

**Global Wi-Fi Offload
Traffic Forecast, 2014
– 2019: *An
Alternative to LTE***

Market Study
First Quarter, 2015





Global Wi-Fi Offload Traffic Forecast, 2014 – 2019: *An Alternative to LTE*

A Market Study

Published First Quarter, 2015
Version 1.0
Report Number: 1Q2015-06

iGR
12400 W. Hwy 71
Suite 350 PMB 341
Austin TX 78738

Table of Contents

Abstract.....	1
Executive Summary	3
Figure A: Wi-Fi Offload by Type (Total TB per Month), 2014-2019	4
Methodology	5
Regions Used in this Report	6
Types of Wi-Fi Networks and Business Models.....	7
Carrier Wi-Fi	8
Cable MSO Wi-Fi.....	9
Carrier and Cable MSO Wi-Fi Business Models	10
Third Party Wi-Fi.....	10
Enabling Carrier and Cable MSO Wi-Fi	10
SWOT Analysis of Carrier Wi-Fi	11
Strengths.....	11
Table 1: Carrier Wi-Fi SWOT Analysis	12
Weaknesses	13
Opportunities.....	15
Threats	15
Carrier and Cable Wi-Fi Standards.....	16
Passpoint / Hotspot 2.0	16
Wireless Broadband Alliance (WBA) NGH and ICP Programs	17
ANDSF	18
VoWiFi.....	18
Integrating Wi-Fi in the Mobile Network.....	20
Figure 1: Simple View of Wi-Fi in the Mobile Network.....	20
Figure 2: Simple View of Wi-Fi in the Mobile Packet Core Architecture.....	21
Roaming on Wi-Fi Networks	22
Wi-Fi Offload	24
Types of Wi-Fi Offload	24
Figure 3: Types of Wi-Fi Networks and their Relation to Wi-Fi Offload.....	25
Why offload?	25
Adoption of Wi-Fi Offload.....	26
Benefits of Wi-Fi Offload.....	27
Potential Issues with Wi-Fi Offload	28
Overview of Global Wi-Fi Trends.....	31
Trends by Region	31
North America	31
Europe	33
Latin America	34

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 © 2015 iGillottResearch, Inc. Reproduction is forbidden unless authorized.

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

MEA (Middle East & Africa)	35
Asia-Pacific	37
Japan	38
Wi-Fi Offload Methodology	40
Connections Data Usage Categories	40
Estimating Data Use per Activity	41
When Are Devices Typically Used	42
Additional Assumptions	43
Global Wi-Fi Offload Connections Forecast	44
Other Key Assumptions	46
Table 2: Global Mobile Data and Wi-Fi Offload Usage, 2014-2019 (TB/Month)	47
Figure 4: Global Mobile Data and Wi-Fi Offload Usage, 2014-2019 (TB/Month)	48
Table 3: Wi-Fi Offload as Percent of Mobile Data, 2014-2019	48
Figure 5: Wi-Fi Offload as Percent of Mobile Data, 2014-2019	49
Table 4: Data Traffic Savings from Wi-Fi Offload, 2014-2019 (TB/Month)	49
Figure 6: Data Traffic Savings from Wi-Fi Offload, 2014-2019	50
Methodology, User-Driven Wi-Fi Offload	52
Table 5: Total User-Driven Wi-Fi by Region, 2014-2019 (TB/Month)	54
Figure 7: Total User-Driven Wi-Fi by Region, 2014-2019 (TB/Month)	54
Table 6: User-Driven Wi-Fi Traffic Share Percent by Region, 2014-2019	55
Figure 8: User-Driven Wi-Fi Traffic Share Percent by Region, 2014-2019	56
Methodology, Carrier-Driven Wi-Fi Offload	57
Table 7: Total Carrier-Driven Wi-Fi Offload, 2014-2019 (TB/month)	58
Figure 9: Total Carrier-Driven Wi-Fi Offload, 2014-2019 (TB/Month)	59
Table 8: Total Carrier-Driven Wi-Fi Offload, 2014-2019	59
Figure 10: Total Carrier-Driven Wi-Fi Offload, 2014-2019	60
Methodology, Wi-Fi Only	61
Table 9: Total Wi-Fi Only Traffic, 2014-2019 (TB/Month)	61
Figure 11: Total Wi-Fi Only Traffic, 2014-2019 (TB/Month)	63
Table 10: Wi-Fi Only Percent of Traffic by Region, 2014-2019	63
Figure 12: Wi-Fi Only Percent of Traffic by Region, 2014-2019	64
WiFi Vendor Profiles	65
Accuris Networks	65
Alcadis ISP Solutions	67
Anyfi Networks	68
Figure 13: Anyfi HOTSPOT solution	69
Figure 14: Anyfi SIMPLE solution	69
Figure 15: Anyfi MOBILE solution	70
Aptilo Networks	71
Aruba Networks	72
AT&T	75
Boingo	78
Bright House Networks, LLC	80

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 © 2015 iGillottResearch, Inc. Reproduction is forbidden unless authorized.

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

Cablevision Systems Corporation	82
Cisco	84
Comcast Corporation	86
Cox Communications	88
Devicescape.....	90
Ericsson	92
GCI	95
Gogo.....	97
Green Packet	99
iPass	101
Motorola Solutions.....	103
NetScout Systems	105
Ruckus Wireless.....	107
Time Warner Cable	111
Verizon Wireless.....	113
Way4orth	115
wefi	115
Xirrus.....	117
Definitions	120
General.....	120
Device Types.....	120
Services	121
Network Technology.....	122
Regions.....	126
About iGR	127
Disclaimer.....	127

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 © 2015 iGillottResearch, Inc. Reproduction is forbidden unless authorized.

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

Abstract

Most mobile operators around the world are experimenting with Wi-Fi networks in some way. AT&T in the U.S., for example, has rolled out Wi-Fi hotzones in congested metro areas. SK Telekom offloads a massive amount of data traffic each month to Wi-Fi, as do NTT DoCoMo and Softbank in Japan. However, in the Middle East and Africa Wi-Fi networks are really just getting started. Wi-Fi is a little more advanced in Latin America, depending on the country, but deployments still lag those in more mature wireless markets.

The reasons behind regional differences in Wi-Fi deployments are as much due to differences in GDP, regulation and taxation, as they are to availability of licensed cellular spectrum, affordability of devices relative to median income, reliable access to power, literacy levels, population and population densities.

This report presents *iGR*'s model for Wi-Fi Offload, which include:

1. **Wi-Fi Only:** This is data traffic that occurs on a Wi-Fi network outside of the home or office on Wi-Fi-only devices.
2. **Wi-Fi Offload (User Driven):** A subscriber/end user who chooses a Wi-Fi connection (except one inside the home or office) rather than use their 3G/4G mobile broadband connection. If the non-home/non-work Wi-Fi network did not exist, this traffic would have gone over the mobile operator's cellular data network.
3. **Wi-Fi Offload (Carrier Driven):** This is user-generated data traffic that the operator diverts from its 3G/4G RAN to a carrier-managed Wi-Fi network. This is data the subscriber would have used regardless of the type of RAN they are on (Wi-Fi or cellular). This type of Wi-Fi offload is not widespread today, but *iGR* believes it will become more common over time.

Key questions addressed:

- What is Wi-Fi?
- Where is the Wi-Fi standard headed?
- How is Wi-Fi used?
- What is Wi-Fi offload?
- What is the difference between user-driven Wi-Fi offload and carrier-driven Wi-Fi offload?
- What are some of the key standards efforts associated with Wi-Fi offload?

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 © 2015 *iGillottResearch*, Inc. Reproduction is forbidden unless authorized.

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

- What are the potential benefits associated with Wi-Fi offload?
- What are the potential issues associated with Wi-Fi offload?
- What is Wi-Fi only? How is it commonly used?
- How much Wi-Fi offload traffic is expected through 2019 both globally and in each region of the world?
- How much Wi-Fi only traffic is expected through 2019 both globally and in each region of the world?
- What percentage of total “mobile” data traffic is Wi-Fi traffic both globally and in each region of the world?

Who should read this report?

- Mobile operators, including those with Wi-Fi networks
- Device OEMs
- Content providers and distributors
- Cable MSOs and those offering Wi-Fi services
- 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 © 2015 iGillottResearch, Inc. Reproduction is forbidden unless authorized.

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