RISK & INNOVATION

Drones, Droids, And Dealing With Disruption

OVERVIEW

We are on the verge of being invaded by a whole new breed of electronic helpers. We haven't just invented robots – we're getting them to vacuum our floors and do our shopping. Drones are beginning to fill our skies and run our errands, while 3D printing has moved from being a curiosity in the hands of hobbyists to enabling large infrastructure projects of major organizations.

But beyond these technological advancements, there are still major issues to overcome. Facebook's famous motto, "Move fast and break things" has become emblematic of the freewheeling sense of opportunity that characterizes Silicon Valley's top innovators.

"Breaking things," however, might mean more than just breaking business models and introducing entirely new ones. What happens if a drone crosses into a commercial flight path? Should an autonomous car drive itself off a cliff-edge to avoid hitting a family sedan?

While almost every new technology brings new opportunities, they also bring new risks. It is the task of regulators and insurers to help analyze and mitigate emerging unknowns, and the responsibility of business leaders to ensure their organizations understand this new and changing landscape – and adapt accordingly.

IN DEPTH

Just as an expedition to a new world needs logistics planners and cartographers to go along with the explorers and help map new territories, emerging technologies need regulations and insurance. And as we enter into a new and ever-evolving world of technological unknowns, this remains necessary.

Brave New Worlds

Drones – long-used by governments for everything from defense to agriculture – are now freely available to the everyday consumer. The commercial applications for drones are enormous. For filmmakers, drones have provided an opportunity to open whole new universe of composition and cinematography offering the ability to obtain shots that traditional aircraft cannot provide. Amazon and other delivery firms have already made headlines with their testing of drone delivery systems. Telecom firms, including Facebook, are using drones to create airborne coverage networks. These uses are just the tip of the iceberg – some manufacturers have even unveiled a drone capable of carrying a human being. Drone taxis maybe just a few years away.

The services drones can enable will be a market worth an estimated $127 billion by 2020. The U.S. Federal Aviation Authority (FAA) estimates there will be around 7 million drones in America's skies by the same year.

The impact of robots and increased independent automation will make an ever greater impact – even before the rapidly-developing field of Artificial Intelligence becomes a commercial reality. Defining robots is a trickier job than drones, as robotics can encompass everything from Roomba vacuum cleaners to complete production line units and driverless cars.

The possibilities are almost endless. Turning human decisions over to non-human intelligence may be a risky move, and one needn't even turn to the dystopias of science fiction to see this. Driverless cars have already been involved in some serious accidents, with additional unknowns as technology develops.

It's also likely there will be other instances of unintended consequences of such new technologies before they become fully integrated in our day-to-day lives – and now is the time to start anticipating and preparing if business and society is to maximize the potential and minimize the risks.

Overcoming Regulatory Challenges

"You see drones flying near airports, so there is probably significant risk of a UAS (Unmanned Aircraft System) getting ingested by a large aircraft and causing very serious damage. There are a great number of possible losses," says Bryan Holmgren, Vice President, Aon Risk Solutions Aviation Practice. The potential results of a mid-air collision could be catastrophic, and these are the kind of eventualities that regulators need to watch out for.

Innovators might think faster than government regulation, but any industry needs regulation and a framework that prevents any potentially harmful consequences. Some countries are heavily regulated and some are not. For example, the U.S. has the most complex National Airspace System (NAS) in the world, so regulations are in place to help ensure UAS are not a danger to manned aircraft and people. The regulation of UAS in the U.S. has been undertaken by the FAA since 2012, after the FAA vs. Pirker case ruled that drones should be classified as aircraft and thus subject to FAA scrutiny, and the regulator has issued initial guidance restricting drone use under the Part 107 rules.

Automation also poses significant risks – the insurance complications of driverless cars alone pose a significant challenge. But the automated vehicle sector too has taken steps towards regulation. In September 2016, the U.S. Department of Transportation issued an initial Federal Automated Vehicles Policy (FAVP).

And this is just one jurisdiction. Several countries in the EU have also developed their own set of UAS regulations, as has China. The latter has also become an industrial lynchpin for the drone sector, in terms of both manufacture and consumption, so may have an important role to play in developing manufacturing quality and safety standards. Several EU countries – along with multiple other regulatory bodies, including the EU itself – is also developing rules for the use of driverless cars on its roads.

Regulations are important because they establish a set of agreed rules and standards across an entire industry – and this has key business benefits. Developing and deploying driverless cars or drones will be easier for manufacturers and distributors if all operators within a market follow the same rules – as they do for the regulation of manned aircraft – as opposed to a patchwork of legislation or an unregulated free-for-all.

New regulations are being welcomed by some manufacturers. Ford, which is heavily involved in the development of driverless cars, praised the announcement of the U.S. policy plan as "helping establish the basis for a national framework that enables the safe deployment of autonomous vehicles."

Insurance Challenges

If regulation attempts to protect users and customers by standardizing practices and technologies, then insurance is there to finance the costs when, for whatever reasons, technology or practices fail or humans make mistakes. And in the fields of emerging, cutting-edge technology like drones and robots, things can go wrong. Coming up with solutions to address potential liabilities of emerging technology, without a case history of previous errors to work from, can prove a uniquely difficult challenge.

The inherent insurance problem with any new technology or product is that there is by definition little legal precedent for establishing risk. "Drones present an entirely new set of risks that are hard to measure, and have not yet been subject to significant litigation," says Rose Marie Norman, Broker, Aon Risk Solutions Aviation Practice. This lack of data will continue to complicate pricing insurance premiums that accurately reflect the risk of new, disruptive technology – at least until a history of litigation and claims have built up.

Another issue is that technology often advances so quickly that what was true about its capabilities at one point will no longer hold six months later. "Unmanned aircraft systems are constantly advancing technologically, so the applications of these devices and the insurance packages that are available may become obsolete as the technology itself – as well as its use – progresses," says Norman. For instance, current drone insurance policies might not be applicable when drones capable of carrying human beings enter the market

Small drones, at least, have for now reached a position of market maturity in that insurance has risen to meet the needs of owners, but the same can't as easily be said for autonomous vehicles. In the auto-sector, insurance liability is likely to shift wholesale onto manufacturers and away from owners and drivers. And this could end up causing profound changes in how auto-insurance policies are bought and sold.

How To Stay Ahead Of Disruptive Risks

The prospect of an unqualified driver crashing a truck has been around for decades. Regulations exist stating who can drive that truck, and for how long, and insurance solutions exist to deal with the possibility of a crash. It is an established risk. The prospect of robots going rogue, or of drones flying into a passenger airliner's engines, is not. Not only do new risks imply new regulatory guidelines and insurance products, but also implies the need for new organizational strategies to minimize exposure to emerging, *un-established* risks.

Drones and automation are just two examples of the kinds of disruptive technologies that are changing the business and regulatory landscape. In this age of rapid technological change, a key challenge for businesses is staying informed about technological opportunities, risks, and the regulatory and insurance complexities presented by them.

This is not necessarily anything new. Setting up a dedicated team that can continually stay on top of emerging regulations is one way organizations look to stay on top of disruption. "Having to understand rules and regulation can be difficult for many risk managers, because they may not have a background in the relevant technical area," says Norman. "Unless you have, for example, an aviation program in your organization, there is a significant learning curve when understanding how FAA regulations apply," she says. "These regulations are changing rapidly and they can be difficult to keep up with."

A Talent For Technology

And it's not just risk management teams that may need staff with new types of skills and experience. Technological and regulatory disruption can also require new approaches to talent and staffing across an organization. "From a human capital standpoint, technology will push entire organizations – and industries alike – to build new skills," says Randy Nornes, Executive Vice President, Aon Risk Solutions. Where once insurance companies needed underwriters, in the future they may need data scientists, coders, and specialist analysts to determine ultimate responsibility and liability for incidents caused by autonomous technologies.

The same is true for organizations keen to make the most of these rapidly-emerging technologies – to identify new applications and maximize their potential may take new perspectives, new thinking, and new ways of working. This is why these technologies are called disruptive – it's not just about the tasks they can do, it's about the ripple effects they cause. To make the most of them, and minimize their risks, organizations need to understand the big picture implications, the potential domino effects of technological and regulatory changes, and to stay on top of emerging changes.

TALKING POINTS

"FAA has no hard rules relating to privacy or data collection and use, nor does it have any rules regarding overflights of private property." – Arthur Holland Michel, Director, Centre for the Study of the Drone at Bard College

"I totally get the level of urgency from folks in industry who see all kinds of applications for Drones. But we're not dealing with a complete green field here. There are other users of our airspace. The challenge for us is an integration challenge." – Anthony Foxx, US Secretary for Transport

FURTHER READING

- We Need To Pass AI Laws Early And Often – Slate, September 12, 2014
- Road Rules review Needed For Robo-Car Insurance – The Australian, November 15, 2016
- British Insurers: 'Give Us Driverless Data' – BBC, November 22, 2016
- More Than Half Of British Drone Owners Flying Blind – Huffington Post, November 25, 2016
- What AI Can And Can't Do Right Now – Harvard Business Review, November 9, 2016