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Climate protection

MEASURES FOR GREATER EFFICIENCY ARE WORKING

Aviation accounts for less than 3 percent of global CO₂ emissions. The industry is working intensively on achieving greater efficiency and less kerosene consumption. Politicians are called on to strengthen the global climate protection system in aviation – there is no comparable agreement for any other industry.



In mid-March, Lufthansa ordered 40 low-consumption longhaul jets. This will enable the company to grow in quality and to dispose of "thirsty" aircraft.

What should politicians do?

The German government and the EU are also putting climate policy on their agenda more than ever before. From our point of view, the focus should be on three top issues:

- Strengthening the climate protection system: Aviation is the only industry for which a globally valid emissions trading system called CORSIA will apply as of 2020. Any airline that grows from this point on must compensate for CO₂ emissions through certified climate protection projects. Politicians should protect this valuable compromise and do everything to ensure its success.
- Promoting alternative fuels: The aviation industry is still far from having an electric drive motor as in cars, which is why promoting synthetic and CO₂-neutral fuels is all the more important. One problem is that this alternative – if available – is still about three to five times as expensive as conventional kerosene. This price difference is hard for airlines to stomach, since kerosene accounts for roughly 25 to 30 percent of operating costs.

CO2-NEUTRAL GROWTH GUARANTEED

The use of market-based instruments to reduce CO_2 emissions is an effective and efficient way to protect the climate. Such instruments have already been implemented in the aviation industry: Since 2012, air traffic has already been growing on all internal European and domestic flights in a CO_2 -neutral manner. And as of 2020, this will also apply to international flights via CORSIA.

• Implementing the Single European Sky: According to Eurocontrol, airlines could save up to 10 percent fuel with efficient and free routing in European airspace. National egos should no longer stand in the way of this climate protection project.

Every year, the Lufthansa Group invests around 3 billion euros in economical aircraft. So that we are able to continue down this path, we are backing a climate protection policy that strengthens investment power and reduces distortions of competition. That is why we take a critical view of any additional national kerosene tax or CO_2 tax over and above the aviation tax. Moreover, such a measure would shift traffic flows to foreign hubs, which, from an economic and ecological point of view, would be the wrong path to take.

CORE CLIMATE POLICY MESSAGES OF THE LUFTHANSA GROUP Available at: ti.lh.com/h4ub

Air traffic control

TACKLING PUNCTUALITY PROBLEMS ACROSS EUROPE

The Lufthansa Group is hiring 600 new employees, increasing its reserve capacity to 37 short-haul aircraft and investing a total of around 250 million euros to improve punctuality in the summer. We expect similar commitment from our partners. Air traffic control in particular is called upon.



According to Eurocontrol, delays increased twofold across Europe in 2018. The main drivers behind this were capacity bottlenecks in airspace and air navigation services, where delays increased by around 80 and 110 percent respectively. Bringing up the rear among the 60 air traffic centers was Karlsruhe, where the controllers have to control a particularly large number of aircraft movements due to overflights. The key reason was that DFS was unable to deploy enough air traffic controllers.

Tackling structural problems

DFS operates in a strictly regulated environment. Enterprises, trade unions and politicians are all called on to address well-known deficits now. Main points:

- More flexible use of air traffic controllers: For the coming summer months, we are hard at work promoting greater flexibility. DFS and employee representatives should work together to facilitate modern working models with part-time shift services. Greater flexibility should also be possible as regards the places of employment.
- Better estimation of personnel requirements: The personnel requirements of DFS are defined by the EU Commission. The basis of this are traffic forecasts, which are updated every five years and which were set too low for 2018 and 2019. Brussels should shorten the interval.

- Enabling more digitalization: The work of air traffic controllers could be made much easier as the systems become more digital, virtual and harmonized between sites. Numerous technologies have already been developed and introduced to the EU in mid-March as part of the Airspace Architecture Study they have to be consistently implemented.
- **Cross-border collaboration:** With a Schengen Area in the air, aircraft would have to fly fewer detours and flight plans would be straightened. Nation states and the respective air traffic control services should pave the way for this.

The delay records of 2018 must not be repeated. All participants in aviation must, therefore, play their part. The growth forecast underlines the pressure to act: By 2040, air traffic in Europe will increase by about 50 percent, according to Eurocontrol.

Aircraft data

WHO GETS ACCESS – CUSTOMERS OR MONOPOLIES?

Aircraft of the latest generation collect more than 1 terabyte of data on a daily basis. Evaluating these data helps airlines to offer even safer and more efficient air traffic. However, aircraft manufacturers are challenging the right to have free access to these data.

Flight data must continue to be the property of the airlines Whoever has the data can develop new services and digital products. The growing market for related services in aviation is worth billions. If the manufacturers had anything to do with it, they would receive all the data exclusively via encrypted channels even after the aircraft have been delivered – the airlines would be passed over. From our point of view, there are good reasons why politicians should monitor this trend:

- **Flight safety:** The airlines are legally responsible for flight safety. In order to best do justice to this responsibility, they must have control over the data of their aircraft.
- **Reliability:** Digitalization can help increase punctuality. As the Lufthansa Group, we want and have to seize these opportunities. Data availability is an essential component of this.
- **Competition:** Airbus and Boeing form a duopoly in aircraft construction. This is different in the market of technical aircraft services, which is characterized by over 1,600 providers. This promotes innovation pressure and fair prices. This market structure would be acutely at risk if manufacturers were to acquire all aircraft data in the future.

AVIATION DataHub – a platform for the entire industry

Lufthansa Technik founded the independent data platform AVIATION DataHub in mid-March. Airlines, manufacturers and other market participants can voluntarily collect, merge and process their data there. Above all, airlines can choose whether and to whom they wish to provide their data.

Planned regulation in the automotive sector sets a trend

Politicians can take countermeasures, as a look at the automotive sector shows. According to the Federal Ministry of Transport, the data should belong to the person who purchased the vehicle, i.e. its owner rather than the manufacturer. The same logic applies to air transport: The Federal Government should quickly ensure the availability of aircraft data in favor of the airlines. Germany should create a legal regulation that can serve as a blueprint for Europe.

GROWTH AWAKENS DESIRES

The aircraft maintenance, repair and overhaul (MRO) market will grow to be worth US\$160 billion by 2026. The market for the aircraft manufacturers wishing to massively expand their shares is accordingly attractive.





Ticket sales

FINALLY CREATING MORE COMPETITION

For three decades, three global distribution systems (GDS) have dominated ticket sales between airlines and travel agencies. Whether Lufthansa, American Airlines or Air China, network airlines have only been able to sell airline tickets via third-party providers and travel agencies through the interposition of GDS providers. The airline industry has invested in alternatives. It is now banking on proper regulation at EU level.

Oligopolies prevent competition and are bad for consumers. This is also the case with the GDS: Over many years, they have achieved a return on sales of more than 30 percent – financed by airlines and ultimately by passengers. Furthermore, they have inhibited technological development, thus weakening the innovative power of the industry. The result is that to date, for example, travelers can only compare prices and flight times when choosing different flight offers.

Airlines are developing a new NDC standard

That's why the IATA seized the initiative in 2012: Since then, airlines, together with technology providers, travel agencies and start-ups, have developed the New Distribution Capability (NDC) standard as an alternative. The partners can thus access the diverse range of airlines direct and offer their customers comparative offers that are markedly more nuanced.

Airlines require authority over distribution

The EU Commission is currently working on the conditions for ticket sales through GDS providers. The big GDS companies of Amadeus, Travelport and Saber are lobbying to preserve the dominant market structure and to regulate innovative sales channels in their favor.

We believe that airlines should choose which offers they should sell and through which distribution channels. This position is also shared by the Federal Cartel Office, which already dealt with the distribution channels of the airlines in 2017. In addition, measures that restrict competition must finally be called into question. For example, the GDS providers' contracts with the airlines contain many questionable clauses. Any market regulations should ensure innovative competition and that new entrants can grow and develop without market barriers.



Travelers are benefiting from the airline initiative

The Lufthansa Group is one of the pioneers of the new NDC standard. We implement direct ticket sales, together with many partners, including over 2,000 travel agencies worldwide. The Lufthansa Group is among the pioneers of the new NDC standard:

- Greater transparency: The new technology allows travelers to compare airline offers more effectively.
 For example, search queries regarding online travel agencies will, in the future, also include Wi-Fi availability.
- A greater variety of offers: Flying should be able to serve individual needs. In the future, travel agencies will increasingly be able to propose special offers for families or business travelers of the Lufthansa Group.

Lounge

FLYING TO CURE THE FEAR OF FLYING

Your muscles tense up, you start to feel claustrophobic, irrational fears plague your mind – that's how the fear of flying is often described. The Ruhr University of Bochum, Germany, has been conducting research into the efficient treatment of phobias for six years. In March 2019, Munster Airport asked it to carry out a study on 123 patients suffering from aviophobia or the fear of flying. A conversation with the project manager André Wannemüller.



Dr. André Wannemüller Faculty of Psychology at the Ruhr University of Bochum

How did you come up with the idea of treating the fear of flying in an actual airplane?

In our studies, we always confront patients directly with the situations that cause them anxiety. We've climbed towers with people suffering from the fear of heights. We have let people who are scared of spiders touch the creatures. And here we've just had what

for the participant is a free flight. What we are always interested in is how much the so-called violation of an expectation affects the phobia. During the flight I mentioned, the passengers had different experiences than those they had originally expected. Some of them were able to overcome their worst fears, such as looking out of the window or going to the onboard toilet.

What were the results?

The final study evaluation isn't available yet. But what we do already know is that the participants say that after the course they were about 50 percent less afraid of flying. That's an extraordinary figure. With other phobias, their level of anxiety was only around 30 percent lower. In about four months, we will interview the participants again and it will be exciting to see if this positive experience will have had a lasting effect, too.

In the western industrialized nations ...

1%–3% of people suffer from a morbid fear of flying/have a phobia of flying

20[%]-30[%] people have a controllable fear of flying

What will stay in your mind the most?

I was sitting in the last row during the flight. At the beginning, people sitting next to each other held hands, even across the aisle. I still find that image touching. And shortly after the flight, one patient who suffered from the fear of flying wrote me saying that, for the first time in decades, he had bought plane tickets to visit his family in New Zealand. That's great.



Peter Rosenkranz

"With a plane that's full of people with a fear of flying, you need to start and land even more gently than normal. Especially since I saw the fear in the eyes of the passengers when they were boarding. During the flight, I briefly explained a few things, such as the creaking noise that's made when the landing gear is extended and the shift in gravity when descending. In the end, when we landed again without

A320 captain with the extended a Lufthansa Group for 13 years when desc when we la

any unforeseen events, pure relief reigned supreme – never before have I been so warmly embraced by so many people."



Telegram

New standard livery YES TO EUROPE!

The Lufthansa Group is committed to the idea of Europe. Since 24 April 2019, a Lufthansa Airbus A320 has been flying the special "SayYesToEurope" livery. In addition, all Lufthansa Group aircraft will display the German flag. Even more important than this symbolism is the fact that with around 3,500 intra-European flights per day, we are fostering the exchange of citizens – and flying to almost every country in Europe.



Social commitment FORMER US MEMBERS OF CONGRESS PRESENT AWARD TO LUFTHANSA



Hallie Jackson, chief correspondent of NBC news in the White House, and Carsten Spohr, CEO of Deutsche Lufthansa

At the end of March, the Association of Former Members of the Congress (FMC) presented the Statesmanship Award 2019 for special social commitment to the Lufthansa Group. The company's relief efforts in Puerto Rico were particularly appreciated. After Hurricane Maria destroyed the power supply and other utilities in fall 2017, particularly in the Aguadilla region, Lufthansa sent over a freighter with 80 tons of relief supplies for the people of the region. The Lufthansa Group is the first aviation company ever to receive the award.

Study CO₂ SAVINGS OF EU AIRLINES

In early March, the renowned research institute SEO Amsterdam Economics published a study on the CO₂ emissions of EU airlines. The core result? Thanks to technical and operational measures, airlines have been able to save about 20 million tons of carbon dioxide since 2014. This corresponds to 1.6 million flights within the EU.

Digital assistant WORLD PREMIERE OF MESSENGER APP

Passengers often have similar questions: Is my flight on time? At which gate is my plane going to take off? And how heavy is my hand luggage allowed to be? So as to be able to answer these and many other questions quickly, passengers from Lufthansa, SWISS and Austrian Airlines can now also receive support from a digital assistant. The chatbots can even change booking reservations – a world premiere.

25th Sustainability Report BALANCE ONLINE FROM 6 JUNE

What has the Lufthansa Group achieved in the last quarter of a century in the fields of economics, social affairs and the environment? The answers will be provided by the upcoming sustainability report Balance, which will be published for the 25th time shortly – and for the first time exclusively digitally.

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