



LYA's Expertise in Spectrum and Technology Strategies and Assessment of Spectrum Needs

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Canada's next spectrum license auction is looming - with a newly minted majority conservative Government, the process leading to the auction may move more quickly than otherwise would have been the case. The stakes are higher than ever as carriers - the new and the well-established ones - in an increasingly competitive industry, look for more spectrum capacity to fulfill the burgeoning future of apps, mobile TV and mobile entertainment, other consumer and enterprise applications and mobile cloud computing, all of these leveraging the capabilities of an increasing array of devices for use on-the-go or when staying put at home

LYA recently published a paper discussing LTE technology and spectrum needs, submitted to Industry Canada as part of inputs to an industry wide consultation. One element of this paper includes the estimation of the spectrum needs of mobile carriers according to their business strategy. LYA's methodology considers the specifics of spectrum bands, technologies and their evolution, spectral efficiency, services and network deployment criteria (such as the density of subscribers per antenna site), as well as the exploding demand for mobile data in addition to fixed line replacement. The LYA paper can be downloaded by clicking [here](#).

Provided below are selected results from our analyses which demonstrate the very substantial spectrum needs of large carriers providing mobile broadband services and the spectrum needs of voice-centric mobile carriers, under different data usage and penetration scenarios.

The longer term spectrum needs of a large data/video centric carrier are estimated to lie in the range of 130 MHz to 200 MHz or even more including the impact of expected major improvements in spectral efficiency. Whether these improvements are realized across multiple frequency bands or not has a significant impact on the amount of spectrum required.

A voice-centric carrier with lower mobile data usage and lower penetration of data users would require less spectrum, in the range of 18 to 25 MHz or more, depending on the composition of its subscriber base and business strategy, to provide for good quality voice and mobile broadband services.

What the results of our analyses and methodology also demonstrate is that spectrum needs vary significantly based on the strategy pursued by each carrier and hence the composition of its subscriber base and that there are a wide range of scenarios and assumptions that need to be

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tested to assess what the spectrum needs of individual carriers are, in total as well as by frequency band.

Whether you are a carrier, an investor, an equipment vendor or a government or regulatory agency, understanding spectrum needs of mobile carriers is a key element to ensure the successful future development of the industry. LYA brings the expertise, the technology and market know-how and the tools to help you in: developing strategic options for technology deployment per spectrum band, estimating your spectrum needs and how much the upcoming auctions could help fulfill these needs, understanding the spectrum needs of your competitors based on their expected technology and commercial strategies and understanding the mitigating techniques to lower your spectrum needs and the capital investment trade offs.

There is no time like the present to get started on a review of the evolution of your strategy and its impact on future spectrum needs, network deployment and service innovation plans.

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