

**North America  
Mobile Video, 2018-  
2023: *Increasing  
Traffic for Mobile  
Operators to Manage***

Market Study  
Second Quarter, 2019





---

# **North America Mobile Video, 2018-2023: *Increasing Traffic for Mobile Operators to Manage***

---

A Market Study

Published: Second Quarter, 2019

Version: 1.0

Report Number: 2Q2019-04

iGR

12400 W. Hwy 71

Suite 350 PMB 341

Austin TX 78738

# Table of Contents

<b>Abstract</b> .....	<b>1</b>
<b>Executive Summary</b> .....	<b>3</b>
Table A: Total Mobile Video and Non-Video Traffic (TB/month), 2018-2023 .....	3
Figure A: Total Mobile Video and Non-Video Traffic (TB/month), 2018-2023 .....	4
<b>What This Means</b> .....	<b>4</b>
<b>Methodology</b> .....	<b>5</b>
<b>Mobile Video Landscape</b> .....	<b>6</b>
<b>Movie/TV Streaming Video</b> .....	<b>6</b>
<b>Other Streaming Video</b> .....	<b>7</b>
<b>What Mobile Operators Currently do with Video</b> .....	<b>7</b>
Encrypted Video Traffic .....	8
Unencrypted Video Traffic .....	8
Mobile operator strategies .....	9
<b>Overview: Video and Compression</b> .....	<b>11</b>
<b>Compression standards</b> .....	<b>11</b>
<b>Compression categories</b> .....	<b>12</b>
<b>Compression techniques</b> .....	<b>12</b>
<b>Codecs</b> .....	<b>13</b>
H.264 and HEVC .....	14
VP9 .....	14
AV1 .....	15
<b>4K</b> .....	<b>15</b>
<b>Types of Streaming – Adaptive Bitrate</b> .....	<b>16</b>
ABR ping pong .....	18
DASH.....	18
<b>Transmuxing</b> .....	<b>18</b>
<b>HTML5</b> .....	<b>19</b>
<b>Additional Strategies to Improve Mobile Video</b> .....	<b>20</b>
<b>Unicast, Broadcast and LTE-Broadcast</b> .....	<b>20</b>
Figure 1: Unicast versus Broadcast & Multicast .....	20
Broadcast versus Multicast .....	22
<b>Edge Computing</b> .....	<b>22</b>
<b>Video Compression Beyond Codecs</b> .....	<b>22</b>
Video Optimization Workflow .....	23
Figure 2: Simplistic Video Optimization Workflow for an OTT Video Service .....	24
Benefits of Video Optimization .....	24
<b>Mobile Operator Video Initiatives</b> .....	<b>26</b>
<b>AT&amp;T</b> .....	<b>26</b>

Quoting information from an iGillottResearch publication: external – any iGillottResearch information that is to be used in press releases, sales presentations, marketing materials, advertising, or promotional materials requires prior written approval from iGillottResearch. iGillottResearch reserves the right to deny approval of external usage for any reason. Internal-quoting individual sentences and paragraphs for use in your company’s internal communications activities does not require permission from iGillottResearch. The use of large portions or the reproduction of any iGillottResearch document in its entirety does require prior written approval and may have some financial implications.

Copyright © 2019 iGillottResearch, Inc. Reproduction is forbidden unless authorized.

FOR INFORMATION PLEASE CONTACT IAIN GILLOTT (512) 263-5682.

DirecTV .....	26
Time Warner .....	26
Stream Saver .....	27
<b>Sprint .....</b>	<b>27</b>
<b>T-Mobile.....</b>	<b>27</b>
<b>Verizon.....</b>	<b>27</b>
<b>Content Provider and Mobile Operator Relationship .....</b>	<b>28</b>
<b>The End of Net Neutrality .....</b>	<b>29</b>
<b>North America Mobile Video Forecast .....</b>	<b>31</b>
<b>Mobile Data Forecast.....</b>	<b>31</b>
Table 1: North America Connections, Population, and Penetration, 2018-2023 (000s) .....	31
Figure 3: North America Connections and Population, 2018-2023 (000) .....	32
Quartiles.....	32
Table 2: Total Mobile Data Traffic (TB/month), 2018-2023 .....	32
Figure 4: Total Mobile Data Traffic (TB/month), 2018-2023 .....	33
<b>Mobile Video Forecast .....</b>	<b>33</b>
Per Mobile Connection.....	33
Table 3: Mobile Video per connection (MB/month) per Quartile, 2018-2023.....	34
Figure 5: Mobile Video per connection (MB/month) per Quartile, 2018-2023 .....	34
Table 4: Mobile Non-Video per connection (MB/month) per Quartile, 2018-2023.....	35
Figure 6: Mobile Non-Video per connection (MB/month) per Quartile, 2018-2023 .....	35
Table 5: Mobile Video and Non-Video Traffic per connection (MB/month), 2018-2023.....	36
Figure 7: Mobile Video and Non-Video Traffic per connection (MB/month), 2018-2023 ....	36
Total Mobile Video Traffic .....	36
Table 6: Total Mobile Video Traffic (TB/month) per Quartile, 2018-2023 .....	37
Figure 8: Total Mobile Video Traffic (TB/month) per Quartile, 2018-2023.....	37
Table 7: Total Non-Video Mobile Traffic (TB/month) per Quartile, 2018-2023 .....	38
Figure 9: Total Non-Video Mobile Traffic (TB/month) per Quartile, 2018-2023 .....	38
Table 8: Total Mobile Video and Non-Video Traffic (TB/month), 2018-2023 .....	39
Figure 10: Total Mobile Video and Non-Video Traffic (TB/month), 2018-2023 .....	39
Table 9: Mobile Video and Non-Video Traffic (Percent), 2018-2023 .....	39
Figure 11: Mobile Video and Non-Video Traffic (Percent), 2018-2023 .....	40
<b>Movie/TV Streaming and ‘Other’ Mobile Video Forecast .....</b>	<b>40</b>
Per Mobile Connection.....	40
Table 10: Movie/TV Streaming per connection (MB/month) per Quartile, 2018-2023 .....	41
Figure 12: Movie/TV Streaming per connection (MB/month) per Quartile, 2018-2023.....	41
Table 11: Other Video per connection (MB/month) per Quartile, 2018-2023.....	42
Figure 13: Other Video per connection (MB/month) per Quartile, 2018-2023 .....	42
Table 12: Movie/TV Streaming and Other Video Usage per connection (MB/month), 2018-2023.....	43
Figure 14: Movie/TV Streaming and Other Mobile Video Usage per connection (MB/month), 2018-2023 .....	43
Total Mobile Video Traffic .....	44
Table 13: Total Movie/TV Streaming Video Traffic (TB/month) per Quartile, 2018-2023 ....	44
Figure 15: Total Movie/TV Streaming Video Traffic (TB/month) per Quartile, 2018-2023 ...	45

Quoting information from an iGillottResearch publication: external – any iGillottResearch information that is to be used in press releases, sales presentations, marketing materials, advertising, or promotional materials requires prior written approval from iGillottResearch. iGillottResearch reserves the right to deny approval of external usage for any reason. Internal-quoting individual sentences and paragraphs for use in your company’s internal communications activities does not require permission from iGillottResearch. The use of large portions or the reproduction of any iGillottResearch document in its entirety does require prior written approval and may have some financial implications.

Copyright © 2019 iGillottResearch, Inc. Reproduction is forbidden unless authorized.

FOR INFORMATION PLEASE CONTACT IAIN GILLOTT (512) 263-5682.

Table 14: Total Other Video Mobile Traffic (TB/month) per Quartile, 2018-2023 .....	45
Figure 16: Total Other Video Mobile Traffic (TB/month) per Quartile, 2018-2023.....	46
Table 15: Movie/TV Streaming and Other Video Traffic (TB/month), 2018-2023 .....	46
Figure 17: Movie/TV Streaming and Other Video Traffic (TB/month), 2018-2023 .....	47
Table 16: Movie/TV Streaming and Other Video Traffic (Percent), 2018-2023 .....	47
Figure 18: Movie/TV Streaming and Other Video Traffic (Percent), 2018-2023 .....	48
<b>Encrypted and Unencrypted Mobile Video Forecast.....</b>	<b>48</b>
Table 17: Encrypted and Unencrypted Video Traffic (TB/month), 2018-2023.....	49
Figure 19: Encrypted and Unencrypted Video Traffic (TB/month), 2018-2023 .....	50
Table 18: Encrypted and Unencrypted Video Traffic (Percent), 2018-2023.....	50
Figure 20: Encrypted and Unencrypted Video Traffic (Percent), 2018-2023 .....	51
Table 19: Encrypted Video and Total Mobile Data Traffic, 2018-2023 .....	51
Figure 21: Encrypted Video and Total Mobile Data Traffic, 2018-2023 .....	52
<b>Video Company Profiles .....</b>	<b>53</b>
<b>Akamai .....</b>	<b>53</b>
<b>Beamr.....</b>	<b>55</b>
<b>EuclidIQ .....</b>	<b>57</b>
<b>ENENSYS Expway .....</b>	<b>58</b>
<b>Flash Networks.....</b>	<b>60</b>
<b>IBM Watson Media.....</b>	<b>61</b>
<b>Media Excel .....</b>	<b>63</b>
<b>MediaKind .....</b>	<b>65</b>
<b>MOBITV .....</b>	<b>66</b>
<b>Ooyala .....</b>	<b>68</b>
<b>PeerApp .....</b>	<b>69</b>
<b>Quickplay Media (AT&amp;T).....</b>	<b>70</b>
<b>Qwilt .....</b>	<b>72</b>
<b>Vantrix .....</b>	<b>74</b>
<b>Velocix.....</b>	<b>76</b>
<b>Wowza Media Systems.....</b>	<b>77</b>
<b>Definitions .....</b>	<b>80</b>
Definitions Table .....	80
<b>About iGR.....</b>	<b>100</b>
<b>Disclaimer .....</b>	<b>100</b>

Quoting information from an iGillottResearch publication: external — any iGillottResearch information that is to be used in press releases, sales presentations, marketing materials, advertising, or promotional materials requires prior written approval from iGillottResearch. iGillottResearch reserves the right to deny approval of external usage for any reason. Internal-quoting individual sentences and paragraphs for use in your company's internal communications activities does not require permission from iGillottResearch. The use of large portions or the reproduction of any iGillottResearch document in its entirety does require prior written approval and may have some financial implications.

Copyright © 2019 iGillottResearch, Inc. Reproduction is forbidden unless authorized.

FOR INFORMATION PLEASE CONTACT IAIN GILLOTT (512) 263-5682.

## Abstract

---

The amount of mobile video passing over the mobile network continues to increase, as a larger number of mobile consumers watch streaming movies and TV, use OTT communication and social media apps, which increasingly contain embedded videos, use video chat applications, and watch news videos. Mobile operators are thus motivated to update their mobile networks with densification and other strategies, such as edge computing, so that they can continue to deliver a positive video experience to their subscribers.

This market study provides a five-year forecast for mobile video traffic in North America. The mobile video forecast is then split into movie/TV streaming video and 'other' video, as well as encrypted and unencrypted video. Further, this study provides detailed information about video compression and streaming techniques used to deliver video content to consumers on the mobile network and additional strategies available to the mobile operator. The study also provides updates on the mobile video landscape and summarizes U.S. mobile operators' recent initiatives regarding mobile video.

Key questions addressed in this report include:

- What is *iGR*'s five-year forecast for mobile video traffic in North America?
- How much mobile video traffic is generated by streaming movies and TV programs? And how much is generated by other types of video, such as chats and embedded videos in social and news media?
- What is the difference between encrypted and unencrypted mobile video traffic and how much mobile video is expected to be encrypted throughout the forecast?
- What strategies are U.S. mobile operators using with respect to mobile video?
- What are video compression, codecs, and video containers?
- What is Adaptive Bitrate Streaming?
- What is LTE Broadcast, and where has it been deployed in North America and other global markets?
- What is edge computing and why is it important to mobile video?

Who should read this report?

- Mobile operators

Quoting information from an *iGillottResearch* publication: external — any *iGillottResearch* information that is to be used in press releases, sales presentations, marketing materials, advertising, or promotional materials requires prior written approval from *iGillottResearch*. *iGillottResearch* reserves the right to deny approval of external usage for any reason. Internal-quoting individual sentences and paragraphs for use in your company's internal communications activities does not require permission from *iGillottResearch*. The use of large portions or the reproduction of any *iGillottResearch* document in its entirety does require prior written approval and may have some financial implications.

Copyright © 2019 *iGillottResearch*, Inc. Reproduction is forbidden unless authorized.

FOR INFORMATION PLEASE CONTACT IAIN GILLOTT (512) 263-5682.

- Device OEMs
- Mobile infrastructure vendors
- Mobile backhaul services and solutions providers
- Content providers and distributors
- Financial analysts and investors.

Quoting information from an iGillottResearch publication: external — any iGillottResearch information that is to be used in press releases, sales presentations, marketing materials, advertising, or promotional materials requires prior written approval from iGillottResearch. iGillottResearch reserves the right to deny approval of external usage for any reason. Internal-quoting individual sentences and paragraphs for use in your company's internal communications activities does not require permission from iGillottResearch. The use of large portions or the reproduction of any iGillottResearch document in its entirety does require prior written approval and may have some financial implications.

Copyright © 2019 iGillottResearch, Inc. Reproduction is forbidden unless authorized.

FOR INFORMATION PLEASE CONTACT IAIN GILLOTT (512) 263-5682.