ARROWHEAD
BUSINESS AND INVESTMENT DECISIONS

Due Diligence and Valuation Report

Arrowhead Code:	90-02-21
Coverage initiated:	June 03, 2016
This document:	May 15, 2023
Fair share value bracket-DCF:	EUR 0.14 to EUR 0.17
Share price:	EUR 0.0187[i]

Analysts

Ayushi Saraswat | Sumit Wadhwa

Company:	Drone Volt SA
Ticker:	EPA: ALDRV.PA, ISIN FR0013088606
Headquarters:	Villepinte, France
Founder	Mr. Dimitri Batsis
CEO	Mr. Mark Courcelle
Website:	www.dronevolt.com

Market Data

52-Week Range:	EUR 0.0073- EUR 0.0568[ii]
Average Daily Volume (3M):	69,050,620[iii]
Market Cap (May 15, 2023):	EUR 20.9 million (mn)[iv]

Financial Forecast (in EUR) (FY ending – Dec.)

EUR	'23E	'24E	'25E	'26E	'27E
High NI '000	1,076	(1,920)	(317)	1,394	3,298
High EPS	0.00	(0.00)	(0.00)	0.00	0.00
Low NI '000	(151)	(2,177)	(1,099)	261	1,744
Low EPS	(0.00)	(0.00)	(0.00)	0.00	0.00

Company Overview: Drone Volt SA ("Drone Volt," "DRV" or "the company") is a France-based company, which specializes in the production, integration, and sale of drones or Unmanned Aerial Vehicles (UAVs) and software for professionals. The company, established in 2011, is listed on AlterNext under the stock symbol "ALDRV." The company is an expert in artificial intelligence (AI) and provides customized professional civil drones and several related services (pilot training, regulatory certification, etc.), which enables it to provide turnkey solutions to its clients. Drone Volt is the market leader in the European broadcasting and service drone industry. The company's client list includes government organizations and industry groups such as the French army, the French Ministry of Defense, Engie, Total, Bouygues ES, ADP, the Air Transport Gendarmerie (GTA) & international government agencies.

FY 2022 Financial Results: The revenue for FY 2022 stood at EUR 13.7 mn in comparison with EUR 8.6 mn in FY 2021, a growth of 59.4% year-on-year (YoY). The consolidated gross profit stood at EUR 2.9 mn, with a gross margin of 21.1% in comparison with 34.7% in FY 2021. In FY 2022, the gross profit margin of high-value-added activities and third-party brands stood at 62% and 15%, respectively. EBITDA for the full year stood at EUR -2.9 mn, as compared with EUR -0.9 mn for FY 2021, driven by investments for the future. The current operating loss stood at EUR 5.2 mn. As a result of 100% provision made toward Aquiline Drones receivables, the company's operating loss and net loss increased to EUR 22.0 mn and EUR 26.3 mn, respectively. On December 31, 2022, total debt and cash amounted to EUR 4.0 mn and EUR 1.3 mn, respectively.

Key Highlights: (1) DRV expects to double its revenue in FY 2023, driven by ongoing negotiations on several significant orders, a strong customer base, a reinforced geographic network and a plethora of products and services, coupled with the commercial launches of LINEDRONE and ramp-up of the "Drone as a Service" offer; **(2)** DRV aiming for a significant improvement in its product mix going forward; **(3)** DRV secured the largest order in its history, exceeding EUR 20.0 mn; **(4)** Recently, DRV announced that LineDrone, a drone for inspection of power transmission lines, developed with Hydro Quebec, had satisfied all the technical requirements as per the latest tests carried out in the laboratory and outdoors on the high voltage lines and conducted a successful validation test, following which, DRV completed the production of its first unit of LineDrone, and would be looking to start its demonstration campaigns; **(5)** DRV acquired Skytools, a drone distributor and service provider to grow its revenue base and expand into new markets. Skytools contributed c. EUR 1.1 mn in FY 2022; **(6)** DRV obtained a Loan of EUR 2.5 mn granted by Bpifrance to support the group's research and development (R&D) efforts;**(7)** In FY 2022, DRV suspended the invoicing of production licenses to its American partner and concentrated the agreement on the distribution in the US; **(8)** DRV has terminated its convertible bond financing contract signed with Atlas Special Opportunities, thereby raising an additional EUR 3.0 mn in early 2023; **(9)** DRV acquired Lorenz Technology ApS, a Danish company specializing in drone-based inspection and surveillance solutions; **(10)** Drone Volt signed a partnership with ROTH2, which will offer hydrogen and deploy recharging stations for its drones; **(11)** Drone Volt sold 50% of its stake in Aerialtronics for EUR 6.5 mn to Aquiline Drones; **(12)** DRV is continuously expanding its product lines, with plans to unveil new drones in FY 2023.

Risks: The key risks include evolving regulatory policies for the sector, supplier risk, emerging competition, and cheaper alternatives.

Valuation and Assumptions: Based on due diligence and valuation estimates, Arrowhead believes that Drone Volt's fair share value lies in the EUR 0.14 - EUR 0.17 bracket using a Discounted Cash Flow (DCF) model – our primary valuation methodology.[v] In addition, the target P/S multiple for 2023 implies a fair value bracket of EUR 0.15 – EUR 0.17.

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1. Summary and Outlook

Arrowhead is updating its coverage on Drone Volt SA (ALDRV) with a fair value of EUR 0.14 per share in the low-bracket scenario and EUR 0.17 per share in the high-bracket scenario, using DCF methodology.

Headquartered in Villepinte, France, the company specializes in designing and marketing civil UAVs for professional purposes. It offers turnkey business solutions to its customers, which include several related services and pilot training. The company is a leader in audio-visual drone solutions and provides aerial photography services to public administration and industry.

Key Highlights:

(1) Given the ongoing negotiations on several significant orders, whether for Third-Party Brand products or for the activities of Drone Volt factory, Services & Academy, the company has a promising prospect for FY 2023. The company foresees a significant growth in its sales which are expected to double in FY 2023.

(2) The company is planning to introduce two new innovative offerings in the professional civilian drone market, with a disruptive impact, in Q2 2023. The first is the LineDrone, which is a specialized drone the company has developed in collaboration with Hydro-Quebec to facilitate complex inspections of high-voltage electricity transmission lines. Following the successful validation tests conducted in real-world scenarios, the company has initiated the production of the first units, and the company will deliver its first units in Q2 2023. Second is the "Drone as a Service" pay-as-you-go offer, which is based on invoicing for use. The company also plans to unveil, in 2023, a new drone that will enrich the product offerings.

(3) Recently, the company secured the largest order in its history, exceeding EUR 20.0 mn. Currently, the group has received a 10% deposit and is actively working towards ensuring product availability for prompt delivery to the customer. The main objective is to ensure timely deliveries and invoicing within the first half of 2023. The company has already delivered its first batch at the beginning of April for the amount of c. EUR 1.0 mn. The company expects to deliver the remaining batches and invoice the majority of the contract during Q2 2023.

(4) To support long-term growth, the company has decided to accelerate its investments for the future with three major and synergistic levers. Firstly, there are the continuous technological innovations with the new Heliplane, the finalization of the development of the Linedrone with Hydro-Québec and the future hydrogen drone, with ROTH2 and Pragma Industries. Secondly, the successful acquisition and integration of Skytools and Viking Drones might lead to an acquisition of complementary skill sets. Third, there is the continued acceleration towards commercial investments with the reinforced presence at major international trade fairs, whether in the US (T&D in April) or in Europe (Eurosatory in June and CIGRE in August).

(5) Drone Volt recently announced the acquisition of Lorenz Technology ApS, a Danish company specializing in software development and automation, that will complement Drone Volt's hardware capabilities, thereby creating a more comprehensive offering for clients worldwide. Lorenz Technology ApS has a proven track record of delivering innovative solutions for various industries, including the construction, agriculture and energy sectors. Its advanced drone software enables clients to automate and optimize their operations, resulting in increased efficiency, safety and cost savings. This strategic acquisition will allow Drone Volt to offer end-to-end drone solutions that combine hardware and software, making it a one-stop shop for clients' needs. Moreover, this acquisition will provide DRONE VOLT with a stronger foothold in the European market. With this acquisition, Drone Volt will have access to Lorenz Technology ApS Denmark's established client base and partnerships, enabling the company to expand its reach and tap into new opportunities in Europe. The acquisition will enable the company to expand its portfolio of drone-based solutions and enhance its position in the global market. With this acquisition, the company is demonstrating its ability to carry out targeted and immediately accretive transactions in line with the company's strategic roadmap.

(6) The company continued its delivery of Hercules 20 UAVs in the US. During Q1 2023, the company has delivered six units, invoiced and paid, compared with four units during Q4 2022. The company expects a favorable outlook with four units delivered, invoiced and paid already since the beginning of April.

(7) The company aims to use its available resources of c. EUR 7.7 mn (EUR 3.0 mn raised in early 2023 through the bond financing agreement and EUR 4.7 mn capital raised in March 2023). The objectives of the investments are to strengthen its employee headcount to support the ramp-up of the Drone-as-a-Service activity, reinforcement of stocks to meet strong commercial demand and make strategic acquisitions such as the Danish company Lorenz to fuel long-term growth.

(8) Drone Volt recently announced the sale of a Heliplane LRS, a Vertical Take-Off, and Landing (VTOL) drone, to Groupe Gilbert who is a major player in transportation, logistics, and civil and mining engineering in Canada.

The sale, the first in North America, might pave the way for future deployment of this type of solution in Canada and the United States (US).

(9) The company also announced the sale of solutions to GE Renewable Energy Offshore Wind, a subsidiary of GE Renewable Energy, which includes six HERCULES 2 drones, two HERCULES 20 drones and a training program for refueling and control missions of an offshore wind farm.

(10) The company raised an additional EUR 3.0 mn in early 2023, after terminating its convertible bond financing contract signed with Atlas Special Opportunities in September 2020.

(11) To finance future investments, the company took an Innovation Loan of EUR 2.5 mn granted by Bpifrance. The loan will be spread over the next 7 years, with a two-year grace period (until September 2024) and an interest rate of 4.30%.

(12) The company has announced its decision to temporarily suspend, from H2 2022, the invoicing of production licenses to its American partner AQUILINE DRONE, which is now devoting all its commercial efforts to the distribution of the HERCULES 20 model.

(13) In January 2022, the company launched a new drone belonging to the Heliplane range. The drone has a fixed wing and can take off vertically and fly like an aircraft. With the ability to fly for up to 3 hours and over 1600 hectares, it is suitable for long-distance monitoring missions and high precision survey missions. Additionally, the company is working on developing a new version with a hydrogen engine to reduce environmental footprint.

(14) In December 2021, the company received an order of 275 HERCULES 20 SPRAY drones for a total of EUR 5 mn to be delivered in the next three years to a leading industrial player in Central Europe. The company plans to deliver 50 drones by the end of the first year. Additionally, the company will discuss the possibility of a licensing arrangement for the production of the drones with the customer (which already has a drone assembly line installed). It had delivered 8 drones by Q1 2022, as per the schedule.

(15) The company signed a letter of intent to acquire a minority stake (worth up to EUR 500k) in SkyCorp. SkyCorp is an Estonian manufacturer of drones that has developed e-Drone Zero which converts hydrogen into electricity and replaces batteries, leading to lower weight and lower environmental footprint. With the stake, the company plans to utilize the technology to produce similar engines or license the technology. The agreement builds on the partnership with ROTH2, with the company looking to HERCULES 20 with hydrogen cells.

(16) In June 2021, Drone Volt signed a partnership with ROTH2, a leader in production of high-pressure steel batteries. ROTH2 will offer hydrogen engines for Drone Volt's HERCULES 10 and HERCULES 20 drones and will deploy recharging stations for the drones, allowing drones to fly twice as long with the same carrying capacity and over longer distances. The recharging stations will be marketed under the Drone Volt brand name with Drone Volt receiving licensing revenues from the sales of these stations for refueling.

(17) Drone Volt signed significant agreements with Hydro Quebec and Aquiline Drones in FY 2020/21 and received substantial interest from customers (including the signing of a contract with a Europe-based customer for a minimum of 275 HERCULES 20 SPRAY UAVs). Thus, the company has a positive outlook for FY 2021 and expects its entry into and activities in the U.S. to drive growth.

Key Risks: Key risks for the company include tougher regulations in the area of operation, along with supplier risk and emerging competition in the near future. In addition, cheaper alternatives of Drone Volt's products by small players could also impact the company's growth.

Industry Overview: The UAV or drone industry has seen rapid growth over the last decade owing to technological advancements in this sector. New markets, such as civil and consumer drones, have emerged and have been driven by new technologies and keenness regarding the various usages of drones across sectors. There have been varied forecasts by industry experts regarding the likely market growth. Teal Group's World Civil Unmanned Aircraft Systems (UAS) Market Profile and Forecast forecasts that non-military UAS production will jump from USD 7.2 bn in FY 2022 to USD 19.8 bn by 2031, a 9.1% CAGR in constant dollars terms, with total civil UAS purchases to reach USD 139 bn in this decade. However, all the estimates highlight the view that the commercial/civil drone industry is expected to witness significant growth over the next decade and will be a major contributor to overall drone industry sales. In addition, the use of commercial drones is likely to increase in areas such as agriculture, media, cinematography and photography, inspection and maintenance, surveillance and real estate. It corroborates our view that there is considerable scope for Drone Volt to capture greater market share with its unique and customized products.

2. Business Overview

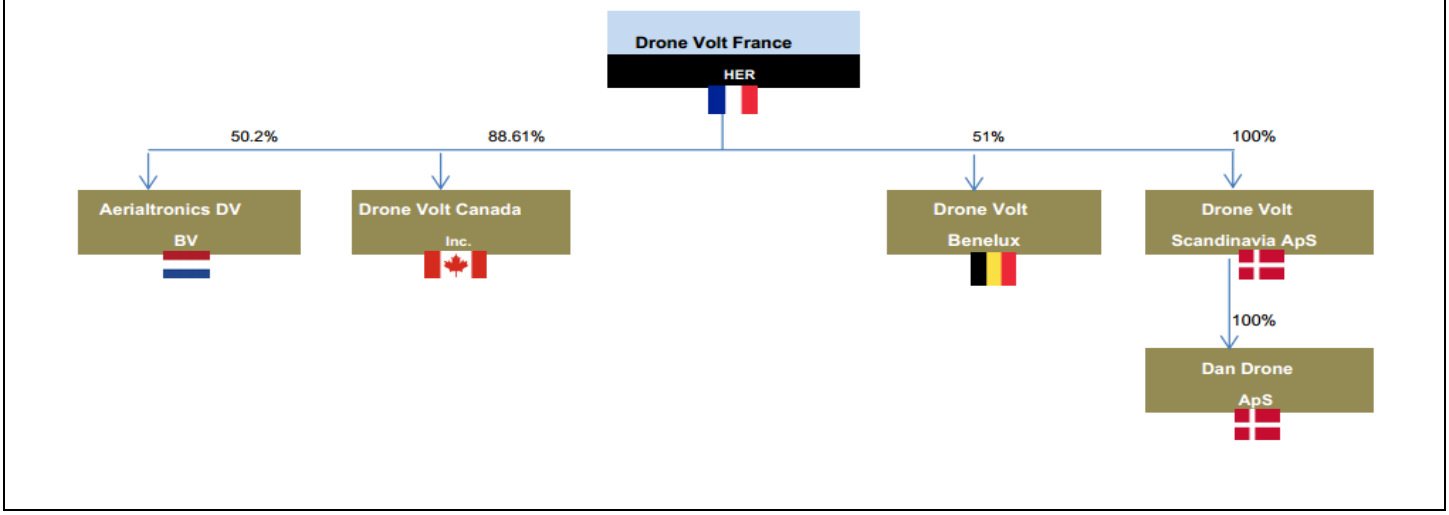
Drone Volt is a leading French aeronautical company producing civilian drones and specializing in the manufacturing, assembling and distribution of professional drones. It came into existence in 2011 as a private limited company, headquartered close to Paris CDG airport, France. It was listed on Euronext Marché libre Paris in April 2015, before being transferred to AlterNext Paris in December 2015. The company's shares are traded under the symbol "ALDRV." Drone Volt has been self-sufficient in developing new technologies based on UAVs or Unmanned Ground Vehicles (UGVs) used for civil applications since 2011. The company is present in France, Belgium, the Netherlands, Denmark, Switzerland, the US, Canada, and Indonesia. On December 31, 2019, the company had 46 employees and 2 production centers in France and the Netherlands.

It designs and manufactures innovative commercial service drones useful for agriculture, audiovisual applications, building and civil engineering works and security. The company offers complete solutions for professional industries. It also provides services such as drone pilot training, repair and maintenance services, or undertaking administrative actions. Drone Volt's customers notably include government organizations and industrial groups such as the French army, the French Ministry of Defense, GDF Suez, Engie, Total, Bouygues ES, ADP, the Air Transport Gendarmerie (GTA) and international government agencies. The company is steadily expanding its geographical reach beyond France.

2.1 Ownership Structure

Drone Volt SA's organizational chart is as follows:

Exhibit 1: Organization Structure[vi]



2.2 Business Model

Drone Volt is involved in manufacture and sale of drones to individuals and professionals. Apart from this, the company offers various drone-related services such as pilot training, regulatory certification and engineering consulting, besides providing customized products, which allows it to offer its clients turnkey products. The company also provides training, repair and maintenance services for drones. It even provides administrative assistance for registering operators with the DGAC (French Civil Aviation Authority), obtaining flight authorizations, training pilots and providing them with requisite certification from the DGAC. Resultantly, Drone Volt has become a one-stop shop for comprehensive solutions to its customers.

The company follows a sales-based model which provides DRV with a competitive edge over its peers who follow a rental model, in terms of availability and customization of drones. Its sales-based model also lowers the risk of obsolescence as the company is not required to store any inventory to rent out its products and can easily adapt to changing technology and market needs.

The company has shifted its focus from distribution to the strategic segment which includes Drone Volt Factory, Services & Academy as the demand has shifted from low-value products to high-value drones. The Distribution segment includes

sale of drones to third-party brands while Drone Volt Factory offers an integrated chain of services, ranging from in-house development of drone systems to training and administrative support to comply with French regulations. The company initially commenced its operations by assembling and dispensing spare parts and drone systems sourced from other manufacturers, which primarily targeted the consumer market and were mainly sought after by a niche group of proficient customers who preferred to build their own systems. Until the present, while the distribution segment continues to make a valuable contribution to the business (c. 81.5% of revenue in 9M 2022), it is no longer the focal point for future revenue growth.

Recent Developments

In October 2020, Drone Volt entered into a promising relationship with Aquiline Drones in the U.S and signed an LOI with Aquiline Drones, with a view of granting it the license of producing the drones HERCULES 2 and ALTURA ZENITH with PENSAR camera, in return for 10% of the recommended selling price of the drones in addition to compensation for the transfer of know-how. However, the company has temporarily suspended, from H2 2022, the invoicing of production licenses to its American partner Aquiline Drone, which is now devoting all of its commercial efforts to the distribution of the HERCULES 20 model. The company additionally collaborated with Hydro-Quebec (October 2020) to industrialize and commercialize a drone for inspecting high-voltage electricity transmission lines.

The company created a strategic joint venture with Pragma Industries, a manufacturer of compact hydrogen cells, to develop hydrogen-powered drones. Hydrogen propulsion would increase the autonomy of the Hercules 20 drone to one hour with a 10kg load and that of the Heliplane to 3 hours with a 2kg load. The joint venture will potentially represent a technological leap, facilitating development of drones with increased flight time for transport and surveillance missions, with the aim to provide manufacturers of fixed or rotary-wing drones with hydrogen engines. The joint venture is also complementary to the existing partnership with ROTH2. Drone Volt will look to strengthen this association by subscribing to 10% of Pragma Industries' capital, while Pragma Industries can subscribe to 18% of Drone Volt's capital.

Furthermore, in 2022, the company acquired Skytools, a Netherlands-based distributor and service provider of drones that proved to be the major contributor to the company's ability to expand its customer base in Europe. The acquisition of Skytools strengthened the company's distribution and service capabilities in the Netherlands and boosted its revenue by EUR 1.1 mn in FY 2022. The company also acquired the assets of Denmark-based Viking Drone, in the same year, which specializes in manufacturing connected drones for developers and integrators, in an all-cash transaction for an undisclosed amount. Viking Drone has developed a drone with a simplistic design that is equipped to adapt to different payloads and allows for use of Artificial Intelligence. Drone Volt has also onboarded 3 engineers from Viking Drone to assist with the integration. The acquisition will enable Drone Volt to strengthen its technologies and offerings.

Recently, the company announced the acquisition of Lorenz Technology ApS, a Danish company specializing in software development and automation, that will complement Drone Volt's hardware capabilities, thereby creating a one-stop shop for clients' needs.

2.3 Products and Services Offered

The company offers a plethora of products from leading world manufacturers of drones. It also designs and manufactures in-house, particularly focusing on making customized products for sectors such as agriculture, surveillance and security, and construction. The following is the product portfolio offered by Drone Volt:

HERCULES 2

Exhibit 2: Product Image and its Specifications

- Tactical drone for reconnaissance and surveillance
- Microdrone with a flight speed of up to 2 kmph
- 27 minutes flight time without payload
- Capable of flying up to 90 kmph in all weather conditions
- Resistant to winds up to 70 kmph
- The dimensions of the frame are 300x300x150 mm, with propellers as long as 254 mm (10 inches)
- This drone's total weight is 1.2 kgs

HERCULES 10

Exhibit 3: Product Image and its Specifications

- Fully customizable with an ability to carry payloads and heavy sensors
- Used for agriculture, construction, security, surveillance, inspection or surveying
- Flight time of 35 minutes in a wide range of operating conditions with wind speed up to 50 kmph
- It comprises a carbon fiber frame and anodized aluminum fasteners
- Removable arms and landing gear make it easy for transportation
- It can lift up to 7.5 kg and can carry a wide range of payloads

HERCULES 10 Spray

Exhibit 4: Product Image and its Specifications

- Used for roof treatment, surface and agricultural treatment
- Tethered spraying
- Sprays up to 3 liters of product per minute.
- Equipped with 4 flat nozzles and a 30 meters pipe
- Allows quick and easy access to inaccessible and dangerous areas
- Operational in 10 minutes and reduces hardware installation

HERCULES 20

Exhibit 5: Product Image and its Specifications

- Used for a wide range of applications such as Installation Of Power Lines, Transport Of Heavy Loads, Mapping / Topography, Autonomous Spraying and Inspection
- It can lift up to 15 kg and can carry a wide range of payloads with maximum flight time of 40 minutes (without payload)
- With 4 removable arms and landing gears, it makes Hercules 20 ultra compact and easy to transport
- Excellent flight stability and resistance, irrespective of the payload it carries
- In terms of build quality, the carbon fiber frame and anodized aluminum fasteners make Hercules 20 extremely resistant

HERCULES 20 Spray

Exhibit 6: Product Image and its Specifications	
	• The customizable crop spraying system length is up to 3 meters wide. The fully foldable system that makes the HERCULES 20 - Sprayer Drone ultra-compact was designed to facilitate transport. • The HERCULES 20 Sprayer Drone is designed for an accurate and constant spraying for various surface treatments: liquid pesticides, fertilizers, new treatment solutions for a wide range of applications. The flow is manually (with the remote control) or automatically adjustable via the application / flight controller • The tank, with integrated pump, can load up to 12 liters for crop spraying. It is fully interchangeable and easy to remove because of the quick release system. The HERCULES 20 can take up to 20 kgs payload

HELIPLANE LRS

Exhibit 7: Product Image and its Specifications	
	• It combines the advantages of multirotor drones with fixed-wing drones • The unfolded dimensions of the drone are 1,000x1,300 mm with a height of 200 mm • It has a maximum payload weight of 1 kg and maximum take-off weight of 2.5 kg • Capable of achieving 150 minutes of flight time, reaching 80 km distance (with the Pro Version) • Its light and robust structure gives great stability and resistance to winds up to 40 kmph • It is equipped with an infrared camera with a daytime zoom of 12.2x • Heliplane is widely used in the security and construction sectors

ALTURA ZENITH

Exhibit 8: Product Image and its Specifications	
	• The drone has dimensions of around 600×600 mm with a height of 470-570 mm with a max take-off weight of 9.65 kgs. • It has max payload capacity of 3kg. With the largest payload compatibility and the simple and fast "click and go" system, it is the most flexible drone in the market • It is equipped with a high-capacity battery and can fly for up to 40 minutes • ALTURA ZENITH has a high level of redundancy which is ensured by 8 motors, coupled with redundant inertial measurement units (IMUs)

PENSAR camera

Exhibit 9: Product Image and its Specifications

- World's first dual-spectrum computer vision platform
- Powered by AI
- Sony 30x zoom HD vision.
- FLIR Boson IR allows identification of heat signatures.
- NVIDIA® Jetson™ Graphics Processing Unit allows AI-based real-time aerial processing.
- Optical character recognition reads texts and recognizes characteristics.
- Daylight and thermal vision overlaid on one screen in real time.
- Privacy masking
- Hand-coded deep learning algorithms

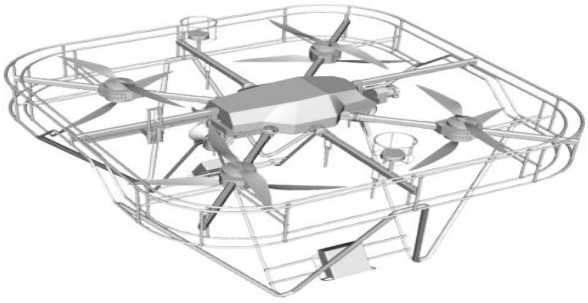
INSPECTION DRONE (ASIO FROM FLYBOTIX)

Exhibit 10: Product Image and its Specifications

- It is designed to explore extremely small and confined spaces and helps to reduce inspection costs
- It can reach 24 minutes of flight time
- It is powered by 10,000 Lumen for 180° orientation, allowing it to operate in dark and unlit spaces
- 4K camera in Timelapse mode can click pictures at regular intervals, which assists in 3D modeling, coupled with an infrared sensor from FLIR
- Honeycomb structure and cage makes it shock-proof
- It has a unique configuration with extended flight time, reduced noise level and redundancy
- More than a dozen sensors to measure its attitude and position 8,000 times per second, make it perfectly stable in the most complex situations
- Key algorithms such as wall-locking algorithm, the Rewind algorithm, Obstacle repulsion algorithm, Safety slowdown algorithm and Self-righting algorithm help in smooth functioning and ensure the safety of the drone and workers

Line Drone

Exhibit 11: Product Image and its Specifications



- It is designed in partnership with Hydro Québec to inspect high-voltage transmission lines.
- It is immune to electromagnetic fields of up to 400kV.
- It has a motorized rolling system, which allows it to make motorized movements on the lines and pilot assistance system helping it to land on electric conductors
- It is a UAV with 8 motors and propellers.
- Sensors calculate loss of steel thickness and prevent power breakages

Other drones that DRV offers include DJI Phantom 3 Professional, DJI Phantom 4, Drone Yuneec Q500 Typhoon, FreeFly Alta, FreeFly Movi M15, DV Wing. DRV also sells drone accessories from various manufacturers on its website.

2.4 Financials[vii]

Q1 2023

Revenue for Q1 2023 amounted to EUR 1.6 mn as compared with EUR 1.7 mn in the corresponding period last year. The decline was primarily attributed to the contribution of EUR 0.3 mn royalties paid as a part of the partnership with the American company Aquiline Drone. However, the license agreement has not been included in the accounts since June 2022. Also, the company has integrated the activities of the Dutch company Skytools as of January 18, 2023. Therefore, on a like-for-like basis, the revenue for the company has increased by 9%.

The gross profit stood at EUR 0.3 mn, a decline of c. 48% YoY. Gross Margin for the quarter stood at 21% as compared with 36% in Q1 2022. The gross margin for Drone Volt Factory, Services & Academy and Distribution segment stood at 45% and 15%, respectively, as compared with 64% and 13% in Q1 2022. The decline in gross profit and gross margin for the quarter was entirely due to the end of the invoicing of Aquiline Drones' license fees. However, on a like-for-like basis, the gross margin has remained stable.

FY 2022

The company recorded revenue for FY 2022 of EUR 13.7 mn, a growth of 59.4% over the previous year and well above the company's initial target of EUR 10.0 mn. It achieved record sales in Europe, underpinned by its ability to offer a rich variety of products and services, along with its responsiveness and proximity to customers. These appear to have been the key factors contributing to this success.

The gross profit for FY 2022 stood at EUR 2.9 mn, as compared with EUR 3.0 mn in FY 2021, translating to a gross profit margin of c. 21.1% in FY 2022, as compared with a gross profit margin of c. 34.7% in FY 2021. The gross margin for the Third-Party Brands stood at 15%, while the margin of the Drone Volt Factory, Services & Academy stood at 62%.

The accelerated investments for the future incurred during FY 2022 have resulted in the widening of EBITDA loss for the year, which stood at c. EUR 2.9 mn (FY 2021: EUR -0.9 mn). The current operating loss for the company stood at EUR 5.2 mn in FY 2022, as compared with an operating loss of c. EUR 3.1 mn a year earlier. The other operating expenses of c. EUR 16.8 mn (inclusive of provision of 100% of Aquiline Drones receivables) for FY 2022 resulted in an operating loss of c. EUR 22.0 mn. The company amortized in advance a large part of the loss carried forward and entered in the balance sheet, generating a tax charge of EUR 4.2 mn. This resulted in a net loss of c. EUR 26.3 mn in FY 2022.

As of December 31, 2022, gross debt stood at EUR 4.0 mn, including an Innovation Loan of EUR 2.5 mn and a PGE of EUR 1.5 mn. Additionally, the company had cash and cash equivalents of EUR 1.3 mn, after considering cash used in operations. This cash used in operations included EUR 3.9 mn relating to working capital requirements and EUR 1.3 mn for cash investments in Skytools and the acquisition of the assets of Viking Drones.

2.5 Company Premiums[viii]

a. **Strong geographical presence and expertise:** The company is present in 7 locations across Europe and North America and its employee base includes experts from the professional drone segment. The company hired different personalities who have expertise in the professional drone field. This helped the company grow at a rapid pace across regions. Drone Volt is currently eyeing different markets to pursue its next big growth avenue. For example, in January 2019, the company signed a contract with a U.S. government agency for the supply of two PENSAR smart cameras. In March 2020, that the company's partner in the U.S. was ready to manufacture a number of the company's drones which would help serve the U.S. market. Drone Volt also signed an agreement with Aquiline Drones, granting it a license to produce HERCULES 2 and ALTURA ZENITH with PENSAR camera in the U.S. The company delivered a spray version of HERCULES 20 in Africa in February 2020. It additionally received orders from the Middle East (3 HERCULES 10 Spray drones for EUR 100k) in July 2020.
b. **Competitive edge over peers:** Drone Volt has launched several new products with multiple applications, such as Drone Spray, Drone Paint and Drone Surveillance. These drones can be used for multiple purposes such as the treatment and cleaning of surfaces, inspection of work, painting, and live surveillance. Drone Volt focuses on providing customized products to its clients. It is developing drones that can carry extra payloads and give it a competitive edge over its peers. It has also launched drone software Drone Volt Pilot, an application that offers easy access to autopilot for DJI drones.
c. **Turnkey products:** Drone Volt also provides a range of services, including administrative support to comply with French regulations, training to operate the drone, and help to acquire a license for flying the drone for operational purposes. The customers receive turnkey products for immediate use. This business model saves the time and cost involved in getting proper training, acquiring a license, and dealing with regulations.

2.6 Company Risks[ix]

a. Regulations: The varied regulations for use of drones in different countries are expected to pose the main challenge to Drone Volt's expansion plans. With the company is looking at expanding its presence worldwide, it needs to follow a different set of rules and regulations for each country. Also, drones can be categorized differently in each country, typically by weight, size, altitude, speed, etc. With many countries still in the process of legislating regulation into law, the expansion plans in some regions may be affected.

b. Suppliers' risk: For its distribution segment, Drone Volt faces the risk of dependency on the supplier's commercial policies as the company's margins could plunge if the supplier increases prices. This risk is partially mitigated by the fact that the company has already tied up with several leading drone suppliers worldwide. Moreover, with the company now focusing on its R&D and attempting to design and develop a majority of the drone parts in-house, this potential threat from suppliers should be mitigated in the future.

c. Competition: While the commercial drone market is still nascent, it is rapidly evolving and the competition within the industry is expected to increase with many small and large players entering the market, eyeing the prospective growth opportunities. The industry may also witness price-based competition, which will significantly impact small players in the market. Another challenge could be the launch of cheap alternative drones in the market, created using copied technology.

d. Innovation in technology: The commercial drone industry is still in its early age and is expected to grow significantly over the next decade, driven by strong innovation in technology. In order to compete, players within the industry need to come out with new and innovative products regularly, which would distinguish them from the others. Therefore, lack of innovation, leading to the obsolescence of its products, could hinder performance and in time even threaten the existence of the company.

2.7 Shareholding Pattern[x]

On May 15, 2023, the number of shares outstanding was 1,102,039,635.

Exhibit 12: Top Shareholding Pattern as on May 15, 2023

Shareholders	Shares outstanding
Free Float	1,102,039,635
Total	**1,102,039,635**

2.8 Listing and Contact Details

The ordinary shares of Drone Volt are listed on AlterNext Paris (Ticker: ALDRV, Date of Listing – April 28, 2015). The company's warrants are listed as BNBS.PA Code ISIN : FR0014007951.

Contacts: 14, Rue de la Perdrix, Lot- 201, Villepinte, France
E-mail ID: finance@dronevolt.com
Phone: +33 (0)1 80 89 44 44
Fax: NA

3 Key Variable Analysis[xi]

3.1 Variable 1 – Revenue from Drone Volt Factory, Services & Academy

This segment generates higher margins for the company as it focuses on providing customized products based on client requirements. Given that the company is primarily focusing on growth in this high-value-added activity segment, it is expected that the number of drones sold in the segment to increase considerably, and thereby, has the potential to increase the contribution of this segment to the company's total revenue.

The following are our estimates for revenues from the Drone Volt factory, service and academy segment for the forecast period under two scenarios - low bracket and high bracket:

Exhibit 13: Drone Volt factory, academy and services segment revenue

In EUR '000	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Low Bracket	22,909	4,363	6,021	8,310	10,487	12,448	14,240
High Bracket	27,985	4,570	6,490	8,845	10,933	12,507	14,083

3.2 Variable 2 – Revenue from distribution

This segment has traditionally seen lower growth. The company purchases drones and their parts from other manufacturers and then assembles and distributes, renting the final product through the company's website. The distribution has historically been contributing more than half of the company's total revenue. However, the company has now shifted its focus to the factory, service and academy segment. Therefore, the distribution segment may witness lower growth and its contribution to the total revenue is expected to come down significantly in future.

The following is the estimated revenue from the distribution segment for the forecast period under two scenarios - low bracket and high bracket:

Exhibit 14: Distribution segment revenue

In EUR '000	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Low Bracket	14,551	17,958	21,530	26,162	30,649	34,653	38,316
High Bracket	15,156	19,246	23,988	29,712	34,770	38,614	42,417

4. News[xii]

- **Announced the acquisition of Lorenz Technology ApS:** On April 18, 2023, the company announced the acquisition of Lorenz Technology ApS, a Danish company specializing in drone-based inspection and surveillance solutions. The acquisition would enable the company to expand its portfolio of drone-based solutions and enhance its position in the global market.
- **Successful fundraising activity:** On March 29, 2023, the company announced that its fundraising activity aimed at institutional investors and individuals was successful, with an oversubscription rate of 162% of the amount of the indicative offer. The overall demand amounted to EUR 4.8 mn (78% from institutional investors and rest from individuals via the PrimaryBid platform).
- **Announced the launch of a fundraising open to institutional investors and individuals:** On March 28, 2023, the company announced the launch of a fundraiser aimed at institutional investors and individuals in order to support its ambitious growth plan. The fundraising activity would allow the company to strengthen its balance sheet through additional financial resources in the context of hyper-growth which would support the company over the long term.
- **Termination of convertible bond financing contract:** On March 03, 2023, the company announced that it had terminated its convertible bond financing contract signed with ATLAS SPECIAL OPPORTUNITES in September 2020.
- **Announcement of the largest order in history:** On February 22, 2023, the company announced the receipt of an order worth more than EUR 20.0 mn. The order is expected to be delivered and invoiced in H1 2023. The company is actively engaged in negotiations and anticipates that these negotiations will be successfully completed in the coming months.
- **FY 2023 Update:** On February 20, 2023, the company made an announcement regarding its ongoing negotiations for several substantial orders, which encompassed all the activities of the group, including distribution, sale of product and service from factories and provision of services. Notably, the group is actively pursuing significant deals in Africa and Europe, which are expected to materialize by the end of H1 2023.
- **Announced update on LineDrone:** On December 22, 2022, the company announced that its first version of the LineDrone has qualified all of the technical requirements of Hydro-Québec.
- **Announced the sale of 4 HERCULES 20 drones in the United States:** On December 12, 2022, the company announced the sale of 4 HERCULES 20 drones in the high-pressure spray version which were produced in the Drone Volt Factory.
- **Announcement for raising full-year 2022 revenue target:** On November 30, 2022, the company aims to achieve double-digit revenue growth for FY 2022, driven by sustained growth in its distribution business in Europe, the ability to diversify the customer portfolio, and the latest references signed. The Group expects its revenue to be greater than EUR 10 mn, a growth of c. 20% over the last year.
- **Announced participation in the international exhibition organized by CIGRE:** On August 29, 2022, the company announced its participation in the international exhibition organized by CIGRE. The exhibition organized by CIGRE is one of the largest international exhibitions in the field of high-voltage electricity. This event is for electricity producers, network builders and managers, and all experts in the sector.
- **Raised an Innovation loan of EUR 2.5 mn from Bpifrance:** On July 05, 2022, the company announced that it had obtained an Innovation Loan of EUR 2.5 mn granted by Bpifrance. The loan was to be spread over the next 7 years, with a two-year grace period (until September 2024) and an interest rate of 4.30%. This loan was backed by the Pan-European Guarantee Fund (EGF Guarantee Instrument), implemented by the European Investment Fund (EIF) with the financial support of the Member States contributing to this guarantee fund. The purpose of this financing was to support the group's R&D efforts. The Innovation Loan is reserved for SMEs and small ETIs created for more than three years, developing and/or marketing a new product, process or service and who can justify an innovation, in particular by significant R&D expenditure. It strengthens the company's cash flow in order to finance all the intangible expenses necessary for the industrialization and marketing of new innovative offers.
- **Announced the sale of a solution to GE Renewable Energy Offshore Wind:** On June 28, 2022, the company announced the sale of solutions to GE Renewable Energy Offshore Wind, a subsidiary of GE Renewable Energy, which includes six HERCULES 2 drones, two HERCULES 20 drones and a training program for refueling and control missions of an offshore wind farm.
- **Announced the sale of a Heliplane LRS to Groupe Gilbert:** On June 21, 2022, the company announced the sale of a Heliplane LRS, a VTOL drone, to Groupe Gilbert who is a major player in transportation, logistics and civil and mining engineering in Canada.
- **Announced delivery of two HERCULES 20 UAVs to the French Navy:** On May 03, 2022, the company announced that it has delivered two Hercules 20 to the French Navy along with two trained expert pilots. The aim of this delivery is to conduct an experiment on the transport of materials through two different tools: a winch and a dropper.

- **Announced a joint venture with Pragma Industries to create long-range hydrogen drones:** On April 28, 2022, the company announced its joint venture with Pragma Industries to create drones that are capable of flying long distances with Hydrogen fuel cells.
- **Acquired assets of the Danish company Viking Drone:** On March 02, 2022, the company announced that it has acquired the assets of a Danish company named Viking Drone which manufactures connected drones for developers and integrators. Drone Volt has specified that it will pay the entire transaction in cash.
- **Completed conversion of remaining bonds**: On February 01, 2022, DRV announced that it had completed the conversion of bonds, attached to Atlas' tranches, into shares, following up on its announcement of suspending the use of the Atlas Special Opportunities' financing line.
- **Acquired Skytools**: On January 18, 2022, the company announced that it had acquired Skytools, a Netherlands-based distributor and service provider of drones, to enter new markets and benefit from its revenue base (EUR 1 mn).
- **Launched a new version of the Heliplane drone**: On January 05, 2022, the company announced that it had launched a new version of the Heliplane drone, which can fly for 3 hours and over 1800 hectares, making it suitable for long-distance monitoring missions.
- **Raised EUR 8.8 mn through the issuance of shares**: On December 10, 2021, the company announced that it had completed the capital increase exercise, raising EUR 8.8 mn through a reserved offering and a private placement. The amount was raised by the issuance of shares with redeemable warrants at a price of EUR 0.075 per share.
- **Received significant order from Central Europe**: On December 02, 2021, the company received an order of 275 HERCULES 20 SPRAY drones from a leading player in Central Europe. The order, worth around EUR 5 mn, is required to be delivered over the next three years, with 50 drones expected to be delivered in the first year. Additionally, the company will explore the possibility of signing a licensing agreement with the customer, which has its own drones assembly line.
- **Raised loan of EUR 500k**: On August 24, 2021, the company announced it had raised a third state guaranteed loan of EUR 500k on favorable terms (the first two in FY 2020).
- **Signed LOI to acquire minority stake in SkyCorp**: On August 03, 2021, the company announced that it had signed an LOI to acquire a minority stake in SkyCorp, an Estonia based developer of drones, which possesses the technology that allows conversion of hydropower into electricity to motor a drone. The company plans to use the technology for production or licensing purposes.
- **Completed transfer of knowledge to accelerate the U.S. production process**: On July 27, 2021, the company completed the training of four drone operators from Aquiline Drones which will help accelerate the production process in the U.S. facility.
- **Signed partnership agreement with ROTH2**: On June 17, 2021, Drone Volt announced that it had signed a partnership agreement with ROTH2, a leader in production of high-pressure steel batteries. ROTH2 will offer hydrogen engines and deploy recharging stations for Drone Volt's HERCULES 10 and HERCULES 20 drones. The recharging stations will be marketed under the Drone Volt brand name with Drone Volt receiving licensing revenue in return.
- **Raised funds worth EUR 3.7 mn**: On June 09, 2021, Drone Volt announced that it had raised EUR 3.7 mn through issuance of shares to historical shareholders and new investors at a price of EUR 0.915 per share. The shares were issued for cash and by offsetting receivables' balance.
- **Received order of 600 drones**: On April 21, 2021, Drone Volt announced that it will deliver 600 HERCULES 2 drones, half of which will be assembled in Paris and half in Aquiline Drones' facility. The order will generate EUR 3 mn in royalties, with more than EUR 1.5 mn generated in FY 2021. The volume of the order is 10 times the volume delivered in FY 2020. The deliveries will start in Q2 2021.
- **Redeemed high-yield debt early:** On February 25, 2021, Drone Volt announced that it had redeemed debt that it had issued in January 2020, 11 months earlier than the redemption date, for an amount of EUR 832k, saving costs of EUR 50k in the process.
- **Announced historic order from European distributor:** On February 08, 2021, Drone Volt confirmed the signing of a major contract worth more than EUR 5 mn with a European distributor for a minimum delivery of 275 HERCULES 20 Spray UAVs over the next 3 years; 50 UAVs to be delivered in 2021.

5. Management and Governance[xiii]

The company has a team of experienced professionals with expertise in the fields of technology, operations, sales and marketing and finance. These highly qualified professionals have been with the company for a long time, signifying the stability of its management. The management's focus is on improving profitability and creating shareholder value.

Exhibit 15: Management Team

Name	Designation	Background
Marc Courcelle	Chief Executive Officer (CEO)	• Marc Courcelle was appointed as the CEO of the company in October 2020 • He previously served as the Director of Production of the group
Stefano Valentini	Chairman	• Stefano Valentini was Director of the Group's International Strategic Alliances • He led the development of the company in the US • He additionally managed Aerialtronics, Drone Volt's subsidiary, between 2017 and 2019
Sylvain Navarro	Group Chief Financial Officer (CFO)	• Sylvain Navarro was appointed as the worldwide CFO of Drone Volt in May 2018 • He formerly served in companies such as Invest securities (as Head of Cash Equity and Equity Capital Market)
Martin Laporte	CEO, Drone Volt Canada	• Martin Laporte earlier served as General Manager of KoptR image
Kim Larsen	Managing Director, Drone Volt Scandinavia	• Kim Larsen oversees the management of Drone Volt's Scandinavian operations
Benoit De Bruyn	Managing Director, Drone Volt Belgium	• Benoit De Bruyn oversees the management of Drone Volt's Belgium branch • He formerly served as senior manager in Delaware Consulting

6. Industry Characteristics

6.1 Industry Overview[xiv]

UAVs, popularly known as 'drones,' are unmanned aircraft or 'flying robots.' The UAVs evolved during World War I when these were used for military operations. These have improved significantly over time, with use of advanced technology such as miniaturization. The UAV market has grown rapidly in the last decade and has created a lot of interest in various parties and companies engaged in UAV technology development. Currently, the UAV market is driven by new technologies such as next-generation unmanned combat systems, and the development of new markets such as civil and consumer drones.

As per GlobeNewswire, the global drone market can reach USD 260.0 bn by 2030 at a CAGR of 27% from USD 28.5 bn in 2021.[xv]

Teal Group's World Civil Unmanned Aircraft Systems (UAS) Market Profile and Forecast predicts that non-military UAS production will jump from USD 7.2 bn in FY 2022 to USD 19.8 bn by 2031, a 9.1% CAGR in constant dollar terms, with total civil UAS purchases to reach USD 139 bn in this decade.[xvi]

As per Drone Industry Insights, the market will grow at a CAGR of 13.8% to USD 42.8 bn by 2025. Even with the impact of the COVID-19 pandemic, investments in the industry increased substantially to USD 2.3 bn in 2020 (from USD 1.3 bn in 2019).[xvii]

Increasing prevalence in different industries, time-saving benefits, a favorable regulatory framework and technological improvements, as per Data Bridge Market Research's report, will see the drone services market grow to USD 228.2 bn by 2029 at a CAGR of 48.8% from 2021. Factors such as a lack of skilled operators, limited bandwidth and security concerns could, however, impede the growth.[xviii]

According to ABI Research, more than 90 mn consumer UAVs will ship during 2025, up from 4.9 mn in 2014, with a CAGR of 30.4% over that period.[xix]

6.2 Outlook

The commercial UAV industry has immense growth potential. However, it is difficult to make a proper market size estimate considering the potential uses of drones in various sectors, such as agriculture, construction, surveillance, aerial photography and media and entertainment. We have compiled market forecasts from different sources. Although the market size estimates vary significantly, all are positive about the industry and expect exponential growth.

Exhibit 16: Outlook on the Commercial UAV industry size

Source	Market Size	Estimated Period	Published
Teal Group*	USD 139 bn[xx]	2033	November 2022
Grand View Research	USD 583.5 bn[xxi]	2030	February 2023
ABI Research	USD 101 bn[xxii]	2030	July 2019
Drone Industry Insights	USD 42.8 bn[xxiii]	2025	June 2020
MarketsandMarkets	USD 58.4 bn[xxiv]	2026	June 2021
RnRMarketResearch.com	USD 40.9 bn[xxv]	2027	September 2021

**Teal Group's 2022/2023 World Civil UAS Market Profile and Forecast*

6.3 UAV Components

UAS can range from small drones that fly on a single charge for 10 minutes and cost under USD 200 to commercial-level aircraft that can fly much longer and cost as much as USD 10,000 or more.[xxvi] Military grade UAVs can cost several mn dollars. Some drones are operated by controllers, while others can be operated by operator's smartphone or tablet. A drone's basic elements are frame, propellers, small motor and battery, electronic sensors, global positioning system (GPS) and a camera.

Presently, there are several types of UAVs, depending on the project they are used for, ranging from toy UAV, almost-ready-to-fly (ARF) UAV to ready-to-fly (RTF) UAVs. The essential kit for UAV includes RC transmitter, multi-rotor frame, motors/speed controllers, flight controller and battery charger. Apart from these, optional accessories, such as battery

alarm, flight controller add-ons, camera gimbal, telemetry and wireless video, could be added in the drone as per the purpose of a project.

Multi-Rotor Frame –The frame is the basic requirement of the UAV. The configuration depends on the purpose it is to be used for and the loads to be carried. The most popular designs are quadcopter (4 motors), hexacopter (6 motors) and octacopter (8 motors).

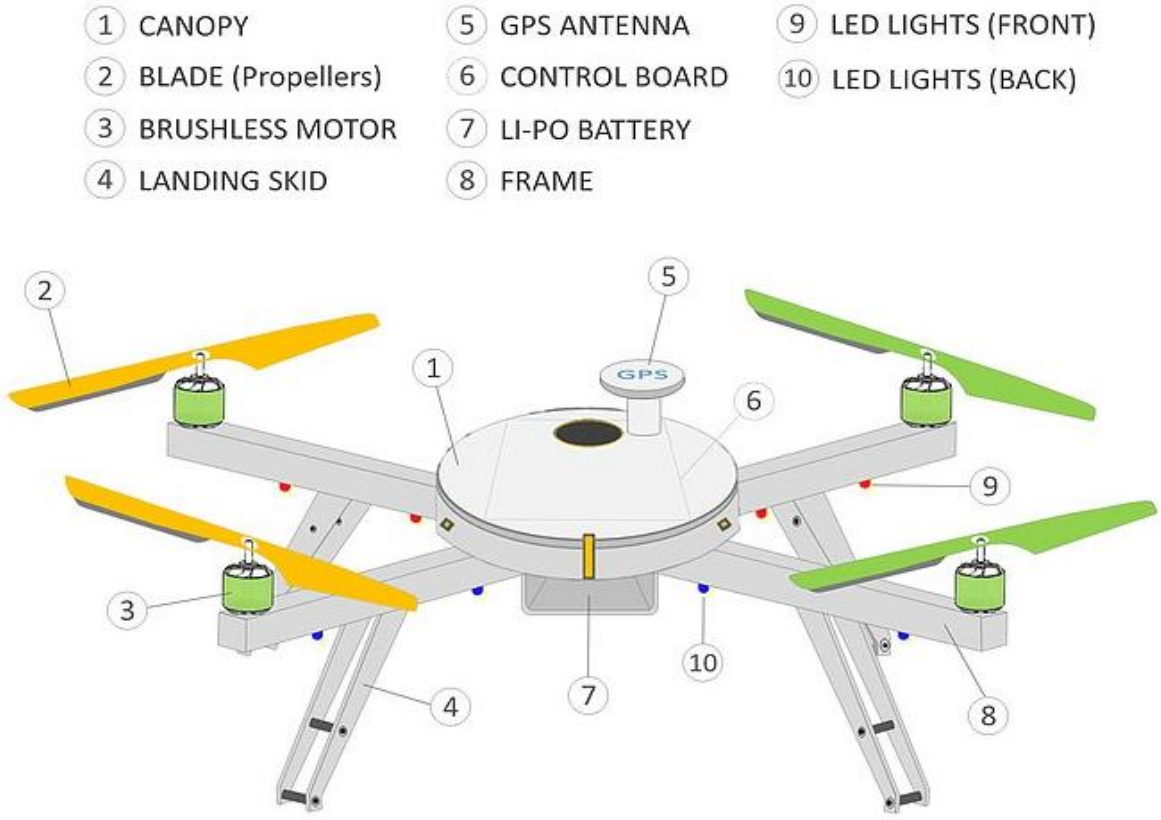
Motors/Speed Controllers and Propellers – The motor is an essential requirement as it impacts the flight time and how much load a drone can carry. It also provides a lift for the UAV. A motor ideally should have less weight with high efficiency. A propeller is an airfoil and consists of 2-3 blades; it provides the thrust to the drone and acts as a rotating wing creating a lift force.

Flight Controller – It acts as the brain of the UAV, connecting all the pieces together. It is used to stabilize the multi-rotor and synchronize it. The more advanced flight controllers can take off, fly and land the UAV autonomously with a preprogrammed waypoint.

Battery and Charger – The battery provides the power for the UAV to fly and would control both motor and flight controller. It is also the heaviest item on a UAV. While choosing the ideal battery, the capacity and voltage factor needs to be considered. The Lithium polymer battery is the ideal and most used battery as this has a high power-to-weight ratio and is readily available.

RC Transmitter – It is possible to fly and control the UAV autonomously without a transmitter, but it is a good idea to have a manual backup for the drone in case something goes wrong. A hand-held transmitter is adequate for most cases.

Exhibit 17: Basic Components of a UAV



6.4 Pricing[xxvii]

Depending on the requirement, the cost of a drone can vary considerably. The drones can be divided into different classes depending on the level of expertise and range they can fly.

Exhibit 18: Basic Components of a UAV

Segment	Entry-Level users	Professional users	Commercial users
Specifications	Kit with drone, four rotors, batteries, charger, GPS and spare propellers	Kit with drone, four rotors, batteries, charger, GPS, spare propellers, advanced cameras and separate controller	Kit with drone, six rotors, larger propeller blades, batteries, charger, GPS, advanced cameras and separate controller
Duration of flight	10 minutes	25 minutes	1 hour
Range	150-200 feet	Half a mile	> a mile
Control	Smartphone or tablet	Smartphone or tablet	Smartphone or tablet
Cost	USD 500	USD 750-2,000	USD 10,000

6.5 History

Early History - The concept of UAVs is old. In August 1849, Austria used unmanned balloons loaded with explosives to attack Venice.

World Wars - Going back to World War 1 (WWI), necessity, the 'mother of invention,' led to use of flying bombs with the development of first unmanned aircraft. The U.S. army and navy both used aerial torpedoes and flying bombs in WWI but faced difficulties in launching and recovering their UAVs. During World War II (WWII), drones were used as gunnery practice targets by the U.S. forces and for aerial attack missions. Meanwhile, Germany produced its own drones, which used jet propulsion-built aircraft.

1950s – A U.S. company, Northrop, developed 'Falconer' and 'Shelduck' UAVs for battlefield reconnaissance. These had an auto pilot system with radio-control backup and video cameras; these also carried flares for night reconnaissance. These were built in great numbers and were used by several military forces internationally. In the 1950s, UAVs were also used as decoys and were released to confuse the radar systems of the enemies.

1960s - This era saw the faster and longer-range aircraft, 'Ryan Firebee,' being developed to air bomb targets. UAVs were developed to fly at high altitudes, controlled by radio lines, and to fly at lower altitudes controlled by standoff manned aircraft. These drones carried cameras for reconnaissance over enemy targets.

1970s – During the Vietnam War, the US extensively used drones. The drones were used as 'Lightning Bugs.' These were used for intelligence gathering and for taking images from both low and high altitudes. These drones were modified with bigger engines and could carry heavier payloads. In the 1970s, Israel modified the drones it purchased from the U.S. and developed the first UAV with real-time surveillance. It used these in its war against Syria as reconnaissance drones, electronic jammers and as decoys; and had minimal losses.

1980s – In 1982, during the Lebanon War, Israel used its self-made UAVs for images and radar decoying to neutralize Syria's air defenses. By the late 1980s, Israel tested a variety of drones in Lebanon. With the rapid advancement in technology, Israel not only outpaced the U.S.in the development of drones, by producing a number of surveillance drones in the 1980s, it also sold them to the US.

1990s – U.S. marine, army and navy units, along with coalition forces, used 'the Pioneer' UAV substantially for imagery support during its operations against Iraq. The UAVs were used for bombing target enemy areas. Following bombing raids, it was used to inspect the target area and transmit live coverage of the damage.

2000s - In early 2000, after 9/11, the U.S. military used drones for attacks in Afghanistan, Pakistan, Yemen and Somalia. These were also used for the operation to hunt Osama Bin Laden. In 2006, America used drones within the U.S. civilian airspace for search and rescue operations following Hurricane Katrina.

2010s - In 2013, Israel used drones in Gaza during its military operations. In 2013, Amazon, the largest online retailer, announced it is developing drone technology for delivery services.

6.6 Industry Segments

Military Drone Market

Utility in armed conflicts led to the invention of UAVs during World War I. Drones are normally used in circumstances considered too risky for manned flights. Drones can provide real-time imagery, intelligence and surveillance information by scanning an area and transmitting the information back to the commanders, in order to destroy enemy targets. Military drones are generally used for air strikes and surveillance. As per the Teal Group's projection, research expenditure on Military UAS will amount to USD 72.5 bn in the next decade, while Military UAS procurement expenditure is expected to increase to USD 16.4 bn in 2032 from USD 12.1 bn in 2023 (amounting to USD 162.2 bn in the next decade). About 81% of the expenditure on R&D of military UAS and 48% of the expenditure on military UAS procurement will come from the US. Therefore, the US will be the biggest UAV market over the next decade.[xxviii]

IHS Jane's Intelligence, a specialist in defense publications, has reported that the global defense and security market for UAVs is expected to grow at 5.5% per annum from the current level of USD 6.4 bn and increase to USD 10 bn by 2024.[xxix] According to the report, Israel was the biggest exporter of UAVs last year, however, it is predicted that the US will surpass its position in the forthcoming years.

Commercial/ Civil Drone Market[xxx]

Teal Group's World Civil Unmanned Aircraft Systems (UAS) Market Profile and Forecast forecasts that non-military UAS production will jump from USD 7.2 bn in FY 2022 to USD 19.8 bn by 2031, a 9.1% CAGR in constant dollar terms, with total civil UAS purchases to reach USD 139 bn in that decade[xxxi]. The rapidly expanding market for Civil Unmanned Aerial Systems (UAS) in the next ten years is poised to generate substantial growth, as countries increasingly allow UAVs in their airspace, and as commercial applications and civil government adoption of UAVs for new roles in border security and public safety continue to soar.

Tractica, a market intelligence firm, estimates worldwide shipments of commercial drones to reach 2.7 mn units by 2025 from 80,000 units in 2015. Also, annual revenue from commercial drone hardware is estimated to reach around USD 4 bn from the current level of USD 283 mn during that period, whereas annual revenue from commercial drone-enabled services would generate USD 8.7 bn compared with USD 170 mn currently.[xxxii] The commercial drone sector will be driven by aerial imaging and data analysis applications. Film, media, agriculture and oil & gas will drive the growth in adoption of commercial drones. Whereas, filming and entertainment, mapping, aerial assessment, disaster relief and prospecting will lead to strong growth in the drone-enabled services market.

There is immense scope for drones in the future. The usage of drones is still in early or mid-stages in many sectors and could play a critical role in reviving growth in various sectors because of its cost-effectiveness and ability to perform tasks which would have been impossible earlier. The table below shows 22 sectors expected to benefit from the use of drone technology; most are in either the early or middle stages of adoption and usage growth, and just a handful of sectors have seen the benefits of higher levels of usage of drone technology over a long time. The agriculture sector is expected to account for approximately 80% of commercial drone usage. By using high-resolution imaging and aerial mapping, identification of crop conditions, checking for diseases, spraying pesticides and fertilizers, prevention of any disease outburst is possible at a much lower cost.

In the US, the delivery segment is expected to be the largest segment whereas the agriculture segment is likely to account for the largest share in the overseas market by 2030 owing to investment by Chinese firms and because small firms are likely to lower costs and increase capabilities.

Commercial drones are also increasingly used for ensuring public safety. For example, drones with high-definition and infrared cameras can assist police and fire departments in intelligence gathering, rescue missions, road patrolling, aerial surveillance, etc.

With drones becoming increasingly popular, the market has attracted the attention of venture capitalists in recent years. US-based startups led the funding rounds, with 65% of the total funds raised flowing to the US. Chinese firms received 16% of the funds in the same time duration (last 10 years).

Exhibit 19: Development Stage of Commercial drones used in different sectors[xxxiii]

	Early Stage	Middle Stage	Late Stage
Application			
Aerial photography			L
Border patrol			L
Construction and real estate images and monitoring		M	
Emergency management		M	
Infrastructure monitoring		M	
Mail and small package delivery	E		
Filmmaking and other media uses		M	
Oil and gas exploration		M	
Precision agriculture			L
Public safety			L
Weather forecasting and meteorological research		M	
Wildlife and environmental monitoring		M	
Technology			
Advanced manufacturing techniques		M	
Batteries and other power	E		
Communication systems			L
Detect, sense, avoid capabilities		M	
GPS			L
Lightweight structures		M	
Microprocessors			L
Motors			L
Engines		M	
Sensors			L

6.7 Uses of drones across sectors

a. Agriculture

Agriculture is expected to benefit significantly from the use of drone applications. Monitoring fields from the sky would drive the new farming revolution. The US-based Association for Unmanned Vehicle Systems International predicts that agricultural uses will eventually account for 80% of the commercial market for drones. With the help of drones, it is possible to capture images of fields at a much cheaper cost compared to when using helicopters or satellite imagery. Drone technology with cameras could enable farmers to monitor their crops, check for diseases or spray pesticides and fertilizers and prevent any disease outburst.

It is difficult for farmers to collect data of farmland spread across large areas. With the help of drones, valuable information can be collected with high accuracy in a short span of time, which in turn can be used to avoid damage caused by various means.

Drones can provide infrared pictures, which help farmers identify exact locations of weed emergence or insect infestations and enable them to quickly focus on the targeted areas. Drones have potential applications in precision agriculture, which involves the use of detailed data on soils, crops, nutrients, pests, moisture and yield to increase farm productivity.

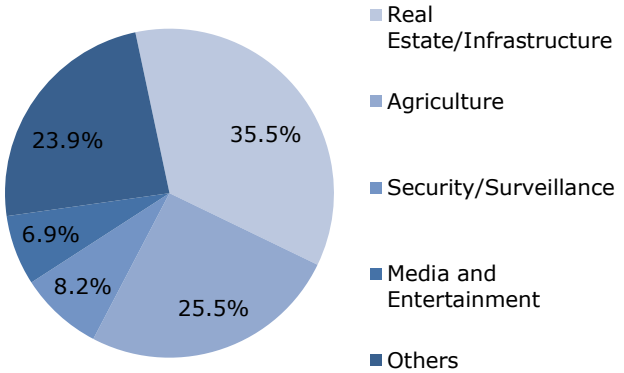
b. Real Estate/Infrastructure

Aerial videography and photography are the new perquisite provided by high-end real estate marketers. Drones effortlessly cover areas which would be difficult to access otherwise and provide perfect images and videos. For real estate clients, it could provide a virtual tour with interactive and realistic presentations. UAVs can be used as maintenance tools to inspect large commercial places such as malls, undeveloped lands and office parks. These can also be useful for inspecting places after incidences of storm or vandalism, for example.

c. Media and Entertainment

The use of UAVs in the media sector has grown substantially and it is said that 'the age of drone journalism' has started. Drones are used by the media industry in numbers. These have become significant instruments for news gathering by leading media players. News agencies can use drones for capturing images and videos of events from different heights and angles. Drones can act as a powerful tool in the hands of journalists with proper training, who know the capabilities of the vehicles. Due to their small size, flexibility and ability to perform in the harshest weather, these could be used to take aerial surveys of places and events such as volcanos, demonstrations or warzones, which were not possible to get up close to by manned aircraft before. Also, as they would not require the direct presence of reporters, news stories which were earlier missed due to the risk of personal injuries to reporters on the ground could be covered.

Exhibit 20: Drone Usage by Industry Sector[xxxiv]



Also, using drones is changing the way films are made as these are better than traditional methods for capturing perfect aerial shots. These are also cheaper, safer and faster solutions. As drones cost a fraction of helicopter or crane shoots, these open new avenues for filmmakers looking to capture aerial shots that were impossible in the past. Drones will continue to change the way movies are filmed. Their use in the film industry will increase with continual improvement in the quality of drones and a decrease in the cost of drones.

d. Surveillance/Security

The trend of using UAVs for commercial aerial surveillance is rapidly increasing, with the development of automated and low-cost drones and technology for object detection. Drones with high definition and infrared cameras can access areas not accessible otherwise, due to the small sizes of drones. UAVs are used for gathering intelligence against enemy targets by government agencies and competitors in business. Drones can help in search and rescue missions, scientific research, wildfire mapping, road patrols, anti-piracy and aerial surveillance of large areas at a low cost. However, the widespread use of drones for domestic surveillance raises serious privacy concerns. These present a threat to privacy as drones are capable of monitoring personal conversations, peeking into many places.

Beside the mentioned sectors, drones can also be used for a wide range of activities, including archaeological surveys, firefighting, healthcare (including medical supplies/delivery), delivery in commercial use, wildlife conservation, monitoring marine life, etc.

e. Inventory Management and Delivery

With the booming e-commerce sector, the proper identification of the stock plays a key role in managing the accuracy of approaching deliveries. Drones help in tracking and locating the inventory while also reducing the turnaround time. The embedded sensors in these small machines can measure and transmit data on a real-time basis and help supervise warehouses more efficiently. Drones can also be used for intralogistics, where they can be used to transfer parts from warehouses to different workshops. However, the main issue for intralogistics is the trade-off between power supply and payload. The most challenging issue with drones in inventory management is that they are yet to reach full automation with indoor navigation. There are recent advancements in line that promise high accuracy in indoor navigation in the near future.

f. Healthcare

Drones have the potential to revolutionize the healthcare industry as they are being utilized for transporting lab samples, tests, medicines and even small equipment during medical emergencies. They are designed to fly to vast distances with speed and can carry an adequate payload to disconnected communities or islands or to any affected areas. There are a few more applications of drones within the healthcare industry that can come up and eradicate geographical boundaries

completely. Recently, the Vital Intelligence project in Australia used drones to oversee and monitor people for signs of COVID-19. The drones can also be used to spread the warning that people should stay home during lockdowns as happened in Spain and China.

6.8 UAV Market in France

Globally, France has been the pioneer in the commercial drone market. It was one of the first countries to regulate the use of commercial drones. In 2012, the Ministry of Transport's Civil Aviation Authority, DGAC made a law relating to design and use of drones in French airspace. Also, the manner in which drones can be used depends on their types and design. However, the legislation does not apply to military or state-operated drones.[xxxv]

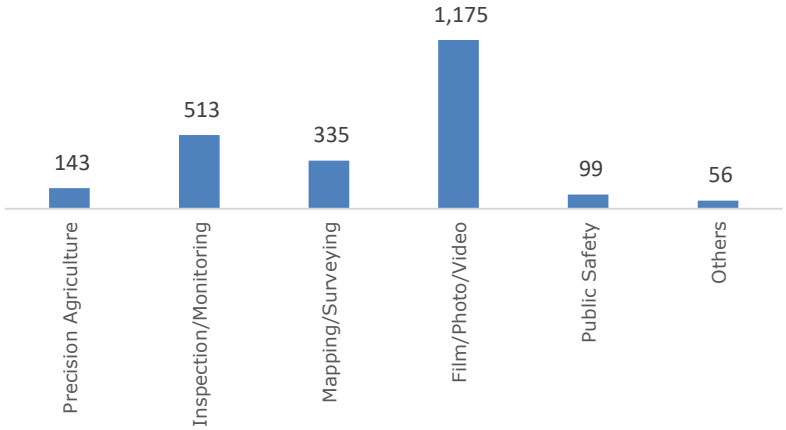
As of 2019, France was the third-biggest drone market in the world and home to companies such as Delair, Parrot and Delta Drone. In 2018, French companies entered into the highest number of strategic partnerships in the industry. With the increasing investments, encouragement from government to promote adoption and growing end-user industries, the drone market in France can be expected to flourish in the future as well.[xxxvi] France's UAV market is expected to grow at a CAGR of c. 10.1% during 2020-26.[xxxvii]

6.9 UAV Market in the US

In the US, drones have been primarily used in war zones to deliver weapons and for U.S. military reconnaissance. But now some new technologies and pending federal regulations are enabling the manufacture and use of UAVs for domestic commercial purposes, giving rise to a growing commercial UAV industry. The commercial drone market in the U.S.is still less advanced due to the Federal Aviation Administration (FAA) regulations, which have closed American airspace for UAV trial flights. The FAA, in May 2014, granted exemption permitting specific use of commercial drones for agriculture, real estate, film and broadcasting, oil and gas and construction activities. The FAA is trying to establish an unmanned traffic management (UTM) system by supporting different initiatives towards that.[xxxviii] The Teal Group's study revealed that 80% of worldwide military spending on drone technology (Research Development Test and Evaluation) over the next decade is expected to be contributed by the US, and 40% of military procurement spending.[xxxix]

There is significant investment potential in this sector in the US. According to the study conducted by the Federal Aviation Administration (AUVSI), by 2025 about 100,000 jobs could be created in the American economy through the use of drones and would generate about USD 80 bn between 2015 and 2025.

Exhibit 21: FAA Exemptions Operation / Mission[xl]



6.10 Regulatory Framework

Despite the significant interest in drones expressed by various sectors, the UAV industry faces major obstacles, which could cut short this sector's growth story. Regulatory policies, safety and privacy concerns, and public awareness regarding drones are key concerns. Currently, there is no uniform global approach to the legal use of drones by either hobbyists or businesses. Many countries differentiate drones by weight category, wherein drones weighing more than 55 pounds are considered in a heavier category. Drones weighing less than 4.4 pounds are dealt with differently than the heavier ones as these have lower safety risks. There are other risks related to regulations such as sharing of frequencies and radio link; quality of drones (especially the heavier drones); and safety from mid-air collision.

a. Regulations in the US

The U.S. has clearly lagged in creating a framework to support the UAV industry and therefore, U.S. drone companies are at a serious disadvantage as they are unable to test commercial drone applications in the US. The FAA has set its regulations for use of drones and prohibits their usage for commercial purposes with some exemptions for some specific activities, such as for companies conducting agriculture, real estate, film and construction activities. AUVSI has estimated that each year of delay in regulatory constraints has a USD 10 bn economic impact for the US.[xli]

Exhibit 22: Types of UAVs in Commercial Operation[xlii]		
UAV Platforms Approved Through FAA Exemptions		
Industry	**Average Weight (in pounds)**	**Average Endurance (in minutes)**
Agriculture	9.14	37.59
Real Estate	5.37	23.10
Film and TV	12.39	19.05
Oil and Gas	9.83	97.40
Constructions	7.22	26.85

Under the FAA regulations, drones weighing less than 55 pounds are allowed to fly for commercial operations during daytime within limited locations, and within the line of sight of the operator. The final set of rules were not expected to be issued until late 2016-17. [xliii]

FAA has been moving in the right direction. Since May 2014, it has permitted a range of commercial enterprises to use drones. The FAA granted 500 exemptions in its first year in over 20 different industries.[xliv] As of September 2015, FAA had issued 1,407 exemptions to U.S. companies under Section 333 to operate drones for commercial purposes. [xlv]

b. Regulations in Europe

The European Aviation Safety Agency (EASA) has been assigned by the European Commission to set up a common regulation for drones across Europe. The set of standards should cover security, safety, privacy, data protection, insurance and liability. Europe aims to become a global leader in emerging drone technology industry, with the right set of regulations to safeguard the countries' interest. Currently, within the European Union, different states have regulated, or are planning to regulate, different characteristics of civil drones less than 150 kg in weight.

The EASA has recently released a roadmap for UAV airspace integration to operate and fly in the EU, specifying three categories based on operational parameters:

Open Category: Under this category, it is not necessary to get permission, approval or a license from the Aviation Authority for drones weighing 25 kg or less. However, UAVs need to meet the defined limitations, such as flying within the line of sight of the operator and within a defined altitude and distance; flying over a crowd is not permitted.

Specific Category: This category covers characteristics that have not been covered under 'open' category. Under this category, the drone operator has to undergo a safety risk assessment and identify a mitigation structure that needs to be reviewed and approved by the National Aviation Authority.

Certified Category: This category includes large, unmanned aircraft and their operations. These would be treated as manned aircraft in terms of rules. The operators engaged in this category would require licenses.

c. Regulations in France

France was one of the first countries to implement legislation on civil drones. The DGAC has classified UAVs under seven categories segmented by weight, the model design and the accessories that these must contain. Along with this, DGAC has identified four scenarios in which UAVs can be used.

Exhibit 23: Possible Scenarios for using UAVs in France[xlvi]				
Particulars	**Scenario 1**	**Scenario 2**	**Scenario 3**	**Scenario 4**
Line of Sight	In Direct View	Beyond the remote pilot's sight	In Direct View	Beyond the remote pilot's sight
Area	Clear of Populated area	Clear of Populated area	Within Populated Area	Clear of Populated area
Distance (Horizontal)	100 m	1 km	100 m	Specific activity and flight that don't meet S2 criteria
Height	150 m	50 m	150 m	150 m

6.11 Major Drone Manufacturers

Dajiang Innovation Technology (DJI) – DJI, a Chinese company headquartered in Shenzhen, Guangdong, manufactures commercial UAVs for aerial photography and videography. The company offers powerful drones, including its popular Phantom series, which are easy to fly and can shoot high-definition footage. The company is a leader in commercial and civilian drone industry, accounting for over 70% of the market. The company received its last round of funding of USD 55.0 mn from different venture capital firms, in February 2023 (total aggregate amount raised: USD 112.6 mn as on date) and has managed to become the first-bn dollar commercial drone company. Currently, the company is focusing on manufacturing agricultural drones and is planning to lower its prices to penetrate this segment.

AeroVironment (NASDAQ:AVAV) – AeroVironment, a California-based technology company, designs, develops, and produces drones for video surveillance as well as for tactical purposes. It is a leader in the military drone space and offers a portfolio of unmanned aircraft systems to the U.S. Department of Defense and international allied governments. The company reported revenue of USD 445.7 mn in FY 2022. AeroVironment has now ventured into the commercial drone space with its simple yet powerful drone, Quantix.

Parrot – Parrot, a French wireless products manufacturer, specializes in technologies involving voice recognition and signal processing for embedded products and drone manufacturing. The company has captured the consumer drone market in a short period of time with its most popular product, AR.Drone and AR.Drone 2.0, a mid- range hobby drone with integrated FPV system controlled by a smartphone app. The company's Bebop series is one of the most popular camera drones in the market due to its affordability and is giving stiff competition to DJI's products. The company reported total revenues of EUR 76.8 mn in FY 2022.

3D Robotics – 3D Robotics, an American company founded in 2009, manufactures consumer drones and offers a range of drones for everyday exploration and business applications. Its popular drone 'Solo' released in May 2015 is argued to be the smartest drone ever. It captures breath-taking aerial imagery and data analysis, enabling mapping, surveying, 3D modeling and more. The company raised USD 53 mn in its latest round of capital infusion in April 2017[xlvii] to support product development. Though the company was an early entrant into the consumer drone space, it has recently exited the market and started building software for commercial drone use.

Competition in the UAV industry

Exhibit 24: Peer Comparison

	Country	Segments
DJI	China	Consumer drone maker; the leader in this category; makes drones for hobbyists and professionals; 'Phantom' series is said to be the most popular drone worldwide; widely used by videographers globally
Parrot	France	Second-largest civil & consumer drone manufacturing company
3D Robotics	US	Consumer drone manufacturer; offers drones for exploration and business applications
Dassault Aviation	France	Designs, manufactures and sells combat aircraft for the military sector; also sells products ranging from business jets to military drones
Delta Drone	France	Designs and manufactures civilian and commercial drones and provides a range of payloads. It also offers consulting, technical assistance and maintenance services
Fly-n-Sense	France	Designs and sells end-to-end commercial UAVs for security, agriculture, environment and industrial activities
RedBird	France	The company analyzes and processes the data acquired by drones and offers data processing solutions to optimize resources, improve performance and secure operations with drone-based information
SurveyCopter	France	Designs and manufactures remote-controlled drones and robots; considered to be a pioneer in mini-UAVs; offers products for civilian and military uses
AeroVironment Inc	US	The company makes small UAVs for the U.S. army for real-time reconnaissance, intelligence gathering and surveillance

7. Valuation

The Fair Market Value of all the company shares stood between EUR 152.3 mn and EUR 188.9 mn on May 15, 2023. The Fair Market Value for one of the company's publicly traded shares stood between EUR 0.14 and EUR 0.17 on May 15, 2023. The valuation approach followed was the DCF method.

7.1 DCF Method

Valuation	
WACC	
Risk-free rate	2.9%[xlviii]
Beta	0.7[xlix]
Market Return	9.9%[l]
Additional Premium	0.00%
Cost of Equity	7.9%
Cost of Debt (after tax)	1.2%
Terminal Growth Rate	2.0%
WACC (Discount Rate)	5.9%

Year Ending - Dec	2023E	2024E	2025E	2026E	2027E	2028E	2029E
FCFF (High)							
Net cash from operating activities	(2,652)	5,183	1,255	3,136	4,465	5,716	15,095
Capital Expenditure	(4,530)	(2,620)	(3,048)	(3,586)	(4,250)	(4,601)	(3,955)
Free Cash Flow to Firm	(7,182)	2,563	(1,793)	(450)	215	1,115	11,140
Discount factor	0.96	0.91	0.86	0.81	0.77	0.72	0.68
Present Value of FCF	(6,928)	2,335	(1,543)	(366)	165	808	7,628
FCFF (Low)							
Net cash from operating activities	(2,613)	3,701	621	2,019	3,038	4,164	12,992
Capital Expenditure	(3,933)	(2,455)	(2,755)	(3,206)	(3,826)	(4,239)	(3,679)
Free Cash Flow to Firm	(6,546)	1,246	(2,134)	(1,187)	(787)	(75)	9,313
Discount factor	0.91	0.86	0.81	0.77	0.72	0.68	0.54
Present Value of FCF	(6,315)	1,135	(1,836)	(965)	(604)	(54)	6,377

Arrowhead Fair Value Bracket	High	Low
Terminal Value (TV)	292,908	244,876
Present Value of TV	200,552	167,665
Present Value of FCFF	2,100	(2,263)
Present Value of TV+FCFF	202,652	165,402
Present Value of Equity	188,906	152,292
Shares O/s (000's)	1,102,040	1,102,040
Fair Share Value Bracket (EUR)	**0.17**	**0.14**
Current Market Price (EUR)	0.02	0.02
Upside/(Downside)	817%	639%
Current Market Cap. (EUR '000)	20,608	20,608
Target Market Cap. Bracket (EUR '000)	188,906	152,292

Sensitivity Analysis

Sensitivity Table - High		WACC (%)				
		3.9%	4.9%	5.9%	6.9%	7.9%
Growth Rate (%)	1.5%	0.33	0.21	0.15	0.11	0.09
	1.8%	0.37	0.23	0.16	0.12	0.09
	2.0%	0.42	0.25	0.17	0.12	0.09
	2.3%	0.49	0.28	0.18	0.13	0.10
	2.5%	0.58	0.31	0.20	0.14	0.11

Sensitivity Table - Low		WACC (%)				
		3.9%	4.9%	5.9%	6.9%	7.9%
Growth Rate (%)	1.5%	0.27	0.17	0.12	0.09	0.07
	1.8%	0.30	0.19	0.13	0.09	0.07
	2.0%	0.35	0.21	0.14	0.10	0.07
	2.3%	0.40	0.23	0.15	0.11	0.08
	2.5%	0.48	0.25	0.16	0.11	0.08

7.2 Relative Valuation Method

Peer comparison on valuation multiples

Using an industry average P/S for 2023E of 3.9x and our estimate of 2023 revenue, we have arrived at a fair value for company's publicly traded shares which stood at EUR 0.15 on a lower bracket and EUR 0.17 on a higher bracket as on May 15, 2023.

Exhibit 25: Valuation Multiples[li]

	Market Cap (EUR mn)	EV/EBITDA		Price to Book Value		Price to Sales	
		2022	2023	2022	2023	2022	2023
Aerovironment Inc	2,478	31.4	30.8	NM	NM	4.9	5.2
Parrot SA	120	NM	NM	NM	NM	NM	NM
Ambarella Inc	2,405	NM	NM	3.7	3.4	16.5	7.5
Safran SA	59,825	13.9	13.6	2.7	2.3	2.5	2.6
Northrop Grumman Corporation	61,303	17.7	14.7	4.7	4.2	2.2	1.7
Total/ Average		**17.7**	**14.2**	**3.7**	**3.4**	**3.7**	**3.9**

Source: Bloomberg as of May 15, 2023.

Relative P/S	Low	High
Peer P/S Multiple FY 2023E (1-Year Forward)	**3.9**	**3.9**
Arrowhead Premium	10%	10%
Price to Sales Multiple (P/S)	4.30	4.30
Revenue per share Estimate (EUR)	0.03	0.04
Target Price per share	**0.15**	**0.17**
Current Share price (EUR)	0.02	0.02
Upside/ (Downside)	682.0%	800.6%

Approach for DCF Valuation

Time Horizon: The Arrowhead fair valuation for Drone Volt is based on the DCF method. The time period chosen for the valuation is 81 months (2023E-2029E).

Terminal Value: Terminal value is estimated using a terminal growth rate of 2.0%.

Prudential Nature of Valuation: It should be noted that this Arrowhead Fair Value Bracket estimate is a relatively prudential estimate, as it discounts the eventuality of any new products being launched in the market or any significant change in the strategy.

Key Variables: The upper and lower bounds in the estimation correspond to the extreme positions taken by the following key variables:

Variable 1 – Drone Volt factory, academy and services segment revenue

Exhibit 26: Drone Volt factory, academy and services segment revenue

In EUR '000	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Low Bracket	22,909	4,363	6,021	8,310	10,487	12,448	14,240
High Bracket	27,985	4,570	6,490	8,845	10,933	12,507	14,083

Variable 2 – Distribution segment revenue

Exhibit 27: Distribution segment revenue

In EUR '000	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Low Bracket	14,551	17,958	21,530	26,162	30,649	34,653	38,316
High Bracket	15,156	19,246	23,988	29,712	34,770	38,614	42,417

Important information on Arrowhead methodology

The principles of the valuation methodology employed by Arrowhead BID are variable to a certain extent depending on the subsectors in which the research is conducted, but all Arrowhead valuation research possesses an underlying set of common principles and a generally common quantitative process.

With Arrowhead Commercial and Technical Due Diligence, Arrowhead extensively researches the fundamentals, assets and liabilities of a company, and builds solid estimates for revenue and expenditure over a coherently determined forecast period.

Elements of past performance, such as price/earnings ratios, indicated as applicable, are present mainly for reference purposes. Still, elements of real-world past performance enter the valuation through their impact on the commercial and technical due diligence.

Elements of comparison, such as multiple analyses may be to some limited extent integrated into the valuation on a project-by-project or asset-by-asset basis. In the case of this Drone Volt report, there are no multiple analyses integrated into the valuation.

Arrowhead BID Fair Market Value Bracket

The Arrowhead Fair Market Value is given as a bracket. This is based on quantitative key variable analysis, such as key price analysis for revenue and cost drivers or analysis and discounts on revenue estimates for projects, especially relevant to those projects estimated to provide revenue near the end of the chosen forecast period. Low and high estimates for key variables are produced as a tool for valuation. The high-bracket DCF valuation is derived from the high-bracket key variables, while the low-bracket DCF valuation is based on the low-bracket key variables.

In principle, an investor who is comfortable with the high-brackets of our key variable analysis will align with the high-bracket in the Arrowhead Fair Value Bracket, and likewise in terms of low estimates. The investor will also take into account the company intangibles – as presented in the first few pages of this document in the analysis on strengths and weaknesses and other essential company information. These intangibles serve as supplementary decision factors for adding or subtracting a premium in the investor's own analysis.

The bracket should be understood as a tool provided by Arrowhead BID for the reader of this report and the reader should not solely rely on this information to make his decision on any particular security. The reader must also understand that on one hand, global capital markets contain inefficiencies, especially in terms of information, and that on the other hand, corporations and their commercial and technical positions evolve rapidly: this present edition of the Arrowhead valuation is for a short to medium-term alignment analysis (one to twelve months). The reader should refer to important disclosures on page 31 of this report.

8. Appendix

8.1 Drone Volt's Financial Summary

Exhibit 28: Financial Summary *Low Bracket Estimates*

Year Ending – Dec.	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Revenue (EUR '000)	37,460	22,321	27,551	34,471	41,135	47,101	52,556
EBITDA (EUR '000)	1,750	(561)	480	1,509	3,064	4,292	5,537
EBIT (EUR '000)	(251)	(2,620)	(1,673)	(788)	741	1,796	2,816
Net Income (EUR '000)	(151)	(2,177)	(1,099)	261	1,744	2,391	3,371
EPS	(0.00)	(0.00)	(0.00)	0.00	0.00	0.00	0.00
Growth rates (%)							
Revenue	172.7%	(40.4%)	23.4%	25.1%	19.3%	14.5%	11.6%
EBIT	NM	NM	NM	NM	NM	NM	56.8%
Net Income	NM	NM	NM	NM	NM	37.2%	41.0%
EPS	NM	NM	NM	NM	NM	37.2%	41.0%
Margins (%)							
EBITDA Margins	4.7%	(2.5%)	1.7%	4.4%	7.4%	9.1%	10.5%
EBIT Margin	(0.7%)	(11.7%)	(6.1%)	(2.3%)	1.8%	3.8%	5.4%
Net Profit Margin	(0.4%)	(9.8%)	(4.0%)	0.8%	4.2%	5.1%	6.4%
Ratios							
Price / Earnings ratio	NM	NM	NM	85.6x	12.8x	9.4x	6.6x
EV/Revenue	0.8x	1.4x	1.1x	0.9x	0.8x	0.7x	0.6x
EV/EBITDA	18.0x	(56.1x)	65.6x	20.9x	10.3x	7.3x	5.7x
EV/EBIT	(125.3x	(12.0x)	(18.8x)	(40.0x)	42.5x	17.5x	11.2x

Exhibit 29: Financial Summary *High Bracket Estimates*

Year Ending – Dec.	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Revenue (EUR '000)	43,141	23,816	30,478	38,557	45,703	51,121	56,500
EBITDA (EUR '000)	3,033	(99)	1,298	2,646	4,485	5,777	7,145
EBIT (EUR '000)	976	(2,268)	(985)	182	1,969	3,063	4,191
Net Income (EUR '000)	1,076	(1,920)	(317)	1,394	3,298	3,951	5,124
EPS	0.00	(0.00)	(0.00)	0.00	0.00	0.00	0.00
Growth rates (%)							
Revenue	214.1%	(44.8%)	28.0%	26.5%	18.5%	11.9%	10.5%
EBIT	NM	NM	NM	NM	NM	55.6%	36.8%
Net Income	NM	NM	NM	NM	NM	19.8%	29.7%
EPS	NM	NM	NM	NM	NM	19.8%	29.7%
Margins (%)							
EBITDA Margins	7.0%	(0.4%)	4.3%	6.9%	9.8%	11.3%	12.6%
EBIT Margin	2.3%	(9.5%)	(3.2%)	0.5%	4.3%	6.0%	7.4%
Net Profit Margin	2.5%	(8.1%)	(1.0%)	3.6%	7.2%	7.7%	9.1%
Ratios							
Price / Earnings ratio	20.8x	NM	NM	16.0x	6.8x	5.7x	4.4x
EV/Revenue	0.7x	1.3x	1.1x	0.8x	0.7x	0.6x	0.6x
EV/EBITDA	10.6x	(323.4x	24.7x	12.1x	7.2x	5.6x	4.5x
EV/EBIT	32.9x	(14.2x)	(32.6x)	176.9x	16.3x	10.5x	7.7x

8.2 Drone Volt's Balance Sheet Forecast

Exhibit 30: Consolidated Balance Sheet

Low Bracket Estimates

Year Ending – Dec.	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Total current assets	19,328	13,195	16,566	15,991	19,225	20,466	22,899
Total non-current assets	18,974	19,370	19,972	20,881	22,384	24,127	25,085
TOTAL ASSETS	**38,302**	**32,565**	**36,538**	**36,872**	**41,609**	**44,593**	**47,984**
Total current liabilities	9,221	6,505	9,244	11,815	12,773	12,830	15,722
Total non-current liabilities	13,407	12,562	14,895	12,397	14,433	14,968	12,096
TOTAL LIABILITIES	**22,628**	**19,067**	**24,139**	**24,212**	**27,205**	**27,798**	**27,818**
Total shareholder's equity	15,675	13,498	12,399	12,660	14,404	16,795	20,166
TOTAL LIABILITIES & EQUITY	**38,303**	**32,565**	**36,538**	**36,872**	**41,609**	**44,593**	**47,984**

Exhibit 31: Consolidated Balance Sheet

High Bracket Estimates

Year Ending – Dec.	2023E	2024E	2025E	2026E	2027E	2028E	2029E
Total current assets	20,713	14,211	18,346	18,785	23,349	25,923	30,133
Total non-current assets	19,515	19,966	20,730	21,852	23,586	25,473	26,474
TOTAL ASSETS	**40,228**	**34,176**	**39,076**	**40,636**	**46,935**	**51,397**	**56,607**
Total current liabilities	9,919	6,633	9,517	12,181	13,146	13,122	16,081
Total non-current liabilities	13,407	12,562	14,895	12,397	14,433	14,968	12,096
TOTAL LIABILITIES	**23,326**	**19,195**	**24,412**	**24,578**	**27,579**	**28,090**	**28,177**
Total shareholder's equity	16,902	14,981	14,664	16,058	19,356	23,306	28,430
TOTAL LIABILITIES & EQUITY	**40,228**	**34,176**	**39,076**	**40,636**	**46,935**	**51,397**	**56,607**

9. Analyst Certifications

I, Ayushi Saraswat, certify that all of the views expressed in this research report accurately reflect my personal views about the subject security and the subject Company, based on the collection and analysis of public information and public Company disclosures.

I, Sumit Wadhwa, certify that all of the views expressed in this research report accurately reflect my personal views about the subject security and the subject Company, based on the collection and analysis of public information and public Company disclosures.

Important disclosures

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10. Notes and References

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[ii] Source: Bloomberg, 52 weeks to May 15, 2023
[iii] Source: Bloomberg, 3 months to May 15, 2023
[iv] Source: Bloomberg as on May 15, 2023
[v] Arrowhead Business and Investment Decisions Fair Value Bracket – AFVBTM. See information on valuation on pages 27-32 of this report and important disclosures on page 33 of this report.
[vi] Source: Company annual report FY 2018
[vii] Source: Company Press release
[viii] Source: Arrowhead BID analysis
[ix] Source: Arrowhead BID analysis
[x] Source: Bloomberg as on May 15, 2023
[xi] Source: Arrowhead BID estimate
[xii] Source: Company Website
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[l] Source: Arrowhead BID Estimate

[li] Source: Bloomberg Estimates as on May 15, 2023