



# Private Aviation Study: Emerging Trends Shaping the Industry

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## Abstract

Business aviation finds itself at a turning point in history. Global commerce has increased in recent decades, and business aviation can be seen as a key player in connecting organizations across the world. Today, business aviation faces scrutiny with environmental concerns challenging the need and execution of said industry. This thesis investigates the current landscape and future trends shaping the business aviation industry, with a focus on capturing and retaining a younger customer segment through strategic management approaches. Despite initial setbacks due to the Covid-19 crisis, the industry has experienced a remarkable resurgence driven by increases in demand and sales, while also facing challenges such as supply chain disruptions and overregulation. Interviews with industry experts highlight significant trends including growth in affluence across the world, sustainability concerns, technological advancements, and the importance of data driven insights. Innovative solutions proposed include technological enhancements to improve ownership experience, data driven insights for cost calculations and client relationships, potential integration of blockchain technology, and strategic marketing efforts to highlight the industry progress and appeal to younger buyers. By embracing innovation and strategic management, the business aviation industry is poised to navigate challenges and capitalize on opportunities for a sustainable and prosperous future.

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**Title:** Private Aviation Study: Emerging Trends Shaping the Industry

**Keywords:** business aviation, trends, sustainability, technological advancements, regulation, innovation, industry progress, marketing, data-driven insights

## Abstract

A aviação executiva encontra-se num ponto de viragem na história. O comércio global aumentou nas últimas décadas e a aviação executiva pode ser considerada um interveniente fundamental na ligação de organizações entre todo o mundo. Atualmente, a aviação executiva enfrenta um forte escrutínio, as preocupações ambientais desafiam a necessidade e a execução da referida indústria. Esta tese investiga o cenário atual e as tendências futuras que moldam a indústria, com o objetivo de captar e reter um segmento de clientes mais jovem, através de abordagens de gestão estratégica. Apesar dos contratempos iniciais devido à crise da COVID-19, o setor registou uma recuperação de mercado notável, impulsionada pelo aumento da procura e das vendas, enquanto enfrentavam outros desafios tais como perturbações na cadeia de abastecimento e o excesso de regulamentação. Entrevistas com especialistas do setor destacam futuras tendências significativas, incluindo o crescimento da riqueza em todo o mundo, preocupações com a sustentabilidade, avanços tecnológicos e a importância de informação extraída através de dados. As soluções inovadoras propostas pelos especialistas incluem melhorias tecnológicas para melhorar a experiência de propriedade, informações extraídas a partir de dados para cálculos de custos e relações com clientes, potencial integração da tecnologia blockchain e esforços de marketing estratégico para demonstrar o progresso do setor e apelar a compradores mais jovens. Ao adotar a inovação e a gestão estratégica, o setor da aviação executiva está preparado para enfrentar os desafios e capitalizar as oportunidades para um futuro sustentável e próspero.

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**Título:** Estudo da Aviação Privada: Tendências Emergentes que Moldam a Indústria

**Palavras-chave:** aviação executiva, tendências, sustentabilidade, avanços tecnológicos, regulamentação, inovação, progresso da indústria, marketing, insights baseados em dados

## 1. Introduction

“30 years ago,teleconferencing was the next best thing to being there. While these new communications devices did relieve the more routine travel needs, both teleconferencing and business travel increased. Productivity gains provided by communications technology generated the opportunity for more business, which, in turn, generated more business travel.” (Sheehan, 2013). Today, the industry finds itself again at crossroads where a range of factors, from advancements in technology and the democratization of private aviation, to sustainability concerns, are challenging the industry's status. The industry’s status has proven to be robust and overcame numerous crisis over the last few decades, with Covid-19 even propelling the industry into a growth trajectory (The Economist, 2021).

This thesis aims to provide an in-depth analysis of the private business aviation sector, shedding light on the market dynamics, competitive landscape, and technological advancements. By exploring these factors, we will attempt to anticipate the future direction of private aviation, identifying the opportunities and challenges that lie ahead.

As we embark on this journey, we will gain insights into the forces driving transformation and the implications for the future of this sector through the perspective of various stakeholders ranging from brokers to manufacturers and pilots. Ultimately, this thesis will contribute to a better understanding how private aviation is evolving and how to capitalize on these trends.

In the following chapters, this paper will give an overview of the academic research that is available on the topic (2), the relevant management theory applied for the research (3) and research intention (4), a market summary is given to provide the reader with a brief understanding of the current situation in the industry and its players (5), further the collected data in the form of interviews will be described with the intent to understand various perspectives on the topic present in the market (6), concluding with the main findings and key takeaways (7) as well as limitations encountered and future research opportunities that could help overcome these challenges (8).

**RQ: How are emerging trends shaping the future of private business aviation?**

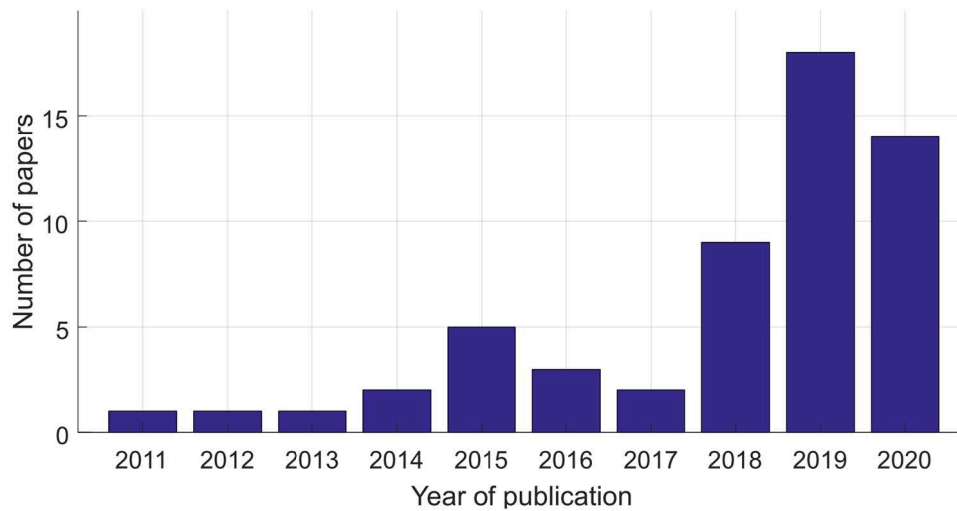
## 2. Literature review

The landscape of private aviation is evolving at a rapid pace, driven by a complex interplay of technological innovations, changing consumer preferences, and environmental considerations. This chapter discusses the foundations of the current private aviation landscape and its challenges. The literature review is divided in five sections: Technological Advancements in Private Aviation, Sustainability in Private Aviation, Changing Consumer Preferences, Market Dynamics and Business Models, Challenges and Opportunities.

### 2.1 Technological Advancements in Private Aviation

Technological innovation has been a driving force behind the transformation of private aviation. The emergence of electric and hybrid-electric aircraft promises to revolutionize the industry by reducing carbon emissions and lowering operating costs. Rendón et al. (2021) highlight the growing importance of electric propulsion technology in private aviation, offering insights into the potential advantages and challenges of this innovation. Air transport is responsible for significant greenhouse gas emissions. Where combined internal combustion engines (ICEs) and electric motors (EM) provide propulsion, some authors have termed this hybrid-electric (Zhang et al. 2016).

Furthermore, the development of autonomous and semi-autonomous systems is paving the way for more efficient and safe operations. Zutin et al. (2022) emphasize the role of automation in aviation. Technologies focused on intelligent systems that continuously acquire and process data exchanging information between machines and systems will enhance flight safety, reduce overall workload, and open the door to simplified air taxi services. Furthermore, aircraft manufacturers have been looking into these modern technologies to further boost competitiveness. In this sense, digital technologies have become a strategic initiative for manufacturers to further develop faster, cheaper, and better aircraft. Figure 1 shows the rising number of published research on Advanced Manufacturing Technology in aviation (Zutin et al., 2022), shedding light on a rising trend of technology involved in the manufacturing process.



**Fig. 1.** *Evolution of papers publication along the years – Zutin et al, 2022*

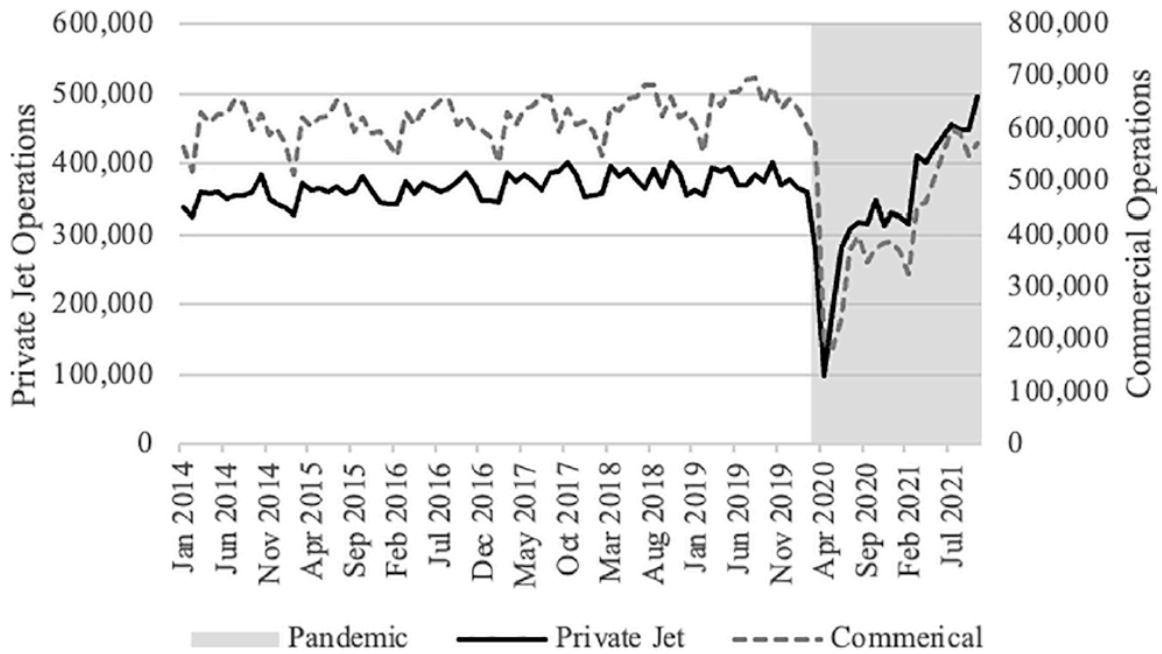
## 2.2 Environmental Trends in Aviation to 2050

The environmental impact of aviation has come under increased scrutiny, and private aviation is no exception. Sustainable aviation fuels (SAFs) are gaining prominence as a means to reduce carbon emissions in private aviation. Recent studies, like Sciacchitano et al., (2022) examine the potential of SAFs to mitigate the environmental footprint of jet travel. Since the first SAF commercial flight in 2011, there has been growing interest in sustainable jet fuel and a collective effort to scale production capacity. However, the high price premium remains the major obstacle limiting adoption of sustainable jet fuel to date. This has partly been caused by road transport biofuels being mandated to blend biofuels into existing fuel systems, while the aviation industry is not obligated to do so. Thus, production capacity is allocated to the road transport industry, driving up prices of biojet fuel. Efforts are also being made to achieve better airport management, flight routes, and to increase pilot training about carbon offsets. Moreover, the rise of electric aircraft, as discussed by Zhang et al. (2016) represents a promising path towards more sustainable air travel. These aircrafts produce zero emissions during flight and are expected to gain traction as battery technology and infrastructure improve. Due to weight and limited battery power it is only used for light single engine pilot training at the moment.

### 2.3 Changing Consumer Preference: The impact of socio economical and geopolitical elements

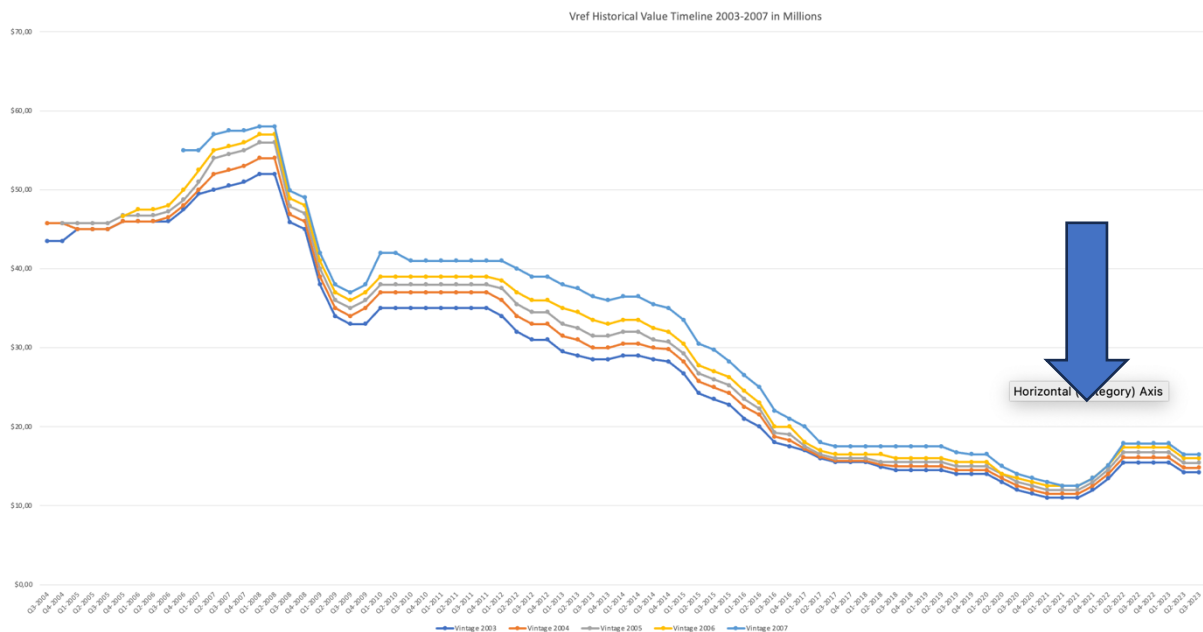
COVID-19 created a sudden and pronounced disruption, initially leading to a decline in private business jet travel due to travel restrictions, health concerns, and economic uncertainty. However, as the pandemic persisted, it gradually transformed the industry. Private jets became a lifeline for businesses and individuals seeking to minimize exposure risks while maintaining essential travel. The demand for private jet charters and ownership surged as they provided a safer and more flexible means of transportation. Some of the demand for private flights is also reported to have come from commercial first class passengers who switched to flying private instead. These passengers are termed as “new class of private traveler” (The Economist, 2021). Gössling and Humpe (2020) estimate that commercial passenger aviation makes up 71% of the global proportion of total aviation fuel use, whereas commercial freight aviation accounts for 17%, military aviation 8%, and private aviation just 4%. Private aviation is, however, the most energy-intensive form of air travel. The average fuel burn per passenger is estimated to be 10 to 20 times higher than the average fuel use per passenger hour for a commercial flight.

Sobieralski and Mumbower (2022) discuss the impact of the pandemic on private aviation and its potential long-term implications for emissions. The figure below shows a significant drop in both commercial and private aviation when the pandemic started. In April 2020 private jet operations hit their lowest point with a 74.9% decrease year-over-year and commercial operations decreased by 69.6%. However, by June 2020 the decrease in private jet operations was only 24.0% year-over-year whereas the decrease in commercial operations was 64.1%. Examining these year-over-year differences further shows increased usage of private jets.



**Fig. 2.** Private jet and commercial airline operations in the U.S. from Jan 2014 to Oct 2021 - Sobieralski and Mumbower (2022)

Looking at the residual value of private jets during these periods we can see a remarkable trend. Figure 3 illustrates the value of a G550 throughout time. The vintage year refers to the manufacturing year the aircraft was made. Price evolution for each vintage is similar, with a steep decline during the 2008-2009 financial crisis of 34%. In normal situations the average depreciation for a jet of this class is between 23%-25% in the first 5 years (Aircraft Exchange, 2023). This depreciation slows as years pass. During the Covid crisis depreciation seems to follow the normal depreciation until Q3 2021 with an increase in value. This further proves the phenomenon of the Covid boom in private business aviation as the value of pre-owned jets increased regardless of the year of manufacture.



**Fig. 3.** Price evolution G550 vintages - Jetcraft

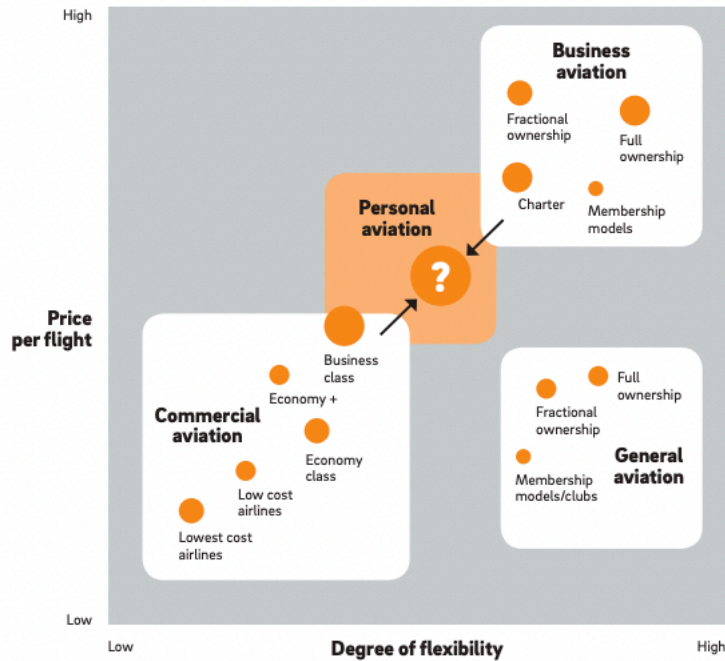
Another factor that influenced private aviation in recent years is the Russia-Ukraine conflict. Akbarli et al. (2022) investigated the effect of the conflict on general aviation and how it is changing the outlook of the industry. At the beginning of the conflict, sanctions against Russia were implemented, especially by western countries. Airline companies and passengers flying over Russian airspace to save time and fuel were affected by this situation and rising fuel prices added to the flight costs. From an environmental and sustainable point of view, aviation took a huge step back due to these flight route restrictions. Private aviation stakeholders such as original equipment manufacturers (OEMs) and spare parts manufacturers were also affected by these sanctions from both sides. The increase in flight costs, delays and the need for safety made the consumer consider private business aviation as a viable means of transportation. In summary, the pandemic accelerated the industry's evolution towards a more flexible and safety-focused mode of travel, while geopolitical tensions reinforced the importance of private jets for secure and reliable transportation options (The Business Jets Global Market Report, 2023). Figure 4 further illustrates the increase in flight hours due to the rerouting of flightplans caused by international tensions.

Airlines	Departures	Arrivals	Flight time	Delay
Air France	Beijing	Paris	11 h 55 m	6 h 5 m
Japan Airlines	London	Tokyo	11 h 55 m	4 h 30 m
Finnair	Helsinki	Tokyo	9 h 30 m	3 h 30 m
Finnair	Singapore	Helsinki	11 h 50 m	1 h 25 m
United	Chicago	New Delhi	14 h 35 m	1 h
Qantas	Sydney	London	23 h 20 m	30 m

**Fig. 4.** *Travel times (Flightradar24, 2022)*

## 2.4 Market Dynamics and Business Models: A new era of personal aviation

The business models in private aviation are shifting to accommodate these evolving trends. The rise of fractional ownership and jet card programs is making private aviation more accessible and cost-effective for a broader range of customers (Lipowsky et al., 2017). Additionally, the emergence of digital platforms and on-demand services like Uber for private jets, is reshaping the way private aviation services are delivered and accessed. Somewhere between private aviation for the ultra-rich and the mass market, a new era of private business jet activity may coalesce, driven by digital disruption, called the era of “personal aviation”. The digital transformation provides more data exchange which will increase fleet availability and make private business aviation immediately purchasable (Roland Berger, 2017).



**Fig. 5.** *Positioning of the new segment in the aviation landscape – Roland Berger 2017*

## 2.5 Challenges and Opportunities: How Millennials see the future of private business aviation

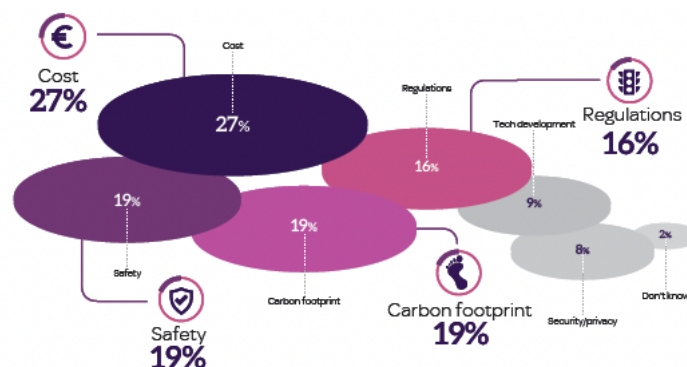
The literature suggests that while private aviation is on the brink of significant change, it faces challenges such as regulatory hurdles, infrastructure development, and the need for industry-wide sustainability initiatives. However, these challenges also present opportunities for innovation and growth (Sciacchitano et al., 2022).

A study conducted by the European Business Aviation Association in 2018 sheds light on the perceptions of Millennials regarding the private business aviation sector. Despite clear comprehension of the fundamental aspects of business aviation, such as privately-owned or chartered planes for business and personal travel, there exists a notable lack of awareness regarding this sector's broader roles. Millennials are largely uninformed about private business aviation's involvement in medical flights, cargo transportation, charter helicopters, and disaster relief. The study challenges the conventional assumption that private jets are primarily associated with prestige and status and highlights how Millennials prioritize experiences over possessions. Furthermore, Millennials place less emphasis on the 'business value (cost-benefit)' and 'opportunity to build business' aspects. They value the practical qualities of private business aviation, emphasizing on-demand accessibility, time-saving, and

improved work productivity. This aligns with the digital-native aspect of Millennials in an era dominated by instant digital connectivity. The findings underscore the need for the industry to adapt its messaging to resonate with the values and priorities of the Millennial generation (European Business Aviation Association, 2018).

Technological advancements, sustainability considerations, changing consumer demographics, and evolving business models are converging to redefine the private aviation industry. The subsequent chapters of this thesis analyze these trends and their implications for the market. The figure below shows that 27% of Millennials believe that cost will remain the biggest impediment for use of private air transport, followed by 19% for the carbon footprint and safety. Further the research shows that 60% of Millennials see private business aviation as a factor that improves flexibility and saves on travel time, while technological advancement only accounts for 26% (European Business Aviation Association, 2018).

This appears to suggest that the technological advancements of private aviation industry are somewhat unrecognized among Millennials. This also applies to innovation, despite business aviation being a driver of innovation similar to Formula One for the auto sector. In relation to trends that will have the greatest impact on air transport, 40% believe that climate change will be greatest, followed by 30% for digitization, and 25% deemed artificial intelligence to be a significant factor. When looking at fuel sources, 43% believe that solar power will be most achievable followed by 17% for biofuel. In terms of timeframe, 25% held that everyday use of personal air travel would become available in 2050 while another 25% believed it would be in 2040.



**Fig. 6.** *How millennials see the future – EBAA 2018*

### 3. Relevant management framework

The future of private business aviation implicates a number of frameworks from management strategy. In this section we will dive into the stakeholder theory.

#### 3.1 Stakeholder theory

The chosen methodology is further motivated by the stakeholder theory that suggests the following: “if we adopt as a unit of analysis the relationships between a business and the groups of individuals who can or are affected by it, we have a better chance to deal with problems of managerial mindset, ethics of capitalism and value creation and trade” (Parmar et al., 2010). From a stakeholder perspective a business can be understood as a set of relationships among groups that have a stake in the activities that make up the business or the industry. It is about how communities and managers interact to jointly create and trade value. To understand a business is to understand how these relationships between customers, suppliers, employees and financiers work and change over time (Walsh, 2005). It is the executives’ job to manage and shape these relationships to create as much value as possible for stakeholders and to manage the distribution of that value among the stakeholders (Freeman, 2009). Effective management of stakeholder relationships helps businesses survive and thrive in capitalist systems, but it is also a moral endeavor as it concerns questions of values, choice and potential harms for large groups and individuals (Phillips, 2003). A description of management that focuses on attention on creation, maintenance and alignment of these relationships better equips organizations to create value and avoid moral failures (Sisodia, Wolfe and Sheth, 2007). Whether it is Jetcraft as a broker or the industry as a whole, a well-developed understanding of each stakeholder is necessary to be successful and thrive in the industry. Through various interviews stakeholders will be engaged in a discussion about the future of the industry, their expectations and how to cater to the new customers of the future.

## 4. Research intention

The goal of this research is to study private business aviation in light of future trends. Building on the literature review (3), the primary data for this study was acquired from diverse professionals currently active in the private business aviation sector.

### 4.1 Academic and Managerial relevance

Creating a business strategy is a core necessity for every business. For a long time, business followed Friedman's (1970) view stating that a company's sole responsibility is to increase profits and thereby maximizing shareholder value. Over the years this perspective of shareholder capitalism has been challenged by researchers and practitioners. With further increasing climate change and rising inequalities, business are urged to act immediately beyond this perspective of shareholder capitalism (Business & Sustainable Development Commission, 2017). While a business can be seen as a contributor to environmental and societal problems it argues that it is the business responsibility to reduce the damage they are causing and contribute to a better world. However not only is it about responsibility it can also open a huge opportunity: "The opportunity to create economic value through creating societal value will be one of the most powerful forces driving growth in the global economy" (Porter & Kramer, 2011, p. 15). Looking at the current climate issue, private business aviation is exposed to scrutiny. For a business to survive in this type of environment it is evident that business aviation will need to develop solutions in the next 15 years (Business & Sustainable Development Commission, 2017). Although various improvements have already been implemented from the manufacturing side to the optimization of travel routes, further research into the future trends and the impact it has on the customer has barely been covered. Therefore, academically this paper aims to contribute to the research field of purpose by highlighting future trends and how to capture an emerging younger customer segment while also creating societal value.

### 4.2 Problem statement and Research Question

The aim is to provide practical insights for professionals in the private business aviation sector. These insights can be used across different segments as selling or buying an aircraft entails a lengthy and complex sales cycle. With a complex relationship between customer and supplier it is essential that expectations are acknowledged. Additionally, as explained in the previous section, due to increasing interest in the sector, there is growing importance of aligning sales strategies and corporate values.

The problem statement is as follows:

Given industry changes and a developing younger customer segment, how is the sector evolving? This research also aims to understand how brokers should position themselves in light of the foregoing. The literature review served as a foundation for the research question which is as follows:

**RQ:** How are emerging trends shaping the future of private business aviation?

## 5. Market summary

### 5.1 Market Definition and Scope

Business jets provide an efficient and productive way of travelling to cater to the needs of individuals or small groups outside the scope of commercial airlines. The ICAO defines business aviation as the following: “That sector of aviation which concerns the operation or use of aircraft by companies for the carriage of passengers or goods as an aid to the conduct of their business, flown for purposes generally considered not for public hire and piloted by individuals having, at the minimum, a valid commercial pilot license with an instrument rating”. The following chapter is meant to give the reader the needed information to understand the current dynamics in business aviation, providing a basis to further navigate this thesis.



**Fig. 7. Organizational chart Business aviation - Business Jets Market 2030**

## 5.2 Status

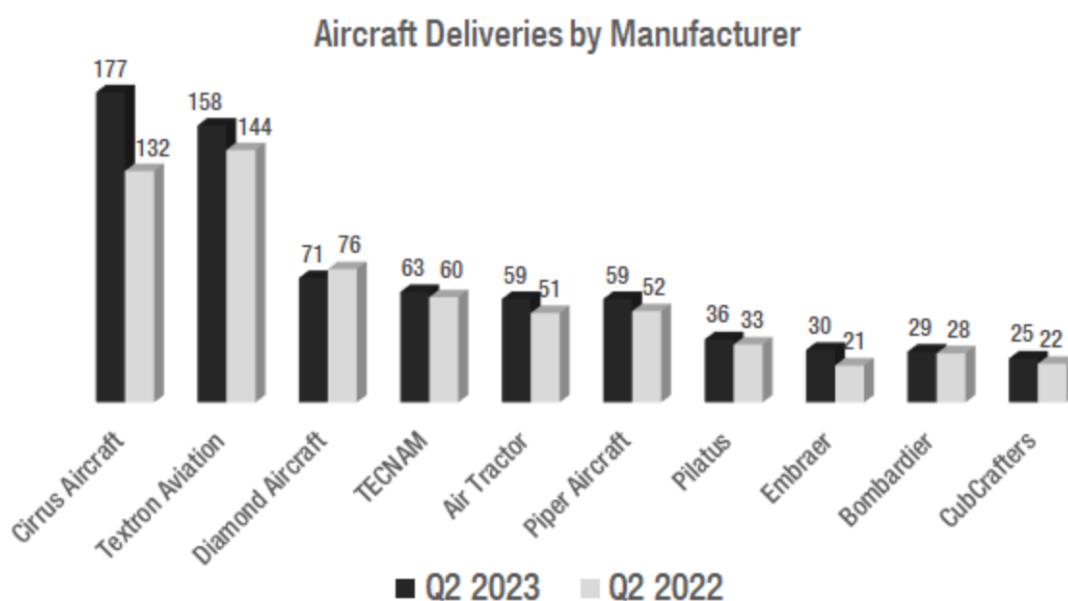
The following overview provides data about the niche sector of private business aviation. As these numbers are hard to come by, information was acquired from Jetcraft to further confirm the numbers acquired.

### *Industry*

In 2022, a total of 712 private jets were manufactured, a 0.3% increase compared to 2021 (GAMA,2022). In 2020, being the Covid year, the number was 644. This suggests that Covid pushed an increase in demand in 2022. A correction in 2023 is expected, which will be covered in the future forecast section. The private business jet market in 2022 was valued at \$20.38 billion, while 2023 is expected to generate \$20.85 billion with a compound annual growth rate of 2.3% (The Business Jets Global Market Report, 2023).

In terms of transactions in the private jet brokerage sector, the market transaction value in 2022 was \$16.3 billion with an average of \$8.2 million. This is an increase of 38% compared to 2021. In terms of aircraft segments, in 2021 light jets catering to domestic travel saw an increase in demand, while 2022 saw a drop of 18% in terms of total transaction volume.

Another factor confirming the health and performance of the private business aviation sector is the production numbers of the manufacturers. According to figures released by the General Aviation Manufacturers Association (GAMA,2022), in Q2 of 2023, manufacturers reported very strong numbers. Aircraft manufacturers delivered 772 aircraft worldwide, up by 18.5% compared to the same quarter in 2022. The US and Europe clearly dominate world business aviation aircraft production with a combined market share of 97% (GAMA,2022).



**Fig. 8.** Annual data – GAMMA 2023

### Manufacturers

Understanding the private aviation market entails familiarity with manufacturers specializing in this sector. Below is a list of manufacturers whose primary focus is private aviation. It should be noted that this does not represent the entire market as there are other OEMs ranging from industry giants such as Airbus to smaller players as Honda jet.

Manufacturer	Headquarters	Size (Range)	Revenue (2022 Estimate)	Employees
Gulfstream Aerospace	United States	Midsized to Ultra-Long Range	Estimated Revenue: \$9.6 Billion	13313

<b>Manufacturer</b>	<b>Headquarters</b>	<b>Size (Range)</b>	<b>Revenue (2022 Estimate)</b>	<b>Employees</b>
Bombardier Aviation	Canada	Light to Ultra-Long Range	Estimated Revenue: \$6.9 Billion	15900
Dassault Aviation	France	Midsized to Ultra-Long Range	Estimated Revenue: \$3.4 Billion	12768
Cessna (Textron Aviation)	United States	Very Light to Super Midsized	Estimated Revenue: \$6.4 Billion	10500
Embraer Executive Jets	Brazil	Very Light to Ultra-Long Range	Estimated Revenue: \$4.5 Billion	18000
Pilatus	Switzerland	Turboprops to Light Jets	\$1.347 Billion	2316

The above numbers have been taken from the manufacturer's annual reports.

### *Customer*

Just as the business jet sector is a niche market, so is its customer group. Characterized by exclusivity and high price points, private aviation exists of select and sensitive clientele (Brun & Castelli, 2013). The business aviation sector can be segmented into the following group of end users.

- **Corporations:** Many businesses and multinational corporations invest in business jets to facilitate executive travel, increase productivity, and enable more efficient access to clients, partners, and operations worldwide.
- **High-Net-Worth Individuals:** Wealthy individuals often purchase business jets for personal use.
- **Government Agencies:** Various government organizations, including military and law enforcement agencies.

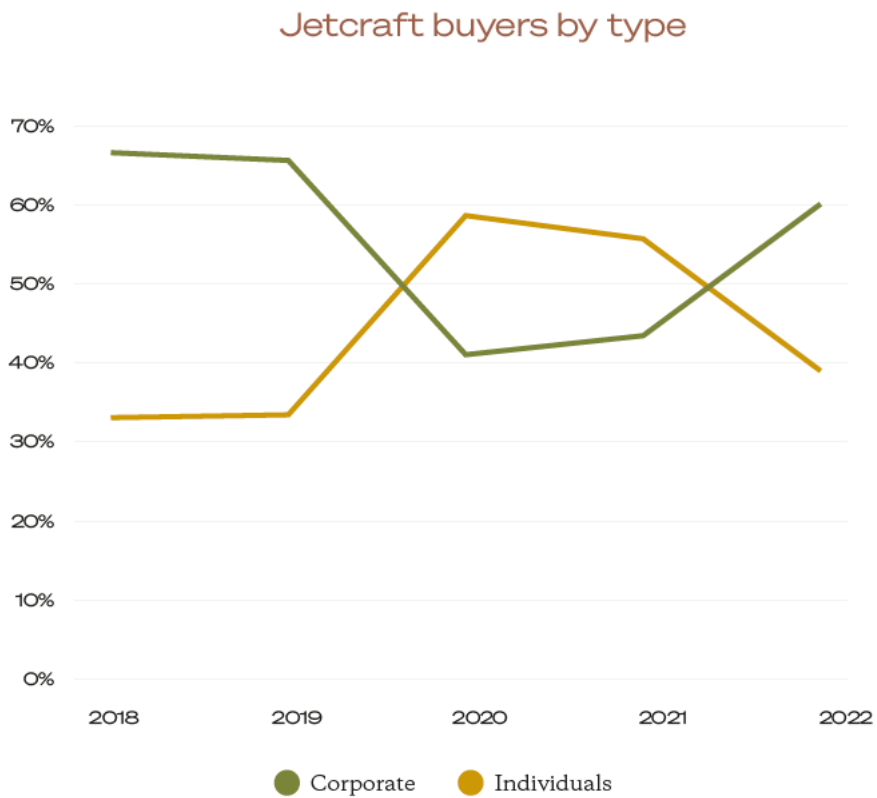
- Charter Operators: Companies specializing in private jet charter services acquire business jets to offer on-demand charter flights to clients.
- Fractional Ownership Programs: Fractional ownership companies sell shares of business jets to multiple individuals and businesses.
- Aircraft Lessors and Financing Companies: Some businesses specialize in purchasing business jets and then leasing them to corporations or individuals.
- Airlines and Commercial Operators: Commercial airlines or other aviation service providers
- Sports Teams and Entertainment Figures: Professional sports teams, celebrities, and entertainment industry figures

The illustration below portrays the benefit that private aviation brings towards such clientele. Providing a secure environment while combining optimal use of time and productivity during travels.



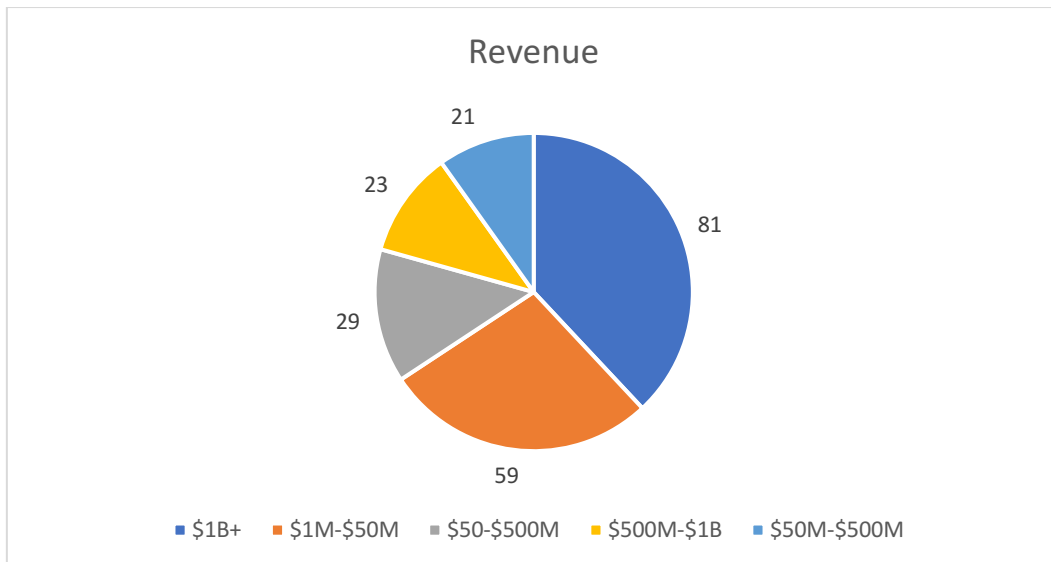
**Fig. 9.** *Global 6000 – Built for maximum comfort and speed (Sharma, 2022)*

In 2022, corporate buyers reached 60% driving growth of the sector. The graph below illustrates that corporate buyers are rising also for Jetcraft, and aircraft usage has even doubled since 2020. This highlights the underlying value that jet ownership offers firms. The data also shows that with an average flying time of 135 hours per year over the last five years, jets are a valuable resource for people with limited time (Jetcraft database).



**Fig. 10.** *Buyer Type- Jetcraft*

The below figure shows turnover relative to the type of net worth. In other words, 81 corporate clients have a net worth of more than \$1B+.



**Fig. 11. Revenue buyers - Jetcraft**

### 5.3 Forecast

Looking ahead, the business aviation sector is one of full promises. In the year 2022 demand reached unprecedented levels and thus showing the healthiness of the sector. In terms of numbers the private business jet market is expected to reach \$41.8 billion by 2030 with a compounded annual growth rate of 4.2% from 2022 to 2030 (The Business Jets Global Market Report, 2023).

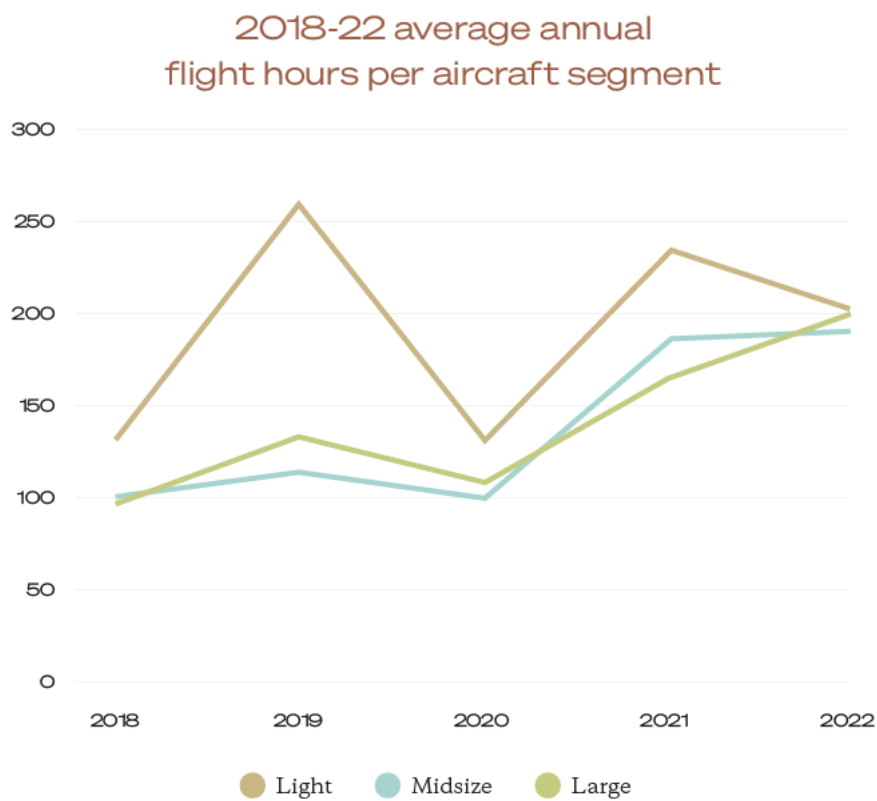
In parallel, transaction value in the pre-owned market will reach a new annual benchmark of \$15.4 billion. After a slight market correction in 2023, the pre-owned transaction volume is forecasted to grow steadily by 4.7% per year.

The market is predicted to remain relatively strong due to several key factors. Firstly, the total transaction volume is expected to increase. Secondly a significant portion of light jets from the under 25-year-old fleet will be retired. Finally, an investment from OEMs focused on midsize and large size jets, therefore there will be more larger jets entering the pre-owned market.

#### *Business jet type analysis*

The business jet aircraft type is segmented into light, mid-size, and large business aircraft. This is based on the number of passengers and range. Up until 2022, Jetcraft's light jet

owners flew more frequently than those with larger aircraft. But with the corporate buyer returning and the opening of borders, flying has evened out across all aircraft sizes to an average of 200 hours per year. Light jets are particularly versatile, typically owner-flown and favored in North America for both business and leisure. Because of this, together with the added advantage of access to a greater range of airports, it is forecast that demand and flight hours in this segment will remain relatively strong. Light jets will see the highest growth from 2022 to 2030 with a CAGR of 11%. In terms of market share, with the maturing of markets outside North America and continued investment in larger jets by the OEMs, it is expected that due to their long range and passenger capabilities, large business jets will account for the biggest portion of the market now and in the future.

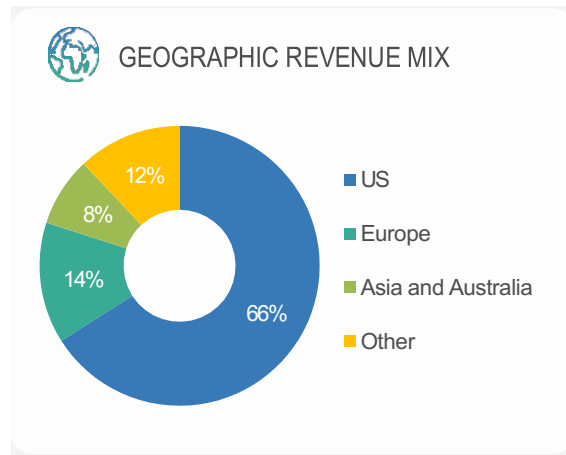


**Fig. 12.** Annual flight hours per aircraft segment -Jetcraft

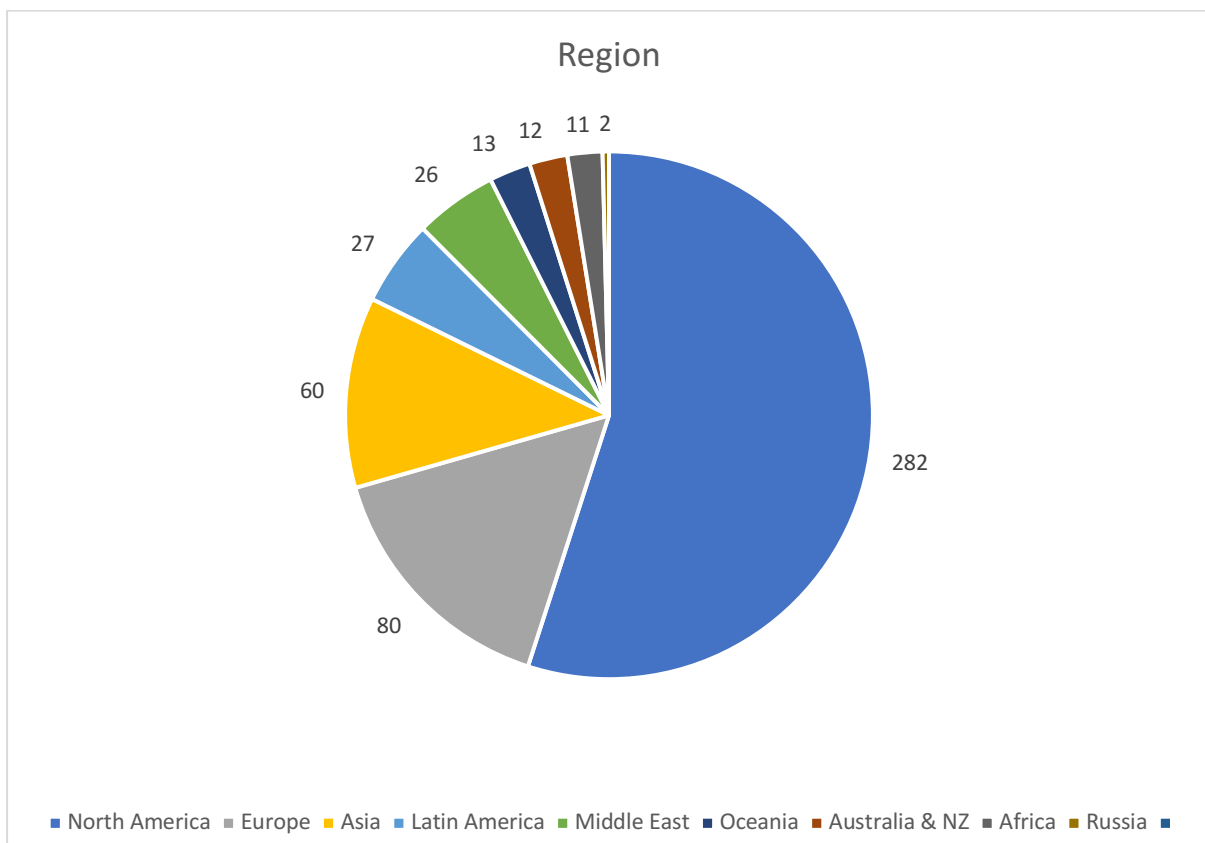
### *Region*

North America led the market in 2022 and was valued at \$19.88 billion. This position is expected to grow due to the presence of major key players, the largest fleet size, and the availability of required infrastructure, all of which propel growth across the region (Business

Jet Market Size, Share, Growth & Analysis, 2023). When looking at the manufacturers like Textron, these statements also confirm that the US remains the largest market, however other markets such as Europe are showing positive growth.



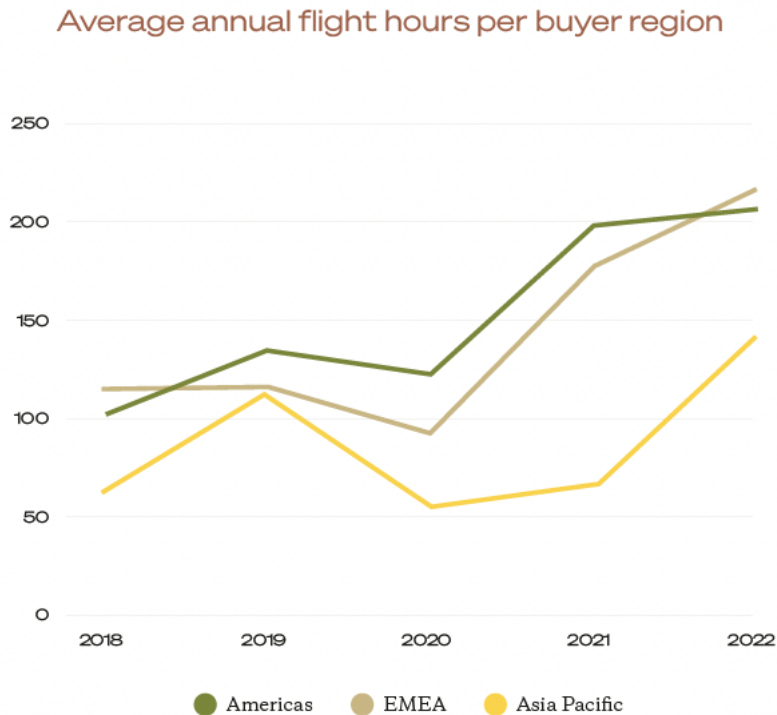
**Fig. 13.** Revenue mix - Textron



**Fig. 14.** Deals per region 2022 - Jetcraft

Looking at data from Jetcraft, buyers in EMEA now use their aircraft more than those in APAC and even the Americas, with North America being the most mature market. This indicates EMEA's growing interest in private business aviation.

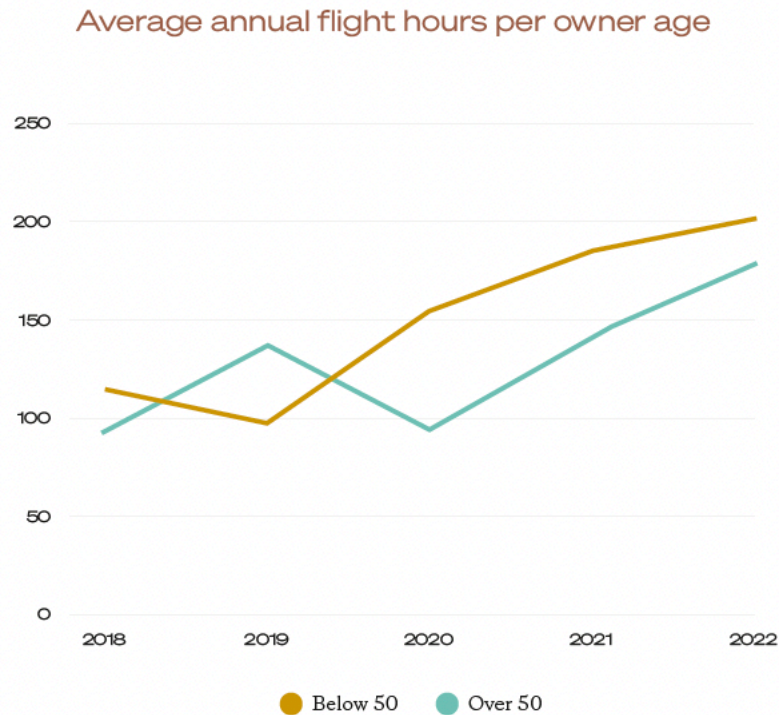
Southeast Asia and Australia are driving demand for private business aviation in the region but are falling behind the trend of increasing flight hours.



**Fig. 15.** Average Annual flight hours per buyer region - Jetcraft

### Customers

Looking at numbers from Jetcraft during the last five years, younger owners have used their aircraft most. Younger business owners in this case are seen as below 50. On average younger owners fly 19% more than those aged over 50. Many of these younger buyers are tech entrepreneurs flying globally to carry out business.



**Fig. 16.** *Average annual flight hours per owner age*

## 6. Methodology

In this chapter, the chosen methodology will be explained. The literature discussed above presented a general overview of the field. The chosen research method will be stated, a description of interviewees selected, and the overall structure of the interview process concluding with data evaluation and analysis. Following this, findings will be presented.

### 6.1 Research method

To understand future trends, this study employs qualitative data collection. Qualitative research is defined as “a set of interpretive activities that seek to understand the situated meaning behind actions and behaviours and rely heavily on the researcher as a unique interpreter of the data” (Sinkovics & Alfoldi, 2012). Since the research focus is an emerging phenomenon in a niche market where information is scarce, interviews with key stakeholders will provide important insights.

The key stakeholders were representatives of brokers, data analyst, pilots, CEO’s, Blockchain experts and manufacturers. A total of nine in dept interviews were conducted. Each interview

offering insights on the current market status, what trends will shape the future of the industry and what strategic initiatives could help manage these trends and capture a younger customer segment. Through this methodological approach, we aim to understand uncertainties that surround the shifting landscape of private business aviation.

## 6.2 Interviews

### 6.2.1 Selection criteria for interviews

When selecting interviewees, it is important that the researchers understand the subjective perspective of a phenomenon rather than generalizing the opinions to large groups of people (McGrath et al., 2018). For this reason, a wide selection of interviewees from different areas were selected: manufacturers, pilots, brokers, data analysts, CEO's and blockchain expert.

Commencing with the basis of aviation, three individuals were interviewed. Among them, one participant was a full-time pilot and the remaining two were CEOs flying privately owned business jets for business and leisure. Interviewing a professional pilot brought the perspective of proximity to the business aircraft, understanding its capabilities and the clients' expectations and fulfillments. Another facet of a pilots insight was the way it provided a touch point with the practical realm. This addresses emerging challenges, such as regulations and aircraft performance. Looking at sustainable solutions and catering to the needs of a new segment is one thing in theory, but the practical side of implementing this is another matter.

Regarding the brokers' perspective, two individuals were interviewed, one of whom previously worked for Bombardier for ten years as a sales director. Brokers are focused on market trends and dynamics, as they facilitate aircraft transactions between buyers and sellers. Additionally, brokers are also instrumental for industry stakeholders such as operators, manufacturers, and investors to position them strategically in the dynamic private business aviation landscape.

From the manufacturing perspective, two sales directors from Cessna and Bombardier were interviewed. As mentioned, one is now active as a broker and had more than ten years of

experience in the manufacturing side. Sales directors have their pulse on customer preferences and demands while also seeing first-hand the technological advancements in the market. These individuals offer perspectives on emerging trends and broader industry insights.

The final three contributors came from diverse backgrounds, with expertise in data analytics, blockchain entrepreneurship, and private jet operations. They each brought unique perspectives to the table, offering insights into current business aviation trends and market dynamics, as well as illuminating potential pitfalls and opportunities that lie ahead.

Interview number	Name	Function	Company	Location	Industry	Purpose
1	Luc Olivier	Director of Operations	Luxaviation	Belgium	Aircraft Management	View from an operational aspect of the business

*Table 1: Operator and Aircraft Management company*

Interview number	Name	Function	Company	Location	Industry	Purpose
2	Ashley Namihas	Director of Sales Europe	Cessna/Textron	United Kingdom	Aircraft Manufacturing	Insights from a manufacturer and brokerage perspective
3	André Nillès	Board Director/Sales Director	Jetcraft/Bombardier	Switzerland	Brokerage	
4	Colin Dunne	Director of Sales North America	Jetcraft	United States	Brokerage	

*Table 2: Sales Directors Manufacturer and Broker*

Interview number	Name	Function	Company	Location	Industry	Purpose
7	Ganesh Veradittaname	Director of Strategy and Analytics	Jetcraft	United Kingdom	Brokerage	Insights from a data perspective on the aviation industry

*Table 3: Data Analyst and Strategy Expert*

Interview number	Name	Function	Company	Location	Industry	Purpose
8	Mathieu Cotin	Founder Tokeny	Tokeny	Luxemburg	Blockchain	Understand the blockchain ecosystem and its potential application in business aviation

*Table 4: Blockchain expert*

Interview number	Name	Function	Company	Location	Industry	Purpose
9	Daren Mendoza	Chief of fleet ACJ 320	Private Family	Dubai	Aviation	Get insights on the current use of private airplanes and understand the demands of customers

*Table 5: Full time Pilot*

Interview number	Name	Function	Company	Location	Experience
1	Luc Olivier	Director of Operations	Luxaviation	Belgium	30 years
2	Ashley Namihas	Director of Sales Europe	Cessna/Textron	United Kingdom	15 years
3	André Nillès	Board Director/Sales Director	Jetcraft/Bombardier	Switzerland	20 years
4	Colin Dunne	Director of Sales North America	Jetcraft	Chicago, United States	8 years
5	Bart Foucart	Founder Abelag/ Pilot	Abelag/Luxaviation	Belgium	30 years
6	Alain Liebaert	CEO/Pilot	Liebaert Textiles	Belgium	30 years
7	Ganesh Veradittaname	Director of Strategy and Analytics	Jetcraft	London, United Kingdom	5 years
8	Mathieu Cotin	Founder Tokeny	Tokeny	Luxemburg	7 years
9	Darren Mendoza	Chief of fleet ACJ 320	Private Family	Dubai	30 years

*Table 6: Full list of interviewees*

### 6.2.2 Interview Structure and Process

Qualitative interviews can take on unstructured, semi-structured or fully structured formats (McGrath et al., 2018). In this study, a semi-structured interview style was adopted. Before commencing the interview stage, a preliminary set of questions was developed for each

segment. These questions were tailored to the specific context in which the companies were situated, creating six different drafts corresponding to the six different areas within the scope (brokers, operators, blockchain, pilots, CEO's, manufacturers). Questions were adapted during the interviews to adjust for specific characteristics of each individual. Throughout the interview, various questions were raised while others were omitted, depending on the course of the interview. Towards the end of the interview there was time for open ended discussions creating more opinion-based conversations. The interviews were conducted in a formal manner, however as the interview progressed informal conversations allowed for deeper understanding of the subject. This approach provided a framework to conduct a consistent interview process while also allowing flexibility.

The interviews took place over a two-month period from December 1<sup>st</sup> 2023 to January 30<sup>th</sup> 2024. During this timeframe, a natural evolution occurred, refining questions ultimately leading to an optimized set for each segment. Throughout this process, certain questions were adjusted due to potential misunderstandings while others were considered out of the scope of this study or irrelevant. The interviewees were contacted through LinkedIn or email with an introductory message and specific interview script attached for preparation purposes.

The researcher's preparation is critical for an interview, as the success of interviews starts with meticulous planning that considers the focus and the scope of the research question (McGrath et al., 2018). Prior to each interview, extensive research was conducted involving research on both the company and the individual.

An illustrative instance is the interview with Ashley Namihas, Sales Director at Textron Aviation. After obtaining a general overview of the company's core business and values, the primary emphasis was on the company's take on the current market landscape and their future sustainability initiatives.

Before initiating the first interviews, trial sessions were organized to test the timing and fluency of speech, involving other researchers. This approach ensured the smooth execution of the final interviews.

### 6.3 Data Evaluation and Analysis

All interviews were recorded with the interviewee’s authorization and further narrated and interpreted. To analyze the data, the interview recordings had to be transcribed. The software application Descript facilitated transcription and the text was revised afterwards to correct for errors. Corresponding with the research question and the structure of the interview questions three dimensions were defined: current situation, outlook, challenges and opportunities. These categories are referred to as coding frames which structured the material into main categories with the relevant subcategories concerning this aspect (Schreier, 2012).

<b>Business status</b>	<b>Outlook</b>	<b>Emerging segment</b>
<ul style="list-style-type: none"> <li>-Current situation</li> <li>-Sales strategy</li> <li>-Technological development</li> <li>-Pain points or challenges</li> <li>-successful approaches</li> </ul>	<ul style="list-style-type: none"> <li>-Trends</li> <li>-Buyers</li> <li>-Market size</li> <li>-Product type</li> <li>-Customer preferences</li> <li>-Legislation</li> <li>-Regulation</li> <li>-Regions</li> </ul>	<ul style="list-style-type: none"> <li>-Reason</li> <li>-Approach</li> <li>- Strategy</li> <li>-Preferences</li> <li>-Financing</li> <li>-Marketing</li> <li>-Environment</li> <li>-Impact</li> </ul>

Table 7: Category system per dimension

## 7. Findings & Discussion

The theory-based implications on the current private business aviation landscape, its future, and strategies to capture a younger emerging customer segment are mirrored to an extent in the findings of this study. Nonetheless, new insights were generated from the interviews and brought clarity about uncertainties concerning the future and potential business strategies. The next three chapters discuss: the status quo, trends that are shaping the future, and strategic management of these trends to capture and retain a younger customer segment.

### 7.1 Status of the private business aviation market

As referred to in the literature review and the market outlook, private business aviation is here to stay and its future, although challenging, looks bright. At the start of the Covid crisis the market dropped significantly. However the market recovered and experienced significant growth to the stage where prices of pre-owned planes skyrocketed. After conducting the present study, the current landscape can be characterized by the following factors:

### 7.1.1 First time buyers/users

Every interviewee agreed that the present represents a very interesting time in the aviation industry. The market has experienced an unforeseen peak with a lot of first-time users in private business aviation. Although new customers are not a rare sight, most clientele are recurring customers. Whether it is for charter companies, pre-owned buyers, or buying straight from the manufacturer, all of them enjoyed the benefits of the boom since the Covid pandemic. Now, slowly but surely, things are going back to normal while still having a growth model. From a charter and broker perspective it is important to guide these first timers with care and give them the full story about owning/chartering a private jet.

*We are in buoyant times. It's a market that's in full movement. Came out of what we all know now is the Covid situation, which gave an enormous boost to business aviation. An enormous amount of extra aircraft sales to people who have never been introduced to business aviation before, and we are now slowly but surely, going back to what I would call a more normal situation in which we still have a growth model. (Interviewee #1)*

Darren, who is lead captain on a ACJ320 fleet, confirmed the trend of new customers finding their way towards private travel stating the following:

*A friend of mine bought a small CJI six years ago, and he's doing more hours than he could possibly ever think of doing. And he's now looking at a second and third airplane because he's just overwhelmed with profit...The airplane cost him a million dollars to buy, six years ago. It's now worth \$1.8 million for the airplane, but he's getting \$1.3 million profit a year at 500 hours. He's got more work than he knows what to do with. It's a really, really busy industry at the moment.*

...

*I think what a lot of people find is once they fly private, it's very hard to go back to commercial again. (interviewee #9)*

Private business aviation is slowly coming back to a more normal situation. Furthermore the Covid crisis and other factors such as the Russian Ukraine war made sure that new customers found their way towards private aviation and are not looking to turn away anytime soon.

### 7.1.2 Supply and Demand

The market had issues to keep up since the pandemic which particularly hit the manufacturers. It started with a disruption of the supply chain while experiencing an increase in demand resulting in backlogs for manufacturers. This phenomenon was confirmed by Ashley who currently works for Textron as director of sales. The effects of the Covid crisis drove up demand around October 2020 which quickly depleted the inventory of pre-owned planes. By February 2022 the industry witnessed a notable pick up in orders for new planes. However, due to supply chain constraints particularly related to manpower and labor shortages, manufacturers faced challenges to ramp up production to meet the soaring demand. Consequently, backlogs for new aircraft across all of Textron's categories (Piston, Turboprop, and Jet) have extended into 2025,2026 and even in 2027.

*We're basically seeing record low levels of inventory available on the preowned market. The demand rapidly increased halfway through the first year of Covid. So around October 2020, when things started really taking off for the general aviation sector, we noticed that the demand for aircraft increased very quickly. Supply of pre owned aircraft became exhausted within a few months, and we started around February 2022 really seeing an increase in orders for new airplanes. (Interviewee #2)*

All participants stated that the market is back to a more rational status with supply and demand more in check compared to 2022. Ashley further highlighted the impact of the supply chain challenges on the entire industry leading to a gradual sell-out of available inventory and increase in aircraft prices both new and pre-owned. The current trend suggests a return to a more balanced equilibrium between supply and demand.

*We're seeing about 5 % now of citations under 10 years old available for sale which is where we like to see it. Any more than 11, 12, 13 % we start getting into a buyer's market and there's negative impacts on value and residual value. Anything in the sort of 1 to 3 % range is just not dynamic enough and there's just not enough happening. So we're kind of in a good place right now. (Interviewee #2)*

Further the research confirmed that the US remains the most important contributor in the current market with 60% of the transactions happening there. It maintains its dominant position due to factors such as the widespread accessibility of private travel, a diverse business landscape, and a conducive regulatory environment. These elements collectively contribute to the thriving market of private aviation in the US. However, the increase in wealth and the addition of new aircraft have catalyzed a surge in outbound transactions overseas. Europe, in this context, is taking second place in terms of significance while Asia-Pacific region assumes third place.

*The US is a very mature market when it comes to business chance. There are about 20,000 business jets in the world. Did you know that 60% of those are in the US. Culturally, it's just part of how people operate in the US if you have a business. All the corporates, the big corporates, fortune five hundreds owners will have an aircraft and they'll change those aircraft every three to five years. So you can be guaranteed that there's a constant churn of aircraft, even if the economy is not doing well (Interviewee #4).*

Despite the current deceleration in the market, the trends of the post-pandemic era are still evident. Short term the prices will be dropping as more planes come on the market, but the long-term outlook of the industry remains positive.

*Short term, there's a bit of a slowdown in the market now but we're still in the post pandemic era. The pricing and market volume increased quite a lot and we see now the price are going down, activity has slowed, but over the long term we're still confident (Interviewee #7).*

### 7.1.3 Consolidation

With the surge in demand comes a need for supply. Therefore, a lot of new operators and brokers are emerging to seize opportunities to help fill a need in the market. With the emergence of new operators and brokers, there is an influx of new ideas, coupled with improvement of aircraft availability indicating a positive shift. Now, while the market is stabilizing the industry experts remarked that there is a notable trend towards consolidation in the industry, driven by the entrance of new players.

*We've seen a lot of new operators emerging and a lot of new ideas emerging with the market, which was lacking new aircraft, lacking secondhand aircraft, and I think slowly but surely we*

*are now getting a little bit better, especially now with the elections in the United States coming up. (Interviewee #1)*

*Consolidation as well. And you see that coming up already, as you have more people coming into the market, you have bigger players and you'll have some consolidation. It'll be good for the industry, improve the level of service and a level of professionalization as well. Because right now, you have too many small times broker that don't have the skill to offer a proper service. (Interviewee #7)*

*We're seeing a lot of consolidation in the major operators over the last couple of years. Wheels up, they bought a good few operators, and they also were owned by Delta. (Interviewee #4)*

In summary the recurring theme of consolidation within the private aviation sector, as highlighted by the industry experts, holds the promise of substantial benefits for the industry. The presence of larger players is becoming more pronounced, paving the way for strategic consolidation. This current tendency of consolidation emerges as a positive force poised to enhance the efficiency and overall performance of the industry.

#### 7.1.4 Supply Chain

The private aviation industry, while thriving, faces challenges that impact operational efficiency and client satisfaction. A pressing concern that emerged during the interviews revolved around supply chain disruptions experienced by OEMs. Delays in obtaining essential components, ranging from small parts to crucial parts, pose significant hurdles. These challenges, notably in the realm of immediate aircraft maintenance and availability of rental engines, are reshaping how stakeholders approach the acquisition and management of private aircraft.

*There are supply chain issues with most of the OEMs. In the fact that it can take a delivery of an aircraft, but then you're going to be waiting for 1 year or 1.5 year for some small parts, which have to do with the comfort of the passengers for instance, to be delivered. Another problem I see in our business is the problem with spare parts.*

*Well, you used to have an immediate action on your aircraft, you're now stuck in a queue and you've got to wait a week before they can take action on your aircraft. And I'll give you another example engines everybody knows the engine programs where you have a contract in which when you have an engine problem, you can have rental engines.*

*There's a shortage of rental engines in the world. It's very important when you buy a second hand aircraft that you have a look, not only at how nice and how good it is, but how is the situation on spare parts? How is the situation on rental engines for that aircraft? Because you can buy, for instance, a second hand 7X. If you have a problem on one of these three engines you might be waiting for 11 months before a rental engine is delivered to you. So, then you're sitting there with an asset of 20, 30 million and you can't use it because there's no rental engine on the market.*

*The titanium used in a lot of the construction and the raw materials came from Russia. And a lot of companies decided now we no longer take these products from Russia. We take the titanium from another part of the world. But you know, as well as I, aviation is slow to accept changes in those things because everything needs to be certified.*

*So that means that these suppliers now have to recertify it. The materials from which they are building their engine that takes time and that makes that there's a dip in the amount of what they can produce, creating the backlog. And I think we will be going through this situation for another year to two years until we have a little bit more normality in the market.*

(Interviewee #1)

Ashley shared the additional perspective from the manufacturing side regarding supply chain challenges. Despite efforts to enhance supply levels, critical constraints, primarily coming from shortages in manpower and labor, have hindered the production process. The ripple effect reaches tier one and tier two vendors, impacting spare parts and essential components. As the industry grapples with these supply chain intricacies, this has led to higher prices of both new and pre-owned aircraft with inflation and surging demand.

*We may have increased our level of supply, but because of supply chain constraints, which has to do with raw materials but predominantly with manpower and labor, we still haven't*

*reached the pre covid level of supply. A lot of people went away from furlough. They never wanted to go back to the factories. So tier one, tier two vendors spare parts, landing gear assemblies, they weren't there.*

*So, we have a supply chain challenge, which affected the entire industry, we couldn't ramp up production to meet demand. We quickly started selling out further and further and pricing of aircraft increased. (Interviewee #2).*

Navigating these challenges will be integral to sustaining the industry's growth and ensuring the seamless operation of private aircraft in a dynamic and demanding market.

#### 7.1.5 Legislation

In business aviation, a pressing concern emerges as the sector grapples with the escalating challenges of overregulation. The landscape is characterized by an overwhelming volume of paperwork, organizational demands and escalating responsibilities raising valid considerations about the potential threat posed by such a regulatory environment.

*One major concern is the increasing burden of overregulation in the business aviation sector. The sheer volume of paperwork, organizational requirements, and responsibilities has reached a point where it can be considered a threat. Comparing it to other modes of transport, such as the high-speed train. (Interviewee #5)*

*The legislation for flying becomes more and more complicated, especially in Europe. Arrivals at most bigger airports require a very early descent, up to 1 hour before landing due to congestion of airspace around these airports and to sequence arrivals better. This requires very careful fuel planning and often an extra stop which in turn is also very bad for the carbon footprint. (Interviewee #6)*

*The current airspace structure lacks coordination between countries and regions. If we were to optimize this, we could easily witness a 20-30% reduction in fuel consumption. Surprisingly, this remains a political decision that often flies under the radar. To illustrate, consider a flight from Portugal to France. The existing airspace structure necessitates unnecessary descents and climbs, particularly around Paris. This not only extends the flight*

*time but also adds to fuel consumption, creating an inefficient travel experience. (Interviewee #5)*

*Parking spaces for an aircraft are becoming a huge issue, especially in the high season. So more and more aircraft have to be repositioned which is a very expensive expense. It increases the cost drastically because you just drop off your customer in Cannes, for example no parking in Cannes. You have to go and park your aircraft 45 minutes away in a smaller airport in Italy. And then you have to go and fetch your customers in Cannes again.*

*(Interviewee #6)*

As the complexity of aviation intensifies, particularly in Europe, the challenges faced by private aircraft operators extend beyond regulatory burdens. The increasing need for repositioning amplifies costs, operational complexities and environmental issues, offering a glimpse into the various challenges confronting the industry.

## 7.2 Trends shaping the market

### 7.2.1 Geographical distribution

In line with the market outlook, the American market remains by far the biggest, however noticeable growth has emerged in other parts of the world such as Europe. The European market is gaining ground in aircraft sales. This shift, while acknowledging the enduring significance of the American market, suggests a cyclical pattern where dominance of the latter is experiencing a slight downturn. A crucial element influencing this change is tax policy and pertaining to the ability to write over business jet expenditures. These insights shed light on the evolving landscape and the multifaceted factors that shape market dynamics for the future.

*The American market is starting to be less strong. In fact, the American market for example, last year, we sold quite a few planes in Europe as well. Europe is nibbling a little more on the American market. The American market always remains number one, but it's starting to decline a little bit. The American market is also declining because over the past years, especially under the Trump administration, the business aviation market benefited from tax advantages. (Interviewee #3)*

It is also worth mentioning that while the European market might be on a growth trajectory at present, it has experienced contractions in the past due to external crises such as the 2008-2009 economic collapse. The resilience of the US market and its ability to rebound remains a dominant force.

*With business aviation, like many other businesses, you have cycles. I can name one, for example, when I was sales director at Bombardier, like in the years 2006-7, Europe was exceptional. We sold and sold over three hundred planes. (Interviewee #3).*

Another finding supporting this claim is rising affluence across the world. While the United States still is a primary repository of wealth, a noteworthy evolution is unfolding with wealth expanding in various regions. This trend suggests a long-term trajectory with change in the economic landscape. Particularly intriguing is the prospect that Europe is poised for sustained growth in affluence. This potentially signals compelling opportunities and considerations for the business aviation sector.

*Wealth distribution, people are getting wealthier. A lot of time, the US was the main driver, but we still have growth in other areas, even though that's a long-term play. We'll still think that it's a major shift in general. (Interviewee #7)*

### 7.2.2 Sustainability

During the interviews it became evident that sustainability already plays a pivotal role in business aviation, with growing importance anticipated in the future. Technological advancements, such as new engine designs to reduce noise levels and optimize fuel consumption, already signal a noticeable shift towards more eco-friendly practices. Despite numerous sources in the industry foreseeing an electric powered aviation future, all the interviewees remained pragmatic, underscoring the industry's conservative nature, particularly concerning safety standards.

*What will have an impact, I hope, is the new engine designs coming with less impact on the environment or noise. For the rest let's be honest, I was sitting in a panel discussion about the future and there people were already saying that we are going to be flying electric in five year's time. But again, aviation is a conservative business, especially on the point of safety.*

*So, I do not see us flying in five years' time with electric engines. That's not going to happen. So, in the future, I think business aviation is going to grow, but I think that the types of aircraft we see now are going to be around for the decades to come. (Interviewee #1)*

*Yes, everyone is working on it. But the point is, in business aviation, the goal is to go fast, be more productive, save time, etc. That's the thing about business aviation. Most of our clients want to go fast, be productive, save time, etc. It's more about productivity, and productivity means speed which impacts negatively your fuel efficiency. It remain a challenge to combine sustainability and productivity.*

...

*And everyone is working on that. There are improvements, and we are also trying to make planes lighter. Like Dassault planes, for example, are often ahead in the design because they have a lot of military experience. (Interviewee #3)*

While acknowledging the growth potential in business aviation, the interviewees cautioned against expecting immediate radical changes in aircraft types, emphasizing a continued commitment to the existing fleet for decades to come. This perspective illuminates the delicate balance between innovation and tradition, shaping the evolution of the business aviation sector.

### 7.2.3 Data driven market

Insights shared by Ganesh, director of strategy and data at Jetcraft, shed light on the critical role of data in shaping the future of the brokerage market. He underscores the significance of having access to accurate and timely information, certainly in a market where little details have huge implications. Challenges such as information opacity and market fragmentation can significantly impact the decision-making processes.

*There's a lot of capacity in the market. If you have information, you have a lot of control power. For example, getting the right pricing information when you ask for a net price, they're going to give you. Oh, yeah, it's in the low fours or low fives. Whatever. We may have a big spread and that impacts the way we take decisions. Information opacity and market*

*fragmentation is an issue too. Sometimes you're dealing with small time brokers, and you don't have the right information. (Interviewee #7)*

*We really use all possible ways to really identify your customers because the big challenge for us is that our customers are not easily identified. It's not like airlines, which are easily identified. It's more difficult for us. (Interviewee #3)*

The increasing importance of data in steering the course of the business aviation market cannot be ignored. As an industry navigating challenges such as capacity surplus, market fragmentation and customer identification, leveraging data-driven insights will be indispensable for stakeholders to drive growth and maintain competitiveness in the evolving landscape.

### 7.3 Capturing and retaining a younger customer segment

A noticeable trend in the aviation industry is the increasing capabilities of private travel to younger individuals. In the past, where private aviation was primarily accessible to older individuals with established careers or family wealth, younger generations now have earlier access to the financial resources needed for private business aviation. This shift is attributed to the rapid growth of non-conventional business such as tech companies expanding the financial capabilities of a younger demographic. In this case younger demographic refers to people younger than 50.

*Younger people tend to have earlier the finance resources you need to fly privately or to fly business aviation. In the early days it was only the older people who already had a big career or mainly through family heritage. Today with the younger non-conventional businesses the financial capabilities grow quite fast. (Interviewee #5)*

*The younger generation likes traveling. They want to see the world. They want to be in London today and tomorrow they want to be in New York. That is absolutely possible in the world we have today. (Interviewee#1)*

The rise in a younger customer segment towards private travel presents an opportunity for the aviation industry to capitalize on this evolving market segment. The following points were identified as pillars to further capture and cater to the preferences of younger clientele. By adapting the offerings to align with the desires of this demographic, such as flexible travel and personalized experiences, the industry can effectively meet the evolving demands of the younger customers.

### 7.3.1 Data insights

- Cost analysis and operating expenses

Providing accurate data insights and managing client expectations effectively are essential for fostering long term and sustainable relationships, which is especially interesting with a younger customer segment. By offering transparent information regarding aircraft performance, maintenance history and highlighting specific risks such as corrosion, aviation providers but also brokers can establish trust and credibility with their clients. By educating clients about the nuances of aircraft ownership and maintenance, service providers empower them to make informed decisions but also highlight the importance of professional guidance during the process of acquiring or selling a private jet.

*Be realistic from the beginning and not over exceed on our promise. But for that, you need to have the right the right level of promises at the start. An aircraft is a technical thing. It can break down. If you buy a secondhand aircraft, you never know 100 percent how the life expectancy of that aircraft is going to evolve and a new word which rises everywhere in our business is the word of corrosion. So if you buy a secondhand aircraft and after five years, it goes into an inspection and there's lots of corrosion that costs money. So it's extremely important that you nourish and tutor your clients to the right expectations. (Interviewee #1)*

*They are much more sensitive. It's something on which we have to argue a lot more. Why? Because they are increasingly required to justify things, especially if they are first-time buyers. When a client is undecided on one plane or another I have more and more studies that I show on the plane, for example, the operation costs and its performance. (Interviewee #3)*

This proactive approach not only builds stronger client-provider relationship but also demonstrates a commitment to customer satisfaction and integrity, which in turn contributes to a long and healthy business relationship.

- Aircraft suitability

As environmental concerns are a bigger concern for younger segments than the older generation, customers are increasingly seeking aircraft options that not only align with their preferences but also prioritize fuel efficiency and environmental sustainability. Data analysis plays a pivotal role in this process by providing valuable insights into the economic performance of various aircraft models.

*Today, when we start selling to guys who are thirty, thirty-five, forty years old, and so on, it is clear that there is a certain environmental factor and image that are more important than guys who are sixty years old.*

*Last month I had a client who contacted me who said: I want a smaller plane. He already had a plane but he wanted another one who was smaller and consumed less for economical and environmental reasons. I did a full analysis of the fuel consumption per hour in comparison to the amount of passengers the aircraft can carry. This shows the economic performance of the aircraft while also including the customer functional necessities.*

(Interviewee #3)

This approach ensures that customers not only find the right private jet based on their preferences but also make informed decisions that promote economic and environmental stewardship.

- Information readiness

In today's fast-paced world, having access to timely and accurate information is crucial, especially in industries where information is scarce and valuable, like private business aviation. Brokers need to be able to have the best possible information available as quickly as

possible. Customers of private business aviation are known to work on a tight schedule and life by the mantra “time is money”.

*Jetcraft is cutting edge because of using different type of technology. 1st, a web application to make it easier for the sales team to use access to technology and the data. 2nd, we're also investing, as you know, in the AI, that large language model. To again lower the bar to entry to access data and analysis. We have all the systems to manage this amount and different type of data as well. (Interviewee #7)*

*Our platform Eureka allows us to directly pull up an overview of all available aircraft types on and off market with an overview of the engine hours, serial numbers, programs, last maintenance report etc. The speed in which we can get this type of information is unique in our world of brokers and takes us a step ahead of competitors. (Interviewee #3)*

By being able to deliver accurate insights on the spot, brokers gain a significant edge over their competitors, meeting the high demands of their clientele and staying ahead in a competitive market.

### 7.3.2 Marketing

- Industry efforts and developments

From innovative technological advancements to community engagements efforts, the industry is actively pursuing avenues to mitigate its environmental footprint while ensuring its continued viability. Marketing these sustainability efforts and fostering community engagement not only pave the way for a greener future but would also benefit the industry immediately. By showcasing the progress in emission reduction, such as renewable energy, recycling initiatives and actively involving the public in dialogue, stakeholders can not only bolster their environmental credentials but also create goodwill and support from communities.

*The FAA has a new website called climbing fast and its basically pro aviation explaining the importance of the aviation industry and what they all to currently in the market to become more sustainable or work together for a better environment.*

...

*I know there was a lot of talk about sustainable aviation field, but it's kind of like a plaster over part of the problem. They are looking into electric propulsion but that is certainly not in the next 10 years. Therefore it is important to engage with the public, set realistic goals and look at the present on how to tackle the current issues. Change the narrative of private aviation in a way where the public works together with the industry. Promote the technological advancements because the industry is here to stay and working against it will only slow things down in the hopes for a greener future. (Interviewee #4)*

Manufacturers play a key role in the aviation process as they exert a significant influence on the trajectory the industry takes toward sustainability. By setting ambitious targets for emission reductions and fuel efficiency improvement, manufacturers can demonstrate a proactive stance towards environmental stewardship.

*We're heavily focused on reducing the emissions at the manufacturing stage. So we're recycling water and we're using 100 percent wind energy now. We're obviously on the plains out in Wichita where it's quite breezy. So we're using wind turbines to generate electricity for all of our facilities. Our targets are to reduce carbon emissions by 50 percent by 2050 and increase fuel efficiency of our aircraft by 2 percent per year between 2020 and 2030. (Interviewee #2)*

In the pursuit of environmental sustainability, stakeholders must be critical of their own initiatives and guard against the practice of greenwashing. The practice of greenwashing not only erodes trust between business and consumer but also undermines the collective effort to foster a greener future.

*I find before we go to the public and say that we have a reason to be here we need to make sure you can look that public straight into the eyes before you open your mouth. The biggest danger within our business is that every company is on this little island now yelling, I'm green, I'm green, I'm sustainable. Just be what you say you are before you boast about it to the public. If one of these days, a journalist will find out X group is not paying one Euro on his flights and that comes in the newspaper, it will not be saying in the newspaper that X group is not paying. It will say private jets are flying around without paying any*

*money towards the environment. And you, the client that buys a ticket from airlines, you are paying for something these rich guys are not paying for. (Interviewee #1)*

- Emphasis on work-life balance

For affluent individuals and corporate executives, owning a private jet offers not only unparalleled convenience and efficiency but also reclaiming precious time for personal pursuits. By engaging in personalized outreach, like one-on-one marketing initiatives we aim to communicate the unparalleled benefits of private travel which can be focused on niche clientele such as high-performance athletes or remote retreat organizers.

*Time saving is probably the most important thing and cost saving because you need less hotel nights, you can use your time more efficiently. You can get closer to your customers because there's smaller airports. It would be a good exercise to create a marketing campaign to go into card program and one on one marketing. Visit them, communicate the advantages specially for them like sporters or remote retreats.*

...

*In my case, but that is only in my case flying as a single pilot saves you a lot of costs and gives you a lot of flexibility. You're not dependent on the crew. You can leave your aircraft somewhere without having it to be flown back to base. So I would say that saves you a lot of costs and is definitely something as a younger person with money that I would recommend, and it is an untapped market in Europe. (Interviewee #6)*

The advantages of single-pilot operations remain an underappreciated facet of this luxury travel option and could inspire jet owners not only to optimize their travel experience but also help unlock a new dimension of personal and professional fulfillment.

- Crunch the Numbers

While marketing can help highlighting the time and cost saving advantages it can also emphasize the environmental responsibility inherent in maximizing aircraft capacity. By being realistic about carbon offset programs and showcasing tangible ways to contribute, such as optimal route planning and participation in offset initiatives, travelers can be empowered to minimize their carbon footprint and enjoy cost/time savings over time. For younger buyers who can be more sensitive to the environmental impact caused by private

travel, these fact-based solutions can make them active players in optimizing the usage of private travel. Further insights can also show how big of a positive economic impact the use of private travel has both direct and indirect.

*Also communicating the importance of filling the plane. Make an emphasis on the cost per seat instead of the cost per plane. Be realistic in the carbon offset created but show what ways they can contribute and how optimal use of the private jet (full capacity, carbon offset programs, different air routes, ...) can already have an effect and diminish their impact on global emissions. (Interviewee #6)*

The decision to utilize private travel often hinges on a delicate balance between numbers-based calculations and the intangible yet valuable concept of increased productivity. This delicate dance between cost savings and the less tangible but immensely impactful gains in efficiency is exemplified in scenarios such as the one described by André Nilles.

*It's a real example that I've seen, and it was a sale. Imagine a client located in Britain, for example. His factory, his headquarters are there and he has, for example, a factory in Italy and the other in Poland. If it's in Britain, to go and see these two sites, it takes a week. If he doesn't have a plane, you see, all the six executives must take the train to go to Rennes or to go to Paris, take a plane, etc., etc. You see, to then go to Italy, for example, to Milan, but the factory is still two hours away by road, and then after that to Poland.*

...

*This is the perfect scenario for a CJ4. Take off in the morning from the UK to Italy, with six executives. Have your meetings and lunch in Italy, then take off in the afternoon and be in Poland in the early evening. Do another meeting with a dinner and fly back after dinner to the UK. So, you can imagine, instead of taking a week, it's a day. Of course, on paper, the hourly cost of your plane will always be significant, yes, but when you start aligning six executives for seven days, hotel nights, taxi expenses, lunches, dinners, etc., then, I will tell you, it starts to become interesting to own a business jet. But in the end it's the clients decision how much productivity is worth to him, and certainly with the younger segment this angle of increase in productivity needs to be put forwards more. (Interviewee #3)*

When presented with the opportunity to condense a week-long itinerary into a single day of travel, complete with multiple meetings across different locations, the allure of private jet ownership becomes undeniable.

- Engagement

As highlighted by industry experts the key to reaching the younger generation lies in leveraging channels of communication that resonate with their preference and lifestyles. From social media platforms such as TikTok and Instagram to professional networks such as LinkedIn, brokers and manufacturers are recognizing the importance of showcasing their expertise and unique value proposition. However, the interviewees remained consistent on one point stating that no matter the technological developments such as digital showrooms and social media, the goal setting remains getting a face to face with a customer. By strategically aligning with events tailored to the attention of a younger clientele such as sport events and yachting gatherings can further enhance their visibility and relevance.

*Use of social media and LinkedIn will help us brokers to form an image but also to show our expertise and way of working. Showing our access to the market and how we are different to other brokers. Demonstrating for example a spec of an aircraft they would've never found. But ultimately your goal of getting a face to face with the customer remains the ultimate number one sales tactic no matter the age group. (Interviewee #4)*

*We need to be where they are. So mostly social media, some events, you know tailored to the younger generation. So maybe invest more in all the crypto events, basically target the young and new source of wealth platforms or events. (Interviewee #7)*

Pilots share a distinctive view on flying private. Their unique perspective and firsthand interactions with passengers offer insights into catering to the preferences of younger customer segments. As emphasized by Darren, the key lies into a more personalized and interactive approach. Using social media channels such as TikTok and Instagram can present an additional avenue for engaging with travelers who may not yet be using private jets but are intrigued by the aviation industry.

*The pilots are stiff and stale, you know, I always say, come up to cockpit, and they love sitting in jump seat and seeing how the airplane works. You can't do that in a commercial airline*

*and it's things like that that makes a difference. You know, they're paying big money. Treat them the way they are. So basically, involve them more in the whole aviation world and be more one on one with them. The youngsters, they do know what the aeroplanes are, what the difference is between an Airbus, a Boeing, and Global. So, talk more about the planes they're using and make them feel more attached to it and interact with them more, basically.*

...

*We always try our best to look after the engines. We always do. Reduce thrust take-offs to extend the wear and tear in the aircraft, use less fuel. They're all things that we actively encourage. (Interviewee #9)*

By combining personalized interactions with pilots and strategic engagement on social media, the aviation industry can effectively cultivate a new generation of business travelers.

### 7.3.3 Technological advancements

- Catering the technological need

The preference and demands of clients are continuously evolving, particularly with the emergence of a new clientele exemplified by tech billionaires in their late twenties. As manufacturers and brokers, it becomes imperative to adapt to this shifting environment by prioritizing innovations that cater to the digital lifestyles and luxurious taste. From ultra-highspeed internet and apple tv streaming capabilities to state of the art espresso machines and wireless cabin control systems.

*Let's say if it's a tech billionaire who's in his late twenties, you know, he's obviously going to be wanting to see a cabin fully loaded with tech. He's going to want to see ultra high speed internet. He's going to want to stream Apple TV. He's going to want to have a video. He or she is going to want to have a video phone call, is going to have the latest cafe espresso machine on board, a media server full of the latest movies and then a wireless cabin control system that allows him to fully manage his cabin from his iPad heating, lighting, lines volume control and he's also going to want to see low cabin altitudes and low noise levels.*

(Interviewee #2)

*Internet in flight is extremely expensive for the moment. If we could have a more democratic price, I think that would be another marketing aspect that would render flights more attractive. Just to give you an idea, if you download, movies whilst you're flying in a private jet, that will cost you three or four thousand dollars.*

(Interviewee #5)

By making in-flight internet more accessible and affordable, the industry can underline the productivity argument and enhance the overall attractiveness of business aviation.

- Asset management

Technology can also redefine the ownership experience for aircraft owners. The development of apps that enable owners to track their assets in real time is one of them. This enhances the owners sense of control and oversight but also facilitates proactive decision and operational planning.

*Giving the owners the potential or the opportunity to follow their aircraft via an app. In which normally the owner was waiting until we give out every quarter of the year, the number of flying hours, what our chart of the aircraft has been doing. Nowadays there are systems in place in which the owner can see now right away, where is my aircraft? How many hours is it? Doing, what flight is it doing?*

Further developments of such apps give aircraft owners convenience and confidence in their investment, facilitating ownership in the business aviation industry.

- Blockchain incorporation

When looking into new technologies, it is difficult to ignore the transformative tool that blockchain provides. Beyond its applications in fractional ownership and alternative financing through tokenization, blockchain presents a potential compelling solution to address longstanding challenges in ownership, transaction and maintenance records. By centralizing and securing data it can offer the promise to streamline administrative complexities while enhancing transparency, efficiency and safety.

*Implementing blockchain can have a lot of effects not only in ownership but also manufacturing or maintenance records. Now everything is a separate entity while with blockchain you can put everything in one cycle. You also have public and private blockchain so for instances financial issues don't necessarily need to be for everyone to see. Overall it would reduce administrative complexities which is a pain point in many industries and as I understood for aviation as well.*

...

*Next to all the elements that blockchain brings, the biggest strength is how it can create a ecosystem of information, personal and public. Imagine linking your investment portfolio together with your company and doing your taxes all in one system. To do this you need to get all the institutions aligned. Gather investors, bolster credibility, emphasize on successful existing cases to further spread and standardize this technology. (Interviewee #8)*

Blockchain true strength lies in its capacity to create an interconnected ecosystem of information, both personal and public. However achieving this vision requires efforts to align institutions and gather investors to bolster credibility.

*It could help for sure, but we cannot control all the aspects of it because we still depend on regulations. But the real value out on this is find the money, you know, young people that may not have access to like billions and billions. But they may want to finance the plane and if they can get easier financing through crypto than through traditional lenders, then there's a real value add to this. (Interviewee #7)*

*A jet at the end of the day is a cost and if tokenization can help carry that weight whether it is on the accountant side or on the transferable side it can be useful. However, there is a lot of alternative financing already available so the competition already exists. (Interviewee #4)*

While blockchain technology holds promise for transforming various aspects of the business aviation industry, its full potential is tempered by regulatory constraints. The real value for younger individuals lies in democratizing access to financing for aircraft ownership as they may lack access to traditional lenders.

## 8. Conclusion and Future Research & Limitations

In this paper, the aim is to investigate the status of business aviation and what trends are shaping the future of the industry. Additionally, the research explores how the strategic management of these trends can capture and retain a younger customer segment. In this chapter a summary of the key findings & takeaways will be provided. Furthermore, limitations are acknowledged and future research to assist subsequent researchers overcome the challenges presented.

### 8.1 Key takeaways

#### 8.1.1 Status

The current landscape of business aviation reveals a dynamic landscape characterized by both opportunities and challenges. Despite the initial setback brought by the Covid-19 crisis, the industry has experienced a remarkable resurgence, fueled by a surge in demand from new customers and the rebound of recurring clientele, increased sales of both pre-owned and new aircraft. However, this resurgence has not been without obstacles. Supply chain disruptions, labor shortages and raw material constraints have posed significant challenges for manufacturers leading to backlogs in production and increased prices across the board. Additionally, the sector grapples with the complexities of overregulation, with stakeholders expressing concerns about paperwork, organizational demands and escalating responsibilities by regulatory authorities. On a positive note, the industry is witnessing a trend towards consolidation from brokers and operators, holding the promise of enhanced efficiency and professionalism within the sector, ultimately benefiting both operators and customers alike.

#### 8.1.2 Outlook

The interviews with industry experts revealed several significant trends that will shape the future of business aviation. The geographical distribution of the market show that Europe emerges as a growing market alongside the U.S pushed by a rise in affluence worldwide presenting opportunities. Sustainability has emerged as another key trend, which is already an important factor today. Technological advancements such as new engine designs and electrical propulsion projects reflect a concerted effort towards more sustainable aviation practices. However, while the industry acknowledges the importance of sustainability,

pragmatic considerations regarding safety standards and the conservative nature temper expectations of immediate changes in aircraft types. Thus, a dialogue needs to be created with the public to align efforts and expectations to grow at the right speed. The increasing importance of data-driven insights is reshaping the brokerage market, with stakeholders recognizing the critical role of accurate and timely information in decision making processes. Challenges such as information opacity and market fragmentation underscore the need for data-driven approaches to navigate the complexities of the business aviation market.

### 8.1.3 Strategic management of trends

Further the insights from the industry experts propose several innovative solutions that can capitalize on these trends that will shape the future of the business aviation industry and provide avenues for growth.

Among these solutions are advancements in technology that enhance ownership experience such as apps that allow aircraft owners to track their assets in real-time. By providing owners with immediate access to vital information, such as flight hours and maintenance history, it empowers them to make proactive decisions and streamline operational planning, enhancing their sense of control and oversight.

Additionally, the adaptation of data driven insights for cost calculations is highlighted as a crucial strategy for fostering long-term relationships with clients, particularly the younger demographic. By offering transparent information regarding aircraft performance, maintenance history and operating expenses trust and credibility can be established with the customer. Not only does this approach educate the clients about the nuances of aircraft ownership but also highlights the importance of professional guidance in navigating the complexities of the aviation industry. Data driven insights can also increase aircraft suitability to the preferences of the client and so increase customer satisfaction.

Looking at technological advancements, the integration of blockchain technology as an alternative financing mechanism presents a promising opportunity for democratizing access to aircraft ownership, especially for younger individuals lacking traditional access to lenders. Further blockchain does have the potential to streamline administrative process and enhance

transparency and efficiency by centralizing and securing ownership, transactions and maintenance records.

Marketing plays a vital role in shaping the narrative of the aviation industry and leveraging the insights provided by industry experts can present opportunities to address the future trends. By highlighting the industry efforts and developments in sustainability, it can showcase the progress made while also fostering community engagement and support. Moreover, by emphasizing the benefits of private travel, such as time and cost savings, as well as environmental responsibility, can appeal to younger buyers who are sensitive to the ecological footprint of their travel. Additionally, strategic engagement through social media channels and personalized outreach can help brokers and manufacturers connect with a younger demographic.

By embracing innovation, fostering collaboration and engaging with stakeholders, the business aviation industry can navigate challenges, capitalize on opportunities and pave the way for a more sustainable and prosperous future. With strategic management of trends and commitment, the industry is well-positioned to thrive in the years to come.

## 8.2 Future research

As this thesis only provides a detailed view in the world of private aviation, future research becomes increasingly evident to provide valuable insights into the challenges and opportunities that emerge. In this subsection, potential research topics are listed that can increase the comprehensive research available to improve innovation and drive progress.

*Blockchain Adoption in Business Aviation:* Investigate the feasibility and potential impact of blockchain technology in various aspects of the business aviation industry including aircraft financing, transaction transparency and maintenance record management.

*Electric Vertical Take-Off and Landing aircraft development:* Explore the factors influencing the adoption of eVTOL aircraft for business and personal travel. Examine how the technological advancements and regulatory framework will shape the evolution of eVTOL and its integration into the existing aviation ecosystem.

*Customer Experience and Service Innovation:* Explore the innovative approaches to enhance the customer experience and service delivery. Identify opportunities for service differentiation, personalization and value-added offerings to meet the evolving customer needs.

*Data-Driven Decision making in Business Aviation:* Examine the use of data analytics and predictive modeling techniques to inform strategic decision-making processes within the business aviation industry. Assess the availability, quality and usability of data sources for optimizing fleet operations, route planning, pricing strategies and customer service delivery.

### 8.3 Limitations

Various limitations may impact the weight of the findings. These stem from the nature of the private business aviation sector and the challenges associated with analyzing the received data.

*Limited Data Availability:* One of the main challenges for studying private aviation is the limited availability of data. The word private in private aviation already indicates that this industry operates in a discreet and exclusive manner, with an emphasis on client confidentiality. Thus, there is a limit of data accessible to researchers and analysts. The nature of information within the industry poses constraints on the depth and width of the research.

*Privacy Concerns:* The private aviation sector is characterized by a higher sense of privacy and confidentiality. High-net-worth individuals and corporations involved in private aviation prefer to keep their travel details, preferences, and investment choices confidential. Researchers must act carefully to respect privacy concerns of the stakeholders.

*Limited Players in the Niche Market:* Private aviation is a niche market, and the number of active players is relatively limited compared to other industries. This limits the ability to obtain diverse perspectives and comprehensive data from intermediaries involved in transactions. The study's findings is biased by the limited number of participants, potentially limiting generalizability of the results.

*Dynamic and Evolving Nature of the Industry:* The private aviation sector is characterized by rapid technological advancements, changing regulations, and evolving market dynamics. Forecasting future trends in such a dynamic environment introduces uncertainties. The study relies on the assumption that current trends will continue, but unexpected shifts in the industry landscape may impact the accuracy and applicability of predictions.

Despite these limitations, this thesis endeavored to provide valuable insights into the anticipated trends shaping the future of private aviation. Researchers and stakeholders should interpret the findings within the context of these constraints. Recognizing limitations, the research methodology incorporated a proactive approach. To tackle the challenges the in-depth expert interviews played a crucial role, supplementing the quantitative analysis. These firsthand accounts provided a qualitative dimension and enhanced the robustness of the study.

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## **Appendix**

### **Interview 1 – Luc Olivier (Luxaviation)**

#### **1-Can you please introduce yourself and your background in the business aviation industry?**

My name is Luc and I currently responsible for aircraft sales and client relations here within the Lux Aviation Group Belgium. My history goes back about 35 years in the same company when we were still called Sky Service. That means I joined the company when I was young. 20-year-old starting with an entrepreneur who just started up business aviation entity. The man was Bart Foucault. I will spare you the details of the history, but it ended up that we bought the largest business aircraft operator in Belgium, which was then called Abelag. We bought that company, and we introduced a little bit, how should I say, entrepreneurship in a existing company that was going to sleep a little bit. We're talking now in the years 2000, 2005. And that company then on his term was sold to Lux Aviation Group, and in that capacity, I've exactly done always the same job. That means I'm looking for people that want to buy an aircraft, and preferably after they bought it, they would like us to operate it. So in that sense I'm a little bit a special case in that sales of an aircraft is not the only thing we're looking at. We're also looking at a long-term relationship.

#### **2-As the Director of Aircraft Management and Sales, how do you perceive the current landscape for aircraft management services, particularly in the context of business aviation?**

I mean, we are in buoyant times. It's a market that is in full movement. Came out of what we all know now is the covid situation, which gave an enormous boost to business aviation an enormous amount of extra aircraft sales to people who have never been introduced to business aviation before, and we are now slowly but surely, I think, going back to what I would call a more normal situation in which we still have a growth model. But not at the exponential rate as we've known it sometimes ago. It is now, I think, a better time to find clients and to establish a relationship than we had about a one and a half year ago. I never find it good to buy an aircraft at the peak of the market, you buy it down, because you actually need it. But if you're able to wait a little bit, it's better to buy in what I call normal times, because then you can find a normal relationship. At normal pricing levels and with normal requirements. So at the moment, I think we're in a in a more quiet waters, which now I think in the future will result into, a little bit of cleanup of the market. I think we've seen a lot of new operators emerging a lot of new ideas emerging with the market, which was lacking aircraft, lacking new aircraft, lacking secondhand aircraft, and I think slowly but surely we are now getting a little bit better, especially now with the elections in the United States coming up. I think we will be going now to what I would call a normal playing field to buy secondhand aircraft. That's the situation.

#### **3-What unique challenges and opportunities do you see in the aircraft management sector at present?**

For my sector again, we go through turbulent times because our sector is in an attack from what I would call the, the environment discussion.

There are some opportunities, if you can give a solution to that question. A lot of new clients wanting to buy an aircraft ask me the question: what about the environment? And what about

the sustainability? So even though it's not one of my major topics, it is something we need to start addressing a little bit more.

So on that on that on that point, I think there's an opportunity for companies who are starting to embrace that problem and who are starting to find solution creative solutions. Not dreaming that we're going to be flying within five years with an electric business jet because I personally think that is not going to happen, but we need to find a solution to that question of the environment with the existing fleet and the new aircraft that are joining. And on that point, I think I look at the young people within our company, they have to come up with bright ideas to do that.

#### **4-Can you provide insights into the current sales strategy your team is employing to meet the needs of clients?**

Well, at the moment, the way I mean, the strategy is quite simple. It's to grow our fleet with quality clients and with quality clients. I mean, one of the hardest things nowadays is to find the right people, the right people in your company. So our vision is to deliver a perfect service. But for that, we also need the right kind of clients. And that is our strategy. Our strategy is to, to build long term relationships with new clients and existing clients. I look at the relationship with your father, which you can see. Was an extremely long term relationship, and that is what we are looking for. We're not looking for short term relationships which result in one or two years because every relationship requires an investment from the client, but also an investment from our part. So that that is our strategy slowly, but surely continuing or growth, but always keeping profitability and serviceability at the highest level.

#### **5-Can you share examples of successful client engagements or instances where your team has exceeded client expectations in aircraft management?**

The extra step we take is, I can give you plenty of examples of clients, in which we've, I think, exceeded and with exceeding, I mean, first of all, making sure that the expectations of the clients are realistic, because if you have a client who thinks he's going to buy a second hand aircraft and he's going to fly it and he thinks it's going to cost him almost nothing, that's not a realistic approach.

Another unrealistic approach is saying to a client, buy an aircraft, we'll operate it for you, you'll be making money on it. That's not a realistic approach. So our approach is to be to be realistic from the beginning to promise to not over exceed on our promise. But for that, you need to have the right the right level of promises at the start.

And I think that is the best thing we can do. One nice example is the fact that we have many clients in the company who started off 20, 25 years ago with a smaller aircraft, which are still in the company with the larger aircraft, I think that is proof of the fact that we have the right strategy because you know, as well as I, that it is very difficult in our business to keep a client in the company always happy because an aircraft is a technical thing. It can break down. If you buy a secondhand aircraft, you never know 100 percent how the life expectancy of that aircraft is going to evolve and a new word, which is rises everywhere in our business is the word of corrosion. So if you buy a secondhand aircraft and after five years, it goes into an inspection and there's lots of corrosion that costs money.

So it's extremely important that you nourish and that you tutor your clients to the right expectations. And that is I think one of the main problems which is existing in our business.

There are too many people promising the world to clients. I was just talking to a client about two months ago who bought the second hand citation 10. He thought he bought the deal of the century until the aircraft went into maintenance, and it's still in maintenance, and he's now looking at the bill nearing about one sixth of the price he paid for the aircraft, and he's angry. But again, the same thing. Somebody promised a lot of things to this client and he thinks he's got a bad deal, but if you look at it at what he paid for the aircraft at the age of the aircraft at where the aircraft is in, I personally find his bill to be normal. But again, he did not expect that, and that's the problem with some of these clients putting in front of them the right expectation.

## **6-How is your firm adapting to and capitalizing on technological advancements within the aviation sector?**

The most advancements we are making is in the digital area. That means paperless cockpits, that means also giving the owners the potential or the opportunity to follow their aircraft via an app. In which normally the owner was waiting until we give out every quarter of the year, the number of flying hours, what our chart of the aircraft has been doing. Nowadays there are systems in place in which the owner can see now right away, where is my aircraft? How many hours is it doing? what flight is it doing? We have of course the advancement on the environment. We are much busier with this environment than we were about 20 years ago. We are paying offset for all the flights we do. So, on that, on that part, there's a big advancement.

## **7-Can you share any challenges or pain points you've encountered in the current business aviation landscape?**

The problem with the OEMs. And now perhaps a point is the quality of work delivered by the OEM. I noticed that in the last 10 years, the build quality of a lot of aircraft has gone down. I see that the OEMs also struggle sometimes to find the right people in their companies to build these aircraft, and that means we have, at the moment, sometimes a brand new aircraft with teething little problems that do not get solved. There's supply chain issues with most of the OEMs. For example it has no problem delivering the aircraft, but then you're going to be waiting for one year or 1,5 years for some small parts, which have to do with the comfort of the passengers. Another problem I see in our business is the problem with spare parts, which are also a problem.

I mean, I see that the constructors are already struggling sometimes to get the parts delivered to the factory to build the aircraft, let alone to have these parts delivered. So their warehouses are fully stocked with enough parts to get these aircraft. One, there is an AOG online. And next to that, we also have a problem on the maintenance side, the MROs where there's more and more a lack of capacity for the maintenance of certain aircraft and that, that can relate into when you have an AOG on a brand new aircraft.

You used to have an immediate action on your aircraft, you're now stuck in a queue and you've got to wait a week before they can take action on your aircraft. And I'll give you another example engines everybody knows the engine programs where you have a contract in which when you have an engine problem, you can have rental engines.

There's a shortage of rental engines on the world. Its very important that if you buy a second hand aircraft that you have a look, not only at how nice and how good it is, but how is the situation on spare parts? How is the situation on rental engines for that aircraft? Because you can buy, for instance, a second hand seven X.

If you have on one of these three engines an issue, which require you to have a rental engine, you might be waiting for 11 months before a rental engine is delivered to you. So then you're sitting there with an asset of 20, 30 million and you can't, you can't find because there's no rental engine on the market.

So these are small things which I find that if you're consulting a company like ours we, we need to go through with you so that you really understand what the market situation is, and again, that you have the right expectation for the product you're buying.

The titanium used in a lot of the constructions, the raw materials came from Russia. And a lot of companies decided now "We no longer take these products from Russia". We take the titanium from another part of the world. But you know, as well as I did. Aviation is slow to accept changes in those things because everything needs to be certified.

So that means that these these suppliers now have to recertify it. This the materials from which they are building their engine that takes time that makes that there's a dip in the amount of what they can produce, and that is now creating the backlog. And I think we will be going through this situation for another year to two years until we have a little bit more normality in the market

### **8-Reaching younger customers is a growing concern. What strategies do you think will be most effective in attracting and retaining this demographic?**

I do, however, think that by having young people in the company here, I hope we are able to touch to the new young clients as you talk to them about it. But if I look at our own clientele we do have a younger clientele than we used to have, but not yet. In in in the how should I say it?

Not yet. Like I hear the stories from the United States where you have entrepreneurs of 25, 29 with the wealth the same now as somebody here from 74 that we do not yet have here. But how are we tapping into them? Yeah, by using their channels of communication, of course. And I have to admit they are different than ours.

So I made the first mistake about 15 years ago. I remember a young man coming to my office to talk about a platform on the internet on which he told me that it was going to be the way forward in a way where people were booking charter flights and business flights. At that moment, I told him, I said, you're crazy.

Nobody's going to go through the Internet to book a private jet or to charter a challenger. Boy, was I wrong, huh? This is now called Avino, that platform. So I do think in the future, the way we have to approach our clients. Might change. How that's going to change. I'll be honest to you. I really have no clue how that's going to happen.

### **9-Are there specific features or services you believe would be particularly appealing to the younger demographic within the context of private aviation?**

To be honest, the younger generation likes traveling. They want to see the world. They want to be, they want to be in London today and tomorrow they want to be in New York. That is absolutely possible in the world we have today.

Again, to be honest, traveling now is there's no fun in traveling. And if you've got to go to Brussels, take the scheduled flight to New York, you need two hours to go through all security, whatever. So that is, I mean, in the older days, business aviation was already a comfort to fly, but now it's become an even bigger comfort.

And not only on the fact that we have nice big seats and that you're sitting alone in the aircraft, but just the hassle free way of traveling. I'll go to Brussels National where we have an FBO and from the car to the entrance of your aircraft. It takes about 12 minutes. That is something with all nobody can change. And that is an extremely big comfort. And if you want to do London, New York in one day. That can only be done in a private aircraft. You can't do that on a scheduled airline. You will need already half a day just to queue to get on board of the aircraft where you have to do the travel. So that is something I think which is most appealing to the younger people. Wealthy younger people is that we will give them something or business aviation will give them something which nobody else can do. You can sit in first class Emirates, but the time to get to the first class seat takes a while. You can sit in the best business class from Delta airlines in the United States, but it's not going to beat getting on board of a private aircraft nearest to your destination than the large airport where you have to go to and flying again nearer to your destination. So even though the younger generation is now looking at the entire world, if you want to travel the entire world, we're more needed than ever before. So I'm looking very positive towards the future, because if you look at the figures that all the OEMs are predicting in the amount of business jet that's going to be around by 2030 and 2050, it is amazing. Indeed. So I'm pretty, I'm pretty confident that our business or segment is there to to grow and to to evolve. And I personally think there will be two business types. There will be again, complete luxury affair, and there will be the, the, the younger entrepreneur, wealthy entrepreneur who, who likes the flexibility of it. There's not always only looking at the the golden seats and expensive catering, but it's looking at the, the fact that he can hop on board and be be whatever he wants to be in a few minutes of time, I always compare and I will close with that. I always compare a business jet as when you became 18 years old and you got your driver's license and you're free to drive around with the car, the liberty you feel at that moment, the fact that you can drive to Brussels to Amsterdam, that's the same liberty you have with the business aircraft. The world is your oyster at that moment.

#### **10- Looking ahead, what trends do you anticipate will have a major impact on business aviation in the next 5-10 years?**

Well, we must have a good look at what these smaller electrical aircrafts are going to create. That is a question I have, because that might create some small competition in our segment, because if, for instance Brussels National Airport becomes easily connectable for somebody living in Bruges, they say in 15 minutes he can go from Bruges to Brussels Airport. That might have an impact on our on our business. And I mean, why do you take a private aircraft now from Kortrijk? Because you don't want to have the hassle to go to Brussels National. You don't want to lose the time to stand in a queue. But these eVTOL aircraft might create a certain easy connection with the main airports that might have an impact. What will have an impact, I hope, is the new engine designs coming with less impact on the environment, on the noise levels but for the rest not sure. I was sitting in a panel discussion about the future and people were already telling that we are going to be flying electric in five years' time. But again, aviation is a conservative business, especially on the point of safety. So, I do not see us flying in five years' time with electric engines. That's not going to happen. So in the future, I think business aviation is going to grow, but I think that the types of aircraft we see now are going to be around for the decades to come. I mean aviation is evolving, but not at the pace as a car. That's my point of view.

## **11-How will the industry address the sustainability trend and what initiatives are expected to reduce the carbon footprint of business aviation?**

The client himself on board also has a responsibility. It's like the guy going to the protests of the Green party, but he's going there in his 25-year-old diesel car because he refuses to buy a new car. Is he done good or bad for the environment? That's a question we have to ask ourselves. Just, just to put it into perspective. But again, I'm not blaming the charter broker. I'm not blaming the operator in Poland or in Eastern European. I'm not blaming the client. I'm just saying we all sit here and. I mean, the client knows that a brand new CG4 is a big capital. So, if I rent that out we need to receive something for that. But still he chooses to pick the East European aircraft for 600 euros less on that flight. It's interesting to do the exercise as well, to see whether like to give more transparency in terms of sustainability, in terms of emission to also tell that to the client, with a marker, for example, it could be also a good, good marketing perspective in that term. Also, again in our business in Belgium, for instance, there are three operators in Belgium operating business aircraft. We do not make a lot of fuss externally about it. Sustainability. We are very discreet in our in our way of working flying group. My competition is making a lot of fuss about how green they are and the fact that they've ordered electrical aircraft and that their roofs are full of solar panel and the other that they are using electrical aircraft for pilot trainings. But both operators forget to say that they're paying zero euros on the emission they do on their fleet while we are paying. Every flight we do, we pay offset CO2 because that is something we have in our DNA. We want to be transparent. That means I want to be able to sit in a panel and, and defend my business, my product. But before you cast the first stone, make sure you are without sin yourself. And that's what I mean in our own business. Every operator should look into himself and say, am I doing everything I can to be to be transparent towards the society I'm living in? And I think since we are paying offset, just like TUI, just like SNBrussels Airlines, because we think it is something we have to be accepted by the people. And then I've got two competitors which aren't paying it. Zero euros. That's also something in our business. I find before we go to the public and say that we have a reason to be here. Make sure you can look that public straight into the eyes before you talk. So within our business, there's still a lot of regularity things to be organized.

And the biggest danger within our business is that every company is on this little island and yelling, I'm green, I'm green, I'm sustainable. Just be, be what you say you are, because that will reflect, you know, if one of these days, a journalist will find out X is not paying one Euro offset on his flights and that comes in the newspaper. It will not be saying in the newspaper that X is not paying. It will say private jets are flying around without any money to be paid to the environment. And you, the client that buying a ticket from two airlines, you are paying for that. And these rich guys are not paying for that. And that is what I mean. That's what I keep telling when we are sitting together with the competition. I say, before you tell everybody that you're green and sustainable, shut up, be quiet because you're not. That, you know, within our business, again, that this is a discussion we can do within our business. We don't have to do that and I would never go to a newspaper and say, Hey, you want to know something? Fine, because that's going to reflect bad on the entire business, but within our business, I think we need to be all on the same line before we can move to the general public and say that we have a reason to be here. And again, for new clients, new younger entrepreneurs, I think they are, they are sensitive to that.

## **12-How do you see a phenomenon such as RWA financing (Real World Asset) capture the younger segment and making it more accessible for other segments.**

It sounds fantastic, that what you mean is that an aircraft share would be easier transferable than it is now. Now it's a big hassle. Would that help the fractional ownership business that would enormously have the fractional ownership business, but here we are blocked. By the financing companies themselves, which I find to be the biggest conservative people within our business.

I mean financing an aircraft in COVID was a huge problem. I remember we financed a seven X and at the start of COVID and that meant six weeks before the start of COVID the bank had no problem in that aircraft and suddenly COVID comes along and the bank had a lot, a lot of problems with that aircraft. So if how these people are looking at crypto financing they are going to be the ones deciding if we can use that or not, not me. I have no problem in using crypto financing because I'm not the owner of all the aircraft we operate, we operate on behalf of the owners. So, it depends on the other party, if they are open to accept that kind of financing.

Yes or no, but for sure that the existing aircraft financing companies, I don't know if I could talk to them about Bitcoins. I don't think they're very open to that. That's my I find the financing extremely conservative.

## **Interview 2 – Ashley Namihas (Textron Aviation)**

### **1-Can you please introduce yourself and your background in the business aviation industry?**

Okay, so I've been in the aviation industry for nearly 20 years now. My first job coming out of university was actually working at an aircraft charter brokerage that was involved with buying and selling charter flights, private jet flights. Back in those days, our primary customers was banks doing roadshows, raising funds. They were property companies, expanding their operations, oil and gas companies, private equity, looking for investments. And the customer profile has definitely changed in Europe since then, which we can come on to. But after working at a charter brokerage called Bizzjet, I went to work for a company called Tag who have a big presence in Europe. I was looking after aircraft management and I was the sales director for the Aircraft Charter and Management Services at HAG, and then in 2013, I joined with Cessna who then pretty quickly acquired Hawker Beechcraft and formulated a new entity called Textron Aviation, and which basically comprised of Cessna, Hawker, and Beechcraft. So I've been there ever since. I look after sales of our jets, which today mean the Citation product line, of which there are six. And I cover a fairly large territory of Northern Europe.

### **2-From your perspective as the Director of Sales at Cessna Aviation, how do you view the current state of the business aviation market? Do you see a difference between continents?**

So we're basically seeing record low levels of inventory available on the pre owned market. So as the demand rapidly increased in the first year, halfway through the first year of COVID. Around October 2020, when things started really taking off for the general aviation sector, we noticed that the demand for aircraft increased very quickly. Supply of pre owned aircraft became exhausted within a few months, and we started in around February 2022, started really seeing an increase in orders for new airplanes. That continued right through at the same pace for a good 18, well, a good 12. a good 12 to 18 months and backlogs now on new

aircraft orders at Textron. Right across the range from Piston, Turboprop and the Jets, we build 20 aeroplanes. In fact, sorry, 18 aeroplanes. We are sold out on those to roughly 2025, 2026, and in some cases 2027 depending on what you're exactly looking for. So in previous years, we may have increased our level of supply, but because of supply chain constraints, a little bit to do with raw materials, but predominantly to do with manpower and labor. A lot of people went away from furlough. They never wanted to go back to the factories. So tier one, tier two vendors spars, landing gear assemblies, they weren't there. So we have a supply chain challenge, which affected the entire industry, so we couldn't ramp up production to meet demand. So we quickly started selling out further and further pricing of aircraft increased. Both new and pre owned in line with inflation and the cost of those parts going up and in line with the demand. So the trend that we're seeing at the moment is a return to a more rational level where supply and demand are slightly more in check. We're seeing about 5 percent now of citations under 10 years old available for sale. Which is where we like to see it any more than 11, 12, 13 percent we start getting into a buyer's market and there's negative impacts on value and residual value and anything in the sort of 0.1 to 3 percent range, is just not dynamic enough. There's just not enough happening. It's sticky. So we're kind of in a good place right now. And we are, you know, we're seeing financial interest rates maybe stabilizing and economic. I think headwinds are still out there as a concern, but hopefully in our key market, which is the USA, which is about 65 to 70%, you know, those, those concerns are less severe than they are in other parts of the world.

### **3-How does Cessna position itself in the market, and what strategies are in place to navigate the competitive landscape?**

We've got two. If you, if you kind of break it down to its most basic level, we've got two user types. We've got owner pilots who are wealthy, people that can afford to own and fly their own airplane, and we've got corporate. Customers and military customers where the passengers are in the back for the owner pilots. It's the dream of flight. It's, you know, it's the passion. It's, it's living the dream. It's flying an aircraft. That's incredibly capable beautiful flight deck, amazing avionics that we continue to update and invest in and then marketing ourselves. to that demographic talking about our heritage, how we're a company of pilots for pilots and how we pioneered flights and continue improving. For the corporate accounts the military customers, the flight departments, the, you know, the ultra high net worth individuals that are sitting in the back and having professional pilots fly them, we are all about productivity, reliability, security, performance and, and the economic business case about generating charter yield versus lower, you know, versus cost of operation and why we're good at generating good yields, why our aircraft can be sold at a high price in charter, and they don't cost a lot to operate support and reliability from the network that we have, making sure that the aircraft isn't on the ground and is supported. So I think the way we don't position ourselves, you know, we want to avoid this notion of luxury, you know, that that is potentially a contentious word these days, because luxury talks about it being not necessary. It talks about it being something that people do in spite of the climate crisis. Whereas what we want to do is leverage the fact that the people, the reason people are buying these airplanes is to be as productive as possible so they can generate economic advantage and that they can pass that on to their shareholders and their employees and you promote general wealth creation which benefits everybody. So that's the way we try and position ourselves to two separate user groups

### **4-Can you provide insights into the current sales strategy your team is employing to meet the needs of clients?**

We've got a number of things really on this point. You know new technology in many ways is going to impact the, the flight deck and the capability of the garment and the pollens or whatever avionics we're using but more broadly. We've recently acquired a company called Pipistrel, who have the world's first certified electric airplane. The velis Trainer, the velis Electro. And we acquired that company because we liked what they were doing. We liked their ideas and their products, and e aviation, textron's new specialists. The electric aviation business is heavily focused on developing better and more capable battery technology including not just straight and level, you know, rotor powered flight, but also Electric vertical takeoff and landing EV toll as well. And of course, we're constantly trying to improve the efficiency of our regular traditional engines. So we've pioneered with GE, the catalyst engine, which is designed to save fuel. Because fuel economy, emissions and electric flight is, is really the technological advancements that I think are going to have the biggest impact on our sector. Certainly that's what most people want to be asking for. All the other stuff is a given, you know ensuring that the avionics update and you've got more and more technology, wireless functionality, uploading flight plans, all that stuff that comes naturally, but it's the, it's the the technology around.

**5-Can you share any challenges or pain points you've encountered in the current business aviation landscape?**

The whole environmental protester situation in Europe, which hasn't, you know, by and large hasn't really impacted America yet, maybe it's coming. Maybe they just have a different culture there where let's say there's maybe perhaps less politics involved, but certainly in Europe, this idea of wealthy people flying on private jets is easily conflated with, you know, the environmental argument and you can very easily say, oh, let's just ban it because it's bad. But you're also kind of saying let's ban it because we don't want wealthy people flying private airplanes and that does that kind of feature in Europe, maybe a bit more than it does in in the US, but in response to that, you know, we've developed carbon offset programs. We're rapidly helping to enhance the availability of sustainable aviation fuel, SAF, so we have a fuel farm in our factories now, and we're giving customers a tank of SAF on every delivery and also we're part of the EGLE campaign in the US, which is a campaign to eradicate the use of leaded fuels for, you know, AFGAS for piston aircraft, piston operations. So, you know, having the right answers and strategies around sustainability is probably the most pressing and urgent challenge that we face as a business.

**6-Are there specific features or services you believe would be particularly appealing to the younger demographic within the context of private aviation?**

It depends on the customer. So if it's a, you know, let's say if it's a tech billionaire who's in his late twenties, you know, he's obviously going to be wanting to see a cabin fully loaded with tech. He's going to want to see ultra high speed internet. He's going to want to stream Apple TV. He's going to want to have a video. He or she is going to want to have a video phone call, is going to have the latest cafe espresso machine on board a media server full of the latest movies and then a wireless cabin control system that allows him to fully manage his cabin from his iPad heating, lighting, lines volume control and he's also going to want to see low cabin altitudes and low noise levels.

So those are factors that are being asked for by the younger audience. And then on the owner pilot side, we're getting a lot of guys, again, who've done very well in business and are

looking into their, in their late twenties, early thirties at buying their first plane. They might've trained in a 172.

They might've then moved into a a Baron or a Bonanza. And now they're looking at their first. High performance turboprop. Well, you know, we will, we'll be offering them a Cessna Denali with auto throttles, the button you press to auto land. If the pilot becomes incapacitated, a really important feature these days, and of course, making sure that the, the avionics are, you know, ultra high definition that you've got.

A camera on board to see in the dark, thermal imaging cameras, that sort of stuff that we're putting on board. So just, you know if it's available and it makes sense to put it on and we can do so at a sensible price, then we'll put it on the aircraft.

### **7-Looking ahead, what trends do you anticipate will have a major impact on business aviation in the next 5-10 years?**

Think that we're seeing countries around the world start to think about how they can extract more tax revenue out of the sector. So, you know, if you look at Norway, for example, there are, and again, much of these are politically led initiatives to demonstrate to the voting public in that country that the government of today is focused on the environment or redistributing wealth or whatever it might be, but certainly in Norway, for example, there are a new taxes that a private jet is going to be taxed heavily on an annual basis along with other assets. The bad thing is these people just leave the country and go and spend their wealth elsewhere. So I think taxation and politics, the optics and how governments respond to pressure from their voting publics. I think that's going to increasingly be an issue for private aviation. So we've got to continue to get our messaging around productivity, security, reliability and safety. Not just get the messaging right, but communicate it in the right channels and through the right media. I think noise and emissions at airports is going to be an increasing issue. So noise abatement. And movement restrictions. We're seeing it at Farnborough right now, where they're trying to extend the opening hours at the weekend. They're trying to get more and more movements. They've got a planning application in. This is London's busiest private jet airport with about 40 percent market share, but they are having fierce backlash from the residents who don't want it. So I think, you know, I think that is also a big area that is going to cause an issue. And then finally there are sort of regulatory and pilot training issues and insurance issues that are going to affect again, not necessarily the big guy, you know, the corporate customers, but the owner pilots, they may just decide that if their insurance premium is 150, 000 a year to fly single pilot. They might just not bother to fly anymore. So yeah, there are challenges coming at us from all directions. And we just have to make sure that we're figuring out solutions and just making sure that the ownership experience for our customers remains. You know, what it should be, how they dreamed it should be, you know, not overly bureaucratic and complex and onerous, because then it stops being fun.

### **8-From a brokerage perspective: what strategic initiatives or innovations do you anticipate will drive success for jet brokerage firms in the coming years?**

There are some stats that I can send you on what we're doing for sustainability. So, we're heavily focused on reducing the emissions at the manufacturing stage. We're recycling water. We're using 100 percent wind energy now. We're obviously on the plains out in Wichita. It's quite breezy. So we're using wind turbines to generate electricity for all of our facilities. So, our targets is to reduce carbon emissions by 50 percent by 2050 create carbon neutral growth from 2020 and beyond. And increased fuel efficiency of our aircraft by 2 percent per year between 2020 and 2030.

**9-How will the industry address the sustainability trend and what initiatives are expected to reduce the carbon footprint of business aviation?**

I think we have a corporate responsibility to do our bit. That's certainly part of it, and whether anyone listens or not, that's beside the point. But we also do have an important obligation to you know, compete and be commercially attractive and part of that commercial appeal is, you know, when you compare us to our competitors, you know, what are petrol and aviation doing that the others are not now. We're all doing something, but we do have carbon emission offset programs like the pro advantage. You just pay by the hour to offset. The offsetting of the fuel emissions that's an important one.

**10-How will the industry navigate regulatory approvals for innovative aircraft and sustainable fuels, and what are the potential timeframes involved?**

I think that this is coming. I think that there are an awful lot of eVTOL platforms that have been ordered, let's say, on refundable deposits to demonstrate to shareholders and customers that companies are buying them because it's part of their plan to reduce emissions. I don't think all of these will come to market. I think many of them will not come to market. I think many of these orders will not happen. I think there will be a core group of which I hope we are one who will be bringing products to market who have products in advanced development, but you need billions of dollars to certify these aircraft. And I think a lot of the problem is that investors will run out of patience and possibly companies will run out of money before they even get over the certification line. And if they do get over the certification line, they've got to hope through perhaps other investment and through lobbying that the infrastructure is there. Not just the physical infrastructure to charge and to handle, but the regulatory infrastructure is there to govern effectively how these aircraft are going to be integrated into our society. So there are lots of questions and obstacles to overcome there, all of which are going to cost money. But the future is going to involve electric, unmanned flying aircraft whether it's the passenger transport or cargo, and I think the timescales are not as close as people think. I think we're still looking at a good 10-year horizon. Not because of the physical machines themselves, but the regulation and the infrastructure needed around them.

We're already having success with the Velis trainer. You know, it's, it's got a one-hour endurance, it goes up, it flies around, it comes back down again. People are training on zero emission electric aircraft now. So yeah, I think there are multiple different issue there.

**Interview 3 – André Nillès (Jetcraft group - Ex Bombardier)**

**1-Can you please introduce yourself and your background in the business aviation industry?**

I started at Eurocopter in 1989 that was my introduction into the aviation industry. After spending ten years at Eurocopter in various parts of the world developing sales I moved to Bombardier in 2001 where I stayed until 2013. Then I got convinced by my previous boss at Bombardier to come join his company called Jetcraft where I buy and sell and continue to sell planes with him.

**2-From your perspective as the Director of Sales at Bombardier, how do you view the current state of the business aviation market? Do you see a difference between continents?**

We are worldwide, you see, we also have offices all over the world, as you know. And on this, as we sell/buy about a hundred planes per year, it gives a good indication, statistically, of the state of the global business aviation. You see, a bit like the manufacturers. Today, the first business aviation market remains for both the manufacturers and for Jet Craft still the United States. Today about sixty percent of sales go to the United States, for example out of a hundred planes, sixty planes go there. On the other hand, what happens is that it's not necessarily that we take them from the United States to sell them in the United States. Obviously, okay? So, for example, a lot of planes that we take in Asia or in Europe today, we sell them in the United States. But when you look at it, these are cycles. What's important is that business aviation, like many other businesses, are also cyclical, and there have been cycles. For example, a decade ago, Europe was even stronger than the United States at times, even in 2007, 2008, we sold more in Europe than in the United States, so there are really cycles, but it's a point today.

So yes, to answer your questions, absolutely, there are strong differences between the areas today. And it has always been. The big advantage of Jet Craft compared to manufacturers. It's a big advantage. Like manufacturers, we are global but when there are cycles, you see, we just need to be in the transaction. What happens? For example, if the market, collapses in the United States, the American owners will want to sell their planes, and who will they turn to? Well, they will turn to people like us, brokers, to sell their planes elsewhere, whether it's in the Middle East, in Asia, and so on, you see. Whereas if you are a manufacturer and the aviation market collapses, well, you don't deliver much, right? You don't sell much. For us, if the market collapses in one place or another, the first thing that owners will do is sell their boat, sell their plane, etc., so they must turn to people like us. That's the big advantage we have as brokers compared to being a manufacturer, you see, that's really the difference. It's a different job, actually! And being with the manufacturer or being like us, a salesperson, it's very different. The biggest business aviation market is the United States. The second is Europe, and the third is Asia.

The market is very strong indeed. the prices of used planes were quite high.

Today, there are more and more planes coming to the market, used planes that are coming to the market. What happens is that prices are starting to drop in all segments but there are still a lot of uncertainties in the world at the moment.

And also, in the same way, the American market is starting to, to be less strong. Last year, we sold quite a few planes in Europe as well.

Europe is nibbling a little more on the American market. So, you see, it's actually what I was saying too. It's a cyclical thing. The American market always remains number one, but it's starting to decline a little bit. I'll tell you why the American market is also declining. It's because over the past years, especially under the Trump administration, before the business aviation market in the United States benefited from tax advantages. You could even say, when you bought a business plane, you could even depreciate it in one year.

Imagine? Oh, yes, in one year, so what happened is that there were quite a few companies that, for example, had very strong figures in the year, and precisely wanted to include a plane in their balance sheet before the 31st of December.

To be able to depreciate it in one year is something we don't have in Europe, we just don't have that in Europe. You see, so now, on the other hand, this very advantageous tax treatment is gradually, well, I would say, reduced? So, there's also a phenomenon that makes the U.S. market absorb a little fewer plane than before. At Jetcraft, we produce, and it's becoming the reference, a document that is extremely precise. On the ten years, the evolution of the market for the next ten years. That becomes a reference in the industry.

### **3-How does Bombardier position itself in the market, and what strategies are in place to navigate the competitive landscape?**

Talking about Bombardier, I want to talk to you about Bombardier, but especially about Jetcraft as well. I will talk less about Bombardier since I haven't been with Bombardier for ten years now, but I can still tell you about it. Today, for example, it is clear that today, well, back when I was with Bombardier about ten years ago, Bombardier was number one. It was the top business jet manufacturer in the world in terms of value, but today, it's no longer the case; Gulfstream is far ahead now in value and in revenue. Because, for example, Cessna, which also produces a lot of business jets, as you know since you have one, these are cheaper planes, and they produce more in terms of volume. Cessna has always been number one in volume, but in value, there was always competition between Bombardier and Gulfstream. Okay, now Gulfstream has surpassed Bombardier. You know that Bombardier had some issues, quite a bit of cash, strategy issues, and so on. About a decade ago, and even five years ago, they were almost ready to file for bankruptcy. It was very complicated for them, and they had to sell as many assets as possible. Bombardier had to sell trains, commercial planes, and focus only on business aviation because if they hadn't done that, Bombardier wouldn't exist today. And you, because they had a lot of cash that were absorbed by their commercial plane, the C Series. It had a lot of issues, significant delays, and absorbed all the group's cash. You know, about ten years ago, and even five years ago, they were almost ready to file for bankruptcy.

It was very complicated for them, and they had to sell as many assets as possible. Bombardier had to sell trains, commercial planes, and focus only on business aviation because if they hadn't done that, Bombardier wouldn't exist today.

On the other hand, to get back to your question, the strengths of the manufacturers, etc. Today, I would say that Bombardier, now Bombardier, if you want, they only have business aviation left. Okay, Bombardier is doing a bit better now because they stopped this hemorrhage. However, Bombardier has a lot of competition, especially in the global series domain. On the other hand, the Challenger part is starting to age a bit, but today they just don't have the resources to reinvest in the Challenger line with a completely new plane. So, there's a plane that works very well, the 6500 and the 7500, they are doing well. And today, the manufacturer that is by far the strongest is Gulfstream. Why? Because not only do they have cash, they have a lot of cash, availability, and they have managed over the last ten years without losing much cash. They have managed to rejuvenate and have extremely performant products on the market. So today, by far, Gulfstream is doing the best. And on top of that, they are number one. Today, they are number one, very strong in value again, right. And Embraer is doing well, you see, they sell quite a bit. And Dassault, not so much, but they have spent a lot of time improving their products with the 6X and later the 10X. The 6X is just being delivered.

So if you want, it took a lot, it's a magnificent plane, it's a fabulous plane, it has the best cabin in this segment. The 10X will be the new reference in terms of almost everything, but it's not there yet. It will be there only in 2027.

And, well, the problem with Dassault today is that they don't deliver much because they are just starting to deliver the 6X and the older ones, the 7X, and so on. And this, well, it's not fabulous, simply because often what happens, and it's the same in the automotive industry or whatever, when they start announcing new planes that will arrive, very often buyers say, "Well, I'll wait, I won't buy this one that will soon be outdated. I'll wait a bit." So, today, today, Dassault's problem is that they really need to deliver quickly because, you know, I get

cash only when I invoice, that is, when I deliver the plane, and today they have quite a few orders. But they mainly need to deliver, and that means that production also has to follow. And you can't suddenly, unlike the automotive industry, aviation is still slower in terms of production. When you have to increase or decrease the production rate of your chain.

Looking at Gulfstream they have the G four hundred fifty, the G five hundred, the G six hundred, and now even the G seven hundred. You see, they really have a range that is extremely complete, very modernized. Very nice cabin, very performant avionics, you see, and especially the planes are there and they deliver, you see. And they deliver.

#### **4-Can you provide insights into the current sales strategy your team is employing to meet the needs of clients?**

It's important for me because, as you know, we are brokers, but in fact, we are a company that sits in a segment by itself. Why? Because we are not a manufacturer, as you know, we are not a constructor, but we sell more than some constructors. When we sell a hundred planes a year, we sell more than some constructors. Okay, and in that, sometimes we also sell new ones. Yes, we can do about five percent new ones per year, you see, from people who give us their new plane for sale because they don't want to take delivery, etc. So sometimes we also sell new ones.

On the other hand, we are not traditional brokers, like Boutsen or most other brokers. Why? Because we are the only ones sometimes buying our own planes, as you know. Okay, we can take a listing, like a real estate agency gives us its plane, its mandate to sell the plane. Okay, so it's not our plane, but we will sell it. But sometimes also, what sets us apart is that there may be clients who say, "How much? How much will you buy your plane?" You see, they really want to sell very quickly, and sometimes we can also buy planes in the same way. We are the only ones to do used aircraft trades, like for example, if you have a client with a used Falcon 2001, and he wants, for example, a used Bombardier. Okay, we are the only ones to say, "Okay, you give me your Falcon 2001 plus fifteen million, and you leave with the Global, or the Dassault." Okay. And the Falcon 2001 is our problem, we take it back in flight for us. Okay, you see, we are the only ones in the world to do that.

In the same way, as we know, our competitive advantage over other traditional brokers is that Imagine Dassault or Bombardier having to take back a plane that is not in their range. What do they do? For example, Bombardier wants to sell a new Global, okay, but it has to take back a Dassault. Well, it won't be able to do that if it wants to, it won't be able to say, "Well, we won't take back an inventory of a plane that's not in our range, you see." And that's a big advantage for us because we have our own lines of credit, because we have the financial capacity to do it compared to traditional brokers. I come back to the positioning of Jetcraft. We are not a constructor, but we sell more than some constructors. We are not because we also buy planes sometimes, we do trades, we do things that most others don't do.

Again, I find that our positioning allows us to offer things that others don't. We continue to be innovative in many things, the solutions we propose. Similarly, you know, the big advantage we have is that we have twenty to twenty-five offices all over the world. We know our clients extremely well. Imagine the complexity of selling, for example, an American plane to a Chinese or vice versa. You really need to know your buyer very well. You need to know your seller very well to be able to master and manage a relationship of radically different cultures. You see, and that's a big advantage of Jetcraft because, yes, we are global, like constructors.

Yes, we are global, but we are also, above all, unlike any other broker. There are as many offices, as many people everywhere, in Brazil, Argentina, Dubai, South Africa, Hong Kong, Beijing, and you see, we are really everywhere, everywhere.

Our strength also. Similarly, we also have specific partners for financing, like Invicta, which helps us finance planes. So, we manage to do things that even some traditional financiers don't do because we are more flexible, less malleable, and less rigid in structure, you see?

Jahid, he spent about ten years at Bombardier, right? Ok, in fact, Jahid was my boss at Bombardier. He left a few years before me to start Jetcraft, you see, to acquire a part of Jack. Now, he has turned it into a multinational that sells a hundred planes a year. And actually, Jahid had told me, you know, when he left to start, he always told me, "André, the day you want to leave Bombardier, come work with me, and we'll develop, you see?" I stayed a bit at Bombardier, but I had always said, before turning fifty, I would do something to be freer, and there you go. So, we developed, and I came here with Jahid.

Ok, and at the board, I sell planes, you know? I sell planes. Everyone is a seller; you must have noticed. Everyone sells planes here. Sales are the key for us.

So, there are quite a few. But there are not only guys from Bombardier; there are quite a few from other manufacturers.

### **5-How is your firm adapting to and capitalizing on technological advancements within the aviation sector? (Jetcraft and Bombardier)**

To be innovative, for example, the same thing as well. You saw, we are now also in the metaverse, all these things. You know, innovative because we have become innovative in our market vision, especially with this market study that we release every year. We are always working, especially with Ganesh's team, to find all possible angles to consistently stay ahead of our competitors and be innovative. We have become, on some things, we have become essential. As I mentioned, well, for buying planes. If someone wants to buy the plane without us, well, we are a bit essential. We bring out yearly market forecast which is seen as the standard for our industry. Moreover, our platform Eureka allows us to directly pull up all available aircraft types on and off market with an overview of the engine hours, serial numbers, programs, last maintenance report etc. The speed in which we can pull this type of information is unique in our world of brokers and takes us a step ahead of competitors.

There is not a broker in the world, I will tell you, there is no constructor or broker who have these capabilities, I speak because we know them well.

You know, just to be able to always stay ahead of our competitors on this.

### **6-Can you share any challenges or pain points you've encountered in the current business aviation landscape?**

Business aviation, like many other businesses, well, you have cycles, and I can name one, for example, when I was sales director at Bombardier, like in the years 2006 and 2007 it was in Europe. exceptional, exceptional, we sold, we sold, I will tell you, we sold maybe three hundred planes, maybe two hundred and fifty at Bombardier, two hundred and fifty planes a year. In 2007, I remember, I sold forty planes on my own, forty planes, and that is have cycles. But, on the other hand, at the end of 2008, everything collapsed. You see, the thing fell apart. There was a huge economic crisis.

So, if you want, there are cycles to manage. If you want, in our business, like in many others, you must manage cycles, but I mean especially, it is that business aviation. Because I find it

quite important that when the economy is good, because obviously our business is very linked to many international economic factors and international conjuncture.

Okay, when the economy is good, the business aviation market often does even better than the economy. Okay, but when the economy crashes, the business aviation market is even more impacted than many traditional businesses. Why, when the thing falls apart globally, what will the owners of planes, yachts, etc., do? Well, they will unload, they will unload the first assets that you will sell.

Well, it's your boat, it's your plane. So, inevitably, it has an even more significant impact, you see, it's a bit exponential. If the economy is good, we'll do even better. When the economy crashes, it's even more terrible in sectors like aviation. So, these are things that still need to be well managed and understood. When you have a wave, you have to surf it, but you know that at some point, this wave will stop. You better anticipate the movement and the wave.

### **7-Reaching younger customers is a growing concern. What strategies do you think will be most effective in attracting and retaining this demographic?**

To clients, I would say, is a bit traditional because obviously, often when you have a business jet, you're more in the range. Forty-five, sixty, seventy, and so on, often, right? It's well, I would say, the traditional business aviation. Well, today, when we start selling to guys who are thirty, thirty-five, forty years old, and so on, it is clear that they have certain, and I see it in my discussions, I see it because the environmental factor and image are more important than guys who are sixty years old. Yeah, and you see this part? They are much more sensitive. It's something on which we have to argue a lot more. Why? Because they are increasingly required to justify things, especially if they are first-time buyers.

When a client is undecided on one plane or another I have more and more studies that I show on the plane, for example, on the operation costs and so on. I have a lot more financial discussions to justify the plane itself but it also depends on the client's profile.

### **8-Are there specific features or services you believe would be particularly appealing to the younger demographic within the context of private aviation?**

Imagine a client, that's what I often take as an example because it's a real example that I've seen, and it was a sale. Imagine a client located in Britain, for example. His factory, his headquarters are there and he has a factory in Italy and the other in Poland.

If it's in Britain and then to go see these two sites, it takes a week. If he doesn't have a plane, all the six executives must take the train to go to Rennes or to go to Paris, take a plane, etc., etc. To then go to Italy, for example, to Milan, but the factory is still two hours away by road, and then after that to Poland. You're going to leave, it's in Krakow or I don't know where. It's almost a week to see your two and, I always take the example of a C J four style plane, okay, a C J four, the plane takes your six guys or your eight guys, it takes them from the nearest airport in Britain.

It takes off in the morning, and it arrives at the nearest airport to the factory in Italy. Okay, in the morning, it arrives again in the morning, you have your meetings in the morning, lunch takes place in the plane to go from Italy to Poland in the afternoon, you have discussions with your factory in Poland, and everyone is back in the evening the same day.

So, you can imagine, instead of taking a week, it's a day. On paper, the hourly cost of your plane will always be significant, yes, but when you start aligning six executives for seven days, hotel nights, taxi expenses, lunches, dinners, etc., then, I will tell you, it starts to become interesting on a business jet that is not a global, in terms of productivity, etc. And that is something where, you see, it's increasingly necessary to work on the angle of approach for young people to explain to them.

So, of course, if the guy has a profile like that, it depends on the flight profiles of your clients, of course. Because if you have a client who is in Paris and regularly, Paris, New York, and so on, it will be complicated to say. Well, buy a Challenger 605, buy a Falcon 2000 X, etc., etc., because when you're in first class, you do your Paris-New York, you're still pretty good, and it's not at all the same cost anyway, it's more difficult, it's even impossible to justify due to the thing, due to the image, due to that, on the other hand.

So, these are, for me, many things to develop, many things to develop. You see, especially to justify certain things, you see, productivity is not waste, I mean, you see, real productivity and not waste.

Another example, last month I had a client who contacted me who said I want a smaller plane. I already have a plane but I want another one who is smaller and consumes less for economical and environmental reasons. I did a full analysis of the fuel consumption per hour in comparison to the amount of passengers the aircraft can carry. This shows the economic performance of the aircraft while also including the customer functional necessities.

### **9-Looking ahead, what trends do you anticipate will have a major impact on business aviation in the next 5-10 years?**

Environmental image, financial situation.

### **10-How is Bombardier/Jetcraft preparing to address these trends in its sales strategies?**

Comparisons, impact on fuel burn, footprint.

Eg: a smaller plane that consumes less also for the image etc...

Fuel burn in comparison to cabin volume

First time buyer starts with light jets and then they move that's why for covid this trend started to push them. But in terms of margins and investment the bigger segments stay important.

### **11-What strategies do you employ to attract new clients, and how do you see the business aviation industry reaching and appealing to a broader audience in the future?**

We work, as you saw in London, we really work on all possible distribution channels and marketing to reach our clients. Whether it's the web, emails, you know, we do a lot of events, we are really present everywhere. We participate in many expos, things like that, and everything. But, nevertheless, I find that word of mouth, and this is still a leader, often in our most effective approaches, you know. Having experienced people, offices all over the world, etc., often when we have meetings, we tell everyone that in the room we have the most efficient sales team in the world, more efficient than the manufacturers, and I assure you it's entirely true.

After, we talked about Eureka, etc. We really use all possible ways to really identify your customers because the big challenge for us is that our customers are not easily identified. It's not like airlines, which are easily identified. It's more difficult for us. You have to really look into it. It's not like airlines. Airlines are very easily identified, etc. For us, it's necessary to really go and find them because we can't approach them in the same way. There are many things, you know, these are the challenges, to find all the channels. This is why we are also partners with the Monaco Air Show, because we have clients we can find there, and etc. There are things, you know, things, you have to really use all the channels and be creative on this point.

**12-How will the industry address the sustainability trend and what initiatives are expected to reduce the carbon footprint of business aviation?**

Yes, everyone is working on it. But the point is, in business aviation, the goal is to go fast, be more productive, save time, etc. That's the thing about business aviation. Most of our clients want to go fast, be productive, save time, etc. It's not about wanting the plane to be yours because you want to fly it, and there aren't many like that. So, it's more about productivity, and productivity means speed. You need your plane to be extremely efficient to save fuel, etc. And everyone is working on that. There are improvements, and we are also trying to make planes lighter. Like Dassault planes, for example, are often ahead in the design because they have a lot of military experience. This is a big point for them. If you look at Dassault, they make very good planes, but they often favored the pilot more than the owner. Often the cabin was a bit smaller. Look at the Global 7500, the cabin is a bit smaller than that of the Falcon 7X. But the one writing the check is the owner, not the pilot.

**13-How will the industry navigate regulatory approvals for innovative aircraft and sustainable fuels, and what are the potential timeframes involved?**

Training planes etc are developing very well; everybody is working on it to be more efficient. But business aviation bottom is to stay fast and save time. There is need for a performing plane. Dassault has more experience that they have the military background; in the past they said that they preferred to have quality for the pilot and not for the people in the back.

**Interview 4 – Colin Dunne (Jetcraft)**

**1-Can you please introduce yourself and your background in the business aviation industry?**

It's my responsibility to find a buyer or follow up. So ultimately get them to purchase an aircraft. And then on the inbound side, I'm responsible for pointing the aircraft for us to sell. Or for us to buy. It's trying to bring in inbound listings. And to, I suppose, build a business in the Midwest. I have been doing that for a year in Chicago. A little bit, with aircrafts five years now. And my own background is I have an engineering background worked for six years in the oil and gas industry. Designing offshore sub-sea equipment and get that up until about 2015. And I went back to study to do an MBA. I worked in Boeing for a couple years in a salesy like account management role. So that was the first into aviation and a salesy roll. And then I've moved from Boeing to Jetcraft where I was in 2019. I would say that this my second career. We can be doing a lot more in the Midwest coming on now.

**2-As the Sales Director, how would you describe the current demand and trends for private jets in the United States market?**

The US is a very mature market when it comes to business chance. There are about 20,000 business jets in the world. Did you know that 60% of those are in the US. And culturally, it's just part of how people operate in the US if you have a business. You know, You have a smaller aircraft, right up to long range aircraft, all the corporates, the big corporates, fortune five hundreds will have aircraft. And they'll change those aircraft every three to five years. And so you can be guaranteed that there's a constant churn of aircraft, even if the economy is not doing well. You know, fortune 500 still have the money. It's it's a business cost to them, It's like having an office or equipment.

The demand is strong, even though we've come off the back of a crazy 2020 right up till the end of 2022 was the highest demand in the industry say in an event like 20 years, certainly since like 2006. And there's still a lot of demand in the market. I think there's a lot of new demands in that period. There was a lot of first time buyers came out in 2022, 2023. Now we're seeing experienced aircraft owners coming back.

So people that looked at that market said, I'm not going to do anything now because there's nothing on the market. And I'm trying to upgrade my G550. There's only 2 G650's for sale. I want to upgrade in a market where it is a lot more auctions. So now the market is bounced out. We've got people making moves that they're going to wait around for.

I've got a few people this year that I've been waiting and waiting and waiting and. I'm following up with them now, because I feel like they're going to do something this year. The case has gone out of the market.

Yeah. So I'd say it's a balanced market right now. January, 2024. We're in a balanced market. I'm sure will soften a little bit as the year progresses. Yeah, it's a pretty, pretty good market by then.

### **3-What do you see as the most significant trends shaping the business aviation industry today?**

We're seeing a lot of consolidation. The major operators over the last couple of years. Wheels up, they bought a good few operators and they also were owned by Delta. It's not like I've got 10 clients now, and six of them are in their thirties or forties. Still quite new in that territory song. Building up the business.

Extra question: Do you see a difference in use of jets?

Yeah, I don't really have an opinion on that aspect on my territory. Sure If you looked at the market forecasts. I'm in Chicago. It's in the middle of America. It's mid-sized territory. There's not too many long range aircraft and my territory. There's a lot of mid-size lights because I only need 2,000 a miles or 1500. You can get from Chicago - west back to Chicago, east back to Chicago. So you've kind of got that. Everything everywhere.

### **4-Can you provide insights into the current sales strategy your team is employing to meet the needs of clients in the U.S.?**

Well, I suppose my wholesale strategy is a business development strategy.

So it's selling what jetcraft do; to make sure that aircraft owners, when they want to upgrade or sale, that they know that I'm there. My sales strategy is to get in front to as many people as possible, right. You know, you're always trying to get a face-to-face meeting so you can use your phone. Email. Social media and post. There are a lot of Christmas cards. I suppose one of the more novel methods is the use of social media. Like to try and connect on LinkedIn. To try and connect on LinkedIn and you know, then you get a face to face or you've had that face space and it connects with them after, but then you're using that platform to nurture our relationship. I'm arguing and I tell people. You know, we sat on aircraft, blah, blah, blah. We do valuations, pre-purchase inspections,... etc. Demonstrate that on social media then.

You want to demonstrate that you're a market expert. So I use social media to give out market information. Here's how many G650 fifties around the market. Here's how many we sold. So that's, I suppose that's one.

I know not many people are doing in jetcraft. It seems to be working for me. But that's what we just got to ask ourselves. You know, what value are you adding to the platform? Really, if you just posted. Hi, I'm in Wichita. You know, Happy Friday. How have you benefited someone's life? How is my day better from reading your posts? Whereas if he provides some info. And entertainment. Well, that's a value in itself. So I, yeah. I was trying to answer value.

I always think if I was to read that. Would it introduce me to someone? Does it entertain or make me laugh? I might go on follow. Or anything like that.

A lot of people post their closings and say I closed this aircraft but in reality nobody is really interested in that.

### **5-Can you share any challenges or pain points you've encountered in the current business aviation landscape?**

For me personally I always try to look for the pain points of our customers and try to make them see what they can all experience when looking into buying or selling an airplane. As a lot of people are trying to convince the owners to let them sell aircraft to make money such as their pilots. Oke, they understand the aircraft and they have flown most with it, but they don't have the reach and acces to all the information available. Jetcraft for example has a huge reach in all four corner of the world and has acces to jets that are not even on the market. You can market a plane well but missing out deals because your reach is only in the states for example. Just because you plane is in america doesn't mean your buyer is in America. So one pain point is bad representation and that's where us professionals come in. There is this analogy we use when selling your house. Who knows your house the best? Well the people who lived in it right? They know every scratch every dent etc however would they sell their own house? No and the simple fact is that it is extremely complex and access to the full market is very important.

### **6-Reaching younger customers is a growing concern. What strategies do you think will be most effective in attracting and retaining this demographic?**

The use of technology will be a key element in this. Use of social media and LinkedIn will help us brokers to form an image but also to show our expertise and way of working. Showing our access to the market and how we are different to other brokers. Demonstrating for example a spec of an aircraft they would've never found. But ultimately your goal of getting a face to face with the customer remains the ultimate number one sales tactic no matter the age group.

### **7-Looking ahead, what trends do you anticipate will have a major impact on business aviation in the next 5-10 years?**

I don't think the likes of virtual showrooms and virtual meetings will take over; it might shave off 5-10% of meetings but the demand for travel will override that. The new demand will still increase, people travel, and the world is more connected than ever. The increase in wealth is a trend that will be there, there is a millionaire every day, a billionaire every couple of months. Business jets are becoming relatively cheaper compared to the amount of wealth in the world. The trend for growth in wealth in the world will increase the demand in business aviation. The long-term trend is up.

## **8-How will the industry address the sustainability trend and what initiatives are expected to reduce the carbon footprint of business aviation?**

The FAA has a new website called climbing fast and it's basically pro aviation explaining the importance of the aviation industry and what they all do currently in the market to become more sustainable or work together for a better environment.

I know it was a lot of talk about sustainable aviation fuel, but it's kind of like a plaster over part of the problem. They are looking into electric propulsion but that is certainly not in the next 10 years. Therefore it is important to engage with the public, set realistic goals and look at the present on how to tackle the current issues. Change the narrative of private aviation in a way where the public works together with the industry. Promote the technological advancements because the industry is here to stay and working against it will only slow things down in the hopes for a greener future. And until then, it's like sustainable aviation fuel. That's only a short-term solution that's around and it's not even a solution. But I like, not to play it down. It's one of those industries where it gathers a lot of an attraction on the tension. It's 4% of emissions. If we focused on not chopping down forests and road transport industry or trucks and shifts and all that. This there's a lot more efficiency to be gained in other industries. But that doesn't answer the question. I don't know. Personally, the long-term solution is electric propulsion. Electricity comes from solar wind. Or another one is nuclear energy.

## **9-How do you see a phenomenon such as RWA financing (Real World Asset) capture the younger segment and making it more accessible for other segments.**

It certainly can be something that can attract customers, a plane basically is something that depreciates and is something that is heavy on your book. It is at the end of the day a cost and if tokenization can help carry that weight whether it is on the accountant side or on the transferable side it can be useful. However, there is a lot of alternative financing already available, I had one guy contacting me through LinkedIn offering me a private loan for 3% while the bank was offering 7%. So, I think that there is already a lot of competition in the industry now in terms of financing.

If you're not able to burn a million a year you are not ready to buy a jet but if you do your life is changing. We all had experiences in the airports where you had to wait or flights are cancelled, it is a life-changing upgrade but of course these kinds of things come with an expensive price. If these alternative financings can help shave off or make it more affordable in a way for a younger segment, why not look into it? The world gets wealthier, and they will jump in that category and once they get the taste for it, they are not going back.

### **Interview 5 – Bart Foucart (founder Abelag/Pilot)**

#### **1-Can you please introduce yourself and your background in the business aviation industry?**

Graduated as a nuclear engineer but then in aviation. I'm still a pilot, still an examiner and I'm still busy and assisting people advising people and assisting people with aircraft transactions basically. I founded Skyservice which now is Abelag, being the first true business aviation operator in Belgium. Now I have sold this company to the Luxaviation group and still have a consulting role in this entity.

**2-How would you describe the current state of the business aviation market from your experience as both a pilot and private owner?**

Go back 25 years ago in Belgium there were about I think 5 jets; two or three jets and a Falcon probably two Falcons and that's what that was about it in the company. In the 20<sup>th</sup> century there has been really acceleration in in development of business aviation.

**3-What do you see as the most significant trends shaping the business aviation industry today?**

The trend of that covid brought with it. A lot of new comers and a surge in demand for private jets.

**4-As a pilot and private jet owner, what aspects of business aviation do you find most appealing or advantageous?**

The other flexibility to travel is the fact that traveling is easily accessible. The ability to organize it by yourself and completely by yourself. Not through Internet buying tickets or travel agencies or you know big airports. So, I would say that the simplicity from traveling is a big plus that can be seen in flying private.

**5-Can you share any challenges or pain points you've encountered in the current business aviation landscape?**

Not particularly as a pilot, but from a business perspective, one major concern is the increasing burden of overregulation in the business aviation sector. The sheer volume of paperwork, organizational requirements, and responsibilities has reached a point where it can be considered a threat. Comparing it to other modes of transport, such as the high-speed train (TGV), highlights the stark contrast. Take, for example, a journey from Brussels to London. The intricacies involved in flights, including security checks, airport procedures, and slot delays, are absent in a train journey. While safety is paramount, the current regulatory landscape, in its pursuit of safety, risks becoming a hindrance rather than an asset.

**6-Reaching younger customers is a growing concern. What strategies do you think will be most effective in attracting and retaining this demographic?**

Younger people tend to have earlier the finance resources you need to fly privately or to fly business aviation. In the early days it was only the older people who already had a big career or mainly through family heritage. Today with the younger non-conventional businesses the financial capabilities can grow quite fast. Here it is important to become part of their community and offer them a service as a way of trying and see how they react. I think there you have two ways you have people really do not care about money and like to use any mean of enjoying life on the other hand you have people who really don't spend money and just like to enjoy life by doing personal things like sport or holidays or whatever. So you have to find out who is who and I think that's to be part of this community and then once you know who is who you would have a specific type of strategy or a different type of approach for these people. If you talk to somebody you feel a person is open to use private aircrafts and again that's today and today they are in this world also through different views in terms of environment. For instance there's one view which says yeah but OK we are we are not going to change the world and other ones were saying we really want to be available to be environmentally friendly and so on and so on. It was unthinkable that user manager would go

there to the job with that with the bicycles about 20 years ago that the CEO would also go to the company with the bike and you still have CEO's that have a private driver to go to the company. So it is really dependent of the style and shows us that there will always be different trends but business aviation is there to stay.

**7-Looking ahead, what trends do you anticipate will have a major impact on business aviation in the next 5-10 years?**

One of the things I personally hate is that I'm flying with the one single passengers New York Brussels back and four days later back to New York and only one person in the back. I think this business model becomes very difficult to continue to defend. Of course, you have exceptional cases that person needs to be there this is exceptional but in general I think there has to come a solution for this.

**8-From your perspective, how might technological advancements influence the user experience for private jet owners and pilots in the future?**

In the aviation sector, focus centers on two key elements: engines and weight. Advancements have been made with the incorporation of composites, significantly reducing the weight of aircraft. Engines, too, have seen a 30-40% decrease in fuel consumption compared to two decades ago. However, when we look into the intricacies, challenges persist. Despite the progress, achieving further reductions in fuel consumption proves to be a complex task. Composites have played a substantial role in weight reduction, but there remains room for improvement. Now, onto a less-explored terrain - the political aspect. The current airspace structure lacks coordination between countries and regions. If we were to optimize this, we could easily witness a 20-30% reduction in fuel consumption. Surprisingly, this remains a political decision that often flies under the radar.

To illustrate, consider a flight from Portugal to France. The existing airspace structure necessitates unnecessary descents and climbs, particularly around Paris. This not only extends the flight time but also adds to fuel consumption, creating an inefficient travel experience.

In essence, I believe that while technological advancements have brought us far, the optimization of airspace, though a political decision, is necessary for achieving further fuel efficiency. Striking a balance between technology and political decisions will be crucial for the future of aviation.

**9-How will the industry address the sustainability trend and what initiatives are expected to reduce the carbon footprint of business aviation?**

Not that much, on the contrary the low costs are still subsidized the fuel is still subsidized so I don't see any sign from the industry. I mean compared to other mobiles like the automobile is just all the way around everything is now electric OK electric is not an alternative, but you could say that that there would be happening there like empty flying.

**10-What challenges do you anticipate the business aviation industry will face in implementing these strategies and adapting to changing market dynamics?**

I think it's mainly again technology changing. I mean well propulsion still is produced today but I don't see any method of propulsion that can replace what we have today and on the

political side it's legislation. I cannot imagine that we can keep on closing our eyes for what I call really abuses on the existing situation today. There's nobody that talks about excessive fuel bill nobody talks about VAT, nobody talks about duties on aviation, and we keep them subsidizing low costs. So, for me if you talk about challenges, these are the challenges. Of course, but they're not only attract our business aviation it's the whole aviation community business aviation is part of it do you feel like there was not enough talk about. But on the other hand, it is also important to show the good side of business aviation and how much it can help develop the economy.

**11-How do you see a phenomenon such as RWA financing (Real World Asset) capture the younger segment and making it more accessible for other segments.**

There have been various revolutions to lower the threshold in private aviation in recent years. One is fractional ownership and various ways have been tried to get to lower as much as possible the price per share. It could provide a certainly a new way of financing but in the end owning or flying private will cost you money. If you start to get cheap and try to be more efficient and lower cost, you start to lose on the big advantages of private aviation.

**12-What are important factors for you as a pilot that business aviation can provide? What are you looking for in an aircraft when buying/using one? As an individual and as a pilot.**

Firstly, I would look at the overall performance (altitude, speed, fuel efficiency), second would be worldwide support and I think at the third place, but this is probably the result from one and two is probably value when thinking about reselling it afterwards.

**13-How will the industry navigate regulatory approvals for innovative aircraft and sustainable fuels, and what are the potential timeframes involved?**

I don't see anything happening in the next 30 years to be honest. For the simple reason and I'm talking as an engineer not as a pilot, I don't see the evolution from batteries progressing in a way that you can use them for an aircraft. I don't believe in batteries and aircrafts, so this means that you need to look for another source, but I don't see another source today except of nuclear energy. I don't see another source today powerful enough and something you can sell across. Of course, there will be a bunch of other questions popping up along the way.

**Interview 6 – Alain Liebaert (CEO Liebaert Textiles/Pilot)**

**1-Can you please introduce yourself and your background in the business aviation industry?**

The CEO of a textiles company in Belgium. I've been flying since I was 18. First as a private pilot. I did my ATPL when I was 42. I have owned five aircraft the King Air 200 second-hand, citation CJ3 new. Falcon 900 EX EASY, second-hand, Citation CJ 4 new, an M2 new, Citation M2 new, and a Citation CJ 2 plus second-hand, and I've been flying all around the world. From a private point of view as a single pilot.

I think this is quite different than most of the other owners in Europe. It's more common in the United States. Single pilot operations for me is extremely important. I used the aircrafts I have both professionally for my business and private.

## **2-How would you describe the current state of the business aviation market from your experience as both a pilot and private owner?**

Well, the current market due to a lack of spare parts and a huge diminution of production capacity at the aircraft manufacturers has been heating up over the last two to three years. My opinion about the aircraft values for the moment is that the values or the aircraft values are 25 percent overpriced.

I think the, the aircraft manufacturers are extremely opportunistic. They still claim that the spare parts have increased in price dramatically and that therefore the price of the aircraft have increased. I mean if you take an average increase in price of 3 percent per year, which is already much, an aircraft compared to pre COVID times would be 10 to 15 percent more expensive. Now the aircrafts have increased in price in four years' time by 35%, between 30 and 35%. So, in my eyes. In view of the economic turmoil that we experienced for the moment, the aircraft, second hand aircraft and new aircraft will vastly diminish in price in the future, in the next six months to a year.

The only thing I do not know is the truth about the price of the spare parts. This is the only thing I don't know how much it is true that the spare parts for the raw materials to make aircraft have increased in price like metal sheets and so on. This is something I do not know, and I think it's worthwhile to study that.

To analyse if it's logical to increase the price by so much in my company prices of all materials being raw materials, spare parts, mechanical parts have diminished and are diminishing right now.

## **3-What do you see as the most significant trends shaping the business aviation industry today?**

Well, I've heard that since COVID the demand has increased, not decreased. So especially for lighter jets. The lighter jet being PC 24, CJ3, CJ 4 is flying quite a lot and have been flying quite a lot in 2022, 2023.

But I think the future for that, the light jet market, which is the market I've always been in, will be increasing. The reason being that the flexibility of flight is becoming more and more, important due to traffic problems and time. For the future and younger generation, a greener way of flying will be something that has to be looked at if you if we want to attract a younger generation. That is for sure. Because from an ecological point of view, we can say what we want, but it is not very ecological. The carbon footprint is still quite high if you fly private jets. I think from the medium to long range jets, the high-net-worth individuals are changing from an older generation to a newer generation, and there has never been as much money available and cash available to a high net individual. The high net individuals didn't become poor. They became richer.

They became richer over the last five years. I think there was some great inflation. I mean, people heightening their prices out of opportunism. So for the medium to long range market, I think the step to convince younger people is going to be a little bit bigger because the price is much higher. The carbon footprint is even worse for a bigger jet than a lighter jet, but the will and the eagerness. to fly private jets in the midsize and long range sector will certainly

not diminish again, because as a way of living, owning a midsize or long range jet is definitely probably gives the most freedom as a human being to do what you want, when you want it and that eagerness to enjoy life and to fly around the world will certainly not diminish with the new generation of millionaires.

Private - work balance has become more and more important and owning. I think it's that should be used as a marketing tool. That HNWI and managers of bigger companies can balance their lives better by using private aircraft.

#### **4-As a pilot and private jet owner, what aspects of business aviation do you find most appealing or advantageous?**

I would say time saving is probably the most important thing time saving in a certain way cost saving because you need less hotel nights, you can use your time more efficiently. You can get closer to your customers because there's smaller airports and in my case, but that is only in my case flying as a single pilot saves you a lot of costs and gives you a lot of flexibility. You're not dependent on the crew. You can leave your aircraft somewhere without having it to be flown back to base. So, I would say that saves you a lot of costs and is definitely something as a younger person with money that I would recommend, and it is an untapped market in Europe. I mean, the single pilot operation in Europe is made extremely complicated. A lot of customers do not accept private operations as a single pilot and commercial operations in crew.

There are only two or three customers that still allows you to fly as a private pilot, single pilot and commercially to fly as a single pilot on an NCC, which is non-commercial complex aircraft, which is a separate set of laws. Is quite straining and of course more expensive because you cannot rent your aircraft out.

Then the aircraft is solely for private use. You cannot recuperate some of the costs by renting it out to commercial operations. So, I think from a legislation point of view, there would be a huge potential in Europe for single pilot operations if the airline authorities would make it easier to own a private jet or a private turboprop on a single pilot on a single pilot. For example, to be based in the United States, it's a lot easier and it's a lot cheaper.

That's why you have a lot of owners of aircraft in the United States owning single and flying single pilot on the record.

#### **5-Can you share any challenges or pain points you've encountered in the current business aviation landscape?**

The legislation for flying becomes more and more complicated, especially in Europe. Parking, parking spaces for aircraft also are becoming for private aircraft are becoming a huge issue, especially in the high season. So more and more aircraft have to be repositioned. Which is a, a very expensive exp, which increases the cost drastically because you just drop off your customer in Cannes, for example no parking in Cannes. You have to go and park your aircraft 45 minutes away in, in a smaller airport in Italy. And then you have to go and fetch your customers in Cannes again. So that is parking is an issue, legislation is in is an issue.

#### **6-Reaching younger customers is a growing concern. What strategies do you think will be most effective in attracting and retaining this demographic?**

I think shared ownership, the entrance step towards business aviation should be made easier and should be made cheaper. So, the card programs, the shared ownership programs, should be marketed a lot better. A lot of HNWI younger people, successful in tech and FinTech they do not know the advantages of business aviation are not presented. It is not presented to them. We should not forget that the European population have a rather negative view on private aviation in comparison to the Americans or to the Asians and so on.

So It would be a very good exercise to develop marketing campaigns to attract those finite younger individuals. And by making it a lot easier to enter in a card program or a shared ownership program, I think a lot of marketing should be done. I would say one on one marketing, I mean, contacting them going to see them organizing a very nice presentation, a sexy presentation, showing the advantages for the families. For the sportive people to go, and do sports for the people that are allowed to do more outside work or remote retreats. Make an emphasis on the cost per seat instead of the cost per plane. Be realistic in the carbon offset created but show what ways they can contribute and how optimal use of the private jet (full capacity, carbon offset programs, different air routes,...) can already have an effect and diminish their impact on global emissions. The advantages, I think something that should be used in the marketing also is the importance of filling the plane. By that, I mean, if you're two in a plane, it becomes extremely expensive. I had a CJ4 with 11 places, one pilot and 10 passengers. Once you divide, especially as a single pilot, you divide the costs by 11, then the difference between business class tickets becomes less noticeable. So, I think that is important. Also, I have flown my team to many places for management meetings, creative problem meetings. Retreats and so on. And if I look at the total price for the company and we only have a small company that was bearable for a profitable company without straining the finances of the company.

So, I think it would be very interesting to make in the presentation an emphasis on the cost per seat instead of the cost per plane. So I think that is that would be that would be very, very important. I have also to say that if you own the plane as a company or part of a plane, you can fly privately so you can fly with a single pilot. So, if the company owns the aircraft or part of the aircraft, the aircraft can be flown as a single pilot operation if the operator agrees. I say again, if the operator agrees, which makes things cheaper. Of course, a lot of companies, a lot of operators think it is too risky to fly with one pilot and they prefer to pay the price and fly with two a lot of private people prefer to fly with two pilots anyway. So that's just a side remark I'm making that if you own the plane as a private person, or if you're allowed to fly on the private operations.

## **7- Looking ahead, what trends do you anticipate will have a major impact on business aviation in the next 5-10 years?**

I think for flights less than two hours, I think electrical flight will be something that is going to be a big plus. I think the air taxi eVTOL, story is also going to be a very, very sexy offer, but there is absolutely no aviation legislation for the moment when it comes down to air taxi with eVTOL and so on. We are talking about the airspace, let's say between zero and 3000 feet, which in a lot of spaces is unregulated airspace. I do not think that airspace will remain unregulated for very long if thousands of air taxis are flying around there together with drones and so on, so we we will need legislation very fast for those electrical air taxis. As we know the legislator in Europe and in the rest of the world is extremely slow. So, the pace of the development of that, those new ways of transport will depend on the speed of the legislation. That will also be a huge challenge for the aircraft manufacturers. As, the price difference between that way of transportation and regular jet fuel, private jets will be huge.

So, if I were private aircraft manufacturer, I would start to look at ways to cheapen the cost of flying with jet fuelled private aircraft. The first step would be to diminish again the prices of new aircraft to a normal price and not a beefed up price at this as it is now, because opportunism is a very short sighted way of destroying a market in fact. Because that's in the short term, you make a lot of money, but in the long term, you just scare people away, which is basically what is happening now. I mean, in Belgium, the salaries increased by 25 to 30 percent over the last 4 to 5 years. I do not think that the aircraft manufacturers in the United States or in Brazil that their wages increased by 30 percent over the last four to five years, but there again it would be interesting, but you will never get the data to know how much margin they make on the planes now. And how much margins they make on the made on the plane previously. But that is something I cannot prove.

-Flights less than two hours electrical flights will be introduced and a viable solution  
-Evtol air taxi will be a very sexy offer => but no aircraft legislation in this aspect now so a lot of work on this will need to be done  
-0-3000 feet there is no regulations but, in the future, this will not be the case if there are thousands of air taxis in the air between drones etc... so legislation will need to be done quickly! The pace of introduction of these air taxis etc will be determined by the pace of introduction of the legislation. Huge challenge for the OEM for the price difference between air taxis and private jets will be huge. If I were a private AC OEM, I will start to look to cheapen the cost of jet fuel and private aircraft. First step and diminish the prices of AC. "greed flation"

### **8-From your perspective, how might technological advancements influence the user experience for private jet owners and pilots in the future?**

I think the navigation systems also, the fact that all approaches will be GPS based in the future will make a lot of airfields available for IFR flights. The communication systems also communication systems in flight. I mean, internet in flight is extremely expensive for the moment. If we could have a more democratic price, I think that would be another marketing aspect that would render flights more attractive. Just to give you an idea, if you download, movies whilst you're flying in a private jet, that will cost you three or four thousand dollars.

Just because the satellite internet connection is very expensive. So that's another thing that could be looked at, especially with the new Starlink system of Elon Musk, the new satellites he's launching. So that would make private aviation also a little bit more, more effective.

I would also say the development of aircraft that use shorter runways and unpaved runways just to give you an idea, the PC 24 is the only private jet that is allowed to land on gravel and non-hard surfaces. But when you look at, the AFM, the aircraft flight manual, you can see that basically all rough surfaces are excluded from that. So, in fact, In my eyes, the PC 24 is not an aircraft made for that because you would not risk an aircraft of 13 million landing in an airstrip in Africa and destroying your engines by ingesting gravel in the jet turbine. So I think that making proper aircraft that can land on rough surfaces and on short runways would open thousands of possibilities to travel. To travel to remote locations, to be closer to your customers, to save time, to save costs and so on.

Of course, the air taxi solves that problem because a vertical air taxi could land virtually everywhere. Because it's a helicopter. Basically, it's a helicopter. The downside about

helicopters is that helicopters are extremely expensive per hour. They cost as much as a jet. They're very slow, like a quarter of the speed of a jet.

They fly very low, so they're in bad weather. And their range is very limited to 500, 600 nautical miles maximum. And that's sitting five hours in a helicopter, which is not a very luxurious way of traveling. So, for me, helicopters are not an option. Only an option to go from outside of a city to inside of the city. That's, that's the only where if you could build an air taxi that can fly at 250 or 300 knots, and that could fly five or 600 miles. Electrically and land everywhere. Basically, that would be a huge development in business aviation.

**9-How will the industry address the sustainability trend and what initiatives are expected to reduce the carbon footprint of business aviation?**

- Fuel/biofuels
- Switch to electrical engines
- Cost exercise between full legs of private jets and having increase in hotel nights, crew, AC commercial time

**10-What challenges do you anticipate the business aviation industry will face in implementing these strategies and adapting to changing market dynamics?**

- speed of legislation changes/implementation
- limits of technology =>speed,range, height, weather
- Price of new technology

**11-How do you see a phenomenon such as RWA financing (Real World Asset) capture the younger segment and making it more accessible for other segments.**

There is a risk in those alternatives' ways; depends on the evolution of the technology and trustworthiness of that technology.

**12-What are important factors for you as a pilot that business aviation can provide? What are you looking for in an aircraft when buying/using one? As an individual and as a pilot.**

- range
- speed
- cost per hour
- passengers load full fuel
- altitude
- avionics (auto throttle, cpdlc, auto land)

More automation in auto land capacities also on rough surfaces and smaller airports  
Making pilots redundant would me a major evolution into safety, the pilot becomes an engineer or a system controller. Downside pilots will not be able to fly anymore (medium term)

O'leary; one pilot idea and crew trained to use systems and auto land the plane.

**13-How will the industry navigate regulatory approvals for innovative aircraft and sustainable fuels, and what are the potential timeframes involved?**

USA pro aviation will move a lot faster than Europe.

## **Interview 7 – Ganesh Veradittaname (Jetcraft)**

### **1-Can you please introduce yourself and your background in the business aviation industry?**

So, I am 29, I always worked in aviation. I have an engineering background. Started my career in aviation consulting in the US. Gave me a good exposure about the aircraft transactional world. Stayed there for a year, then moved to business aviation, been with Jetcraft for over four years now. Started as a sales engineer and, I'm now handling all the data and analytics aspects of the company.

General Perspective:

### **2-From your perspective as the Director of Data Analytics and Strategy, how would you assess the current state of the business aviation market?**

I think long term, it's increasing population of ultra high networth individuals also long term, good prospect for economic growth as well. Short term, there's a bit of a slowdown in the market now we're still in the post pandemic era. So with the pricing and market volume we see now the price are going down, activity has slowed, but over the long term we're still confident.

### **3-What (data-driven) insights or trends are currently influencing the strategic decisions at your jet brokerage firm?**

One of the key business line for jet craft is buying and selling jet on inventory using our own credit lines. So it's really about how much we want to take because now we know that planes take longer to sell and prices are going down or careful. So, what I would look at is the price trends across segments and also the percentage of fleet for sale. That gives you an idea of how stretched or loose the market is and days on market to market.

### **4-What do you see as the most significant trends shaping the business aviation industry today?**

Everything that came up with the pandemic. So a lot of new users, how they're going to trickle down to ownership at some point, new business model in place to keep growing. Wealth distribution, you know, a lot of time US was the main driver but we still have growth in other areas, even though that's a long term play. We'll still think that it's a major shift in general.

### **5-How is your firm adapting to and capitalizing on technological advancements within the aviation sector?**

I think we're cutting edge because of using different type of technology. 1st, a web application to make it easier for the sales team to use access to technology and the data. 2nd, we're also investing, as you know, in the AI, that large language model. To again lower the bar to entry to access data and analysis. And yeah, we have all the system to manage this amount and different type of data as well.

### **6-Can you share any challenges or pain points you've encountered in the current business aviation landscape?**

There's a lot of capacity in the market. If you have information and you have a lot of control power. For example, getting the right pricing information when you ask for a net price, they're going to give you. Oh, yeah, it's in the low fours or low fives. Whatever. We may have a big spread and that impacts the way we take decision. Information opacity. And market fragmentation is an issue too. But sometimes you're dealing with small time brokers and, you know, the dynamics are not really helpful to slow down the deal.

**7-Reaching younger customers is a growing concern. What strategies do you think will be most effective in attracting and retaining this demographic?**

We need to be where they are. So mostly social media, some events, you know tailored to. The younger generation. So maybe invest more in all the crypto, basically target the young and new source of wealth platforms or events.

**8-Would there be any services or features that you would find particularly appealing for that segment?**

Social media platforms, also the members club, I think would be a good one. Sporting events as well, but especially targeting the young. Yeah, I mean, then you have all the crypto again, all the new source of wealth type of event.

**9- Looking ahead, what trends do you anticipate will have a major impact on business aviation in the next 5-10 years?**

Well, I think the main one is the increase in wealth concentration, that will benefit our industry well-trained, well-trained people able to access a business aviation. Second is sustainability. As you saw, we represent a small percentage of carbon emissions. We're an easy target, right? So that's something that the industry will have to address otherwise we may face some new regulation, you know, in feral growth and then I think there will be some consolidation as well. And you see that coming up already to make, as you have more people coming into the market, you have bigger players, and you'll have some consolidation.

It'll be good for the industry, improve the level of service and a level of professionalization as well. Because right now, you have too many small times broker that don't have the skill to offer a proper service.

**10-How will the industry address the sustainability trend and what initiatives are expected to reduce the carbon footprint of business aviation?**

Yeah, I think you need to look at it for term medium term long-term short-term option is already in place, which is the carbon offsetting. Medium term is, probably some new types of usage, you know bundles on flights do more flight sharing, et cetera. Even though I'm not too confident about this and the long term and the most efficient, in my opinion, will be technological investment. So, you know, hydrogen plane, electric planes. Yeah, that's how I see it.

**11-What strategies do you employ to attract new clients, and how do you see the business aviation industry reaching and appealing to a broader audience in the future?**

We invest a lot in you know, marketing attending events. Also, social media. We try to improve our presence as well. Other than that, it's mostly organic growth. So, sales guy

contacting, going to events. Sporting events is another one that we attend as well. We're attending to also the cross-industry events in the yachting industry, arts, etc. which would capture more clients.

**12-How do you see a phenomenon such as RWA financing (Real World Asset) capture the younger segment and making it more accessible for other segments.**

You can own an eight of a private jet and that gets you access to X number of hours on the plane. That's a business model. It's been working well for NetJets, still not a profitable company, but they've grown quite a lot. Then the switch from this to crypto, I'm not sure how much value it adds, except the traceability, maybe more information, but it's already there, and it's working, so. I don't think moving to crypto will add a lot more, except maybe appealing to a younger audience. Yeah, the functionality and the benefit are already there. There will be some bottlenecks with the civil aviation authorities. The end, they need to stamp. The papers at some point will be blocked by them.

So, it could help for sure, but we cannot control all the aspects of it because we still depend on regulations. But the real value out on this is find the money, you know, young people that may not have access to like billions and billions. But they may want to finance the plane and if they can get easier financing through crypto than through traditional lenders, then there's a real value add to this.

**13- How will the industry navigate regulatory approvals for innovative aircraft and sustainable fuels, and what are the potential timeframes involved?**

I know mostly certification to commercial aircraft. The US is Boeing and Europe is Airbus. So sometimes they play around it to push their champion. That's a bit tricked. but I wouldn't say there's too many differences. It usually takes 5 to 10 years to certify everything

**Interview 8 – Mathieu Cotin (Tokeny)**

**1-Can you please introduce yourself and your background in the industry?**

Started as a freelance programmer in blockchain building software and programs. Moved to Tokeny in Luxembourg to further developed my skills in blockchain while also using my sales skills that I developed before in my previous jobs.

**2-How does blockchain and tokenization basically work and what are the benefits?**

Blockchain and tokenization are transformative technologies revolutionizing traditional industries. Blockchain, at its core, is a decentralized, tamper-resistant ledger that records transactions across a network of computers. Tokenization, on the other hand, involves converting real-world assets into digital tokens on a blockchain. The benefits include enhanced security, transparency, and efficiency in transactions. Tokenization facilitates fractional ownership, allowing investors to own a portion of high-value assets, such as real estate or aircraft.

**3-As a Blockchain Specialist, could you explain the role of blockchain technology in facilitating fractional ownership, especially with Real World Assets (RWA), within the business aviation industry?**

My focus is on creating digital tokens representing ownership shares in companies. Blockchain ensures transparency and security in recording ownership transactions, simplifying the complexities of fractional ownership structures. For example, in our own firm Tokeny we have now more than 10 shareholders, if a decision needs to be done our tool helps collect these signatures of these different shareholders in a safe but rapid way. This increases time efficiency and decision making.

**4-What challenges have you encountered or foresee in implementing blockchain solutions for fractional ownership in business aviation or just implementation of blockchain in other existing markets, and how do you propose overcoming these challenges?**

The main challenge for me at the moment is that people are mis informed or not informed at all how it works. This creates a sort of misplaced scepticism around blockchain and tonkenisation while actually those people are probably already engaging with blockchain on a day to day wihtout even knowing it. Blockchain will also only work to its fullest if its embraced by everyone. To beat this is to educate the market and its consumers which is happening at the moment, just look at the differences in the last ten years but work still needs to be done.

**5-Can you share specific examples of how blockchain technology has addressed issues related to ownership, transparency, or governance in the aviation sector?**

So you have our own example for the shareholders signature but another one is a guy who started a company that created co working offices on the blockchain. This was back in 2017 so pretty revolutionary, basically you could buy tokens and use these as hours in the co working which were based in LA, Bali, Bangkok etc. Few years later he is now CEO of a company that works in aircars and its mobility plans. There is also play in here to implement blockchain to make it work. Another example is a company that tokenized actual humans, young footballers were you could buy tokens of his total value at that time and then gain the further he progressed in his career. So a lot of possibilities and basically shows that everything can be tokenized.

**6-Given the regulatory environment surrounding aviation, how do you navigate and ensure compliance when implementing blockchain solutions for fractional ownership?**

So we had a few leads in the aviation industry however they didn't come to fruition because one we didn't have the infrastructure yet and two the industry is very tough to bring in new things. They need to be fool proof and hardened. Drawing from experiences in other markets, overcoming these challenges requires collaboration with regulators and industry stakeholders to establish frameworks. Technologically, robust solutions and user-friendly interfaces can ease adoption barriers.

**7-Are there lessons learned or best practices from implementing blockchain in fractional ownership in other sectors that can be applied in the business aviation?**

Implementing blockchain can have a lot of effects not only in ownership but also manufacturing or maintenance records. Now everything is a separate entitiy while with blockchain you can put everything in one cycle. You also have public and private blockchain so for instances financial issues don't necesseraly need to be for everyone to see. Overall it

would reduce administrative complexities which is a pain point in many industries and as I understood aviation as well.

**8-Is there proof from any other industries that the implementation of blockchain technology attracted a younger customer segment?**

Yes for sure, it is evident that these technological advancements attract a younger customer segment. Certainly millennials and Gen Z who are accustomed to digital technologies value the fact of having transparency, efficiency and innovative financial solutions.

**9-How would you market the idea of blockchain technology in the aviation industry as a trustworthy source of financing?**

So basically the main thing I would say is standardization. Next to all the elements that blockchain brings, the biggest strength is how it can create an ecosystem of information, personal and public. Imagine linking your investment portfolio together with your company and doing your taxes all on one system. To do this you need to get all the institutions aligned. Gather investors, bolster credibility, emphasize on successful existing cases to further spread and standardize this technology.

**Interview 8 – Darren Mendoza (Lead Captain ACJ320)**

**1-Can you please introduce yourself and your background in the business aviation industry?**

I joined Comrad as a line pilot and a training captain. And now I'm the lead captain on the ACJ fleet. We operate a fleet of corporate airbuses. I'm the lead captain at Dubai. So, we have two Maltese registered ACJ 320s out of Dubai. We specialize in head of state presidents, royalty.

**2-How would you describe the current state of the business aviation market from your experience as a pilot?**

Very buoyant. It's very, very busy. In fact, I'm in Cannes at the South of France. A friend of mine bought a small CJ1 six years ago, seven years ago, and he's doing more hours than he could possibly ever think of doing. And he's now looking at a second and third airplane because he's just overwhelmed with profit. The airplane cost him a million dollars to buy, six years ago. It's now worth 1.8 million for the airplane, but he's getting 1.3 million profit a year at 500 hours. He's got more work than he knows what to do with. It's a really, really busy industry at the moment. It's, it's quite interesting to be in the market right now.

**3-What do you see as the most significant trends shaping the business aviation today?**

I think there's a lot of, there's a lot of companies like NetJets and Vista, and they're kind of losing focus about what the core business is, which is, you know, a unique business experience. And they're becoming a bit airline ish, you know, when you start getting into large numbers, it just becomes a sausage factory like an airline. I can't see the difference. All you're doing is supplying, is providing a service that goes when they want to go, versus the service on board. And I think really you know, to be different, you need to put an extra quality service, which I think we do. We go through a lot, we have a customer success

department. You know, when we have a booking, we go through what people want as preferences and it's a little bit of extra service. And then I think people also look at the quality of their money, but they're prepared to pay a bit more for that service, you know.

**4-As a pilot, what aspects of business aviation do you find most appealing or advantageous?**

People generally see a pilot when it flies along, they land safe, they're happy. But you know, for me it's all about, we have cockpit door open policy on a private jet. Passengers talk to us, we talk about current affairs, we have a bit of interaction with people. For me, the most appealing thing is I get to commute. I can live in the south of France, I go back to my rotational work, which airlines don't do. And I work the days I want to work.

**5-Can you share any challenges or pain points you've encountered in the current business aviation landscape?**

The only thing that's probably different to an airline is just not knowing when you're on duty. You don't know where you're going, you know from day to day, you're on duty for 20 days. As long as you accept the fact, you know for 20 days you don't know where when or how and you can accept that it's fine but coming from an airline background where I knew every day what I was doing each day where I was going was an adjustment in the beginning.

**6-Reaching younger customers is a growing challenge. What strategies do you think will be most effective in attracting and retaining this demographic?**

Have a bit of banter. Again, you look at some of the airlines, the pilots are stiff and stale. While I have these guys come on and, you know, they might be wearing some nice new Adidas trainers. My kid loves those trainers, you know a bit of interaction. That's what they want. I always say, come up to cockpit, you know, and they love sitting in jump seat and seeing how the airplane works. You can't do that in a commercial airline and it's things like that that makes a difference. You know, they're paying big money. Treat them the way they are. So basically, you involve them more in the whole aviation world and be more one on one with them. The youngsters, they do know what the aeroplanes are, what the difference between an Airbus, a Boeing, and Global. And they ask you questions like, here we are on an Airbus, what's the Bombardier? I mean, a Global goes faster and higher, but then look at the comfort you're in. You know, you're in a massive Airbus, you've got a stand-up cabin, you've got your double bed, you've got a shower, which you don't have on a Global. And they understand that, you know. Operating a BBJ is the echelon of private jets. They're not as modern as Global, but it's done in comfort, class and style. So, talk more about the planes they're using and make them feel more, like, attached to it and interact with them more, basically.

**7-How will the industry address the sustainability trend and what initiatives are expected to reduce the carbon footprint of business aviation?**

I mean, I've been involved for two and a half years with a company that is, producing electric aircraft. So I'm a little bit involved with knowing the ins and outs of it. I just can't see it happening in my lifetime. I mean, I see, yes, all these companies say they're going to be operating by 2026. And New Zealand has signed a deal with a company that's a VTOL electric aircraft that will be operational. It isn't going to happen. I can tell you now the amount of certification required for electric aircraft it's just not going to happen. I think what

a lot of people find is once they fly private, it's very hard to go back to commercial again. And again, once you fly a big Airbus versus a global, all the people that own our Airbuses or Boeings have in the past had Falcons, Gulfstreams, and you know, they would never ever go back to smaller airplanes again. I see the trend staying for many, many years, you know and as I said, the trend, I'm going against the trend, the trend saying it's going to be more, it's going to be more environmentally friendly. I don't think it will be. I think it'll be more than 10 years before we see electric aircraft flying feasibly. I mean, you look at the Osprey, which is just now being grounded. It's a, it's a VTOL aircraft with, with normal jet engines, you know, if they can't make the jet engine do a VTOL on an Osprey, they're not going to make it work on an electric one, they're not going to allow it. If they're running at a, I think it's 13 percent crash rate on an Osprey, you're not going to allow that in a commercial aircraft and that's a fact indeed.

**8-What are important factors for you as a pilot that business aviation can provide? What are you looking for in an aircraft when using one?**

So yeah, that's part of a job between a pilot and a good pilot, you know, a commander and a normal captain. We always try and optimize our routing. We always try our best to look after the engines. We always do reduce thrust take-offs to, to extend the wear and tear in the aircraft, use less fuel. They're all things that we actively encourage. It's not affecting safety. It's just the way you operate the aircraft. You know, same with catering, same with every aspect of the aircraft. It's the reality is by saving on those type of things, it saves the company money as well. So, it's a doubly assured you're saving money for the company and you're doing a little bit for the environment at the same time. So I think that's a plus.

**9-How will the industry navigate regulatory approvals for innovative aircraft and sustainable fuels, and what are the potential timeframes involved?**

As I said, being involved with an electric aircraft company now and the problems they're having, they're actually ones they've actually been flying, getting the hours up for certification. The battery doesn't have the range. It doesn't have the capability to do what they say it's going to do. And also the other thing is the safety. I have a a Joby, you know, Dutch company underwater scooter, electric scooter. So basically you put the battery in and it goes underwater. You zoom around. It's approved to carry on an aircraft so I can take it on Emirates. I can take it on my private jet. I'm allowed to, it's approved by the FAA to take on an aircraft. I took it on my flight, no issues. I got home to France, it was sitting in my lounge, it exploded. Now I've been in touch with the manufacturer, they're mortified by it, they don't understand how it's happened, it wasn't charging, it wasn't plugged in, the battery exploded. Now, there's that high risk that you're going to have with electric aircraft, you know? For thousands of batteries on an airplane, I think the certification, it's going to take one aircraft to catch on fire and it's back to square one. Let alone the actual physics of how it runs, and it's also a bit of a false economy. I mean, you use the amount of power required to charge these things up, how do you get rid of the batteries when you're done? We need to go nuclear, obviously it's the cleanest way to produce electricity. Lot of companies like Germany are getting out of nuclear, going back to coal and gas, which creates emissions. We are slowing down technological advancements because of what we feel rather than what we should actually be doing.

