The Safety and Ethical Impact of Drones

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The use of drones is becoming more and more popular both in private and commercial arenas. Companies like Amazon, Google, DHL, and Facebook are using or planning on using them to some extent and an increasing number of private citizens are purchasing them for photography. So much so that the term "Dronie" has been coined to describe a self-portrait taken by a drone. With the increasing use and operation of drones the question of safety and ethical operation must be addressed. Are the systems already in place enough to reasonably guarantee protection from those concerns? What systems could be put in place to mitigate the dangers that drones impose? While drones and our future seem to be intertwined for the long haul at the moment, the technology to provide safe and ethical operation is limited but well within our reach.

When most people think of drones, the idea in the forefront of their minds is most usually safety. With the multitude of near misses between drones and airplanes as well as with drones and people, regulations and technology must be put in place to help safeguard everyone from the potential dangers of drones. Current FAA regulations require pilots of drones weighing above 0.55 lbs to register their drone with the FAA and to display a unique identification number on the drone as well as to agreeing to fly it within line of sight, away from other people and certain places (airports, restricted airspace), and below a certain altitude. Registration however is not required at the time of purchase and is solely left to the pilot to either abide or disregard the law. This leads to the pilots of downed drones, those that caused injury, or those used for nefarious purposes (for example terrorists) to be hard or impossible to track down if unregistered. Even if the pilot was registered it does little to nothing to prevent any possible harm or wrongdoing. Systems such as tracking and no-fly areas, auto detection and avoidance, as well as inter drone communication must be put in place to help better safeguard everyone from the increasing number of drones in the sky.

There are some companies working on those issues but a lot more still must be done before drones can be considered safe. The biggest push is to have drones communicate not only with each other but with full size aircraft as well to help prevent drone-drone or drone-aircraft collisions. While several companies have taken this initiative the lack of a standardized and centralized regulation is still missing. If drones are to have a future then someone, most expectably the FAA, must step in and demand these changes.

Drones must also become smarter if they're going to be used on a commercial scale. The ability of the drone to detect and avoid obstacles itself is probably the most important. The use of drones by companies like Amazon would be operation out of line of sight of the home base of the drone, eliminating any possibly of a human pilot to intervene if something went wrong. Assuming the delivery drone they debuts would be autonomous, the need for the drone to identity objects in its path, even if on a preprogrammed route, would be needed to ensure safe operation. The need for the drone to land, or crash land, itself in a safe area would also be needed to ensure nothing or no one got hurt if something went wrong. The technology does exist to address these concerns but the drive to create and implement these changes has had less enthusiasm than that of the many countless possibilities drones may have to offer.

The ethical dilemma of drones is also a great concern as not everyone who operates a drone has the desire to follow the rules. Spying on others along with corporate espionage are some of the biggest privacy conquences since the induction of drones. When it comes to private individuals little if nothing can be done about spying on neighbors and the like apart from the legal consequences if caught. Unless privately operated drones are banned from all residential areas, the risk of having a neighbor spying on you with a drone, though unlikely, will always be present as long as private citizens can own one.

For commercial entities there are new technologies developed by a few companies that could protect companies from corporate espionage along with preventing drones from getting too close to airports or restricted space. One company has a system that can not only detect drones but identify the type of drone and payload capacity and the other can actually disrupt drone to pilot communications and the gps signal. As most autonomous drones use gps data to fly, the latter technology can counter both piloted and autonomous drones.

Drones are still a new technology but they have already been incorporated in almost every facet of our lives. From those amazing aerial views on TV, to keeping soldiers out of harm's way, to the potential of having packages speedily delivered to our doorstep or to providing internet to remote areas, drones are here to stay. However, before the sky is filled with drones certain regulations and technologies must be put into place in order to protect the people they were built to serve. Whether it be the government or a private company, someone must step in and set a standard for how drones will become safer and prevent them from becoming weapons for those that wish us harm.