

October 5, 2018 *Seminar*

Spectrum 5.0:

**New directions in spectrum assignment for
5G**

Re-thinking Spectrum Awards for Optimal 5G Deployment

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Spectrum assignment: Current thinking still too conservative

- **Present assignment procedures do not incentivise the industry development in the expected manner**
- **Growing body of evidence that spectrum auctions do not stimulate network investments**

Re-visiting the generally accepted wisdom:

Auctions on fees-> *negative* impact on investments and the Telecom industry

- **GSMA and NERA (2017) conclude:**
 - “Statistical evidence shows the impact on consumers and links high price outcomes with:
 - Lower quality and reduced take-up of mobile broadband services;
 - Higher consumer prices for mobile broadband data »

- **Cambini & Garelli (2017)**
 - spectrum fees and availability do not have significant impact on operators' revenue and investments.



*Re-visiting the generally accepted wisdom:
Auctions on fees->negative impact on investments
and the Telecom industry*

**Commission study by PolicyTracker, LS Telcom & VVA
(Oct 2017)**

- **« ...questions the common view that operators who pay high prices for spectrum must invest in their networks to recoup their investment.**

An end to Spectrum Assignment Schizophrenia



- Governments say broad policy objectives are to be pursued
- End of the day Governments, or Agencies in charge of license assignments, focus exclusively or primarily on maximising the fees they can derive from the spectrum auction

Re-balanced Spectrum assignment core principles

■ Pogorel/Bohlin 2017*

- Learn the lessons of 15 years of wireless communications development
- Maximising the return on public assets is no guarantee of industry development and global welfare
- The state assets must be managed in the public interest: The state cannot behave as a private entity maximising its own income
- Spectrum is a public resource to serve the **public interest as government defined objectives**
- 2017*
https://www.researchgate.net/publication/316524026_Spectrum_50_Improving_assignment_procedures_to_meet_economic_and_social_policy_goals_A_position_paper

Defining Spectrum awards 5.0

- Competition is of the essence...

COMPETITION MEANS

COMPETITION (Not only auction)

- Competition should take place in network deployment, service provision
- A « successful » spectrum award results in positive outcomes for the economy, not a race on frequency fees like we have done in the past

Re-balance spectrum assignment criteria

■ Pogorel/Bohlin 2017*

- **Spectrum has no value in itself...Its value resides exclusively in the contribution It makes possible for society, the economy, public safety**
- **This economic and social contribution is to be maximised**
- **(Not frequency fees)**

*https://www.researchgate.net/publication/316524026_Spectrum_50_Improving_assignment_procedures_to_meet_economic_and_social_policy_goals_A_position_paper

Recent events are confirming the mood is changing and a paradigm shift is looming on the horizon:

- Realisation at EU that the digital Europe perspectives is hindered by the burden of spectrum auctions
- EU RSPG to conduct « Peer reviews »
- France « New Deal »: Decision on 4G licence renewal without auctions, but with corresponding investments and speeded up network roll-out in February 2018
- Reduced expectations on the proceeds of the 5G auction in Italy (from 3.5 to 2.5 Bn Euros) in September 2018
- Japan endorsing « comprehensive strategic approach » for 5G spectrum
- Spain: July 2018 3.6 GHz fees paid in instalments
- Ofcom « Technical advice to Government on improving mobile coverage » (Sept 2018)



Spectrum awards 5.0 re-balanced criteria

- **Competitive Deployment commitments of bidders as criterion #1**
- **Fees to the Government agency in charge #2**

Sample investment incentive procedure

1. Competitive bidding on deployment objectives

- **“Those entitled to the use of the frequencies are identified, for each right of use, on the basis of rankings expressed by band and for the reserved lot, based on the deployment objectives offered through a system of competitive improvements, according to the modalities established in the call for tenders, starting from a pre-determined level, established for each lot.”**

Sample Procedure 2: Frequency fees

- **Successful tenderers are required to pay a frequency fee for the relative rights of use, as a contribution to the use of radio frequencies. Those are based on the pre-determined amount, affected by a coefficient $0 < X < 1$ corresponding to the investment effort.**
- **The pre-determined amount is defined by an international benchmark and an assessment of costs and profitability.**
- **A coefficient of 0 corresponds to 100% deployment -> no or minimal frequency fee**
- **Coefficient 1: no commitment-> full frequency fee**

Investment incentive Assignment options for NRAs

Assignment regime	1	2	3
Criteria	Auction on Fees with Coverage Obligations	Negotiated Frequencies-for-Investments	Auction on Investments
A. Network deployment coverage	NRA discretion on coverage: potentially high or close to 100%	Trade-off between NRA and bidders	NRA requirements Bidders' business considerations
A. Competitiveness	Distorted by focus on fees Oligopoly limitations	Limited	High focus on policy objectives
A. Frequency fee	Highly detrimental to investments	Presumably low in the short-term	To be determined Endogenous or exogenous



Issues

- **Overcoming the concerns of the Ministry of Finance**
- **Major role played by Agencies in charge of national and regional development**
- **Monitoring the commitments of the operators**

Thank you!

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