



## Frequently Asked Investor Questions

### GENERAL / INDUSTRY-RELATED

#### 1. What will the future of 5G mean for Boingo's business?

- The Company is very excited about 5G which will commence the first time both licensed and unlicensed technology will converge. While discussions surrounding the future and implications of 5G are ongoing, the Company believes it will require a significant paid upgrade cycle at its DAS venues. Further, the Company is agnostic regarding which spectrum of technology the carriers choose to deploy given its wireless rights in its venues. Lastly, the Company is a part of many industry organizations including: the CBRS Alliance, Multefire, Wi-Fi Alliance, Wireless Broadband Alliance, New IP Agency and The Wireless Infrastructure Association, that are setting the standards for the future of wireless connectivity.

#### 2. Who does Boingo compete against? What are the key differentiating factors for Boingo versus its competitors?

- The Company's competitors vary by revenue stream. The Company competes in the DAS space with the carriers themselves as well as tower companies and smaller regional players that have the ability to build DAS networks in indoor and outdoor venues. In the military vertical, the Company competes with traditional cable companies that can provide both cable and internet services to soldiers. The Company may also compete against smaller, regional wireless infrastructure providers in the Wi-Fi space.
- Boingo is unique in that it believes it is the only neutral host network operator that has a core competency in building and operating both DAS and Wi-Fi networks for over a decade. Further, the Company works with both licensed and unlicensed technologies, which positions it well for 5G which will mark the convergence of licensed and unlicensed spectrum.



## **DISTRIBUTED ANTENNA SYSTEMS ("DAS")**

### **3. How does the accounting for a typical DAS deal work?**

- Boingo acquires the long-term wireless rights in major venues. The Company then discusses the build with all four carriers to determine which carrier is interested in leading the design. Networks typically launch with one or two carriers at the beginning with the third and fourth carriers potentially joining the network at a later date. Participating carriers are often determined by the specific market priorities of each carrier as well as by the carriers' capital expenditures budget.
- The Company works with the lead carrier(s) to design the network. A typical deal results in an operating margin of the network build fees in the mid-20% range.
- This Network build fee is typically billed 50% up front, 40% at substantial completion and 10% upon carrier acceptance. The Network build fee is recorded within accounts receivable on the Company's balance sheet which is converted to cash upon receipt of payment from the carriers.
- The recurring carrier access fee revenue varies by venue, although they are typically 3-5% of the initial Network build fee per year per carrier, for each year of the agreement. These access agreements typically include 3% annual escalators.
- The access fee revenue is generally recognized as incurred and the network build fee revenue is generally recognized on a straight-line basis over the estimated customer relationship period which typically is coterminous with the venue agreement (typically 10+ years in length from network launch).

### **4. Why is a DAS network still relevant given carrier offload opportunities to Wi-Fi?**

- There are multiple reasons why Boingo believes DAS is a necessary solution, depending on the coverage/capacity the carrier has at a given venue as well as what type of network may already be in place at that venue.
- Wi-Fi has more throughput at a lower cost than cellular technology and as such, Boingo believes it scales better.
- There are also some cases where a carrier may opt for both Wi-Fi and DAS and/or small cells which is a good proof point that, at times, both networks may be necessary in order to provide enough bandwidth.



**5. Why does DAS (access fee) revenue decline sequentially each year from the fourth quarter to the first quarter?**

- The Company's contracts with the carriers for certain marquee locations are unique in that they have an annual access fee for an annual allotment of minutes (MOUs).
- If a carrier exceeds their annual allotment of MOUs, Boingo is paid an incremental fee for each incremental MOU above the allotment. The allotment of minutes are issued on January 1<sup>st</sup> of each year. In the first quarter of the year, there are few excess MOUs while the fourth quarter typically has the most excess MOUs.
- The other DAS venues in the Company's portfolio have fairly standard contracts with the typical annual escalators and do not contribute to this seasonality.

**6. What is the timeline for DAS nodes in backlog be reflected on the income statement?**

- The Company has 22,200 nodes deployed & ~11,000 nodes in backlog as of September 30, 2017. The Company believes the majority of these nodes in backlog will be deployed and start to contribute to revenue and operating income in ~18-24 months.

**7. How do small cell solutions complement Boingo's DAS strategy?**

- Small cells are exciting because the opportunity expands the Company's addressable market. The Company believes that small cell networks will ultimately be deployed in many venues that may not have made financial sense to build-out a DAS network in the past.
- For venues that will cost less than approximately \$1 million to build out, the Company typically would look to leverage a small cell network.
- DAS networks are typically multi-carrier solutions for larger venues that typically cost in excess of \$1 million to build out.
- The Company remains very encouraged by the amount of interest it has been seeing from all four carriers regarding small cells.



## WHOLESALE WI-FI

### 8. How do the economics work for carrier offload agreements with the carriers?

- Carrier offload agreements are based on usage. Boingo is compensated by the carrier for total data consumed (megabytes) on the Boingo Wi-Fi network.
- For competitive reasons, the Company will not comment on specific contract terms and pricing.

### 9. How much traffic is currently being offloaded via Boingo's agreements with Sprint and Carrier #2?

- The Company does not report on traffic trends as a key operating metric; however, traffic has been exceeding its expectations in the managed and operated networks deployed.
- In venues where carrier offload is fully deployed, the Company has seen more than 60% of it's connects, a measure of paid traffic on its networks, coming from offload.
- As the carriers are authenticated onto more of the Company's managed and operated venues, the Company anticipates traffic will increase and drive more meaningful revenue contribution in 2018 and beyond.

### 10. Is it probable that Boingo will sign Carriers #3 and #4 to carrier offload agreements in the near future? When will Carrier #2 be identified?

- The Company has had great conversations with all four carriers and, based on the Company's current expectations, does not view it as a question of "if" but "when" it will sign the remaining two carriers to offload agreements.
- The economics are compelling and Boingo has a robust footprint of key strategic venues that most likely would require the carriers to partner with the Company in order for their customers to have access in these key strategic locations.

### 11. What is "Comes with Boingo?"

- "Comes with Boingo" is the name of a product representing a wholesale services agreement with partners such as American Express and Mastercard, to help add value to their offerings by bundling a Boingo Wi-Fi subscription plan with their products and services. The Boingo subscription enables their customers' access to more than 1



million hotspots around the globe to support bandwidth-intensive mobile activities and avoid expensive cellular data overage charges.

- The subscription landing page can either be integrated into the partner's promotional site or it can be a standalone microsite hosted by Boingo.
- The pricing is based upon total end users included in the program and is not based on activation or usage.

## **MILITARY**

### **12. What level of penetration does Boingo expect to achieve on live bases?**

- As of September 30, 2017, the Company averaged ~41% subscriber penetration across its military bases, which was in line with its updated expectations. The Company estimates most military bases are ~80% occupied which would imply closer to 50% penetration of its addressable subscriber base. The Company will not be providing a target rate going forward.
- Given the current high penetration rate, the Company expects military subscriber growth to slow and to grow at modest pace moving forward.

### **13. What is the opportunity for carrier offload and DAS / small cell deployments on the military bases under contract?**

- Given most military bases generally have poor cellular coverage, both in barracks and in common areas, carrier offload, DAS and small cell solutions will help provide increased density to augment cellular connectivity.
- Boingo is technology agnostic. No matter which technology will be deployed, Boingo is typically able to partner with the carriers for their technology of choice to help carriers meet the needs of their customers on these bases. Boingo's venue rights enable it to provide these connectivity solutions.



## FINANCIAL

### 14. How does Boingo think about capital allocation?

- The Company believes the best use of its capital is for deploying network assets.
- M&A is always of interest.

### 15. What is the margin profile for each line of Boingo's revenue?

- While the Company does not provide segment reporting, directionally speaking, the gross profit margin profile for each revenue stream can be approximately characterized as follows:

DAS: Mid 40% range

Military: Mid 70% range

Wholesale Wi-Fi: Low 60% range

Retail: Low 70% range

Advertising and other: Low 50% range

## MISCELLANEOUS

### 16. Does the Company expect the retail vertical will eventually go away or will it work to stabilize the decline?

- While retail revenue is expected to continue decline, the Company does not believe this line of revenue will go to zero given certain customers prefer to subscribe for higher speeds and to avoid advertisements.
- The Company does expect some pressure on retail as it anticipates it may change its retail business model at certain key venues in connection with certain contract amendments/extensions.

### 17. What is Passpoint?

- Passpoint is the Wi-Fi Alliance's trademarked brand designating that a hardware device has passed interoperability testing against the Hotspot 2.0 technical specification. Any hardware devices (smartphones, tablets, laptops, access points) that pass the testing for the Hotspot 2.0 specification compatibility receive Passpoint



certification. Those devices with Passpoint™ certification include the necessary technologies to enable seamless, secure connections.

## **DISCLAIMER**

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