



Spectrum 5.0

Improving assignment procedures to meet economic and social policy goals

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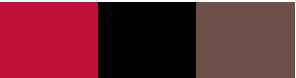
4G/5G Growing concerns

- **Growing concerns in Europe about the pace of deployment of new and future wireless technologies and networks**
- **Currently observed for the deployment of 4G**
- **More acute with the future deployment of 5G**
- **Governments in most countries face “...widespread public dissatisfaction around coverage, particularly outside urban areas.” (Ofcom, 2016).**

Right hand/Left hand



- **Some branches of Governments, or Agencies in charge of license assignments, focus exclusively or primarily on maximising the fees they can derive from the spectrum auction**
- **Only secondary attention paid to the widely observed limitations of this policy tool in achieving broader policy objectives.**

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

Auctions on fees have had a negative impact on investments and the Telecom industry

- Study by GSMA and NERA (2017) concludes:
“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
- Commission study by PolicyTracker, LS Telcom & VVA (2017)
“the grouping with the highest auction prices also had the poorest network availability... This questions the common view that operators who pay high prices for spectrum must invest in their networks to recoup thnier investment.
- Cambini & Garelli (2017) have illustrated the fact that spectrum fees and availability do not have significant impact on operators' revenue and investments.

Double talk...





Spectrum awards 5.0 re-balanced criteria

- **Balance legitimate goal of efficient use of spectrum as a limited public resource, with equally prominent objective of deriving the maximum benefits for the economy that can be expected from investments in wireless network technologies**
- **Right incentives for the operators to exploit the potential of future network technologies in fulfilling economic, social and industrial objectives.**
- **Investments commitments of bidders as criterion #1**
- **Fees to the Government agency in charge #2**



Spectrum awards 5.0 Issues

- **Investments commitments at present value**
- **Possible scenario: amount paid to an agency with with withdrawals each year conditional on investments made (Sweden 800 MHz band, 2008)**



What spectrum fee should be paid to the government?

- Fees should be paid for the use of spectrum as a limited resource. We could consider various methodologies:
 - - % of investments
 - - % of expected income
 - - pre-defined fee.



Monitoring of commitments

- **Cope with risk of divergence between ex ante commitments and ex post outcomes**
- **Institutional arrangements designed to ensure the compliance to commitments, and to cope with potential shortcomings.**
- **Reverting back unused or under-used frequencies as for past spectrum assignment procedures**
- **Not much different from what is currently performed by NRAs**

Positive short term and long term impacts at telco, industry, government budget, and macro level

- **MNOs know precisely what is expected in the terms of their license, allowing them to define their business model and strategy.**
- **Fee paid to Government loses central status**
- **Funding by banks, especially the EIB, made easier.**
- **Better consideration devoted to entrants with infrastructure investment plans**
- **Public benefits from faster deployment of new networks, faster diffusion of new services, increased incomes of all industries, and the government from corresponding taxes.**
- **Focus on investments has positive impacts on R&D, technology and standards**



Conclusion:

- **Spectrum has no value in itself...**
- **Its value resides exclusively in the contribution its use makes possible for society and the economy**
- **Put an end to the case by case lottery among insiders in successive spectrum awards**
- **Not too late to think about re-balanced spectrum awards for 5G**

Thank you

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