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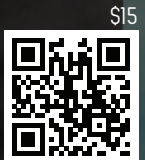
APPLICATIONS

TIM HANDLEY,
FOUNDER & CIO

ADAM ZAYOR,
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FlyGuys

IMPROVING OUTCOMES
ACROSS THE DRONE
ECOSYSTEM



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IMPROVING OUTCOMES ACROSS THE DRONE ECOSYSTEM

As an extended family member who followed completely different career paths, little did Tim Handley, and Adam Zayor know that one day they would join forces to redefine the drone industry. While Zayor matured into an exceptional operational leader, handling industrial and construction management for infrastructure projects nearing \$1 billion in scope, Handley rose to be an outstanding leader and entrepreneur, developing his core superpower—technology-fueled organic sales growth.

Technologists at heart and drone hobbyists by obsession, the duo was quick to realize the disruptive capabilities drone technology could bring to a variety of industries through aerial imaging and data analytics. While musing about its limitless possibilities, they recognized the absence of a platform in the UAV market that could facilitate collaboration between drone pilots and organizations requiring their services. The roadmap was clear: build an expert pilot network that in turn would help enterprise clients in their uptake of drone technology, building solutions by prototyping together and sharing in the R&D expense.

FlyGuys was established to improve outcomes across the drone ecosystem, catering to a diverse client base in sectors such as energy, industrial, construction, agriculture, and emergency services. Through drone services like inspections, surveying, mapping, and progress monitoring, the company strives to deliver operational efficiency from UAVs at lower cost and less effort for clients, while serving drone pilots with missions and back office support.

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DRONES FIT PERFECTLY INTO THE IOT LANDSCAPE WITH THEIR MULTI-SENSOR HOLDING CAPABILITY. FLYGUYS CAN HELP ENTERPRISES OPERATIONALIZE IOT BY USING DRONES IN AREAS SUCH AS ASSET AND FACILITIES INSPECTIONS

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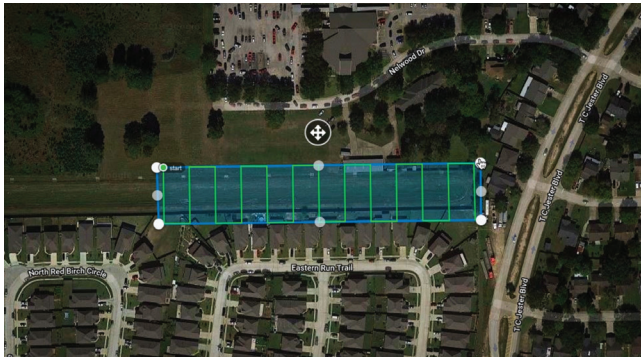


ADAM ZAYOR,
FOUNDER & CEO

Beyond Traditional Methods of Remote Imaging and Inspection

Handley, Chief Information Officer at FlyGuys, deciphers the current drone market scenario based on two exponential curves, one representing UAV pilots entering the industry and the other representing total drone missions divided among the pilots. He explains how the market has seen a tremendous increase in drone pilots, with Federal Aviation Administration (FAA) certified pilots going from 5,000 in 2015 to 125,000 pilots in 2018 following licensing changes. Meanwhile, he highlights how the current drone market lacks the number of missions to support the influx of pilots—but not for long. “A tsunami of drone missions will hit the marketplace in a few years. We’re preparing our pilots ahead of time with support, training, and jobs, so clients can work with an expert supplier as the wave hits,” explains Handley.

An information company at its core, FlyGuys essentially gathers drone information from its distributed network of pilots, adds value, and delivers it to clients. FlyGuys can help clients bridge the data into operational systems—for example, information management systems (IMS), BIM systems, CAD systems like Autodesk, and asset management systems such as Maximo or SAP. “We’re taking a broader view at bringing drone data into systems with the greatest impact on efficiency,” adds Handley. Some



clients are using drones as an on-ramp to the Internet of Things (IoT). “Drones fit perfectly into the IoT landscape with their multi-sensor holding capability. FlyGuys can help enterprises operationalize IoT, using drones in areas such as asset and facilities inspections,” says Adam Zayor, CEO of FlyGuys.

One of Zayor’s key contributions to FlyGuys is the underlying technology that pilots and internal teams use to coordinate mission logistics from their mobile devices, easily scaling to any size job. The workflow application includes highly detailed compliance and procedural systems to ensure consistent, high-quality results. FlyGuys has also developed a Mission Quality Management approach,

which is employed in the mobile app, and is used for logging and confirming all job specs, assigning pilots, and requiring a completed pre- and post-flight checklist with all compliance requirements met for uniform results.

FlyGuys is drone and software agnostic, so the app accommodates the right components for each mission’s objectives. “We’re partnering with vertical tech to bring the latest drone analytics into our solutions,” says Zayor. For example, one FlyGuys ecosystem partner in Europe specializes in drone imaging analysis for solar farms, and another has superior distribution grid and wind turbine analysis tools. FlyGuys offers these services to bring the best results to clients in various sectors. Partners, in turn, fulfill missions across the U.S. with FlyGuys. Following this model, FlyGuys continues to grow the sectors and use cases it serves.

A Peek inside FlyGuys Technology

FlyGuys has built a structure to assign drone systems to missions using a granular to big-picture approach. This includes discerning the type of data to be collected, such as thermal, RGB, 3D or LiDAR; any special requirements such as asset type or analytics; followed by the type of cameras or sensors needed to collect the data. This information then indicates the best drone equipment to hold those sensors, as well as the best pilot to fly the drone.

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One of the biggest differentiators for FlyGuys is the company’s focus on compliance. “Our systems require pilot, equipment, airspace, and mission-specific clearances to be completed before dispatch,” says Zayor. FlyGuys performs mission compliance directly and through third-party providers, integrating compliance rules into mission specs based on the client, industry, location, use case, and asset type, helping to prevent problems or liability exposure.

Cultivating Pilot Relationships and Skills

Another FlyGuys differentiator is the relationship maintained with its drone pilots. FlyGuys is developing and training pilots

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THIS KIND OF POTENTIAL EXISTS IN EVERY INDUSTRY. IT'S JUST A MATTER OF CONNECTING WITH THE EXPERTS IN THAT INDUSTRY WHO CAN ARTICULATE THE PROBLEMS TO OUR ENGINEERS, AND THEN DEVELOPING A DRONE SOLUTION TO SOLVE THEIR PROBLEM

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to deliver consistent, standardized, and scalable commercial drone services to a variety of industries. Instead of posting jobs with pilots bidding against one another in a ‘race to the bottom’ on price, FlyGuys treats pilots as a Community of Excellence, focusing on pilot career success with back office support services. The company also assigns jobs vs. asking for bids. “As drone pilots ourselves, we know the early stage of this business is hard, especially with so many new pilots entering the market,” says Handley. (The FAA forecasts 301,000 commercial drone pilots by 2020.) “FlyGuys pricing is competitive, yet we preserve fair margins to pilots. Quality remains high since we’re not constantly using low price bids, typically from newer pilots.”

New pilots are welcome, however. FlyGuys is developing programs and technologies for beginner pilots to build their expertise through low-complexity, autonomous missions, where FlyGuys provides them with preprogrammed flight paths. During this process, a QC procedure guides the pilots through training sessions and media feedback processes, ensuring they adhere to FlyGuys service delivery standards.

Custom Solution Implementation

FlyGuys offers ‘off the shelf’ services, such as distribution grid inspections for energy sites or progress monitoring for construction sites. The company also develops custom solutions for

clients interested in creatively solving goals with drone data and analytics, bringing drone innovation into the enterprise through low-cost proof of concept engagements. Taking a consultant’s approach to interpreting the client’s ideas and pain points, the FlyGuys team formulates a working prototype for testing and then broad-scale implementation. “We haven’t even scratched the surface with drones, IoT, and analytics. Every engagement has an opportunity to produce an industry-changing solution,” says Handley.

Often there’s a lack of clarity about getting started. Some companies consider taking drone operations in-house, though it may not be the right approach given the speed of change in drone technology. Others consider posting jobs on drone marketplace sites. FlyGuys simplifies the process by maintaining a nationwide network of vetted and qualified pilots, and by handling the equipment and software logistics for high-volume or multi-location missions. “You don’t want to post complex drone jobs on Craigslist or a drone bidding site and hope for the best or deal with multiple drone pilots and systems. We’re a single point of accountability for drone services,” says Handley.

FlyGuys also sees the unique positioning of drones to help save lives. “Hurricane Harvey exposed drainage issues in the cities it hit,” Handley explains. He realized one way to make those cities safer was to use drones

to locate drainage problems. Now, FlyGuys is assisting a top five U.S. city to map and model over 114 miles of canals and waterways, coordinating with up to ten pilots daily. The city leverages a FlyGuys-built system to establish each mission path and corresponding files. The company then stitches this data using their GIS and provides it to city officials. This has empowered the city to pull up its geographical and waterway data in near real-time, supporting repair planning. “This kind of potential exists in every industry. It’s just a matter of connecting with the experts in that industry who can articulate the problems to our engineers, and then developing drone solutions for those problems,” Handley says.

A Step into the Future

With the explosive growth in the drone space, Zayor believes FlyGuys is perfectly positioned to be a top drone services provider. “We have an ideal combination of drone service offerings and pilot fulfillment capabilities, and the workflow technology to scale,” he says. The company plans to expand internationally and to leverage every opportunity brought forward by the convergence of drones, artificial intelligence, augmented reality, and IoT. “We’re excited to partner with expert pilots and deliver a great platform for driving mutual success while bringing the power of drones to clients,” Zayor concludes. **CA**