

Adding value to the UK economy from marine science and technology

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71% of Earth's surface

99% by volume of the biosphere

97% of water on Earth

93% of excess heat absorbed

90% mobile carbon on Earth

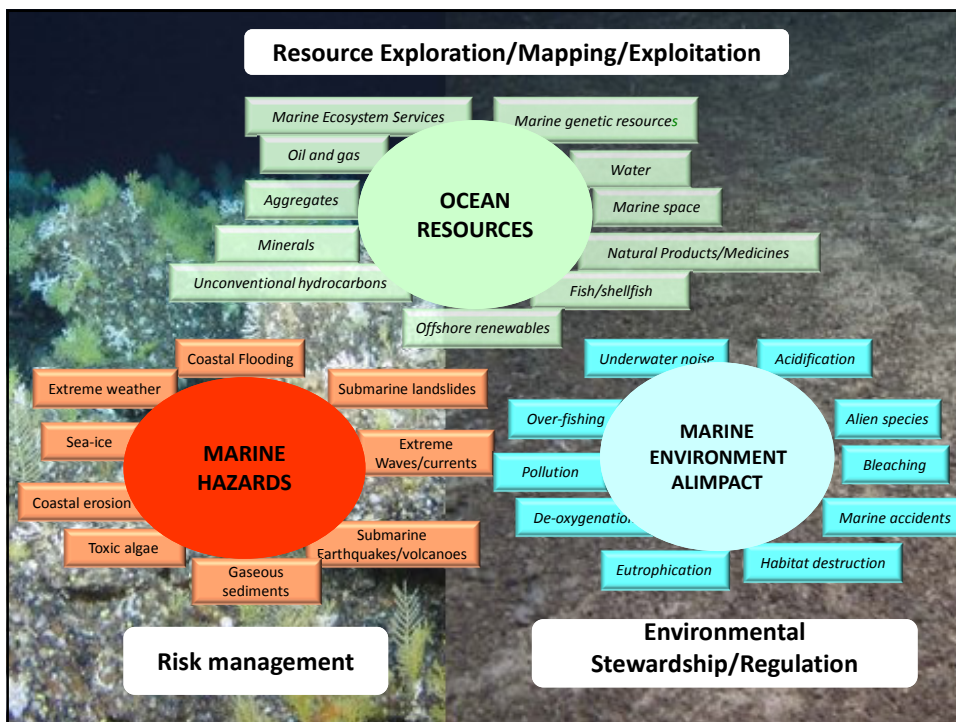
50% of the oxygen we breath

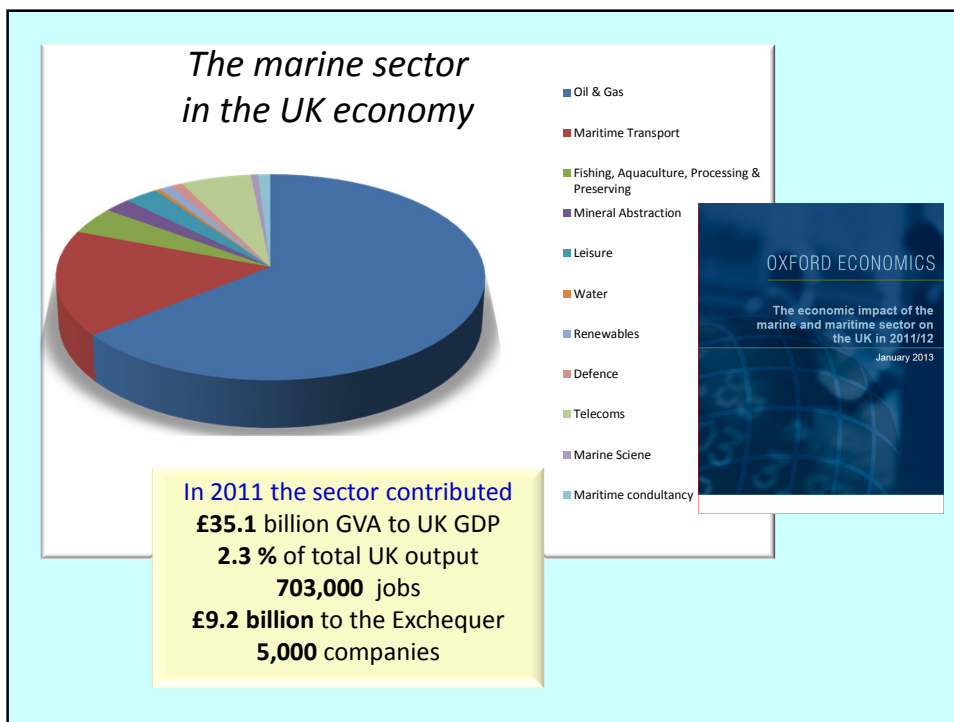
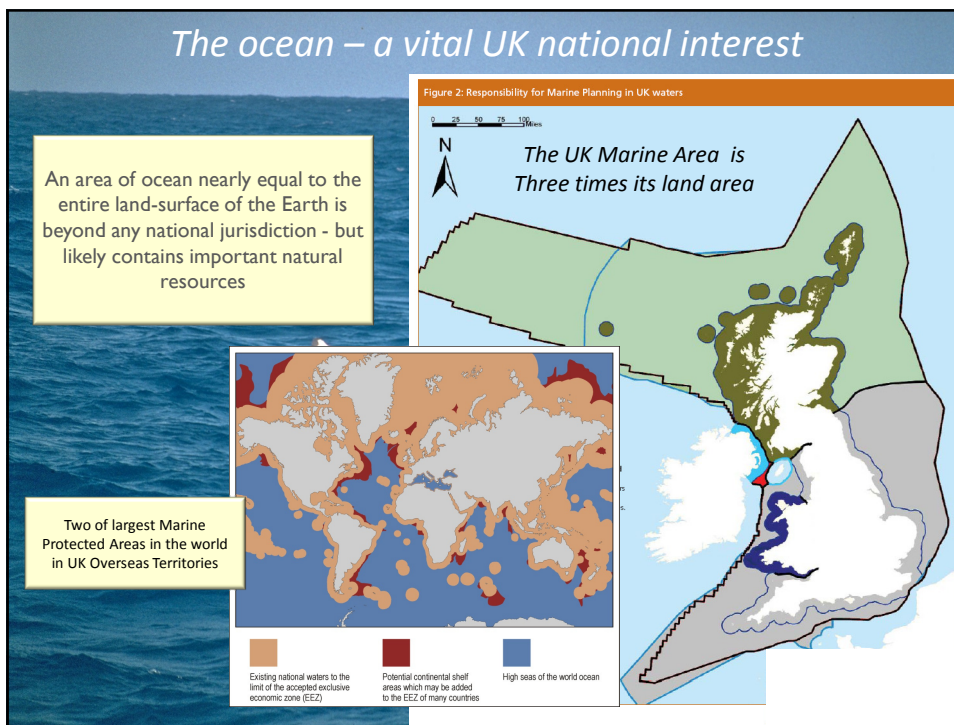
50% species on Earth

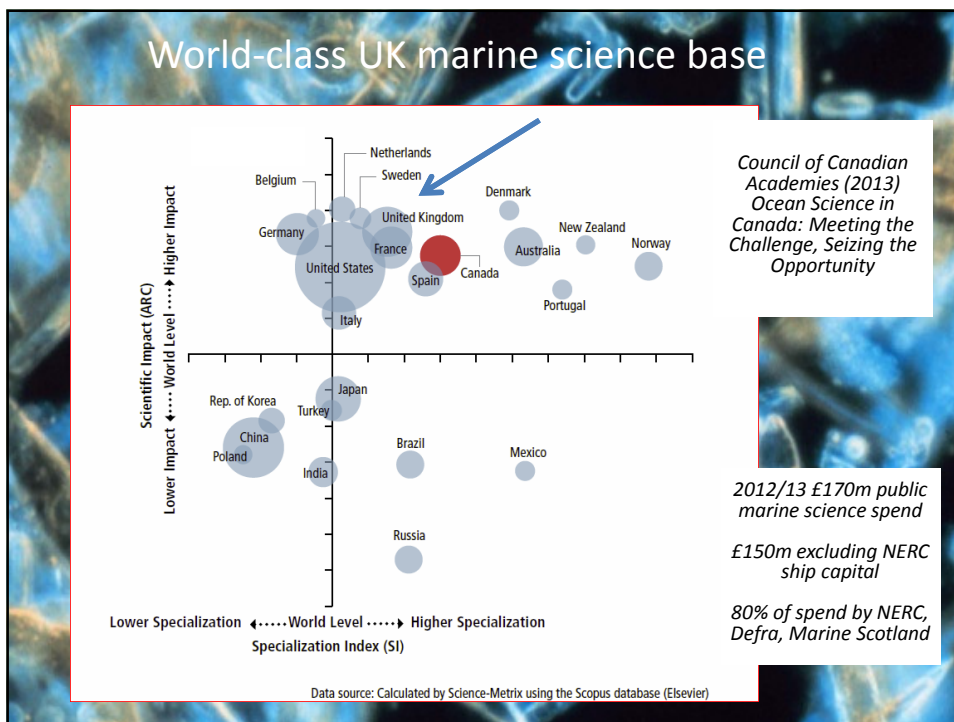
50% of specimens below 3km depth
from previously un-described species

30% carbon dioxide emissions absorbed

14 phyla found only in ocean

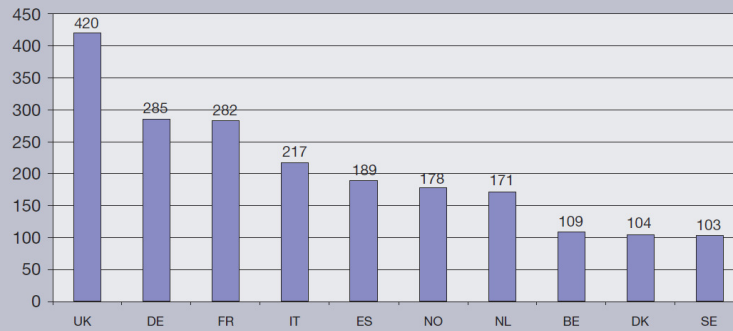






UK marine science is very competitive in Europe and highly collaborative internationally

Breakdown of countries with the highest number of participations in marine-related proposals selected for funding in 2007-2008



European Commission (2010):
Analysis and inventory of FP7 marine related proposals

World-class marine research infrastructure



RRS Discovery

£120 million capital investment in Global-class Research Ships



ISIS Remotely Operated Vehicle



RRS James Cook

Discovery of the World's deepest and hottest hydrothermal vents at 5km depth

Hydrothermal vent fields and chemosynthetic biota on the world's deepest seafloor spreading centre

Diaglaia P. Connelly, Jonathan T. Copley, Bradley J. Merton, Kate Stanfield, Paul A. Tyler, Christopher R. German, Cindy L. Van Dover, Dina Amos, Maarten Furlong, Penny Girdley, Nicholas Hayman, Neil Hübnerich, Mark Judge, Tim Le Bas, Stephen Mitchell, Alexandra Mørk, Pascale Mourou, Verity Pua, Mike Peabody, Bill S. Peterson et al.

Nature Communications 3, Article number: 625 (2012) | doi:10.1038/ncomms1636

Deepest undersea vents discovered by UK team

By David Shukman
Science editor, BBC News

21 February 2013 Last updated at 07:53

NERC
SCIENCE OF THE ENVIRONMENT

THE AUTOSUB3 Pine Island Glacier Ice shelf Campaign

8 missions (2 test)

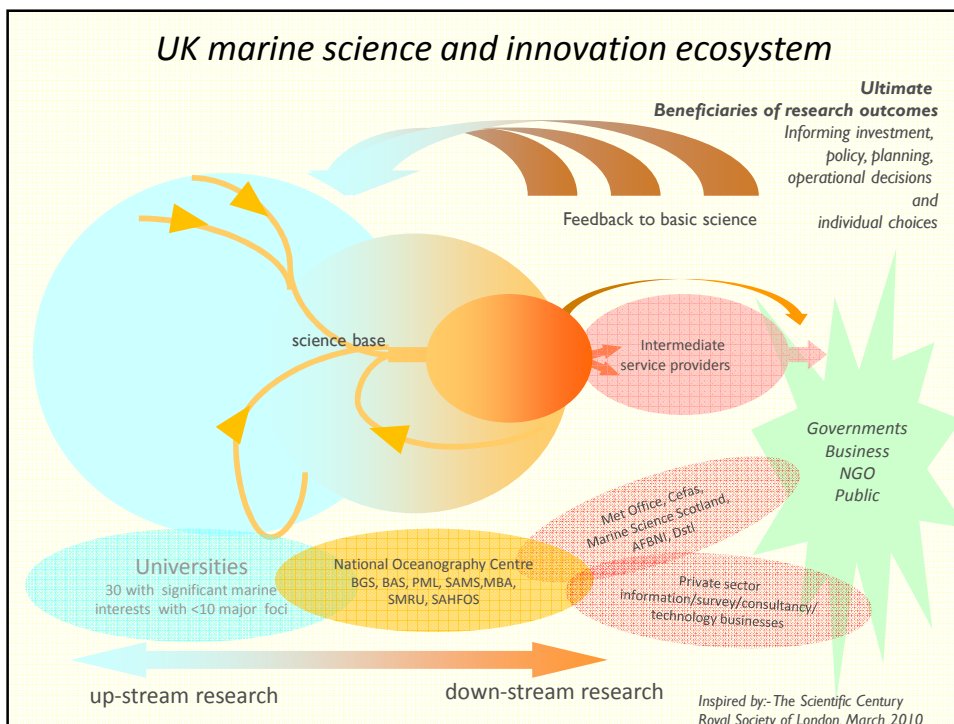
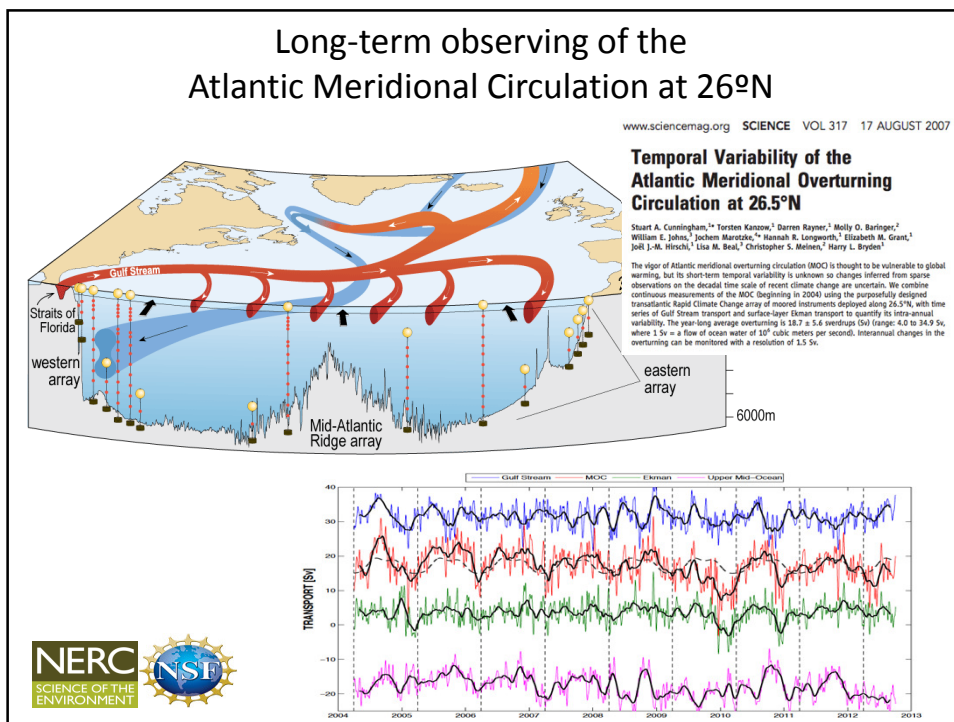
Longest 60 km

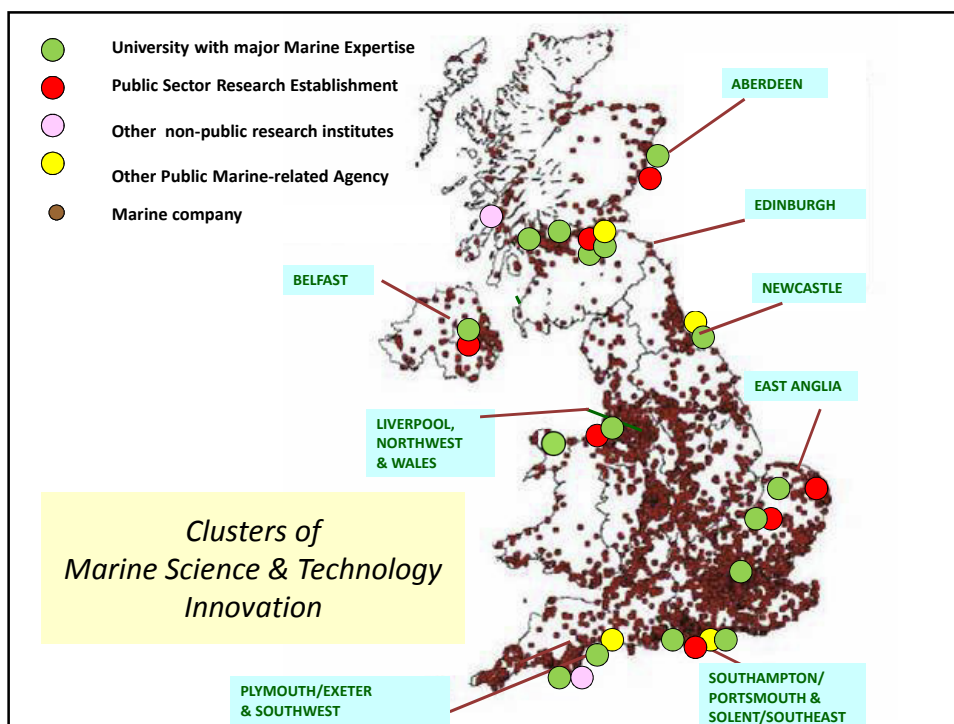
Total 4 days and 510 km run under the ice shelf

Pine Island Glacier

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NSF





Marine Industries Liaison Group Review 2013

Marine Science Coordination Committee

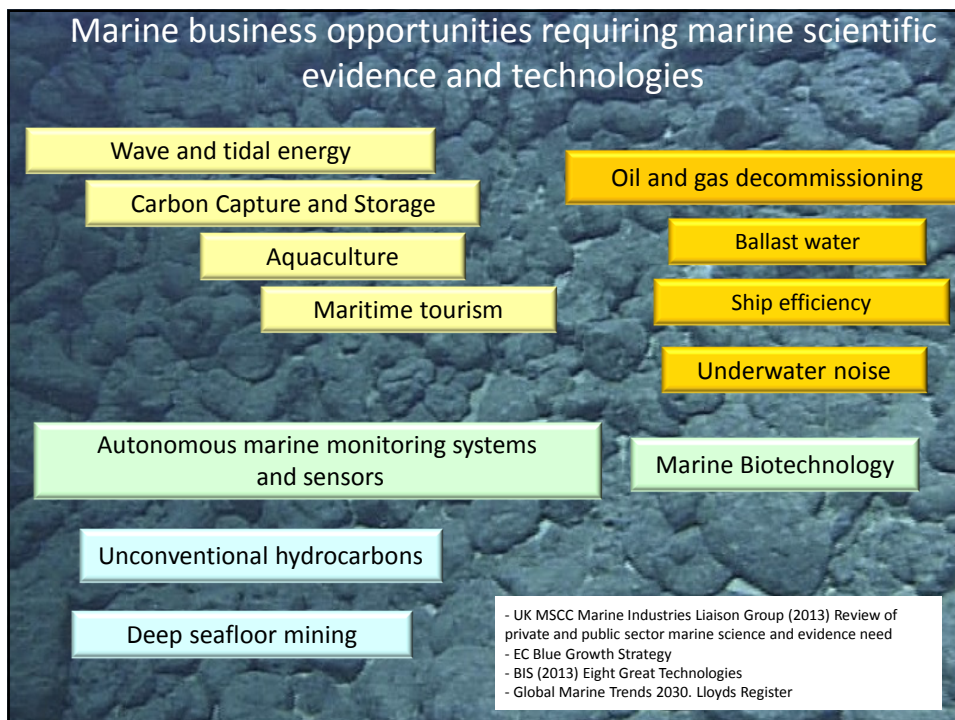
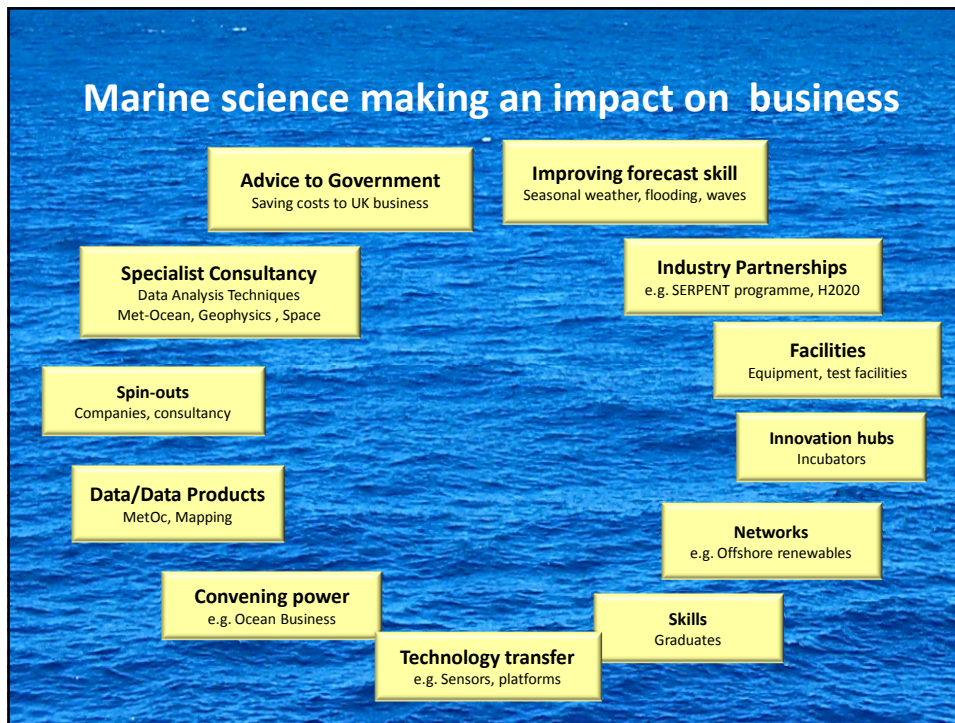
Time of **growth and confidence** in marine industries sector

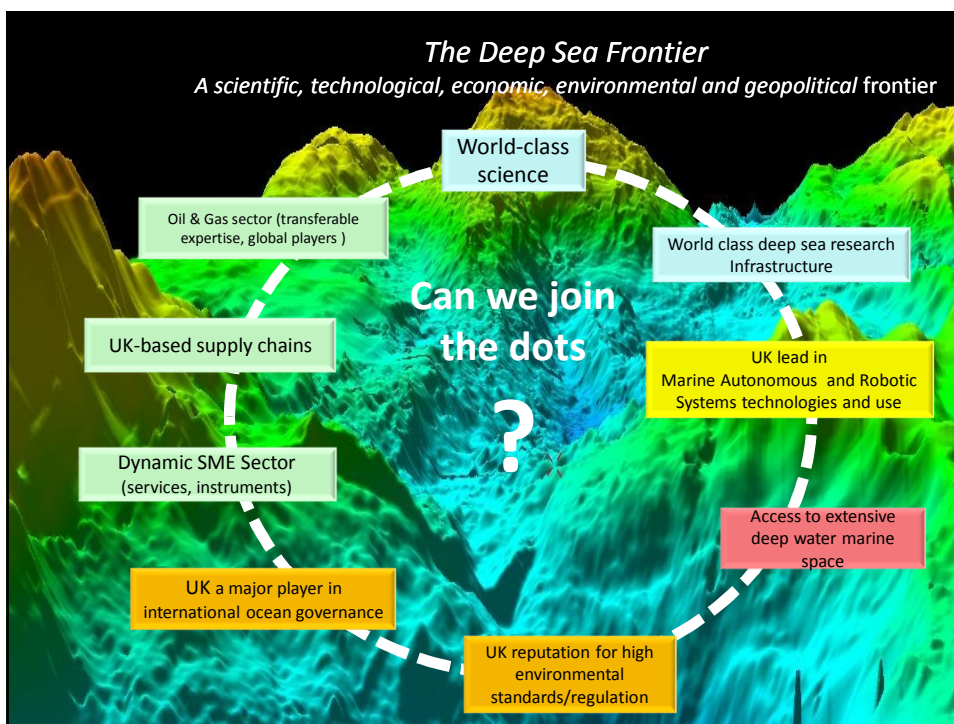
There are **common needs** between public and private consumers of marine science
 e.g. Seabed and habitat mapping, hydrographic and geophysical surveys, marine monitoring, modelling, remote sensing, instrumentation

Blue skies research important - but more focus needed on (strategic) applied scientific evidence needs with a **longer term view** – horizon scanning

Collaboration between public and private sectors could improve
 (examples of missed opportunities: Argo floats, gliders, offshore wind – other countries viewed as being better at this e.g. USA)

<http://www.defra.gov.uk/mscc/files/MILG-marine-science-needs-and-capability-study.pdf>





Actions

Strengthen the marine research ecosystem
 Follow through on research infrastructure capital investments
 Nurture marine innovation clusters

A longer-term, rounded strategic view of the opportunities
 Horizon scan with wide engagement - Science, Government, Industry

The Deep Sea frontier – think big, think ahead, join the dots
 How about a real commitment to our ocean future - mapping the
 UK's seafloor with modern methods as a UK big data asset

Britain and the sea ?

