Message

From:	Moyse, Brandon [BMoyse@catcapital.com]
Sent:	5/14/2014 5:58:44 PM
To:	De Alba, Gabriel [gdealba@catcapital.com]
CC:	Michaud, Zach [zmichaud@catcapital.com]; Creighton, Lorne [LCreighton@catcapital.com]
Subject:	FW: Due diligence request
Attachments:	WIND Canada Spectrum Memorandum v2 - April 2014.pdf; High-Level Spectrum Solution Matrix.xlsx

Please see attached for the spectrum memo and matrix referenced in today's meeting.

Brandon Moyse

The Catalyst Capital Group Inc.

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bmoyse@catcapital.com

From: McGuire, Dylan [mailto:Dylan.McGuire@morganstanley.com]
Sent: Wednesday, May 14, 2014 5:48 PM
To: Moyse, Brandon
Cc: Michaud, Zach; Creighton, Lorne; Yao, George; Bai, Aoyu; Shaw, Victor
Subject: RE: Due diligence request

Brandon,

Please see the spectrum memo and spectrum matrix attached. The management team is working on a table around roaming payments now and we will provide as soon as possible.

Best,

Dylan

Dylan McGuire
Morgan Stanley Canada Limited | Investment Banking Division
181 Bay St. Suite 3700 | P.O. Box 776 | Floor 37
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Dylan.McGuire@morganstanley.com

From: Moyse, Brandon [mailto:BMoyse@catcapital.com]
Sent: Wednesday, May 14, 2014 4:22 PM
To: McGuire, Dylan (IBD); Michaud, Zach (zmichaud@catcapital.com)
Cc: Creighton, Lorne; Yao, George (IBD); Bai, Aoyu (IBD); Shaw, Victor (IBD)
Subject: RE: Due diligence request

Hey guys –

Further to our meeting today, can you please follow up on these items:

1) Spectrum memo

2) Spectrum spreadsheet/matrix

3) A table showing how much WIND has paid to each incumbent under roaming agreements and how much WIND has received from each incumbent under roaming agreements. It would be great if this can be broken out by voice minutes/MB usage and if they could quantify what the impact would be under the new arrangement.

Thanks,

Brandon

Brandon Moyse

The Catalyst Capital Group Inc.

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bmoyse@catcapital.com

From: McGuire, Dylan [mailto:Dylan.McGuire@morganstanley.com]
Sent: Tuesday, May 13, 2014 9:22 PM
To: Michaud, Zach
Cc: Moyse, Brandon; Creighton, Lorne; Yao, George; Bai, Aoyu; Shaw, Victor
Subject: RE: Due diligence request

Zach,

Please see the updated model questions list.

Best,

Dylan

Dylan McGuire
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Dylan.McGuire@morganstanley.com

From: Michaud, Zach (zmichaud@catcapital.com)
Sent: Tuesday, May 13, 2014 7:51 PM
To: McGuire, Dylan (IBD)
Cc: Moyse, Brandon; Creighton, Lorne; Yao, George (IBD); Bai, Aoyu (IBD); Shaw, Victor (IBD)
Subject: RE: Due diligence request

Hey guys,

For the model questions, need to understand the buildup of revenue by plan by region, so they need to show us how they are thinking about this going forward. Also, we need to understand the cost lines and the build up of all those components, not just the growth #s, I want to understand what is actually in those costs.

I'll send comments on the others shortly.

Thanks,

Zach

From: McGuire, Dylan [mailto:Dylan.McGuire@morganstanley.com]
Sent: May-13-14 7:33 PM
To: Michaud, Zach
Cc: Moyse, Brandon; Creighton, Lorne; Yao, George; Bai, Aoyu; Shaw, Victor
Subject: RE: Due diligence request

Zach,

Please see the updated requested list based on our discussion. I've also attached model questions that will go across for the meeting tomorrow morning.

Best,

Dylan

Dylan McGuire
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Dylan.McGuire@morganstanley.com

From: McGuire, Dylan (IBD)
Sent: Tuesday, May 13, 2014 5:21 PM
To: Creighton, Lorne

Cc: Michaud, Zach (zmichaud@catcapital.com); Moyse, Brandon; Yao, George (IBD); Bai, Aoyu (IBD); Shaw, Victor (IBD)
Subject: RE: Due diligence request

Lorne,

As discussed, attached is the latest DD list with priority questions requiring documentation as soon as possible, and model specific questions for tomorrow's meeting.

Please let us know of any comments. Once complete we will revert to UBS and emphasize the need for hard copy documentation, and that a discussion, while helpful, in not a substitute.

Best,

Dylan

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From: Michaud, Zach (zmichaud@catcapital.com)
Sent: Tuesday, May 13, 2014 1:47 PM
To: McGuire, Dylan (IBD)
Cc: Yao, George (IBD); Moyse, Brandon; Creighton, Lorne
Subject: Re: Due diligence request

They need to provide documents though, can you go through the DD list and put together things we need to get asap in a physical form to analyze with my guys. We can't just do everything verbally, even if it's easier for them.

From: McGuire, Dylan

Sent: Tuesday, May 13, 2014 1:30 PM

To: Michaud, Zach

Cc: Yao, George

Subject: FW: Due diligence request

Zach – happy to take the lead on organizing this from our end and liaise with UBS.

If you can provide names of those available for a full day session we will take care of the agenda and remaining logistics.

Best,

Dylan

Dylan McGuire
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Dylan.McGuire@morganstanley.com

From: Yao, George (IBD)
Sent: Tuesday, May 13, 2014 1:21 PM
To: Turgeon, Francois (francois.turgeon@ubs.com); Michaud, Zach (zmichaud@catcapital.com)
Cc: Kunal.Kapoor@ubs.com; turbinecore
Subject: RE: Due diligence request

Thanks Francois. We will coordinate on our end and revert.

Regards,

George Yao, Vice President
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Phone: +1 416 943-8422
Fax: +1 416 943-8643
George.Y.Yao@morganstanley.com

From: Turgeon, Francois (francois.turgeon@ubs.com)
Sent: Tuesday, May 13, 2014 12:24 PM
To: Michaud, Zach (zmichaud@catcapital.com); Yao, George (IBD)
Cc: Kunal.Kapoor@ubs.com
Subject: Due diligence request

Zach, George,

We went through the due diligence request list you sent us earlier this week (attached) with Wind's management and we think it would be most efficient to have an in person DD session to walks through the list as a lot of the questions are best managed through narrative explanation with reference to certain files. Could you check with relevant people on your team if you would be available for a full day session on Thursday? We will advise on best venue once you confirm

Thanks

Francois

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Band	Owner	BP Risk	License Details	Quality/Characteristics	Handset Ecosystem	Activity	Cost at auction	Estimated purchase price	Contiguous with Wind spectrum ?	Ontario	BC	Alberta	Other Considerations
AWS	Mobilicity	very low	5x5 /2008 / 5 years remaining on initial license	high-frequency / LTE eco-system	available	deployed/in use in major Wind markets	243m	Videotron rumoured to have offered $200m in a cash deal, WIND has offered $100m	yes	yes	yes	yes	possible lease to own opportunity to defer capital, approx 140k customers, approx 40 useful sites, handset compatiblity of existing customers
700	Videotron	very low	5x5 / 2014 / 10+ years remaining	low-frequency / LTE eco-system	2,016	expected to go unused/undeployed and clearly not available for an incumbent to acquire	est. 150m	May not deal as no urgency, price likely min $200-250m, may roll for equity	N/A	yes	yes	yes	assists with in-building urban coverage (fewer small cell solutions required in dense urban)
2,500	April 2015 auction	low	2x10 / 2015 auction	high-frequency / LTE eco-system	2,016	incumbents substantially capped, spectrum very likely available at sub 100m cost to Wind	possibility of beauty contest auction or installment payments over license term, minimum bid approx 40m, expected to be sub 100m cost		no				
AWS	Videotron	medium (incomplete solution)	5x5 / 2008 / 4.5 years remaining on initial license	high-frequency / LTE eco-system	available	unused/undeployed, PUT option sold to Rogers at approx 190m that will very likely not be approved by Industry Canada	96m	May not deal as no urgency, and incumbent relationship riskprice likely min $125m, may roll for equity	no	Toronto Only	no	no	works well with new roaming regime
AWS	Shaw	medium (incomplete solution)	2x10 / 2008 / 5.5 years remaining on initial license	high-frequency / LTE eco-system	available	unused/undeployed, call option sold to Rogers at 325m that will very likely not be approved by Industry Canada	180m	May not deal as no urgency and incumbent relationship risk / retaliation risk high with little benefit / cost would be 250-300m	yes	no	yes	yes	works well with new roaming regime
850/PCS	Held by incumbents	medium	Industry Canada permitted transfer	3G deployment / use existing AWS for LTE	available	N/A	N/A	would be trade with an incumbent	no				
AWS 3	Fall 2014 / early 2015	high	2x10 at auction in USA late 2014	high-frequency, LTE ecosystem longer term	2,016	N/A	N/A	unknown	no				

600 Mhz	consultation for auction in 2015	high	Consultation 2015	low-frequency, long term LTE roadmap	2,016	N/A	N/A	unknown	no				

Conclusions/Rank
1
2
2
3
3
4
5

5

Date: April 29, 2014

Subject: WIND Canada Spectrum Considerations

Introduction

This document describes North American carrier spectrum ownership, WIND Canada's current best information on the related handset issues, spectrum sharing, the results of the recent 700MHz spectrum auction in Canada, Mobilicity's AWS spectrum and conclusions on spectrum acquisition priorities.

Note that the North American handset ecosystem is primarily driven by (i) chip/antenna technology development, (ii) spectrum ownership by large U.S carriers and (iii) the "willingness" of handset OEM's to tailor handsets to specific carrier demands (i.e., to exclude certain bands from handsets to reduce likelihood of switching).

The most evident example of North American spectrum/handset ecosystem constraints is 3G AWS. T-Mobile is the only U.S. carrier that has deployed 3G on AWS: Consequently WIND Canada, Videotron and Mobilicity have been and still are dependent on T-Mobile's handset ecosystem roadmap. This has been constraining in two ways: (i) past, current and future availability of 3G AWS devices, and (ii) availability of 3G AWS fallback for LTE devices.

Spectrum Ownership in North America

	Spectrum Frequency and LTE Band Equivalents												
	700				800	850	PCS		AWS	WCS	S	2.6	
	B29	B12	B13	B17	B26	B5	B2	B25	B4	TBD	B23	B41	B7
AT&T	LTEP			LTE		UMTS	UMTS/LTEP		LTE	LTEP			
Leap							CDMA		CDMA/LTE				
Verizon			LTE			CDMA	CDMA		LTE				
Sprint/Clearwire					IDEN/CDMA/LTEP		UMTS/LTEP	LTE				WIMAX/LTEP	
TMO/PCS		LTEP					CDMA/UMTS	LTE	UMTS/LTE				
USCC		LTE				CDMA/LTE	CDMA		LTE				
Rogers		LTEP		LTEP		UMTS	UMTS		LTE				LTE
Bell/Telus			LTEP	LTEP		CDMA	CDMA/UMTS	LTEP	LTE				LTE
WIND Canada									UMTS/LTEP				
Videotron			LTEP						UMTS/LTEP				
Dish											LTEP		

Legend:
LTEP - LTE planned to be deployed

Notes:
1. AT&T recently received regulatory approval to acquire Leap.
2. TMO is transitioning Metro-PCS customers from CDMA to GSM and refarming Metro-PCS AWS spectrum to LTE.
3. Telus recently acquired PCS B25 spectrum from Novus and Public Mobile in Canada. Over time, it is expected that Telus will deploy LTE on this spectrum.
4. Rogers, Bell and Telus own 2.3 and 3.5 spectrum which has not been widely deployed.

The 600 MHz band is in the process of being reallocated from television broadcast to commercial mobile services in the U.S. through a complex incentive auction and re-packaging process. The 600MHz spectrum auction timing has not yet been announced but is expected in 2015. This auction will be a significant development for LTE spectrum in North America. Industry Canada will evaluate the timing and the process for the repurposing of the 600 MHz band, based on the outcome of the incentive auction process in the United States, but is expected to quickly follow the U.S.

Key LTE Bands in North America

Band 4 (AWS) – All major carriers except Sprint have deployed LTE on AWS. Because AWS was auctioned later in the network deployment lifecycles in North America, it has become a key LTE spectrum. Mobilicity owns AWS spectrum in Canada that is contiguous with WIND Canada's AWS spectrum. Mobilicity is currently in a CCAA (Canadian equivalent of Chapter 11 creditor protection) process, and has announced that it has agreed to be bought by TELUS for $350 million (though it must be noted that the Government has been clear that this transaction will not be permitted to close due to spectrum concentration/competition concerns). Additional AWS spectrum (known as AWS-3 and contiguous with existing AWS spectrum in Canada and the U.S.) is expected to be auctioned in the U.S. sometime in the Fall (2014) and Canada sometime thereafter (in Canada, this spectrum is being used today for low-capacity fixed point-to-point microwave links, which are mostly legacy systems, and the expectation is that these frequencies will be repurposed for mobile services). LTE Band 10 covers part of AWS-3.

Band 7/41 (2500MHz) – Rogers and Bell have deployed LTE on 2500MHz. Band 7 in Canada (equivalent in Europe) does not have an equivalent band plan in the U.S. Sprint is deploying 2600MHz LTE on Band 41 in the U.S. which is a TDD band plan with no equivalent in Canada. Canada has announced the rules for a 2500MHz spectrum auction (certain blocks of that spectrum are still available in Canada) to be held in April 2015; 2 x 10MHz of 2500MHz spectrum in Canada is effectively set aside from the three incumbents (as a result of cap rules). Recent leaks from senior Government officials indicate that (due in part to TELUS' persistence in seeking to acquire Mobilicity) that more pro-competition measures are being contemplated, including doubling the amount set aside from the incumbents and rather than an auction allocating spectrum based on a "beauty contest" where the spectrum is gifted to parties based on their ability/commitment to achieve policy objectives such as competition with the incumbents. (Note: There is 50MHz of unpaired 2.6GHz spectrum partly owned by Rogers and Bell. WIND Canada believes that Rogers and Bell will deploy LTE on this spectrum although this is not yet confirmed.)

Bands 12/13/17/29 (700MHz) – 700MHz spectrum is a key LTE spectrum that has been deployed in the U.S. by AT&T and Verizon and was auctioned in Canada in early 2014 (results below). AT&T has deployed in the Lower B/C (Band 17) and Verizon has deployed in the Upper C1/C2 (Band 13). AT&T has announced plans to deploy LTE (potentially for multi-cast) in the unpaired Lower D/E bands (Band 29). U.S. Cellular (a regional U.S. carrier) has deployed LTE in the Lower A (Band 12). T-Mobile recently purchased Lower A spectrum from Verizon.

Final Results of Canadian 700MHz Auction

Service Area	**Paired Blocks**					**Unpaired Blocks**	
	Lower A	**Lower B**	**Lower C**	**Upper C1**	**Upper C2**	**D**	**E**
Eastern Quebec	Rogers	Rogers	TELUS	Vidéotron	Bell	TELUS	TELUS
Southern Quebec	Rogers	Rogers	TELUS	Vidéotron	Bell	TELUS	TELUS
Eastern Ontario & Outaouais	Rogers	Rogers	TELUS	Vidéotron	Bell	TELUS	TELUS
Southern Ontario	Rogers	Rogers	Bell	Vidéotron	TELUS	Bell	Bell
Alberta	Rogers	Rogers	TELUS	Vidéotron	Bell	TELUS	TELUS
British Columbia	Rogers	Rogers	TELUS	Vidéotron	Bell	TELUS	TELUS

Bands 2/25 (PCS) – AT&T and Sprint are planning to deploy LTE on Band 2. Sprint and T-Mobile (through Metro-PCS) have deployed LTE on Band 25. TELUS acquired G Block spectrum from Novus and Public Mobile in Canada and has announced plans to deploy LTE on Band 25. Adjacent H Block is being held in reserve by Industry Canada.

Band 26 (850) – Sprint has deployed LTE on Band 26. U.S. Cellular has deployed LTE on Band 5.

Bands 22/42 (3500) and 30 (WCS) – Canadian incumbents own spectrum in these bands but have not yet deployed LTE. The spectrum licences expire in 2014 and the Canadian government has indicated that it will take back spectrum in these bands if the build requirements have not been met. There is potential interference from WCS with Satellite Digital Audio Radio Service (S-DARS) band; AT&T is working with Sirius XM to avoid interference issues in U.S. and is expected to launch LTE on the WCS band (Band 30) in 2015. The incumbents have indicated that they will deploy LTE on WCS spectrum. To date, deployments in the 3500MHz band are fixed and portable (e.g., USB modems, laptops and tablets), and various versions of WiMAX. According to Industry Canada, LTE devices are expected in a few years for this band, which would need to be designated for mobile use. Up to 175 MHz of spectrum may be available (three 25 MHz paired blocks and one 25 MHz unpaired).

Availability of Spectrum in Canada

The following LTE spectrum opportunities are either announced or expected to be available in Canada (Note: Canada typically follows the U.S. a year or two later):

- Mobilicity's AWS spectrum (Mobilicity in CCAA sale process, sale to TELUS expected to be blocked)
- 700MHz spectrum (Upper C1 likely available in secondary market from Videotron)
- 2500MHz spectrum (auction April 2015)
- AWS-3 (not yet announced, bands are being cleared in Canada, likely auctioned in 2015 or 2016)
- H Block spectrum (not announced)
- 600MHz (not announced, waiting for the U.S.)

Another opportunity may be created by TELUS' repeated attempts to acquire Mobilicity. TELUS has significant spectrum holdings in 850MHz (25 MHz in B.C. and Alberta) and PCS (1.9GHz) (20 MHz in B.C. and Alberta and 40 MHz in Ontario). TELUS values Mobilicity's AWS spectrum more highly than equivalent amounts of 850MHz or PCS, given (i) relative scarcity and (ii) current LTE handset eco-system. Thus, it is possible that TELUS could agree to divest itself of some amount of PCS/850MHz to be permitted to acquire Mobilicity. This spectrum would permit WIND to re-farm its current AWS spectrum to LTE while serving its existing 3G base using 850MHz/PCS.

Handset Considerations

3G AWS

There are two key aspects with respect to the handset ecosystem in North America as it relates to WIND Canada's deployment of 3G AWS:

- Availability of 3G AWS handsets
- Availability of LTE handsets with 3G AWS fallback

Both are driven by T-Mobile's ongoing need for 3G AWS handsets and/or 3G AWS fallback. The best information WIND Canada has at present is that T-Mobile will continue to support new 3G AWS handsets through 2015. There are certain rumors that T-Mobile is working aggressively to deploy 3G on 1900 (Band 2) to re-farm all AWS spectrum to LTE before the end of 2015 but there is a very large subscriber base on 3G AWS and it is likely not practical for this timeline to be achieved. That said, availability of 3G AWS handsets could decline once the OEM's are comfortable that T-Mobile does not require new or fallback handsets with 3G AWS. WIND Canada's business plan assumes continuing availability of 3G AWS handsets through 2016. This assumption drives the speed of WIND Canada's LTE deployment on 700MHz as well as the timing of the AWS re-farm.

In general, LTE Band 4 (AWS) and Band 17 (700MHz Lower B/C) handsets have 3G AWS compatibility. This is because T-Mobile has deployed LTE on Band 4, AT&T has deployed LTE on Bands 4 and 17 and T-Mobile requires 3G AWS fallback. Consequently, it is convenient for OEM's to include the complete combination of Bands 4, 17 and 3G AWS.

The Verizon and Sprint LTE bands (13 and 25) may not support 3G AWS fallback because there is no requirement for this fallback from Verizon and Sprint.

In general, the expectation is that AT&T and T-Mobile handsets will likely contain 3G AWS fallback for the foreseeable future while Verizon and Sprint handsets may not have that configuration until 2015.

LTE Band 12 (which includes 700MHz Lower A/B/C blocks) has been deployed by U.S. Cellular, a traditionally CDMA carrier. Verizon recently sold its 700MHz Lower A spectrum to T-Mobile and this is expected to create a handset ecosystem for Band 12 and 3G AWS.

VoLTE

An alternate solution to the issue of 3G AWS fallback is the deployment of a VoLTE technology solution. WIND Canada's best information is that commercial VoLTE will be available in North America in 2014 (Verizon, Bell and possibly other carriers are moving to commercial deployment) however the handset ecosystem will take time to evolve (starting with high-end handsets). This segregates the 3G and LTE networks which creates some inefficiencies but is viewed as an acceptable alternative.

Other

Samsung has indicated the following:

- LTE Band 13 (700MHz Upper C1/C2) and Band 7 (2500MHz) are, at the moment, technically difficult to implement together on a handset.
- LTE Band 13 (700MHz Upper C1/C2) and Band 17 (700MHz Lower B/C) are technically difficult to implement together on a handset.
- Adding LTE Band 12 (700MHz Lower A/B/C) to a handset with Band 17 (700MHz Lower B/C) is easier than adding to Band 13 (700MHz Upper C1/C2).

Recap Conclusions

- LTE Band 4 (AWS) and LTE Band 17 (700MHz Lower B/C) handsets should contain 3G AWS for the foreseeable future (AT&T and T-Mobile ecosystems).
- LTE Band 4 (AWS) and LTE Band 13 (700MHz Upper C1/C2) will be included together on handsets (Verizon ecosystem).
- LTE Band 13 (700MHz Upper C1/C2) handsets may not contain 3G AWS which means a customization to the Verizon ecosystem would be required for WIND Canada (or VoLTE).
- LTE Band 7 (2500MHz) does not work with LTE Band 13 (700MHz Upper C1/C2) in the same handset.
- LTE Band 7 (2500MHz) does not exist in the U.S.
- LTE Band 12 (700MHz Lower A/B/C) has limited deployment as Lower A 700MHz was until recently owned by Verizon, not AT&T (note: now owned by T-Mobile).
- Band 12 (700MHz Lower A/B/C) is easier to integrate with Band 17 (700MHz Lower A/B) than Band 13 (700MHz Upper C1/C2).
- LTE Band 29 (700MHz Lower D/E) is expected to be deployed by AT&T.
- LTE Band 41 (2.6GHz) is expected to be deployed by Sprint.

Spectrum Sharing Opportunities

WIND Canada has an opportunity to share its AWS spectrum in Southern Ontario with Rogers and possibly other bands in future depending on AWS spectrum band aggregation technology roadmap. Spectrum sharing is relevant to the Upside business plan scenarios that assume sharing with Rogers in Southern Ontario.

AWS Spectrum

Mobilicity's AWS spectrum is contiguous with WIND Canada's AWS spectrum in Ontario, Alberta and B.C. Mobilicity's AWS spectrum is not contiguous with Rogers' AWS spectrum in any region. This makes spectrum sharing more difficult as it requires spectrum band aggregation technology which is not available for AWS spectrum at this time. However, WIND Canada's current AWS spectrum in Southern Ontario is contiguous with Rogers' AWS spectrum and the acquisition of Mobilicity's AWS spectrum will allow WIND Canada to share its Southern Ontario AWS spectrum with Rogers within reasonably short time of obtaining access to Mobilicity's spectrum (WIND Canada's customer base would be migrated to Mobilicity spectrum thus freeing up the block that can immediately be shared with Rogers). WIND Canada will need to anticipate LTE Capex to deploy Ottawa, Alberta and B.C. as in those areas there will be no spectrum and network sharing.

WIND Canada has modeled four scenarios that include the acquisition of Mobilicity's AWS spectrum as follows:

- AWS spectrum
- AWS spectrum and customer base
- AWS spectrum and upsides
- AWS spectrum, customer base and upsides

Upsides include spectrum and network sharing with Rogers in Southern Ontario; sale of unused AWS spectrum in Eastern Canada, Manitoba and Saskatchewan; and lower domestic roaming costs.

A fifth AWS scenario was presented that assumes maintenance capex for 2014 and 2015 and a LTE build from 2016 – 2018. This shifts portions of the LTE capex to periods where WIND Canada's EBITDA is positive which reduces peak funding requirements.

There are significant government relations' benefits to be realized from WIND Canada bidding for Mobilicity's AWS spectrum. Both Vimpelcom and WIND Canada have always clearly indicated to the Canadian government that one of the main constraints to the Company's growth was the need for additional spectrum at economically viable cost. Not indicating an interest (at any value level) in Mobilicity's spectrum might undermine the credibility of such statement presented over the past years. In all cases, WIND Canada would recommend presenting an offer for Mobilicity's AWS spectrum even at an aggressive value and with several conditions to preserve and enhance relations with the Canadian government and to ensure that the Canadian government does not change its approach with respect to transfers of AWS spectrum to incumbents even in case of bankruptcy or insolvency (i.e., to TELUS in this particular case).

Note that Shaw has 2 x 10MHz of AWS spectrum in Alberta and B.C. that is contiguous to Rogers' AWS spectrum in those markets. Rogers has an option to acquire the spectrum from Shaw later in 2014. WIND Canada does not expect this transaction to close and consequently this could be a source of spectrum in future. This is very high quality spectrum that could be shared with Rogers.

700MHz Spectrum

Videotron acquired 700MHz Upper C1 in Ontario, Alberta and B.C. (as well as Quebec) but to the best of our knowledge has no intention of directly deploying that spectrum outside of Quebec. Thus, there may be an opportunity to partner with Videotron or acquire the 700MHz Upper C1 from Videotron. If so, WIND Canada would need to ensure it has a VoLTE strategy as 3G AWS fallback will likely not be available on most Band 13 handsets in the short term. WIND Canada has modeled the acquisition of Videotron's Ontario, Alberta and B.C. 700MHz spectrum as well as its Toronto AWS spectrum. The main difference between the AWS and 700MHz scenarios is that the LTE roll-out in Alberta and B.C. occurs later in the 700MHz scenario because of the need for VoLTE and the associated handset ecosystem.

2500MHz Spectrum

WIND Canada has not modeled the acquisition of 2500MHz spectrum but we view it as important spectrum as it can be purchased without incumbent pressure in the 2015 spectrum auction, can be used to put pressure on Mobilicity spectrum value and may be acquired through a beauty contest or installment payments (all dependent on government responses to incumbent actions with respect to spectrum over the course of 2014).

Spectrum Priorities

Based on the foregoing, WIND Canada's spectrum priorities (from a strategic and handset ecosystem point of view) in order are as follows:

1. Mobilicity AWS spectrum (or TELUS 850MHz/PCS as divestiture in an acquisition of Mobilicity)
2. Videotron's 700MHz Band 13 spectrum
3. 2500MHz spectrum in 2015 auction

APPENDIX

Industry Canada Commentary on Spectrum

The following points are various extracts from speeches by and discussions with Industry Canada on spectrum in Canada:

- Government is considering changing the 2500MHz auction to double the amount of spectrum available to non-incumbents (from 20 MHz to 40 MHz) and allocating based on "beauty contest" rather than an auction.
- Once the 2500MHz auction is completed, Canada's inventory of available mobile broadband spectrum will have doubled (from pre-700MHz auction) from 270 MHz to 528 MHz.
- Industry Canada's objective is to have between 1000 MHz to 1100 MHz in the Canadian market by 2022, thereby doubling mobile broadband spectrum over the next decade.
- New spectrum is not the only solution. Service providers should combine their spectrum with other service providers to increase capacity. Dynamic spectrum sharing technologies also offer promise. And 'concatenation' technology is needed, to aggregate high capacity blocks of spectrum from many slivers and bands.
- AWS-3 would be ideal to pair the 1755-1780 with 2155-2180 for AWS-3, as extensions of the existing AWS-1 bands. These bands were set aside many years ago in anticipation of the need to expand AWS holdings. It is ready to go in Canada, and would provide an additional 50 MHz of mobile spectrum.
- AWS-2 (i.e., H block (1915-1920 / 1995-2000 MHz) would be a natural extension of the PCS bands; This would be desirable from an ecosystem point of view but they do not provide much new capacity – only 15 MHz, including the unpaired band at 2020-2025.
- AWS-4 is being closely monitored (2000-2020 MHz and 2180-2200 MHz) and subject to a policy consultation, this 40 MHz of spectrum will be repurposed for mobile broadband services only, or for joint terrestrial-satellite application (recognizing Canada's vast territory, and low population density in rural and remote areas, satellite services remain essential).
- 3.5GHz has created high international interest for mobile services, and its propagation characteristics make it ideal for small high-capacity urban cells. But there are radar allocations in the lower part of this band, and fixed satellite in the upper portion, which is used in Canada for broadband services, weather monitoring and important applications for our Northern communities. The band architecture will have to be flexible to support an eco-system that can operate in all or parts of this band. Industry Canada sees promise in some of the European TDD band plans.
- 600MHz: Canada is closely monitoring the U.S. incentive auction process for broadcast TV. Industry Canada is being encouraged by FCC to move on 600MHz in concert, not with the usual multi-year delay.
- 1.4 GHz (L-Band): Spectrum managers from around the world are working to identify additional mobile spectrum at the next World Radiocommunication Conference in 2015. Regional, and if possible global harmonization, is particularly important to us as the Canadian market is not large enough to attract manufacturers to build equipment uniquely for us. The L-band is being discussed in the lead-up to WRC-15. As a result of a recent consultation, Industry Canada will soon be announcing changes to the band to accommodate aircraft testing. At some point in the future, the band may be revisited to accommodate broadband mobile services, depending on the outcome of WRC-15.