



# Smart airports and disruptive forces in global aviation:

*Megatrends and technology applications*



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# Introduction

*This research looks into the megatrends that impact the aviation sector, particularly the changes in the wake of Covid-19.*

The year 2020 was undoubtedly the most difficult year in aviation history, and the year 2021 began similarly, with severe travel restrictions. Concerns for health and safety have been dramatically increasing on a global scale, followed by the pandemic aftermath. Although crises cannot always be foreseen or planned on the spot, they can be predicted with the right tools, letting the industry prepare for a recovery.

International organizations, governments, and airline companies are all struggling to find creative ways to return to previous demand levels. Despite these challenging circumstances, advanced technologies promise to help businesses bounce back and make air travel live

again. In fact, many industry experts regard digitalization as a crucial enabler, not only for dealing with pandemic implications, but also for ensuring business continuity once constraints are lifted. New digital solutions can enhance the air travel journey by evolving even further operations, like passenger processing, which requires maximum airport flexibility. Added to this, airlines aim to restore travelers' confidence by maintaining high standards in terms of cleanliness, customer experience, and efficiency.

There has never been such a crucial time to delve into the disturbing airline crisis since the outbreak of this pandemic. According to Airports Council International World study, which conducted in the second half of 2020, the industry lost that two fifths of the entire passenger traffic, which equals 3.6 billion passengers, and nearly half of airport revenues in 2020. The unprecedented drop in aviation and commercial activities had a devastating impact on income streams, with forecast losses about 45 percent or more than USD 76 billion by the end of 2020, compared to preCovid-19 predictions of USD 172 billion. Furthermore, airports currently face considerable risks of bankruptcy for the airline, ground handling, and other airport-related service providers.<sup>1</sup>

1. Airlines. IATA. (2020, June). Technology solutions for the airport industry in the time of COVID-19.

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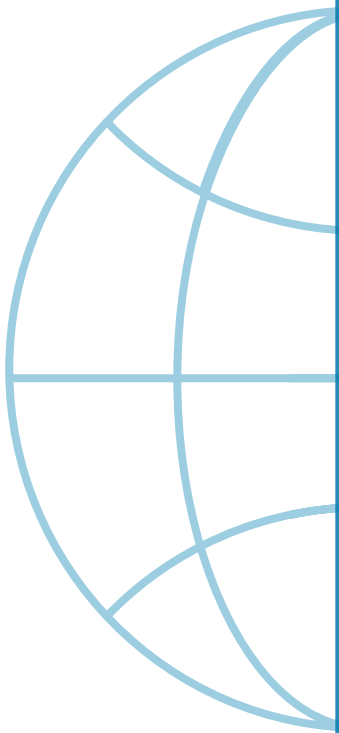
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Besides, World Travel and Tourism Council showed 75 million jobs are under threat due to Covid-19, resulting in a drop of USD 2.1 trillion in global GDP in 2020, which is alarming for the tourism sector. The Asia-Pacific region is the most severely affected region, with up to 49 million jobs at stake, representing a loss of approximately USD 800 billion in Travel and Tourism GDP. Up to 10 million jobs in Europe's travel industry are currently under peril, equivalent to a USD 552 billion in lost income. The crisis has also a significant impact on the Americas, with the US, Canada, and Mexico losing up to USD 570 billion in combined revenue, and putting over seven million jobs in the travel and tourist industry at risk. Brazil, the United Kingdom, Italy, Germany, France, Japan, Indonesia, and India are also harmed by the crisis.<sup>2</sup>

Nevertheless, there is still light at the end of the tunnel thanks to digital adoption in aviation with significantly improved operations and optimized experiences, enhanced security and smart technology. All those megatrends are bound to recommence the air travel market and rebuild customer trust, provided businesses make the necessary adjustments on two basic priorities, the traveler journey and the screening technology. More and more airports are entering the zone of innovation, behaving as 'multi-modal' hubs for both people and corporations, aiming to optimize procedures and experiences. With this in mind, stakeholders have the call to respond with incremental innovations, ready-to-implement solutions to keep up with changing aviation dynamics.

2. World Travel & Tourism Council. (2020, March). Latest research from WTTC shows a 50% increase in jobs at risk in Travel & Tourism.

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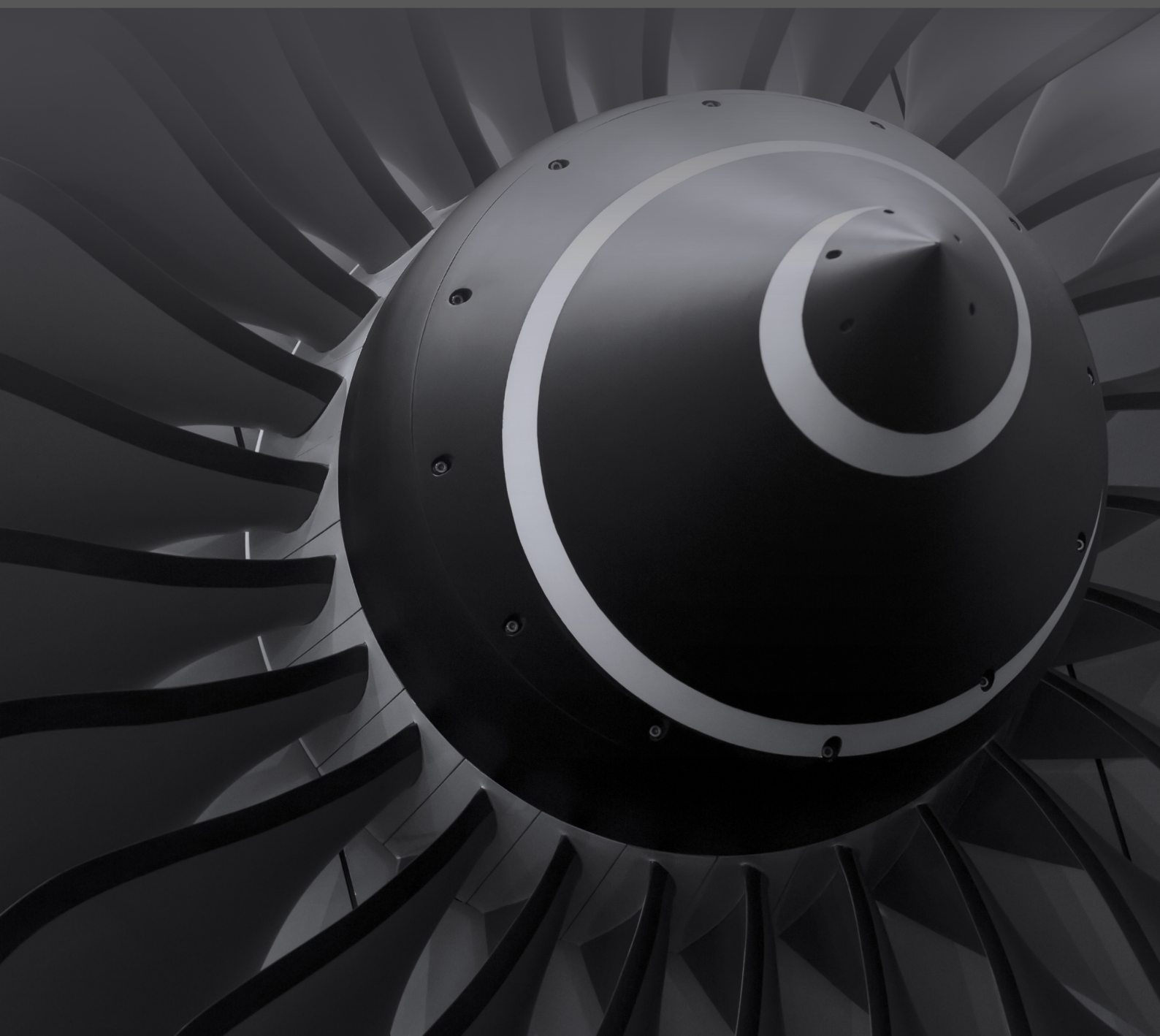
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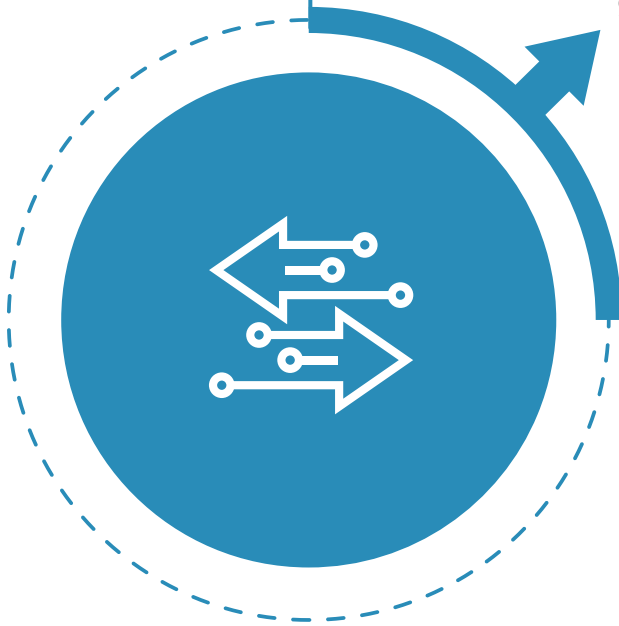


# Key megatrends in Aviation Industry

## 1. Contactless technology

Contactless technologies have recently emerged as a game-changer for aviation and other verticals. Although airlines and airports have substantially decreased their expenditures, touchless technology remains a top investment goal between now and 2023, to control virus dissemination and passenger-staff interaction. According to SITA's 2020 Air Transport IT Insights survey, CIOs have redefined their IT investment priorities due to the new health and safety standards, to increase airport operations' efficiency and to ensure safer and more automated processes during air travel.

To improve the passenger journey, airlines actively seek a totally touchless check-in experience and transactions for all offered services, from booking to arrival stage. Moreover, their funding in research and development programs has been growing while cybersecurity and cloud solutions are also receiving much more attraction. Particularly the passenger mobile applications are on the top priority, with 97 percent of airlines already developing major projects, followed by cybersecurity (96%) and cloud services (94%) by 2023.



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Besides, contactless applications focus on essential customer services, like automated lounge access and mobile delayed baggage reporting. Almost 86 percent of firms aim to invest more in remote IT services and virtual projects that will mainstream, reflecting the need for an agile and effective working environment. Likewise, revenue management is a critical business area that companies demand to recuperate by spending more money in advanced solutions to enable passenger services via social media. It is astonishing that airlines have doubled their venture investments in biometric self-boarding and ID documentation technology.

By 2023, operators will be eager to send real-time notifications to passengers' mobile devices regarding bag-tracking buffer this information to the staff. Furthermore, touchless check-in through kiosk and mobile are the primary milestones to transform functional operations for 84 percent of the surveyed companies, followed by self-bag-drop (79%), bag- tags via kiosk and mobile (74%), and mobile touchless payments (74%).<sup>3</sup>

3. SITA. (2021). 2020 Air Transport IT Insights.

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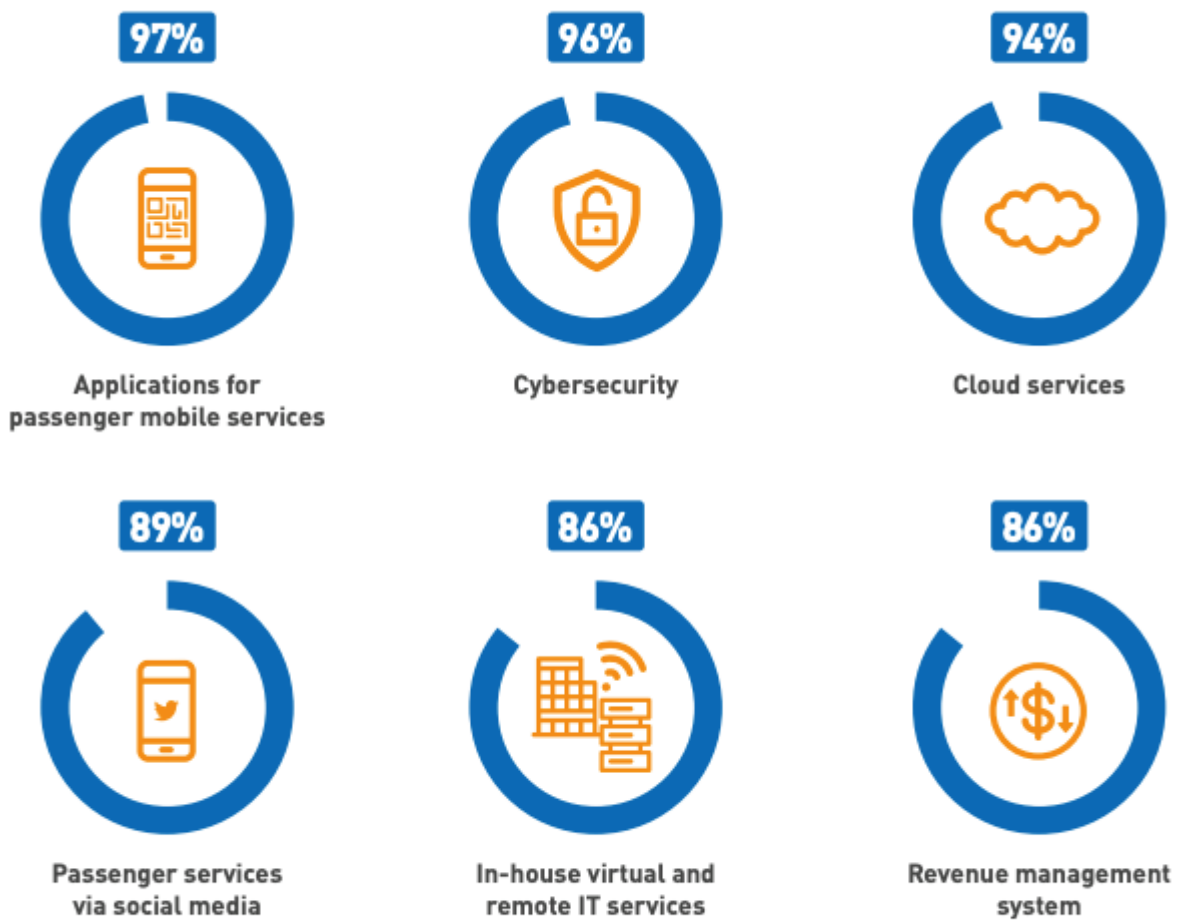
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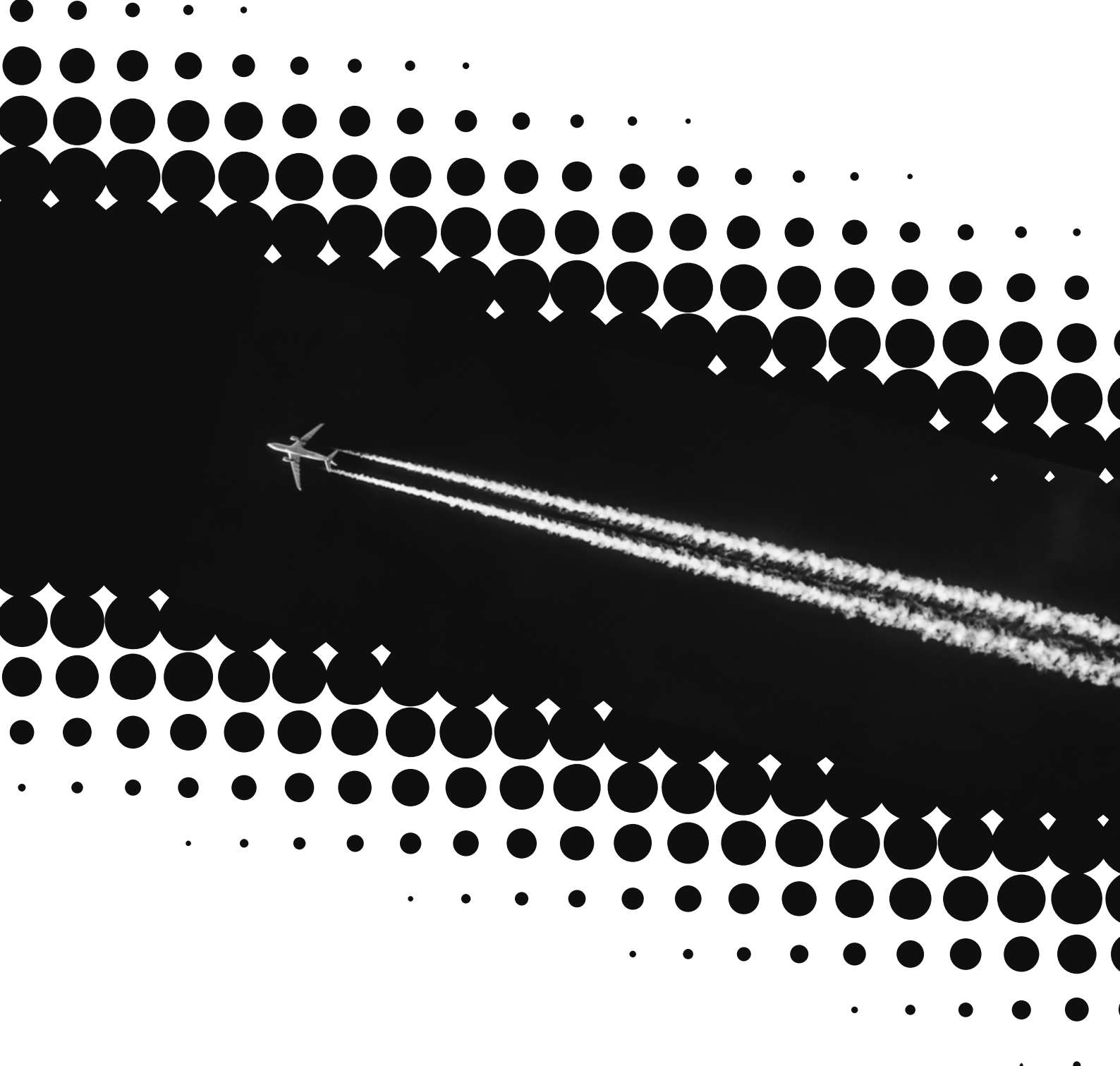
Figure 1 | Top investment priorities for airlines. SITA. (2021). 2020 Air Transport IT Insights.



**% of airlines planning major programs / R&D by 2023**



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