ARCHIVED REPORT

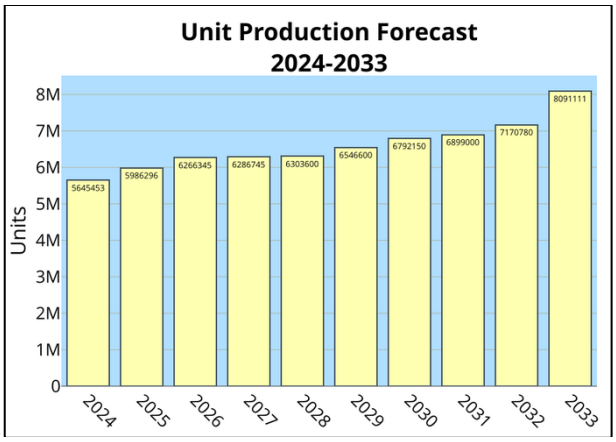
For data and forecasts on current programs please visit

www.forecastinternational.com or call +1 203.426.0800

DJI UAVs

Outlook

- Large numbers of DJI drones in Russo-Ukrainian War
- DJI remains the dominant provider of commercial UAVs
- Market share of Chinese firms is 90 percent
- DJI is a difficult company to compete against



Orientation

Description. Unmanned air vehicles.

Sponsor. Private development.

Status. In production. New systems are in development.

By some estimates, DJI may control upwards of 90 percent of the consumer (hobbyist) segment and 70 percent of the commercial and civilian (industry and government) segments of the drone market.

Total Produced. Over 28 million UAVs were built by DJI through the end of 2023. Chinese-made drones flew more than 16 million hours during 2023 in China. China had 1.3 million small drones in service flying.

DJI has partnered with Anzu Robotics, a U.S.-based company, to license DJI's technology for sale in the American market. Cogito Tech Company Ltd, based in Hong Kong, registered in August 2023 to sell drones in the United States.

Application. Unmanned air vehicles designed to perform multiple missions, including hobbyist activities.

Price Range. The cost of these unmanned air vehicles is as follows: $600-$1,000 for the Phantom 3; $2,000 for the Mavic Pro; and around $3,000 for the Inspire 1.

The DJI Neo drone has a price of $200.

Contractors

DJI	https://www.dji.com, No.18 Gaoxin S 4th Ave, Nanshan District, Shenzhen, China, Tel: + 86 0755 2665 6677, Prime

Contractors are invited to submit updated information to Editor, International Contractors, Forecast International, 75 Glen Road, Suite 302, Sandy Hook, CT 06482, USA; rich.pettibone@forecast1.com

DJI UAVs

Technical Data

	Metric Phantom 3	Metric Inspire 1	U.S. Phantom 3	U.S. Inspire 1
Dimensions				
Diagonal Length*	689 mm	559 mm	2.26 ft	1.83 ft
Height	184.15 mm	301 mm	7.25 in	11.85 in
Weight	1,216 grams	2,935 grams	42.893 oz	103.53 oz
Number of Rotors	4	4	4	4
Performance				
Speed, maximum	16 m/s	22 m/s	52.49 ft/s	72.18 ft/s
Altitude	6,000 m	4,500 m	19,685 ft	14,763 ft
Radius	1,000 m	2,000 m	3,281 ft	6,562 ft
Endurance	25 min	18 min	25 min	18 min

* Including Phantom 3's rotors and with Inspire 1's landing gear lowered.

Propulsion. These UAVs use electric motors as propulsion systems.

Control & Guidance. These unmanned aircraft are controlled by a simple ground control station but can also follow a preprogrammed flight path.

Launcher Mode. These UAVs perform takeoffs from any field.

Recovery. These unmanned air vehicles can make conventional landings in the field.

Variants/Upgrades

DJI has developed a variety of vertical takeoff and landing (VTOL) unmanned air vehicles. The company offers the Phantom, Inspire, and Mavic UAV series. Another system is the MG-1S, which is designed for use in agriculture. The company continues to develop new systems, as well as control equipment.

DJI unveiled the DJI Mini 2 small portable UAV in 2020. This system, a successor to the Mavic Mini, weighs less than 249 grams. The cost of the DJI Mini 2 UAV is EUR459.

In addition, the company has developed the DJI FPV (First Person View) system. DJI introduced the Agras T30 and T10 agricultural drones in 2021. The company claims it has sold more than 50,000 Agras units as of 2021.

Other Chinese companies involved in the civilian UAV market are Areox Technologies Co, Ehang Technology Co, Zero Tech, Aheadx, ElecFreaks, Playable Creation, Yuneec Electric Aviation, Micro Multi Copters Aero Technology Co Inc (MMC), and Xaircraft. Xaircraft focuses on the agricultural industry. Since 2011, the company has built air vehicles that can spray pesticides, but it is also working on package delivery systems.

Other competitors include Kespry, which is partnered with John Deere, and GoPro Inc, which began offering UAVs in October 2016. AirWare is working with Caterpillar.

Snap Inc mentioned interest in acquiring Zero Zero Robotics, a Beijing-based UAV manufacturer, during 2017. The company already owns Ctrl Me Robotics.

Simtoo, which is based in Shenzhen, unveiled a UAV known as Fairy. This is a competitor to the DJI-made Spark and will retail for about $150. The Fairy weighs just 140 grams.

DJI is working with Volatus Aerospace Corporation to provide UAVs to potential Canadian customers.

For information on additional UAV systems, please see the pertinent entries in the **Program Review** section.

DJI UAVs



Phantom 3 UAV

Source: DJI

Program Review

Background. The civilian market for unmanned air vehicles has been around for decades. Many of these systems were designed for use by hobbyists. This market has seen explosive growth in the last five years, and at the forefront is SZ DJI (Da-Jiang Innovations) Technology Co Ltd.

DJI was founded in 2006. The company began as a small operation in a single office, but has grown to include a global workforce of over 3,000 employees. DJI is headquartered in Shenzhen, Guangdong Province, China.

Dominating the Market

DJI has aimed to provide a line of easy-to-operate unmanned air vehicles for the commercial market, as well as for hobbyists. Many of the systems on the market were difficult to use (requiring a huge learning curve). This situation prevented large-scale use of UAVs by the general population.

DJI did not release its first full-fledged UAV until February 2012, but it quickly became the world's largest manufacturer of consumer unmanned air vehicles. By 2013, the company's worldwide sales exceeded $130 million, with growth of 300 to 500 percent annually. DJI's revenues reportedly exceeded $1 billion in 2015.

DJI had teamed with AgTech and Drone Nerds to provide drones to the agricultural market sector. The company said in 2022 that its sales in this market sector were growing from under 2,000 drones in 2012 to over 130,000 in 2021. This latter figure is far higher than those previously listed.

Operations. DJI's unmanned air vehicles are in service around the world. Many of these systems are used by hobbyists, but large numbers are used for applications such as aerial photography, supporting anti-crime operations, construction site work, and even border patrol missions.

A U.S. government employee lost control of a DJI-made Phantom FC40 UAV during a flight over Washington, DC. The UAV was found the next day on the lawn of the White House on January 26, 2015 (the employee was reportedly intoxicated).

In March 2016, a smuggler attempted to use a UAV to deliver drugs, a mobile phone, and weapons to inmates at Bedford Prison outside of London, England.

In April of that year, a protester used a UAV to land a bottle of radioactive waste on the roof of the Japanese prime minister's office.

DJI-made UAVs have been used on the sets of *Game of Thrones* and the most recent *Star Wars* film.

Chinese actress Zhang Ziyi, who starred in *Crouching Tiger, Hidden Dragon* and *Rush Hour 2*, received a diamond engagement ring delivered with a Phantom 2 Vision+ that was summoned by her musician boyfriend on February 7, 2015.

Numerous police departments in the United States, the U.K., and elsewhere are using DJI UAVs in anti-crime operations.

DJI foresees demand for UAVs to shoot films and news coverage, survey farmland and oil fields, inspect power lines and oil pipelines, and give firefighters a bird's-eye view of burning buildings.

DJI UAVs

Commercially available drones are turning up in Iraq and Syria in use with various factions. Iraq's Federal Police and a Shia militia are customers of DJI-made UAVs. These forces purchased the UAVs from a store in al-Mansur, a Baghdad neighborhood. The UAVs have been used to scout Islamic State positions and help ground troops spot improvised explosive devices (IEDs) and other hazards. The UAVs also help provide targeting data to Iraqi Army artillery units.



Inspire 1 UAV

Source: DJI

These UAVs have been seen over Fallujah and Mosul. Iraqi security forces began an offensive to retake Mosul in October 2016 and made heavy use of unmanned air vehicles.

The Islamic State is also using DJI UAVs to perform reconnaissance missions and conduct lethal attacks. DJI and other Chinese-made small drones also have been active in fighting in Myanmar and Sudan during 2023 and 2024, as well as in the Russo-Ukrainian War (see separate entry under the Worldwide Distribution section).

DJI-3DR Alliance. DJI surprised the industry with its 2017 announcement of an alliance with 3D Robotics, a one-time rival. As part of this alliance, 3D Robotics will integrate its software into DJI-made UAVs with the goal of meeting the needs of customers in the construction industry.

3D Robotics reportedly found it difficult to compete against DJI, which was much larger and able to rapidly develop new systems to meet evolving customer demands.

Air Vehicle Models. DJI is designing UAVs for use in the civilian market.

Phantom Series. This quadcopter series is the most well-known of DJI's UAV products. DJI unveiled the Phantom 1, the first ready-to-fly quadcopter, in January 2013. The UAV is designed to be flyable within an hour of unpacking and reportedly will not break the first time an operator crashes the vehicle.

Technical Data

	Phantom 1	Phantom 2
Diagonal Length	350 mm	350 mm
Weight	1,000 g	1,300 g
Speed, max	10 m/s	15 m/s
Radius	300 m	1,000 m
Endurance	10-15 min	25 min

The Phantom 1 is no longer in production.

The Phantom 2 offered operational improvements within the Phantom 1's compact design. As with its predecessor, this UAV is durable and easy to fly. This series includes the Phantom 2 Vision, which weighs 1,160 grams, and Phantom 2 Vision+, which weighs 1,242 grams and has a communication distance of 500-700 meters.

Like the Phantom 1, the Phantom 2 series is no longer in production.

The company added the Phantom 3 to its product line in 2015. The Phantom 3 is more portable than the Inspire 1 and is equipped with a better camera and flight controls than previous models. There are two versions in this line: the Phantom 3 Standard ($999) and Phantom 3 Professional & Advanced ($1,259). What differentiates the two versions is the camera.

Technical Data

	Phantom 3	Phantom 4
Diagonal Length	350 mm	350 mm
Weight	1,216 g	1,380 g
Speed, max	16 m/s	20 m/s
Radius	1,000 m	
Endurance	25 min	28 min

DJI UAVs

In March 2015, DJI launched the Phantom 4, which features the Obstacle Sensing System. This system has two forward-facing optical sensors that scan for obstacles and automatically direct the air vehicle around an obstruction. If the UAV cannot get around an obstacle, the Phantom 4 slows and stops until the operator provides new instructions.

The ActiveTrack mode ensures that the operator can keep the camera centered on a subject.

The Phantom series are the firm's bestsellers in Latin America, priced between CNY6,000 and CNY8,000 ($970-$1,300).

DJI introduced the Phantom 3 SE in 2017 at a cost of $599. This UAV has a 25-minute flight time and carries an improved camera. The control range of the Phantom 3 SE is 4 kilometers.



Mavic

Source: DJI

DJI also offers the Phantom 5.

Inspire Series. The first in this series is the Inspire 1. This UAV is more powerful than its Phantom counterpart and is equipped with a 4K super high-resolution camera and dual controls. These controls allow the pilot to focus on navigating while the camera operator is filming.

The Inspire 1 lets outside programmers create apps that control the device and the information it gathers. Orders for Inspire 1, which are sold for nearly CNY20,000 ($3,200) in China, are reportedly increasing.

Mavic. DJI introduced the Mavic UAV in 2016. The company emphasizes the portability of this system.

Mavic – Technical Data

Dimensions	305 x 244 x 85 mm
Weight	734 g
Altitude	5,000 m
Distance	13 km
Endurance	27 min

Independent reviews indicate the Mavic Pro is small in size but provides better performance than the Phantom 4. The system is controllable for up to 7 kilometers and can livestream to a selected device via a company app.

The Mavic Pro includes obstacle avoidance, optical sensors, subject tracking, sport mode, tripod mode, and precision landing.

The Mavic 600 Pro is larger than the Mavic Pro, but offers improved flight performance and better loading capacity. This UAV uses A3 Pro flight controllers and the Lightbridge 2 HD transmission system. It has a maximum payload of 6 kilograms and can fly for 35 minutes. The data transmission range is 5 kilometers.

The Mavic Pro Platinum is an evolution of the existing system. The new model is 60 percent quieter than the Mavic Pro and priced at $1,099 and $1,399.

The Mavic Air is a more compact version of the Mavic Pro.

DJI UAVs

Mini SE – Technical Data

Dimensions	
Folded	138 x 81 x 58 mm
Unfolded	159 x 203 x 56 mm
With propellers	245 x 289 x 56 mm
Weight	249 grams
Speed	
Ascent, max	4 m/s
Descent, max	3 m/s
Operational, max	13 m/s
Altitude	3,000 m
Endurance	30 min

DJI has since developed the Mavic Air 2 and Mavic Air 2S versions. By 2021, the company had announced another new drone that costs around $299. The drone is referred to as the Mini SE.

Mavic 3 – Technical Data

Weight	<920 grams
Range	15 km
Endurance	46 min

The Mavic 3 also became available in 2021, at a cost of around $1,600 for the Pro model and $1,000 for the Cine.

The Mavic 4 drone appeared in 2024, along with the DJI Neo. The Neo is a small handheld drone that weighs just 135 grams.

Spark. The Spark is a small UAV that can launch from an operator's hand. First introduced in May 2017, DJI uses this system in an effort to appeal to a broader consumer market. This UAV incorporates much of the same technologies as the Mavic in a much smaller package.

Spark – Technical Data

Dimensions	143 x 143 x 55 mm
Weight	300 g
Range	
Remote	Up to 2 km
Phone	Up to 100 m
Endurance	16 min

The Spark can shoot 12-megapixel photographs and 1,080-pixel videos. The UAV is controlled using a mobile device or hand gestures. The Spark can fly for 16 minutes.



Spark

Source: DJI

The basic version is priced at $499.

DJI also offers the Storm cinematography UAV.

Funding

DJI is a private company and does not release much information about its finances. In 2010, the company had revenues of $500,000; they had increased to $130 million by the end of 2013. Revenues continued to increase in 2014, rising to around $500 million (reportedly a 300 percent increase over the previous year). DJI's 2015 revenues reportedly ended at $998 million, or nearly $1 billion (a 100 percent increase over the previous year). In 2016, revenues increased by a further 60 percent. Revenues for 2017 were around CNY18 billion ($2.83 billion), which was 80 percent higher than in 2016.

DJI has a large market share and reportedly provided 70 percent of the world's commercial UAVs in 2015 (the company said in 2015 that it had over 50 percent of the market). Eighty percent of the company's revenues are from abroad, primarily Japan, Europe, and North America. DJI may be worth $8-10 billion. Yuneec International, another Chinese company, holds 5 percent of this market.

DJI is the world's largest provider of consumer drones. Some 80 percent of these revenues were generated by overseas sales. By some reports, 50 percent of all UAVs flying in North America are built by DJI. The U.S. is the largest customer for DJI. Members of the European Union are the second-largest customer group. DJI reportedly had a 90 percent share of the market in Europe as of 2020.

DJI announced in January 2019 that it expected losses of more than CNY1 billion during fiscal year 2018 due to internal corruption. Still, the market share of DJI was estimated at more than 75 percent in 2021 and at 70+ percent in 2022. During this time, DJI may have had a 70 percent share of the commercial sector and 80+ percent of the first responder sector. Overall, Chinese companies, such as DJI and Autel, control 90 percent of the civilian, commercial, and consumer market. Autel's share of this market is around 15-16 percent.

Contracts/Orders & Options

By Mar 2023, the Ukrainian "Army of Drones" project has raised over UAH 4 billion to purchase 3,201 drones.

In Aug 2022, Ukraine announced its purchase of 64 drones using charity donations. This purchase include 30 DJI Matrice 300 RTK drones. The money spent on this purchase is not available.

By Aug 2022, El Salvador's military had received 12 DJI-made Matrice 300 RTK drones, according to the Ministry of Defense (MoD). These drones, along with other equipment, was acquired under a contract worth $972,600.

By Aug 2022, the Ukrainian military had received the Matrice 300 drone made by DJI of China. The contract is worth UAH474 million. These drones were purchased under Ukraine's Army of Drones project. Kyiv launched this project on July 1, 2022.

DJI began selling the Phantom 1 quadcopter in 2013. The company is selling UAVs worldwide, and it derives about 30 percent of its revenues from the United States, 30 percent from Europe, and 30 percent from Asia, with the remaining sales coming from Latin America and Africa. Sales in Latin America tripled in 2015.

In Jul 2020, DJI donated 12 T16 drones to Pakistan for use in its program to control locusts. The value of this donation is around CNY670,000. A further 38 drones reportedly arrived the following August.

In July 2019, the U.K.'s Network Rail purchased DJI UAVs from Heliguy, an authorized seller of these systems. This deal is worth GBP2.6 million. The company will provide UAVs and maintain this fleet for Network Rail. This is a three-year contract, but it could run for a total of five years.

In 2018, DJI won a contract from Komatsu for the delivery of 1,000 custom Matrice 100 UAVs. This is the company's largest single commercial UAV order up to this point. The value of this contract is not available.

In 2017, Israel announced its plans to acquire UAVs from DJI. The IDF (Israel Defense Forces) is equipping its combat units with DJI-made UAVs, specifically the Mavic and Matrice.

In August 2015, Brazil's Labor Ministry said it will use six DJI Inspire 1 UAVs to monitor properties suspected of engaging in forced labor in Rio de Janeiro.

Also in August 2015, Peru used DJI UAVs to undertake 3D surveying and mapping of over 12,000 Inca ruin sites.

DJI UAVs

Worldwide Distribution/Inventories

DJI is selling unmanned air vehicles to customers in over 100 countries. The company's first successes were on the export market. Later, DJI began to market its UAVs to customers in China. From January to May 2015, DJI exported 160,000 commercial UAVs, 69 times the volume during the same period in 2014. These sales are worth CNY750 million ($120.8 million). Other leading companies in this market are Yuneec of China and Parrot of France.

Reports indicate that some of the company's biggest customers are **Mexico**, **Chile**, **Brazil**, and **Paraguay** (the value of these sales is in the tens of millions of yuan). The Chilean Marine Corps acquired DJI Mavic Pro UAVs in 2018 to help secure its bases. Other militaries also operate its drones, but the commercial and civilian segment sales are the largest. The military in **El Salvador** began operating DJI drones in 2022.

Some 30-40 percent of sales are to customers in the **United States** and 20 percent are from **China**. In 2018, DJI reportedly controlled nearly 80 percent of the market in the United States and Canada.

DJI's U.S. business customers include American International Group Inc and Commonwealth Edison Co, in addition to a host of lesser-known firms in the real estate, insurance, energy, agriculture, and film and television industries. DJI customers also include people and companies engaged in advertising, construction, farming, film, firefighting, and many other industries.

Central Hudson Gas & Electric Corporation experimented with a Phantom 2 to inspect power lines during 2014. Xcel Energy and Eversource (in New Hampshire) also used DJI UAVs.

The U.S. Department of Interior halted the use of DJI-made UAVs in October 2019. The DoI has more than 800 drones in its fleet and conducted 10,000-plus flights through July 2019. Effective 2021, a U.S. government report said DJI UAVs were safe and secure for government and enterprise operations. The report said there was "no malicious code or intent" in the company's drones. However, the U.S. Department of Defense said in July 2021 that it still considered DJI drones as a security risk. Florida, Mississippi, Arkansas, and Tennessee had imposed legal blocks to the sale of DJI drones to government agencies (a total of seven states banned the sale of DJI drones by June 2024).

Despite this situation, the U.S. Secret Service and FBI continued to purchase DJI-made drones (at least 27 in a three-month period during 2021). The DoI switched to the Blue sUAS, but has been disappointed in its performance and its higher cost (compared to DJI drones).

Police departments around the world are also purchasing DJI-made UAVs. In the United States, DJI-made UAVs are used by police departments across the nation.

The **Indian police** are using these UAVs to monitor crowds during major events. India is reportedly using DJI Phantom 3 UAVs along its border with Pakistan. Pakistani troops shot down a UAV that violated their country's airspace in July 2015. DJI officials said the company did not directly sell UAVs to the Indian Army. The Indian government denied that it had lost a UAV along the border with Pakistan and claimed it did not operate systems like the Phantom 3.

DJI officially announced in 2021 its intention to enter the Indian market.

The DJI-made line of UAVs is popular among police departments and is in wide use by law enforcement in the United States, the U.K. and elsewhere, including: Jamaica Constabulary Force; Limerick Fire and Rescue Service, Ireland – Phantom 2+; Jakarta Police, Indonesia; Iraqi Federal Police – Inspire; Iraqi Army – Phantom 3; and Nanjing City Police, Jiangsu Province, China. They are also used by Bermuda Aerial Media and Lufthansa.

The Lowell Police Department added a DJI Matrice 300 drone to its inventory in April 2023. This purchase costs $27,400. That same year, the Alger County Rescue 21 team in Michigan. A Florida state law grounding DJI drones forced the Broward County Sheriff's Office to cease use of its 60+ Chinese-made systems. The purchase of these drones cost more than a quarter of a million dollars. Miami Dade Fire Rescue Drone program purchased 25 drones for $80,000. The total number Chinese-made drones operated in Florida was more than 1,800 units.

Alabama proposed a similar ban on Chinese-made drones in 2023.

DJI UAVs

DJI's UAVs were also active on the set of the HBO *Game of Thrones* series. Additionally, Aptonomy Inc is using a DJI-made UAV to support security operations; its "flying security guard" uses a DJI S1000+ UAV as its basis.

The **Armenian armed forces** are using Phantom UAVs. Azerbaijan claims it shot down an Armenian UAV operating from the Nagorno-Karabakh region in 2016.

The **Australian military** is using its systems for non-classified missions. By 2017, the Australian military had 40 DJI-made UAVs that it uses in military exercises. The Royal Australian Army's 17th Combat Service Support Brigade received the Phantom 4 UAVs in August 2018. Australia planned to purchase 350 UAVs. Cyber security experts in July 2023 called on the Australian government to cease use of its 3,000+ DJI drones (some 40 drones were used by the Australian Border Force).

The **Croatian Mountain Rescue Service** uses the DJI Mavic 2 Enterprise Dual system. The police in the **Netherlands** also operate DJI-made UAVs. The police have purchased around 100 drones, mainly to monitor public order.

A DJI-made Mavic 2 Pro drone appeared over a North Korean military parade in 2020. That same year, Japan began to consider excluding China from supplying UAVs to its security forces and military.

Chinese-made UAVs are a dominant force in the **South Korean** market. DJI has a 60 percent share of South Korea's hobbyists market and perhaps a 70 percent share of the commercial market. Large numbers of Chinese-made drones are used by South Korean public institutions.

Israeli Program. The Israel Defense Forces (IDF) fielded DJI-made UAVs in 2017. The IDF is equipping its ground forces with Mavic Pro and Matrice 100 UAVs until the Tzur small UAV enters service.

Sources said in 2023 that Israel began to purchased thousands of additional drones from Chinese companies, including DJI. Orders spiked after the Hamas terrorist attack on October 7, 2023, against targets inside Israel. The IDF reportedly purchased drones from DJI and Autel Robotics.

Operations: Ukraine. Russia invaded Ukraine on February 24, 2022. Moscow planned a lightning campaign that would be over in two to three days, but its invasion quickly became bogged down due to stiff Ukrainian resistance. Prior to the war, the Ukrainian border guard force used DJI-made UAVs to support its anti-smuggling operations.

Both sides of this war are using DJI-made UAVs. Unmanned air vehicles, especially small systems, are deployed widely to perform local area reconnaissance missions.

A group of Finnish volunteers delivered 140 DJI Mavic mini drones to Ukraine in March 2022. The group spent EUR52,000 to purchase these systems. Local Ukrainian citizens are said to have donated their privately purchased drones to the nation's military. A group of Ukrainians said in March 2022 they had donated 100 drones to the military.

Also in March 2022, a volunteer group in the Netherlands said it had donated 187 DJI Mini 2 drones to Ukraine. In addition, a further 209 drones have been purchased. In April 2022, DJI announced it had suspended all product sales to Russia and Ukraine.

The Ukrainian military received an unknown number of DJI Matrice 300 drones in August 2022, according to a government announcement. The Ukrainian Army also operates the Mavic 3 drones. These drones are operating near Lysychansk in the Donbas region.

Russia is reportedly the largest user of DJI-made UAVs in this conflict and is accused of using information from the company to monitor flights of these drones conducted by the Ukrainian military. DJI denies these reports, and said in April 2022 that it had suspended all business activity in Russia and Ukraine due to the current war. The company said it opposed any military use of its products.

Russia is reportedly attempting to jam electronic signals used to control the drones operated by the Ukrainian Army.

Specifics on the number of DJI-made UAVs used by the two sides in this war are not available, but estimates place the total in the "tens of thousands." The Russian Army may have more than 5,000 DJI drones in service.

The loss rate for DJI-made UAVs in this conflict is very high.

Research published in 2023 showed that nearly 60 percent of all drone operations flown by both sides in the war involved DJI-made systems. Large numbers of so-called DJI drone knockoffs operate in Ukraine, as well as

DJI UAVs

products made by Autel (another Chinese company). A British study claims the average life span of a small drone in Ukraine is roughly three to four flights.

Both sides have modified DJI drones to allow them to drop explosive packages on hostile forces.

The Ukrainian government said its armed forces received a further 300 DJI Mavic 3T drones by March 2023. Officials said 3,201 drones were purchased over the nine months since the launch of the "Army of Drones" project by the Ukrainian military.

Unconfirmed reports say that Ukraine has purchased tens of thousands of Chinese-made drones to support its armed forces. The Ukrainian government said in April 2024 it had acquired 4,000 DJI Mavic 3 drones (3,000 Mavic 3Es and 1,000 Mavic 3Ts) for UAH575.2 million.

Ukraine received 550 Mavic 3T drones in September 2024 as part of a donation.

Users. DJI has sold commercial UAVs to customers around the world. Drone Guards, a private company in South Africa, is using DJI UAVs. The U.K.'s Network Rail purchased DJI UAVs from Heliguy in 2019. There are also customers for DJI drones in France, Germany, Qatar and Turkey. Canard Drones in Spain offers drone services and has a fleet that includes the DJI Mavic 3 Enterprise drone.

Forecast Rationale

DJI is by far the leading provider of small drones for use by civilian (government) and commercial (business) organizations, as well as by consumers (also known as hobbyists). Although specific figures are not available, DJI might control 70 percent of the civilian and commercial segments and perhaps as much as 90 percent of the consumer segment.

Calling DJI a juggernaut is like calling Moby Dick a really big fish. The company's effect on the small drone market cannot be understated. DJI is a seemingly unstoppable force which crushes all that stand in its way.

Although competitors accuse DJI of using its dominant position to manipulate the market, the company achieved its status by anticipating customer needs and then providing a line of affordable and easy-to-operate drones to meet them. Love them or hate them, there is no denying DJI's market success or the popularity of its products.

The blacklisting by the U.S. government will not faze DJI or significantly affect its market share. Besides remaining popular with civilian clients, DJI's drones are fighting on both sides of the Russo-Ukrainian War. Moscow invaded Ukraine on February 24, 2022. The lightning campaign planned by Russia quickly bogged down, with the conflict turning into a war of attrition.

Both sides of this conflict are using large numbers of small off-the-shelf drones, including a reportedly huge number manufactured by DJI. These systems are performing local area reconnaissance for frontline units, gathering intelligence on troop positions, and spotting targets for the artillery. In addition, some of these drones have been modified to carry out suicide attacks on different types of ground targets. DJI said it is not actively supporting either combatant and decries the use of its drones in warfare. The total number of DJI-made drones participating in the Russo-Ukrainian War is unknown, but it might be in the tens of thousands. One source said the number of DJI-made drones used in the war has exceeded 1 million.

The number of DJI-made UAVs operated by the militaries of Ukraine and Russia is miniscule compared with the company's civilian, consumer, and commercial sales. Along with other domestic companies, China may account for 90 percent of all small off-the-shelf drones sold worldwide. DJI's global market share might amount to 70-plus percent, which some sources call a low estimate. The company manufactures more UAVs and exports them to a greater number of clients than any of its competitors.

The worldwide market for unmanned air vehicles and related technology has exploded over the past few years. Although the value of this market has seen rapid growth, it could see a slowdown in the rate of increase, but not a decline.

DJI transformed the commercial UAV market with its development of a fly-out-of-the-box quadcopter. Previous systems involved a huge learning curve for users, which was negated by DJI devices. In addition, DJI systems are far less expensive than their predecessors. The Phantom series provides professional-level features, including high-quality cameras. These UAVs created a surge in sales to hobbyists and non-hobbyists alike. Sales of DJI-made systems increased fivefold with little marketing effort.

Not surprisingly, competing with a company as dominant as DJI is proving extremely difficult. Any prospective David will have a difficult time defeating this market Goliath. 3D Robotics was first to give up, followed by Parrot and Skydio. Fighting DJI for market share just wasn't worth it.

That said, DJI is not without rivals. There is also the possibility of heightened competition from defense firms that manufacture UAVs for the U.S. and other militaries. Furthermore, DJI is well aware that the commercial UAV revolution could be stopped in its tracks by overregulation. Most troubling for the company is a possible patchwork of local regulations by state and city governments that could hurt innovation. Outright bans would be a worst-case scenario for commercial UAV makers.

DJI believes it can maintain its peak position because it is a dynamic company capable of introducing new systems and upgrades into the market within months, not years. Basic UAVs like DJI's will likely drive the U.S. and international commercial market for the foreseeable future, meeting business demand for a range of uses, including aerial photography, site inspection, real estate promotion, police anti-crime programs, and video production.

A problem for DJI is the backlash that could emerge over China's predatory economic policies that are resulting in a growing number of countries imposing trade sanctions. The U.S. has already banned the import of numerous Chinese-made products, and DJI's drones may be next. New sanctions could be a "golden opportunity" for competitors to gain market share at DJI's expense.

DJI said the coronavirus would help in the effort to expand its market share in that the company could see greater sales among police and other government agencies to enforce health restrictions. Moreover, DJI claims it is the leading supplier of drones for use in agriculture. And finally, DJI officials say the company is venturing into new market sectors, such as the drone delivery business. Time will tell whether these assertions prove accurate.

Ten-Year Outlook

ESTIMATED CALENDAR YEAR UNIT PRODUCTION												
Designation or Program	High Confidence					Good Confidence			Speculative			
	Thru 2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	Total
DJI												
DJI UAVs												
	29,442,406	5,645,453	5,986,296	6,266,345	6,286,745	6,303,600	6,546,600	6,792,150	6,899,000	7,170,780	8,091,111	65,988,080
Total	29,442,406	5,645,453	5,986,296	6,266,345	6,286,745	6,303,600	6,546,600	6,792,150	6,899,000	7,170,780	8,091,111	65,988,080