

A new era of personal aviation

How digitization is disrupting the business aviation industry – and injecting it with new life



WINGX

Roland
Berger



navigating
complexity

The lowdown

The business aviation industry is still reeling from the general worldwide economic decline of the late 2000s and early 2010s. Global sales of new business jets remain in the doldrums, roughly 40 percent down on just a decade ago. Likewise the utilisation of business jets is well behind pre-crisis levels. Access to business jets, outside ownership, has remained as limited as ever. Digitization, which has turned many other industries on their head, has yet to get its teeth into operating practices in business aviation. Most operators' fleet management systems remain resolutely offline and pricing is home-made. Retail access is opaque, the vast majority of brokers offering customers a digital interface but still doing the booking by hand behind the scenes.

We believe that things are about to change. Digital disruption is set to transform the industry, injecting it with new life. Within the next few years a genuinely

digital platform for matching dynamic supply and demand will emerge and business jet options will become transparent and immediately purchasable. The impact of this change could be sufficiently disruptive to create a new market segment emerging between the luxury of private aviation and the mass-market airlines. We call this segment "personal aviation".

This imminent reshaping of the business aviation landscape appears to be endorsed by the perceptions of an increasing number of observers within the industry. We present our findings from interviews with around 30 industry experts and the results of an online survey carried out in collaboration with CorporateJetInvestor.com.

This study has been jointly conducted by Roland Berger and the business intelligence firm WINGX and represents our joint vision of the future of the business aviation industry.

A glimmer of hope is on the horizon.

Digital disruption is ushering in a new era
of personal aviation.

Times are tough for business aviation. The industry has still not recovered from the Great Recession, with global sales of new business jets in 2017 forecast to fall at least 40 percent short of comparable sales in 2008. During a decade of stagnation, it's remarkable that the industry has not done more to reinvent itself. This is especially true of the way in which access to business jets is provided. The way in which time on business jets is chartered was until recently still much the same as it was 15 years ago. Moreover, few businesses and entrepreneurs would consider using business aviation: They consider it an unnecessary luxury, despite knowing very little about its products, pricing or operators.

There is, however, a glimmer of hope. The charter market has been growing steadily in the United States for at least two years, and has vigorously recovered in Europe in the last six months. Some of this recovery is down to a better economy, and an oversupplied market yielding significant price discounts. However, it's no coincidence that charters have flourished just as we have seen changes and innovations on the supply side –

the beginnings of a radical transformation driven by digitization.

To understand the challenge of chartering business jets, you need to understand the evolution of this idiosyncratic and still-immature industry. Business aviation was never designed to provide a service for hire. Enabling aircraft access to anyone not already an aircraft owner has evolved as a secondary priority, a way to offset ownership costs and support future aircraft sales. The terms and standard of such access have always been extremely variable because of the highly fragmented fleet of owned aircraft available for hire. Charter started as a loose sharing arrangement between owners and their affiliates. Brokers came in because their expertise was needed to expand the market, and to intermediate in the complex job of tying up supply and demand.

The arrival of fractional ownership in the 1990s changed the rules of the game. This new model articulated a simple proposition: on-call access to an aircraft in return for a standardized fraction of the cost of full ownership. It was a revolutionary idea and provided

much of the first boom in business aviation at the turn of the twenty-first century. Various derivative usage programs followed, principally the "jet card", with much of its sales focused on soaking up unused capacity in the burgeoning fractional fleets. Then the 2009 crash exposed a huge excess inventory, with aircraft pricing subsequently collapsing for several years, especially in the mid and small jet end of the market. The fractional fleets took the brunt of the hit, and a substantial number of their customers looked for alternative options to fly.

Following the 2009 crash some variations on usage programs continued to do well. VistaJet stood out as a potential competitor to NetJets by swiftly aggregating a brand new premium jet fleet and marketing a simplified hours program guaranteeing global access. This was ideally timed for the new generation of ultra-wealthy individuals created by the oil and commodities boom in emerging markets.

The challenge however – then and still now – was how to bring transparency and consistency to such a disaggregated market. Over 70 percent of the "fleets" of business jets available to charter have only one aircraft. Most operators' "fleet" management systems are offline, pricing is home-made, and their commercial focus is operational, not retail. Customers have neither time nor experience to ask the right questions, hence the need for brokers to stitch together each new charter contract. → [A](#)

The opacity of the business jet charter market stands in stark contrast to the wave of digital disruption witnessed across the rest of the travel sector in the last 5 years. The first to go were "scheduled" products such as flights, train tickets, and hotel rooms. They were followed by dynamic inventory, such as short-term car rental, bike rental and taxi services. Various attempts were made to bring the same kinds of solution to business aviation. Virgin Charter was a conspicuous failure to automate the broker market, and DayJet tried and failed to create a commuter network flying semi-scheduled air taxi networks.

There has been a success story in the business aviation sector: Avinode. Anticipating the pre-recession

surge in demand for business aviation, they brought much-needed connectivity to the diffuse community of brokers and operators. While it promised to be the Amadeus for business aviation, it instead flourished simply by being the monopoly hub for brokers to find operators. Only now, a decade later, is it attempting to get both parties to transact rather than simply meet on their website.

Meanwhile the first "online brokers" started to get some traction several years ago. But the vast majority of the broker market continued to operate much as it always had. Their claim is that charter remains a highly complex task, for which their customers need a human concierge not a website-automated robot. The traditional brokers claimed that the online challengers weren't fundamentally changing the customers' experience. Effectively they were just collating customer enquiries online, then automating their distribution to potential operators.

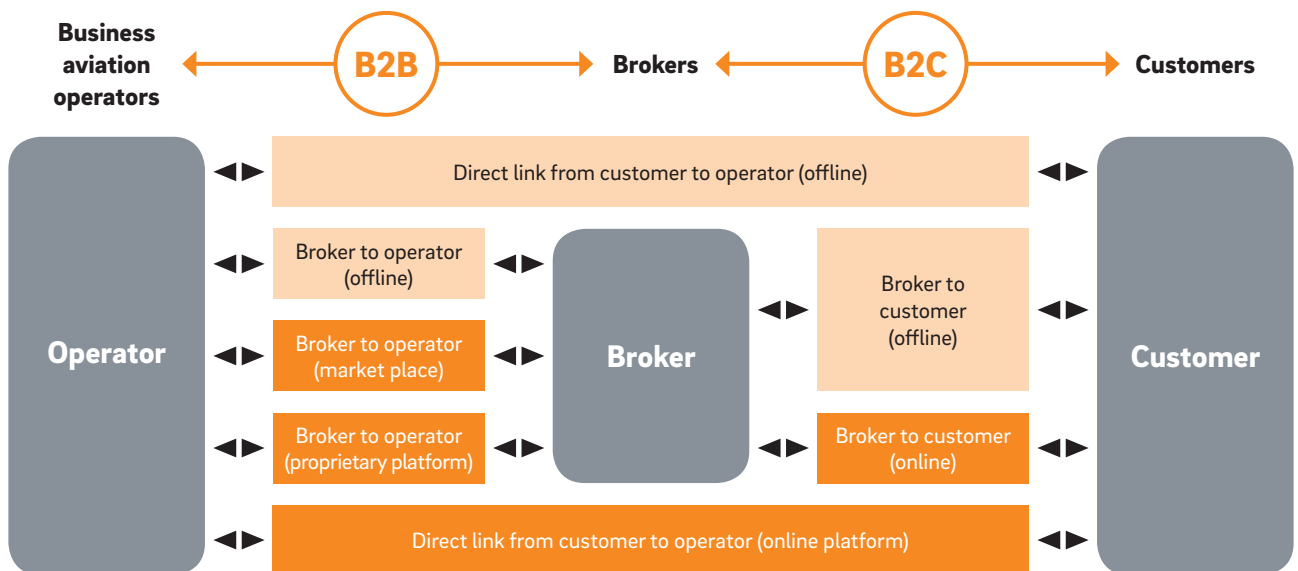
In the most recent couple of years the online brokers have taken their model forward, beyond the online automation of the brokers' traditional "reverse auction" of customer enquiries. Back channels have been established to monitor operators' scheduling systems, and various platforms have started to simulate prices for any given request. In theory at least this would enable potential charter customers to browse, select and purchase a private jet flight with the same immediacy they would in any other experience of purchasing a travel service.

In order to test the potential impact of this transformation, we asked those dealing with the challenges on a day-to-day basis. We conducted around 30 interviews with various stakeholders in the business aviation industry, including operators, brokers, customers, investors and representatives of industry associations. We backed this up with an online survey carried out in collaboration with CorporateJetInvestor.com and business intelligence by WINGX into recent trends in business jet charter and the degree to which digital disruption is already stimulating the market. In the following sections we present a selection of our findings.

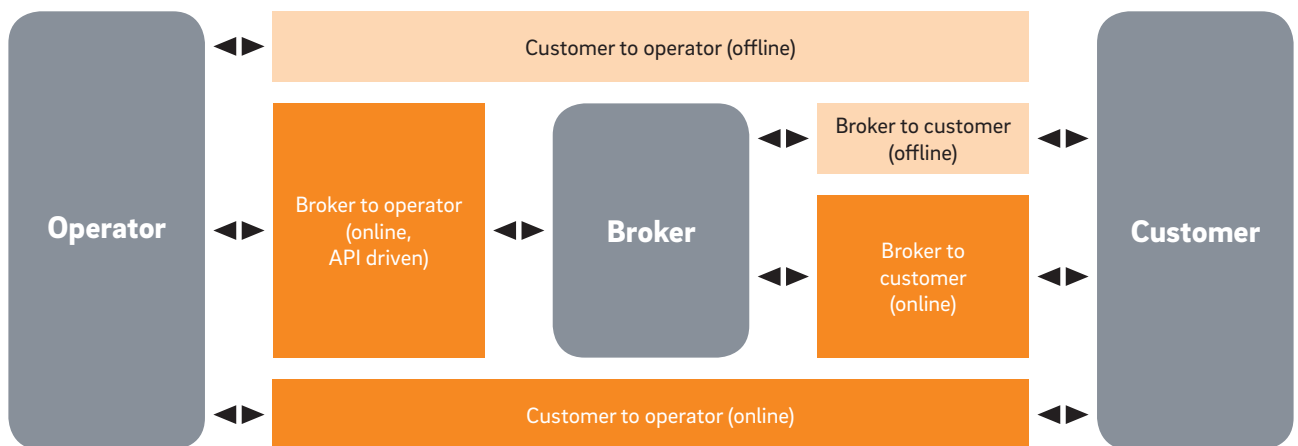
A: Change in the industry's value chain.

Digitization is already simplifying the landscape but still based on the traditional structure.

Current value chain – Initial digitization clearly visible



Next 3-5 years – Further digitization but still based on traditional structure



Offline Online

Source: WINGX, Roland Berger

The principal challenge is technical.

Most companies offer customers a digital interface but do the booking manually in the background.

Our expert interviews, online survey and market research revolved around two key questions: How is the business jet industry dealing with the challenges it faces today, and how do stakeholders see the industry developing in the coming years and decades?

In theory at least, the impact of technology on charter access is huge. Customers get a transparent view of all inventory for hire, and can select and purchase instantly, instead of waiting for a traditional broker to find and barter an aircraft and negotiated price. Yet, the principal challenge – stressed by respondents time and time again – is technical: How to build a platform that is able to monitor the dynamic availability of aircraft across a highly fragmented fleet, and how to engineer a competitive price that instantly accounts for the myriad variable costs of operating an aircraft between two points.

This technical challenge results in a number of complications. Currently, for example, most companies admit that they only offer a digital interface towards the customer but do the booking manually in the background, like traditional brokers. Instant pricing is high-

ly challenging because operators quote based on cost, which includes many constantly changing variable factors (time-variable landing fees, FBO¹ charges, and so on). As one interviewee commented, "Instant pricing is by definition impossible."

The "digital" matchmakers and booking tools still rely on human beings for the approval. Even with instant push notifications on a smart phone it seems doubtful that the owner will accept within seconds. The big advantage is that operators get a genuine take-it-or-leave-it option to sell a trip. This is far preferable to the endless stream of potential inquiries from the traditional broker channels.

Another underlying challenge highlighted by our respondents is getting access to inventory, that is, persuading a large number of operators to integrate their scheduling systems and respond to customer requests in response to the platform's simulated pricing. Instant pricing is dependent on seamless integration with operators' management systems within which all flight planning and pricing data needs to be extracted. While this may be viable with some operators, integrating sufficient

¹ Fixed based operator. FBO charges are levied on the local representatives of all private aircrafts.
The FBO charges are calculated by rounding the maximum permissible take-off weight to the nearest ton.

market inventory represents a significant challenge. A further critical factor is the role of the owner. Operators typically do not own the aircraft and only manage it for a certain owner. Each charter flight needs to be approved by the owner.

Beyond the technical challenge, our research revealed that an additional challenge for online brokers is how to accelerate their penetration of the available fleet. Establishing a relationship is one thing – the likes of PrivateFly and Victor have achieved this over many years of generating sales, whereas the likes of Stratajet have simply flown themselves in for an introduction to every operator on the map. But beyond that, brokers need to build leverage over the available fleet. Otherwise they will only ever be the intermediaries.

According to industry stakeholders, the fragmentation of the market is the major challenge here. The more complex and variable operators' pricing and scheduling, the tougher it is for the broker to present customers a standardized model. The online disruptors have gone some way to addressing this vulnerability by building APIs into fleet scheduling platforms. A bolder investment is to join forces with the scheduling platform provider, as Stellar has done with FOS² in the US market.

Operator consolidation is beginning to help the brokerage market out by assembling larger fleets on the same schedule platform. Luxaviation and Gama Aviation are the two obvious consolidators, building fleets of several hundred aircraft in the last few years' acquisitions. But their business models are all about owner-management. This is not a fleet dedicated to hire by the hour.

There are also some owned and operated fleets growing organically and joining forces. This has been critical in providing the online brokers with homogeneous and dependable lift. Blink, Wijet and GlobeAir have access to close to 60 air taxis, and they're all favorites with the online brokers.

An alternative route for brokers looking to gain control of inventory is virtual capacity aggregation. The charter industry has long been obsessed with making a

"We anticipate the market will start to solve the fragmentation problem. We're seeing increasing operator consolidation. And the intermediation of inventory will start to consolidate around online information providers."

Industry Association CEO

fortune from "empty legs", the 30 percent of sectors flown with no passengers but required to ferry aircraft back to owners or for ensuing charter trips. Empty legs are seen by the industry as the low-hanging fruit. Yet all such ventures have failed: Traditional charter customers don't like the inconvenience, and in any case operators tend not to stick to the posted empty-leg schedule.

The JetSmarter approach has been to pre-purchase the distressed inventory. By guaranteeing a buyer for all last-minute positioning activity, JetSmarter found willing operators and quickly established a large proxy fleet. With the capacity acquired, JetSmarter then pre-sells the flights to users via membership programs. JetSmarter's digital platform then becomes the booking engine for allocating members to pre-purchased inventory.

But this is not the only approach possible, say our industry experts. Other digital innovators have purchased their own inventory, and then, with complete control over its availability and scheduling, sought to build demand through membership schemes on the one hand, and product innovation on the other. Examples include Wheels Up and Surf Air who have purchased fleets of King Air and Pilatus PC12 prop aircraft, selling the capacity into "country club" membership schemes. Besides getting traditional charters at a discount, members get access to seats on corporate shuttles and ride-sharing.

² Flight Operations System

Say hello to a genuinely digital platform.

Business charter flights are moving from being curated to commoditized.

What are our industry insiders' predictions for the industry? How do they see business aviation transforming in the years and decades ahead?

It's not a coincidence that the charter market is recently showing increasing vigour; the online disruptors are already making a difference. But these are early days. The charter market is still behind where it was ten years ago in terms of activity. The available fleet of aircraft is still highly fragmented. And the revenues being generated by disruptors are nowhere close to generating the profits necessary to pay off their investments. However, there is considerable investor appetite for business models aiming to shake up the business jet product. Recent investment rounds for leading online brokers such as Victor and Stratajet are comparable to the pre-crisis financing of the putative air taxi disruptors like Blink and Jet Bird. Jet Smarter's relatively enormous financing may be more in hope than expectation, but indicates investors' excitement at the prospect of combining Uber style disruption with the glamour of business jet travel. → [B](#)

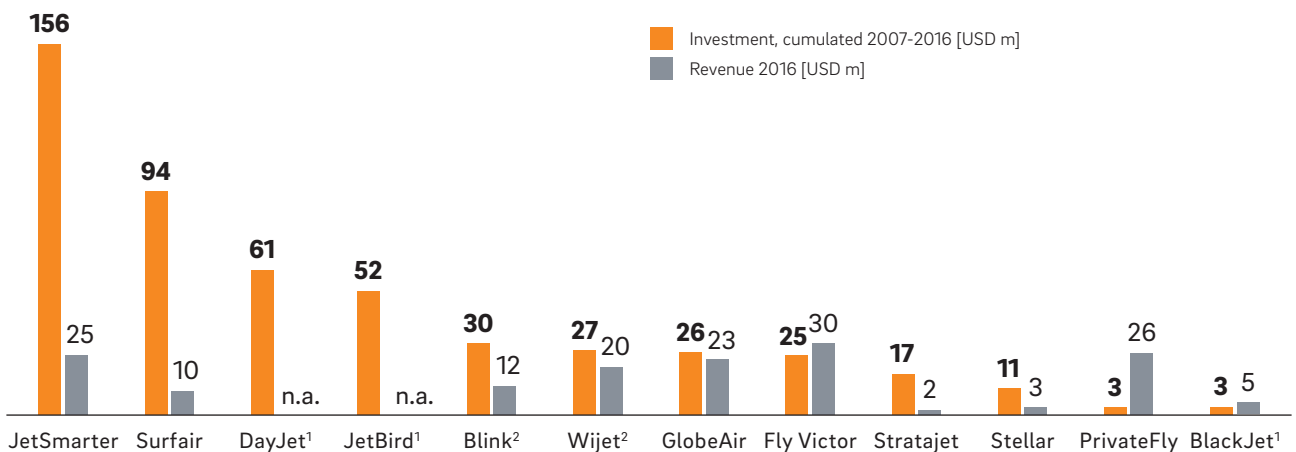
Notwithstanding the unhappy investors, there is probably room for a handful of winners. The race is on to build a seamless chain linking inventory availability to spot pricing. Our respondents believe that this will be possible in less than two years. With a viable platform for matching dynamic supply and demand, chartering an aircraft will be liberated from its black box. As soon as availability and pricing can be guaranteed on-call, business jet options will be seamlessly integrated into the GDS³ for any other travel product. In many cases, the business jet charter option will still be too expensive for business executives. But for the first time it will be transparent and immediately purchasable, should it fit the particular circumstances.

As the charter product moves from being curated to commoditized, it will also be easier to increase the availability of seat sales. The consolidation of the scheduled airlines around low-cost carrier (LCC) models focused on major airport hubs should only hasten the demand for thin point-to-point alternatives. These used to be served by regional networks scheduled by operators, but could equally be served by business jet

³ Global Distribution System. The channel through which the airline industry has distributed inventory to the travel market

B: Investment in, and revenue from selected business aviation companies.

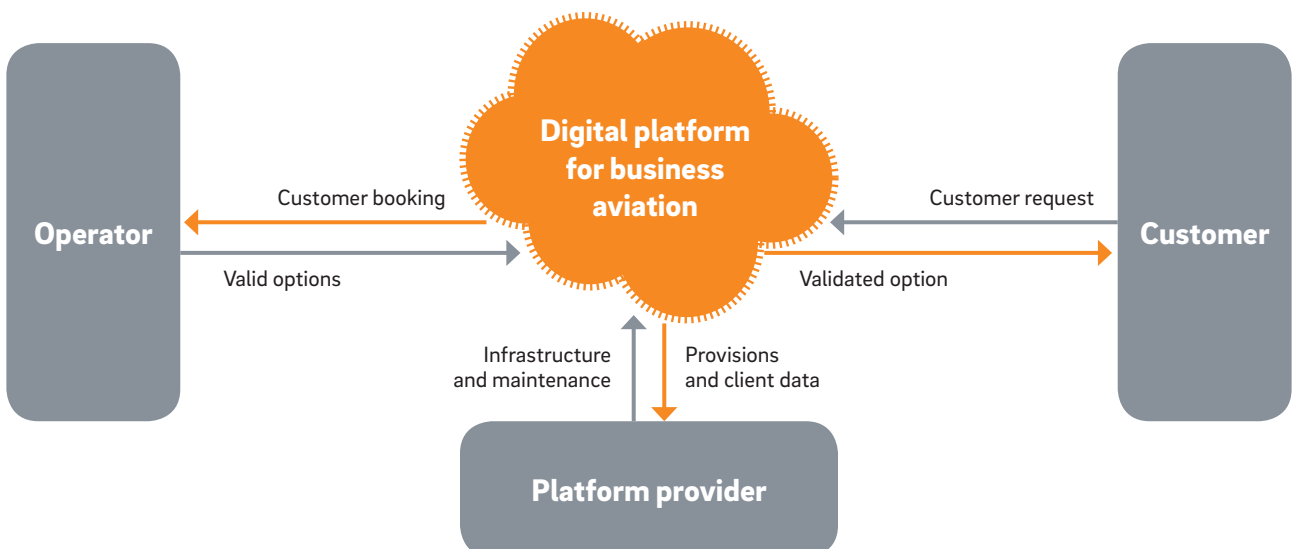
Cumulated investment 2007-2016 and revenue 2016 [USD m].

¹ Operations closed (DayJet in 2008, JetBird in 2014, BlackJet in 2016)² Wijet took over Blink in 2016, separate figures shown

Source: Bloomberg, Crunchbase, Observer, Business insider, Owler, Forbes, Capital IQ, LA Times, company websites

C: Future value chain.

A 'true' digital platform for business aviation will lead to a transparent and simplified process for the customer.

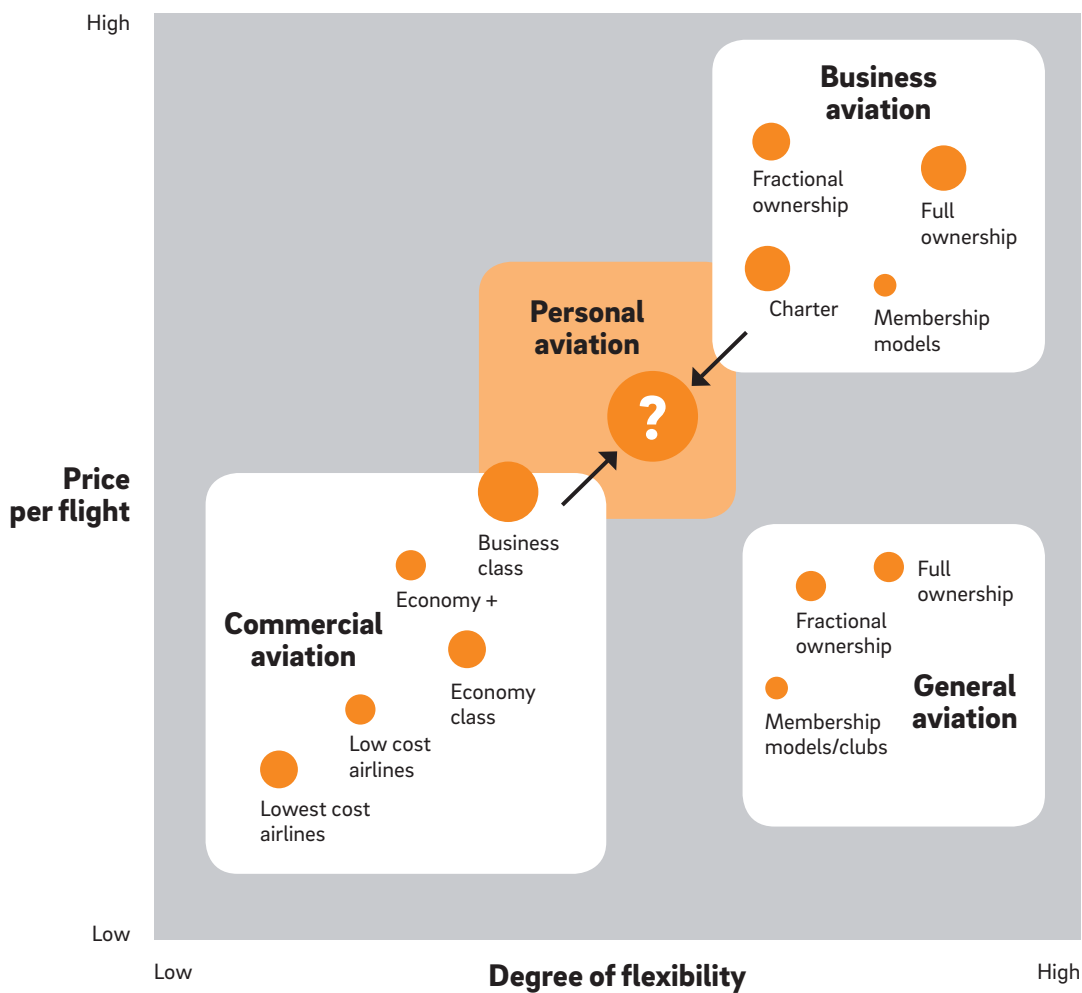


Source: WINGX, Roland Berger

D

RESHAPING THE BUSINESS AVIATION LANDSCAPE.

Position of the expected new segment in the aviation landscape.



operators where the flights are collaboratively scheduled by their members. → [C](#)

The private jet industry as it is widely perceived – catering to the super-rich with the primary allure being luxury and privacy – will continue to exist, say our industry insiders. This is the niche to which the Bombardier and Gulfstream ultra-long range aircraft will cater. With the world's billionaire population flourishing, this will remain an attractive market. But at the same time, emerging from this niche and perhaps not overlapping to a great extent, the "mass" charter model could become a much larger market. We believe that, somewhere between the ultra-rich private aviation and the mass-market airlines, a new era of business jet activity may coalesce, driven by digital disruption. We call this the era of "personal aviation". → [D](#)

"Traditional brokers could well leave the market in large numbers. Digital players are expected to take that share and increase it. However, we will see some exits or mergers this year, as some of the startups begin running out of money."

Industry expert and founder

This hypothesis has wide support in the industry. Some 81 percent of our respondents were sure, or at least thought it was conceivable, that these developments would lead to the emergence of a new market segment serving the requirements of a new customer clientele slightly above scheduled business class flights. With a significant share of first-time fliers, this development is already triggering additional growth of the overall charter market in terms of passengers. → [E](#)

The results of the survey indicate that this growth partially originates from the cannibalization of airline business-class flights. However, the number of flights will not increase at the same level, as the "low-end business aviation" segment will be fueled by "air-taxis", such as JetSmarter. In addition to the benefit of a lower price point for the customer, the pooling of flights will also free up slots in the airspace as well as at the airports.

"We currently see a new segment emerging that is positioned between traditional business jet flights and business-class flights on scheduled planes. These flights are operated on an air-taxi model with regular routes between city pairs where the big airlines are not able to provide direct connections."

CEO of international business jet operator

Consolidation of the broker market is also likely going forward: Some 70 percent of the surveyed experts were sure that online platforms would lead to consolidation here, with only a few dominant companies by 2020. In the long run, five to ten such companies will probably survive. There will be specialists in match-making and others in managing the physical assets. It is expected that the new disruptors will need to find established business models – or disappear.

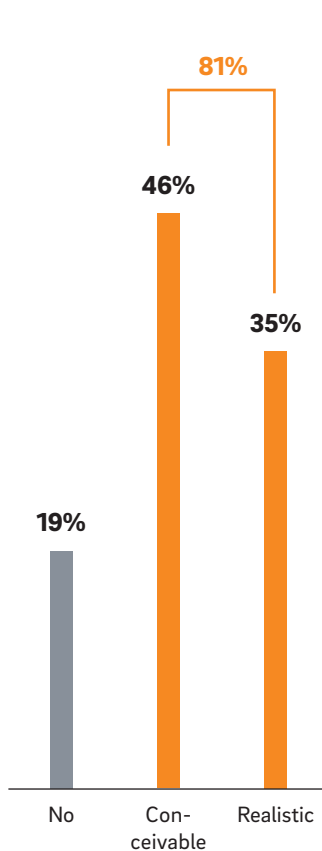
Traditional broker firms need to further specialize in high-end, personalized services or they will be replaced by their digital competition. In the end, industry experts estimate that 20-30 percent of the global number of charter flights will be filled by these high-end brokers

E

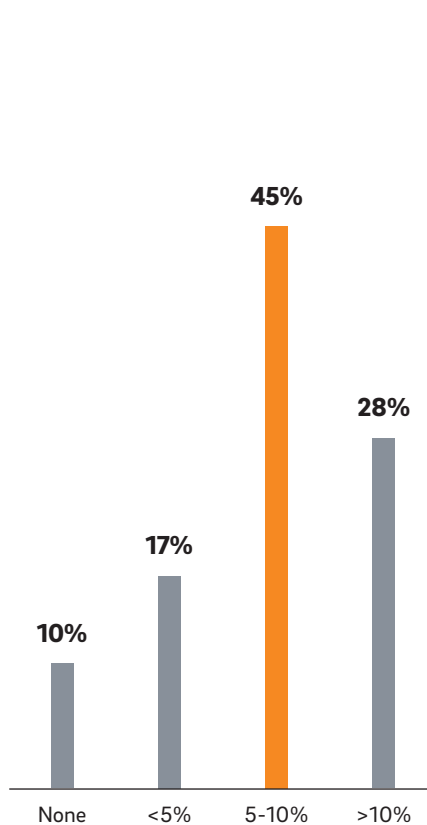
A NEW ERA IS DAWNING.

Industry experts think a new era of personal aviation may be on the way.

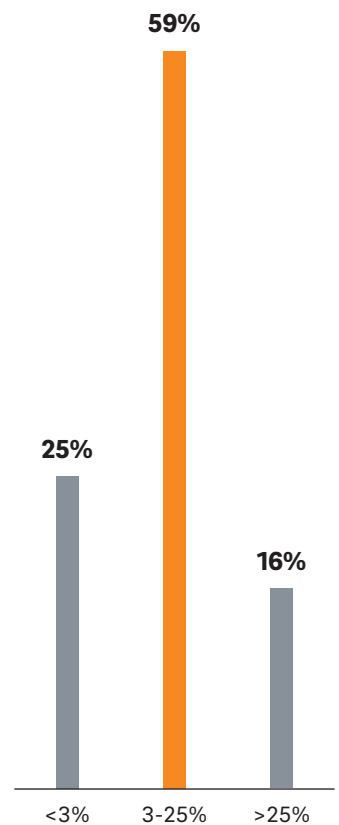
In-between traditional business aviation and airline services



First time flyers on business aviation charter in 2017



Business class customers that can be captured by business aviation charter by 2020

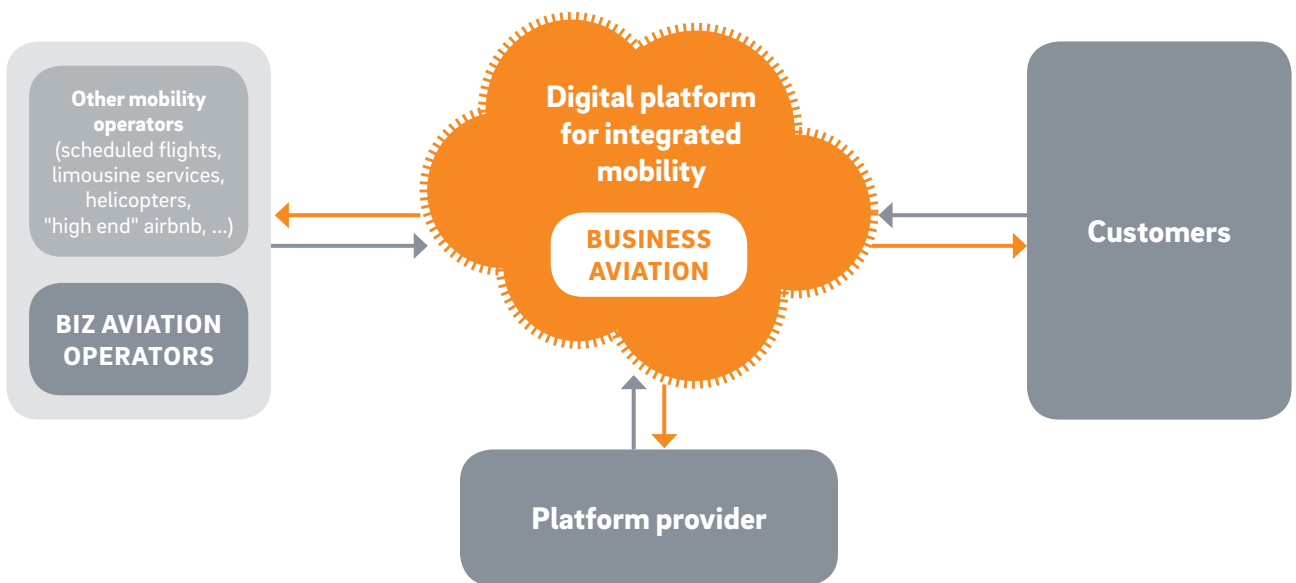


Note: Sample includes 700 individual answers on a total of 10 questions. Percentage indicates how often a specific answer has been given by the respondents.

Source: Poll conducted via CorporateJetInvestor.com

F: The endgame for business aviation.

Business aviation as part of an integrated mobility platform.



Source: WINGX, Roland Berger

while the rest of the market, and in particular the new personal aviation segment, will be served by digital companies. That means they will triple or quadruple their market shares compared to today.

In the short term, the supply side should benefit from digital newcomers offering operators higher utilization. However, consolidation on the demand side will eventually put pressure on the supply side. One potential reaction could be the foundation of alliances similar to those in the airline industry, such as Oneworld and Star Alliance.

In addition, the instant booking of flights will favor an "on-demand" market over a typical "membership-based" market. In the endgame, the ultimate customer experience will be a fully integrated mobility offer covering limousine service, business jet flights, commercial aircraft flights, and helicopter flights, comparable to

what moovel provides for short-distance mobility. Customers will simply book a trip from point A to point B without having to think about what the trip will look like exactly, or which modes of transportation will be used (automobile, helicopter, business jet, commercial aircraft). Indeed, the next evolutionary step will be live optioning between different modes in the event of delays. → **F**

Digital disruption is set to transform the business aviation industry as it has done many other mobility sectors. This injection of new life will reshape the industry landscape and usher in a new era of personal aviation. For customers, the issues they need to weigh up will be very simple: convenience, time, and price. Players who are able to offer an attractive solution that also satisfies these three criteria will ultimately establish themselves as winners in the market.

Imprint

WE WELCOME YOUR QUESTIONS, COMMENTS AND SUGGESTIONS

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WINGX is a Business Intelligence specialist, providing data, analytics and insights to the global business aviation industry. We aim to equip our customers with actionable analysis to support decision making, increase competitiveness and identify opportunities.

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