

The background of the lower half of the page is an aerial photograph of ocean waves. The water is a deep blue, and the white foam of the waves is visible. A dark blue, semi-transparent overlay covers the entire image, making the white text stand out.

DEBUNKING THE MYTHS ABOUT DRONES

Why drone technology represents an achievable competitive edge for your company – and is no longer just for blue-sky thinkers.



DEBUNKING THE MYTHS ABOUT DRONES

Let's be clear about one thing. Drones are not just for enthusiasts – they're also for serious business. But there are a few preconceptions that may be holding companies back from exploiting their full potential, and with all the disinformation circulating in the media this is no surprise. So, we thought it was time to dispel a few of the myths.

DRONE TECHNOLOGY IS STILL IN ITS INFANCY

It may seem this way – but this is largely because businesses are only now becoming aware of the possibilities of using UAS (unmanned aircraft systems). Behind the scenes, drone technology has been maturing and is now in use across a range of industries.

BP was a notable pioneer when, in June 2014 after years of testing (and, one would assume, lobbying) it gained FAA approval to fly drones across its Prudhoe Bay oilfields to monitor and maintain its oil pipeline infrastructure. It has since been adopted – and adapted – by many diverse sectors, from insurance and infrastructure to emergency services and the media. The number of drone-based patents being granted has risen exponentially in recent years; at the same time, economies of scale have caused the cost of the aircraft themselves to plummet.

Yet while the hardware gets cheaper, the overall value of drone-based business worldwide remains staggering. In a 2016 report, PWC analysed the potential of addressable markets, taking into account the cost of labour and services that are potentially replaced by UAS – and estimated that the total addressable value of drone-powered solutions in all applicable industries was over \$127bn.

To say drone technology is in its infancy is inaccurate. If we continue the human metaphor, drone technology has grown up, gone to college, graduated from business school and is now out there in the work place. And everyone wants to hire them.

DRONE TECHNOLOGY IS RISKY

The truth is that most things worth doing come with risk attached. But in business everyone knows that it's not about eliminating risk (because you can't) but reducing it, managing it, controlling it – and assessing the risk/reward ratio.

This is another indication of the maturity of the drone industry – or rather the regulatory environment that surrounds it. For decades, governments and aviation authorities have been assessing its viability and safety and have refined the regulatory conditions in which drones must operate – which in turn provides a reliable framework that enables investing companies to quantify risk.

Our background at Consortiq is firmly in the aviation world, and we are reassured by the fact that drone regulations are based on the same analysis used for commercial, manned aircraft. Research shows that much of public concern over drone usage centres on fears over the activities of unregistered private operators. Years of discussion, negotiation, expert analysis and risk assessment has given us a framework that makes drone operation as proportionately regulated as commercial aviation.

The drone industry is keen to work with regulatory authorities, and the uptake in registered operator licences bears this out: between August and December 2016, 23,000 operators were tested and approved by the FAA (Federal Aviation Administration).

Similarly, in the UK, the CAA reports that almost 2,500 businesses hold a 'Permission for Commercial Operation', with any number of pilots operating under each licence.

In short, UAS are the tools of an expert, accredited and highly regulated industry. As with any technology, the risk of investing in it is down to the investor and outside the control of the industry. But for its part, the UAS industry can offer reassurance to investors that drone operation is expertly and responsibly managed in accordance with robust aviation industry rules.

“Drones have brought a creative step-change
to the media industry in a remarkably short time”

Michael Surcombe, ex Innovation Lead,
BBC Technology

DRONE DEVELOPMENT IS DRIVEN BY THE MILITARY – NOT BY BUSINESS.

This is a myth – but a fascinating back story nonetheless. Being able to guide a weapon-carrying or reconnaissance aircraft BVLOS (beyond visual line of sight) is clearly a compelling advantage for any military. Yet the military development of drones should not be confused with commercial drone development, because the two parties come from different angles.

Steeped in a tradition of airborne warfare, military drone developers are effectively starting from the desire to make existing machines pilotless. They already have a thorough understanding of how military aircraft can be deployed for tactical and strategic advantage, and have worked to use remote control technology to recreate this but without putting personnel at risk. The developers of commercial drones, however, had no such heritage. Drones were entirely new and were driven principally by the same technological advancements that drove mobile phones: the miniaturisation of components, the improvement in battery life, the development of digital photography etc. While the bigger picture is complex, in truth, commercial drones have more in common with your smartphone than they do with their air force namesakes.

DRONE PILOTS ARE EXPENSIVE, SPECIALIST AND IN SHORT SUPPLY

The worry is understandable. The tech industries have a long history of being at the mercy of a small group of skilled professionals who could name their price (remember the first HTML programmers, the first SEO specialists?). If you are thinking of investing in drone technology, the last thing you need is the worry of a skills shortage in the critical area of drone operation.

But the answer is in the term: operator. Drones are not flown in the same way that model aircraft are flown, they are operated. You do not need to be a 'ninja' drone pilot since drone operators are not necessarily flying the aircraft, they are in charge of the mission. So rather than fly the drones hands-on, the operator tells the aircraft where it should go; a fundamental difference – yet the operator still needs to be accountable for their actions.

Training is therefore a key part of any investment, but there is unlikely to be a shortage. In the USA, 300 drone pilot licenses (aka Part 107 licences) were issued each day in the second half of 2016. With numbers like that, it will not be a specialist skill that commands an expensive salary. Instead, the trick will be designing the system that suits the application – the drone system that solves your commercial problem in the most effective way.

Drone - What's in a name?

In his 2008 book, "Unmanned Aerial Vehicles," the military historian Steven Zaloga, explained how a remote control aircraft codenamed Queen Bee was designed by the British Navy in 1935 for target practice. The US military saw the craft demonstrated and decided to pursue their own development – and adopted the name 'drone' for later incarnations, in homage to the original Queen Bee.

DRONE TECHNOLOGY IS ALL ABOUT AERIAL PHOTOGRAPHY, RIGHT?

We've all seen the beautiful aerial shots used in movies, ads and TV shows. But while aerial photography is perhaps the most obvious commercial application for UAS, enhancing the creative product while reducing costs, it is only one of many.

The infrastructure sector – roads, energy, oil & gas etc. – is using drones to monitor geographically distributed networks of assets for maintenance and inventory management purposes. The transport and logistics industry uses them to deliver goods, notably medicines or time-critical items. (The potential cost-saving is compelling: according to an estimate developed by [ARK Investment Management](#)¹, Amazon will be able to charge customers just \$1 to have a drone deliver a package in 30 minutes or less.)

The insurance sector is using drones to prevent fraud and to more accurately assess risks (such as vulnerability to natural disasters). Agriculture can use them to spray crops, security services use them for surveillance, while telecommunications companies use UAS as a highly effective extension to their networks (as well as a way to monitor the physical state of network assets that cannot be easily accessed otherwise).

Whether drones are delivering a payload, collecting data, or simply replacing personnel, they are providing commercial advantage in almost every conceivable sector.

“We can now find people faster than ever – and for a fraction of the cost of a helicopter”

Séamus Kearns

Consortiq Chief Instructor and volunteer at
Surrey Search and Rescue Team

THE FUTURE COST OF A DRONE-BASED STRATEGY IS UNPREDICTABLE

It's new and exciting. But does that really mean that it's unpredictable? Most companies investing in drone technology today do not see it as an open-ended investment. On the contrary, they see it as an open-ended opportunity.

The reason is that the competitive advantage of using UAS is only achieved when it is done at scale. Shareholders are not interested in niche deployments; the real game players are the ones who 'uberize' their industry by leveraging new methods on a scale that makes a fundamental difference to the bottom line.

As a result, the investment decision right now is not about scale; it's about proof of concept. Most companies do not know exactly how UAS will be deployed, but they know there will be opportunities in the future – and the companies best placed to exploit the opportunities will be those who got involved early. So the initial investment in testing and preparing to deploy drone technology will result in greater certainty in the future when you prepare to scale – because you will be ready to do in a shorter timeframe and gain real advantage over slower-moving competitors.

THE POTENTIAL OF DRONE TECHNOLOGY WILL BE SWALLOWED UP BY A MASS OF REGULATIONS

There are plenty of scare stories about drones. The media loves to speculate wildly when unlicensed drones enter commercial air space, for example, and governments and aviation authorities have been busily developing the legal and regulatory framework for drone operation to prevent such events happening.

But regulations will not stifle commercial drone use for two reasons.

First, as mentioned previously, the regulations and licensing requirements in place are designed to reduce any risk attached to the commercial use of UAS, which is an advantage to any organisation considering using the technology.

Second, and perhaps more importantly, there is great pressure on governments to provide clear regulations in order to encourage drone companies to base their operations in their country. With an estimated value of £127bn, the drone market is very tempting and every national government wants its slice of the pie.

Perhaps the most interesting recent example was seen when Amazon chose to test its Prime Air delivery service in the UK instead of the US. The company found that FAA regulators were too slow in granting approvals to test so they chose to do it elsewhere. In 2015, when the FAA finally approved a drone design, Amazon had already tested it overseas and evolved the design. In effect, as was widely reported in the media², the FAA approved an obsolete product.

DRONES WILL TAKE OVER THE WORLD

Let's be honest here. As suppliers to the drone industry, we must declare something of an interest in its success. But we also believe that our interests – and yours – are best served by being realistic. So, when we see scaremongering reports about drones becoming omnipresent, a sky filled with criss-crossing unmanned deliveries and data-gathering UAVs, we feel we should also point out the limitations of drone technology – and why many of these reports are exaggerated.

In the field of delivery, for example, the drone-based delivery model is in competition with the established delivery infrastructure on the ground. In many cases, this is beneficial to using drones. Drones are likely to be preferred in situations where:

- Delivery items are small/lightweight
- Delivery times are critical (e.g. medical supplies)
- The alternative infrastructure is weak (e.g. poor roads, such as in less developed countries)

But while the use of UAVs is a breakthrough in the above scenarios, and can offer enormous benefits, this is not always the case. Deliveries of certain items in developed countries may be best served by ground based autonomous vehicles or emerging disruptive logistics infrastructure. It's simply cheaper and easier. But anything is possible!

In other situations it may simply be easier to use traditional ground-based infrastructure (but don't forget that autonomous vehicles are disrupting the market here too).



SUMMARY

The arrival of proven drone technology for commercial use is an extraordinary development, and one that promises so much potential. It is also unusual that, in a world of software- and data-driven disruption, it is the physical nature of drones – their ability to fly – that makes them so compelling.

And it is a metaphor that holds true for the businesses that are thinking of how to use drones for their own commercial benefit. They too need to go somewhere new in their thinking – to take a different view of their industry and the way their businesses work. It is only by taking that different perspective that the opportunities will reveal themselves, in the same way that the bigger picture can only truly be seen from the air.

Yet we also hope that this paper has helped to clarify some of the detail. Preconceptions abound in the world of drones and we hope we have helped you to see more clearly why some of those preconceptions are unhelpful, and that the transformational effect of drones on your business may be easier to achieve than you previously thought.

Talk to us

If you'd like to talk to us about what drone technology could do for your organisation, we'd love to hear from you. Whether you have plans in motion, or are simply curious to find out more, we'd be happy to discuss your needs and potential opportunities.

Feel free to pick up the phone or drop us message:

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¹ <http://www.businessinsider.com/delivery-fee-for-amazon-prime-air-2015-4?IR=T>

² <https://www.wsj.com/articles/amazon-says-its-approval-to-test-delivery-drones-already-obsolete-1427219327>