Mobile Video in the Encrypted Era

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CANTO 2015
Mobile operators are in the business of selling buckets of bytes

Voice and text are commodity add-ons to data packages in many markets...
Video is guaranteed to consume lots of bytes.

So the mobile network should be a mobile video network.
Video stalling is the dropped call of mobile broadband

If video drives usage and usage drives revenue, then stalling is a revenue killer!

Key KPIs:

Then...

...and now
A video dashboard tells you how big the stalling problem is…

Percent of Videos That Stalled w/ and w/out Optimization

…and how well your optimization techniques are addressing it
Optimization provides balance between experience and efficiency

Without Optimization

Excessive buffering = waste

Stalling = poor experience

With Optimization

Optimal buffering

If it’s too fast, slow it down.
If it’s too slow, lower the quality so the network can keep up.
An optimized video experience leads to more data consumption

Aggregate 24-hr data consumption by optimization level applied

Radio Side Data Volume (GB)

Baseline

Optimized

+33%

+8%

... more data consumption yields higher data revenue
Once video is optimized, it becomes a differentiator

Vodafone Turkey advertisement: “Best network for video”

https://www.youtube.com/watch?v=ZtUn48_-X-w

A better video experience attracts new subscribers
The impact of encryption:
More than 50% of mobile data is encrypted today, and rising fast

Citrix forecasts that 75% of mobile data traffic will be encrypted by 2018.
But the sources of encrypted traffic are few.

Three sites account for the majority of encrypted traffic:

- Google incl. YouTube (51%)
- Facebook (28%)
- Others (10%)
- Whatsapp (1%)
- Akamai (5%)
- Appspot (5%)
Only \(\frac{2}{3}\) of Google traffic is encrypted at the moment.

Vast majority of Facebook content is encrypted.

If Google and Facebook encrypt 100\%, total encryption will rise another \(~15\%\).
Vast majority of encrypted Google traffic is video
Only a small amount of encrypted Facebook traffic is video

Roughly half of encrypted traffic is video. Without proper tools, this content is unmanageable.
 Encryption is more prevalent for newer Android devices

Android device use of SSL is highly dependent on version #

Android upgrade cycle will shift more video traffic to use SSL
ABR video formats are more prevalent on newer OS

Smartphone device upgrade cycle will shift more YouTube video toward ABR protocols
Encrypted ABR Video will become the single largest traffic class

Encrypted and Unencrypted ABR video will account for nearly 60% of mobile data traffic by 2018.
Why do mobile operators deploy ByteMobile?

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<th>Benefit</th>
<th>Description</th>
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<tr>
<td>Application Visibility</td>
<td>Enables fine-grained monitoring of application trends and experience, usage and efficiency KPIs</td>
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<td>Improved Customer Experience</td>
<td>Improves the mobile data experience, providing competitive advantage, “best network” perception</td>
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<td>Increased Network Efficiency</td>
<td>Reduces wasted data – data that doesn’t create more revenue or improve experience</td>
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<tr>
<td>Increased Data Usage</td>
<td>A better experience leads subscribers to consume more revenue-producing data</td>
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These benefits apply whether the data traffic is **encrypted** or **unencrypted**
Citrix ByteMobile
ELEVATE THE MOBILE EXPERIENCE