The Current Funding Model - strengths weaknesses - for and against

Coastal Futures

Marine Information Issues and Responses

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Introduction

- The need for sharing
- Public Good
- Financial basis for access to public data/information
- The economic benefits of different access models
- Some non-economic implications of charging for access to public data/information
- The case for and against open unrestricted access

The need for sharing

- Isolated environmental data/information is of limited use
- Benefits increase with merging with other data sets to increase spatial/temporal coverage, permit better understanding of impacts etc
- The case for sharing to increase utility is strong at all scales from local to global
- Attaching a commercial value to environmental data/information generally inhibits sharing and reduces the wider benefits
- This is widely recognised and is the reason for introducing legislation that encourages open, interoperable and unrestricted pooling of data and information about the environment, eg Aarhus Treaty, INSPIRE etc

Private Sector Sharing

- The private sector increasingly recognises the benefits of open exchange of data and information critical to safety and environmental protection

Private Sector Sharing

Pooling of weather and seastate information in the North Sea

- Network of observations made by different operators used to provide information products for common use
- Data and information passed to national governmental organisations (eg UK Met Office) as contribution to wider public good

COWRIE Collaborative Offshore Windfarm research into the Environment

- "The most exciting challenge for COWRIE is to develop a system and plan that will bring together all the environmental data and information collected by each developer during site investigations. Developers are required to give this data to The Crown Estate. They have asked COWRIE to provide a system that will look after and manage the data and make it available to all interest groups."

Private Sector Sharing

Oceanographic measurements in the Gulf of Mexico

- All observations made by operators are merged through NOAA NDBC to provide a freely accessible quality controlled real-time and historical data

SIMORC – Making archived oceanographic information held by the oil and gas industry available for general use

- The SIMORC project aims to make the extensive archive of worldwide oceanographic observations made by the oil and gas industry openly and freely available for secondary use by the wider community

A New Public Sector UK model ?

A Sea Change A Marine Bill White Paper

- 8.89 We will expect the MMO to work closely with MDIP and MEDAG to contribute to a culture of sharing, circulation and reuse of data……Implicit within this is the need to maintain a network of DACs…
- 8.90 ..it is essential that the MMO can make relevant information freely available……It may need to make a reasonable charge for making some information available.

HoC S&TC Investigating the Oceans

- P86 "We further recommend that [the MMO]….facilitate the release of data…..to maximise its value to the community at large"

Public Good

- A commodity or service that is provided, without cost, to all members of a society
- A good that costs little or nothing for an extra individual to enjoy and where the costs of preventing any individual from that enjoyment are high; public goods have the properties of nonrivalrous consumption and nonexcludability
- A good that generates a social benefit that everyone can enjoy and that no one can be deprived of

Information for Public Good

- Revenue from taxes is used to support collection of environmental data to support public good
- Data used to generate information to ensure safety of life and property, for protection of the environment and for monitor compliance with national/international legal obligations
- A wide variety of marine data are collected for public good purposes; meteorological, oceanographic, ecological, bathymetric, geological etc

Data/information for Public Good

- Public Good environmental data/information is generally retained for future use
- Good custodianship has proven benefits in terms of future (often unanticipated) use
- In a digital age data/information interoperability between agencies and between nations can deliver wider public good benefits (INSPIRE, GMES, GOOS, GEOSS)

Data/information for Public Good

- Should access to these public data/information assets be charged for?
- Should charging be differential depending on nature of use?
- Should basis of charging preclude reuse for another purpose?

Access to public good data and information

- A number of models have evolved for determining the cost basis upon which public good data and information may be accessed
  - Free of charge
  - At marginal cost (cost of producing one additional 'unit', – generally equates to cost of retrieval for digital data)
  - At cost of retrieval (generally falling to near zero for digital data/information)
  - At market/commercial rates
- USA and UK generally regarded as at opposite extremes in terms of access policy

US Model

- US Government Departments/Agencies are precluded from engaging in commercial activity by law in accordance with the US Constitution
- US policy combines a strong freedom of information law, no government copyright, fees limited to recouping the cost of dissemination (ie marginal cost) and no restrictions on reuse

UK model

- Trading Funds established to seek to offset costs of tax funding for public goods through sale of public data/information and derived information products at market value eg UK Met Office, UK Hydrographic Office, Ordnance Survey
- Outside of Trading Funds general UK policy (post the 2000 Baker review) is one of marginal cost access

Rest of Europe

- Mix of policies:
  - Provided free – eg Dutch/Finnish Met data
  - Sold at market value – eg Deutscher Wetterdienst
  - Sold at mix of market value/marginal cost – eg ECMWF, ESA
  - Not made available – eg French met data

Economic comparison of models

- A number of studies have considered the effectiveness of different models in respect of secondary exploitation of Public Sector Information
  - Commercial exploitation of Europe's public sector information, European Commission, 2001
  - Borders in Cyberspace: conflicting public sector information policies and their economic impacts, NOAA, 2002
  - Achieving optimum value from publicly funded marine information sources, UKMIC, 2003

Summary Conclusions of Studies

- That semi-monopolistic market value trading by state bodies greatly reduces the secondary use of public data/information
- That returns to the tax payer from such activity are likely to be substantially less that would be achieved in an environment of free and unrestricted use
- That commercial use within public bodies is less innovative than in the private sector

Returns to the tax payer

- The MIC study demonstrated that returns to the tax payer from sales of public marine data have been small (with the exception of charts and publications from the UKHO) with **revenue** less than 1% of overall operating costs for the organisations concerned

Returns to the tax payer

- No comprehensive evaluation of returns form sale of public data/information has been conducted since the 2003 MIC study
- Returns cannot easily be determined from published accounts which mix true external trading with trading within government (a zero sum game)
- Commercial profit cannot easily be determined as cost of sales associated with commercial revenue hard to separate
- Evidence indicates that profit generation through Trading Fund sales of public data/information has, at best, remained static

Other impacts of access restrictions

- Access restrictions for commercial reasons can have unintended consequences for:
  - Effective national, international and global exchange of data/information for meeting national, international and global public good needs
  - The scientific integrity and independence of public bodies

National/International exchange of data/information

- Increasingly safety and environmental issues demand access to cross departmental/multinational/global public data/information
  - Response to major spills
  - Coastal zone management
  - Prevention of coastal flooding
  - Natural disaster prediction and response (eg tsunamis and cyclones/hurricanes)
  - Understanding and predicting climate change
  - etc

Implications of commercial trading by UK Government bodies

- Present policies can inhibit realising the benefits of national/international integration of data/information assets:
  - Compromises what can be delivered in terms of inter-agency working (IACMST in Select Committee Report)
  - Makes international data/information exchange exceptionally complex (license agreements, need to impose restrictions on subsequent use etc)
  - Makes formulating international agreements seeking vital public good benefits difficult, eg UK position on INSPIRE

Implications of commercial trading by UK Government bodies

- Can create false expectations of potential returns leading to net reduction in funding of key public good data collection/information generation
- Creates a false expectation of the rewards of trading public data/information leading to other nations seeking to restrict international exchange for public good purposes (eg recent statement in US and restrictions starting to be placed by Chinese public bodies)

Scientific Integrity and Independence

- Public bodies have a critical role as sources of independent unbiased data and information of the highest integrity
- Mixing public good objectives and commercial imperatives can compromise this position

Positive Implications

- Proximity to customers improves feedback leading to better public services
- Charging for data/information creates a true contractual relationship with all that this entails in terms of liabilities, fitness for purpose (can be a negative for the supplier!)

The open access model

- Stimulates 'collect once, use many times' by encouraging open exchange between government departments/agencies
- Simplifies open international exchange for global public good
- Fosters the emergence of strong and vibrant secondary commercial use

The open access model

- Has some downsides:
  - Can inhibit development of public good uses which are perceived to undermine private business use (eg Horizon Marine example in US)

Our contention

- Government bodies should concentrate their efforts on meeting critical public good needs
- Secondary use of public good data/information should be positively encouraged by removing barriers to access
- This will effectively foster 'collect once, use many times' goals of UKMMAS

Our contention

- Unrestricted access will foster wider commercial use by niche service providers
- If government so chooses there is nothing to stop government bodies from being shareholders in such enterprises. This would create a level playing field for commercial use (but caution companies can fail as well as succeed – failures cannot be hidden)

Our contention

- Need to persuade government that the public good needs for marine data/information are sufficiently pressing to demand adequate funding from the public purse
- And that free and open access to marine data/information will generate greater tax returns through secondary use than the current trading fund model

You decide