



Maritime Cyber Risk Management



07 June 2018

Who We Are

HudsonAnalytix, Inc. offers integrated risk management and technical advisory services to the global maritime industry. Clients include:

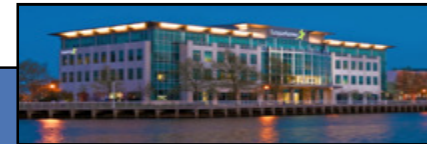
- Port Authorities & Terminal Operators
- National and regional port systems
- Integrated oil/gas companies
- National oil companies
- Global maritime transportation companies
- Insurance Companies
- Governments

Operating Divisions:

- **HudsonCyber - Maritime Cybersecurity & Risk Mgmt.**
- **HudsonSystems** - Software Solutions
- **HudsonTrident** - Security (Physical & Operational)
- **HudsonMarine** - Operational Marine Management
- **HudsonTactix** - Consequence Management



HudsonAnalytix
Complexity made simple.

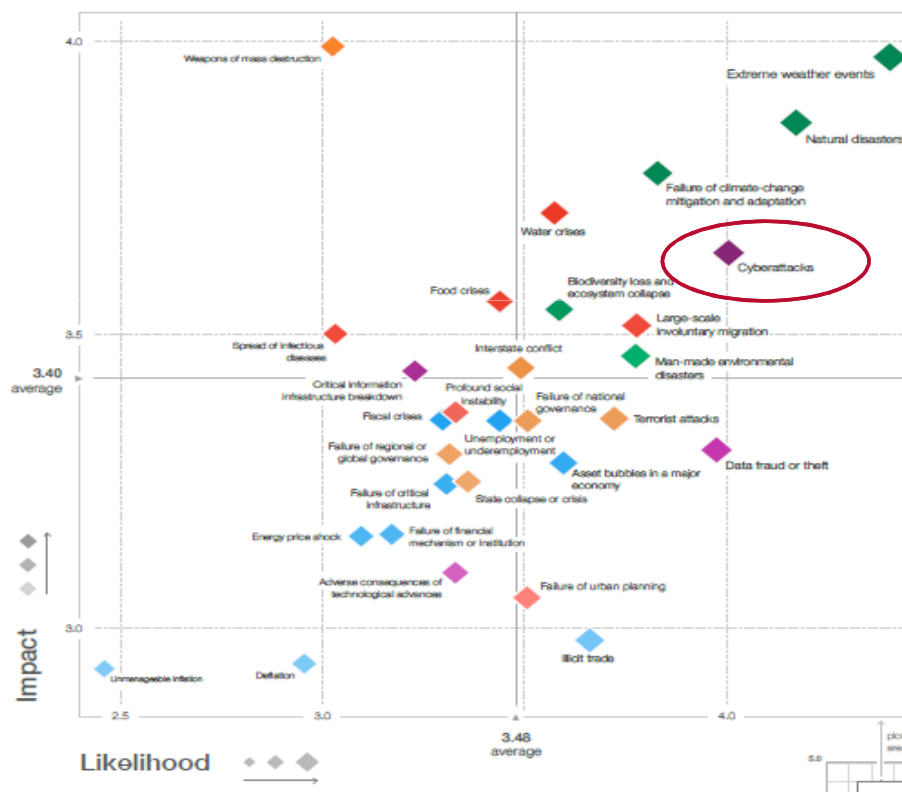


Key Facts:

- Established in 1986
- Worldwide Presence:
 - Philadelphia (Global HQ)
 - Washington, DC
 - San Diego, CA
 - Santo Domingo, Dominican Rep.
 - Copenhagen, Denmark
 - London, UK
 - Rome, Italy
 - Piraeus, Greece
 - Jakarta, Indonesia (JV)
 - Manila, Philippines

World Economic Forum Report 2018

Figure I: The Global Risks Landscape 2018



Context: General Cyber Threat Trends

- **Threats** are increasing:
 - Hacking tools are widely **available** and simpler to use
 - The potential **impact** of cyber attacks continues to grow
- **Hacker motivations** are changing:
 - No longer egocentric
 - Shift to **professional** cyber criminals motivated by money
- **Certain common factors enable** threat actor success:
 - Economy of organized cybercrime
 - **Inter-connected** systems
 - Widespread organizational failure to implement **cyber hygiene**



Common Challenges in Shipping

1. Competitive imperatives mean executives must accept a certain level of cyber attack risk.

2. The implications of cybersecurity are pervasive, and this impedes the adoption of risk-based strategies. Cyber risk touches **every business function** across a shipping company.

3. Cyber risk is difficult to quantify. There's no single **quantitative metric** such as value at risk for cybersecurity, making it much harder to communicate the urgency to shipowners

4. Difficult to change behavior.



*Mckinsey & Co, Why Senior Leaders are the Front Line Against Cyber Attacks

How cyber aware is the shipping industry?

- The urgency for action is becoming gradually understood

Why?

1. No apparent ship-related cyber attacks
2. No mandatory framework from related shipping organizations (TMSA 3)
 - Other regulations affect maritime stakeholders (NIS, GDPR)



"I DON'T THINK YOU UNDERSTAND THE CONCEPT OF CYBERSECURITY."

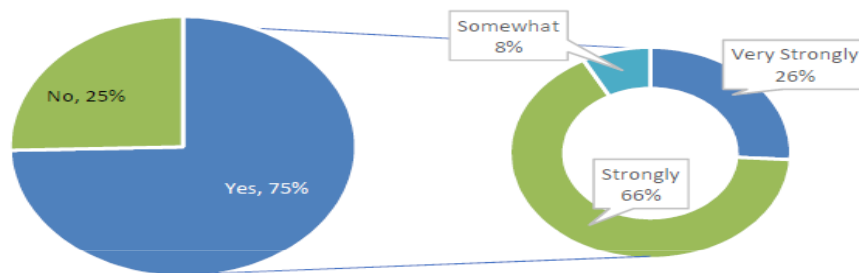
Priority

Understand how these affect the industry in order to minimize cost

'Cybersecurity as ROI'

Crew Connectivity Report 2018

Does the provision of crew connectivity influence which shipping company you work for?



How strongly does it influence you?

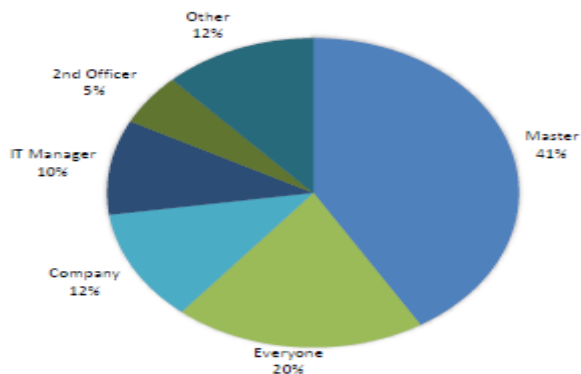


Figure 13. Who is responsible for cyber security?

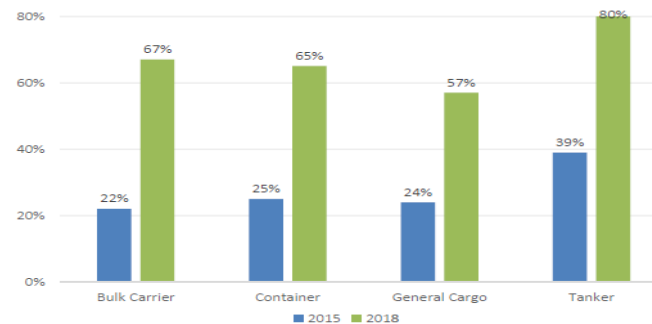


Figure 9. Growth in the provision of internet access in selected sectors

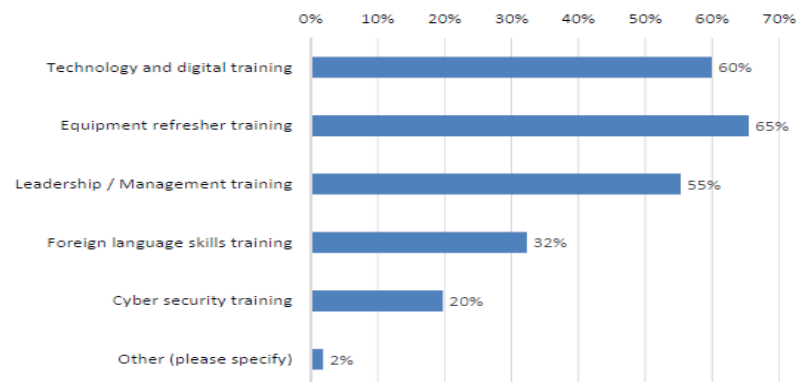


Figure 19. Additional Training Requirements

What is “Cybersecurity”?

Cybersecurity is **NOT**:

- Information Technology (“IT”)
- Compliance (e.g. ISO; ISM Code, TMSA3)
- Solved by a “silver bullet” approach



Cybersecurity **IS**:

- A sustained risk management **activity**
- About cultural change and business transformation
- The mission of protecting the **entire** business
- A nod between User and Corporate Awareness (**all of you!**)

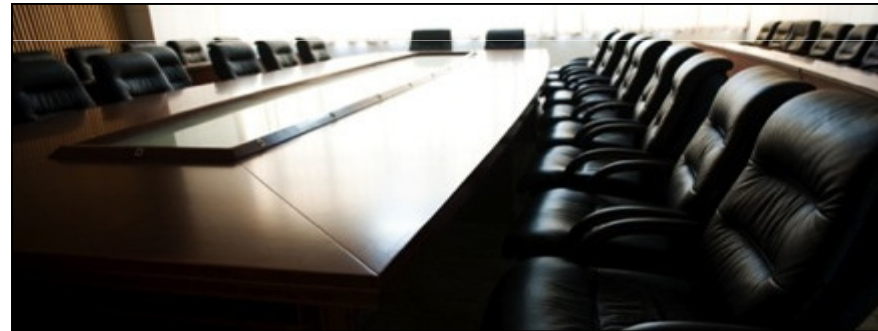
Cyber Risk Management Begins at the Top

It's a Boardroom Challenge

Managing Directors, CEOs and Board Members are increasingly being held accountable for their organization's cybersecurity. Cyber risk management **must be owned by leadership** rather than be relegated to an "IT" challenge.

Cyber risk affects an organization's:

- **Balance Sheet / Profit & Loss**
- **Legal Exposure**
- **Operational Effectiveness**
- **Customers**
- **Vendors**
- **Partners**
- **Employees**



Business Leaders Are Left with a Range of Unanswered Questions

- **What** do we invest in first?
- **How much** do we need to budget?
- **What are our *priorities*** when it comes to Cybersecurity?
- **How can we *measure*** the effectiveness of our investments?
- **Are our investments *sustainable*?**

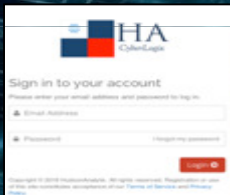


HudsonCyber offers

- Cybersecurity Assessment
- Table Top Exercises (TTX)
- Threat Assessments
- Cyber Risk Management Planning
- Executive Awareness Training
- ***HACyberLogix***
- Cyber Threat Intelligence Support



What is *HACyberLogix*



What is *HACyberLogix*?

Easy-to-use, cloud-based tool designed for shipping companies to support assessing and managing cyber risk.

Who is *HACyberLogix* for?

Shipowners and operators with Balance Sheet responsibilities.

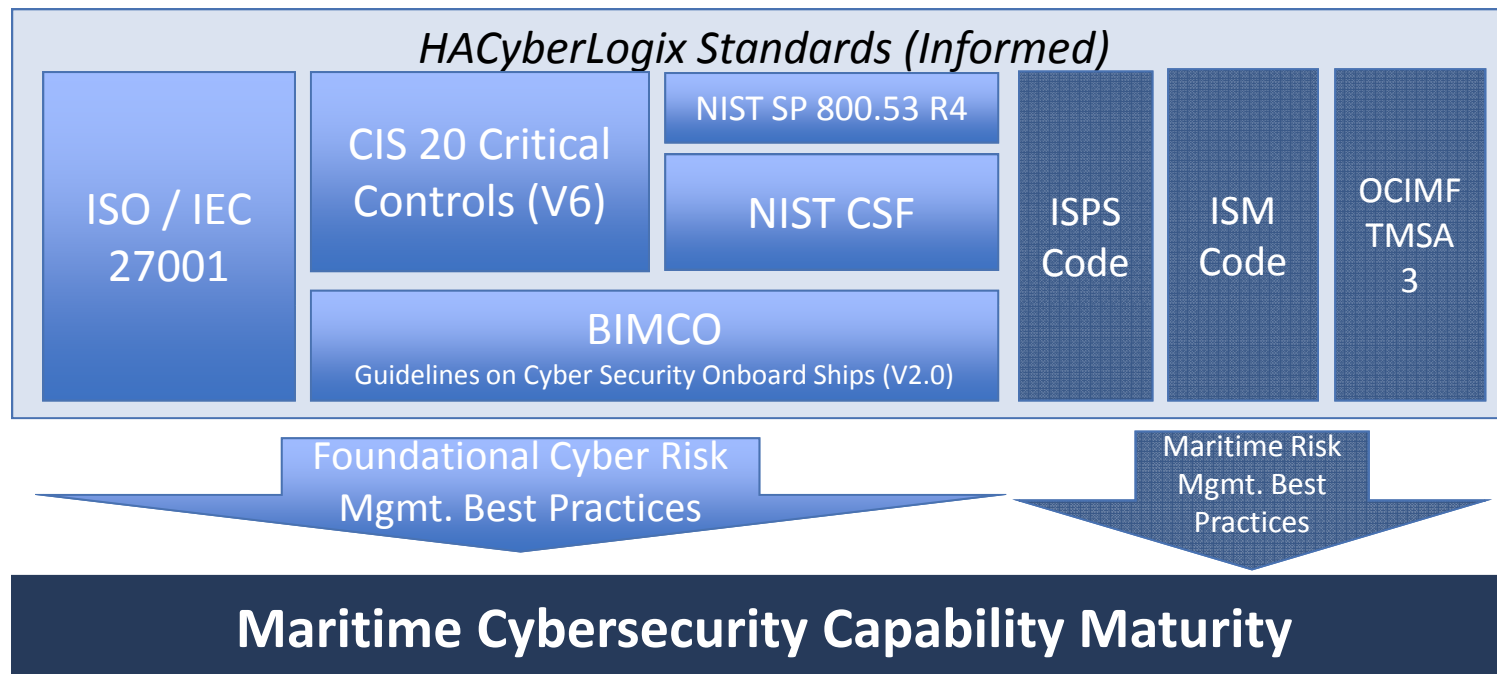
What does *HACyberLogix* do?

Assess enterprise cybersecurity capabilities and deliver tailored decision-support guidance

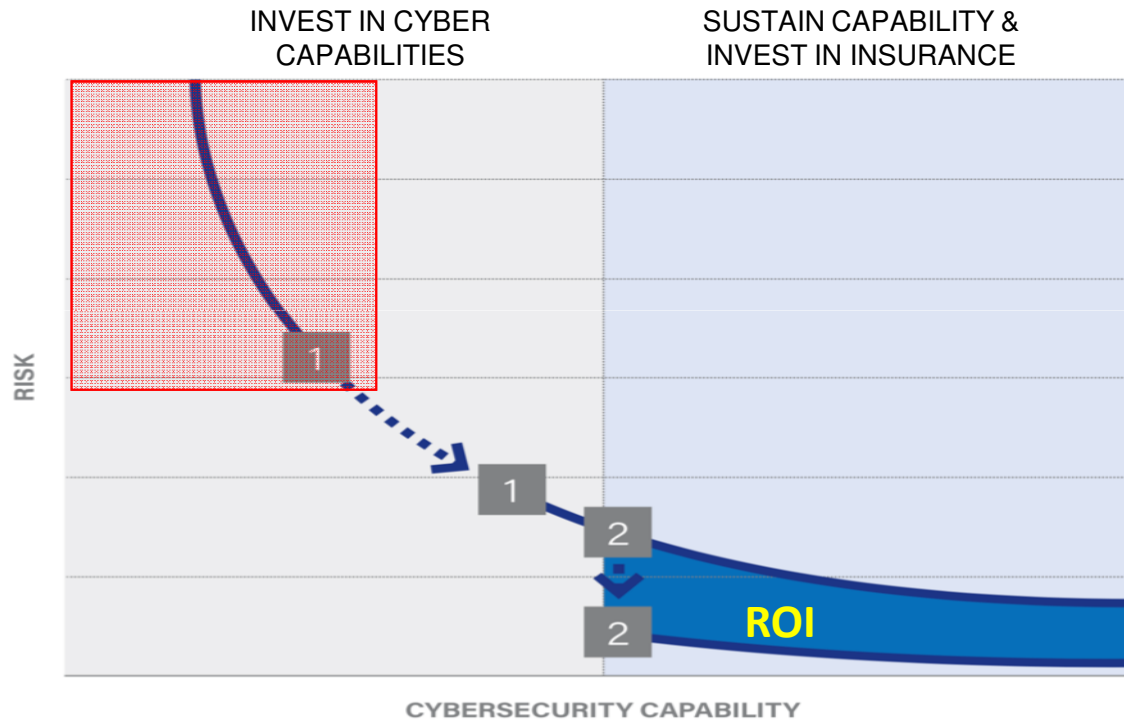
Why use *HACyberLogix*?

Supports continuous improvement in cybersecurity capabilities and informs investments and resource allocation.

HACyberLogix



Driving Risk Reduction



The Cyber Risk Reduction Curve

Investing in the right combination of technology and insurance maximizes risk reduction.

1. Technology Risk Reduction
2. Insurance Risk Reduction

Courtesy: Axio

Benefits

- **Strengthen** cybersecurity capabilities
- Institute **consistent** evaluation and benchmarking of cybersecurity capabilities
- Share knowledge and best practices
- Enable prioritized **resource allocation**
- Inform cybersecurity investments
- Drive continuous **improvement**



Driving Continuous Improvements and Setting the Stage for Long-Term IMO Compliance



- Investment Planning
- Resource Allocation
- Mitigation Activities
- Begin SMS Updates
- Sustain Investments & Resources
- Mitigation Activities Continue
- Finalize SMS Updates



Thank You

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*“If cybercrime was a country,
it would have the 13th highest GDP in the world”*