The Spectrum Shortage

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“Leading economies have clearly grasped and responded to the urgent need to auction more government spectrum, because they appreciate data demand is relentlessly doubling annually.”

“All I see on the CES 2014 show floor is mobile, mobile, mobile, ------- and to me that means spectrum, spectrum, spectrum.”
Industry Status

- Total Subscribers – 915 mn
- Wireless Subscribers – 886 mn
- Gross Revenues – Rs 212,592
- Gross Block – Rs 7.10 bn
- NET Debt – Rs 2.50 Bn
- EBITDA – Rs 0.4 Bn
The Urban – Rural Divide

- The total penetration is skewed towards urban

- Urban penetration is 139%

- Rural penetration is 42%

- Urban trends show the need for data

- Rural trends show the need for balanced voice and data

- Clear headroom for deeper rural penetration

- Spectrum the need of the hour.
Next Round – The Data Game

886 Mn Indians on Mobile Voice

One to One

Internet on Mobile
Central Role in the Transition to Digital Lifestyle

One to Many
In 2013, 210 Mn Indians had Internet Access

188 Mn of them on Mobile Internet!

More than 600 Mn waiting to be connected...
Spectrum Holdings

• Before 2010 – 1168.50 MHz
• Acquired — 2010, 2012, 2014 1635.80 MHz

• 800 MHz Band – CDMA 236.25 MHz
• 900 MHz Band – GSM 449.40 MHz
• 1800 MHz Band – GSM 646.50 MHz
• 2100 MHz Band – WCDMA 460 MHz
• 2300 MHz – BWA 1320 MHz
Spectrum Sharing

- Being actively considered by the DoT
- Principally implies active Infrastructure sharing
- Defined as the SIMULTANEOUS usage of a specific band
- Confined to a specific area only
Spectrum Trading

- Also being actively considered by DoT
- To be permitted on a circle basis
- Permission for a defined period of time
Spectrum Utilization Efficiency

<table>
<thead>
<tr>
<th>Total Subscribers</th>
<th>Total Spectrum</th>
<th>Subscribers/MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>883 mn</td>
<td>3103</td>
<td>285K</td>
</tr>
<tr>
<td>493 mn (56%)</td>
<td>810 (26%)</td>
<td>609K</td>
</tr>
<tr>
<td>390 mn (44%)</td>
<td>2293 (74%)</td>
<td>170K</td>
</tr>
</tbody>
</table>

• The top 3 National Operators account for just over half the total subscribers as of end of January 2014, but just over one quarter of the allotted spectrum

• There is a desperate need to get more spectrum to those who use it efficiently
Thank You