

Spectrum management

A broadcaster's point of view

Catherine Smadja
BBC

A fairy tale...

Once upon a time...

...they had a dream.

If they applied pricing,

or, even better, could run auctions,

everyone would live happily ever after,

spectrum being put to its best use,

in the best of all free markets.

And, for some, the dream became true

- On 27 April 2000,
a very happy Chancellor



received a nice
£22.47bn cheque



i.e. 2.12% GDP

For others

It was a nightmare!

Problem is...

...for the UK PSBs, the nightmare is the reality!

It is all so simple

Spectrum is scarce

=

Spectrum is valuable

=

Spectrum has a price

=

Spectrum must be paid for

There are two ways to charge for spectrum

- The best way is to use **auctions, as auctions allow**
 - To assign the spectrum efficiently;
 - To promote competition;
 - To “realise the full economic value” of spectrum.
- But sometimes, auctions are not possible (spectrum is already allocated), or not desirable (social value, public policy reasons).
- Then, **AIP** replaces auctions as the mechanism to ensure that users are faced with the full value of spectrum. Spectrum managers assess the price the bands would raise in an hypothetical auction and charge this price to existing users.

In this model,
Price is the paramount spectrum
management tool.

- you are ready to pay the highest price =
- you will generate the most value out of the spectrum =
- you will make the most efficient use of spectrum.

Free spectrum should be abolished

- That's so “ last century”
- May be an unlawful state aid
- An incentive to be inefficient
- Unfair to competitors/other users
- A waste of money
- A loss for the economy

In the UK, spectrum currently used by PSBs will be subject to AIP

- Administered Incentive Pricing will apply on already allocated spectrum (For DTT muxes, there is an exemption up to 2014 in consideration of DSO costs)
 - BBC : spectrum pricing does not work for PSBs
- No AIP on analogue tv if DSO timetable is met
 - BBC : OK except if DSO delayed because of external circumstances
- Populated based fees for radio from 2008
 - BBC : costs 1.5m a year. Universality/coverage requirements. Loss of money useful for investing in digital radio
- No AIP on digital radio until 2012
 - BBC : AIP after 2012 might delay Radio DSO

And all available spectrum is being auctioned

- Ofcom has a very extensive spectrum award programme
- The DDR : 128MHz
- But also 660 MHz in other bands.
- 10GHz, 28, 32 and 40 GHz, as well as L-Band awards have been completed
- 2.6 GHz is the next one, but could be delayed (T-Mobile).
- Technology and service neutral auctions

But are pricing and auctions
really that efficient ?

Can spectrum pricing work? (1)

Spectrum pricing can work

when the user can decide
to use less spectrum,
as a response
to the price paid.

BUT

- The BBC has no flexibility to stop using spectrum, or even to decrease significantly the amount it uses
- Because has very stringent obligations
 - Services to deliver
 - Universality obligation
 - Must fit with with consumers equipment (could not move to less congested bands)

Can spectrum pricing work ? (2)

Spectrum pricing
can work

When spectrum users
can / have
to respond to the charges
by a change
in their behaviour

BUT

In the case of the BBC

Either it gets the money
from the licence fee

→ No effect, just a tax on
the LF payer

Or it does not get the money

→ A decrease in its ability to
meet its PSB obligations

Spectrum pricing can achieve the wrong outcome

- Had spectrum pricing been applied in 2003 in the UK, DSO would never have been possible and the DDR would never have been released.
 - **Simulcast would have been too expensive, and deemed inefficient**
 - Broadcasters would never have taken the risks involved in switchover, had they been required to pay for the extra spectrum necessary.
 - The mode change which was one of the reasons of the success of Freeview would not have happened.

Spectrum pricing is not necessary

- Pricing is not necessary in **the presence of spectrum trading**. The ability to trade marginal bits of capacity and generate revenues is a strong incentive to ensure spectrum efficiency.
- Also, calculating **AIP is very delicate** (on which basis?) and is subject to errors which could have a negative impact on the ability for PSBs to meet their obligations.
- M. Cave himself : there is a risk that, “spectrum pricing could potentially result in inefficient outcomes since it could result in too little of the socially beneficial activity being provided”.
- So no argument for creating a system of spectrum charging which appears unnecessary, is based on erroneous assumptions and could pose a serious threat to the delivery of public service objectives.

So spectrum pricing does not work, but surely auctions do?

Well, not really

So, they say an auction aims

- To assign the spectrum efficiently;
- To promote competition;
- To “realise the full economic value” of spectrum.
- But sometimes, auctions are not possible (the spectrum is already allocated,), then let’s try and assess the price it would raise in an hypothetical auction and charge it to existing users.

But auctions do not always deliver an optimal outcome for spectrum efficiency

Service & technology neutral auctions will not deliver an optimal outcome from a pure efficiency point of view.

- Not all the spectrum bands are equally appropriate for all services or technologies.
- The future extent of European harmonization will constrain the way spectrum is used in the UK and prevent consumers and manufacturers benefiting from economies of scale.
- If there is no co-ordinated planning, the guard bands necessary to avoid harmful interference between services, will have to be designed around the use with the highest potential interference level, which is potentially very wasteful.

Nor for the society

Auctions do not always take into account the full “social value” of services

Some services might not be delivered by the market, if their social value cannot be fully captured by their private value. E.g radio mics in theaters or festivals, or free HD on DTT.

There is citizen value in preserving and developing the existing DTT platform by enabling viewers to receive HD services free to air. The public policy benefits of ‘future-proofing’ the DTT platform include universal, free-to-air access to PSB, sustained platform competition and efficient use of spectrum.

Nor for citizens

Auctions will not deliver outcomes meeting the public interest:

- The free to air PSBs, whether licence-fee funded or advertising funded, cannot recoup the costs of an auction through incremental revenue as HD revenues will only be substitutive.
- Their ability to pay in an auction for additional spectrum to launch HD services will be much lower than the value to society of maintaining DTT as an attractive, universal, free-to-air platform and providing HD PSB services on it.
- PSBs will be outbid in auctions by other users , e.g. those who plan pay services, generating additional revenue. Indepen has estimated that the value lost if PSBs are not able to develop HD FTA services on DTT ranges from £5.4-15.6bn.

So what to do ?

- 1 Be **really efficient, and prove it!**
- 2 Achieve switchover, and commit to review regularly spectrum use afterwards
- 3 Accept that all spectrum should be valued, and the appropriate price, when not paid, be considered as a subsidy
- 4 Make the case that management and charges are different things!
- 5 Work with other spectrum users : we are all in the same boat!

In the UK we have lost a battle;
but the fight continues...

Thank you

catherine.smadja@bbc.co.uk