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Media Briefing
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Civil Aviation 2040

A Perspective by Swiss Society

Delphi Study (November 2018 – February 2020)

Partnership

The study was executed on behalf of:
Aviation Research Center Switzerland



Main Take-aways

- Air transport development scenarios for 2040: -1%, +1.4%, +2.3%, but **more than 80% expect growth** of the air travel market until 2040. (RQ1)
- Aviation is seen as a **part of entire mobility ecosystem** by Swiss society. (RQ2)
- Swiss population is **in favour of increased capacity and offers** with focus on **direct intercontinental connections** (business and leisure combined). (RQ2)
- Individual **leisure offering is according to expectations** (no need for growth). (RQ2)
- **Regulation and financial incentives** to address environmental concerns are **not a clear requirement for mobility behavior**. (RQ2)
- **Flight bans** as a regulatory action are **objected**. (RQ2)
- **Alternative means of public transport** (instead of air transport) relevant for **mobility consumers** that already use non aviation transport. (RQ2)
- Believe in sustainable **competitiveness** and **innovative strength** of Switzerland **independent of air transport** offering. (RQ3)
- The **economic benefits** from air transport are **supported**, but **underestimated**. (RQ3)
- **Wealth and well-being** of citizens are **not necessarily associated** with service offerings by airports and airlines (RQ3)
- **Link** between the **export/import related GDP** of Switzerland and **air transport** don't seem to be made. (RQ3)



Giga- & Megatrends

Gigatrend *DIGITIZATION*

Megatrends

- Innovation Technologies
- Urbanization
- Individualization
- Mobility Behaviour
- New Life
- New Work

Competitiveness & Attractiveness

Air Transport System

- Connectivity
- Networking
- Location Factors
- Long-term Growth
- Differentiators



Center for Aviation Competence

University of St.Gallen

A Societal Delphi Study

- **Needs** of the **Swiss society** for the air traffic system in 2040.
- Different **scenarios** and **projections** tested.
- **Bottlenecks** of the air transport **infrastructure** taken into account.
- Air mobility **restrictions** taken into account.
- **Acceptance** of air mobility restrictions by Swiss society assessed.
- **Impact** of air mobility restrictions on Swiss **prosperity** assessed.



Aim is to support a basis for national dialogue on the future of the Swiss civil aviation system.

Overarching
Research Question

*“What is the role of
aviation with respect
to prosperity, wealth
and well-being of the
Swiss society in
2040?”*



Hypotheses:

- H1** Infrastructure of Swiss airports, capacity of direct flights and connectivity from and to Switzerland are the key drivers of future demand for air transport services by the Swiss society.
- H2** Technological innovation, sustained demand and supply and alternative means of transport are affecting the personal air travel behavior of the Swiss society.
- H3** The Swiss society believes in the systemic relevance of aviation in general and the Swiss civil aviation industry in particular.

Research Questions:

- RQ1** What are the traffic scenarios for the Swiss aviation system by 2040?
- RQ2** What is the expectation for the Swiss aviation system by B2C individuals and society?
- RQ3** How relevant is connectivity for the Swiss society and economy of the future?



Empirical



Today



Scenarios

Growth (as per demand)

Growth (as per capacity)

Decline (tipping point)

GDP
Policies
Capacity
Demography

Projections

Demography
Frequency
Price
Habits
Alternatives
Limitations
Ecology
Innovation
Competitiveness
Wealth

3 Scenarios

- **Maximum scenario** Growth as per demand, +2.3% CAGR
- **Reference scenario** Growth as per capacity, +1.4% CAGR
- **Minimum scenario** Decline after tipping point, -1.0% CAGR

30 Projections (12 Objectives) & 1 Delphi Survey

- **Connectivity & Frequencies**
- **Regulation & Limitations**
- **Habits & Alternatives**
- **Integration & Inter-modality**
- **Ecology & Sustainability**
- **Price & Competitiveness**

1-10 Likert Scale

→ Likelihood

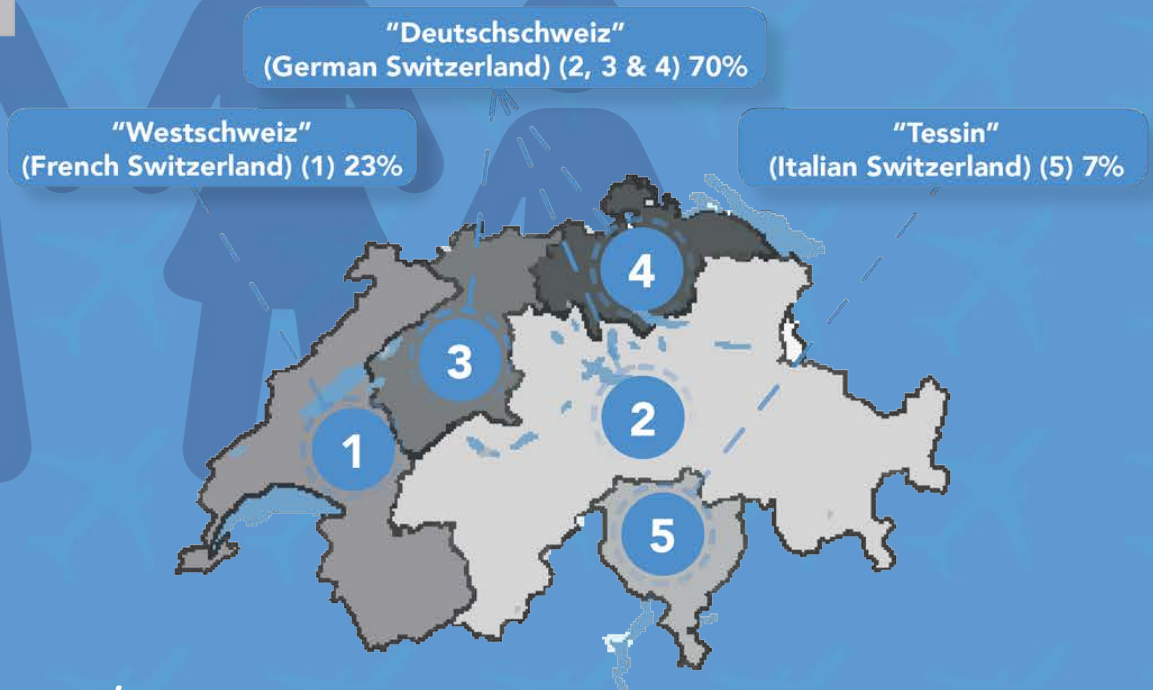
→ Preference



Age	Proposed Share	Proposed Sample
16 - 26	19%	190
27 - 35	20%	200
36 - 43	20%	200
44 - 52	17%	170
53 - 59	15%	150
60 - 69	9%	90
	100%	1000

A Representative Sample* of Switzerland

with a focus on air mobility users 2020-2040



Demographics

Type	Education	Gen Z	Gen Y	Gen X	Baby Boomer	Total
Regular traveler	None/Practical	159	19	15	22	215
	Vocational	60	243	229	198	730
	University	136	872	436	281	1'725
	Total	355	1'134	680	501	2'670
Frequent traveler	None/Practical	13	2	2	1	18
	Vocational	5	36	26	13	80
	University	23	146	64	29	262
	Total	41	184	92	43	360
Total	None/Practical	172	21	17	23	233
	Vocational	65	279	255	211	810
	University	159	1'018	500	310	1'987
	Total	396	1'318	772	544	3'030

Gender

- Female
- Male

Nationality

- CH
- Non-CH

Generation (Age in 2019)

- Baby Boomer (56-69)
- Gen X (43-55)
- Gen Y (24-42)
- Gen Z (16-23)

Education Group

- Practical (No formal education/in education)
- Vocational ("Lehre")
- University

Mobility Category (Household's prime mode of transport)

- Individual (Car)
- Mixed (Car/Train)
- Public (Train/Bus)

Political Orientation

- Not disclosed
- Left (GPS, SP)
- Middle (GLP, EVP, CVP, FDP, BDP)
- Right (SVP)
- Indifferent

B2C / B2B

- Non-Executive
- Executive

Income Group (Household)

- Low (0-6'000 CHF)
- Medium (6'001-12'000 CHF)
- High (>12'000 CHF)
- Not disclosed

Region

- Westschweiz (West Switzerland)
- Alpen/Voralpen (Alps/Pre-Alps)
- Mittelland West (Midland West)
- Mittelland Ost (Midland East)
- Tessin (Italian Switzerland)

Traveler Type (Flights)

- Frequent (private: >3x/year or business: >5x/year)
- Regular

Air travel behavior: Most frequent travelers belong to Gen Y

Generation	Value	FQT %	Comment
Babyboomer: 1946 - 1964	43	8 %	Seniority, end of career, older travellers; n = 544
Gen X: 1965 - 1980	92	12 %	Family and mid-career; n = 772
Gen Y: 1981 - 1996	184	14 %	Most frequent travellers, students, early career; n = 1318
Gen Z: 1997 - 2012	41	10 %	Young, students, partly independent; Greta generation n = 396

To be read as follows:

14 % of all generation Y respondents are frequent air travelers

Outcomes of Dephi study

- **Trend:** 25 or 75 percentiles and normal standard deviation
- **Consensus:** 25 or 75 percentiles and a narrow standard deviation
- **Debate:** 25 and 75 percentiles and a wide standard deviation
- **Mixed:** Balanced median (50 percentile) and a normal standard deviation

Trend: Habits

- **The personal beliefs and habits do not reflect the expectation of the society as a whole with respect to mobility needs.**
- **Transportation offerings are in accordance with societal requirements.**
- **“attitude-behavior gaps” are present in various cases of the sample data.**



Trend: Competitiveness

- **Competitiveness of Switzerland is not seen to be at risk by 2040.**
- **The Swiss society believes in the country's economic strength and capability to innovate.**
- **The Aviation industry seems to be less relevant or connected to this competitiveness.**



Trend: Innovation

- **The technical footprint of air mobility in 2040 is neither clear nor in favor of autonomous solutions.**
- **The maturity of unmanned vehicles has not progressed enough.**



Consensus: Infrastructure

- **The Swiss society expects more connections to and from Switzerland by 2040.**
- **The Swiss market could be saturated for outbound travel.**
- **Panelists are not concerned about a decline in destination offerings.**
- **Growth comes from needs of inbound travelers, transit passengers and the business community.**



Consensus: Limitations

- **Swiss society is objecting flight bans as a regulatory action.**
- **This opposition for such measures is less related to the ecological footprint or sustainability concerns, but to the restrictive character of such measures.**



Debate: Alternatives

- **Inter-modality and modal switching seem to polarize the societal landscape.**
- **Participants, who are not exposed to already existing mobility alternatives (e.g. using train, night train, car sharing, long-distance bus) are less likely to accept these projections.**



Mixed: Pricing

- Pricing of air mobility services is not a key differentiator for the travel decisions made by Swiss society.
- Less concern about cost or whether higher prices are caused by (emission) compensation charges.
- Effectiveness of regulatory measures and monetary incentives is questionable.



Mixed: Connectivity

- **Future (2040) connectivity of Switzerland depends on individual circumstances.**
- **There is no clear picture.**



Mixed: Ecology

- **Expectations for environmentally conscious behavior by 2040 are not necessarily based on ecological behavior in 2019.**
- **Willingness to compensate for Carbon footprint of air travel in the future.**
- **Footprint by other means of transport is less obvious to the Swiss society in 2019.**
- **Less differentiated perception of ecological impact from non aviation mobility options today and in the future.**



B2B Control Group

- B2B sample expects **more regulatory intervention** (than B2C) by 2040
- B2B are **less** likely to use **flight alternatives** up to 700km
- B2B panelists **value travel time** over cost savings
- B2B don't need more European connections, but they expect more **interncontinental** trips departing from airports **outside Switzerland**
- B2B are less pessimistic about autonomous mobility in 2040 than B2C, but still very **modestly convinced by** piloted **air taxi** services

High uncertainty levels & switching behaviour

- 80% in favor of **growth scenarios** (Max & Ref)
- 2/3 have **switched** from original assessment scenario
- **None scenario** has reached absolute **majority** (>50%)

		FINAL SELECTION			
		Max (+2.3%)	Ref (+1.4%)	Min (-1.0%)	Switched
PRE-SELECTION	Max (+2.3%)	488	383	144	52%
	Ref (+1.4%)	395	413	198	59%
	Min (-1.0%)	288	495	226	78%
Total		1'171	1'291	568	63%

Most influential demographics

- Flight **travel exposure** is a key opinion maker
- Impact of **political** parties to be relevant for personal attitudes
- **Young** generations to differ from traditional **mobility patterns** (more & shorter)
- **Ticinesi** believe much **more** in **aviation innovation & growth** than other parts of Switzerland

Top 10 differentiating factors among participants (Polarized):

1. Travel frequency (**Frequent traveler**)
2. Political orientation (**Right parties**)
3. Geographic location (**Ticino**)
4. Political orientation (**Left parties**)
5. Transport profile (**Public**)
6. Nationality (**Non-CH citizens**)
7. Generation (**Baby boomer**)
8. Corporate status (**Executives**)
9. Education level (**Lower level**)
10. Generation **Z**

Least influential demographics

- **Average Swiss inhabitant** to show the **least** polarizing or **disruptive** opinion when it comes to air mobility requirements and behaviour
- **Male/female** distribution does **not affect** opinions (exception: autonomous air mobility is still showing a gender bias by men)
- Participants with a **university** degree are **less likely** to show **extreme** assessments for 2040

Top 10 non-differentiating factors (Balanced):

1. Corporate status (**Non executives**)
2. Nationality (**Swiss**)
3. Travel frequency (**Regular travelers**)
4. Education level (**University degree**)
5. Income (**Average salaries**)
6. Transport profile (**Mixed**)
7. Gender (**Male**)
8. Gender (**Female**)
9. Political orientation (**Middle parties**)
10. Generation **X**

Conclusions

- More than 80% expect **growth** of the air travel market.
- Preference for **direct** connections on long-haul routes.
- **No** direct belief in the **essential role** of air connectivity for economic growth and prosperity of the society.
- Regular travelers (non-business community) **do not see need** for more air **capacity and connectivity** for their personal requirements.
- The **aviation infrastructure** and its growth parameters are **taken for granted**.



Interesting findings and limitations concerning the Swiss society

The Swiss society...

...does not see the connection between real economic and societal impact of air transport and society's prosperity

...does not make a connection between growing incoming tourism by air and economic impact

...does not make a connection between growing outgoing tourism and society's benefit of air travel



- **There is an attitude behavior gap, which may influence Swiss air travel behaviour in the next 20 years.**
- **Airlines might be confronted with lower growth after normalisation independent of COVID-19.**

Take-aways for the aviation industry in Switzerland

Airlines...


... are locked in an image crisis.

... may link the result also to a reduction of in-flight quality for leisure travellers over time.

... may see a decline of business travel demand for flights up to 700 km.

... should keep focusing on developing intercontinental connections.

... should recognise that business travelers do not need more European connections

- 
- **Airlines need to work on their image in the society.**
 - **Airlines need to better understand society's future expectation.**