TECHNICAL & SCIENTIFIC APPLICATION, INC.

UAC: Building for IIoT Through a Mutually Beneficial Relationship

About the Company:

The Universal Alloy Corporation (UAC) is an industrialized Cinderella story. What started in 1996 as a simple tool and die shop in Southern California soon grew to be one of the world's most prolific producers of hard alloy extrusions–they are now a global manufacturer of aircraft structural components and a leading provider of aeronautical machining and surface treatment services. But their success didn't come without setbacks.

When the Recession hit in the late 2000's, UAC's competitors were forced to scale back their processes and production. However, UAC not only learned to adapt to the fluctuating economic environment, they became determined to use the market lull to their advantage. In an audacious move, upper management invested in indirect extrusion technology and proceeded to install "a press that [is] the fourth largest in North America and the first of its size in the U.S. since World War II." As a result of their bold leadership, UAC launched itself forward and settled into its place at the head of the aerospace aluminum extrusion market. A position they still hold today.

Universal Alloy Corporation is headquartered in Canton, Georgia, and supports manufacturing plants and warehouses in Anaheim, California; Wichita, Kansas; and Romania (a Southeastern-Europe facility). The company commissions over 1,800 employees across these locations.

The Company's Challenges:

UAC had signed a ten-year contract with a large international aeronautics manufacturer, the scale of which necessitated UAC to conduct extensive operational expansions. In order to accommodate the increased production and logistical demands delineated in the contract, UAC built an entirely new manufacturing facility in Ball Ground, Georgia. Consequently, the company needed to outfit the new location with Wi-Fi capabilities.

In order to accommodate the increased hardware traffic in and out of their warehouses, UAC also planned to establish an IoT device tracking system–a comprehensive "smart" environment that would be implemented over the next several years. UAC needed a way to track the manufactured hardware in and out of their warehouses, and they needed a system that made it easier for pickers to accurately and quickly fill the necessary Bill of Materials for each shipment. This type of tracking system would also grant the UAC team a better understanding of overall supply and demand, helping them keep their ovens and presses efficiently loaded on the facility floors–packing them strategically would increase profitability and overall efficiency.

As such, UAC knew that they didn't just need a generic Wi-Fi upgrade; they needed to establish a robust wireless mesh network that would sustain their exponentially-increasing bandwidth demands. From the very beginning, the wireless deployment would need to be engineered in such a way as to seamlessly sustain the additional bandwidth mandates of a real-time, logistical tracking system. Whatever vendor provided the Wi-Fi solution would need to size the wireless deployment to match future bandwidth loads.

Solution Requirements:

UAC had an existing wireless support contract with Cisco. However, UAC was anything but pleased with the price point that Cisco offered for a wireless deployment of this magnitude. Not only that, as a company, Cisco offers very little contract flexibility and only allows their clients to use specifically Cisco-appointed vendors (further limiting contract and expense negotiations). In the midst of so much change and forward momentum, UAC upper management quickly realized their need for a new vendor who would partner closely with them and be willing to adapt to an ever-evolving business model.

In short, AUC needed a vendor to deliver an economic, yet effective, solution that would fulfill their growing list of project requirements:

- Updated wireless hardware (across all locations)
- Robust network that would sustain all employee traffic
- Established mesh wireless system for future IoT device deployments
- Sustainable wireless coverage for the next five years of growth
- Contract and vendor flexibility
- More economical price point

UAC knew that Cisco was no longer a viable option. So, they began their search in earnest for a new wireless vendor. Luckily for them, the solution was closer to home than they may have expected.

The Relationship:

Years prior and at a different company, Brian Spivey (now Managing Partner at TSA) worked closely with a man named Matt Ringer. Over that time, the two became more than superficial work acquaintances; through their mutual respect for and dedication to their work (and each other), the men had developed both a professional and a friendly, personal relationship. The two stayed in touch even after new occupations called them away from their original workplace. Brian was recruited by TSA, and Matt took a position at UAC.

Matt was eventually promoted to CIO of UAC, and once he was faced with the wireless deployment debacle, he decided that he no longer wanted to compromise the company's future by contracting with restrictive vendors. He wanted a partner that truly had his company's best interest at heart. A partner that he trusted.

When Cisco failed to provide what he needed, Matt listed Brian—and his TSA cohorts—as his first choice for the solution. TSA eagerly accepted and quickly went about architecting a solution that did not revolve around a price point but revolved around the company's needs and desires.

TSA Provided:

The TSA wireless team recommended that UAC use HPE's Aruba as their wireless hardware vendor. As mentioned before, Cisco's support contracts don't necessarily allow for clients to choose strategic vendors for hardware procurement and management purposes. But TSA consistently fosters flexibility and client-choice.

More specifically, UAC decided on Aruba's 320 Series for their Wi-Fi units. However, before the hardware arrived, TSA deployed our wireless experts to carefully analyze the physical layout of each UAC warehouse, manufacturing facility, and office building. By physically walking through the facilities and studying original blueprints, our experts determined the most strategic placement for each new Aruba unit, creating a comprehensive mesh environment that eliminated dead spots.

When the hardware did arrive, TSA completed the physical installation with ease, but for several weeks after, our wireless engineers remained on-site to help troubleshoot environmental-related hiccups. No matter the competing radio frequencies, "noise" from surrounding hotspots, or the steel-predominant infrastructure of the building itself, our TSA experts worked doggedly until they had optimized UAC's equipment placement; we didn't rest until we had enabled the best performance out of the wireless hardware.

Like with any new project, there were some initial challenges that we faced. Namely, we ran into some complications with the configuration of ClearPass, UAC's authentication platform of choice. But once again, TSA continued to work closely with UAC to deliver a complete solution–we don't leave our clients until they are fully satisfied with the work provided. Because ClearPass was UAC's network security option, our IT team recognized the urgent need for this system to integrate seamlessly with the new mesh environment. Because ClearPass is highly customizable, it is also a rather complex tool that takes time (and patience) to configure properly. Our TSA experts were determined to provide a security integration solution without building an overly-complex configuration.

TSA Accomplished:

TSA successfully delivered a comprehensive wireless mesh environment to all of UAC's facilities–systems so robust that UAC is confident that they will support their impending IoT device rollouts for the foreseeable future. However, TSA did more than just deliver a wireless solution.

Before UAC had officially decided on their new wireless partner, they crunched some numbers between the two contracts. Months prior to this decision, Cisco had named an inflated price for the new manufacturing facility's wireless deployment, and UAC had budgeted that amount in response. However, when UAC approached TSA with the same request, they were thrilled to see much more manageable numbers on the solution we offered them.

THE AMOUNT THAT UAC HAD BUDGETED FOR CISCO'S SINGLE DEPLOYMENT IN THEIR BALL GROUND, GEORGIA FACILITY WAS ENOUGH TO COVER TSA'S DEPLOYMENTS OF ARUBA WIRELESS HARDWARE AND SUPPORT ACROSS ALL OF THEIR FACILITIES COMBINED.

"What we ended up with was a mutually beneficial relationship," says Brian, "UAC conducted their business based on who we are, not just what we are." UAC made the right decision, but had little idea of how advantageous that partnership would prove itself to be. It is important to mention that, their first project together, TSA and UAC realized that the they sponsor and support several of the same charities (MUST, Goshen Valley Boy's Ranch, etc.). This discovery provided further confirmation that the two companies had made the right decision as it reflected a shared interest and a united desire to aid the community in which they lived.

Both could rest assured that the other had a similar heart for how business should be conducted. It ended up that TSA had the business solution that UAC needed, but in the end, the reason that the two still work so closely together today is because we both see the world in the same way – in all aspects of our lives.

DON'T PUT UP WITH A TRANSACTIONAL VENDOR WHO'S JUST THERE FOR THE PO.

Contact one of our TSA representatives to start a mutually beneficial relationship.