

KYMETA FULFILLS PROMISE OF GLOBAL MOBILE CONNECTIVITY BY PARTNERING WITH JABIL TO SPEED TIME TO MARKET, REDUCE COSTS AND MEET EXACTING QUALITY DEMANDS



Case Study

KYMETA

Company	Kymeta
Industry	Satellite Communications
Country	USA
Employees	145
Websites	www.kymetacorp.com



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Nathan Kundtz,
President and CEO,
Kymeta

CHALLENGES

- Developing and executing world-class manufacturing processes to bring a breakthrough product to market quickly
- Special glass-handling expertise was required, along with a stringent quality focus
- Flexible, adaptable partnership was needed to address start-up business demands

SOLUTION

- Jabil combined solar industry experience, automation expertise and end-to-end supply chain visibility to speed time to market and lower risk
- Jabil's collaborative approach and dedicated workcell model enabled Kymeta to focus on core business with confidence in meeting time-to-market goals

BENEFITS

- End-to-end manufacturing services enabled Kymeta to go from RFQ to production line in six months
- End-to-end supply chain visibility has lowered risk while enabling Kymeta to reduce costs by 43 percent
- Kymeta is poised for its first commercial to launch in Q2 2017 with additional products under development

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**Bill Shadle,
VP of Operations,
Kymeta**

Anyone who’s ever tried—and failed—to use a connected mobile device at sea, along a rural road or on a train outside a major city realizes ubiquitous connectivity is more hype than reality. Until now. Kymeta, an innovative technology start-up in Redmond, Washington, has pioneered a breakthrough technology that takes advantage of satellite network capacity to deliver always-on, always-connected communications.

The company’s small, efficient, flat-panel antennas use metamaterials-based beamforming technology to connect low- and medium-earth satellites with anything that moves. A major industry disruptor and technology enabler, Kymeta provides planes, trains, automobiles and more with seamless, high-speed connectivity.

The idea behind the antennas was born out of metamaterials research by Nathan Kundtz, founder, president and CEO of Kymeta, while earning a Ph.D. in Physics at Duke University. A technology made famous as the building blocks for a Harry Potter-style invisibility cloak, metamaterials also have the potential to revolutionize wireless communications. “Kymeta fixes two of the biggest problems with wireless connectivity: coverage and capacity,” he explains. “For the first time, mobile connected devices can access satellites for universal coverage while gaining 5,000 times more bandwidth than terrestrial mobile.”

Industry Disruptor, Opportunity Enabler

Using its mTenna® technology, Kymeta’s satellite antennas are lightweight, low-profile, energy efficient and affordable. With no mechanical or moving parts, installation and maintenance are simplified while enabling high-speed broadband applications for anything that moves as well as the Internet of Things.

“Our ability to offer connectivity to more platforms will open the door to opportunities that haven’t existed until now,” Kundtz adds. “We’re positioned to significantly disrupt certain industries while enabling new types of innovation and investment across the entire ecosystem to benefit everyday lives.”

To spur innovation, Kymeta perfected its technology “secret sauce,” which uses liquid crystal as a core element of the antenna’s architecture and functionality. By using components that come off a liquid crystal display production line, Kymeta can take advantage of vast production capacity. The challenge was finding the right partner to help scale manufacturing.

Jabil Blends Best Experience & Business Acumen

When Bill Shadle joined Kymeta as vice president of operations in November 2015, he was tasked with accelerating full-scale production, which included the selection of an Electronics Manufacturing Services (EMS) provider. “Time to market was critical, yet we lacked systems, infrastructure and planning capabilities,” he recalls. “We needed a manufacturing partner that not only understood our lifecycle as a company, but had a deep understanding of the technology and global footprint to scale rapidly.”

In assessing potential partners, Shadle was quick to add Jabil to the short list based on previous successes with the world-class manufacturer. “Jabil clearly had the global footprint, which was a major factor,” he says. “RF capability was table stakes, so what impressed us most was Jabil’s flexibility and adaptability to grow with us in extending that expertise in a satellite communications product.”

Kymeta also needed proven glass handling expertise as well as experience with adhesives and strict tolerances. "Jabil brought together transferrable skills from diverse industries to support a disruptive product, which was really interesting to us," notes Shadle. For instance, Jabil had tremendous expertise in the solar industry, which showed strength handling glass in a manufacturing environment. Experience in the kitchen appliance industry also illustrated glass-handling prowess while demonstrating how automation could be applied to Kymeta's product.



Additionally, Kymeta believed Jabil's full complement of resources would serve them well, including a manufacturing plant in Eastern Europe which supported solar panel production; a California-based engineering group; test engineers on the East Coast; and commodity management support at company headquarters in Florida. "Jabil's differentiators are time to market, business acumen and a focus on quality," says Shadle. "Those three things alone meant Jabil needed to be part of the bidding process. They competed against the best and won."

From RFQ to Production in Six Months

To expedite time to market, Jabil's West Coast engineering team spent time at Kymeta's headquarters working with early prototypes in the lab. What started as a knowledge transfer process soon turned into a collaboration to identify design industry best practices, standards, and tools to improve Jabil's performance and cost efficiency. "Jabil helped create a manufacturing mindset and culture in our design engineering teams, so they were always thinking of questions that needed to be answered and key design elements that had to be addressed," says Shadle. "This clearly had a positive impact on setting objectives and defining processing, cycle times and capabilities to ensure success."

The constant interaction also streamlined decisions around product capabilities, supply chain, manufacturing processes and automation. "Jabil supported us in a number of ways," recalls Kundtz. "Flexibility on the front end helped us learn what we otherwise didn't know about production. Most important, Jabil allowed us to focus on the core elements of our business in antenna design."

Kymeta points to Jabil's materials expertise as a pivotal factor in moving forward its alpha product prototype. "Jabil's engineers worked with us to finalize materials and remove uncertainties," adds Shadle. "Together, we turned the prototype into something real and ready for production in just six months, which is remarkable.

We were thrilled to build our first product after just launching the project months earlier."

Kymeta also credits close supply chain alignment for expediting processes while lowering costs. Jabil's supply chain experts reviewed initial prototypes and made sourcing recommendations that resulted in major cost savings. "Whenever you introduce a new technology, it can be quite expensive to produce early prototypes," Shadle notes. "With Jabil's supply chain insight and sourcing recommendations, we reduced costs by 43 percent while improving quality. The ability to do that quickly was huge for Kymeta."

Delivering Visibility and Value

From the start, Jabil's InControl Intelligent Digital Supply Chain played a major part in helping Kymeta reduce risk, which is crucial, especially for a new company. An accurate risk assessment of Kymeta's supply chain was presented in a quantifiable, measurable way. "Jabil InControl helps us understand and manage risk both strategically and tactically," says Shadle. "The risk framework lets us quantify very specific elements of our supply chain, and pinpoints where we should be focusing our attention and priorities, which is huge."

Moving away from single-sourcing components is one way Kymeta continues to lower its risk score, which now has a benchmark typical of a high-tech company in a multinational environment.

Another risk factor addressed by InControl is the ability to immediately assess and minimize the impact of geo-political events and natural disasters. Getting a real-time notification of any event that could disrupt Kymeta's supply chain is crucial, especially since the company leverages the LCD industry, which is heavily concentrated in earthquake-prone areas of Asia.

With InControl, Kymeta has structured its supply chain so every piece can scale. "Jabil helped us go really deep into our supply chain, which gave us confidence that Kymeta can deliver what our customers expect without hiccups in the supply chain," says Kundtz. "We don't have to worry about what it will take to reach large-scale production, allowing us to stay focused on our core mission."

Looking ahead, Kymeta is eager to take advantage of InControl to synchronize the multiple tiers of its supply chain, while having virtual access to information on any connected device. "Anywhere, anytime visibility into what's going on in the supply chain across first, second and third tiers is powerful," says Shadle. "Providing more suppliers with some of that access will result in more collaborative planning, improved inventory availability and greater operational efficiency."

Automation is another strategy enabling Kymeta to reach volume production, especially as it relates

to glass handling. Jabil's special expertise in this area led to a recommendation to invest in automation, which Kymeta believes will contribute significantly to improved efficiency and quality. Making antennas for the first time using components that come off an LCD production line is not trivial, so Kymeta expected low production yields initially. However, the team experienced high yields early on, which has validated early manufacturing process decisions and boosted confidence for a successful commercial launch in Q2 2017.

Kymeta also gives credit to Jabil's workcell business model, which encompasses a dedicated team to oversee all aspects of Kymeta's manufacturing and supply chain operations. "Jabil's model strikes the right balance between customer focus and the ability to leverage synergies across the globe," adds Shadle. "Simply stated, it's a powerful combination."

Another winning combo is a strong cultural alignment and transparency between the two organizations. "In contrast to other contract manufacturers, Jabil has matched the energy and pace of our organization," says Kundtz. "They're always ready and flexible when it comes to dealing with the inevitable changes that come with a new company and technology. Jabil is essential to our market entry."

In March 2017, Kymeta announced commercial availability to meet early customer requirements while continuing to advance its antenna technology. Regardless of whether a car is in New York City or the Sahara Desert, always-on, always-connected communications will not only replace spotty Wi-Fi available today, but it also lets software updates and fixes be delivered over the air. This becomes even more important as the industry moves toward autonomous vehicles.

Kymeta also is making major inroads in its other target industries through a series of partnerships with technology companies and manufacturers of civilian armored vehicles, yachts, rail, coaches, aircraft and more. "Automotive and aerospace OEMs are very demanding when it comes to quality," concludes Shadle. "Jabil has the pedigree, experience, DNA of quality management and partner network to support us. Jabil's right in the middle of our operation today and is a key component of our future."

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.