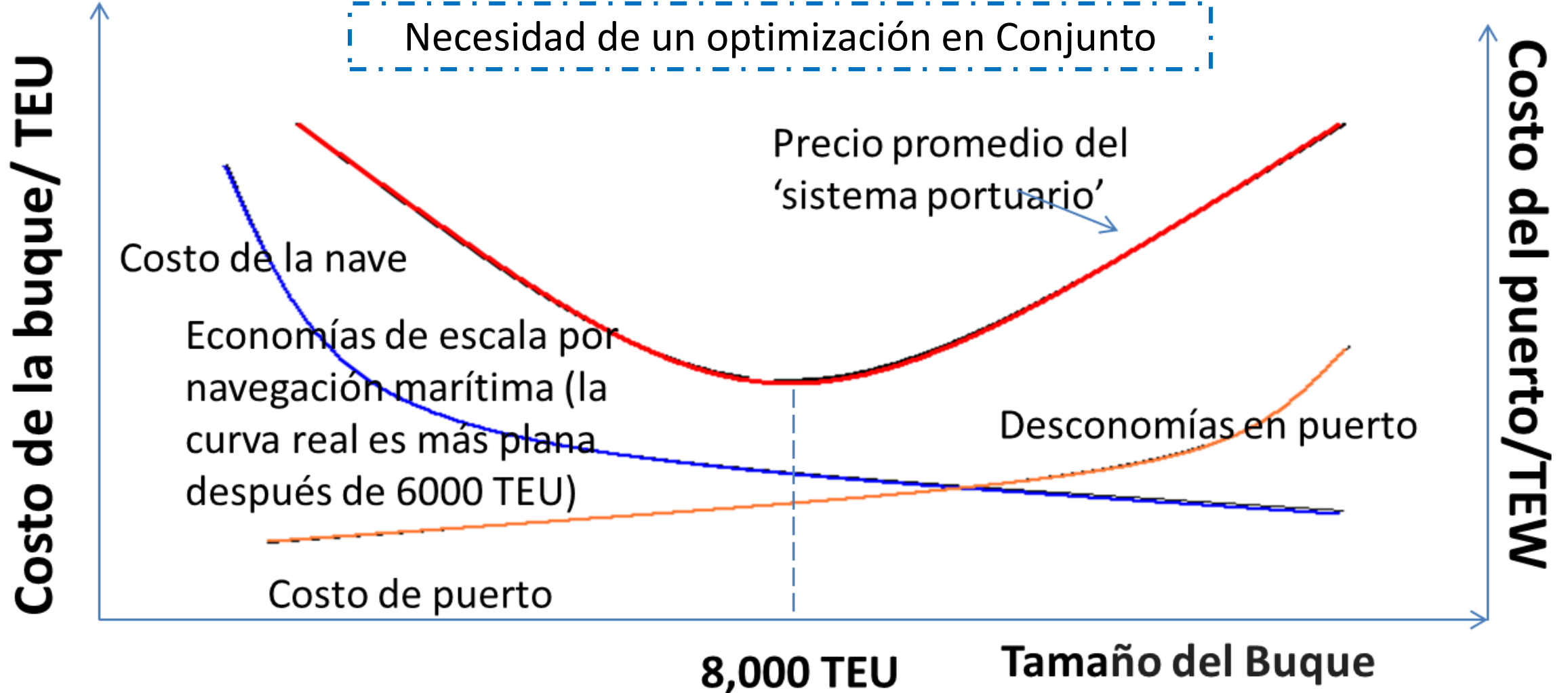
Capacity has increased by approximately 1,200% since 1968.



Graphic: Allianz Global Corporate & Specialty.
Approximate ship capacity data: Container-transportation.com



Optimal Size of Container Ships and Port De-economies



Kendall, UNCTAD, OECD y MEL han calculado que el portacontenedor promedio, llegando en una nave grande, toma más tiempo en manejar y almacenar. En otras palabras, el tiempo en puerto por TEU es una función creciente del tamaño de la nave.



CONCENTRATION OF SHIPPERS

MAIN SHIPPING LINES IN 1992

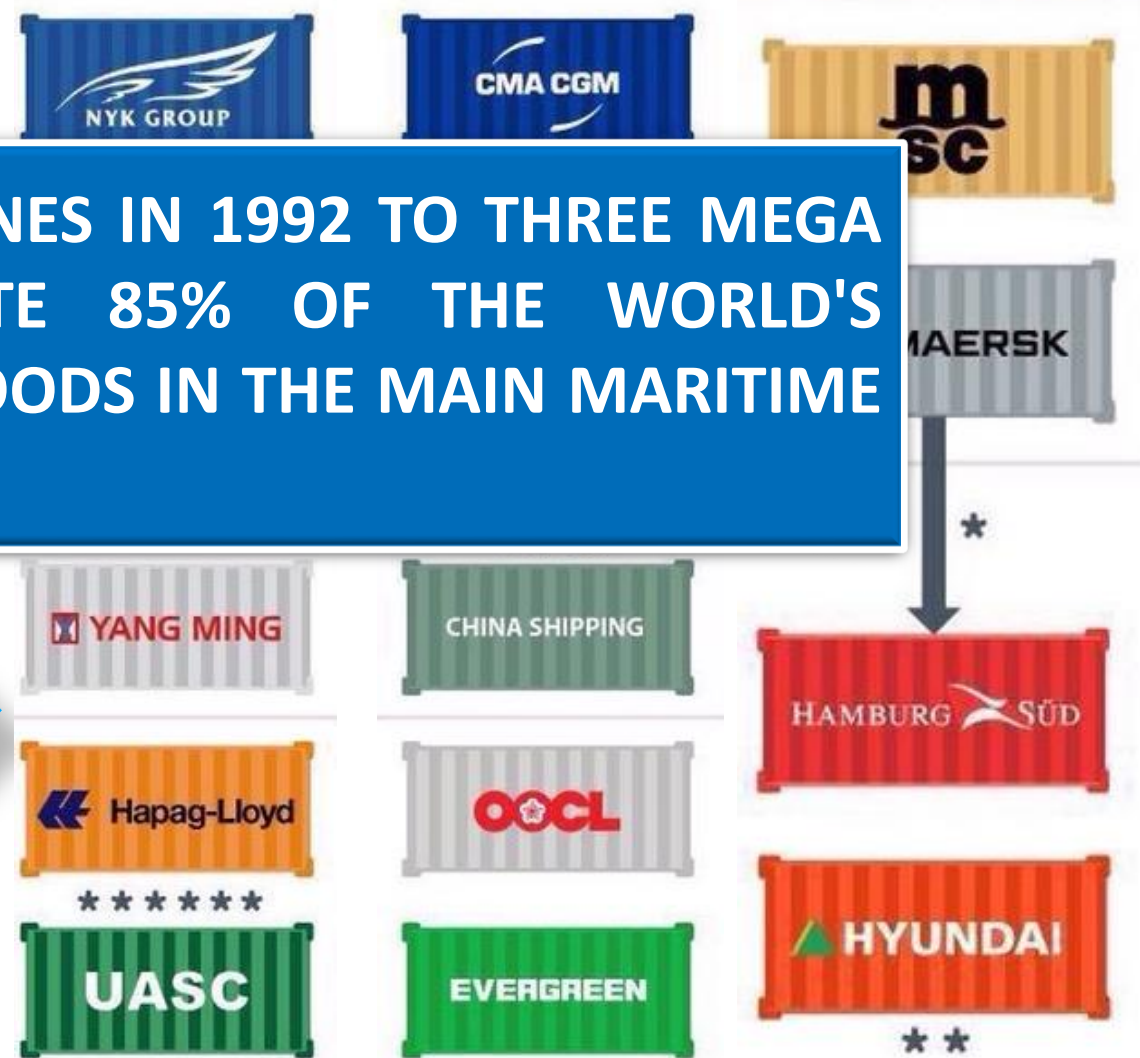
- APL
- Choyang
- CMA
- CGM
- Cosco
- CSAV
- CSCL
- Dellmas
- SRS-Senator
- Evergreen
- Hanjin
- Hapag Lloyd

FROM MORE THAN 100 SHIP LINES IN 1992 TO THREE MEGA ALLIANCES THAT CONCENTRATE 85% OF THE WORLD'S CAPACITY OF MOVEMENT OF GOODS IN THE MAIN MARITIME ROUTES

- Nippon Yusen
- NOL
- Norasia
- NYK
- OOCL
- P&O



THE Alliance Ocean Alliance 2M Alliance



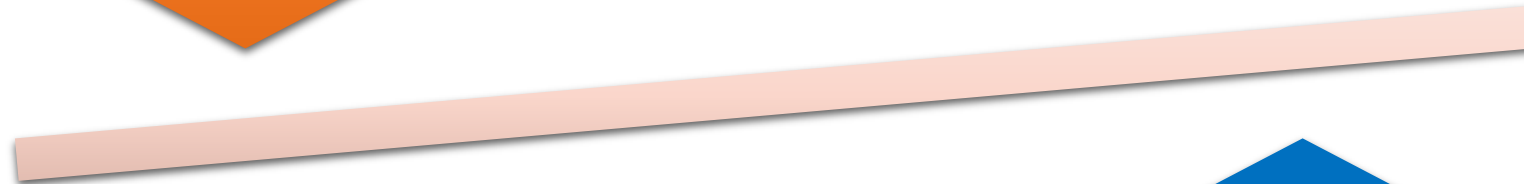


Always trying to...

FINDING THE RIGHT BALANCE



Security 



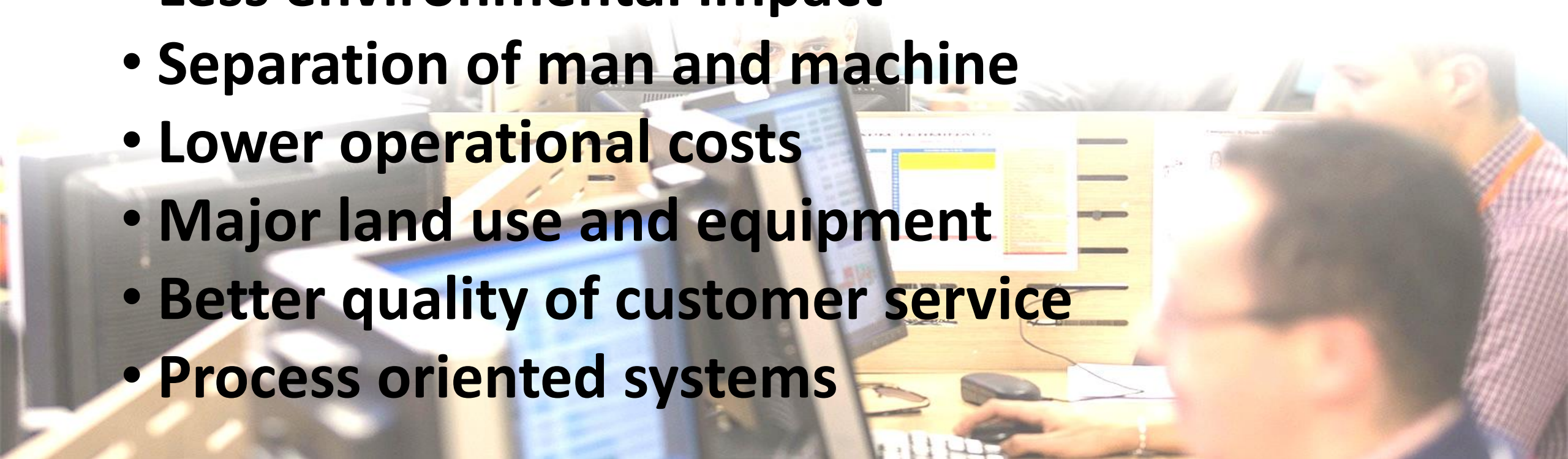
Port Automation
and
Competitiveness





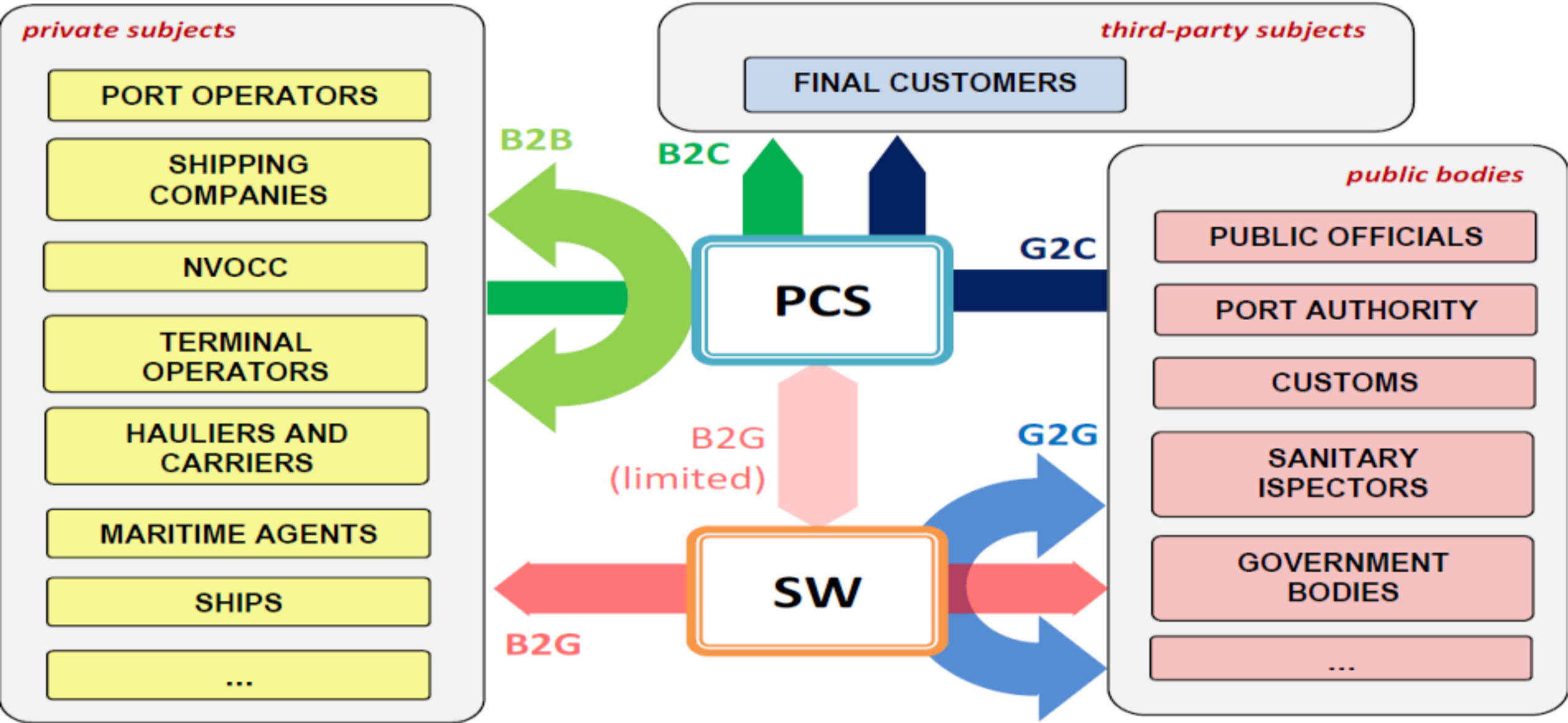
Automation

- **Increased productivity**
- **Higher productivity**
- **Less environmental impact**
- **Separation of man and machine**
- **Lower operational costs**
- **Major land use and equipment**
- **Better quality of customer service**
- **Process oriented systems**





Port Community System/ Single Window



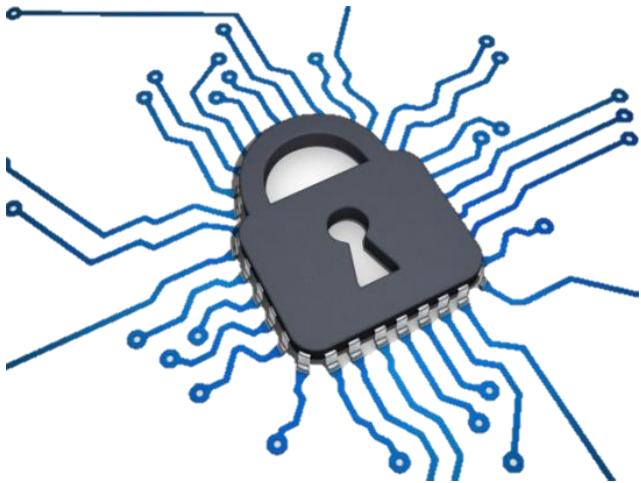
Smart Port

Processes among Stakeholders



Integrated

Interconnected



Cyber Security risk at each step/Institution due to more Automated Processes

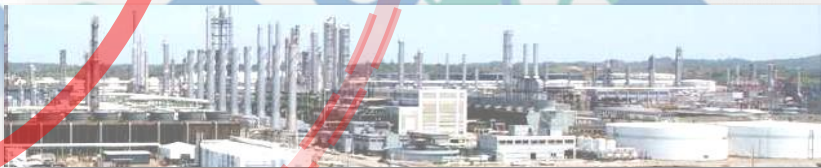
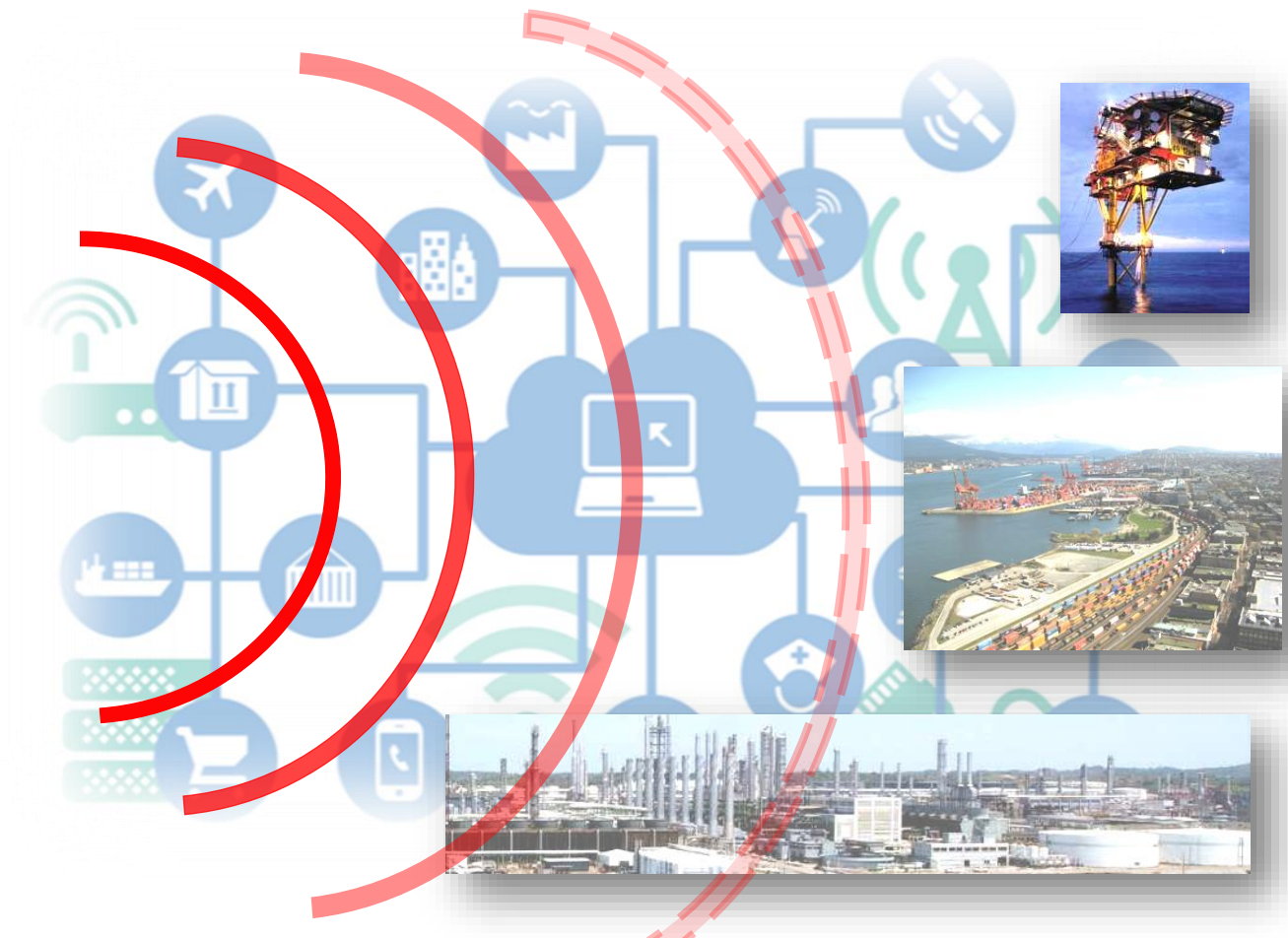


Cyber Security Risk: Everything is connected

- **Rule 1: Everything connected to the internet can be hacked.**
- **Rule 2: Everything is being connected to the internet.**
- **Rule 3: Everything else follows from the first two laws.**



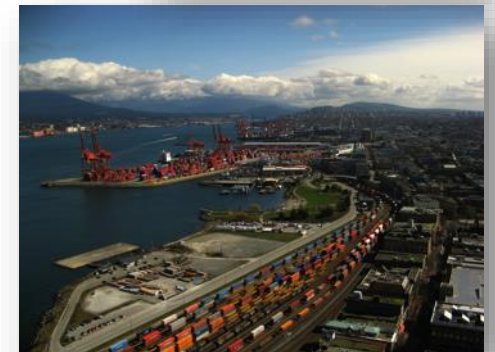
- Computer Monitoring and Control and Data Acquisition (SCADA)
- Industrial Control Systems (ICS)
- Load / Systems Terminal Administration
- Navigation Systems - RADAR, AIS, VTS
- Satellite Communication Systems
- Any software application (email, HR and financial, logistics)
- Every operating system in Microsoft platform or Android
- Mobile Platforms - RFID!
- Security Systems - CCTV





What's Vulnerable in the Maritime Domain? Answer: Almost Everything!

- Supervisory Control & Data Acquisition (SCADA) equipment
- Industrial Control Systems (ICS)
- Cargo / **Terminal Management Systems**
- **Navigational Systems** - RADAR, AIS, VTS
- Satellite **Communications Systems**
- Any Software Application (e.g. email, financial, human resources, logistics)
- **Any Operating Systems** (e.g. Microsoft and Android platforms)
- Mobility platforms - RFID!
- Security Systems - CCTV





Establishing a Standard of Care for 21st Century Risks

ASSESS

Benchmark your cybersecurity state. Perform a cyber risk / assessment; Identify best practices

MITIGATE

Establish a budget, implement best practices and deploy solutions

TRAIN

Implement cybersecurity training program for executives and staff

TRANSFER

ENGAGE

INSTITUTIONALIZE

Establish a Cybersecurity Risk Management Program - Resource it with People, Processes and Tools

Feedback Loop



Solutions to Boost Competitive LAC Ports

- A **model law** must establish the legal and institutional basis of the port management system, taking into account the functions or competencies, the **organization, coordination and programs of the various actors.**
- An appropriate **regulatory framework** will make ports more **efficient and competitive.**
- The consideration of the new concepts of **consultations to the private sector.**
- Use of **international norms and standards**, such as the World Customs Organization Data Model, SAFE Framework, IMO FAL Conversion, ISO standards, etc.

Legislation and modern, updated and flexible technology that allows change and provides space for innovation.



Successful Practices: Valparaíso, Chile

- Integrates public and private agency systems.
- Provides visibility and traceability of processes and flow of loads and trucks inside the port system.
- It allows synchronizing the physical and documentary flow of charges.
- Controls the attributes that must be met by loads and transport for entry to the port.
- It allows to manage the flow of trucks to the port terminals





Globalization, Trade and Maritime Shipping

Shipping is one of the most globalized industries in the world, as in one transaction several countries may be involved.



Cortesía: Fernando Gamboa, Exdirector General de Fomento y Administración Portuaria, SCT



A Few Considerations...

Only a fraction of global container volume is done by fully automated terminals.

- To stay ahead, automation has been heralded as inevitable. Major transshipment hubs and aspiring **ports bet their future on automation**, which raises the cyber risks impact.

Cyber attack to automated terminals “NotPetya” cyber-attack in June 2017.

- Maersk interrupted operations at terminals worldwide, causing logistical havoc for weeks after the attack. **It cost Maersk \$300 million**, even though the attack was not specifically directed at them.

LAC needs to update its port and national legislation to support modernization processes (e.g., Digital Signature).



Final Conclusions

- Ports must modernize **soft and hard infrastructure** to improve productivity and reduce delays.
- **Elimination and reduction** of procedures and documentation.
- **Single window** receive and manage information for **interoperability** between stakeholders, including port security, **reduces time and cost**.
- **Customs and Ports** need to improve cooperation/information exchange.
- Balance **Efficiency & Competitiveness vs. Security and Protection**.
- **Adequate and flexible** legal framework.
- It is **ESSENTIAL** to take **cyber security** into account as we automate.
- **Role of the State** for **incentives** for private sector participation



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Thank you!

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