



# THE FUTURE OF DRONES

Executive Summary

A WIKISTRAT CROWDSOURCED SIMULATION



September 2013





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### EXECUTIVE SUMMARY

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The drone age is coming. It has been estimated that annual spending on them around the world will almost double to \$11.4 billion by 2022. This may prove to be an underestimation as the range of applications to which they are put expands rapidly. As is often the case, the new technology has been driven by the military, and drones are still identified with targeted killings, but this is likely to rapidly change as their civilian uses grow.

This drone revolution has massive implications, ranging from legal and moral to economic and geopolitical. It will be a deeply disruptive technology, able on the one hand to provide undreamt-of capacities to impoverished people and countries, and on the other to widen the gap between haves and have-nots. It may prove a creative, empowering experience, but also has the potential to be destructive, destabilizing and divisive.

In this simulation, Wikistrat asked its strategic community to explore the ways in which drone technologies of every kind could reshape political, economic, social, security, environmental and legal landscapes over the next twenty years and in the process the look and feel of a future world after the “drone revolution.” Across 12 days, 90 analysts from around the world collaboratively developed some fifty scenarios as to their possible uses and implications.

The key dilemmas proved to be who the primary beneficiaries would be:

1. Will drones consolidate or challenge existing divisions between rich and poor at an individual and geopolitical level?
2. Will drones primarily allow us to perform existing functions more effectively or open up substantively different fields of human activity?

While the “drone revolution” — like all revolutions — will be cacophonous, disturbing and disruptive, it will be a time of exciting and imaginative exploration of the capabilities of this new technology. As such, four Master Narratives emerged, spanning a range of potential futures, from disrupting the fabric of human society in destructive, anarchic ways, through to unlocking new opportunities in economic development, citizen participation and global security.

Five key roles emerged:

**Drone will fight our wars.** Currently, drone technology is being driven by military applications, and this will continue as they become increasingly varied in their roles, from remotely piloted CASEVAC air-ambulances to screens of surface and submarine guardians around high-value warships. In due course, they will acquire increasing autonomy, raising complex moral, legal and practical questions about when and where drones may engage without direct human guidance.

**Drones will do our work.** Drones carry out tasks humans cannot, or do not want to do themselves. From remotely piloted ambulances to leading SWAT raids in hostile situations, from collecting garbage to moving goods, they become ubiquitous, even making their way into the media, gathering news footage and becoming entertainment tools. Beyond that, whole new areas of human endeavor and experience will become feasible, from low-impact virtual eco-tourism to deep space exploration. Of course, society will also have to learn to be careful for what it wishes. Tireless, cheap and efficient drones will put increasing numbers out of work, or relegate them to minimum-wage shift work in remote control hubs, the call centers of the age. The result may be a Luddite backlash, with populists inveighing against drones as a tool of the “one-percent” and individuals resorting instead to vandalism. In this way, the drone age sees a magnification of existing divides between rich and poor, on global, national and local levels.

**Drones will oppress us.** By allowing a loyal few to control massive arrays of specialized remotes, drones offer great opportunities to states with the will and resources to use them. While advanced democracies will have to balance this with political and legal constraints, richer authoritarian states will be amongst the greatest beneficiaries. Remotes allow regimes to gather intelligence on their own citizens and suppress unrest efficiently and ruthlessly. Even democracies, assailed by criminal and terrorist threats, will feel the temptation to relax their controls on these remotes, even though what may be originally built and bought to fight crime or prevent fraud may find itself then pressed into use spying on dissidents, activists and whistleblowers.

**Drones will liberate us.** Despite — or perhaps because of — their early use as tools of counter-insurgency, drones will be enthusiastically embraced by terrorists and other violent non-state actors, political activists and criminals. Drones will smuggle drugs, keep watch for the police and even launch attacks. However, beyond that, drones provide new tools for citizen participation and control, albeit at the cost of challenging and reshaping our concepts of privacy. The accumulation of recorded video, audio and other footage from remotes creates a dense information sphere in which much of our everyday life will be constantly captured. This will pose formidable cultural and legal challenges, radically changing how we think about privacy and public image. In the short term, this will be unsettling and divisive, but in the longer term, generations will adapt and acquire great opportunities to hold their governments, peers, corporate providers and civil servants to account.

**Drones will make us question our legal and ethical assumptions.** Drones are implicitly disruptive, upsetting old power and economic relationships and proliferating capabilities hitherto the preserve of the state and corporations. Laws and regulations will lag behind technological capacities, on issues ranging from the crowding of urban airspaces to the privacy issues raised by the use of drones by paparazzi. We can also expect a vigorous ethical debate on establishing limits on the autonomy of drones. As the dividing lines between remotely operated vehicles, programmed robots and semi-autonomous devices with pseudo-artificial-intelligence becomes increasingly blurred, drones will be at the heart of wider debates about the man/machine interface. In short, drones will change the world — but it is up to public, private and civic initiative to decide how to guide, shape and control the revolution.

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