



Drones: Unlocking Unlimited Potential for Utilites

By Jeremiah Karpowicz

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Powering an Evolution with UAVs

WHEN PEOPLE TALK about utilizing UAVs for commercial purposes, typically the two biggest topics of concern are around FAA regulations and return on investment. The technical limitations around how drones can be applied are often a major point of conversation as well. This is what makes the concerns power, process and utility companies have around drones so unique. For the most part these organizations are not dealing with any of those issues as a top priority.

Instead, utility companies are working through the logistics of interpretation, collaboration and scalability. They're more than willing to comply with FAA requirements, but those requirements need to be properly interpreted. If a barrier needs to be installed when they're operating a drone within 500 feet of a person who isn't involved in the operation, what does that barrier need to look like? Utility companies don't compete with one another, which means that they can collaborate around these kinds of issues, but regional and logistical distinctions can make that process a difficult one. Lastly, the sheer size of many utility companies means that their ability to properly utilize drones represents a double-edged sword, as costs and potential savings across an entire infrastructure are weighed out.

Despite these unique challenges, professionals in various segments of the market have seen the potential UAVs possess. Dave Truch is Technology Director, Digital Innovation at BP, and while he doesn't speak for the company, he has been around long enough to understand how UAVs have changed the paradigm.

"Drones are the culmination of data collection technology in a lot of different ways," Truch said. "Being able to take advantage of the computational and simulation capabilities that are now available has been incredible, and we can use drones to handle emergency situations in a way that wasn't possible just a few years ago. They're really changing the paradigm."

That change is being felt throughout many utility companies as they find that drones enable them to not just look at how they're doing things like monitoring power lines and inspecting

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oil rigs, but at how they want to be doing them. UAV technology has been democratized to the point that utility companies can essentially customize the function of a drone or even an entire fleet, which provides them with an opportunity to both decrease costs and make their operations safer. Those sorts of changes can impact everything, from the practices around handling emergency situations, to the kinds of jobs that will soon be available in these sectors.

The Scale, Scope and Setup of Utility Operations

MANY UTILITY COMPANIES are working at scales that force them to figure out the best way to monitor and repair thousands of miles of infrastructure, which is an enormous undertaking. The costs that are associated with installing a new tool or process across an entire organization can be difficult, but issues around scale can cut both ways.

Jonathan Evans is the CEO of Skyward, and his company has helped clients launch commercial UAV programs, manage operations, and safely integrate with the national airspace. Some of these organizations include publicly traded utility companies who are very careful to operate safely and responsibly with UAV technology, and also recognize an opportunity when one presents itself.



“Utility companies have massive infrastructures, which means if they can use a tool to increase efficiency or reduce costs, moving the needle just a little bit can have a big economic impact,” Evans said. “When you’re looking at inspections of power lines, gas lines, and especially cell phone towers, utilizing a tool like a drone can mean a serious investment, but it can have a tremendous benefit.”

Large utility companies are used to spending for things like helicopter surveys, mostly because doing so was the only way they’d be able to monitor particular areas of the infrastructure, or get a safe look at dangerous situations, like a downed power line. When drones first came on the scene the price point between manned and unmanned options around these tasks weren’t all that far apart, but things have changed. Costs are coming down on a stunning order of magnitude and that has allowed people like Frank Scumacci to take a closer look at the technology. As the Director of Strategic Initiatives at ComEd, he’s anxious to see how drones will be able to change things at his company, but he’s able to approach that concept in an especially powerful way.

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“In terms of what we’re doing from a utility perspective with drones, we’ve been working hand in hand with other industry leaders,” said Scumacci. “The nice thing about our industry is that we’re able to share information because we don’t compete. It’s not a retail market. The work that we and another handful of companies are doing in this market is creating the groundwork for operations across the country.”

Remote Sensing Means Safer and More Efficient Operations

DANGEROUS SITUATIONS are an inherent part of utility operations. Whether that’s setting up power lines, scouting for oil in treacherous conditions or making an upgrade to a cell phone tower, there are certain dangers that come with working in these industries. The danger gets that much more pronounced for the person or team that needs to be sent in when something goes wrong. However, UAVs have the ability to mitigate and even eliminate that danger by taking people out of harm’s way.

“In our case, the majority of our excitement is around the ability to do remote sensing without humans,” Truch explained. “A lot of our activity is based on putting humans in unsafe environments to do basic data collection or do visual observation and monitoring of our activities. So we’ve often had to put humans in these very remote, far away, harsh arenas where it’s been a challenge to get anything other than spot inspections. With these tools, we can take people completely out of those dangerous situations.”

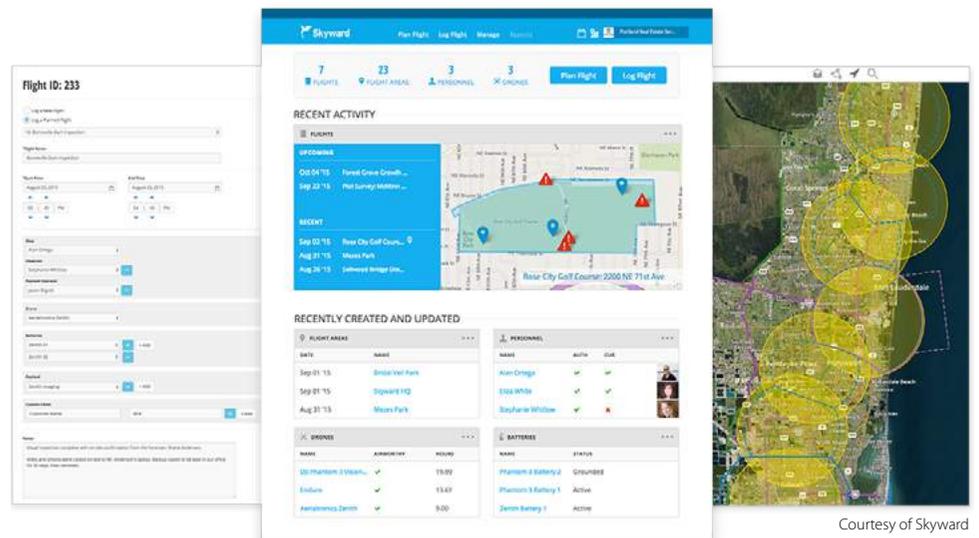
Being able to remove people from unsafe conditions is obviously critical, but it’s not the only benefit of using drones for such tasks. Rather than having to go out to the actual problem area, information about those situations can come back to the person or people who need to see it. This allows them to take a measured approach around potential and ideal solutions. It even enables them to more effectively monitor everything to stop problems before they happen. In short, it allows them to do their jobs better. The fact they’re able to do that from the safety of a remote location cannot be highlighted enough though.

“Safety is such a big thing,” said Scumacci. “There’s no way you can deny that having two feet on the ground rather than having someone up in the air in a helicopter or strapped on a harness isn’t safer. But from a business perspective, we’re still going to need to have the same experts we have today look at our infrastructure. Instead of looking at it when they’re strapped

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Courtesy of Skyward

“With a fleet of drones you can have continuous surveillance coverage over every spot at all times. You can see everything at once, which is great, but you still need a person responding and reacting to what’s being shown.”

to a tower or from up in a helicopter, those same people can be the ones looking at the live video that we are getting from a UAV. The things we were doing aren’t going to go away just because we can start using UAVs. We are just going to be able to do them more efficiently.”

That last point is especially relevant to highlight, because the ability to monitor and respond to emergency situations in the same way they’ve always been monitored and handled is tantamount. As these procedures are developed, they’ll become more efficient and cost effective, all of which will make the benefits utility companies see from UAVs even more pronounced.

Keeping People Involved

WHILE THERE ARE some key differences in the utility industry when compared to other industries, one thing that’s the same is the hype that has been built up to an untenable degree. The promises many manufacturers have around what their fleet of drones can do often make it sound like an organization will be able to move forward with nothing but that fleet of drones, handling everything from setup to monitoring procedures to repairs.

That’s a concerning trend, but none of the professionals who are actually working to utilize drones in their operations are focused on removing or replacing the people currently involved. They’re motivated to use drones to create and enable different approaches to current tasks and operations.

“Drones are allowing us to move from a discreet, time-based activity set to a continuous, condition-based monitoring and surveillance,” Truch said. “With a fleet of drones you can have continuous surveillance coverage over every spot at all times. You can see everything at once, which is great, but you still need a person responding and reacting to what’s being shown.”

Perhaps the tasks and responsibilities of human beings in the process will evolve. Certain tasks that are now being handled by humans will be automated when possible, but that shouldn’t be seen as a loss. Instead, it can free up that person to do something different. It can enable an increase in efficiency in an especially powerful way. The job might change, but the person isn’t going anywhere.

“No matter what we’re doing with a drone, we’re doing it to support people,” Evans concluded. “Ultimately, UAVs are tools that augment our processes and to help us succeed. But the person still has to be there to judge what is or isn’t happening. And that requires robust management platforms, just like we expect with other tools and systems that we use.”

It’s not just about putting these tools in the hands of those humans though. It’s about allowing and encouraging them to develop and create a procedure that’s going to work for them and their organization. UAVs are giving utility companies the ability to reconsider their approach around the setup, monitoring and fixing of their infrastructures, but people are and will continue to be intimately involved in each of those steps. ■



About the Author:

Jeremiah Karpowicz is the Executive Editor for Commercial UAV News. He has created articles, videos, newsletters, ebooks and plenty more for various communities as a contributor and editor. He has also worked as the Executive Editor for ProVideo Coalition where he was first introduced to UAV technology.



JONATHAN EVANS
CEO and Co-Founder
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Jonathan Evans is the CEO and co-founder of Skyward, a leading information management platform for commercial drone operations. He is a self-proclaimed “geeky pilot” with over 3,000 hours of flight time. Jonathan began his aviation career as a UH60 Blackhawk pilot in the Army and later served as a civilian air ambulance pilot across the United States. Jonathan is a nationally recognized commentator and invited keynote speaker at leading drone industry conferences and events.



FRANK SCUMACCI
Director of
Strategic Initiatives
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Frank Scumacci has more than 21 years of leadership experience in Customer Operations and Strategic Development from various industries including utilities, education and banking/finance. Prior to joining ComEd in 2008, Frank led operations at other notable companies such as People’s Energy, HSBC and GE Consumer Finance.



DAVE TRUCH
Technology Director
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Dave is located in Houston and is focusing on innovative solutions associated with deep water technologies, remote locations and strengthening the interaction with traditional IT and energy sector technology groups at BP. In his prior role in Functions, Dave was accountable for the IT component of the 5 year strategies for four functions, Communications and External Affairs, Economics, Group Planning and Group Technology; integrated strategy (DCT, HR and Property) of delivering choice workplace solutions for the organization; creating the blueprint for change associated with the convergence of the Group Security, Digital Security and Crisis Management organizations into one single group focused on enterprise security and continuity.



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