



DJI CONTINUES UPWARD TRAJECTORY

Frank Wang Tao is a notorious perfectionist, whose abrasive personality led to most of his colleagues walking out on him from his drone company, DJI Innovations. Also a pragmatist, he even has a single bed in his office, where he works and sleeps.

By Liu Yi

Many of the entrepreneurs in Silicon Valley have a positive outlook on the future of drones, and DJI's drones have quickly become a must-have item. In fact, even Bill Gates and Apple cofounder Stephen Wozniak are also known to be DJI drone enthusiasts.

From *Star Wars* to *Game of Thrones*, and even on the lawns of the White House and the official residence of the Japanese Prime Minister, one can see the shadows of DJI drones, of which the Phantom series is often compared to the Ford Model T because of its innovation and dominance of the drone industry.

Wang, 34, developed a helicopter flight control system in his senior year at Hong Kong University of Science & Technology. He was completely devoted to the group project, staying up until 4 or 5 a.m. and even skipping classes in the daytime. Unfortunately though, the night before the group presentation, the hovering function of the onboard computer system unexpectedly failed, yet Li Zexiang, Professor of Robotics at the university, took notice of Wang's passion and dedication and thanks to his recommendation, Wang was admitted into the graduate school. One could say that the group project marked a turning point in Wang's life.

In his graduate school years, Wang built prototypes of flight controllers in his dorm room. Then, in 2006, he and his two friends

initiated a research project in Shenzhen using their scholarship money and founded DJI. However, due to his headstrong personality, the other founding members announced their departures just two years later.

Meanwhile, the conditions necessary for the drone industry to expand from a military-oriented to a consumer-oriented market were met. Around 2008, were rapid advancements were made in relation to the battery, motor, flight control and sensor systems and technologies. The reduced cost for the major parts and components, and the miniaturization and high-accuracy

trends paved the way for commercialization of drones. At some of the forums for drone enthusiasts, some argued that the quadcopters are better than the monocopters as the four-propeller designs are cheaper and easier to program.

The Phantom Series

DJI began developing a support system to shoot stabilized video during flight by adjusting the direction of the accelerator, and by 2012, after continuous research and investment, DJI was able to develop the software and hardware systems necessary to build a drone including the control soft-



Wang is explaining about drone to Mark Rutte, the prime minister of the Netherlands.

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Chinese Startup 1



Wang's drone has become essential equipment at the film industry.



ware, propellers, support system, horizontal stabilizer and remote controller. Based on prior designs, DJI launched its Phantom series in January 2013. This became the world's first consumer-level drone series, and DJI seized the opportunity to dominate the market. In 2015, DJI topped the list of emerging companies showing the highest growth announced by *China Entrepreneur Magazine* in an article headlined "Future Star Enterprises."

DJI's marketing strategy is quite interesting. According to the curator who planned the Wings of Combat Drones: China Drone Competition, DJI took part in both the industrial and commercial drone exhibitions, and in contrast to the drones of other companies that exhibited fixed wings, only those manufactured by DJI had several propellers that allowed indoor flight with

DATA

Sector	Drone
Founder(s)	Frank Wang Tao
Year of Inception	2006
Base	Hong Kong
Capital invested	Not disclosed
Investors	Excel Partners
No. of employees	2,800
Key customers	Film industry and drone enthusiasts



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high effectiveness. DJI found a niche in the market with military and commercial drones that were considerably cheaper than other models and were of higher quality compared to model aircraft.

DJI has defined its drones as a "flying camera" for use in the filming and broadcasting industries. Aerial filming was nothing new at movie and TV shoots, but the rental cost for a helicopter amounting to nearly \$10,000 per day was considered a hefty sum of money. The aerial shoot by a drone controlled by a drone flight specialist, on the other hand, produced the same effect, yet it only cost a couple of thousand dollars. As a marketing strategy, DJI opened an office in Hollywood, and made its drones available for the filming of American TV shows including *Modern Family* and *Homeland*.

In addition to the Hollywood celebrities, many entrepreneurs in Silicon Valley developed a positive outlook on the future of drones, and DJI's drones soon became a must-have item. In fact, even the afore-

mentioned Gates and Wozniak are also known to be DJI drone enthusiasts.

DJI grew at a rapid rate. In 2011, there were only 90 employees with the annual revenue recorded at \$4.2 million. But now, there are 2,800 employees, and three factories are in operation. This year's revenue is expected to be three to five times that of last year, which was recorded at \$130 million. DJI even received a \$75 million invest-



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ment from Accel Partners, a Silicon Valley venture capital firm, this year, and it plan on expanding further by boosting investment in the application field.

At the same time, DJI will open the SDK (Software Development Kit) platform this year for developers to create apps specific to their fields of interest based on accurate measurement and imaging analysis made possible through basic-level programming.

According to *China Entrepreneur magazine*, there are two models: a camera-based model with human- and object-tracking software that allows panoramic photography and a flight route control-based model that runs a corresponding control program to allow the aircraft to fly in a specific orbit.

At present, DJI has 70% share of the civilian drone market and 50% of the miniature drone market worldwide. With DJI turning its focus from the drone-based platforms to the application of aircraft platforms, the growth potential of this emerging enterprise is still unknown.



Phantom 3, new model drone was introduced in London last April.