

Future-proofing navies for an uncertain future

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The Problem: Dealing With Future

- **General George C. Marshall, 1938**

With us, geographic location and the international situation make it literally impossible to find definite answers for such questions as : who will be our enemy in the next war; in what theatre of operations will it be fought ; and what will be our national objective at the time

The Military Problem

- **Long acquisition times for military equipment**
- **Long service lives for major units**
- **Finite budgets**

Sources of Radical Change

- **Political and Economic Change.**

Coping with a Surprising Future

- **Developing cooperative capabilities**
- **Developing competitive capabilities ?**

Cooperative Naval Roles:

- **Maintaining Sea Control and the Capacity to Manoeuvre**
- **Expeditionary Operations**
- **HADR**
- **Inclusive Maritime Security.**
- **Cooperative Naval Diplomacy.**

Competitive Naval Roles:

- **Maintaining Sea Control and the Capacity to Manoeuvre**
- **Nuclear Deterrence**
- **Ballistic Missile Defence**
- **Maritime Power Projection**
- **Exclusive Maritime Security.**
- **Competitive Naval Diplomacy.**

Sources of Radical Change

- **Technological change**

Technology Readiness Level 2030

Information, communication and weapons systems will be substantially more capable in 2030. Remote operation will have increased, and cyberspace will be the new battleground. Artificial intelligence will support, or deliver, naval capability. Governance of automated systems will be a key issue.

Directed energy weapons will have matured. Autonomous, self-firing systems and multiple low cost systems will enhance naval reliability.



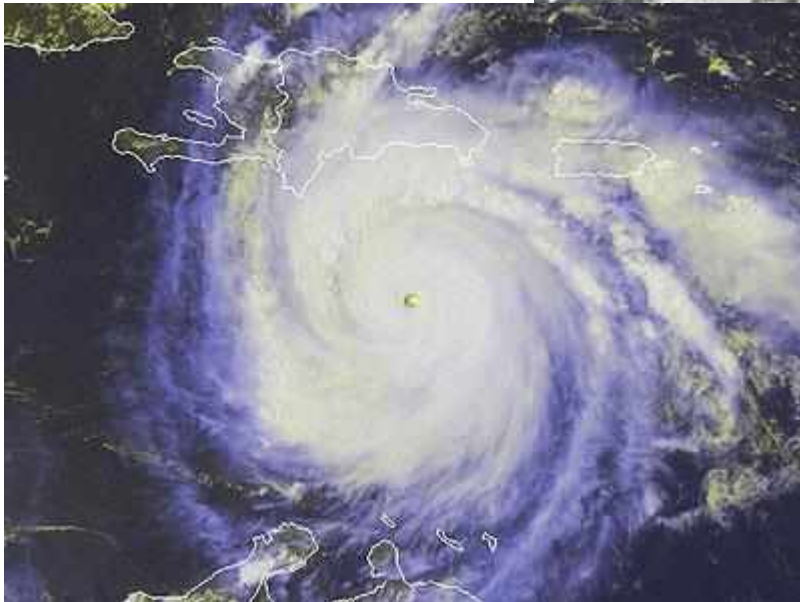
Fig. 97 Technology readiness level 2030

Source: Dstl





Environment & Resources



Probably Worse Than it Was Before ?

- **Rapid and Radical International Change**
- **Failing Governments**
- **Terrorism and Globalised Crime**

Probably Worse Than it Was Before ?

- The widening of security
- The widening of the spectrum of possibility

Trend analysis and the no-surprise future

Population & Demographics

Fig. 6 The 10 most populous countries/regions in 2030 (thousands)

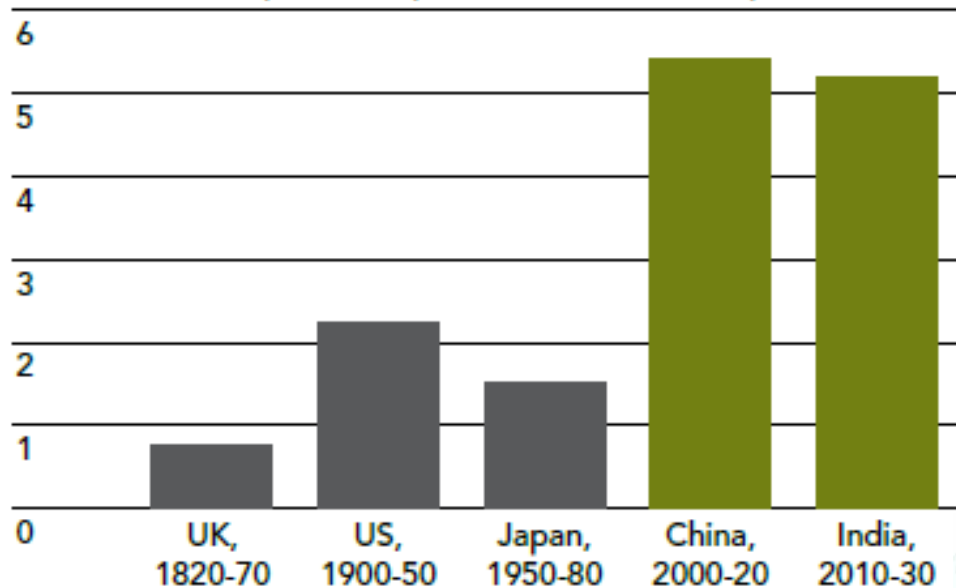
Source: UN 1.58

2030

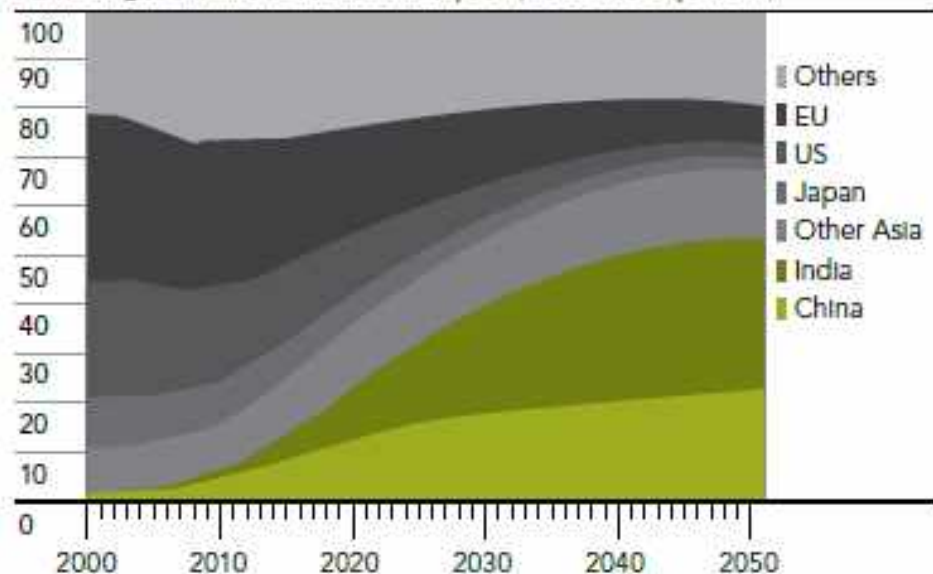


Economy, Globalisation & Power

Average Increase in percentage point share of global GDP, per decade



Share of global middle-class consumption, 2000-2050 (percent)



Trend Analysis : some problems

- **Measurement**
- **Coping with variation**
- **Unexpected events**

The Surprise Future



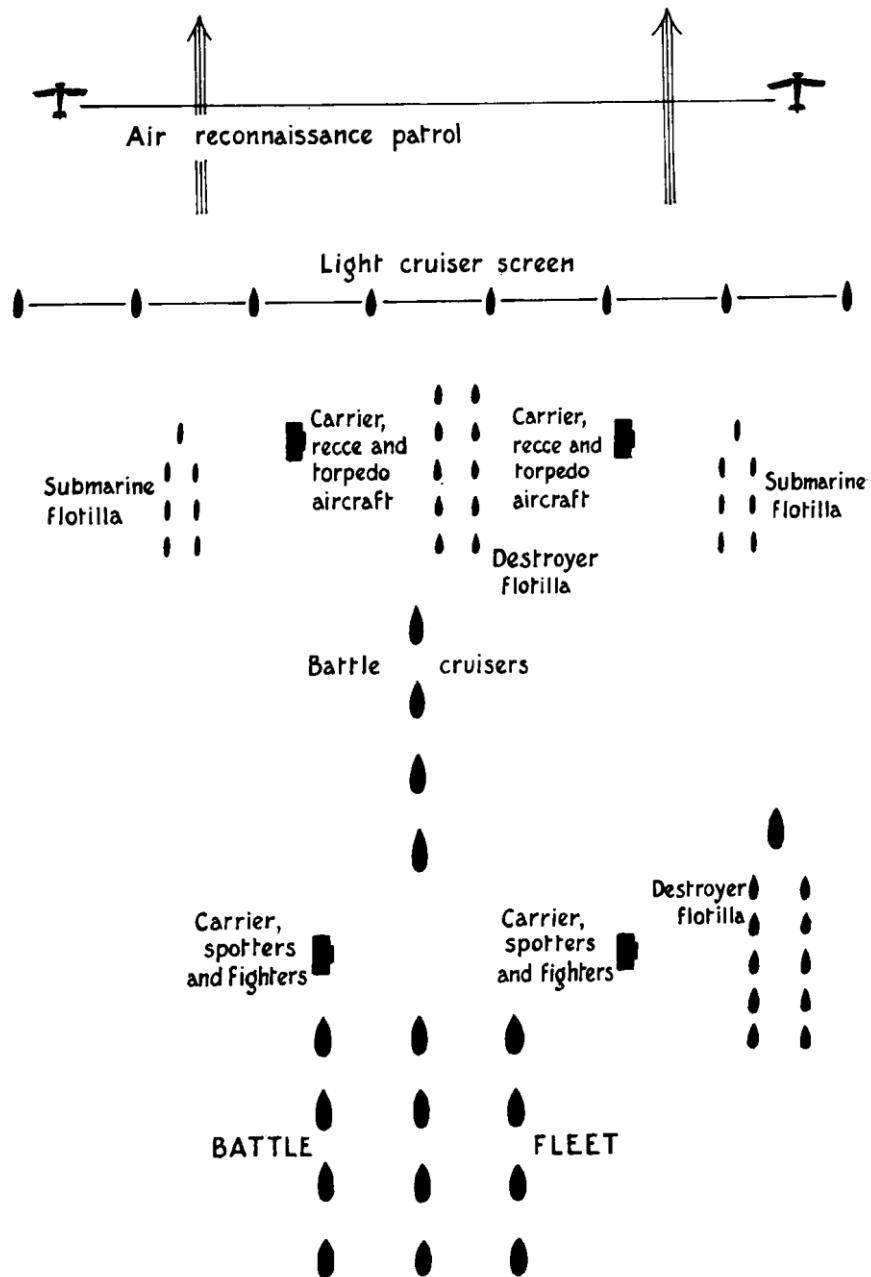




Designing a Versatile Fleet ?

- **For adversaries, situations or capabilities ?**
- **Multipurpose ships.....**
- **....or multipurpose, balanced fleets ?**

BATTLEFLEET IN TYPICAL CRUISING DISPOSITION, 1924



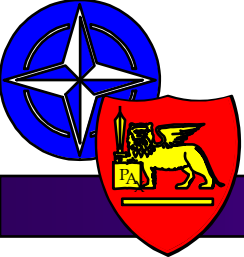


Designing a Versatile Fleet ?

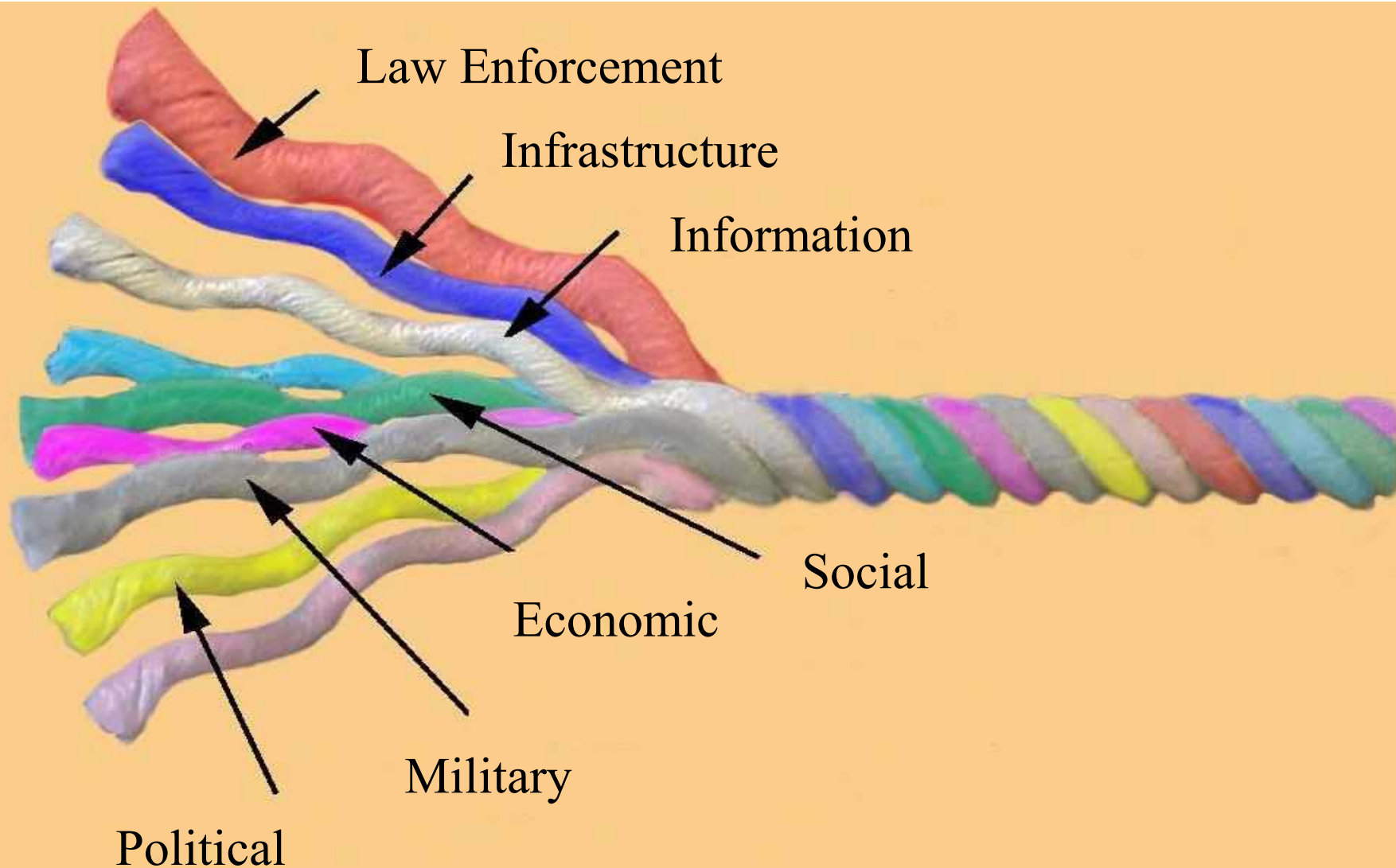
- **Unmanned systems and other solutions ?**
- **Reversing trends by reforming acquisition ?**

Naval Requirements ?

- **Accepting the requirements of choice**
- **Supporting the direction of travel**
- **Thinking holistically**



THE COMPREHENSIVE APPROACH



Future – Proofing: Six Approaches

- **Sustaining the maritime approach.**
- **Selling the Sea**
- **Strategic patience**

Future – Proofing: Six Approaches

- **Identifying and resourcing clear priorities**
- **Cost -effective acquisition**
- **Cost- effective fleet management**

Conclusions ?