

**Global WiFi Offload  
Traffic Forecast, 2012  
– 2017: *Moving  
Toward the Het-Net***

Market Study  
Fourth Quarter, 2013





---

# **Global WiFi Offload Traffic Forecast, 2012 – 2017: *Moving Toward the Het-Net***

---

A Market Study

Published Fourth Quarter, 2013  
Version 1.0  
Report Number: 4Q2013-02

*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>
Figure A: WiFi Offload in Context (Total TB per Month), 2012-2017 .....	4
<b>Methodology</b> .....	<b>5</b>
<i>iGR's Usage Categories</i> .....	5
<b>When Are Devices Typically Used</b> .....	8
<b>WiFi Offload</b> .....	<b>10</b>
Brief Overview of Key WiFi Standards .....	10
Passpoint / Hotspot 2.0 .....	11
ANDSF .....	13
Partnerships .....	13
<b>Types of WiFi Networks</b> .....	<b>14</b>
<b>Types of WiFi Business Models</b> .....	<b>15</b>
<b>Types of WiFi Offload</b> .....	<b>15</b>
<b>Why offload?</b> .....	<b>17</b>
<b>Adoption of Offload</b> .....	<b>18</b>
<b>Benefits of WiFi Offload</b> .....	<b>19</b>
<b>Potential Issues with WiFi Offload</b> .....	<b>20</b>
<b>Global WiFi Offload Connections Forecast</b> .....	<b>22</b>
<b>Global WiFi Offload Connections Forecast</b> .....	<b>22</b>
Table 1: Global Mobile Data and WiFi Offload Usage, 2012-2017 (TB/Month) .....	22
Figure 1: Global Mobile Data and WiFi Offload Usage, 2012-2017 (TB/Month).....	23
<b>Assumptions by Region</b> .....	<b>26</b>
North America.....	26
Europe.....	27
Latin America .....	28
MEA (Middle East & Africa) .....	29
Asia-Pacific .....	31
Japan .....	32
<b>Methodology, User-Driven WiFi Offload</b> .....	<b>34</b>
Table 2: User-Driven WiFi by Region, 2012-2017 .....	36
Figure 2: User-Driven WiFi by Region, 2012-2017 (MB/Month per User) .....	37
Table 3: Total User-Driven WiFi by Region, 2012-2017 .....	37
Figure 3: Total User-Driven WiFi by Region, 2012-2017 .....	38
<b>Methodology, Carrier-Driven WiFi Offload</b> .....	<b>39</b>
Table 4: Average Carrier-Driven WiFi Offload, 2012-2017.....	40
Figure 4: Average Carrier-Driven WiFi Offload, 2012-2017 .....	40
Table 5: Total Carrier-Driven WiFi Offload, 2012-2017.....	41

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 © 2013 *iGillottResearch*, Inc. Reproduction is forbidden unless authorized.

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

Figure 5: Total Carrier-Driven WiFi Offload, 2012-2017 .....	42
<b>Methodology, WiFi Only .....</b>	<b>43</b>
Table 6: Average WiFi Only Traffic, 2012-2017 .....	44
Table 7: Total WiFi Only Traffic, 2012-2017 .....	44
Figure 6: Total WiFi Only Traffic, 2012-2017.....	45
<b>WiFi Offload in Perspective .....</b>	<b>46</b>
Table 8: Global WiFi Only Traffic, 2012-2017 .....	46
Figure 7: Global WiFi as Percent of Total “Mobile” Data, 2012-2017 .....	47
Table 9: Global WiFi as Percent of Total “Mobile” Data, 2012-2017 .....	47
Figure 8: Global WiFi as Percent of Total “Mobile” Data, 2012-2017 .....	48
Table 10: North America WiFi as Percent of Total “Mobile” Data, 2012-2017 .....	48
Figure 9: North America WiFi as Percent of Total “Mobile” Data, 2012-2017.....	49
Table 11: Europe WiFi as Percent of Total “Mobile” Data, 2012-2017 .....	49
Figure 10: Europe WiFi as Percent of Total “Mobile” Data, 2012-2017.....	50
Table 12: Latin America WiFi as Percent of Total “Mobile” Data, 2012-2017 .....	50
Figure 11: Latin America WiFi as Percent of Total “Mobile” Data, 2012-2017 .....	51
Table 13: MEA WiFi as Percent of Total “Mobile” Data, 2012-2017.....	51
Figure 12: MEA WiFi as Percent of Total “Mobile” Data, 2012-2017.....	52
Table 14: Asia-Pacific WiFi as Percent of Total “Mobile” Data, 2012-2017 .....	52
Figure 13: Asia-Pacific WiFi as Percent of Total “Mobile” Data, 2012-2017 .....	53
Table 15: Japan WiFi as Percent of Total “Mobile” Data, 2012-2017 .....	53
Figure 14: Japan WiFi as Percent of Total “Mobile” Data, 2012-2017 .....	54
<b>Definitions .....</b>	<b>55</b>
<b>General.....</b>	<b>55</b>
<b>Device Types.....</b>	<b>55</b>
<b>Services .....</b>	<b>56</b>
<b>Network Technology.....</b>	<b>57</b>
<b>About iGR .....</b>	<b>61</b>
<b>Disclaimer.....</b>	<b>61</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 © 2013 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 WiFi networks in some way. AT&T in the U.S., for example, is rolling out WiFi hotzones in congested metro areas. SK Telekom offloads a massive amount of data traffic each month to WiFi, as do NTT DoCoMo and Softbank in Japan. However, in the Middle East and Africa WiFi networks are really just getting started. WiFi is a little more advanced in Latin America, depending on the country, but deployments still lag.

The reasons behind regional differences in WiFi deployments are as much due to differences in GDP, regulation and taxation, as they are to availability of spectrum, affordability of devices relative to median income, literacy levels, population and population densities.

This report presents *iGR's* model for WiFi Offload, which include:

1. **WiFi Only:** This is data traffic that occurs on a WiFi network outside of the home or office on WiFi-only devices. *iGR's* model estimates that in 2012, a total of about 0.38 gigabytes (GB) each month per active device among that subset of mobile connections that have WiFi-only devices (and use them outside the home or office). This is the smallest sub-set of WiFi offload usage.
2. **WiFi Offload (User Driven):** A subscriber/end user who chooses a WiFi connection (except one inside the home or office) rather than use their 3G/4G mobile broadband connection. If the non-home/non-work WiFi network did not exist, this traffic would have gone over the mobile operator's cellular data network. *iGR's* model estimates that in 2012, a total of about 0.41 GB per month per active device was offloaded to WiFi. This is the predominant form of WiFi offload today.
3. **WiFi Offload (Carrier Driven):** This is user-generated data traffic that the operator diverts from its 3G/4G RAN to a carrier-managed WiFi network. As such, *iGR* counts this traffic as a fraction of mobile data since this is data the subscriber would have used regardless of the type of RAN they are on. (Note that this definition may change over time, as the actual technology required to "hotswitch" the end user from 3G/4G to WiFi becomes more transparent to the end user.) *iGR's* model estimates that in 2012, a total of about 0.04 GB per month per active device was offloaded to WiFi. This type of WiFi offload is not widespread today, but *iGR* believes it will become more common over time.

Key questions addressed:

- What is WiFi?



- Where is the WiFi standard headed?
- How is WiFi used?
- What is WiFi offload?
- What is the difference between user-driven WiFi offload and carrier-driven WiFi offload?
- What are some of the key standards efforts associated with WiFi offload?
- What are the potential benefits associated with WiFi offload?
- What are the potential issues associated with WiFi offload?
- What is WiFi only? How is it commonly used?
- How much WiFi offload traffic is expected through 2017 both globally and in each region of the world?
- How much WiFi only traffic is expected through 2017 both globally and in each region of the world?
- What percentage of total “mobile” data traffic is WiFi traffic both globally and in each region of the world?

Who should read this report?

- Mobile operators, including those with WiFi networks
- Device OEMs
- Content providers and distributors
- Cable MSOs and those offering WiFi services
- Financial analysts and investors.