The reuse of psi in EU meteorology – a flawed model

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magnitude of the data: snapshot of the massive amounts of data: all that data has to be transmitted and turned into forecast;
The PSI used for the re-use in European meteorology is different from almost all other PSI:

- Perishes quickly: value lasts for only one day, maybe longer. Then it's useless
- International: only knowing data from 1 country is useless
- competitively exploited by the PSIH

PSI in meteorology – All these data are:

- quickly & easily exchanged in near real time every hour and every day. They are fully discoverable and carry their own meta data
- Data is paid for by public money
- non rival
- but are controlled by the National Meteorological Services (NMHS) and are not non-excludable
- value doesn't change if many people use the data
- essential for commercial value added weather business
- only a small sub-set of this PSI is “free” (as defined by the World Meteorological Organisation Resolution 40 – WMO 40)

Political Influence:

- “Thatcherite” enthusiasm for “private sector efficiency” led to the establishment first of “downstream”, commercial services arms within NMHS and then to the UK Trading Fund/Agency model (1970s -1980s)
  Major weakness: cash paid directly against invoices benefits the Fund/Agency but indirect revenue generated from the market in the wider economy (e.g. from increased tax revenues) does not. This leads to a protectionist approach

The (National) Meteorological Market in Europe: The NMHS is a monopolistic data supplier, it is not transparent and anti competitive. The private sector has to pay for additional:

- Margin
- product dev costs
- fixed costs
- data costs & licenses
- lack of SLA's,

but only a small amount of costumers are willing to pay high price; middling prices: some costumers; Most of the costumers are not willing to pay. The data is for free, but of low quality (newspapers, news, etc.).

Managing the market:
The NMHS saw an opportunity to gain departmental revenue from data sales and to control competition in their markets:

- 1995 they agreed through WMO a sub-set of data that would be made freely available to all (WMO Resolution 40). Excluded vital, regional, high resolution data which could still be sold.
- Many European NMHS joined together to form ECOMET for the central management for re-sale and distribution of data to the private sector. Agreed not to sell each other's data.

The market structure:

- The NMHS now had massive advantages. They held all the data and controlled its availability and price for their "downstream" competitors.
- But Private Sector companies were smaller, had low overheads, were commercially agile and customer focussed. The good ones began to gain business against and from the NMHS

Start of the private market:

- In Europe smart entrepreneurs began to develop application-specific commercial weather services for sectors such as the media, transport, legal and insurance [segment (b)] and competed with the NMHS (1980s). Hampered by lack of basic observational and forecast data
- US (and Japanese) owned companies used the data available free from the US (and Japan).
- European companies developed initially in The Netherlands where data were more readily available
- Some forecasting companies persuaded clients to provide application specific observations (e.g. for winter road weather forecasts).

How expensive is data? Hypothetical examples of companies show that for example road weather in France are more expensive, because you need data from many different countries, however in Poland you can work with polish data only.

In 1999 the private sector formed its own trade association –PRIMET –to work for:

- all data to be released at the marginal cost of re-distribution
- a level competitive playing field

In 2003 the EC produced the first PSI Directive (revised 2013)

- PSI in the areas covered should be "free" to re-users BUT
- PSI Holders can charge re-distribution costs + "a reasonable" proportion of the capital invested, i.e. charge what you can get away with!
- No anti-competitive –practices (such as cross-subsidies) but there is no transparency, so no one can prove fairness
- So, NMHS continue to charge whatever they wish to for data not covered by WMO-40.

Technology has changed the demand for weather services products in recent years.

- The widespread introduction of "weather apps" (a typical re-use of PSI found in many market sectors) has opened up the bottom end of the market – the "two penny market" [segment (c)]
- Helped to compensate for the effects of stagnation in the wider economy

Some things are changing Politics

- Some nations (Holland, Finland, Norway, Sweden, Iceland) no longer charge for data
- Some nations (UK, Germany) have greatly increased the amount of "free" data
- Some data prices have been reduced
- Most (but not all) nations have increased the data available
- Some NMHS (Norway, Germany, Holland Finland) have withdrawn from the retail market

NMHS made some of their data free (but still not all of it – the best data is still very expensive) but still the situation improved; they withdrew form the retail market → result: the market improved a lot and was growing. The private sector has already overtaken

NMHS in market size.

A lost Opportunity

- Although the meteorological market in Europe grew slowly from a very low base, by comparison that in the US grew very fast
- Average overall growth in Europe 1999-2006 5% p.a. (expensive data)
- Average overall growth in USA 1999 – 2006 17% p.a.(free data)

The **US market and the EU market compared** in the year 2006/2007 (outdated, but essentially still the same situation):

- Actualy annual tax revenue:
  - US: 396 mio dollars
  - EU: 147 mio dollars
- Potential annual net additional tax revenue:
  - for EU: 350 mio dollars

What is the Damage? Net loss of money to European economies
Quite a lot of money: "If the European market was as well developed as the US market we might expect that there would be a net gain in revenue accruing to central Treasuries of at least €300m annually" – Pettifer (2009) PSI In European Meteorology –An Unfulfilled Potential Proc 7th EEgov Conference; Prague

There's a Long Way to Go

- Around 35% GDP is affected by weather
- European GDP (2012) = 14085.75 X 109Euro**
- Assume a 1:20 cost/benefit ratio is needed to stimulate product purchase (segments (a) and (b))
- the potential European market size should be ~ 0.35 X 0.05 x 14085.75X109 = 247x109Euro
- current European market penetration therefore: ~306 x 106/247 X 109~ 0.1%

The Model is Flawed

- Although the model maybe stable, possibly even sustainable, it is flawed:
  - It suppresses growth in the sector
  - Stifles entrepreneurial activity
  - Wastes opportunities and wealth
- Change is needed but only political decisions will produce it.