DRONE INDUSTRY SNAPSHOT

PUBLIC SECTOR

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Public sector groups — with the exception of the US military — haven't traditionally been early adopters of new, digital technologies. But, with companies across industries increasingly seeing strong returns on investment from their unmanned aircraft, these organizations are now taking notice and seeking to replicate those results. As of April 2017, 347 government agencies outside of the US military — 83% of which are police and firefighting forces — were using unmanned aircraft in some capacity, according to The Center for the Study of the Drone at Bard College, representing a 518% explosion over the prior 24 months.

PUBLIC SECTOR BY NUMBERS

💰	**Annual Industry Spending**	$11.5 Trillion in 2017 (US only)
👪	**Industry Employees**	22.3 million (US only)
🚁	**Addressable Market for Drone Use**	$107 million by 2022
💲	**Share of Total Value Generated by Enterprise Drones**	7.1%
⚖️	**Top Regulatory Barriers**	Bans on drones flying over humans, LOS requirements

Source: Business Insider Intelligence estimates, Bureau of Labor Statistics, St. Louis Fed, Trading Economics, US Bureau of Economic Analysis
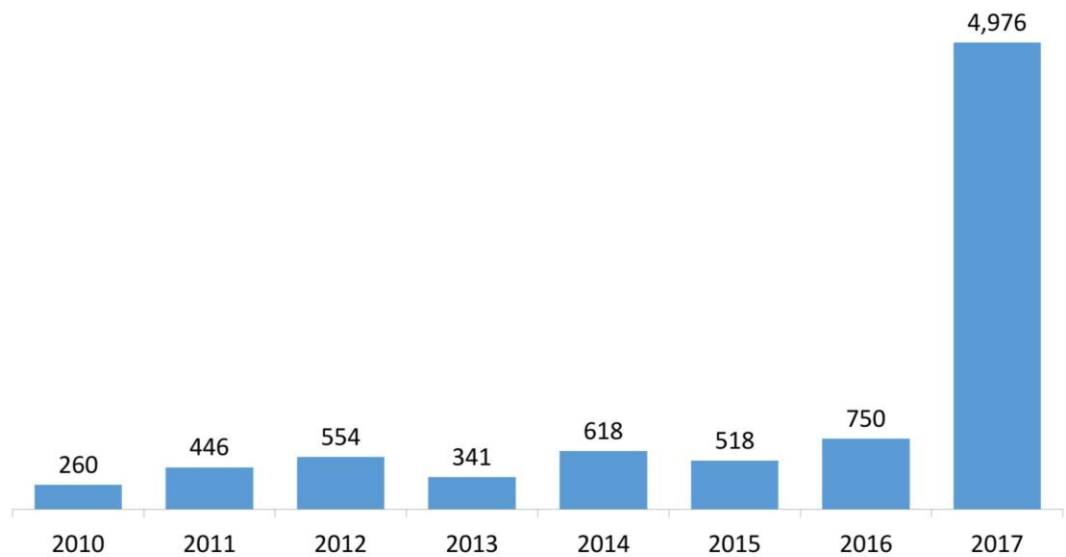
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Top Use Cases

Surveying. Public employees — from firefighters to police officers, as well as government officials — need to monitor and examine crime scenes, fires, and publicly owned land. Unmanned aircraft can help with these assessments in different ways for different groups. Police forces, for instance, need to assess the aftermath of crime scenes to capture minute details, like the location of blood stains, that can be used as evidence later on. Unmanned aircraft can fly above crime scenes and take high-resolution images, capturing stains, skid marks, and other small details that simply cannot be seen with the naked eye. Meanwhile, the Department of Interior (DOI) uses the aircraft to increase efficiency when surveying land. Drones take the about one-seventh of the time and one-tenth of the cost to survey and map out federal lands as traditional methods, according to DOI officials speaking to The Wall Street Journal. In particular, they can be incredibly helpful during forest fires — in 2017, the DOI deployed drones 707 times during 71 wildfires. These aircraft use infrared cameras to map the progression of a fire, helping to determine where to position firefighting crews on the ground.

Inspections. Federal law [mandates](#) that state-owned bridges are inspected at least once every two years, a process that takes weeks and often yields inaccurate or incomplete results, largely because humans need to inspect awkward angles that can be unsafe to get up close to, according to [PwC](#). Compounding this pressure is the sheer volume of infrastructure that needs to be inspected for damages ahead of potential repairs — American Road and Transportation Builders Association [estimates](#) that about 55,000 bridges across the US are in need of major repairs. Manual inspections are also costly — state agencies or contractors typically need to use a "[snooper](#)," which is a heavy-duty truck with a price tag as high as $1 million. Drones equipped with thermal, infrared, and other cameras can map out infrastructure and access areas very dangerous for human workers to reach. Many state-level contractors, for instance, now send drones up to inspect the top of 200-foot suspension bridges or underneath the bridges' roadways, thus eliminating the need to use expensive equipment or put a worker in danger. Minnesota started [trialing](#) drones for bridge inspections back in 2015, and now uses them to capture images of small cracks and crevices, which it will eventually compile into a library of thousands of images to identify deterioration over time.

Drone Flights Conducted By Department Of Interior
By fiscal year

Year	Flights
2010	260
2011	446
2012	554
2013	341
2014	618
2015	518
2016	750
2017	4,976

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Search and rescue. Searching for missing persons and suspects usually takes at least days, and requires dozens of police officers and first responders, often diverting valuable resources away from other priorities. For instance, it took over 100 state, local, and even some federal authorities nearly two weeks to find marathon bombing suspect Dzhokhar Tsarnaev back in 2013. Worse yet, suspects often hide in forests and other sparsely populated yet dense areas, making finding them through traditional searches using helicopters and people on the ground difficult, or impossible. Police forces can now use unmanned aircraft equipped with thermal imagers, which, unlike other high-definition cameras, capture heat waves. The human body is significantly hotter than the natural environment, so drones equipped with thermal imagers can identify humans from hundreds of feet in the air without being detected, even during nighttime hours. This allows law enforcement to instantly identify humans on the ground, and alert authorities back at a central location to send out additional forces to catch the suspect or help the missing person.

What Comes Next

The proliferation of drones in the public sector will continue to move at a slower pace than other industries, largely because of cost constraints. Yet, as forest fires become more costly and common, it will force the DOI to slowly continue to expand the number of drone flights it conducts annually, and could also push local law enforcement agencies to use unmanned aircraft to help tackle the fires right away, before federal authorities arrive on the scene.

Meanwhile, on the search and rescue front, computer vision software — the same type found in Apple's latest iPhone — only just started to arrive in enterprise drones about little over a year ago. Once law enforcement agencies begin to make widespread use of aircraft with this technology, changes in regulations that will occur over the next three to four years will enable police forces to fly drones over cities and other densely populated areas, helping to better identify suspects on the run and capture evidence at crime scenes.

Download the charts and data in Excel »

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