



KONGSBERG

# Cyber Risk for Maritime

Enabling a step-change in risk management  
for the maritime industry

---

[kpmg.no](http://kpmg.no)  
[kongsberg.com/kdi](http://kongsberg.com/kdi)



The international shipping industry is responsible for the carriage of around 90% of world trade. With the first waves of digitalization starting to hit the sector, new and exciting opportunities arise. The benefits are destined to not only change the way vessels are operated and maintained, but also the way the entire logistic value chains will interact and function. Existing business models will be challenged and new ones will arise.

With new technologies pushing the industry forward at a rapid pace, new threats emerge. The omnipresent interconnectivity exposes the sector's infrastructure to more and more cyber vulnerabilities – this year alone, cybercrime is estimated to cost the global economy around \$600 billion. Cyber risk is not only tied to new digital solutions, but it is equally important to understand the human and organizational factors involved in order to get the full picture.

In order to help you on your journey, KPMG and KONGSBERG have partnered up. Together we have the capabilities, experience, and knowledge to help you navigate through the digital threats and start to harness the tremendous business potential provided by digitalization.

## Welcome on board.



# Great opportunities

The maritime industry is on the verge of a digital disruption. Digitalization is increasingly considered one of the key solutions to the many significant challenges the industry is facing, ranging from overcapacity, low margins, regulatory pressure, and lack of efficiency, to new digital demands from customers. Although digital transformation of the maritime sector is still in its infancy, it's safe to assume that digitalization will have a major impact on operations and existing business models in the years to come.

The benefits from digitalization have already been manifested by early adopters, and we expect the industry adoption of new digital solutions will accelerate significantly going forward. But fast-moving changes do not come without risk. The digital solutions and systems designed yesterday did not come with built in features to mitigate the risks of tomorrow.

To be able to make a safe and secure transition to the new connected digital market, you need to be able to manage risk.

## The benefits of digitalization

The main benefit drivers for digitalization are:



### Reduced costs

Better use of data will improve asset lifecycle optimization and operational excellence, as well as enable value-chain transformation.



### Reduced risks

The use of new technology will reduce risks to personnel and assets, e.g. autonomy in hazard operations, moving offshore activities onshore etc.



### Increased sustainability

Technology offers solutions to some of the large sustainability challenges the sector is facing, e.g. emissions and the transition away from fossil fuel.



### New revenue opportunities

It's commonly accepted in the sector that the digital transformation in time will challenge the existing business models, and new business models and opportunities will emerge.



# Digitalization, a double-edged sword

Global scale, multi-vector dimension, and usage of leaked state-sponsored tools give attacks like last year's WannaCry a unique sophistication, marking the beginning of a new generation of cyber attacks.

Nevertheless, malware is not the only risk challenging our security in cyberspace. Among the most pressing issues are also data breaches, phishing, social engineering and insider threats, hacking and hacktivism, weaponization of AI or simply a human mistake.



## The human factor

Cyber resilience is highly dependent on individual employees. Adversaries can exploit a lack of knowledge and awareness for their benefit.

- How well are your employees trained to resist social engineering? Do they have the knowledge and awareness to act upon and adapt to new digital threats?
- Do the cyber incident teams share mental models? And do the IT personnel, the OT personnel, and the shippers communicate efficiently to act swiftly in a time-critical case?

## Technology implications

Digitalization and connected vessels will include integration of previously isolated systems and, in most cases, integration with new partners in a digital eco-system. The right choice of digitalization partners is essential to achieve end-to-end security.

- Are you prepared for secure integration of IT and OT systems?
- How is your technical infrastructure prepared and tuned for the risk of intrusions 24/7/365 from anywhere in the world?
- Did you build in protection mechanisms, and will you be able to detect an ongoing cyber attack and act upon the alerts?

## Organization and regulation

Organizational changes are needed to be able to enjoy all the benefits of digitalization. While doing so, new processes must mitigate cyber risks and link into your organization's preparedness and continuity procedures in case of cyber incidents. Cyber threats are cross-sectorial and cross-departmental, and take benefits from organizational silos and lacking communication channels.

Cyber threats stemming from digitalization are real. Soon, regulatory requirements will come into play, too. The International Maritime Organization (IMO) has given ship owners and managers until 2021 to incorporate cyber risk management into ship safety. Lack of compliance with these requirements may lead to detention of ships, meaning huge financial losses for their owners.

- How mature is your cyber risk management program? Do you have the right tools in place for evaluating and addressing both human, technical and organizational risk?
- Will you be able to prove compliance to the upcoming resolution?

# Our vision

KPMG and KONGSBERG see the following key takeaways that you need to keep in mind as you embark on your journey of digitalization:



**Change is coming** – in terms of ever-changing cyber threats, but also from a regulatory perspective.



**Great commercial opportunities arise** – digitalization provides enormous benefits that boost your business.



**Cybersecurity needs to go hand in hand with digitalization** – the more you rely on digital products and processes, the more you will need to make sure that the corresponding risks are appropriately managed.



**Those who are able take a holistic approach to digitalization will be tomorrow's winners** – harvesting benefits from digitalization and managing the right risks put you in a winning position.

Today's cyber risk posture in the maritime sector, as well as upcoming regulations, demand a strong approach towards identifying those cyber risks that matter most, and addressing them in the most cost-effective way. This asks for scalable and data-driven solutions to automatically identify and address risks.

## Combining leading positions

We can help you navigate safely through these challenges, enabling you and your company to reap the full rewards of connecting your vessels to the cloud and turn data into value.

KONGSBERG develops industry-leading technology that can be utilized for measuring, monitoring and correlating all types of maritime data. KONGSBERG offer an open digital ecosystem that helps clients unlock the value of their data.

KPMG has global expertise on cybersecurity advisory and digital risk management for critical sectors like maritime. KPMG develops digital risk management solutions that bring together their award-winning advisory practices, methodologies and industry benchmark data.

By combining leading positions in these areas, KPMG and KONGSBERG want to provide the maritime sector with innovative digital services to address existing and future cybersecurity risks.



# Welcome on board

## About the Kongsberg Group

KONGSBERG is an international, knowledge-based group delivering high technology systems and solutions to clients within the oil and gas industry, merchant marine, defense, and aerospace.

Kongsberg Digital is one of the three business areas within KONGSBERG providing next-generation software and digital solutions to customers within maritime, oil and gas, and renewables and utilities. The company consists of more than 500 software experts with leading competence within the internet of things, smart data, artificial intelligence, maritime simulation, automation and autonomous operations.

## About KPMG

KPMG offers audit, tax and advisory services across the globe. KPMG's business-savvy cybersecurity member firm professionals understand that businesses cannot be held back by cyber risk. KPMG recognizes that cybersecurity is about risk management – not risk elimination. Therefore, we work closely with clients in helping them to manage risks and grasp opportunities.

KPMG has been named a leader in Information Security by the Forrester Wave in 2017 for having the clearest, most direct vision on cybersecurity.

## Contacts

For more information about the step-change in your maritime cyber risk management practices and the immediate benefits of KPMG's and KONGSBERG's solutions for your organization, contact us or visit us at [www.kpmg.com/no](http://www.kpmg.com/no) or at [www.kongsberg.com/kongsberg-digital](http://www.kongsberg.com/kongsberg-digital).



### Arne Helme

Partner, KPMG

E: [arne.helme@kpmg.no](mailto:arne.helme@kpmg.no)  
T: +47 406 39 507



### Thijs Timmerman

Senior Manager, KPMG

E: [thijs.timmerman@kpmg.no](mailto:thijs.timmerman@kpmg.no)  
T: +47 477 18 865



### Vigleik Takle

VP Commercial Management, Kongsberg

E: [vigleik.takle@kdi.kongsberg.com](mailto:vigleik.takle@kdi.kongsberg.com)  
T: +47 488 40 870



### Jan-Sigurd Sørensen

Strategic Advisor Maritime, Kongsberg

E: [jan-sigurd.sorensen@kdi.kongsberg.com](mailto:jan-sigurd.sorensen@kdi.kongsberg.com)  
T: +47 930 33 219

**kpmg.no**

**kongsberg.com/kdi**



The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavor to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act on such information without appropriate professional advice after a thorough examination of the particular situation.

© 2018 KPMG AS, registered with the trade register in Norway, and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ('KPMG International'), a Swiss entity. All rights reserved.

The name KPMG and logo are registered trademarks of KPMG International.

Designed by CREATE | CRT102923A