

International Telecommunications Society (ITS) Workshop: Spectrum Policy and Auctions: Best Practice from Around the World

On November 21, 2019, the International Telecommunications Society (ITS), along with local host TELUS Communications (Canada) and academic host Chalmers University of Technology (Sweden), convened a workshop, in Ottawa, Canada, on spectrum policy and auction best practices from around the world.

The workshop arrives at a critical juncture as regulators the world over are allocating spectrum, and designing associated policies, to enable 5G deployment. The workshop attracted more than 70 participants from Canada and across the world to discuss auction best practices, opportunities and challenges, in the 5G era. Participants included representatives from government, industry and academia.

The ITS—which this year alone has convened events on four different continents—served as an ideal venue for this discussion, because of its ability to bring these diverse stakeholder groups together, on a neutral terrain, where everyone can bring to bear important perspectives on the foremost goal on everyone’s mind: maximizing the social and economic promise of 5G.

The workshop was opened by **Stanford Levin**, ITS Board member. **Stephen Schmidt**, ITS Chair, welcomed participants to the workshop and framed the workshop in the larger historical context of ITS. **Adam Scott**, Director General, Spectrum Licensing Policy at Innovation, Science and Economic Development shared welcome remarks on behalf of the Government of Canada. See the [Welcome video](#).

The keynote speech of the workshop was given by **Professor Martin Cave** of the London School of Economics, Prof. Cave offered a candid “love letter to auctions” and explained why he believes they remain the best method of spectrum allocation. Prof. Cave offered some findings on what makes for successful options and what traps can lead regulators down an unsuccessful path. See the [video](#) or the [slides](#) from this presentation.

Professor Cave was then followed by **Oliver Chapman**, GSMA Policy Director, who presented research into the effects of certain auction features on network coverage, quality, and retail price. The findings were based a comprehensive econometric model, detailing auction outcomes from more than 60 developing and developed countries and generally stressed the importance of using auctions as an efficient allocation mechanism rather than a tool to raise government revenues. The research presented by Mr. Chapman emphasized the empirical linkage between high auction prices and lower network coverage and quality. See the [video](#) or the [slides](#) from this presentation.

The FCC’s efforts and findings on how to re-purpose spectrum for new uses including novel incentive auction and voucher schemes were then presented by **Evan Kwerel**, Senior Economic Advisor at the Federal Communications Commission. Dr. Kwerel

elaborated on the design features and detailed considerations to make these schemes work effectively and find more productive use of spectrum. See the [video](#) or the [slides](#) from this presentation.

The last speaker before lunch was **Dan Maldoom**, a partner at DotEcon, who focused his presentation on the auction strategies adopted by Ofcom, the U.K. regulator ComReg, the Irish regulator. Dr. Maldoom provided a number of important lessons from effective auction designs and stressed that when auctions run into problems, they frequently arise not as a result of auction design but rather as a result of the misapplication of auction rules. See the [video](#) or the [slides](#) from this presentation.

Professor Pat Sujarittanonta, Chulalongkorn University, related some of the challenges in past auction implementation in Thailand as an example of how many design features could go wrong. His review of Thai spectrum auctions revealed that flawed policy can lead to inconsistent implementation and very high prices. Dr. Sujarittanonta then explained how the Thai regulator is learning from these experience and is rapidly allocating 5G spectrum using best practice multi-band auction design. See the [video](#) or the [slides](#) from this presentation.

Drawing on recent experiences from Italy and Germany to support his analysis, **Jan-Hendrik Jochum**, Senior Expert, Public and Regulatory Affairs, Deutsche Telekom suggested that auctions themselves may not always be the most effective way to allocate spectrum. Both of those countries recently conducted auctions featuring an imposed artificial scarcity of 5G spectrum and resulted in spectrum prices that set international records. Mr. Jochum offered suggestions on alternatives to auctions (for example, assignment in exchange for investment and deployment commitments), as well as suggestions as to when auctions remain an effective method of allocation. See the [video](#) or the [slides](#) from this presentation.

Nick Bone, Principal Engineer: Auctions, Security and Cryptography, Vodafone, provided suggestions based on his experience in over 60 auctions globally. Dr. Bone cautioned that, while auctions can allocate spectrum efficiently, they can be very sensitive to small deviations from the optimal design, and these small deviations can lead to significant market distortions. To demonstrate his point, Dr. Bone modelled some typical distortions in a set of illustrative counterfactuals, where the cost of stepping away from the preferred auction design was so significant that bidders were incentivized to stay in the auction and pay inefficiently high prices. See the [video](#) or the [slides](#) from this presentation.

The final speaker of the day was **Professor Erik Bohlin**, Chalmers University of Technology, who described the use of auctions to allocate spectrum as a fundamental policy innovation. However, Professor Bohlin cautioned that the implementation of auction frameworks has been wrought by a number of weaknesses and idiosyncrasies that have contributed to great variations in outcomes and implementation inconsistencies. Professor Bohlin offered that a more consistently applied auction

framework would have benefitted auction results across the globe. See the [video](#) or the [slides](#) from this presentation.

The conference concluded with a panel of all speakers, moderated by **Janet Yale**, previously an executive at TELUS and presently Chair of the Canadian Broadcasting and Telecommunications Legislative Review Panel, which will shortly propose amendments to the Canadian communications statutory framework. Each of the speakers had an opportunity to reflect on comments of the day and provide advice. See the [video](#) of the panel discussion.

The workshop provided a wealth of insights into auctions, with three key insights emerging. Firstly, auctions are often (though not necessarily always) an efficient way to allocate spectrum, but small deficiencies in auction design can lead to significant market distortions. Secondly, auctions should be used to allocate spectrum efficiently and not as a tool to maximize government revenues. High auction prices adversely impact on the network quality and the pace and reach of network deployment. Finally, the most important single action that regulators can take to facilitate the deployment of 5G technology is to release as much of the relevant spectrum as possible, as quickly as possible, on an efficient basis.

Ms. Yale additionally invited each speaker to participate in a "lightning round" targeted on providing a single focused recommendation, from each speaker, to advance Canada's 5G path. See the [video](#) of the 5G recommendations for Canada.

Erik Bohlin
Chalmers University of Technology
Workshop Co-Chair

Stephen Schmidt
ITS Chair