



# MASS OPERATIONS– IMPACTS ON SEAFARERS

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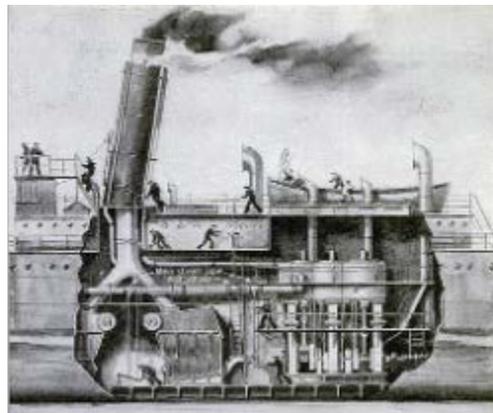
**World Maritime University**

**IMO, London**

**05 September 2022**

# MASS: WHERE ARE WE NOW?

## MOVING CONTROL FROM SHIP TO SHORE



1819

first successful transatlantic crossing



1912

'Selandia' first 2 stroke Diesel powered ship



2021

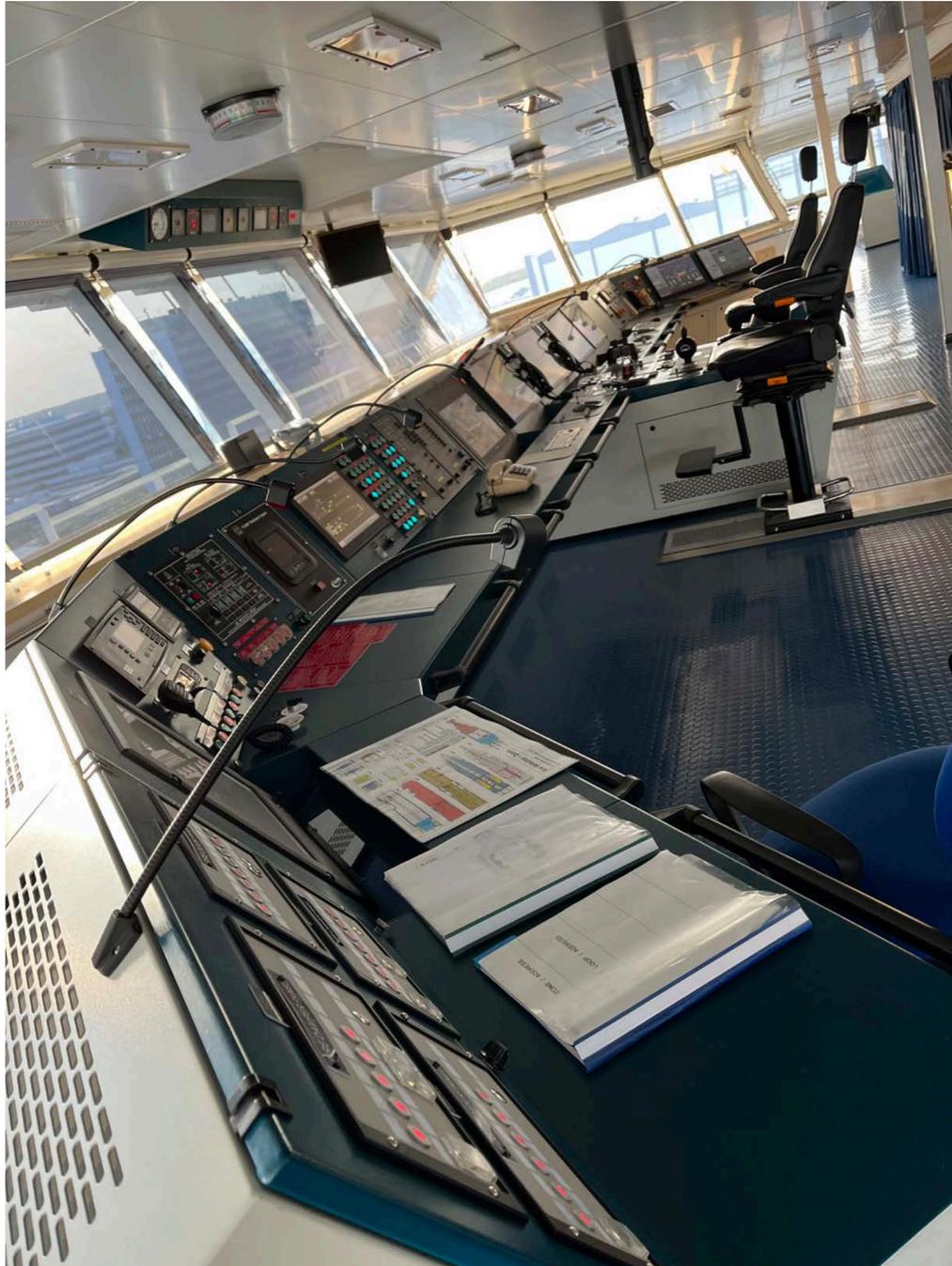
2032



# MASS: WHERE ARE WE NOW?



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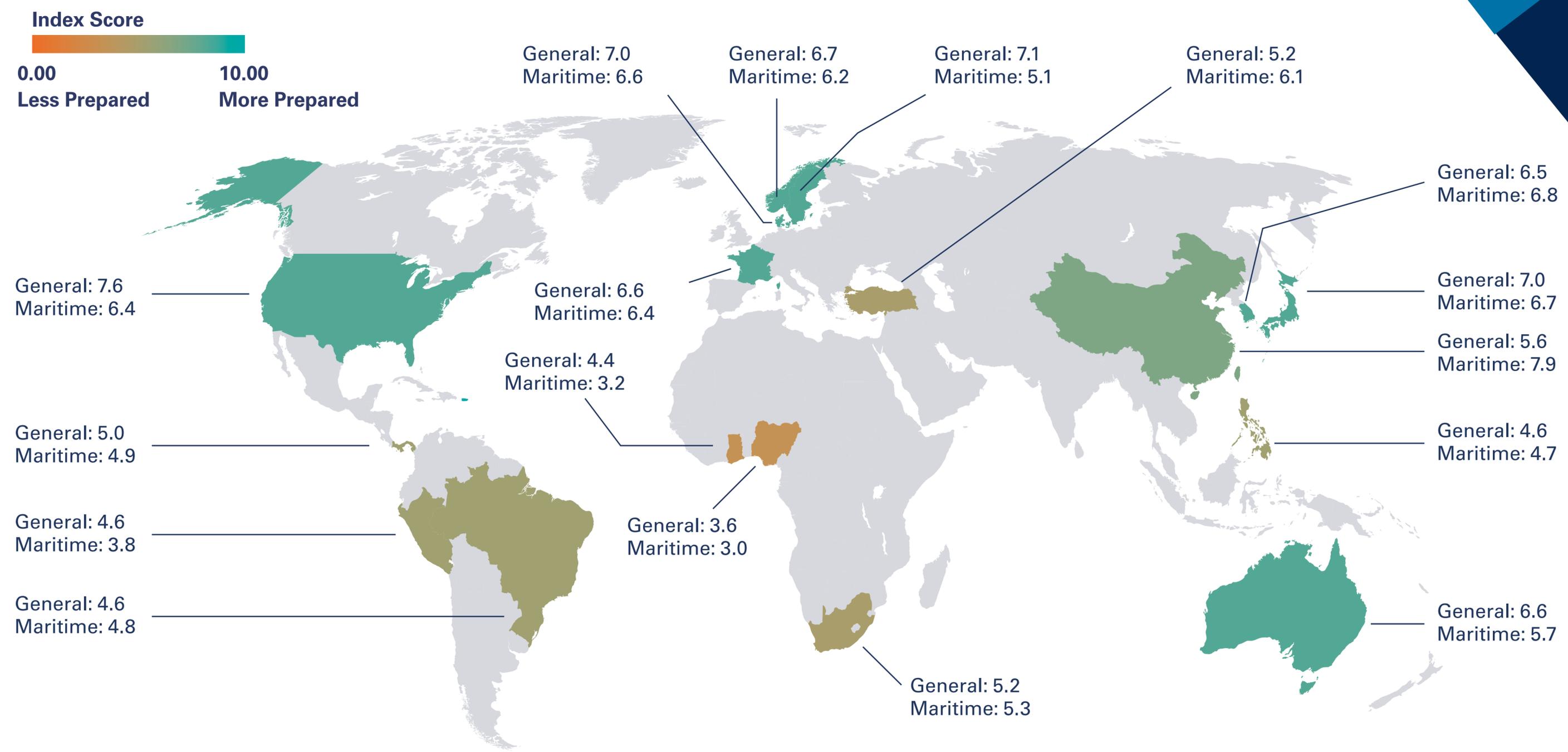


**Bridge**



**Engines Room**

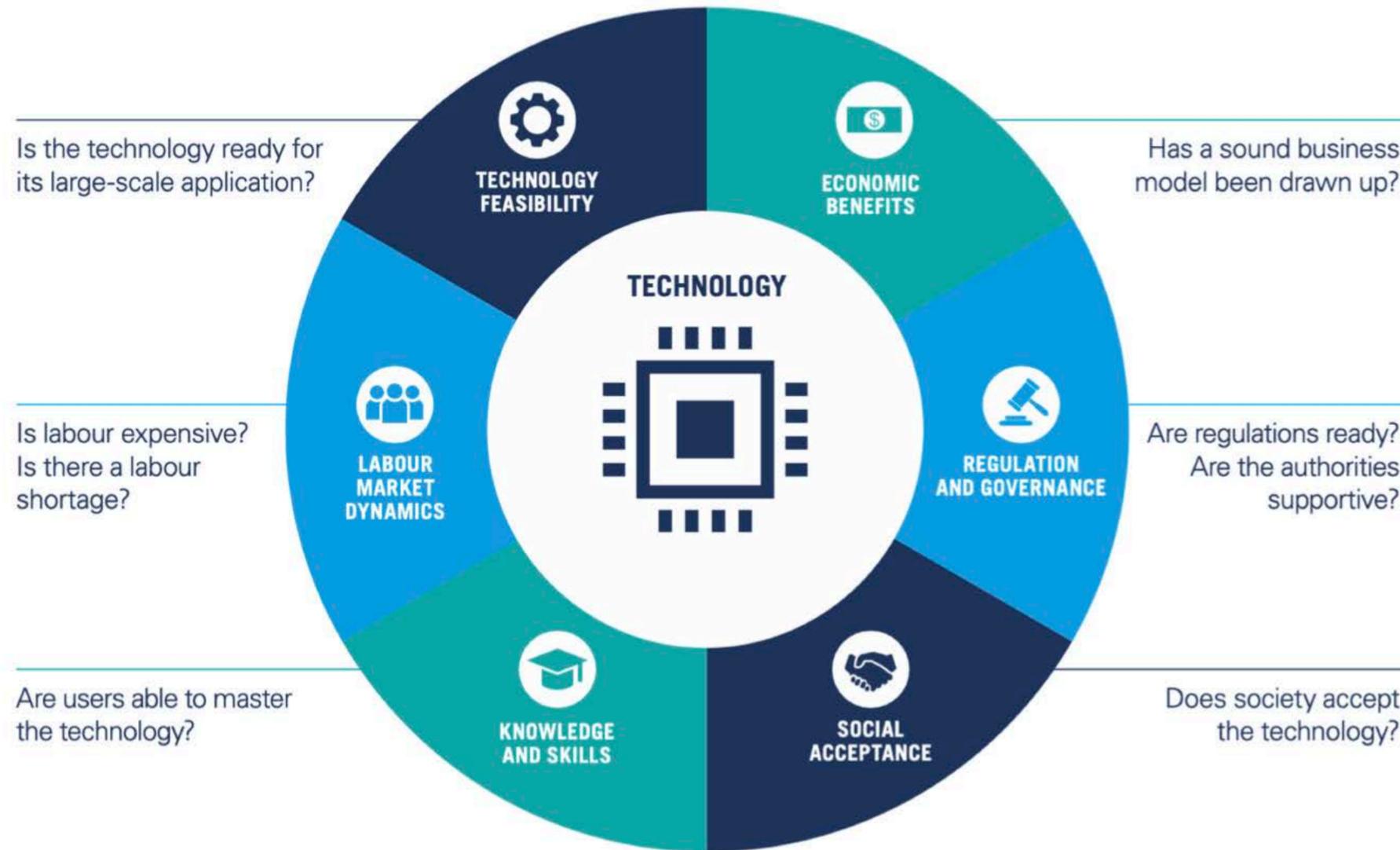
# MASS: WHERE ARE WE NOW?



Source: WMU Country Profiles – Technology Readiness: Maritime

# INTRODUCTION OF MASS IS EVOLUTIONARY RATHER THAN REVOLUTIONARY

## SIX MAIN FACTORS



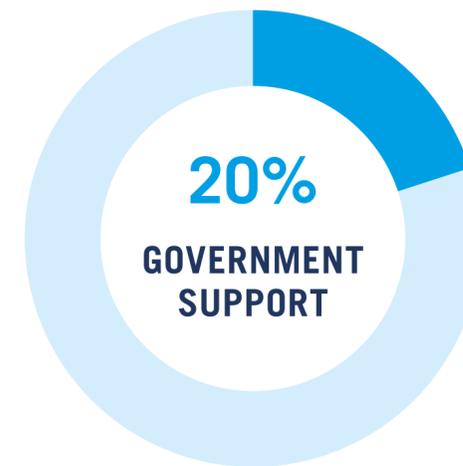
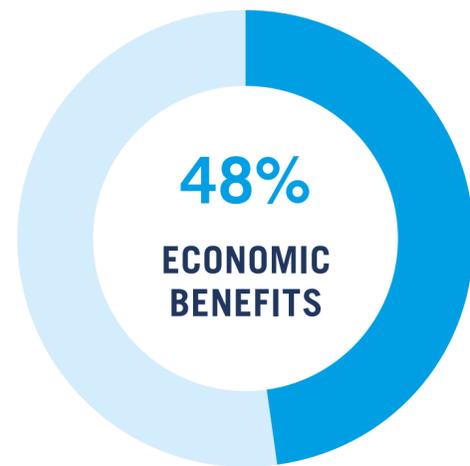
Source: WMU/ITF: Transport 2040: the future of work

# INTRODUCTION OF MASS IS EVOLUTIONARY RATHER THAN REVOLUTIONARY

## HIGHLY AUTOMATED SHIPS



### ENABLERS

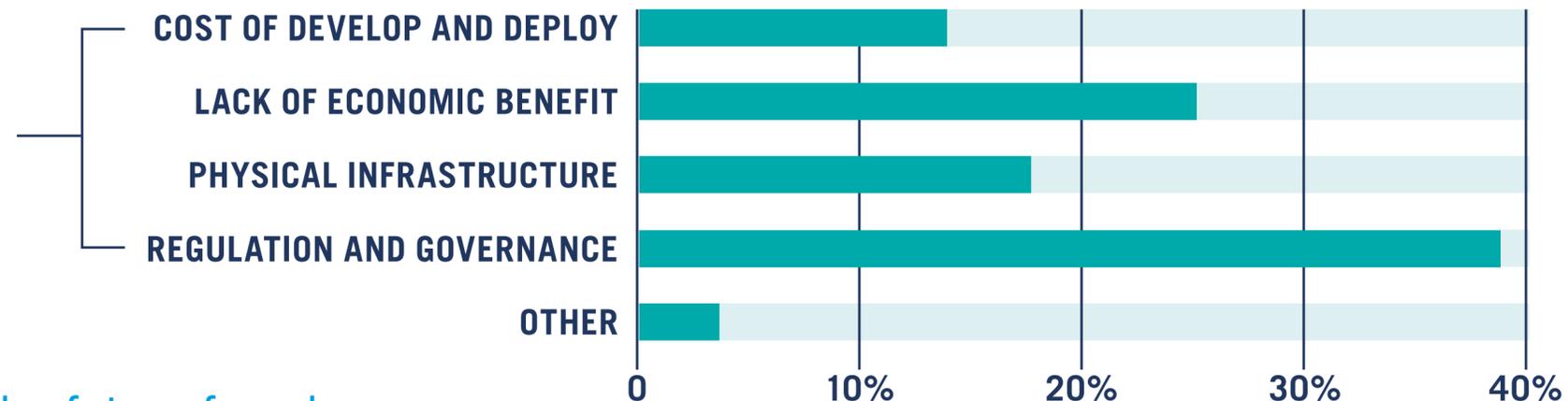


### HURDLES

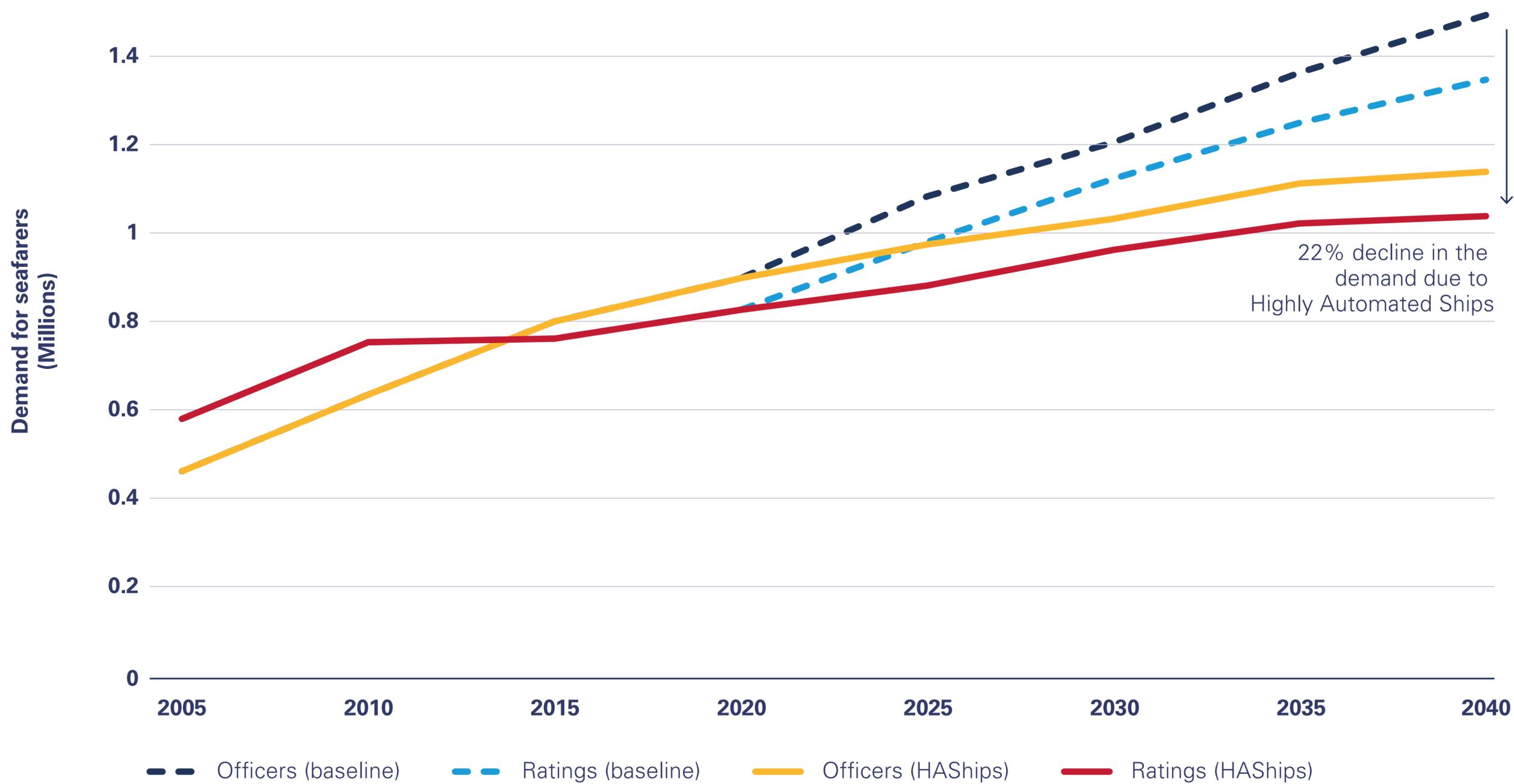
14%  
COST

25%  
ECONOMIC BENEFIT

39%  
REGULATION AND GOVERNANCE



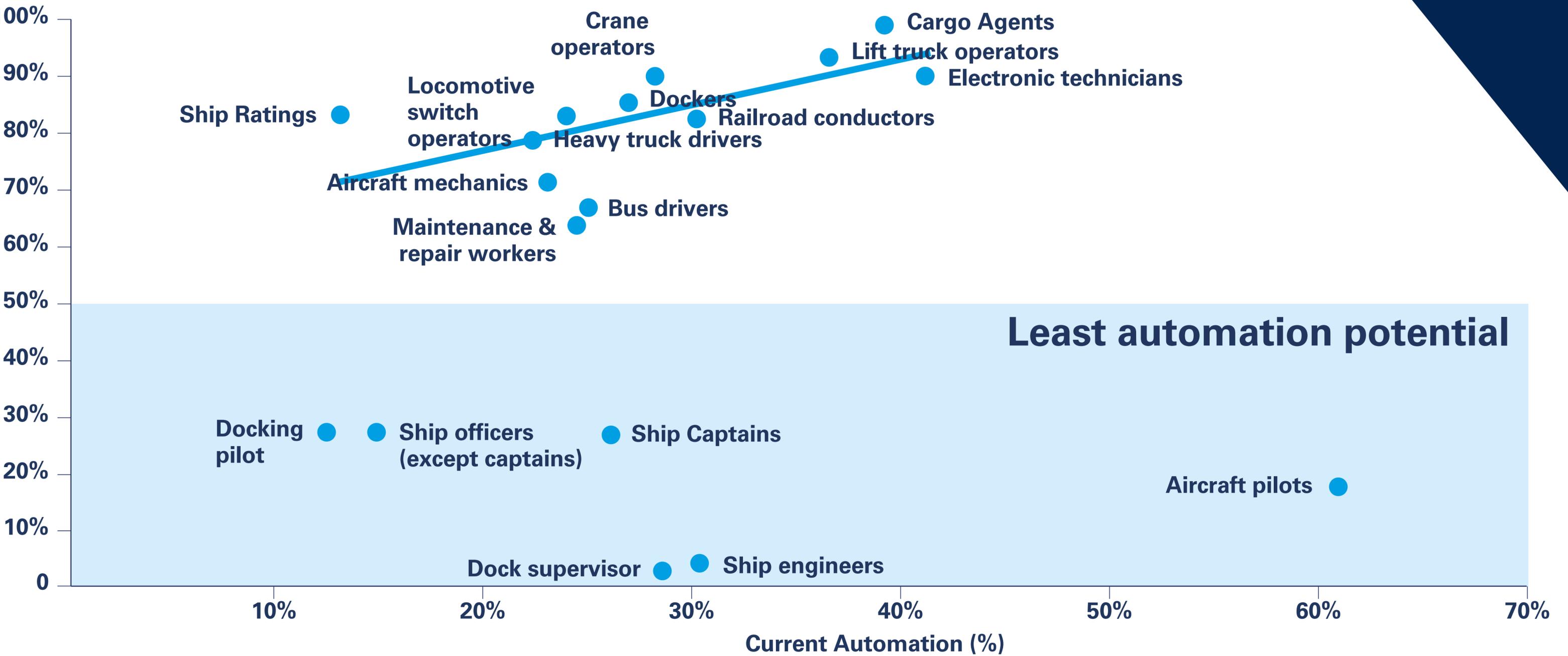
# POTENTIAL IMPACTS ON SEAFARERS



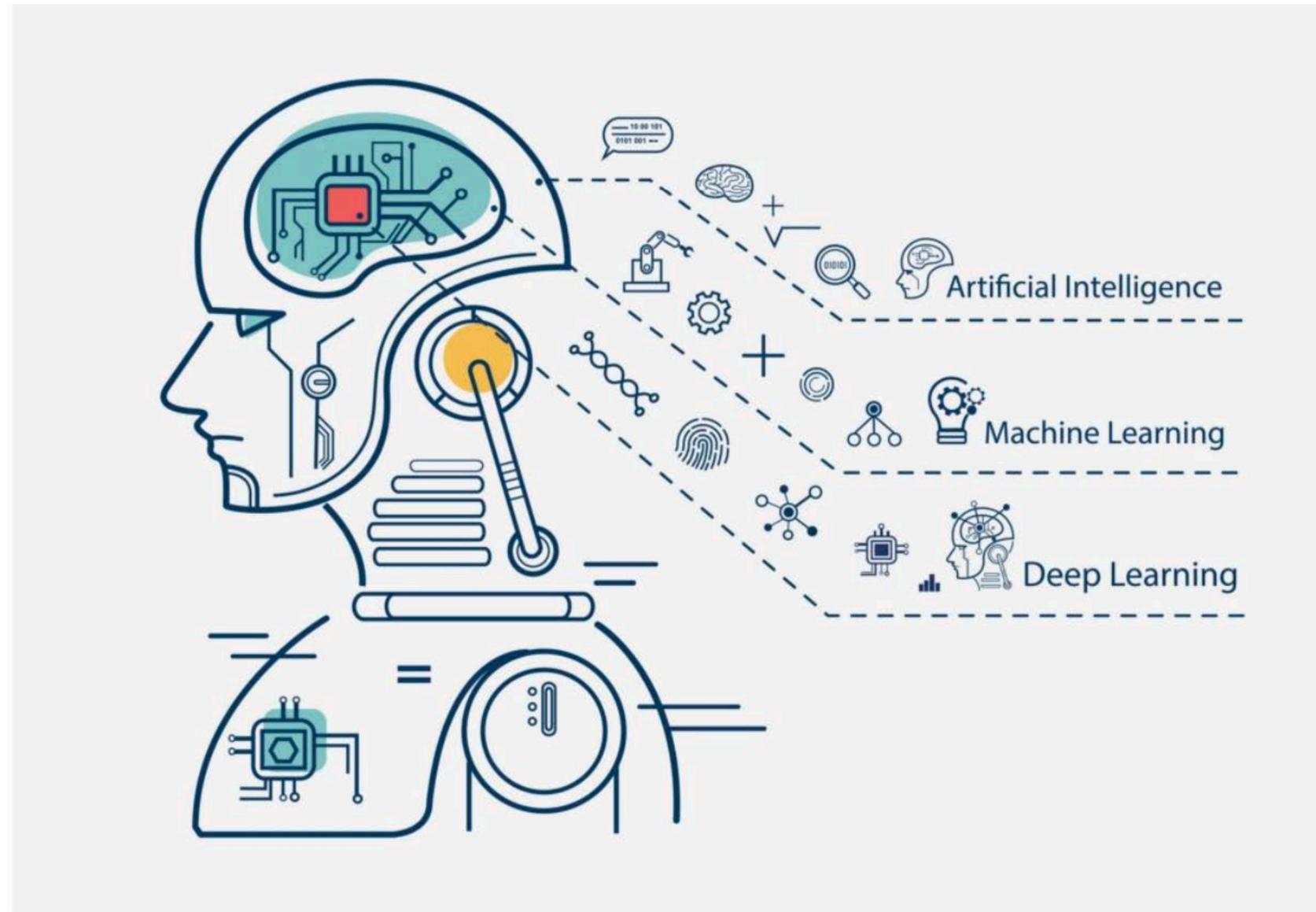
Sources: Historical data from ICS/BIMCO (2016); forecast used data from the start-up curves of Chapter 1 and UNCTAD maritime data; WMU forecast.

Notes: HAShips stands for Highly Automated Ships taking international voyages (average tonnage, average trade). The predictions are subject to a high level of uncertainty, quantified between -6 percentage points and +18 percentage points within a 95 per cent confidence interval. The crew reduction approximately follows an exponential process and by 2040 the crewing levels are assumed to be reduced between 16 and 24 per cent.

# POTENTIAL IMPACTS ON SEAFARERS



# POTENTIAL IMPACTS ON SEAFARERS



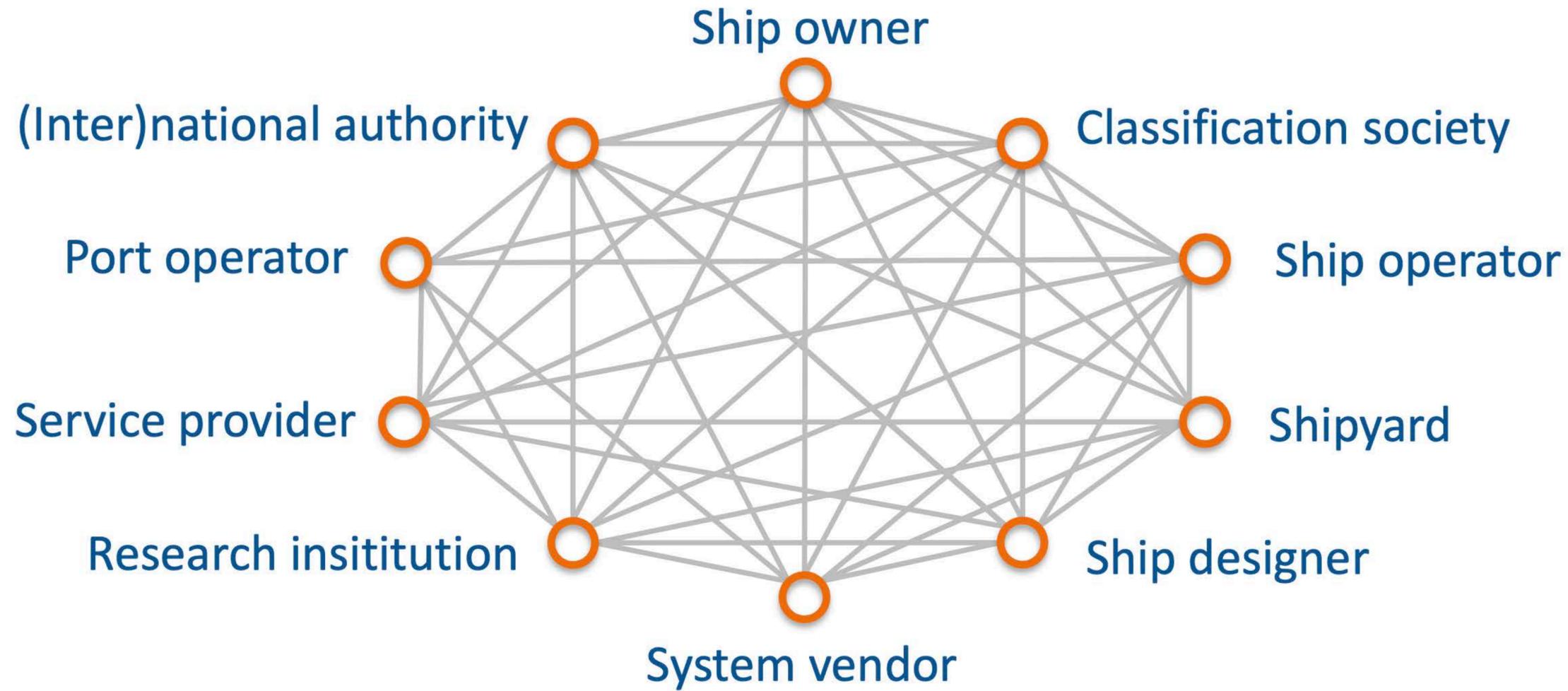
**New skills and competencies will be needed...but not only!!!**

# POTENTIAL IMPACTS ON SEAFARERS

**“Adaptation/Revision” of Maritime Labour and Human element instruments will be needed as well, considering:**

- How to deal with Occupational Health and Safety (OHS)? i.e. Technostress; Additional work due to the introduction of new technology, etc.**
- How to protect seafarers against monitoring/surveillance at sea due to technology?**

# REGULATING MASS: A COLLABORATIVE PROCESS



Source: Zou, G (2021)

# REGULATING MASS: A COLLABORATIVE PROCESS



**Participation of seafarers in the process**

# RECOMMENDATIONS

- 1. Facilitation of more intensive dialogues between stakeholders in the maritime sector for a better understanding of the different position of all parties concerned**
- 2. Considering to involve more Labour Supply Countries in the dialogue**
- 3. Identifying future competencies needed to effectively work in a world of advanced automation and technology in transport and considering to allocate national funds to implement them in education and training**
- 4. Considering OHS of seafarers within the development of the MASS Code**
- 5. Proper national strategies and policies to address the ramifications of further automation and technology in the maritime sector**

**THANK YOU FOR YOUR ATTENTION**

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