

A new era of personal aviation

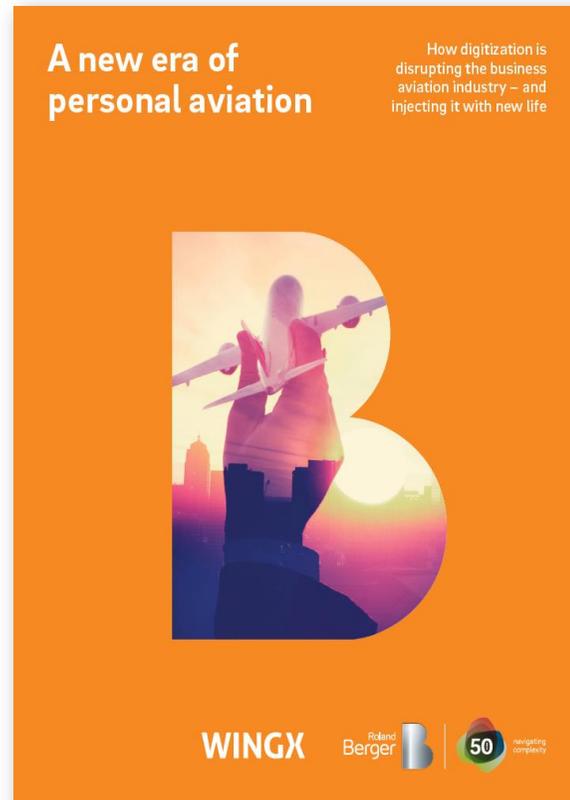
How digitization is disrupting the business aviation industry and injecting it with new life

EBAACE
22-24 MAY 2017 | GENEVA



We are pleased to present the results of our study today – Thanks to everyone who has contributed along the way

Study and participants



More than 30 industry experts participated via interviews



We collected more than 700 individual answers to 10 questions in an online survey

- 1 **Industry associations**
 - 2 **Ground Suppliers**
 - > Airports
 - > FBOs
 - > Services
 - 3 **Experts & Media**
 - > Consultants
 - > Leading trade publications
 - 4 **Aircraft Operators**
 - > Aircraft Management Companies
 - > Taxi operators
 - > Fractional operators
 - 5 **Charter broker**
 - > Traditional brokers
 - > Online disruptors
 - > Charter market place providers
- 

In a nutshell – We believe that digitization will encourage the emergence of a new segment of 'personal aviation'

Big 3



In addition to executive interviews and an online survey there is evidence in the activity data showing the "digital momentum"

Where is the evidence?



We have conducted interviews and surveys with business aviation industry executives across the supply chain to test our hypotheses with your views



We have benchmarked the recent adoption of digital platforms in business aviation with prior waves of digital disruption evident in all other mobility sectors



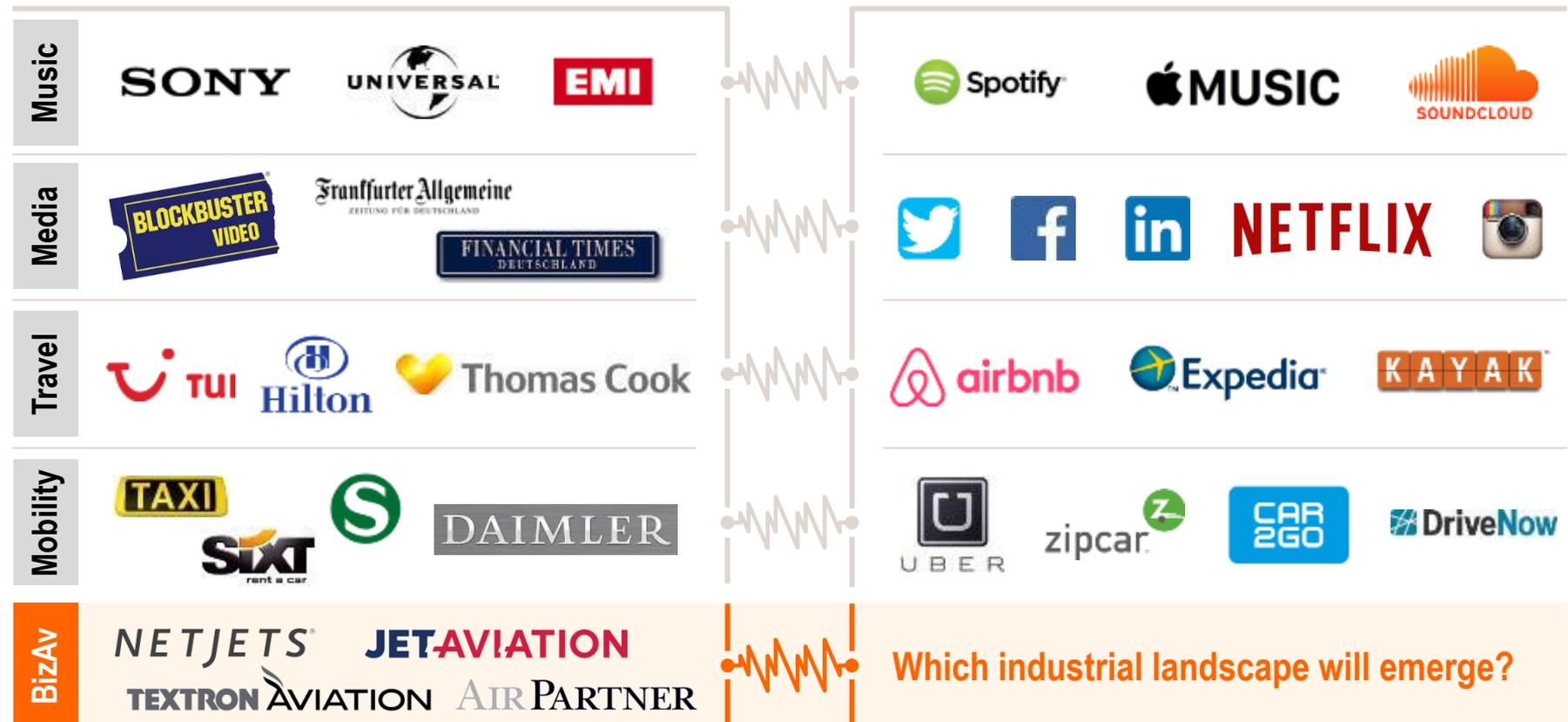
We have noted the recent growth in business aviation charter market activity and evidence that momentum is being provided by digital disruptors

In recent years, digitization has transformed industry, challenging traditional business models and creating new competitors

Business aviation is one of the last undigitized sectors...

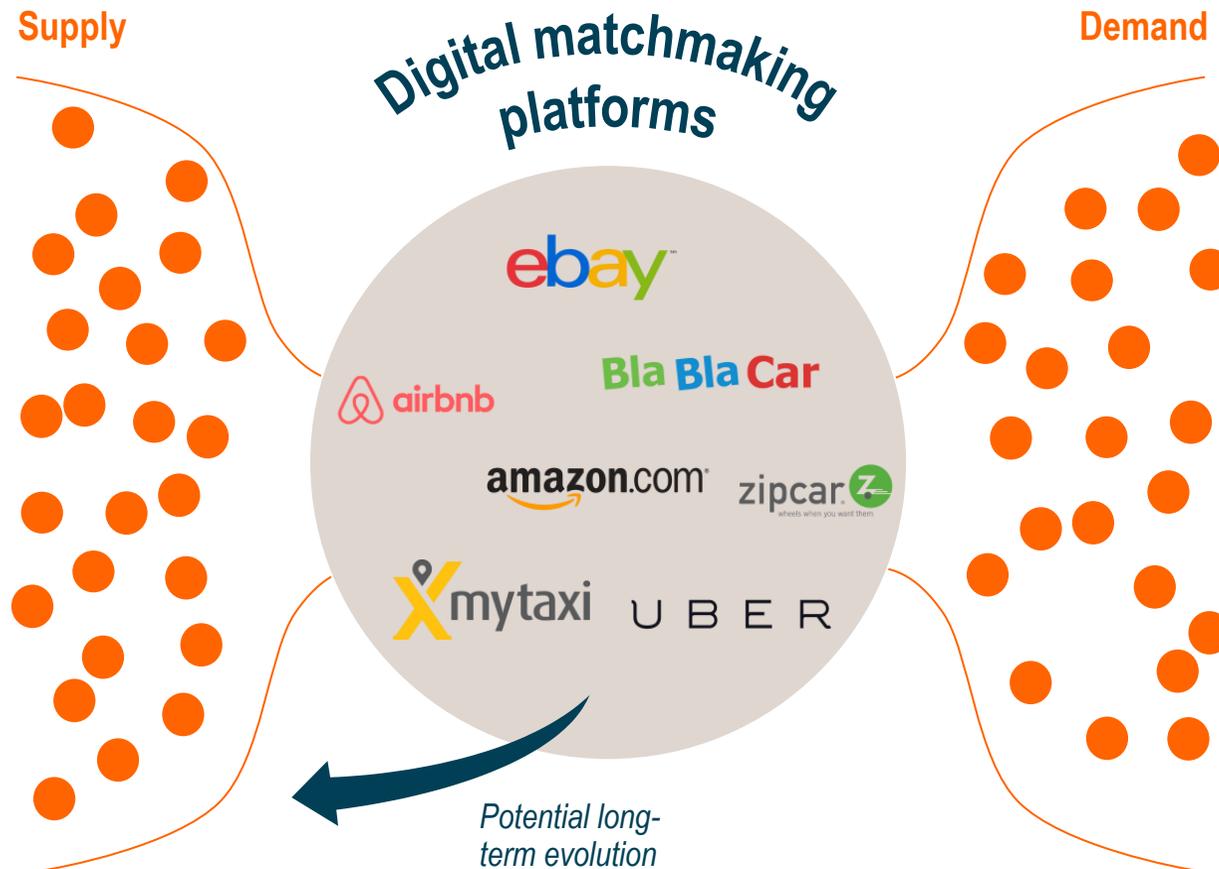
Before digital disruption...

...and after



Digital business models are all about connecting dynamic demand and dynamic supply

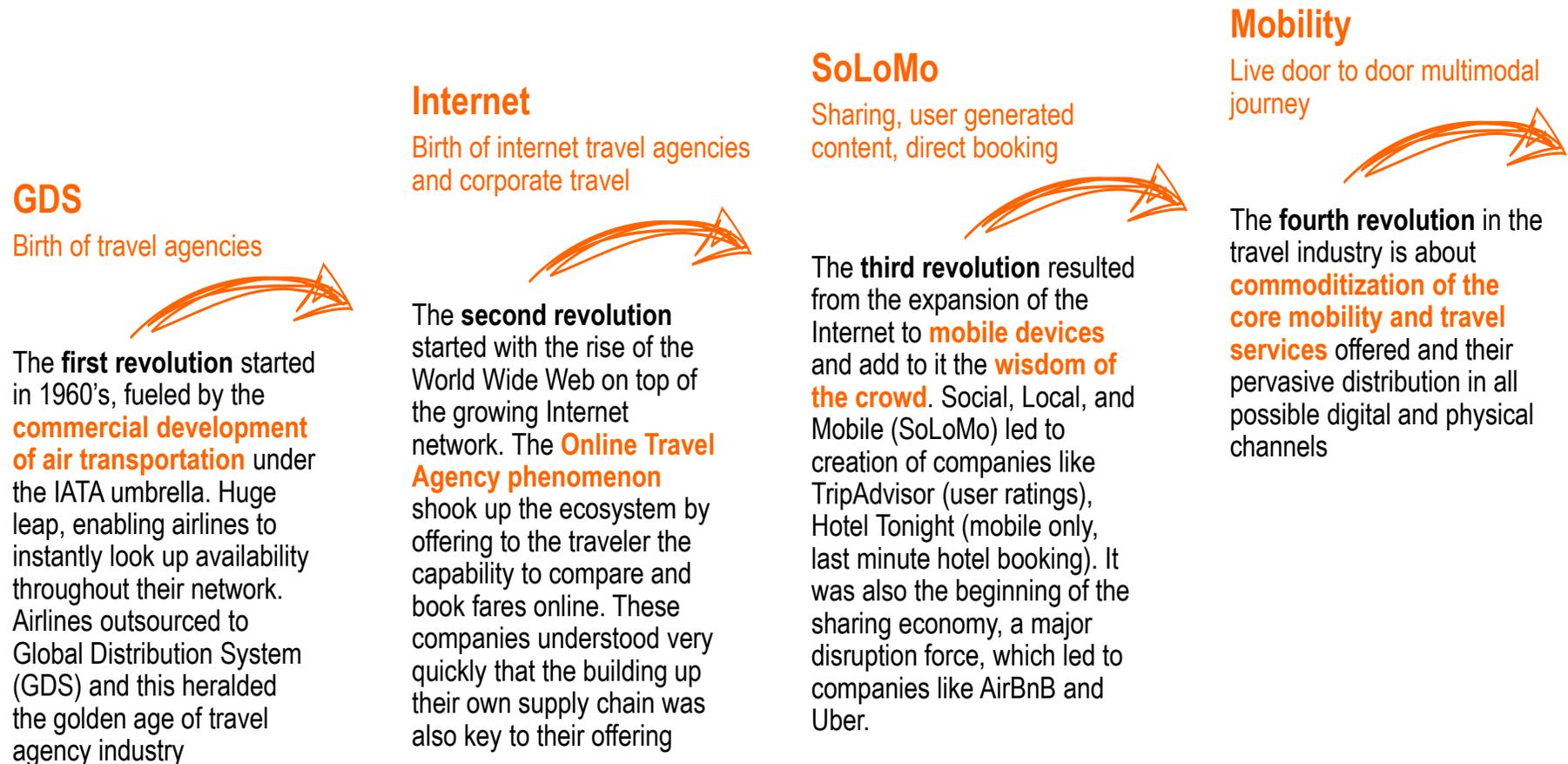
Typical value add of digital business models and exemplary companies



- > Digital platforms are often matchmakers to better connect a fragmented/dynamic demand side with a fragmented/dynamic supply side
- > For scheduled inventory this is not too challenging and is already quite mature, e.g. airline or hotel e-bookings companies
- > For dynamic inventory this is much more challenging – Much later penetration by digital contenders, e.g. Uber within taxi market
- > Private Jet market also characterized by a very dynamic supply – Question is whether it is too challenging
- > So far traditional business models like fractional ownership or charter are still dominant in Private Jet market

Digital disruption in the travel industry has accelerated in the last 10 years – The race is now on towards fully commoditized mobility

Digital disruption waves in the travel sector



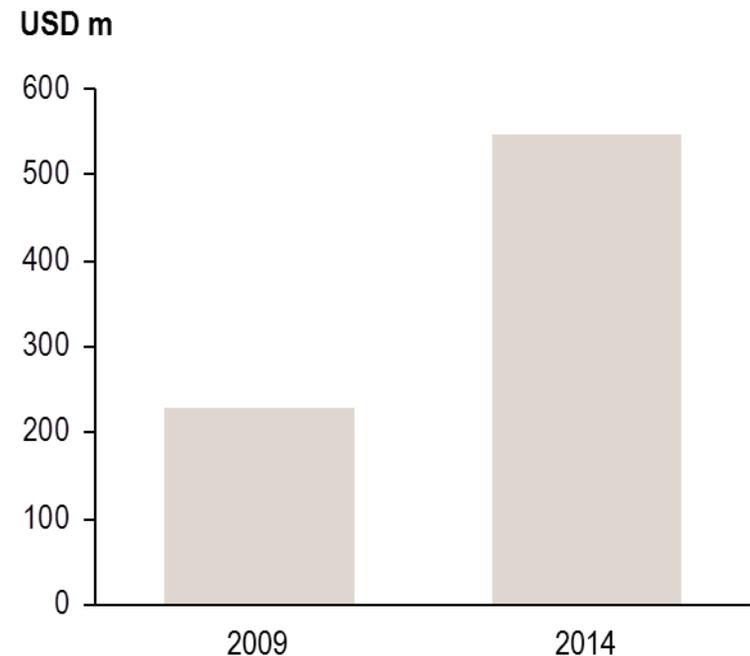
The digital disruption of the town taxi market is an interesting benchmark – How to match dynamic demand and supply?

Case study – Uber



... but ...

Taxi driver commissions in San Francisco

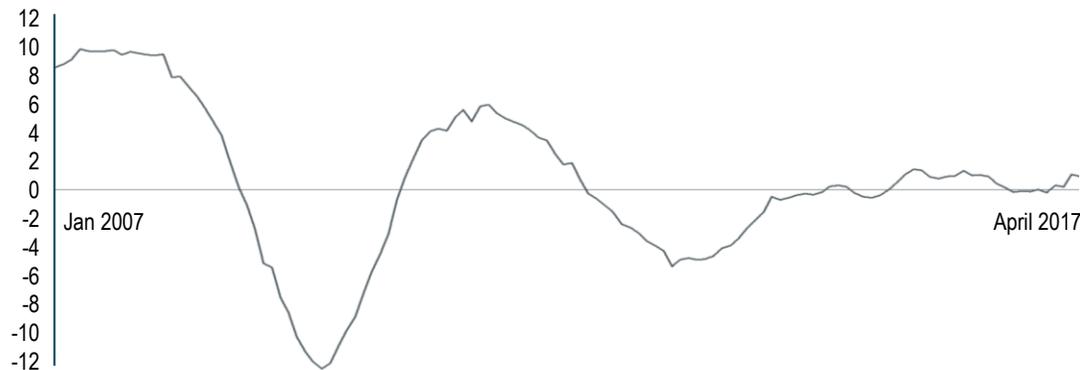


Enormous growth of Uber has not just taken share but hugely increased market size. Simple key: make inventory easier to find and easier to pay for

Long term trends in business jet deliveries and flight activity indicate an industry still struggling to emerge from a long recession

Flight activity and aircraft delivery

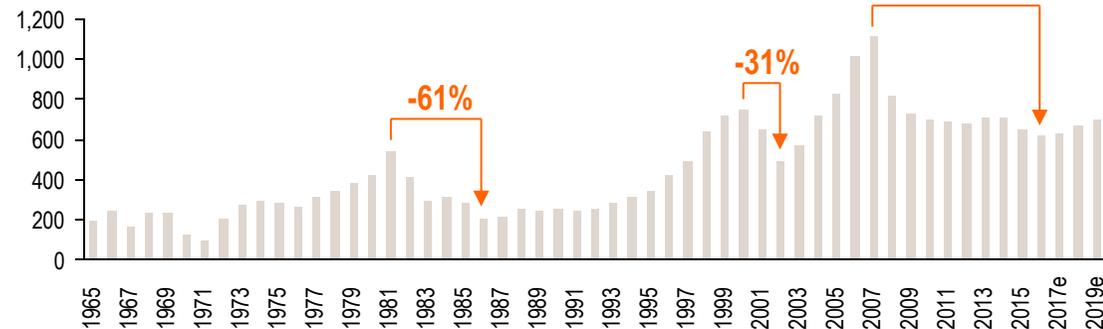
Business aviation activity, Europe, 2007-2017 [L12M in %]



Remarks & Observations

- > Business aviation has still not recovered from the Great Recession. Global sales of new business jets this year are forecast to fall at least 40% short of comparable sales in 2008. **Why has this industry not managed to regain its market?**
- > Few businesses and entrepreneurs would consider using business aviation, considering it an unnecessary luxury, despite knowing very little about its products, pricing or operators. **Why are potential users of business aviation not aware of the product?**
- > In contrast to the constant evolution of cutting-edge technology in business jets, the way in which time on business jets is chartered is still done in much the same way it was 15 years ago. **Why is there such a contrast with any other travel sectors, which have been turned upside-down by digitization?**

Business jets delivered, Global, 1965-2020E



Access to business aviation: compared to renting any other 'mobility' service, chartering an aircraft is an inconvenience

Chartering a jet takes ages to review, choose, select and pay for

Travel Sector experience

- > Instant online mobile access to wide range of travel services
- > Comparison of different mobility options for any schedule option
- > Open data sources and geo-tracked inventory mean that 'operators' can instantly allocate
- > Customer can easily compare and contrast all options by any preferred criteria
- > Customer can also get peer-review on travel supplier
- > Purchase is instant, availability guaranteed,

- > Until recently, aircraft options were not visible to end user; dependent on broker intermediation
- > Not possible to compare business jet options with other transportation alternatives
- > Most operators still scheduling off-line/in-house. Some way from standardized inventory API.
- > Customer gets superficial comparison but rarely on guaranteed price and availability
- > No meaningful historical customer feedback to refer to. Industry ratings not comparable.
- > Availability and transaction negotiated/agreed off-line



Chartering a business jet

Why has business aviation not developed a mature digital market place before now?

Number one underlying problem

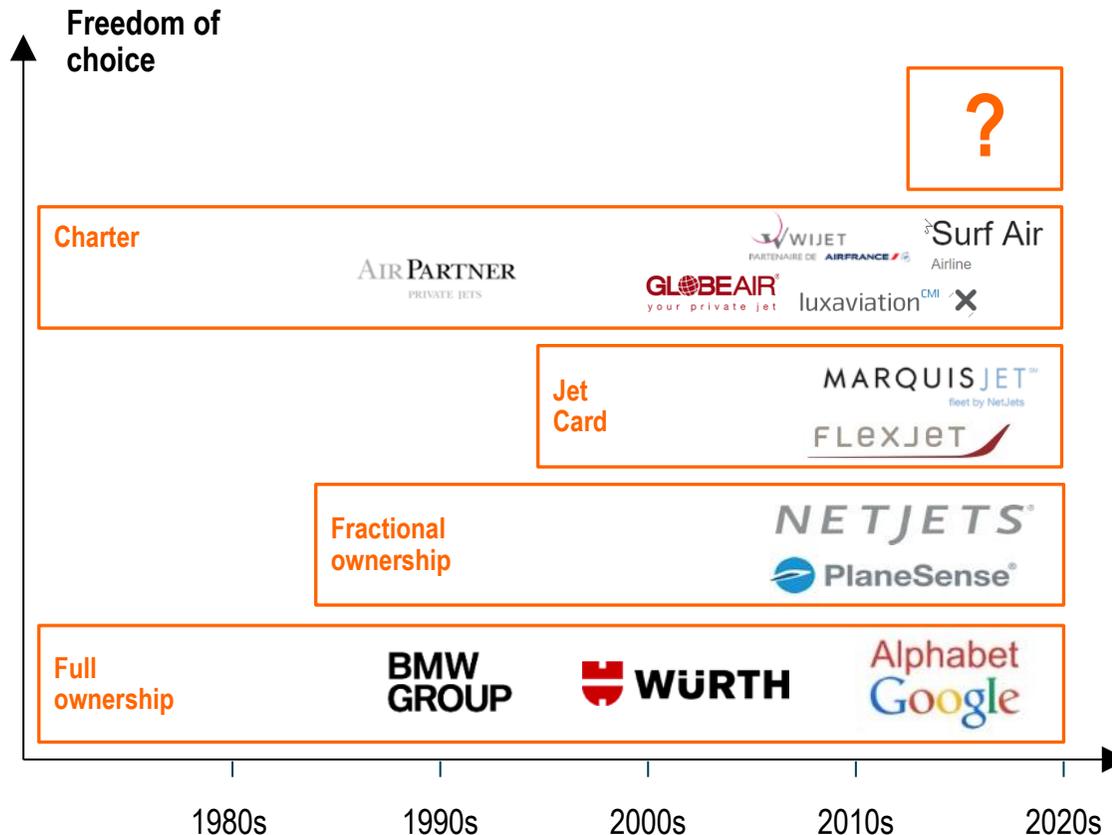
Supply
fragmentation

(77% of active aircraft in Europe belong to fleets of 5 or fewer)



In the absence of an online market, fractional/card exploited gap between expensive ownership and opaque charter spot-market

Business model development over time

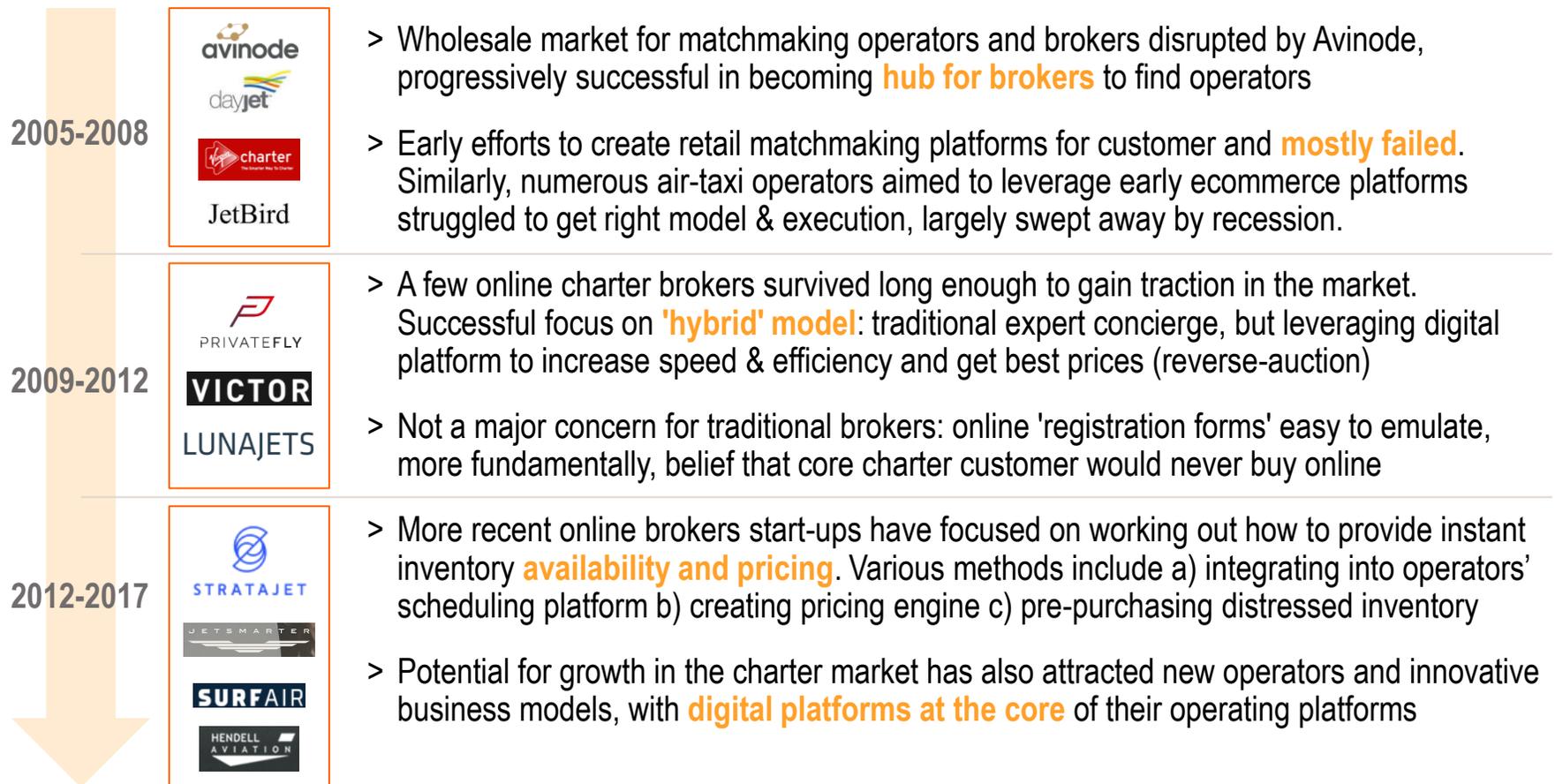


Remarks & Observations

- > Full ownership is the traditional model of business jet access but no more than 20k owners worldwide, 50% HNWI, with a market of 500-1000 new ac per year.
- > Charter always there, but opacity and unreliability of the spot-market has artificially limited market, perhaps 100,000 users worldwide.
- > Fractional ownership successfully exploited the gap for guaranteed price & availability without ownership cost. Cards soaked up excess capacity.
- > Post-recession risk aversion to asset-ownership saw large scale exit from Fractional programs.
- > Wrong time to win newcomers, but opportunity to build new models around dissatisfied users.

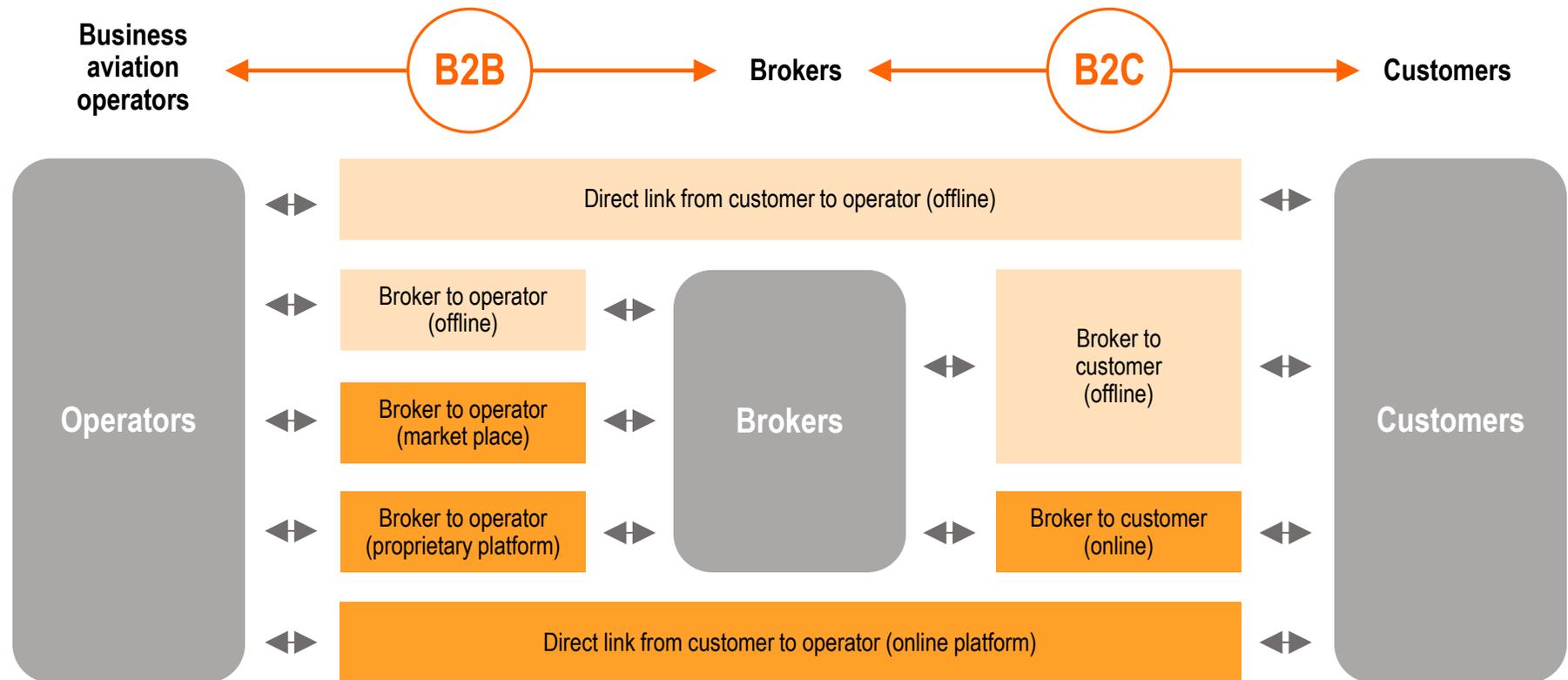
Digitization central plank of new business models. B2B quickly established. B2C several waves, gradually getting traction

Digital story in the business aviation charter market



The current supply chain for inventory distribution is still mainly offline. Very little evidence of end-to-end digitization.

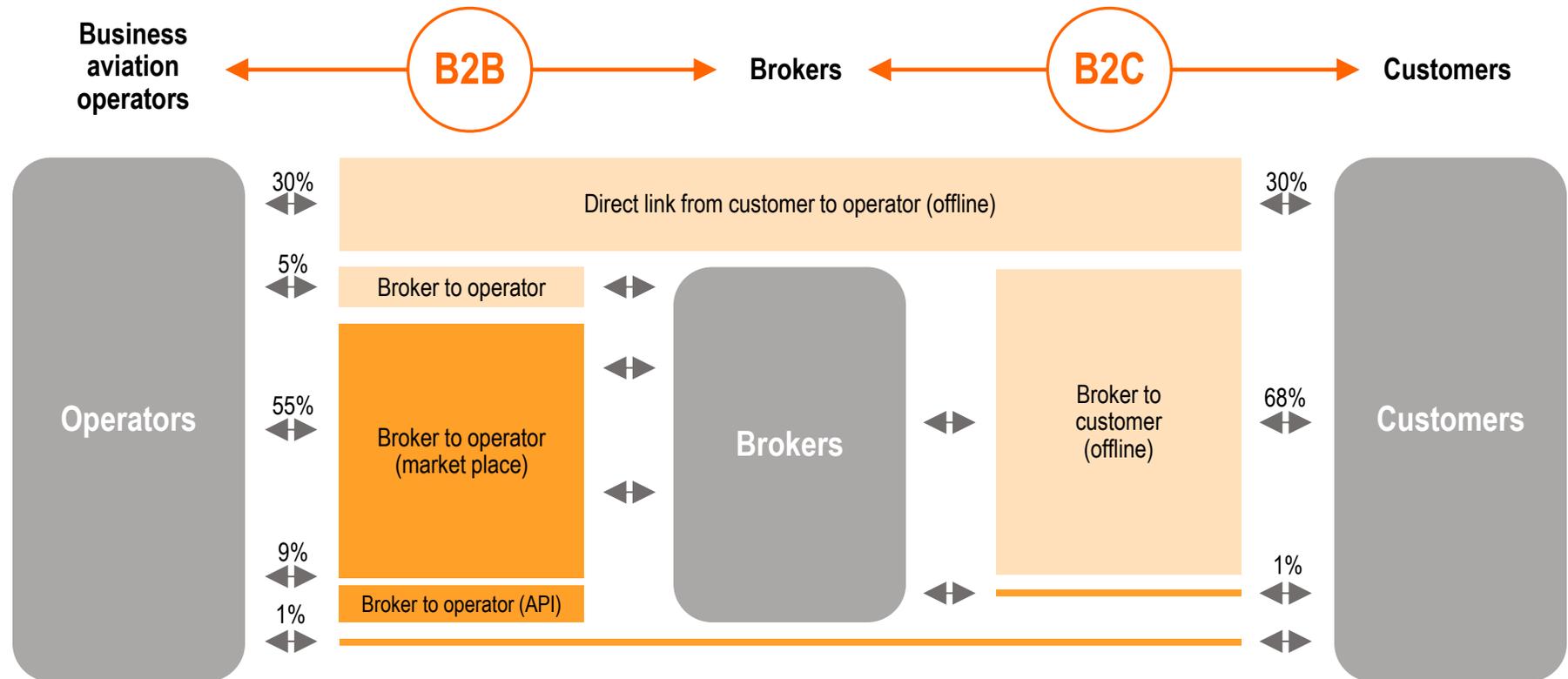
Supply chain for distribution of charter inventory from operators to customers



Offline Online

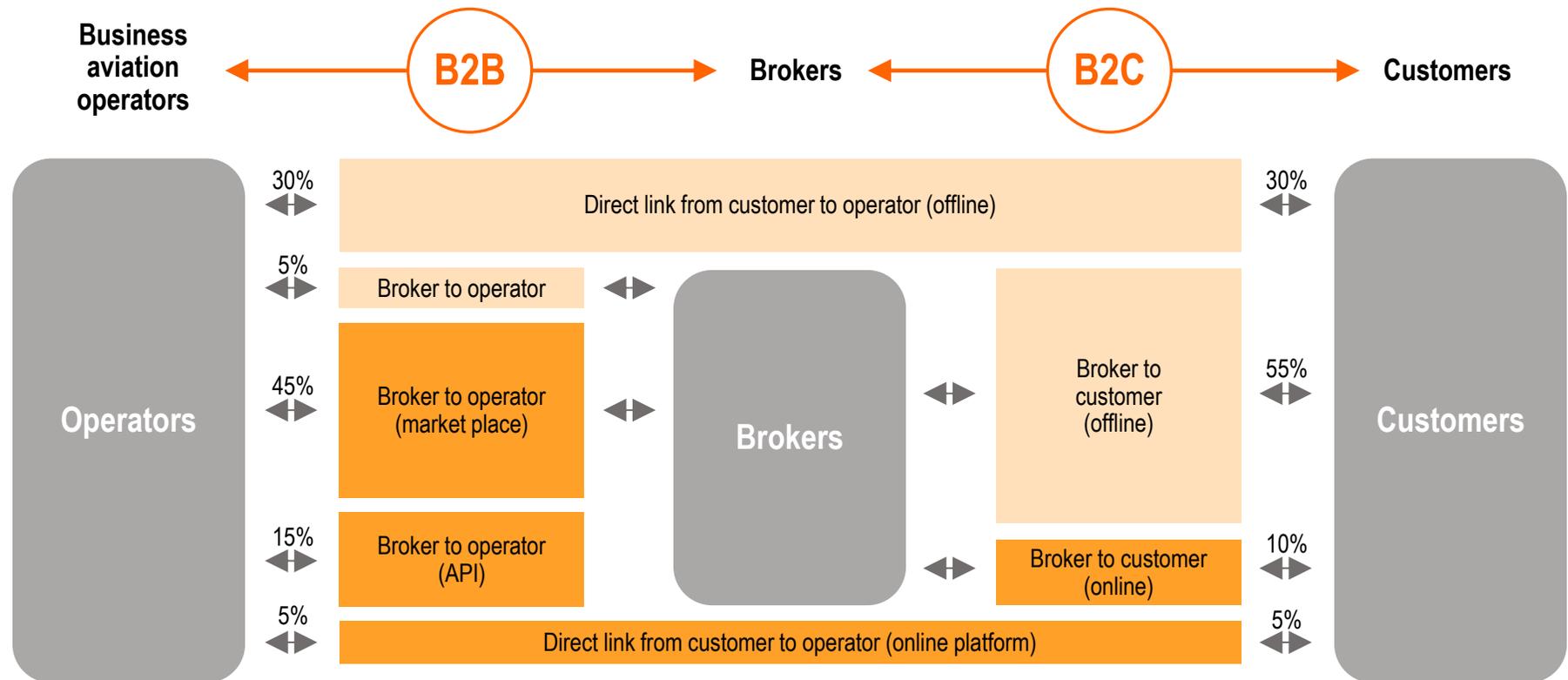
Currently the supply chain is dominated by Avinode in the B2B market, and legacy brokers in the B2C market

Who owns what in the supply chain – Recent past



Things have started to change recently, with operators building direct digital channels, and online brokers digitizing end-end

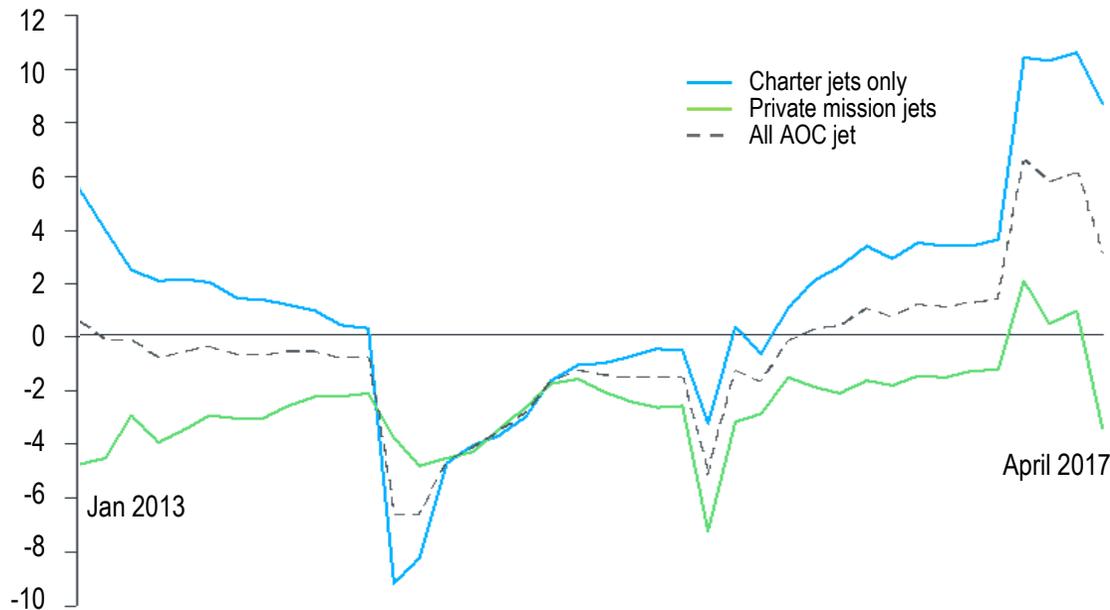
Supply chain beginning to shift towards digital channel – Present



Yes a flat market in terms of total activity, but business jet charters have taken off in the last 18 months

Flight activity trends in Europe 2013-2017

YTD % growth



Remarks & Observations

- > Sharp decline in overall activity end of 2013 affecting both charter and private
- > Stable increase since then reaching peak growth recently
- > Charter outperformed private missions in terms of growth since 2015
- > Charter growth in the last quarter above 10% YTD growth indicating strong shift towards charter business
- > Is it a paradigm shift, away from ownership, towards on-demand?

Is there evidence that online brokers are driving growth? Certainly their preferred operators are those with most growth.

Activity comparison between online brokers' most-used aircraft and other aircraft

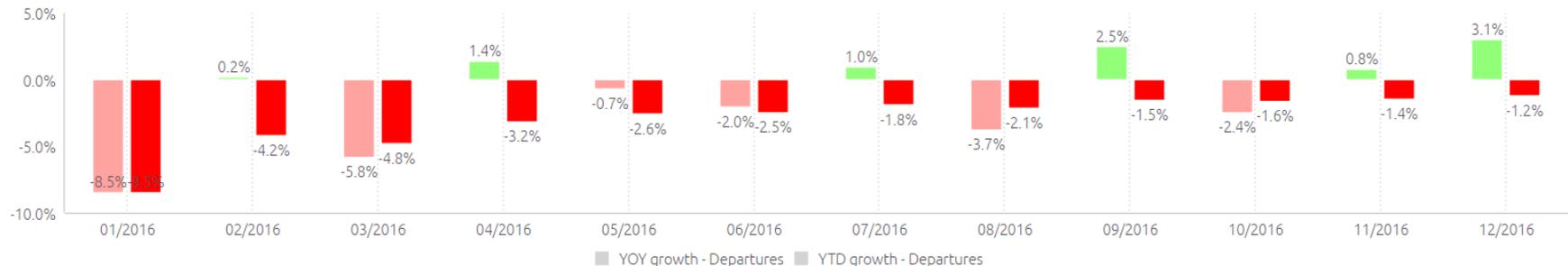
Online broker operators [ca. 250 aircraft]

Top 10% had 23% growth 2016/2015



Other operators

Versus -1% for the rest of the fleet



Note: Darker colors = YTD trend

Certainly seems to be a correlation between JetSmarter shuttle routes and fast-growing European pairs

Selected airport pairs of JetSmarter

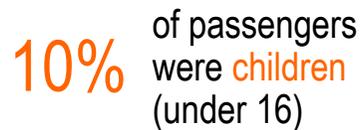
Departure airport name	Arrival airport name	Flights 2016	2016 vs. 2015	JetSmarter Shuttles Europe
LSGG-Geneva Cointrin International Airport	LFPB-Paris-Le Bourget Airport	1.640	4,5%	
LFPB-Paris-Le Bourget Airport	LSGG-Geneva Cointrin International Airport	1.570	0,1%	
LFMN-Nice-Côte d'Azur Airport	LFPB-Paris-Le Bourget Airport	1.011	15,9%	
LFPB-Paris-Le Bourget Airport	LFMN-Nice-Côte d'Azur Airport	967	5,1%	
LFMN-Nice-Côte d'Azur Airport	UUWW-Vnukovo International Airport	893	-1,3%	
UUWW-Vnukovo International Airport	LFMN-Nice-Côte d'Azur Airport	870	-1,2%	
LFPB-Paris-Le Bourget Airport	EGGW-London Luton Airport	739	0,8%	
EGGW-London Luton Airport	LFMN-Nice-Côte d'Azur Airport	635	8,4%	
LFMN-Nice-Côte d'Azur Airport	EGGW-London Luton Airport	630	15,2%	
LTBA-Atatürk International Airport	LTAC-Esenboğa International Airport	503	29,3%	
LIML-Linate Airport	LFPB-Paris-Le Bourget Airport	492	3,6%	
LFPB-Paris-Le Bourget Airport	LIML-Linate Airport	474	-1,5%	
EGGW-London Luton Airport	LSGG-Geneva Cointrin International Airport	457	3,9%	
LSGG-Geneva Cointrin International Airport	EGGW-London Luton Airport	430	-4,2%	
EGGW-London Luton Airport	UUWW-Vnukovo International Airport	367	7,9%	
UUWW-Vnukovo International Airport	EGGW-London Luton Airport	364	1,7%	
LIML-Linate Airport	EGGW-London Luton Airport	200	-5,2%	
EDDM-Munich International Airport	LSZH-Zürich Airport	195	9,6%	
LSZH-Zürich Airport	EDDM-Munich International Airport	189	17,4%	
EGGW-London Luton Airport	LIML-Linate Airport	182	-6,2%	
EGGW-London Luton Airport	LEIB-Ibiza Airport	154	4,1%	
EGGW-London Luton Airport	EDDM-Munich International Airport	127	21,0%	
EDDM-Munich International Airport	EGGW-London Luton Airport	124	8,8%	
EGGW-London Luton Airport	KHPN-Westchester County Airport	108	12,5%	

But are the online brokers bringing newcomers into the industry, or is it just redistribution of market share

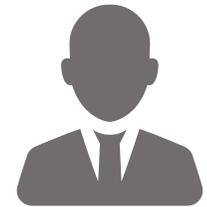
Business jet user profiles

The passengers

Who did we fly in Q1?



Average UHNWI that charter business jets



Online disruptors are claiming growth KPIs in significant contrast to the sluggish overall market

Key figures on online disruptors



- > Average **time to book reduced** by **38%** in 2016
- > **945%** revenue growth over 4-year period - source: FT 1000
- > Flight requests to **Ibiza up 441%** last year
- > Online app contributed to **60% of bookings** in 2016
- > **15% of all bookings** in 2016 were **1st time private jet travelers**



- > During 2016 the company became one of the first business aviation 'unicorns', **valued at more than USD 1 bn**
- > More than **8,000 members** spending average of **USD 27 k per year**
- > **200 shuttles per week** within and between US, Europe and Middle East



STRATAJET

- > In Q1 **>3 million quotes** - managed without any operator intermediation
- > **Staff up** from half dozen **to 60 in 2 years**, rapid expansion in Europe and US markets
- > Since US expansion Oct 2016 Stratajet has **300% YOY increase in bookings** and achieving a **USD 10 m run rate** within six months
- > **32%** of customers are **first-time private jet travelers**



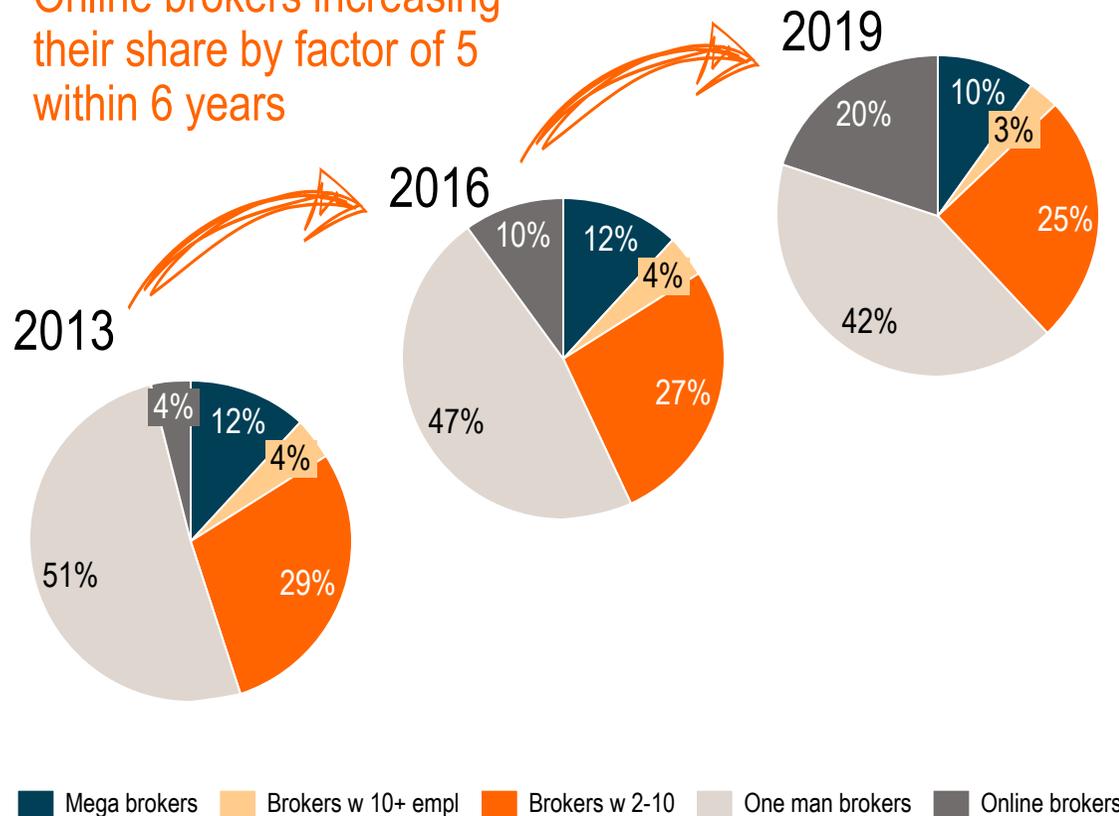
PRIVATEFLY

- > **Profitable**, expanding in Europe and US, **CAGR >50%** since 2013
- > Frequently listed as one of **fastest growing companies in UK**
- > **Average spend** per booking was **up 26%** in Q1/2017 YoY
- > **Time to booking** rapidly falling, **1/3 within 48H** days, 2/3 within a week
- > **33%** of searches on **mobile**

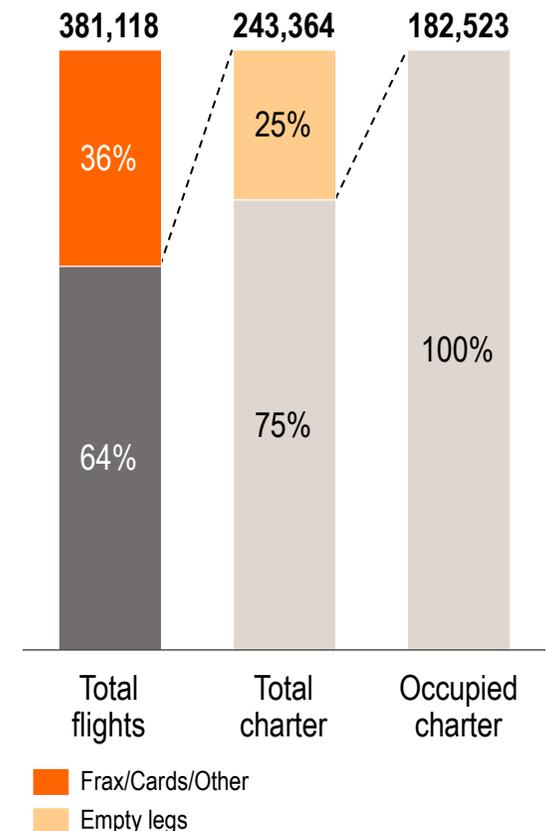
Online broker appear to be increasing share quickly – But ultimately is the market to play for big enough?

Market shares and addressable market in Europe

Online brokers increasing their share by factor of 5 within 6 years



USD ~2 bn to play for?



But there are challenges for the online players, principally their reliance on operators, who may build own B2C channels

Obstacles and limitations to the success of the online brokers

- Most brokers have now recognized that they need an online charter platform. Larger brokers have deep pockets to buy in technology and harness to well-established customer accounts
- Many in the industry still believe business aviation will never go fully online; part of its appeal is that it's high-touch business where customers get benefit of personal concierge service
- Clever platform is one thing, but as OTAs discovered, content is king; online brokers need to harness the supply side. Maybe less easy to do in an up-cycle.
- More coherent, consolidated supply-side needed. Lux & Gama have aggregated <10% of the market, and their fleets largely owner-focused. Can owner-approval be fully automated?
- Owned & Operated fleets will focus on maximizing branded B2C channels. These are typically the taxi-jet operators which have provided online brokers with strong growth to-date
- Entry-point to industry may be dominated by newcomer hybrid airlines (JS, Surf); they will look to retain control over same customers as they step up to full aircraft charter

Roughly 30 interviews with industry experts and cross-section of senior managers conducted to test our assumptions and analysis

Interviewees of major European stakeholders in business aviation

Questions

- > What is the current state of the charter market?
- > What are the main charter products and why?
- > How have online brokers changed the industry?
- > Will digital platforms transform charter
- > What other factors needed to grow the market?



Industry interviews

- 1 **Industry associations**
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Main insights

- > Market has been stagnant for several years
- > Industry needs to overhaul its charter products
- > Online brokers have taken market share
- > They will be one factor in growing the market
- > Supply side consolidation is most important



Fairly broad consensus that business aviation still suffers from fragmentation, image problems, opaque access...

Interview feedback – Current state of the charter market



Digital access platforms are starting to have an impact: smarter tools, educated customers. But are they profitable...

Interview feedback – Impact of digital business

⌋⌋ Aiming to sell charters on a Challenger for a dollar per seat per mile **is not going to work out financially**

⌋⌋ Problem is limited go-to inventory. Most aircraft **release requires owner approval offline**

⌋⌋ Challenge with BizJet booking is that the **customers have a high-end expectation** for the customer journey. Dozens of touch points. Needs high-touch service

⌋⌋ 10 years ago **booking a flight was complex** and traditional brokers used that to justify their position in the chain. **Now it's different** because the customer is more educated

⌋⌋ Current **platforms are not fully digital**. Still need costly customer service staffing, more marketing platforms than digital matchmakers



⌋⌋ Online brokers **aren't yet visibly lowering prices**. Need to crack 'empty leg' problem first

⌋⌋ Important differences between current online brokers – is it **just an online registration form**, or does it offer transparent selection of products?

⌋⌋ The membership platforms **are picking up customers who wouldn't otherwise afford** business aviation. That's not sustainable

⌋⌋ We're now seeing **3rd wave of B2C start-ups**. Are any yet profitable?



⌋⌋ Disruption in the Business Aviation is **not as disruptive as in other industries**. It's a hospitality service industry.

⌋⌋ Online brokers **can't change the game** until OEMs start producing much **cheaper aircraft**

⌋⌋ Main challenge for online brokers is **unsophisticated scheduling** and quotation system within the airlines

Consensus that B2C channel will go fully digital in the near future – but it will require deep pockets and good execution

Interview feedback – Expectations for the future

Challenge for online brokers is how to **consolidate a virtual fleet** of reliable inventory

Will require **very deep pockets** and the right model to build a consumer brand

Satellite-based navigation and other ATM **innovation will open up small airports**, essential facilitator for growth of charter market

At **EUR 400 per seat** per sector a charter model could **take serious share from premium airlines**

Can aircraft owners afford to **rent out much higher utilization** of their aircraft, without damaging resale value?

Digital platform not enough. They need not just access to product but control of inventory

Expect to see **legacy brokers shift to complex trips**. Online brokers will dominate A-B charters



The **infrastructure** (e.g. FBOs, pilots) is **insufficient** to manage a big increase in users

Problem could be the ceiling on **max utilization of current inventory** in the market

The real value is in **capturing a direct channel to HNWI** for any service, not just jet charters

There is no doubt that B2C delivery **will go digital in the next 2 years**

Uber-like opportunity won't come from traditional jet fleet, needs low-cost inventory, likely to be **props**

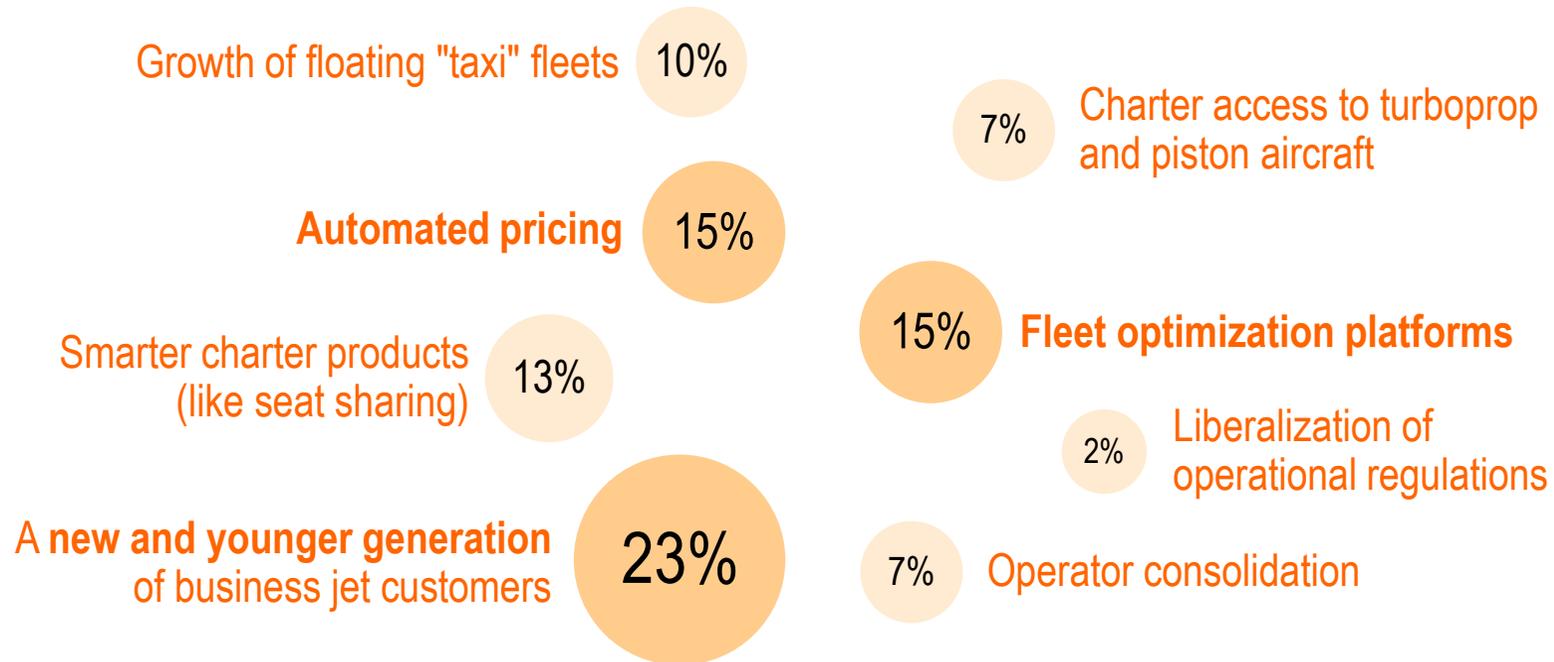
End-game will satisfy a person booking a trip from point A to point B who does not care about how the trip exactly looks like (e.g. car, helicopter, business jet, commercial aircraft)

Could well be an **industry outsider that takes this opportunity** (Jet Blue, Google, Tesla, etc.)

Changing expectations of business jet user may be the biggest factor in encouraging digital solutions

Survey: What do we need to unlock growth besides digital

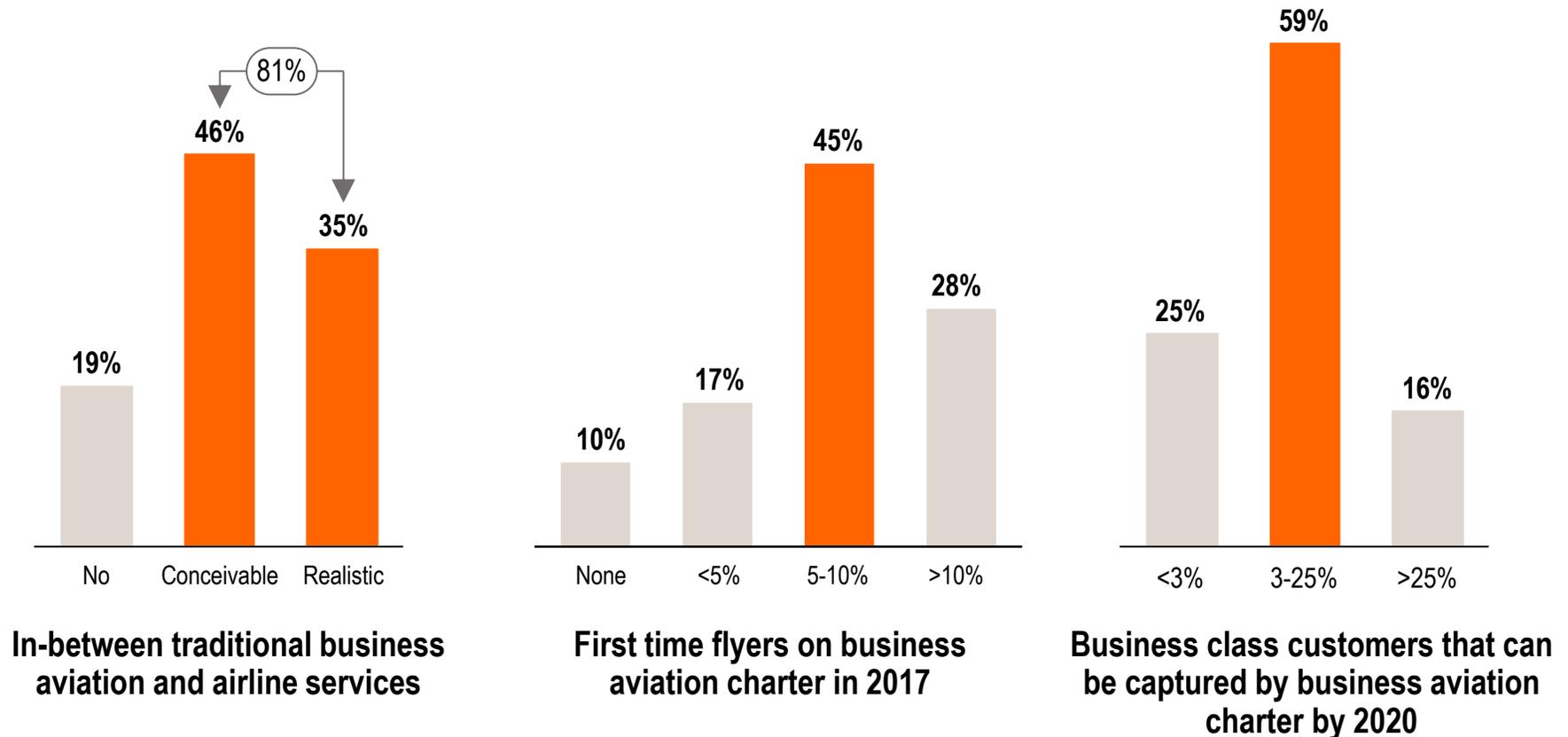
Question: Which of the following factors will be most important in your view in growing the size of the charter market in the next few years?



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

Vast majority see a new space opening up for ‘low-cost’ charter – 59% reckon charter could capture up to 25% of Premium traffic

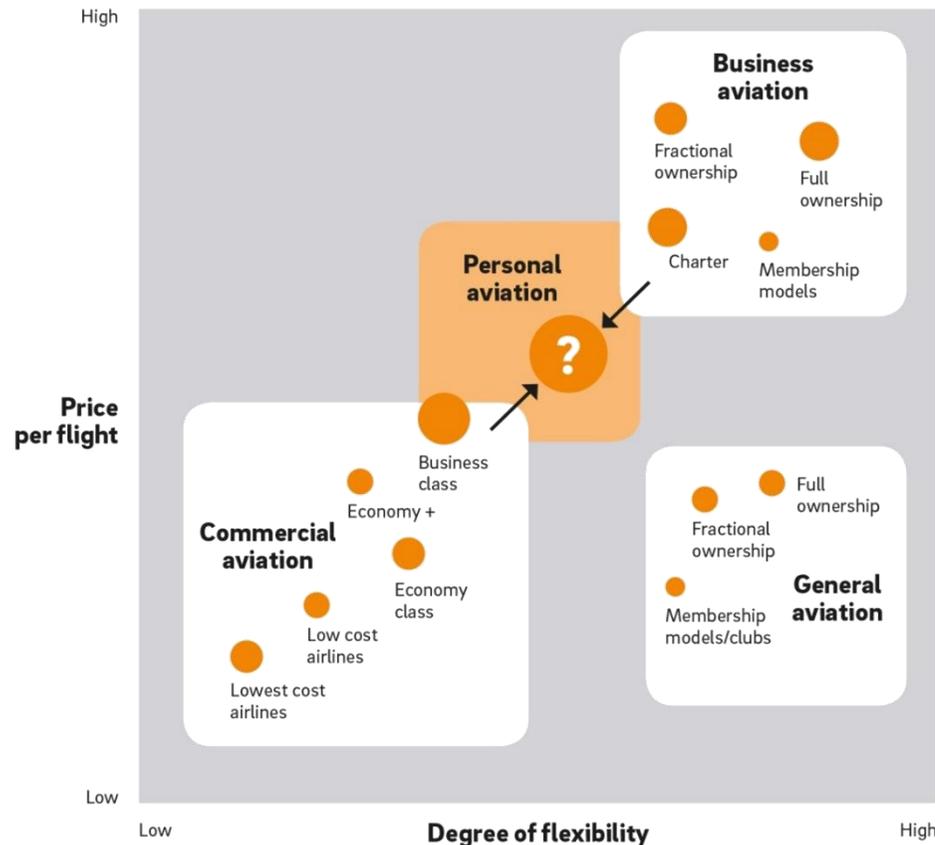
Survey – Can business aviation steal share from airlines?



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

We believe digital disruption will be one of the motors for the creation of a new user-space in aviation

Position of the expected new segment

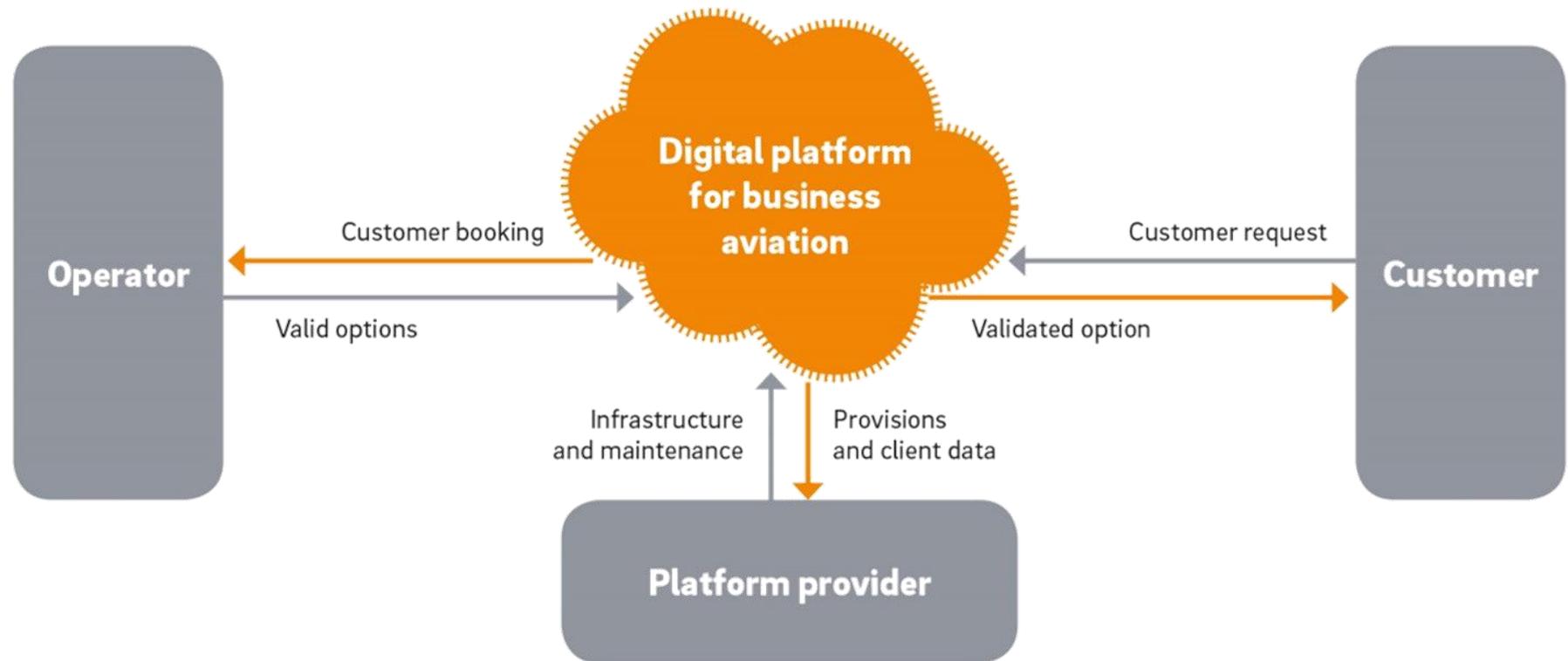


Remarks & Observations

- > Business aviation has been restricted to an artificially small market because of its inefficiency and opacity
- > Innovators are developing digital platforms which are starting to create a functional B2C market place
- > Within the next 2 years we expect to see customer access on a browse-review-purchase basis
- > The market will also be unlocked by actual & virtual consolidation on the supply side
- > Including new operators using digital platform to promote new charter business models to a much bigger market
- > This market could operate in distinctly different way to traditional 'private jet service' providers.

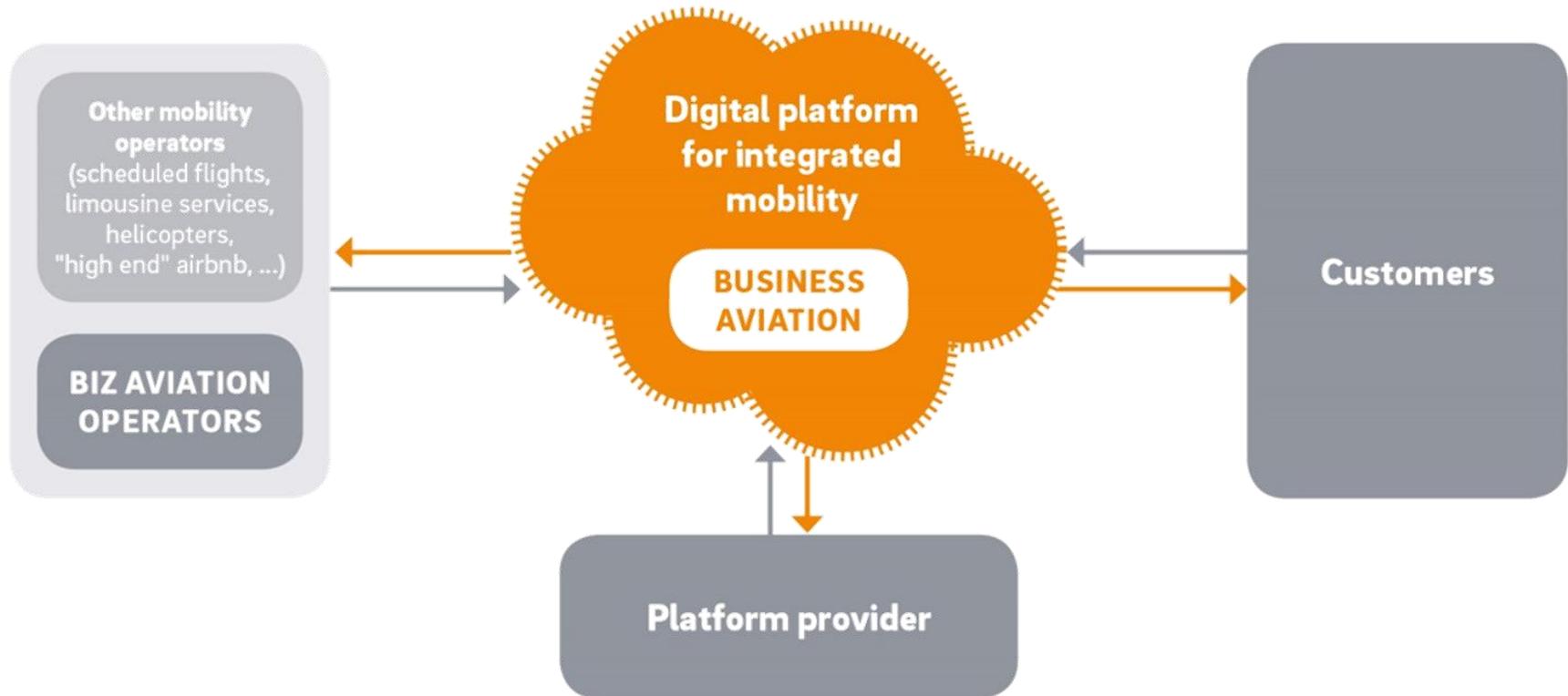
A 'true' digital platform for business aviation will bring transparency and simplicity in the customer experience

Future value chain – Mid term



Our long term vision is a fully integrated digital mobility platform with business aviation at its core and other mobility services attached

Future value chain – Long term



Conclusions ...

- 1 **Business aviation** has been **stagnant** for years; the industry is still trying to recover from the Recession. No help from an uncertain macroeconomic climate.
- 2 To stay relevant, the **industry has to adapt**. It's been slow to do so. But we're now seeing growth in the charter market which suggests successful innovation.
- 3 **Access** to business aviation **is changing**. It used to be a silo. Access through personal relationships only. And an opaque, inefficient charter market.
- 4 Now **digital tools** are finally **creating** the **conditions** for an online market place. Initially, an automatic reverse-auction. But now getting easier to find and pay immediately.
- 5 No more argument: **brokers need a digital channel**. Not all will adapt in time. Expect disruption and a few big winners.
- 6 **But there's a challenge**. Without access to inventory, online brokers will struggle. Owner and operated fleets may bypass them with their own digital channels.



navigating
complexity