



Comments on

Canada Gazette Notice No. DGRB-005-09

**Consultation on Transition to Broadband Radio Service (BRS)
in the Band 2500-2690 MHz**

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The Wireless Communications Association International (“WCAI”), the trade association of the wireless broadband industry, submits these comments on the Consultation released by Industry Canada on March 14, 2009. Founded in 1988, WCAI is an international, nonprofit, technology-neutral trade association whose members comprise the entire wireless broadband ecosystem. WCAI represents service providers, equipment manufacturers, application developers and other contributors to the wireless broadband industry, including all of the major spectrum licensees in the 2.5 GHz band within the United States.¹

WCAI commends Industry Canada for issuing this important consultation. Given the amount of bandwidth available within the 2.5 GHz band, this band is essential to the development of mobile broadband worldwide, which has very different spectrum needs than traditional cellular networks. To ensure this band is used in Canada as efficiently and effectively as possible, WCAI recommends that Industry Canada:

- Allocate the spectrum in contiguous spectrum blocks of at least 30 MHz each to meet increasing consumer demand for mobile broadband services;
- Permit fully flexible use of the spectrum for either TDD or FDD throughout the entire band and allow operators to mitigate any potential interference; and
- Harmonize to the maximum extent possible its band plan with the band plan in the United States and other countries.

These recommendations would minimize cross-border interference with the United States and promote the rapid and efficient deployment of mobile broadband services in Canada.

¹ See <http://www.wcai.com/index.php>.

DISCUSSION

A. Industry Canada should allocate the spectrum in contiguous spectrum blocks of at least 30 MHz each to meet increasing consumer demand for mobile broadband services.

To support the most advanced mobile broadband services, mobile broadband networks require significantly more spectrum and wider contiguous bandwidths than traditional cellular networks. To meet increasing demand for mobile broadband, WCAI recommends that Industry Canada license the 2.5 GHz spectrum in contiguous spectrum blocks of at least 30 MHz each.

As depicted in Figure 1 below, a traditional handheld device, with average customer usage patterns, will consume about 30 megabytes of data in a month.² A single smart phone is consuming 30 times that amount, and a single connected notebook or laptop computer is consuming 450 times that amount.³

Figure 1

Average Megabytes Consumed per Month	
Device	MB/Month
Regular Phone	30
Smart Phone	900
Laptop	13,500

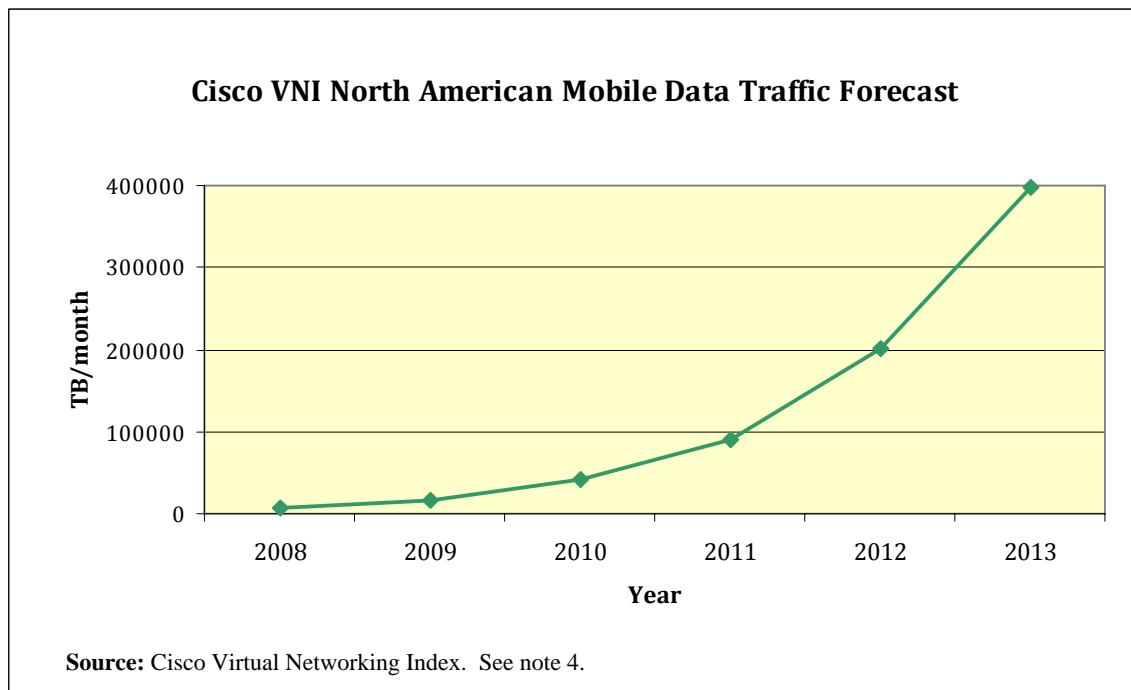
Source: Cisco Virtual Networking Index. See note 2.

² See *Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update*, White Paper, at 3 (Jan. 29, 2009) (available at http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/white_paper_c11-520862.html).

³ See *id.*

The continuing emergence of wireless applications that more fully integrate broadband into Canadians' daily lives will generate even more demand for contiguous wireless broadband spectrum than that depicted above. Cisco estimates that mobile data traffic in North America will increase 129 percent from 2008 to 2013.⁴

Figure 2



As traffic increases, so will the need for additional spectrum in wider contiguous bandwidths.

To help mobile broadband providers meet this increasing demand for mobile broadband, Industry Canada should ensure providers have access to contiguous spectrum blocks in the 2.5 GHz band of at least 30 MHz. Providing for more contiguous spectrum would allow faster data rates and more flexible frequency

⁴ *Cisco Visual Networking Index*, *supra* note 69, at 6 (Appendix A, Table 1).

reuse schemes, and would enhance coordination efforts with U.S. operators.

Industry Canada should avoid any allocation plan that would fragment the spectrum and reduce the ability of operators to deliver multiple contiguous channels of at least 10 MHz each. Channel sizes of less than 10 MHz significantly reduce the spectral efficiency of mobile broadband networks.

B. Industry Canada should permit fully flexible use of the spectrum for either TDD or FDD throughout the entire band and allow operators to mitigate any potential interference.

The best way to maximize efficient use of the 2.5 GHz spectrum band is to provide for fully flexible use of the spectrum for either TDD or FDD throughout the entire band and allow operators to mitigate any potential interference. This would allow licensees and systems operators to freely switch between FDD and TDD technologies as technology changes and marketplace demands evolve. In contrast, limiting by rule the use of a portion of the band to FDD and a portion of the band to TDD could stymie investment and deployment of advanced technologies (4G and beyond) in the band.

Allowing fully flexible use would maximize economic efficiency whereas mandating a particular technology could suppress vast amounts of productive economic activity.⁵

The central tension in spectrum allocation pits economics against engineering. In a market with well-defined property rights, such conflicts melt. Resource owners employ engineers to reveal options for business ventures linking investors, technologists, device makers, and service providers. Spillovers between spectrum owners are adjudicated by parties that gain wealth from cost-effectively resolving disputes. Under administrative allocation, however,

⁵ See Thomas W. Hazlett, *A Law and Economics Approach to Spectrum Management Rights: A Response to Weiser and Hatfield*, 15 Geo. Mason L. Rev. 975, 977 (2008).

resource decisionmakers do not know what economic values are possible and do not internalize gains from finding out. Instead, they pursue rules to minimize harmful interference. This lacks a balancing test for evaluating trade-offs. Indeed, simply restricting productive activity reduces interference, and regulators rely much too heavily on this approach in policing airwaves.⁶

Rather than choose a particular technology and impose it by regulation, WCAI recommends that Industry Canada provide for full flexibility and allow operators to negotiate economically efficient results.

C. Industry Canada should harmonize to the maximum extent possible its band plan with the band plan in the United States and other countries.

WCAI recommends that Industry Canada harmonize to the maximum extent possible its band plan with the band plan in the United States (which allows fully flexible use within the band, i.e., operators may choose either FDD or TDD technologies) and other countries. Harmonizing the Canadian and U.S. band plans would enable manufacturers and network operators to realize economies of scope and scale. It would also facilitate cross-border roaming, an issue that is especially important between Canada and United States, because over 70 percent of the Canadian population lives within 50 miles of the U.S. border. The resulting lower costs would facilitate additional investment in infrastructure and devices and promote rapid growth. Significant deviation from the U.S. band plan, i.e., by limiting the Canadian allocation to FDD use in the upper and lower portions of the band, would give rise to cross border coordination and interference issues that may make it difficult to deploy new mobile broadband services in the 2.5 GHz band in border areas.

⁶ Thomas W. Hazlett, *Optimal Abolition of FCC Spectrum Allocation*, *Journal of Economic Perspectives*—Volume 22, Number 1, pp. 103-128, at 108 (Winter 2008).

CONCLUSION

WCAI appreciates this opportunity to share its views with Industry Canada and looks forward to working with Industry Canada in the future.

Respectfully submitted,
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