



People. Development. Impact.

**Breaking away from “tradition”
Labour issues in the shipbuilding and marine equipment
industries**

The viewpoint of universities and research

C-WP6 Workshop

Dr. Khanssa Lagdami
ITF Seafarers Trust
Assistant Professor
Maritime Labour Law and Policy

OECD, Paris
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ABOUT WMU

Established in 1983 within the framework of the International Maritime Organization (IMO), a Specialized Agency of the United Nations.

MISSION

To be the world centre of excellence in postgraduate maritime and oceans education, professional training and research, while building global capacity and promoting sustainable development.

VISION

To inspire leadership and innovation for a sustainable maritime and oceans future.

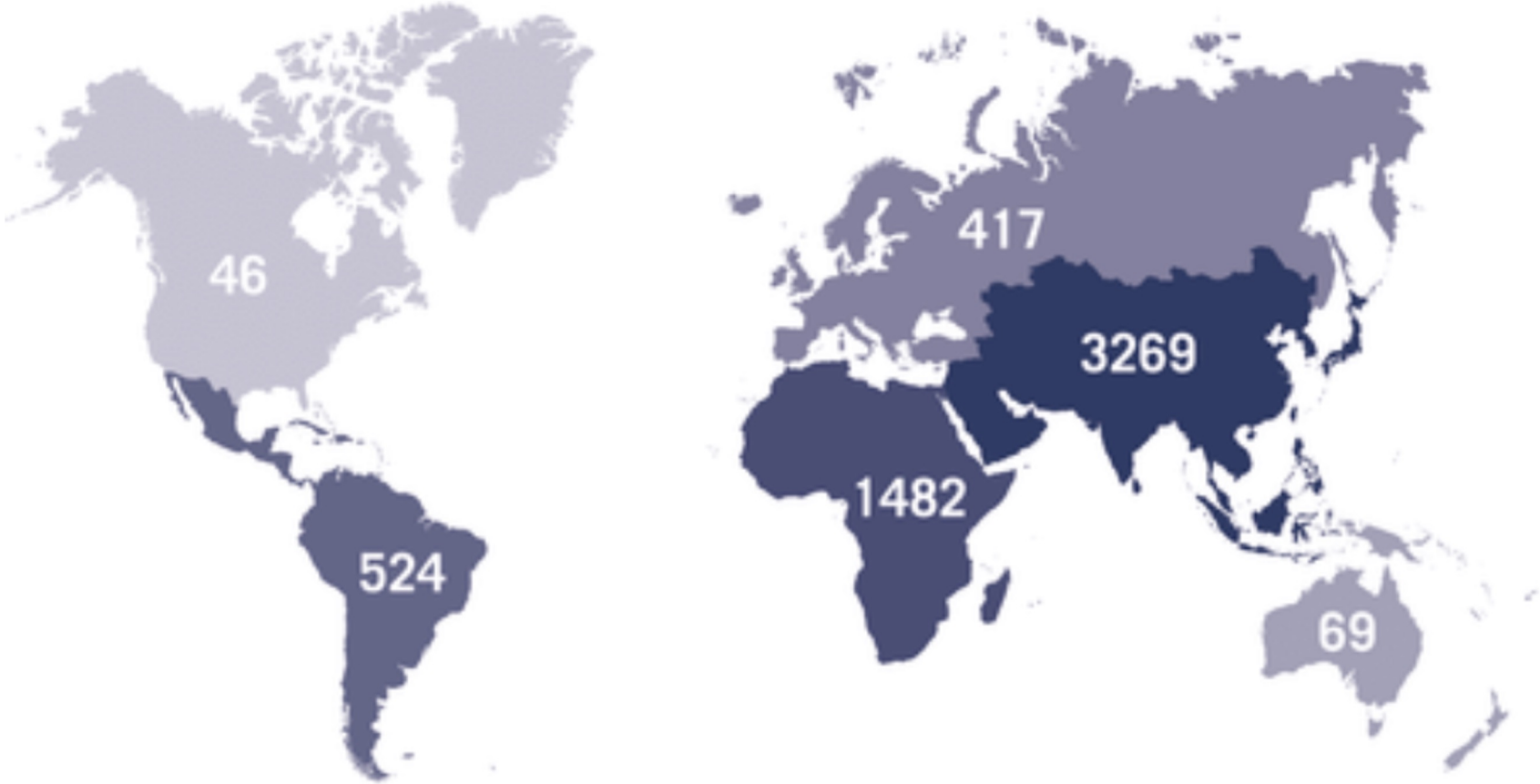


GLOBAL IMPACT

5,807 Alumni

170 Countries and Territories

1,295 Female Graduates



OUR COMMITMENT TO THE UN SDGs



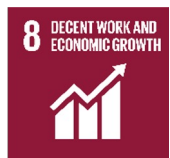
ensure inclusive & equitable **quality education & promote lifelong learning** opportunities for all



achieve **gender equality and empower all women** and girls



ensure access to affordable, reliable, **sustainable and modern energy** for all



promote inclusive and sustainable **economic growth**, employment and **decent work** for all



build resilient infrastructure, promote inclusive and **sustainable industrialization and foster innovation**



take urgent action to **combat climate change** & its impacts



promote just, **peaceful** and **inclusive societies**



strengthen the means of implementation and revitalize the **global partnership for sustainable development**



Conserve and sustainably use the **oceans**, seas and marine resources for sustainable development



GOVERNANCE



IMO Assembly (175 IMO Member States & 3 Associate Members)
President: H.E. Mr. Antonio Manuel R. Lagdameo



IMO Council (40 IMO Member States)
Chair: Víctor Jiménez



WMU Board of Governors (30 appointees by IMO SG)
Chair: Chancellor Kitack Lim
WMU Alumnus



WMU Executive Board (10 appointees by IMO SG)
Chair: Gerardo Borrromeo



World Maritime University
President: Professor Maximo Q. Mejia



OUR CONTRIBUTIONS



Masters Programmes



PhD Programme



LLM and Postgraduate Diplomas via distance learning



Capacity Building



English and Study Skills Programme



Customized Professional Education



Solution focused and policy relevant Maritime and Ocean Research



Technical Cooperation Support at request of IMO



WMU's FUTURE OF WORK PROGRAM



The world of work is facing unprecedented changes. New technologies, such as artificial intelligence, robotics, automation, and digitalization of the economy, along with changes in socio-political patterns and climate change, are shifting the nature of work.

The WMU Future of Work Programme looks at how to make this shift inclusive. Through interdisciplinary research, we are developing ways to adapt to these unprecedented changes in the world of work within maritime and related industries. Taking into account hard data, combined with people's perspectives and experiences, we aim to shape policy and decision-making within the maritime transport sector for an inclusive and sustainable future for all.



WMU's FUTURE OF WORK PROGRAM



**International Chamber of Shipping Summit
Manila, 2023**

**Shaping the Future of Shipping – Seafarer
2050 Conference**

Monday 26th June 2023

WMU's FUTURE OF WORK PROGRAM

Phase II of Transport 204:

- **Continuous Assessment of Trends in Automation and Technology (Technology evolution roadmap)**
- **Future maritime skills, competencies and career opportunities**
- **Four case studies on Occupational Health and Safety**

What does current ship look like?

LNG/LPG



Bulk Carrier



Chemical Tanker



Cruise Ship



Ferry



What does future ship look like?

Ships will be more digitalised, greener , safer and automated

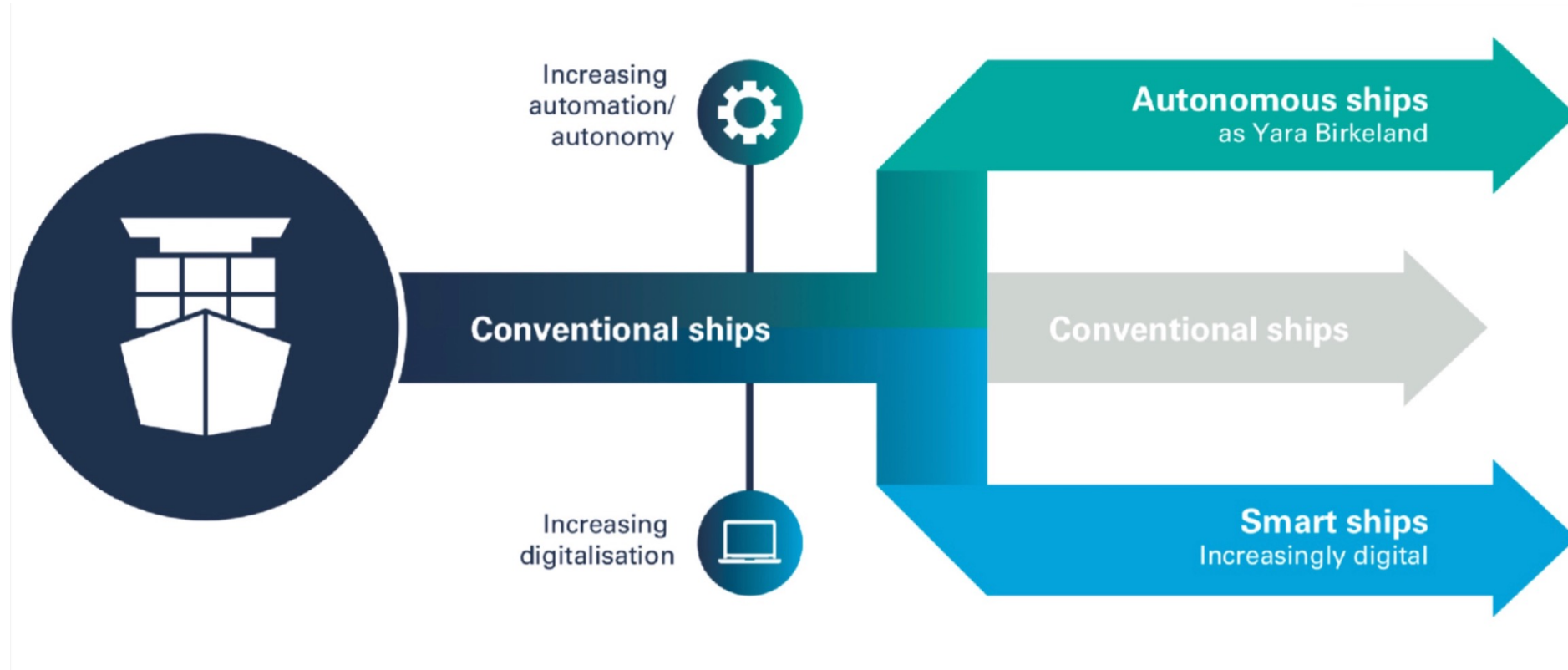


FastRig wing-sails developed by UK company Smart Green Shipping



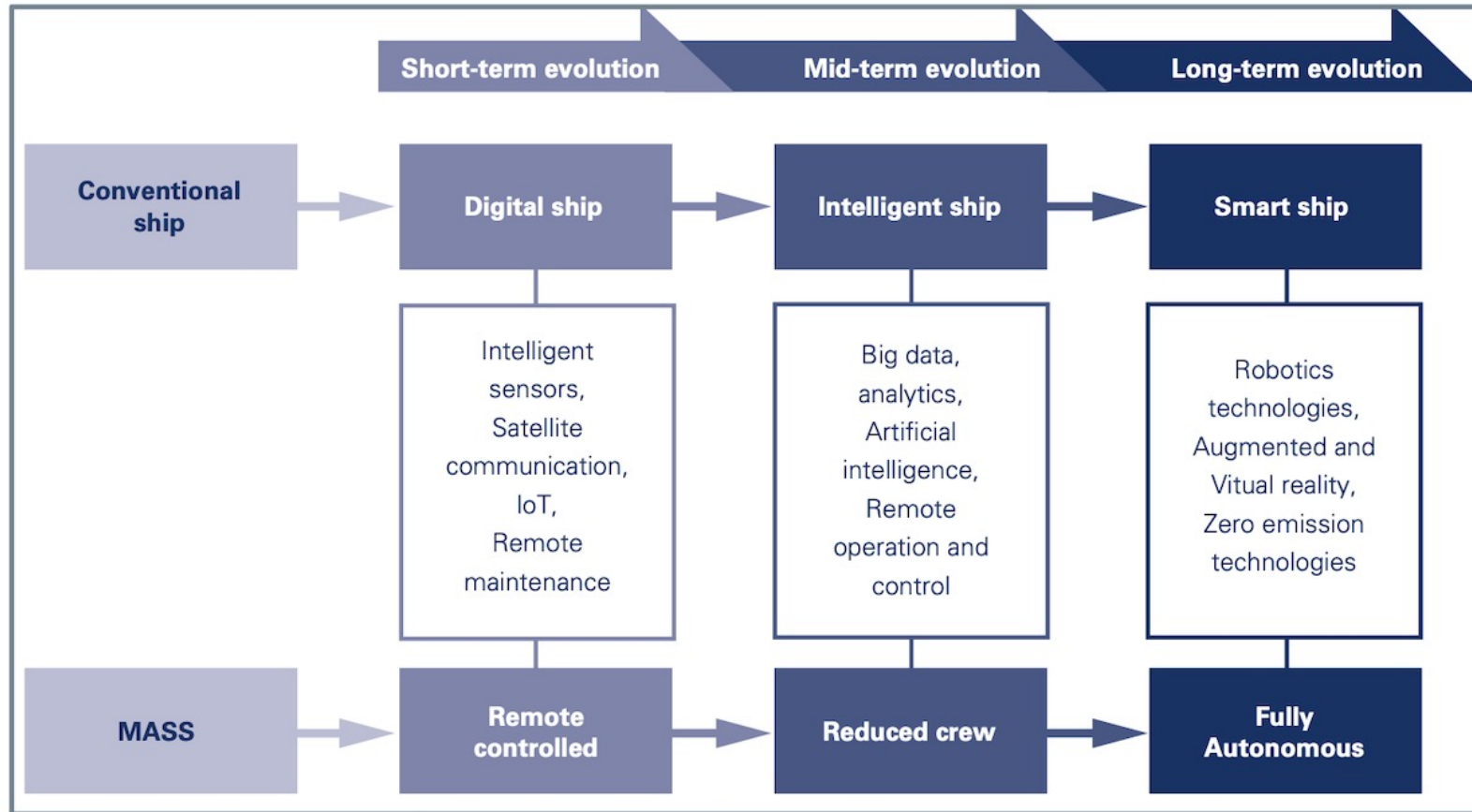
Yara Birkeland Ship

Burification in shipping development



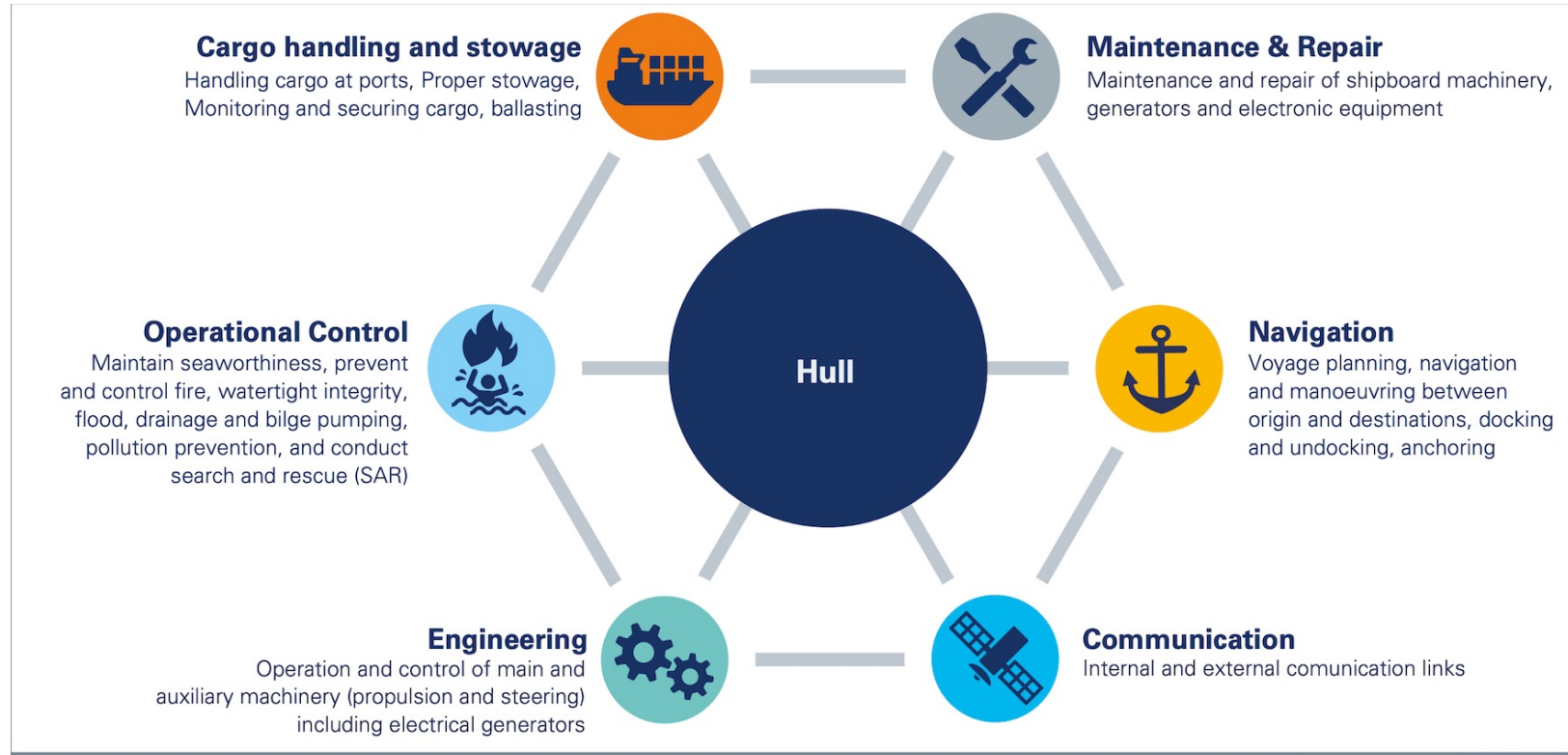
Source: ITF/WMU Transport 2040, Automation, Technology, Employment, The future of Work

Evolution of the ship



Source: ITF/ WMU Transport 2040, New technologies and its impact on seafarers

Transformative future ship technologies



Source: ITF/ WMU Transport 2040, New technologies and its impact on seafarers

Main Technologies

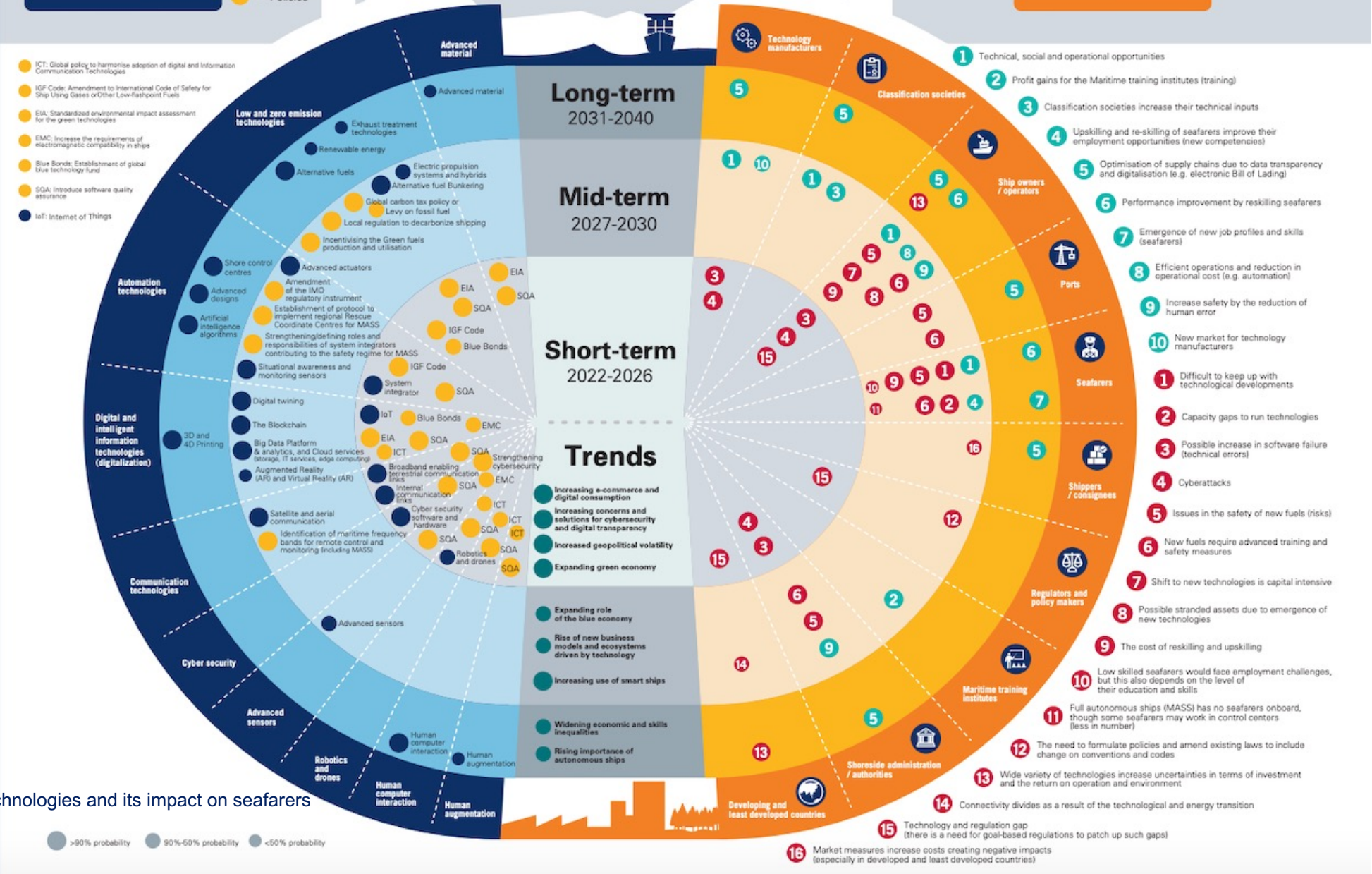
- = Trends
- = Sub-Technologies
- = Policies

Tech Road Map

- = Opportunities
- = Threat

Stakeholders

- Increasing e-commerce and digital consumption
- Increasing concerns and solutions for cybersecurity and digital transparency
- Increased geopolitical volatility
- Expanding green economy
- Expanding role of the blue economy
- Rise of new business models and ecosystems driven by technology
- Increasing use of smart ships
- Widening economic and skills inequalities
- Rising importance of autonomous ships

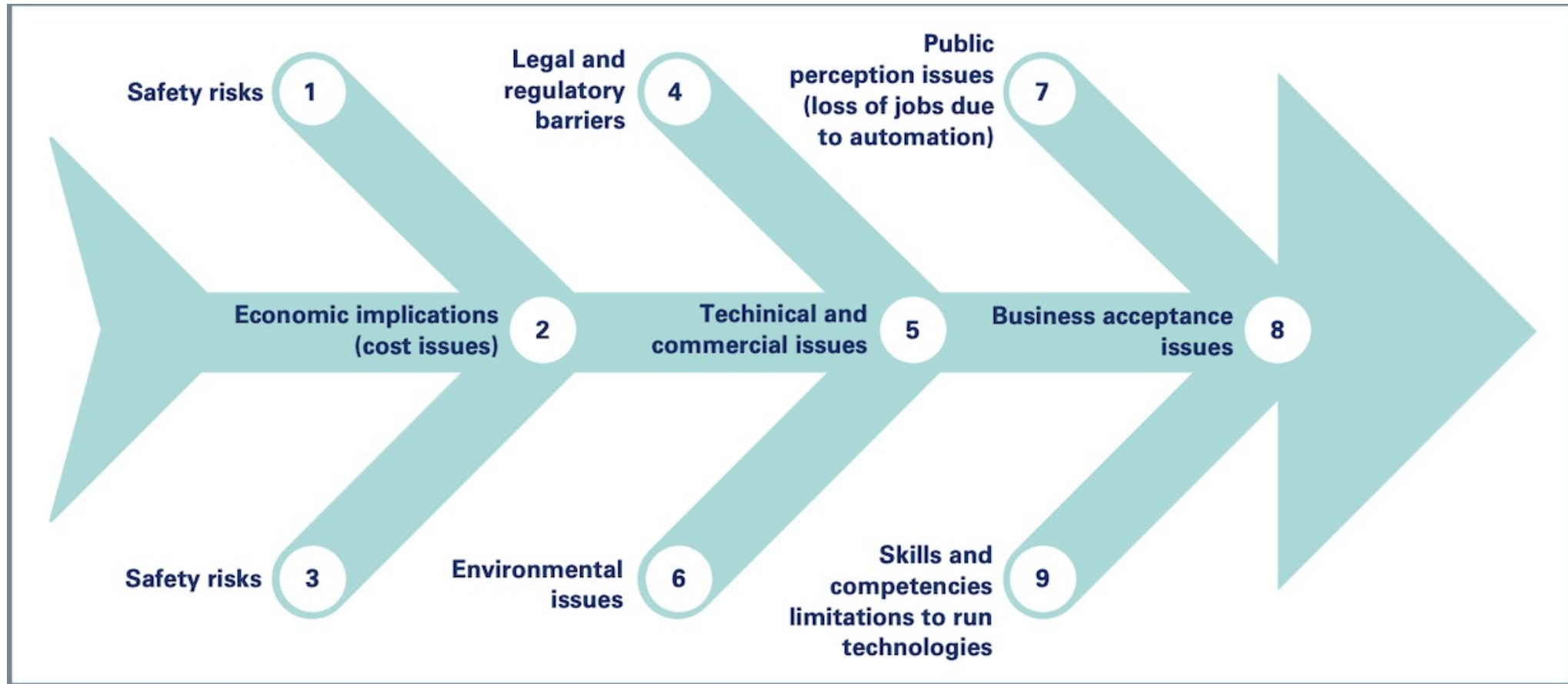


- ICT: Global policy to harmonise adoption of digital and Information Communication Technologies
- IGF Code: Amendment to International Code of Safety for Ship Using Gases or Other Low-flashpoint Fuels
- EIA: Standardized environmental impact assessment for the green technologies
- EMC: Increase the requirements of electromagnetic compatibility in ships
- Blue Bonds: Establishment of global blue technology fund
- SQA: Introduce software quality assurance
- IoT: Internet of Things

- 1 Technical, social and operational opportunities
- 2 Profit gains for the Maritime training institutes (training)
- 3 Classification societies increase their technical inputs
- 4 Upskilling and re-skilling of seafarers improve their employment opportunities (new competencies)
- 5 Optimisation of supply chains due to data transparency and digitalisation (e.g. electronic Bill of Lading)
- 6 Performance improvement by reskilling seafarers
- 7 Emergence of new job profiles and skills (seafarers)
- 8 Efficient operations and reduction in operational cost (e.g. automation)
- 9 Increase safety by the reduction of human error
- 10 New market for technology manufacturers
- 11 Full autonomous ships (MASS) has no seafarers onboard, though some seafarers may work in control centers (less in number)
- 12 The need to formulate policies and amend existing laws to include change on conventions and codes
- 13 Wide variety of technologies increase uncertainties in terms of investment and the return on operation and environment
- 14 Connectivity divides as a result of the technological and energy transition
- 15 Technology and regulation gap (there is a need for goal-based regulations to patch up such gaps)
- 16 Market measures increase costs creating negative impacts (especially in developed and least developed countries)

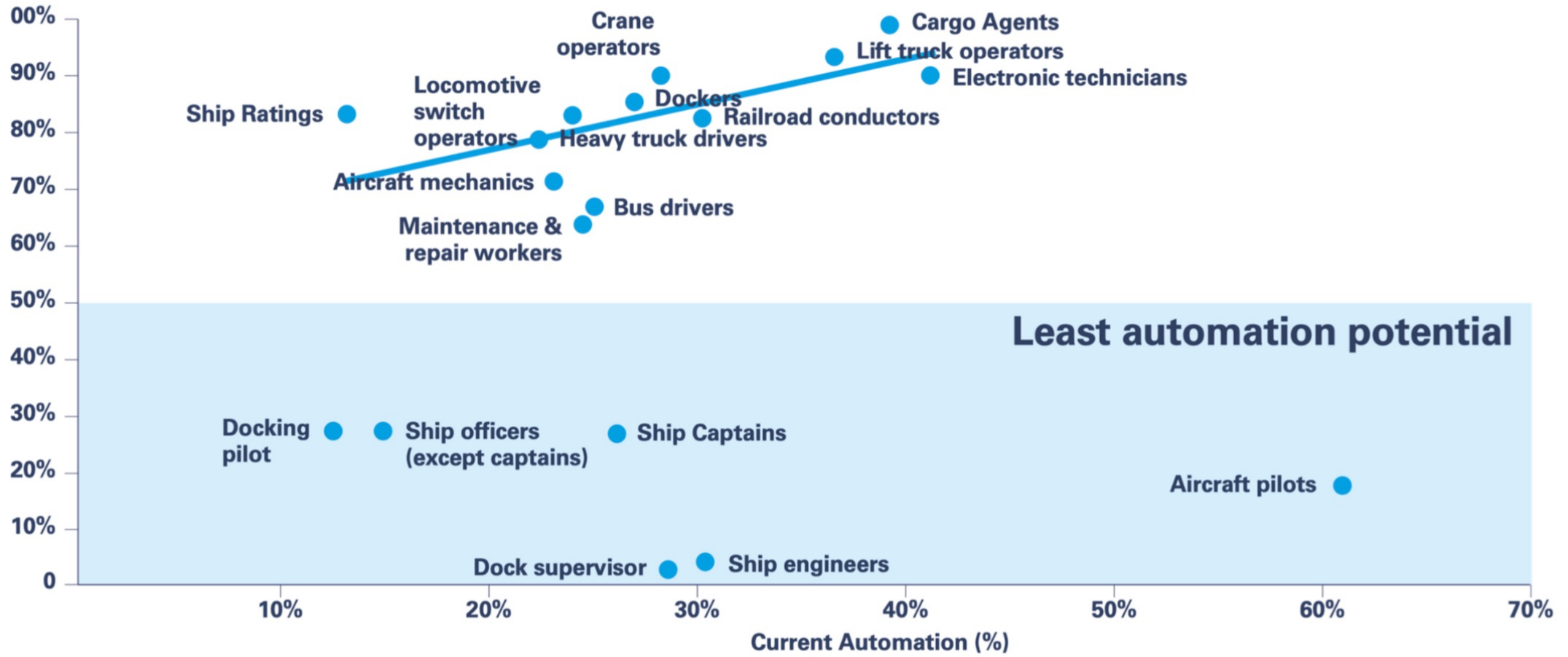
Source: ITF/ WMU Transport 2040, New technologies and its impact on seafarers

Transformative future ship technologies



Source: ITF/ WMU Transport 2040, New technologies and its impact on seafarers

Potential impacts on workers



Source: ITF/WMU Transport 2040, Automation, Technology, Employment, The future of Work

New skills and competencies might be needed by shipbuilding workers

What are the actions taken by universities to provide initial and life-long education to train future workers in the maritime sector?



Long Term

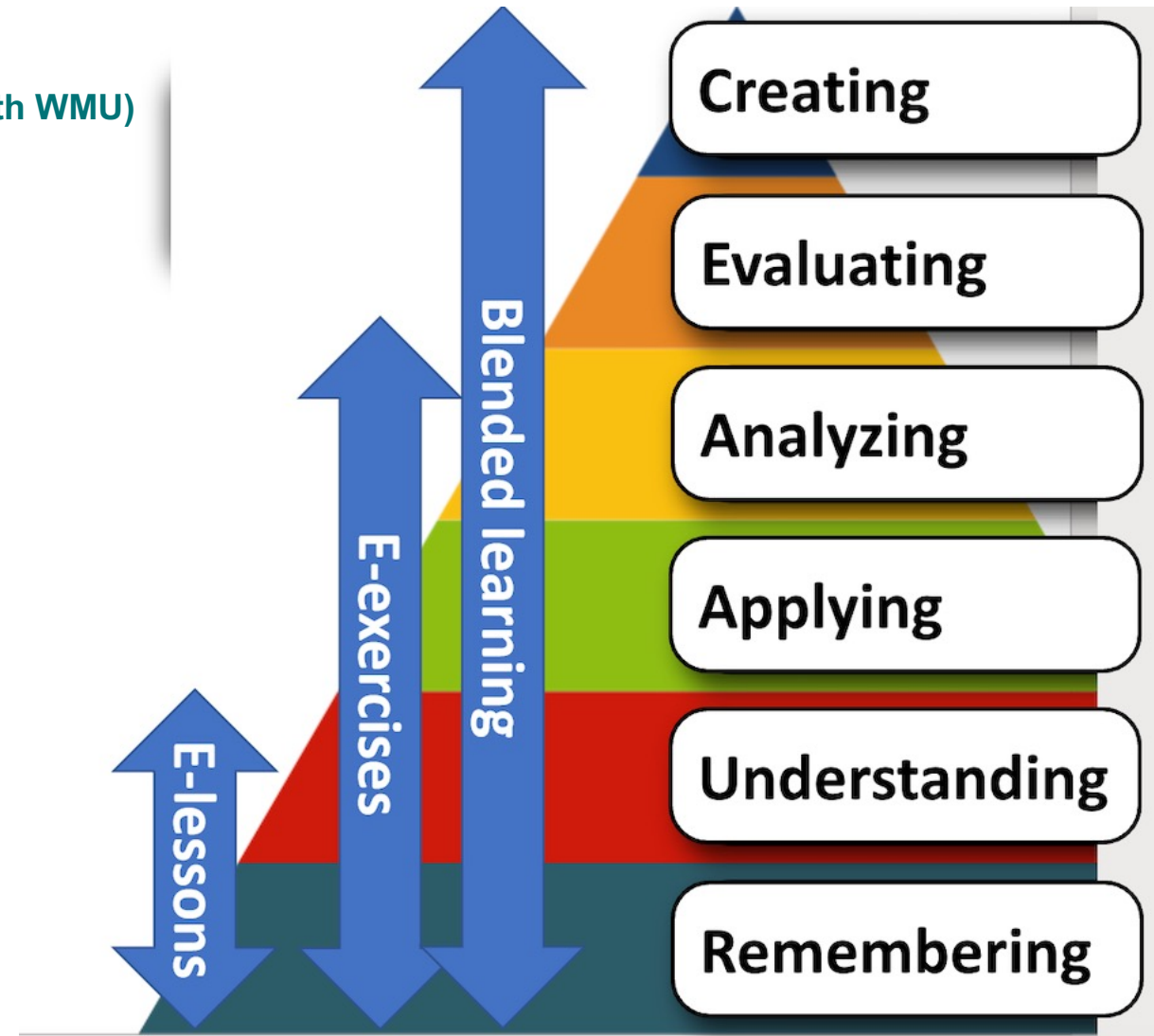
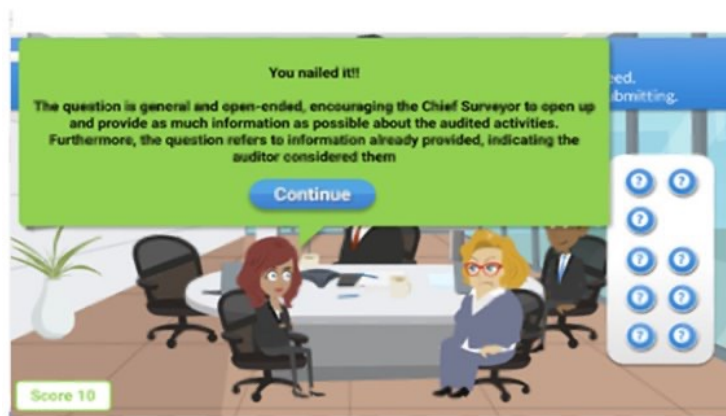


Short/Medium/Long Terms

Source: ITF/ WMU Transport 2040, New technologies and its impact on seafarers

What are the actions taken by universities to provide initial and life-long education to train future workers in the maritime sector?

Exemple: IMO E-Learning Capacity-Building (in collaboration with WMU)



Source: WMU MET specialisation, lecture notes

How about a just transition for shipbuilding workers?

The cost of the transition must also includes protecting the health and well-being of shipbuilding workers.



People. Development. Impact.

Thank you for your attention

