Overview Notes for Catalyst

Business Strategy and Auction Support

CONFIDENTIAL – March 26, 2014

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CANADIAN WIRELESS INDUSTRY DYNAMICS

- Post 700 MHz auction

- Bell and TELUS were the losers of this auction; cannot deploy mobile broadband to effectively compete with Rogers without substantial rearrangement of their 700 assets and spectrum aggregation with other bands; effectively a BELLUS spectrum and network sharing agreement in 700 MHz will be difficult to implement in the short term.
- Rogers needs no one to continue to develop its lead with LTE deployment; definitely the winner of the auction; likely the only carrier to really deploy mobile broadband in the short term with 700; cannot readily extend network sharing deals with MTS and VL in 700 band.
- A 4th mobile carrier in ON, AB and BC is not a fait accompli
- Potential expansion of VL outside QC: more spectrum required; potential consequences of the departure of PKP; VL to launch LTE in Qc in summer; IPhone being launched on March 28th, first new entrant to do so.
- Closing of spectrum deals with Rogers with Shaw and VL looks unlikely after the acquisition of 2.3 GHz licenses by Inukshuk were turned down
- Wind: conclusion of transaction with Vimpelcom is still outstanding and then what? What if Vimpelcom just walked away? Unlikely due to value of the licenses. But,operationally, Wind is facing lack of spectrum and technology obsolescence with HSPA.
- Mobilicity: another extension until April 30
- A successful merger of Wind and Mobilicity within a short timeframe could dampen ambitions of VL outside of QC substantially but it seems unlikely to happen without a strong third party.
- CRTC review of roaming and tower sharing framework could lead to tariffs being imposed. Likely not before some time in 2015.
- CRTC possibly could take action beyond roaming and tower sharing within the same process.

Upcoming spectrum opportunities

- 2.5 GHz in early 2015
- Potential opportunity to acquire or reduction of 2.3 GHz spectrum
- Of the order of 140 MHz of additional spectrum for mobile services expected to be auctioned in three processes in the next 5 years in Canada. Note that the dates below are for the USA.
  - Started with PCS H Block/AWS-2 – FCC Auction #96 – completed January 2014
- Broadcast Incentive Auction – 2015 timeframe – 600 MHz
  - Up to 40+40 MHz (or asymmetrical); to free up and repack broadcast TV channels in a process where broadcasters relinquish licenses in a reverse auction, which are then sold to mobile carriers in a forward auction.
- AWS-3 – 1.7/2.1 GHz – September 2014
  - New 25 MHz of paired spectrum to add to AWS range – 1755-1780/2155-2180 MHz plus 1695-1710 MHz.
- Will also set the stage for future auctions heading towards the FCC's National Broadband Plan of licensing 500 MHz of spectrum capacity for mobile…
  - e.g. future AWS-4 in the 2 GHz range (satellite S Band 20+20 MHz)

TECHNICAL REQUIREMENTS FOR A 4TH CARRIER

- In the 2014/16 timeframe
- At least 20+ 20 MHz of spectrum deployable for LTE either in one band or likely in multiple bands; in the short term, can use HSPA in AWS for voice services
- Excluding spectrum costs, of the order of a couple of $ B for deployment over 5 years; would vary depending on any potential acquisition costs of current new entrants
- Lower roaming and tower sharing fees would be a major benefit; new entrants need to eliminate domestic roaming fees in their offer; CRTC may be able to help but their track record is mixed
- Being able to operate as MVNOS outside of their built up areas would benefit new entrants
- Also, and not the least issue, IC has created significant uncertainty regarding its foreign investment policy for small telecom carriers.

Thank you!

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