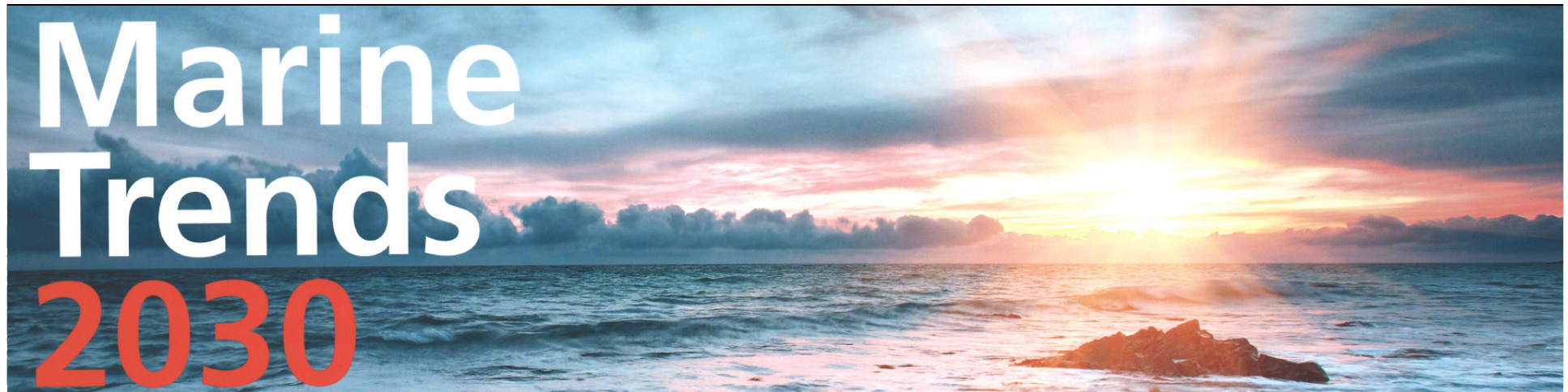




A future for maritime professionals

Patrick Carnie 高海帆 GAO Hai Fan

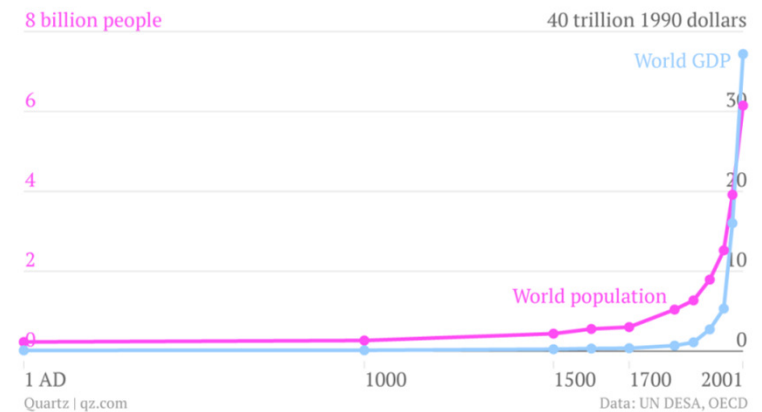
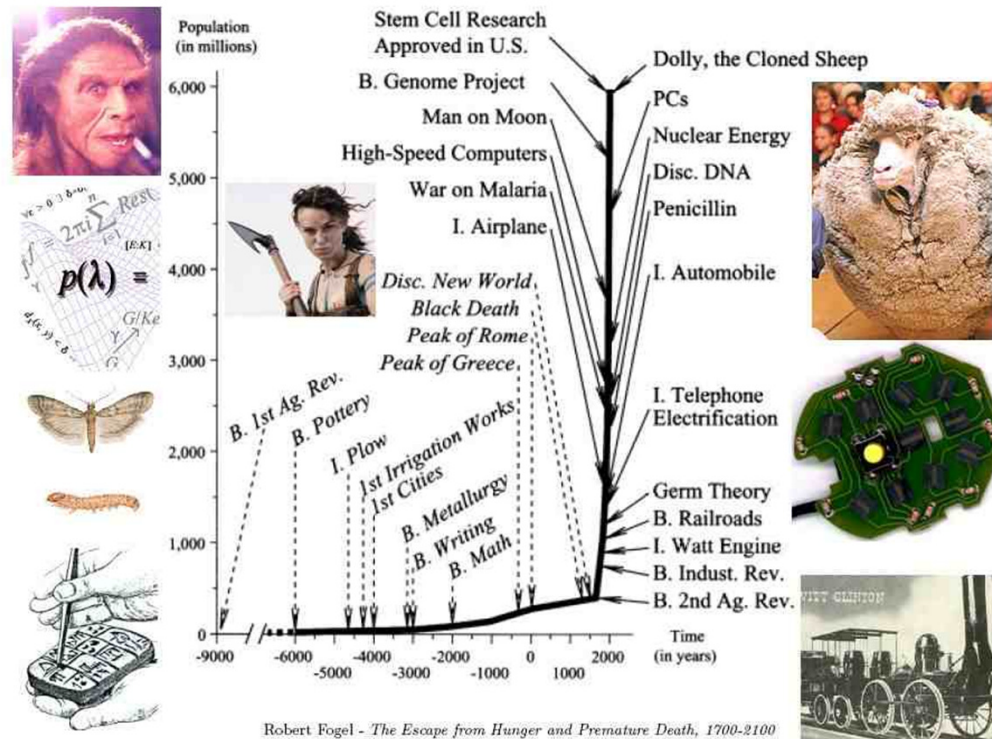
IESIS/RINA Joint lecture, 10 December 2014

Why consider the future?

Change is coming.

The world is less stable.

Our sector has potential to do better.



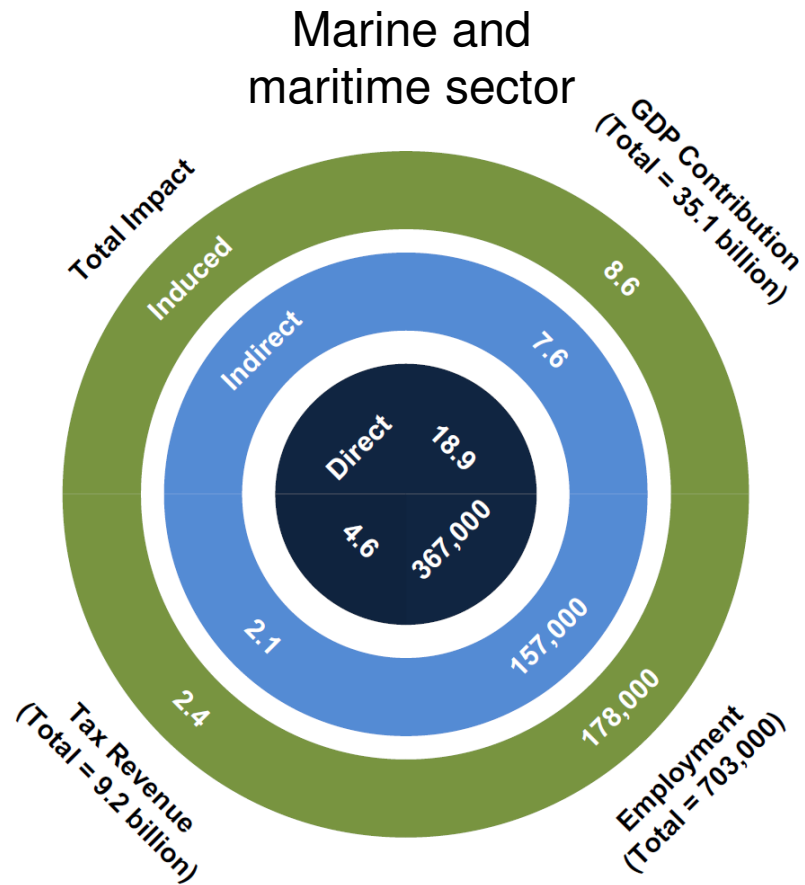
Maritime Professionals?



The Royal Institution of
Naval Architects



Strengths & Weaknesses



Maritime Services: **3.5% of Scotland's GDP**

2.9% of Scotland's jobs

Strengths & Weaknesses



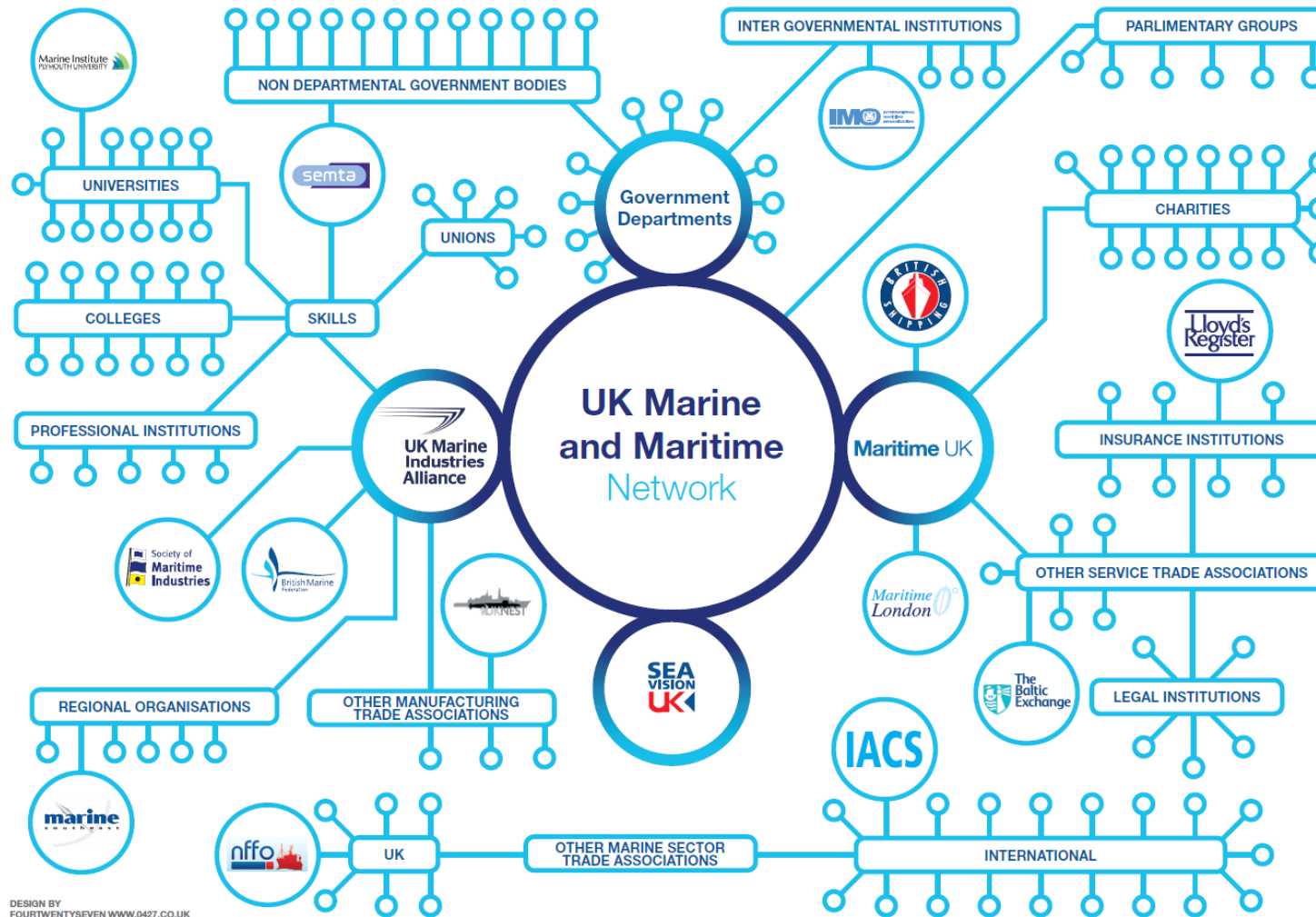
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Strengths & Weaknesses



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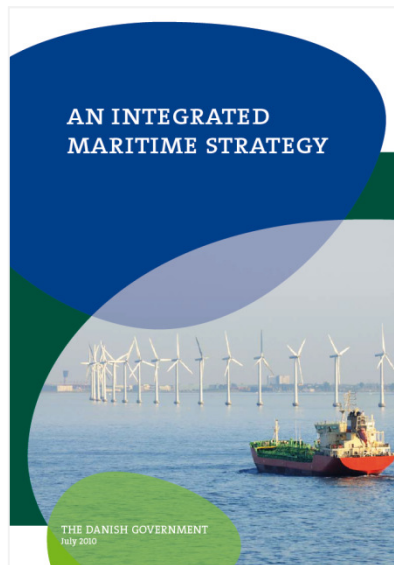
Threats & Opportunities



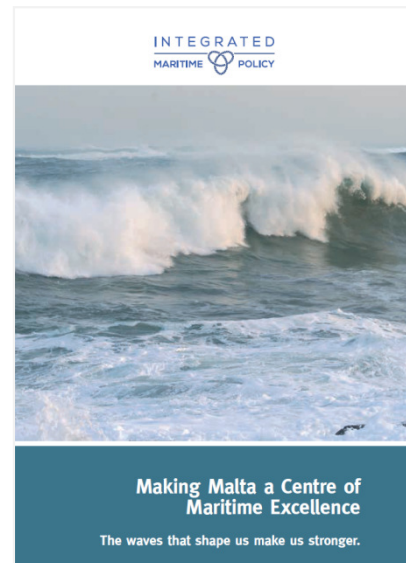
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Threats & Opportunities



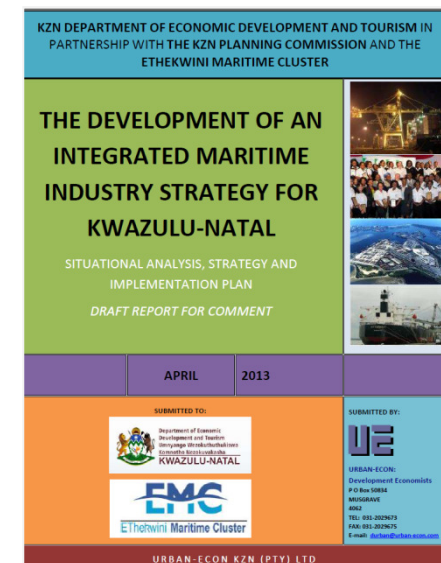
Denmark



Malta



San Diego



Kwazulu-Natal

EC, France, Germany, Netherlands, Norway, Italy, Singapore, ...

Threats & Opportunities



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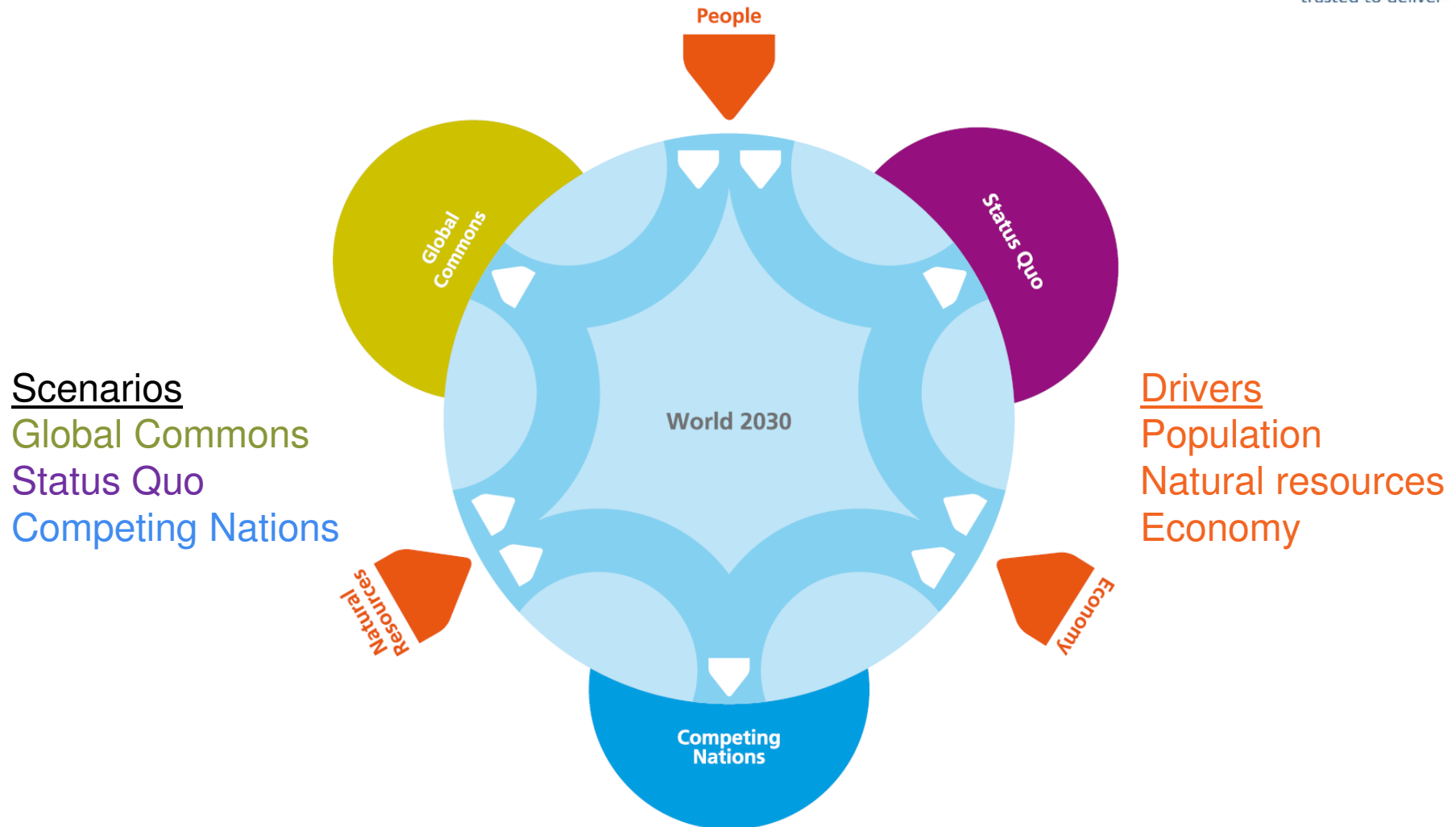
Threats & Opportunities



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Threats & Opportunities



Threats & Opportunities



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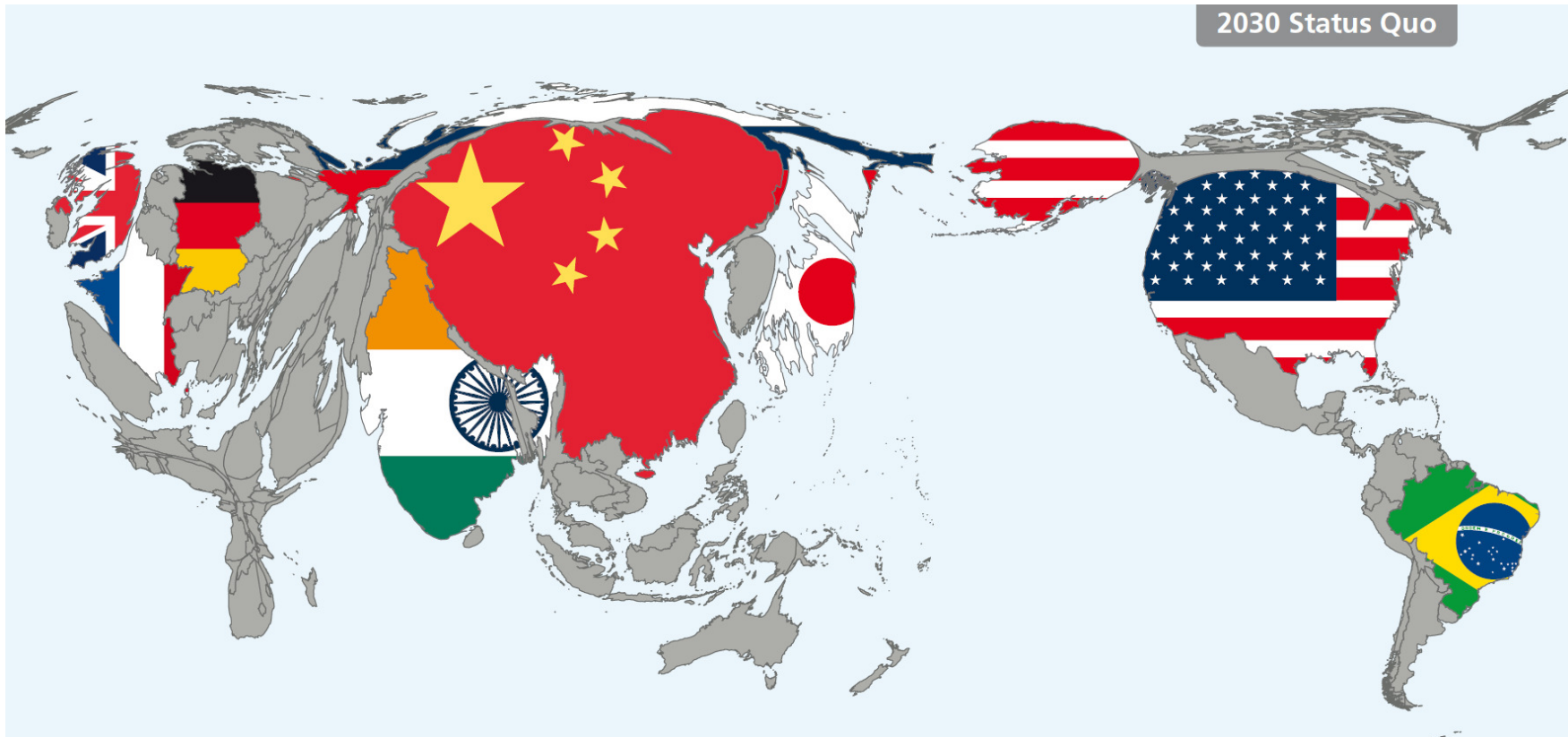
2010



Threats & Opportunities



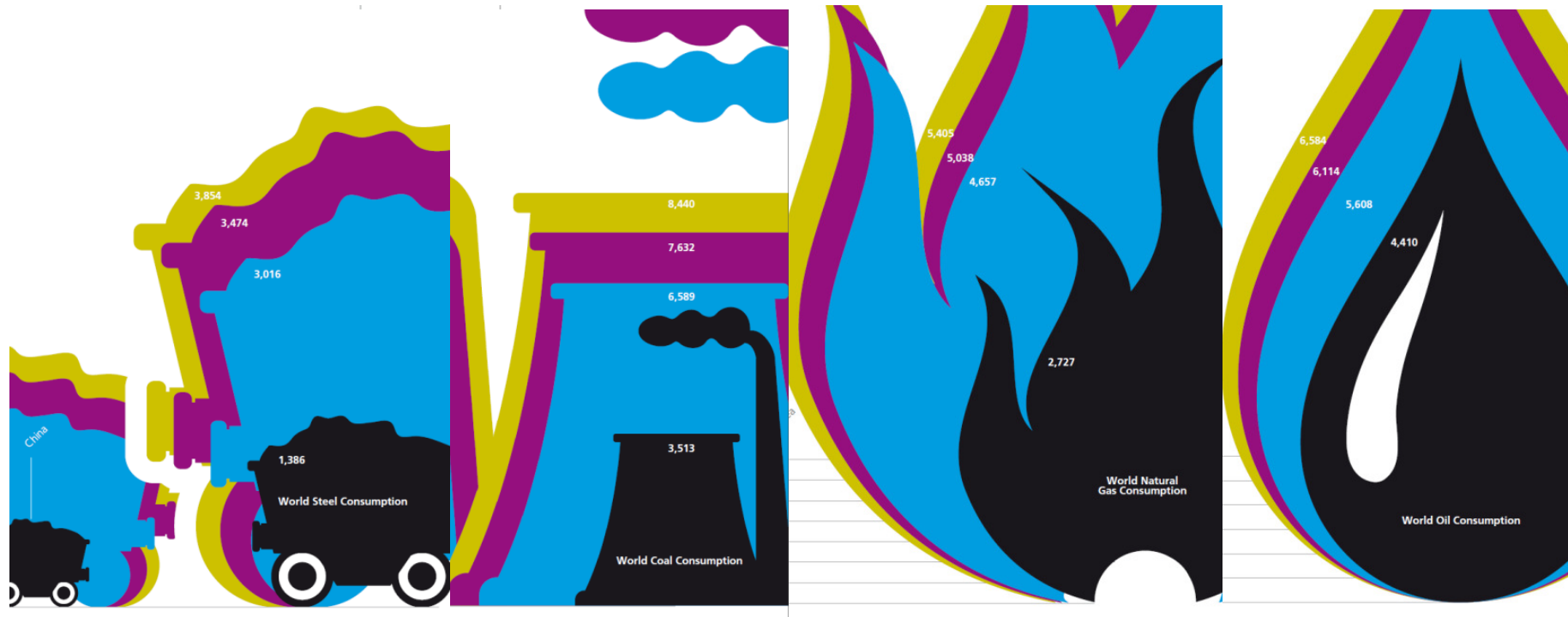
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Threats & Opportunities



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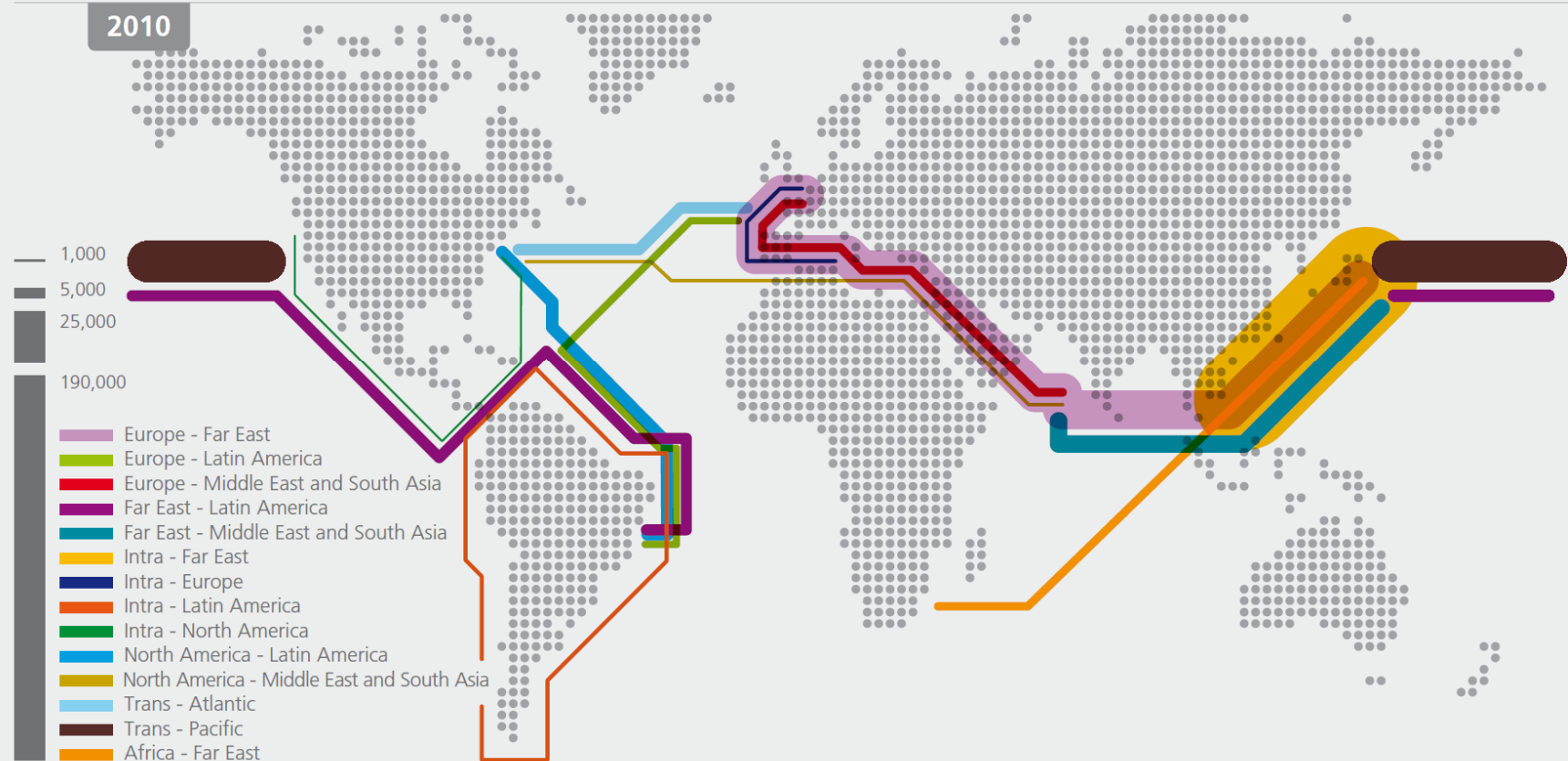
Threats & Opportunities



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Fig. 61 Seaborne Container trade 2010 (thousand TEU)

Source: MSI / LR

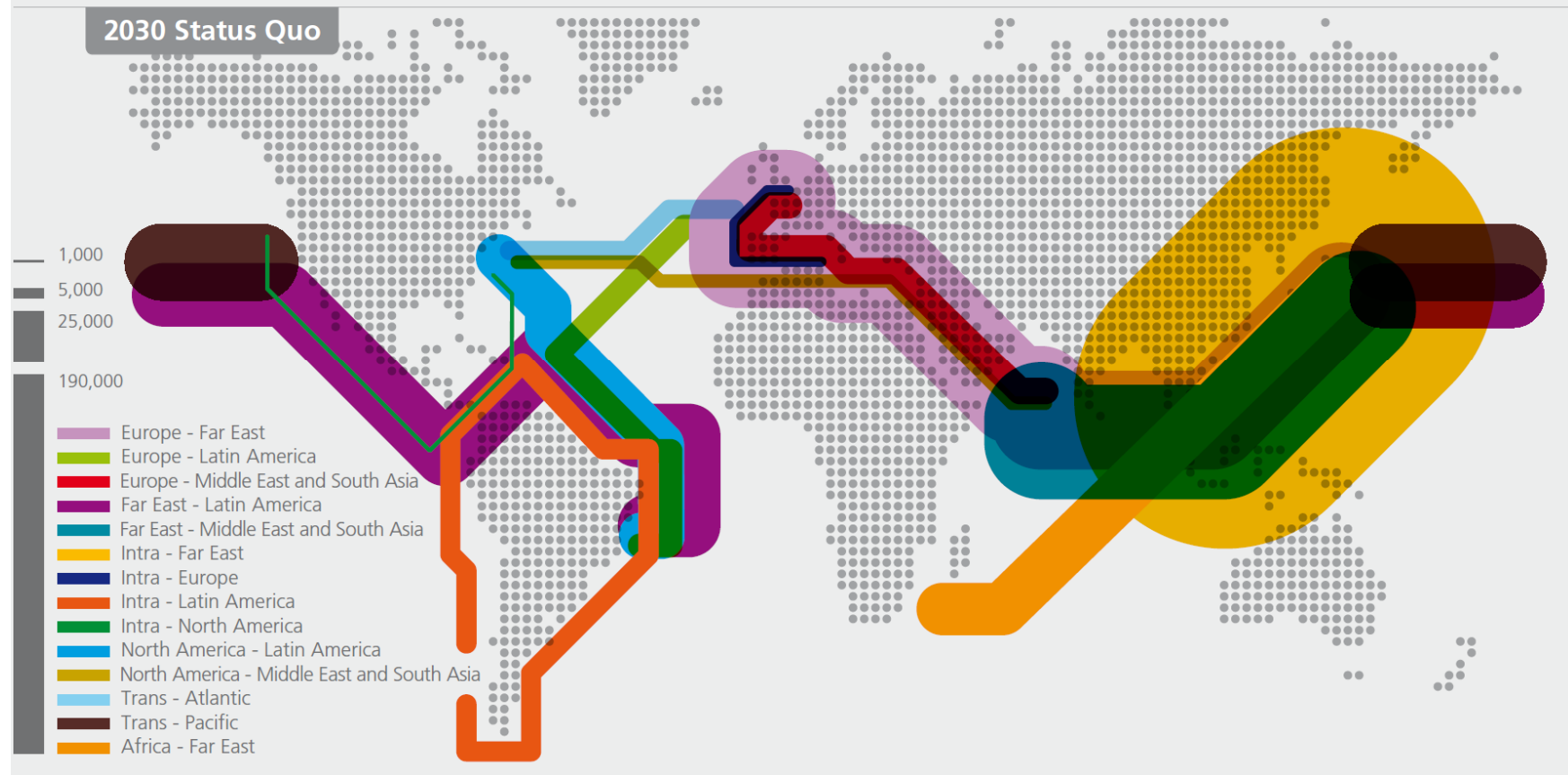


Threats & Opportunities



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Fig. 62 Seaborne Container trade 2030 (thousand TEU)
Source: MSI / LR



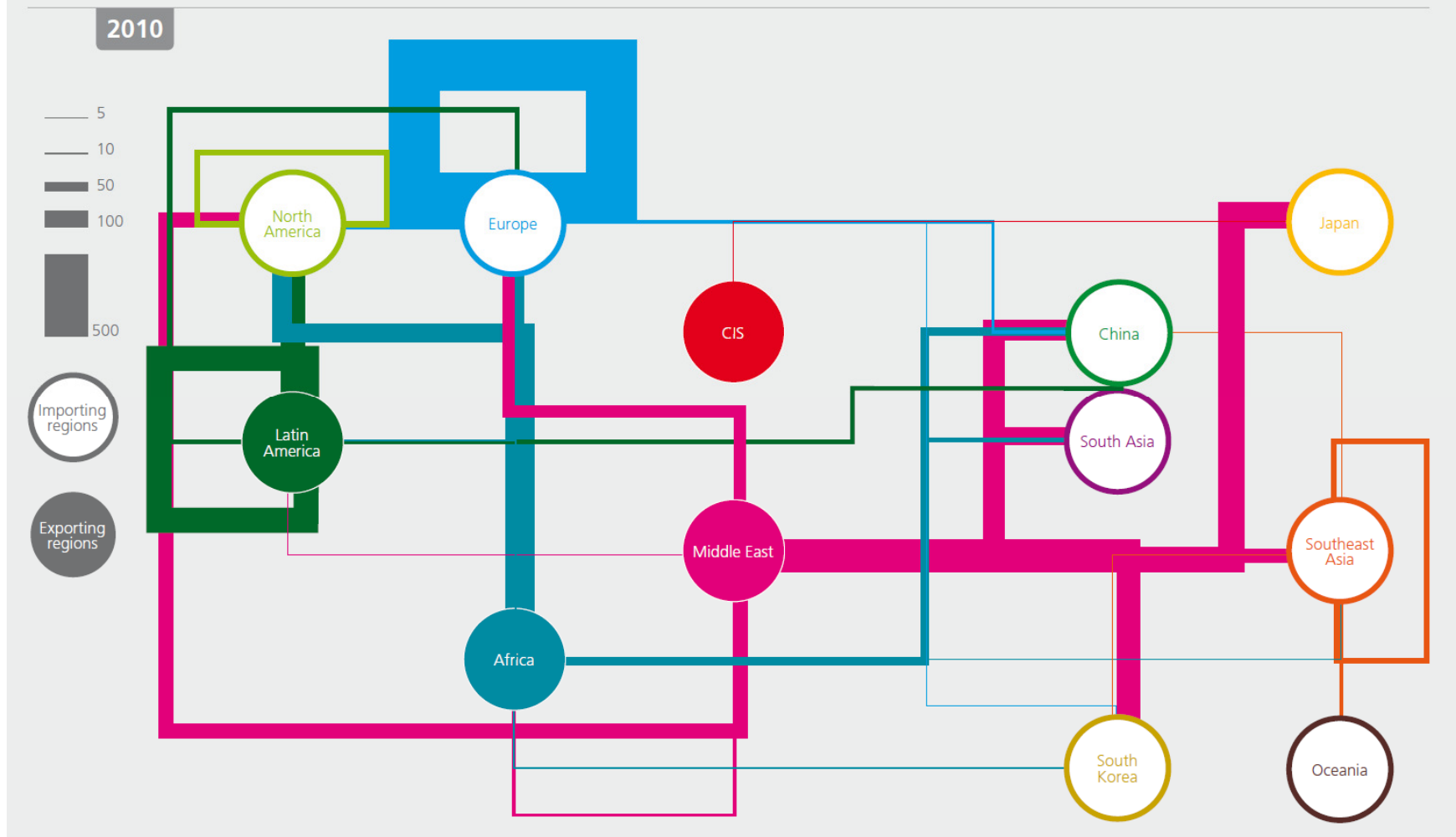
Threats & Opportunities



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Fig. 39 Crude Oil seaborne trade 2010 (million tonnes)

Source: MSI / LR



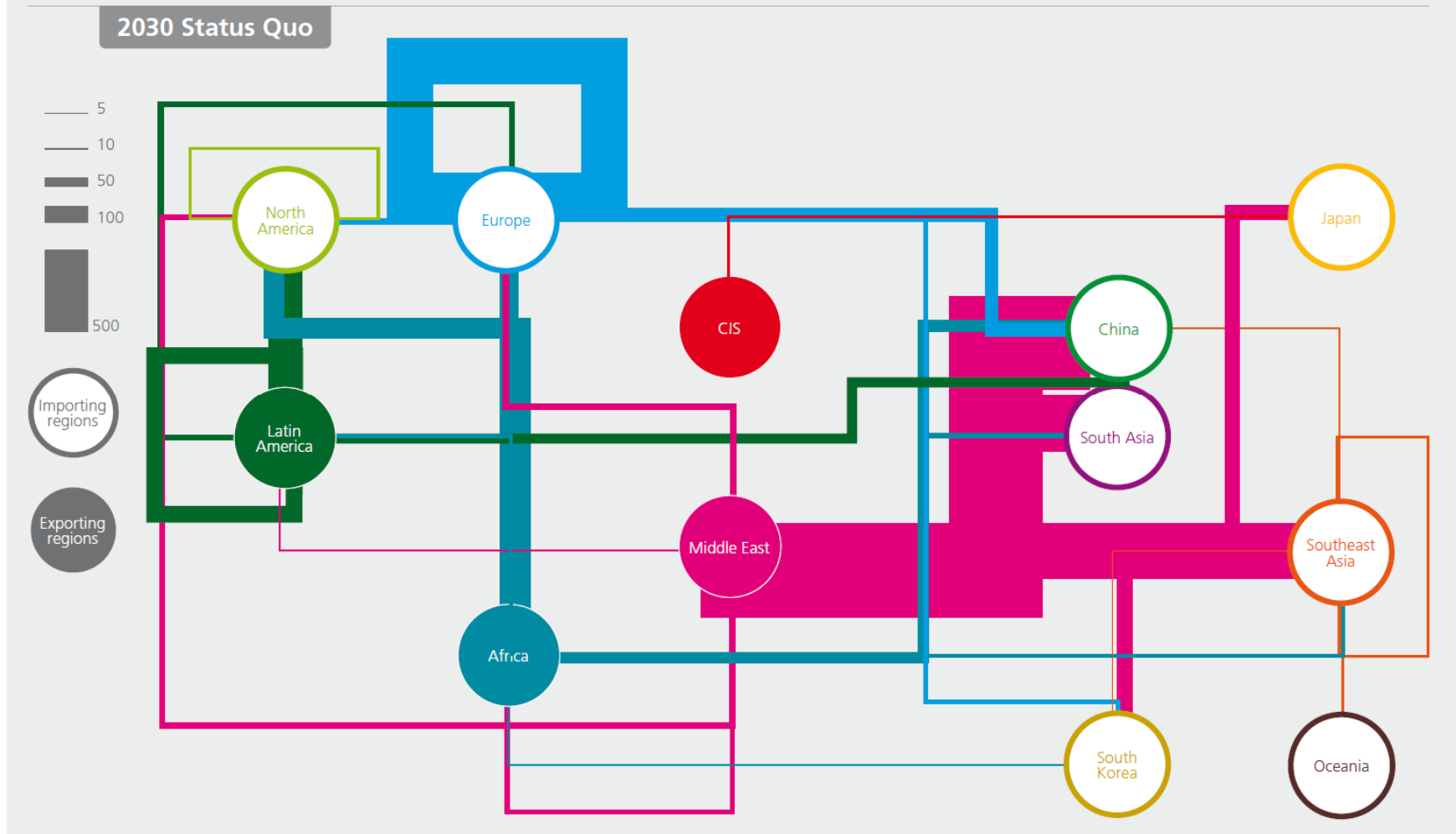
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Fig. 40 Crude Oil seaborne trade 2030 (million tonnes)

Source: MSI / LR

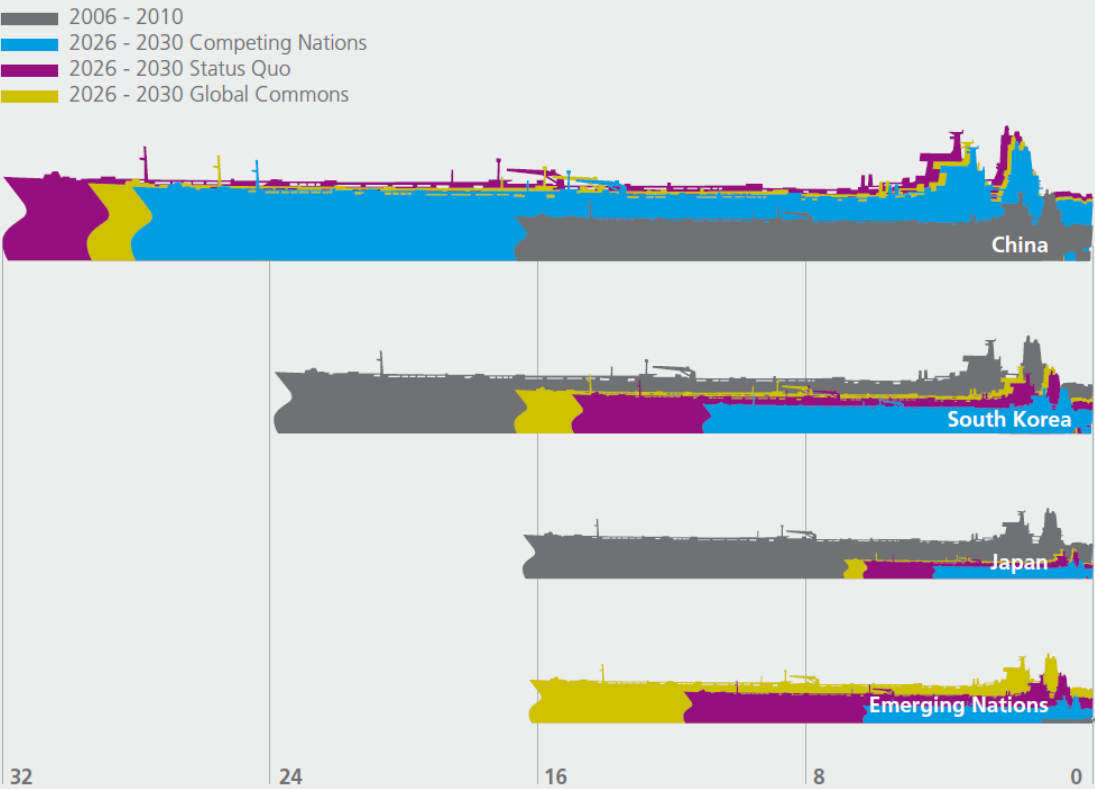


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Fig. 72 Bulk Carrier, Tanker, LNG, Containership (million GT)
Source: MSI / LR

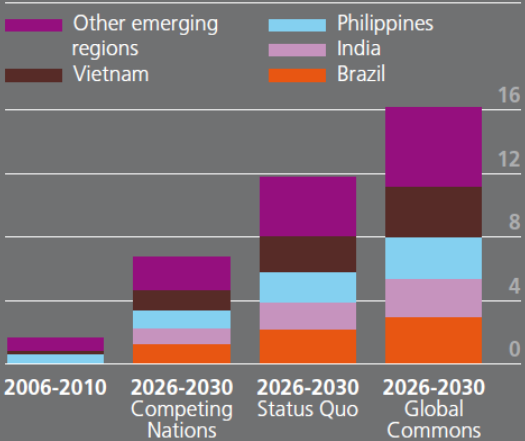


Emerging countries

The total deliveries from the emerging countries will increase. Vietnam, Brazil, India, and Philippines will be the potential leaders.

Brazil and India will see the largest percentage increase, while Vietnam will gain the largest volume. However, their individual deliveries will remain significantly smaller than those from China or South Korea in 2030.

Fig. 73 Emerging countries newbuilding delivery (million GT)
Source: MSI / LR



Threats & Opportunities

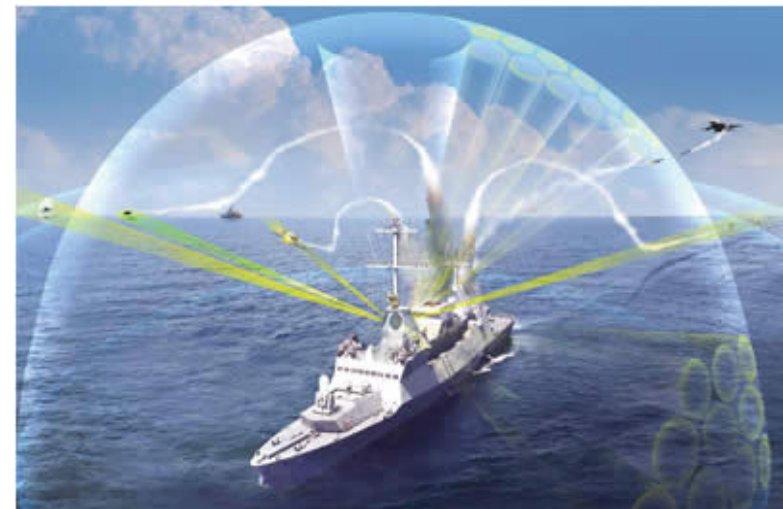
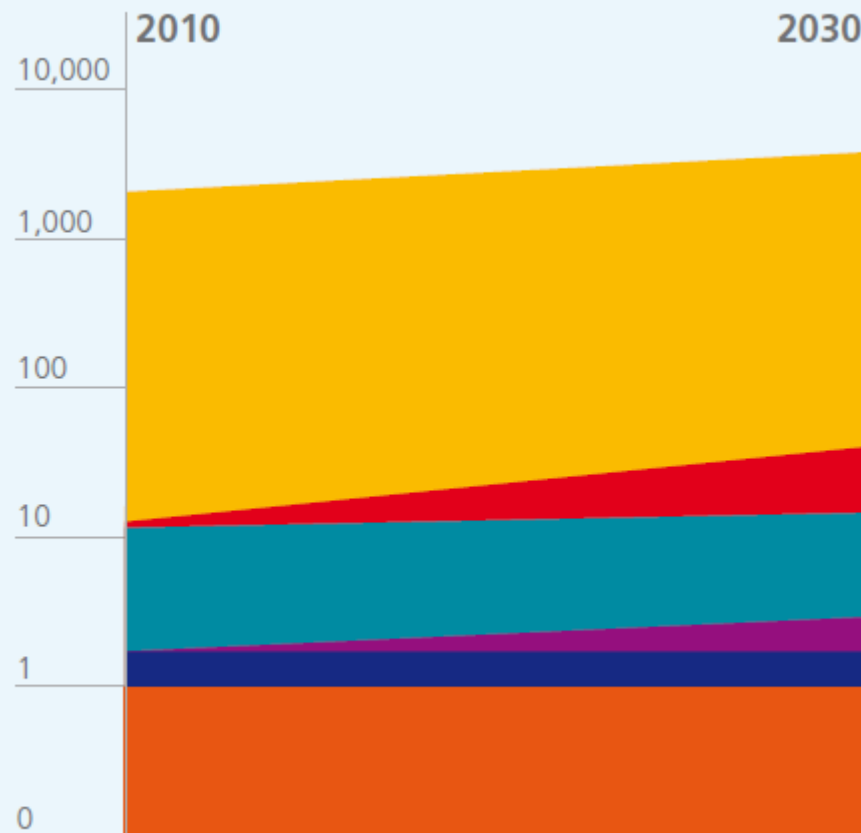


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Fig. 90 Naval Power Index 2030 (in log scale)

Source: QinetiQ

USA China Russia Japan India UK



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2030 Future naval systems

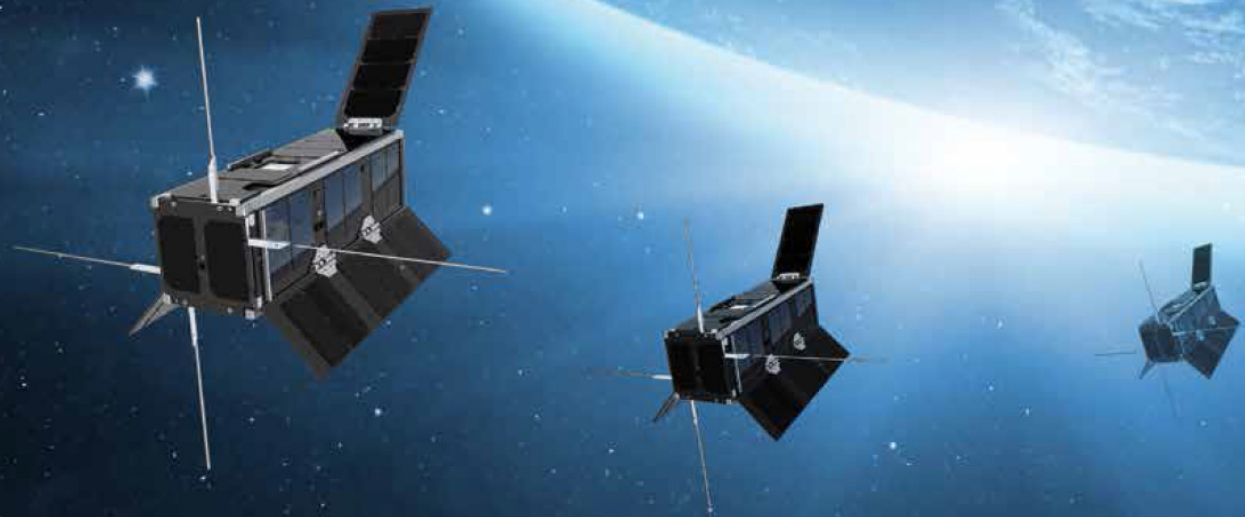


Fig. 96 Technology readiness level 2010
Source: QinetiQ



Threats & Opportunities



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Floating platforms oil and gas platforms

270 Total platforms in 2010

Fig. 100 Number of floating platforms

Source: University of Strathclyde

2010



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Floating platforms oil and gas platforms

618 Total platforms in 2030

Fig.101 Number of floating platforms

Source: University of Strathclyde

2030



Threats & Opportunities



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Offshore wind turbines

100 times more offshore wind turbines

Fig.103 Number of offshore wind turbines

Source: University of Strathclyde

2010



Threats & Opportunities



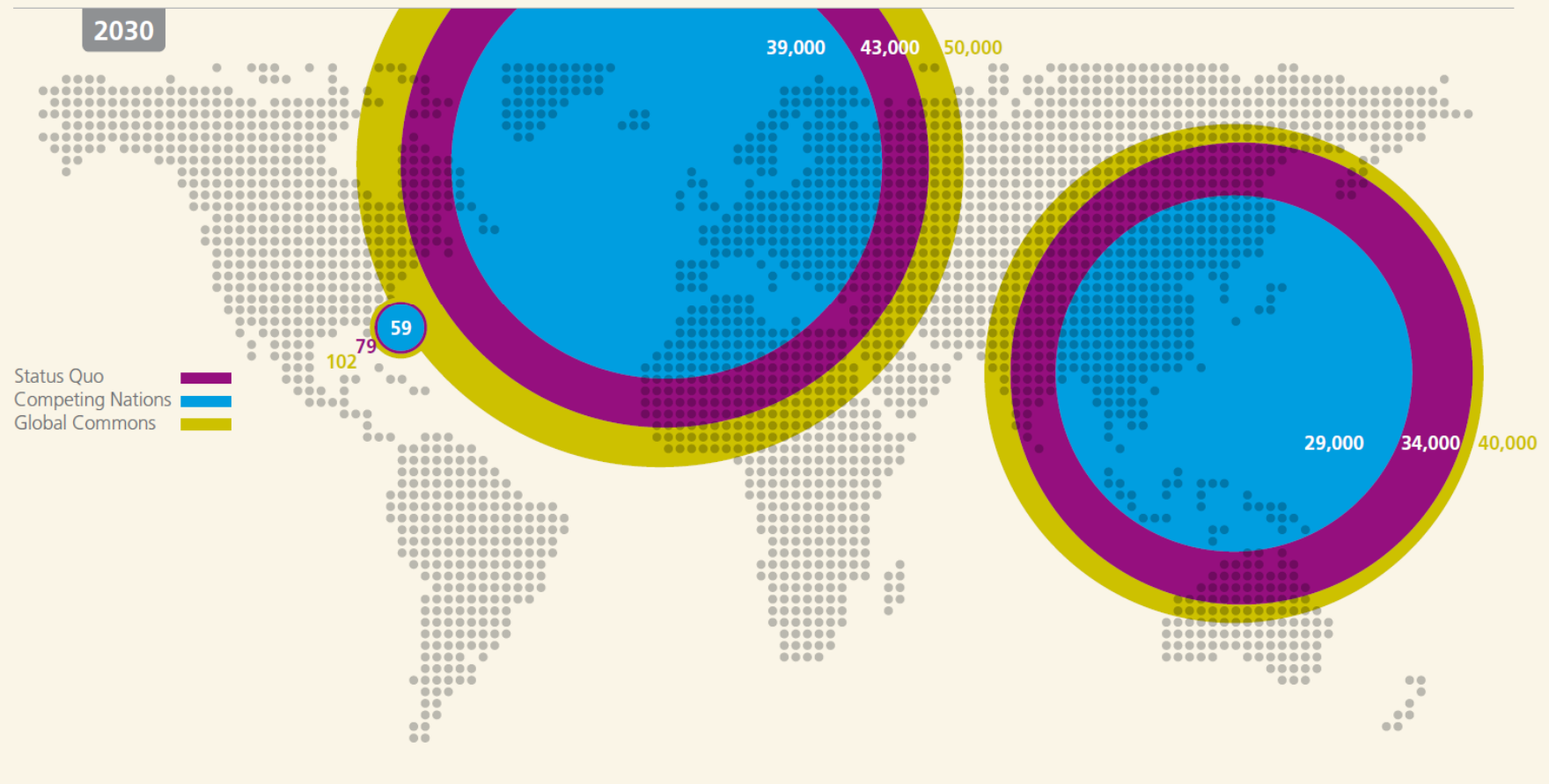
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Offshore wind turbines

More than 65,000 wind turbines are required to provide more than 226,000Mw of wind capacity in 2030

Fig.104 Number of offshore wind turbines

Source: University of Strathclyde



So what?

Reasonable information to support a positive future

Is there anything special about Scottish Maritime Professionals?

What's our value proposition?

If survival is likely, how can we maximise outcomes.

A future for maritime professionals



Sustainable future demand

- customers needs
- next generation maritime technologies and value propositions
- Vision
- empowering trade associations and institutions

Supply of maritime professionals

- conquer ignorance
- encourage proto-engineers and women to join us
- publicise our heroes

Professionals + business + academics + Government

Thank you



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Global Marine Trends 2030

<http://www.lr.org/en/marine/projects/global-marine-trends-2030.aspx>