

OSSIA MAKES THE IMPOSSIBLE A REALITY, THANKS TO JABIL'S SHARED WIRELESS POWER VISION



Case Study



Company	Ossia
Industry	Consumer Electronics
Country	United States
Employees	11 - 50
Websites	www.ossia



“Having all these cutting-edge technologies in one place shows that when it comes to innovation, Jabil leaves nothing on the table. The Blue Sky Center is a fantastic example of how the latest advancements interact and work together to create next-generation products.”

- Hatem Zeine,
Founder, CTO and Chairman, Ossia

CHALLENGES:

- Specialized product design, engineering and manufacturing expertise was required to validate and optimize Ossia's game-changing Cota™ technology
- Partnering with a world-class manufacturer was needed to create an ecosystem of potential device customers

SOLUTION:

- Jabil leveraged strong RF expertise, proven engineering prowess and focus on innovation to optimize Cota technology
- Jabil's proven success with major global brands enabled Ossia to initiate development of a crucial wireless ecosystem to support its technology

BENEFITS:

- Jabil's development work on the Cota™ Tie elevated the technology; Ossia was named a CES 2017 Best of Innovation Award honoree
- The depth and tenure of Jabil's relationships with some of the biggest brands in the work has opened the door to working with potential customers who can leverage Jabil to produce Cota-enabled devices at volume

The future of wireless power has arrived. Developed by Ossia, a Bellevue, Wash.-based company that has made the seemingly impossible a very real and viable technology. While the idea of wireless power has been bandied about for years, Ossia is the first company to develop a safe, efficient and viable solution that makes it a reality.

“Together, Ossia and Jabil are collaborating to build a wireless charging ecosystem to take this wonderful technology to consumers. Jabil’s expertise and access to different markets in the consumer, industrial, medical and automotive sectors offer a natural gateway to product partners.”

**- Mario Obeidat,
CEO, Ossia**

With Cota™, Ossia’s patented smart antenna technology, there’s finally a way to power all the devices people rely on daily: smartphones, wearables, remote controls, smoke alarms, electric toothbrushes, AA batteries, and more—without wires, plugs or charging pads. A revolutionary idea that has been coming together for nearly a decade, Ossia uses technology similar to Wi-Fi to deliver wireless power by safely targeting energy to devices at a distance, even if they are in motion or lack line of sight.

“People have been trying to do wireless power for 100 years, but haven’t overcome the many challenges and barriers in creating a true wireless power system that is safe and efficient,” explains Hatem Zeine, Founder and CTO of Ossia. “Cota adds a twist to the equation based on the law of physics to solve the problems and charge devices wirelessly.”

Making Wireless Power a Reality

Sure, it sounds like science fiction, yet Ossia’s game-changing technology is viable and available today. The concept evolved from Zeine’s early research with antennas to boost Wi-Fi signals

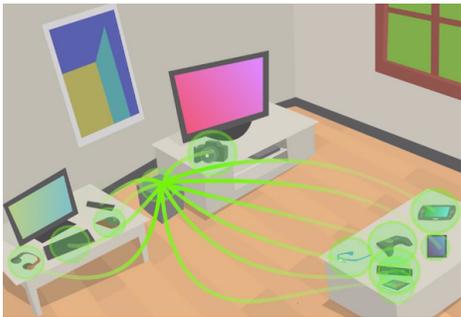
nearly a decade earlier. “This research led to a technique whereby the signals could be improved to such a point, you actually delivered power,” he recalls. “I filed the first patent for this technique in 2007 and formed the company in 2008 to bring this unique breakthrough to market.”

By 2010, Ossia’s first prototype was developed; three years later the next and by 2014, a third. The company built prototype after prototype to demonstrate to potential partners and device companies that its technology worked as well as was safe, efficient and affordable. “It was our intent very early on to be a licensing company,” Zeine adds. “So, we focused on creating a technology we could vouch for and stand behind, knowing that we would protect our customers and the technology going forward.”

For Mario Obeidat, CEO of Ossia, seeing a small LED light turn on without a battery was his own “light bulb moment” of the vast market opportunity for the Cota™ technology. “We are fundamentally transforming the way that consumers will power devices,” he says. “Whether it’s a smartphone, IoT device, wearable, medical

device like a pacemaker, or an industrial application, consumers will no longer have the constraints of power cords. With Ossia, the age of power cords will be over."

Before declaring the demise of power cords altogether, however, Ossia was faced with validating its technology breakthrough. "One of the most difficult challenges initially was that nobody believed it," recall Zeine. "It was hard for people to accept that we could deliver wireless power to multiple devices around their home. Remote controls on the table, phones, Bluetooth headsets, game consoles—all could be charged without being plugged in."



The challenge was not only in getting people to believe Ossia had mastered the delivery of wireless power, it took a lot of explanation to walk someone through how the technology worked. Each Cota system consists of hundreds of antennas that both transmit and receive wireless signals. Over time, it became clear that Ossia needed to build working prototypes to prove the technology worked as advertised.

Ossia created multiple systems to prove the technology was

viable and the opportunities were plentiful for prospective technology partners. Additionally, a dedicated team focused on protecting its core IP while other groups addressed regulatory issues and interoperability standards.

In 2016, Ossia showcased a tabletop, cylindrical transmitter/charger at the Consumer Electronics Show (CES). The response was overwhelmingly positive, which reinforced the need to encourage top device makers to be among the early adopters. "The next step in making our wireless power a reality is partnering with global entities that can integrate Cota™ into their own consumer electronics devices," Zeine explains. "However, since the biggest players don't manufacture their own electronics, it became critical to work with a world-class contract manufacturer that had the expertise and the relationships to help propel our business forward."

A World-Class Team to Support World-Class Technology

At CES' 16, Zeine met with a team from Jabil and was immediately impressed with the company's end-to-end capabilities. "What really attracted us to Jabil was how they could help us with both product design and manufacturing," says Zeine. "It was obvious they could provide all kinds of support that matched what we needed from a market entry point."

After CES, Ossia visited the Jabil

Blue Sky Center in San Jose, where conversations were initiated about next steps. "Jabil's Blue Sky Center was a real eye opener as it showed how Jabil approached the product lifecycle, starting with initial concept and industrial design through each phase of product development to add innovation, efficiency and quality," he adds. "We even spent time talking about how best to accelerate go-to-market by creating technology designs that would appeal to licensees."

Not only did Jabil bring strong RF expertise to the table, Ossia appreciated the healthy skepticism Jabil's engineers had about the Cota™ technology. As the relationship commenced, Jabil helped Ossia go through additional testing for the further validation required. "That's where we really engaged at the higher cerebral level to enable a meaningful conversation," Zeine recalls. "We couldn't work with a company that doesn't believe in what we do. Jabil understood the technology at a deep enough level to be able to help us in the implementation and promotion of the technology as we talk to customers."

Jabil also embedded an RF engineer in Ossia's environment to accelerate learning and knowledge sharing. In return, Ossia provided tools, education and support to Jabil, enabling the team to jumpstart innovative ideas for boosting performance and driving out costs. "Jabil's engineers complemented our team and added a lot of value from their work

in making some of the largest and bestselling products in the world," adds Zeine. "Knowing Jabil is trusted by big manufacturers of major products gave us peace of mind that we'd made the right choice."

Taking Wireless Power to the Next Level

Jabil's style and expertise contrasted sharply with other manufacturers Ossia worked with previously. While some manufacturers are only accustomed to dealing with large product companies gearing up millions of units, Jabil quickly understood the need to focus on innovations in performance, cost and form factor. This would prove pivotal in helping Ossia bring the technology out of the lab and into the minds of potential consumer electronics customers.

Together, Jabil and Ossia worked on a new prototype that would become the Cota™ Tile, which resembles a standard drop ceiling tile but actually can wirelessly charge dozens of electronics. Jabil applied its specialized skills in mechanical engineering and visual circuitry to develop a Printed Circuit Board (PCB) for this latest prototype. "We received the board and everything worked perfectly the first time," says Zeine. "This showed the level of understanding and quality techniques used by Jabil. It really impressed our team." Jabil also helped bolster battery design for improved performance and offered other innovative ideas to further optimize the technology.

About Jabil

Jabil is a digital product solutions company providing comprehensive electronics design, production and product management services to global electronics and technology companies. Offering complete product supply chain management from facilities in 27 countries, Jabil provides comprehensive, custom solutions to customers in a broad range of industries. Nypro, a Jabil company, specializes in medical devices, with a global footprint of ISO 13485 and FDA registered facilities, manufacturing many of the most recognized medical brands for major healthcare and wellness companies. Jabil common stock is traded on the NYSE under the symbol, "JBL". Further information is available on Jabil's website: jabil.com.

Ossia sees far-reaching benefits to Jabil's digital intelligent supply chain, global footprint and value-added manufacturing services. In particular, Ossia was inspired by all the technology innovations on display at Blue Sky. Robotics for assembly, 3D printing and flexible materials offered valuable insights for future product planning. "Having all these cutting-edge technologies in one place shows that when it comes to innovation, Jabil leaves nothing on the table," notes Zeine. "The Blue Sky Center is a fantastic example of how the latest advancements interact and work together to create next-generation products."

Collaborating on a Worldwide Wireless Ecosystem

When CES rolled around in 2017, Ossia's Cota™ Tile was named a Best of Innovation Awards 2017. The prestigious award, sponsored by the Consumer Technology Association, recognizes achievements in product design and engineering. "At Ossia, we pride ourselves on innovation," says Zeine. "That's really part of the culture we share with Jabil as they too want to work on something that's really cutting edge, then innovate every aspect to make it into a practical, cost-effective and efficient system that can be produced in volume."

CES also proved to be an excellent venue to express Ossia's and Jabil's shared vision of expanding user freedom, convenience and efficiency through the adoption of wireless power. "Together, Ossia

and Jabil are collaborating to build a wireless charging ecosystem to take this wonderful technology to consumers," says Obeidat. "Jabil's expertise and access to different markets in the consumer, industrial, medical and automotive sectors offer a natural gateway to product partners."

To that end, Ossia will leverage Jabil's global capabilities in design, engineering, materials, manufacturing and supply chain optimization to build working systems for large OEMs around the world. Having Jabil backing its technology gives Ossia additional credibility as the company expands its growing wireless ecosystem across different industry segments, ranging from automotive and consumer wearables to commercial and residential applications in coffee shops, hospitals and homes.

In addition to the Cota™ Tile, the partners are working on other form factors, including a picture frame that would be inconspicuous in a home or office environment. "There's going to be a trillion devices sometime soon needing power and we want all of them to be Cota-enabled just like we have Wi-Fi today," concludes Zeine. "Imagine a day where every device and every place is enabled with wireless power. It will be invisible except for an easily recognizable logo that lets consumers know they can charge all their devices wirelessly. With Jabil's help, the future will be here sooner than anyone thinks."