

**SITA**



**2018 AIR TRANSPORT  
IT INSIGHTS**

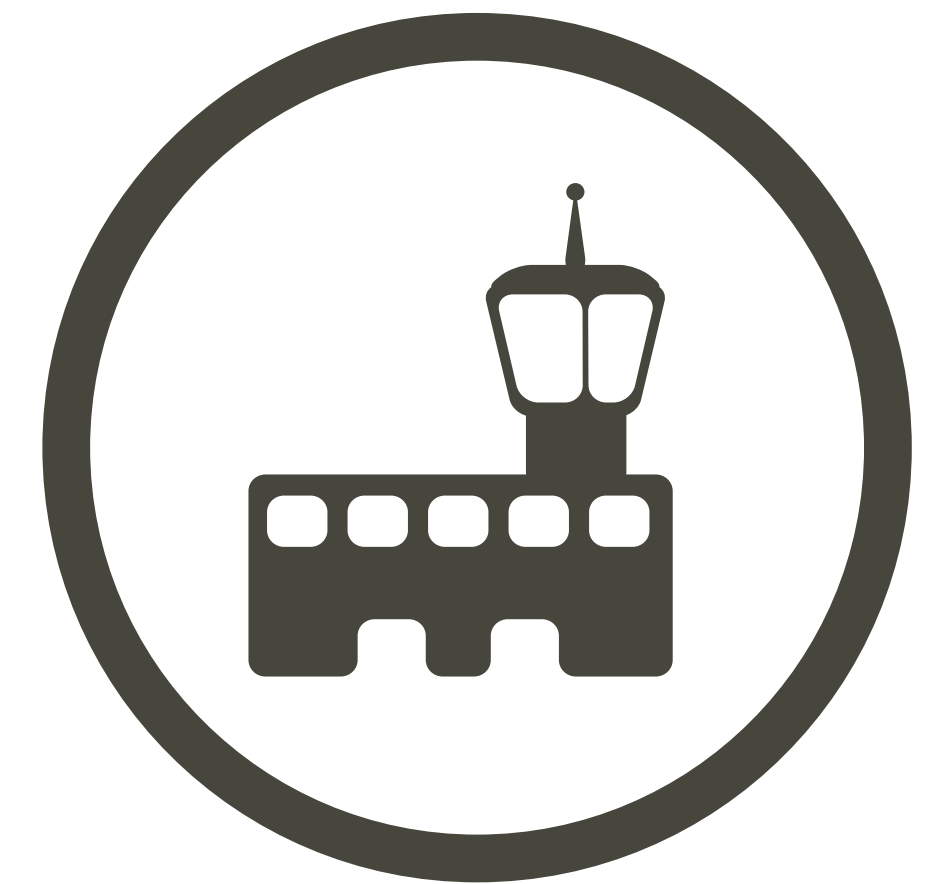
**2018 AIR TRANSPORT  
IT INSIGHTS**

**AIRLINE**

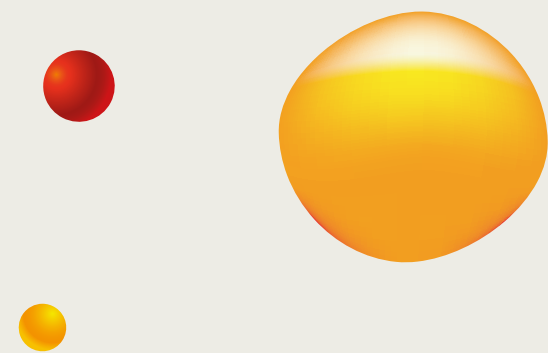


**Pages 3-21**

**AIRPORT**



**Pages 22-39**



Three decorative colored circles are located in the top right corner of the page. From left to right, they are a small yellow circle, a small red circle, and a larger orange circle with a gradient effect.

# AIRLINE IT TRENDS

A silhouette of a commercial airplane is shown in flight, positioned in the upper left quadrant of the page. The background is a clear blue sky with several palm trees visible at the bottom and left edges.

New digital technologies promise to meet many of the pressing issues and requirements faced by the airlines. Even though airline IT spend has stayed broadly the same since our last survey, change is very much on the cards. We're now set to see much higher budget on technology for 2018 with IT spend reaching 3.67% of revenue. As part of this investment growth, airline priorities are placed firmly on improving passenger mobile services and strengthening cybersecurity capabilities.

A key airline aspiration is to create a 'connected passenger experience'. Mobile flight status notifications have now become commonplace. At the same time, airlines are communicating more about missing baggage information via

mobile – clearly helped by their efforts to comply with IATA's Resolution 753 for baggage tracking.

Investing in biometric technology to automate passenger ID management is another trend evident in this year's survey. Airlines are increasingly investing in, and piloting, biometric solutions. The installation of self-boarding gates using biometrics with ID documentation, are set to become commonplace over the next three years with 63% of airlines expecting to use them. What's more, mobile-app check-in will overtake 'traditional methods' as the most common check-in procedure.

To create the connected passenger experience, airlines are investing in

digitalization, especially new technologies such as Artificial Intelligence (AI) and Blockchain. High on airline agendas are AI-driven virtual agents and chatbots, with 85% of airlines using or planning to use AI for these services by 2021. This will help to deliver a more connected experience for travelers, by answering questions and relaying flight status information. Blockchain is in the mix as potentially enabling airlines to enhance passenger identification. Airlines are looking for innovation strategies to trial these technologies. Clearly, it's an exciting time when the 'hot' technologies of the day align well with the industry's pressing needs.



# AIRLINE IT TRENDS



**IT SPEND**

PAGES 5-6



**INVESTMENT  
PLANS**

PAGES 7-11



**SELF-SERVICE**

PAGES 12-13



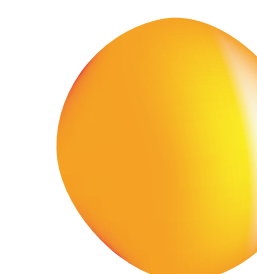
**MOBILE**

PAGES 14-15



**TECHNOLOGIES**

PAGE 16-21



# AIRLINE IT SPEND STATIC IN 2017 BUT NOW SET TO GROW



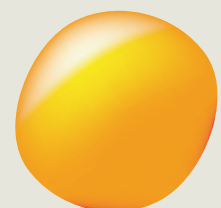
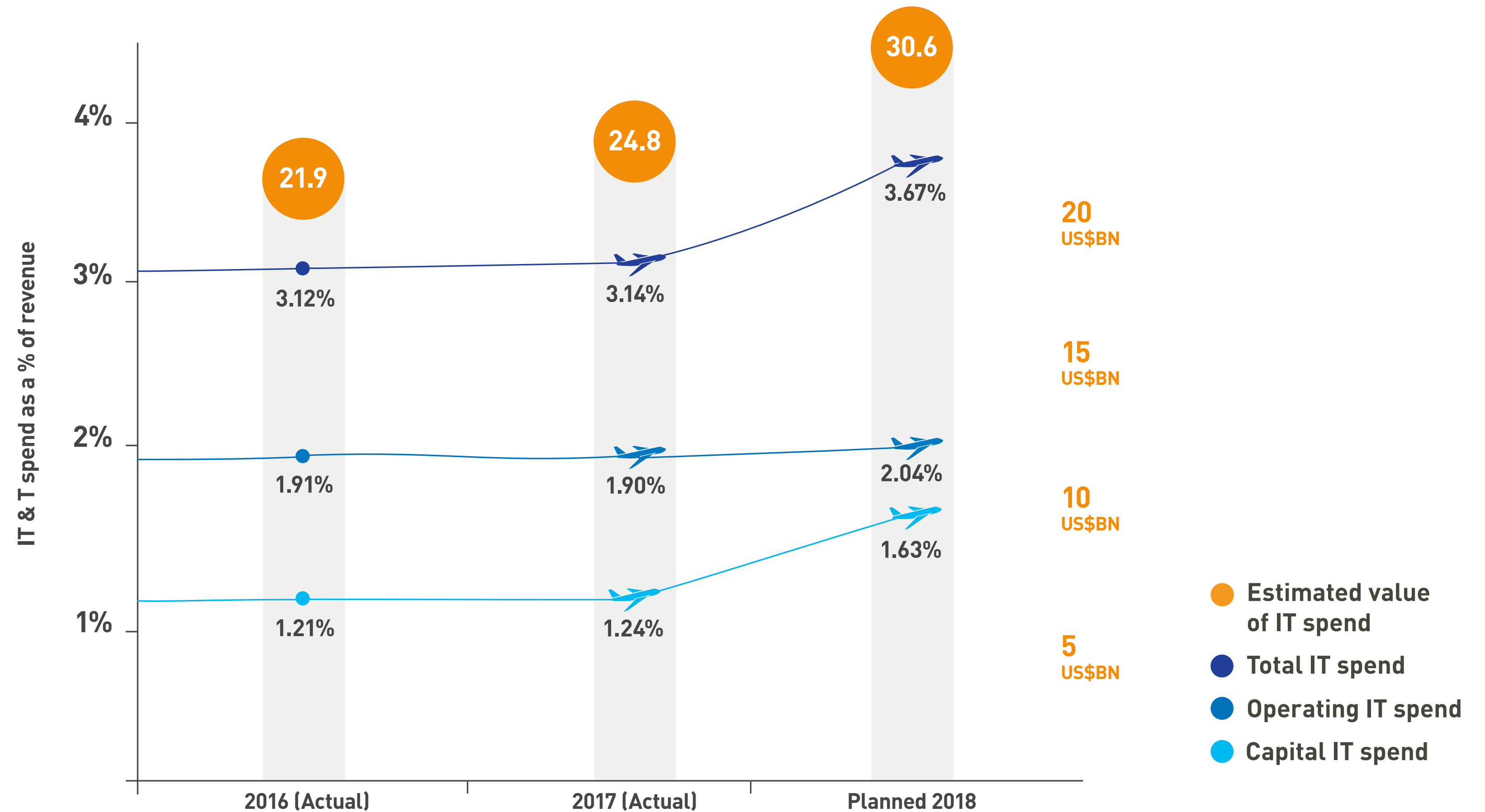
### ANALYSIS

#### Airline IT spending to increase in 2018

Airline IT budgets have remained mostly stable with a 3.12% total IT spend a % of revenue, plateauing in the past 2 years.

Operating spend has remained fairly similar over the last two years with 1.9% of revenue while capital spend slightly increased to 1.24%.

Future predictions for both operating and capital spend are very strong for 2018, with a forecast of 3.67% for IT spend as a % of revenue.



# CIO OPTIMISM - AS HIGHER IT BUDGETS ANTICIPATED FOR 2019

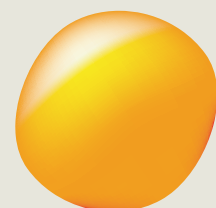
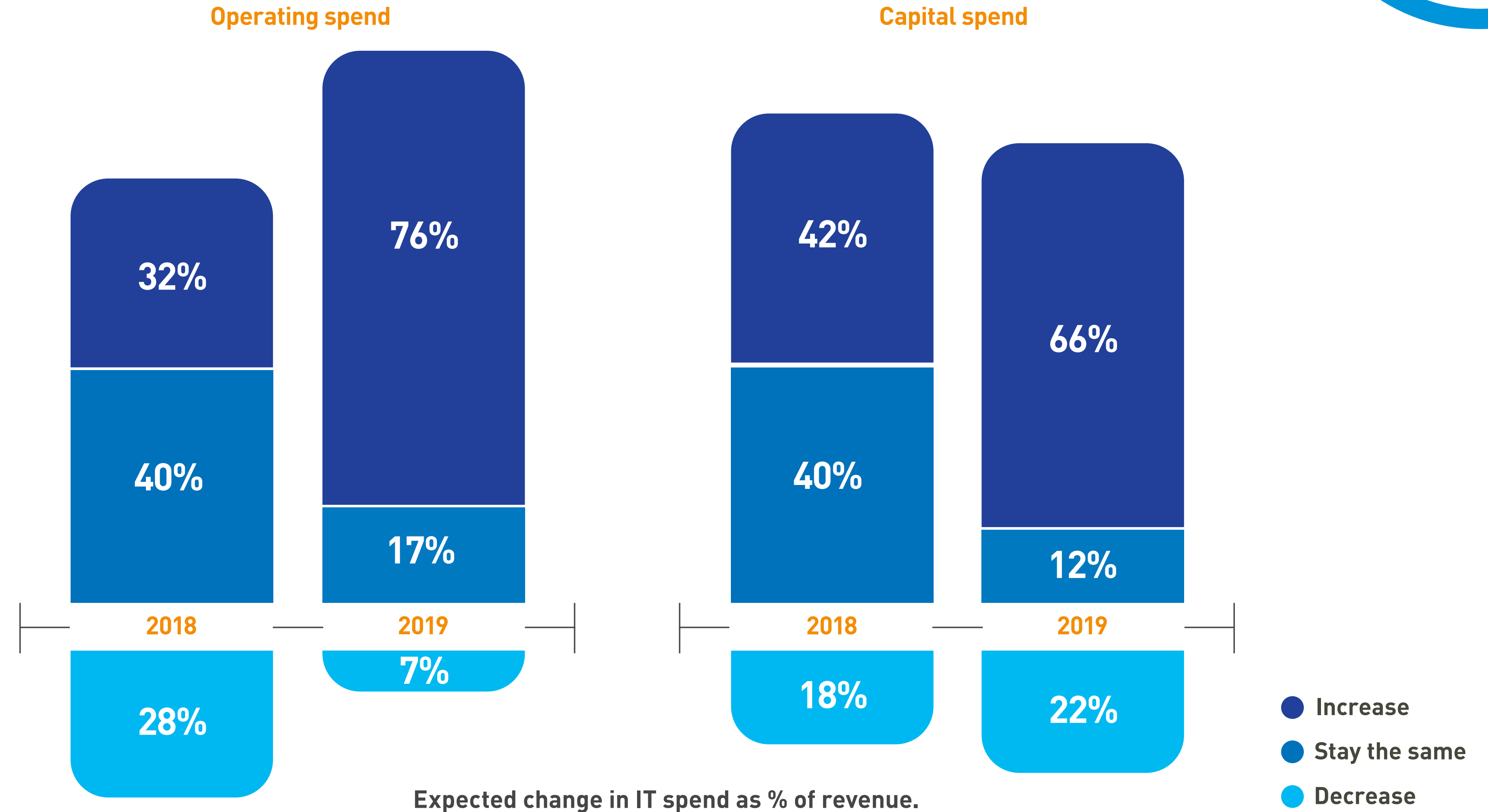


### ANALYSIS

#### Confidence going forward

Expectations for 2019 are very strong, with around three quarters of airlines expecting increases in both capital and operating budgets:

- 76% and 66% respectively expect increases in the coming 12 months.
- As opposed to under half (32% and 42%) saying this in 2017 for 2018 predictions.



# MOBILE SERVICES AND CYBERSECURITY HIGH ON AIRLINE CIO AGENDAS



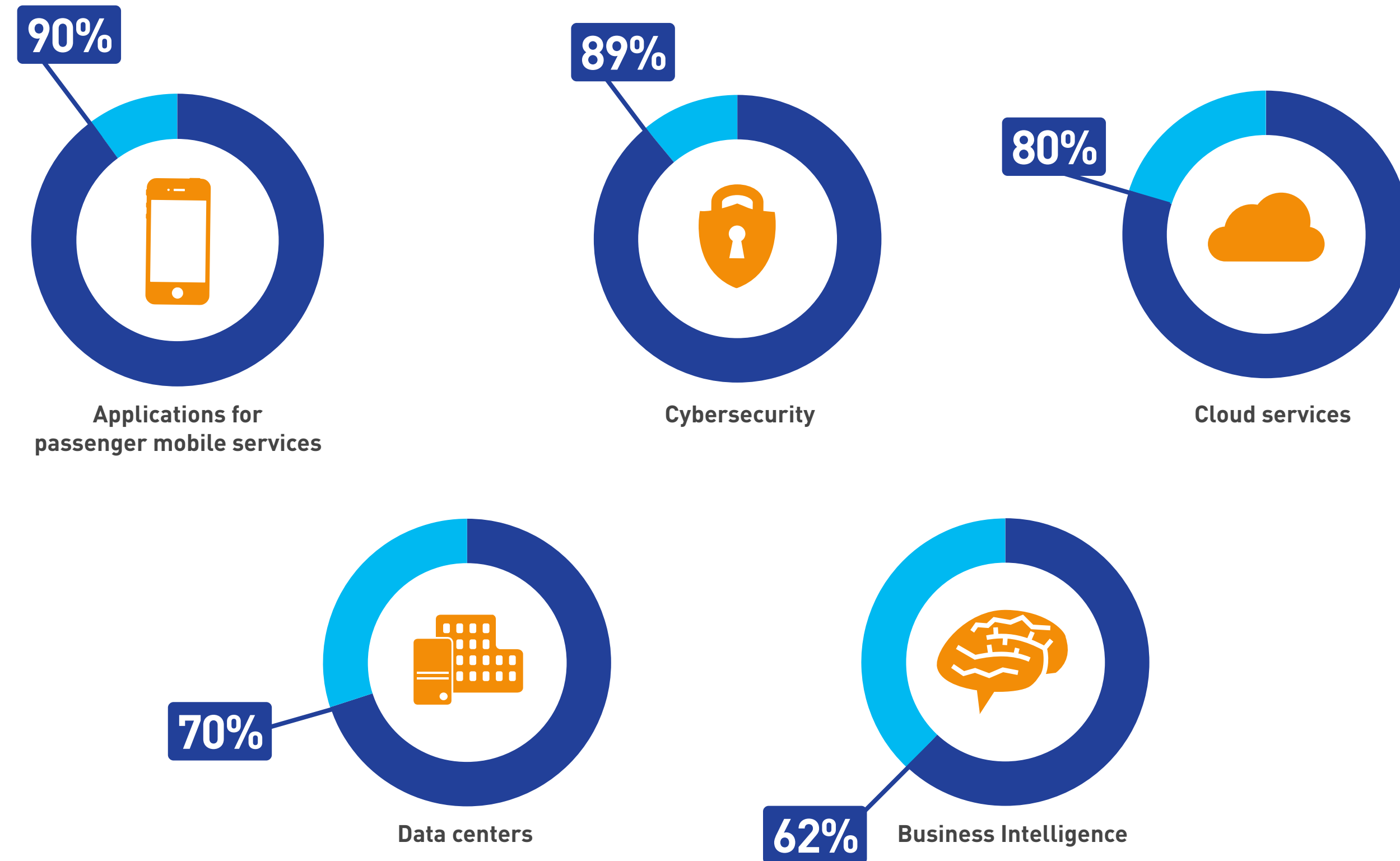
### ANALYSIS

#### The airline CIO agenda

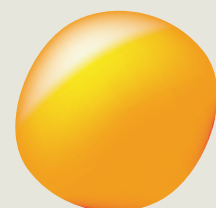
Mobile services and cybersecurity have clearly been on the agenda since 2017 for IT services investment - with double digit growth in terms of the 'major programs' in place over the past year, making them almost ubiquitous among airlines.

Within airline operations, there are two areas where most airlines have a 'major program' where there has been large growth. They are:

- 'Applications for passenger mobile services', now at 90%, up from 80% last year.
- And cybersecurity initiatives, at 89% and up even further from 71% last year.
- Cloud services are still important, with 80% having a major program, despite little growth here.



% of airlines planning major programs / R&D by 2021.





# MORE SELF-SERVICE INVESTMENT AT AIRPORTS TO TACKLE DISRUPTION AND ID MANAGEMENT

### ANALYSIS

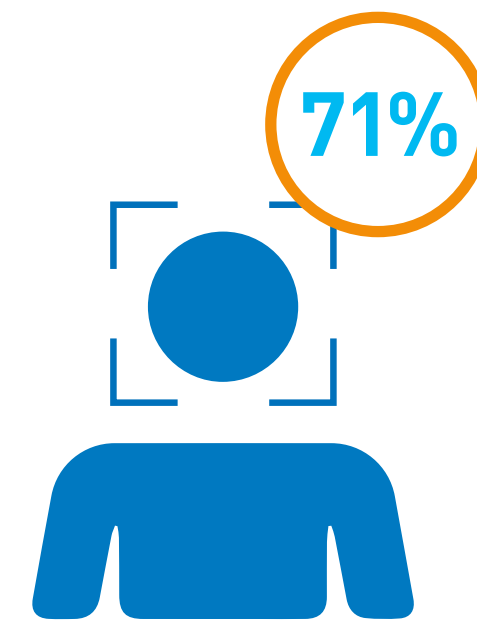
#### Airline investment priorities at the airport

At the airport, the area most airlines have invested in by far is 'self-service solutions for irregular operations', where 88% of airlines say they have plans to invest by 2021. Some 68% have a major program and 20% plan R&D in this area.

71% of airlines also have investment planned for 'biometric identity management solutions'. Just 18% of airlines have a major program in place, but over half of them have a pilot/R&D project.



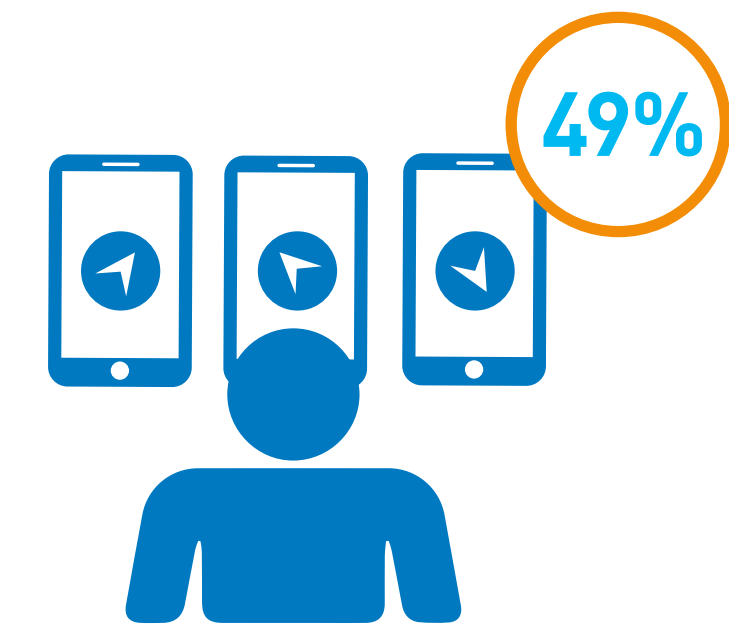
Self-service solutions for irregular operations



Biometric identity management solutions

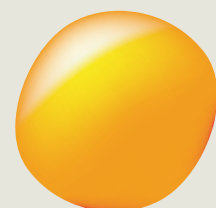


Real-time wait time monitoring system



Interactive wayfinding/navigation solutions

% of airlines planning major programs / R&D by 2021.





## AIRLINE | INVESTMENT PRIORITIES FOR OPERATIONS

# BAG TRACKING READINESS GROWING STEADILY



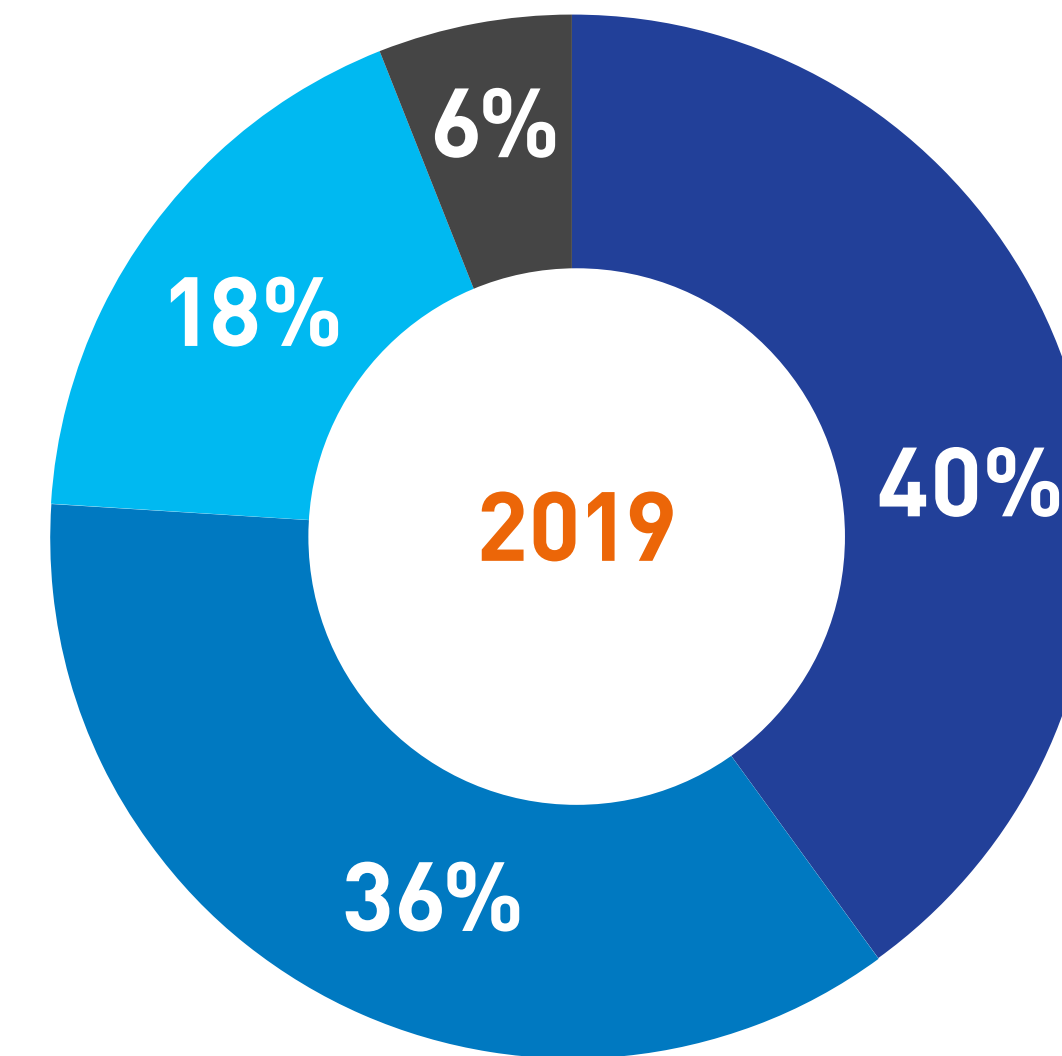
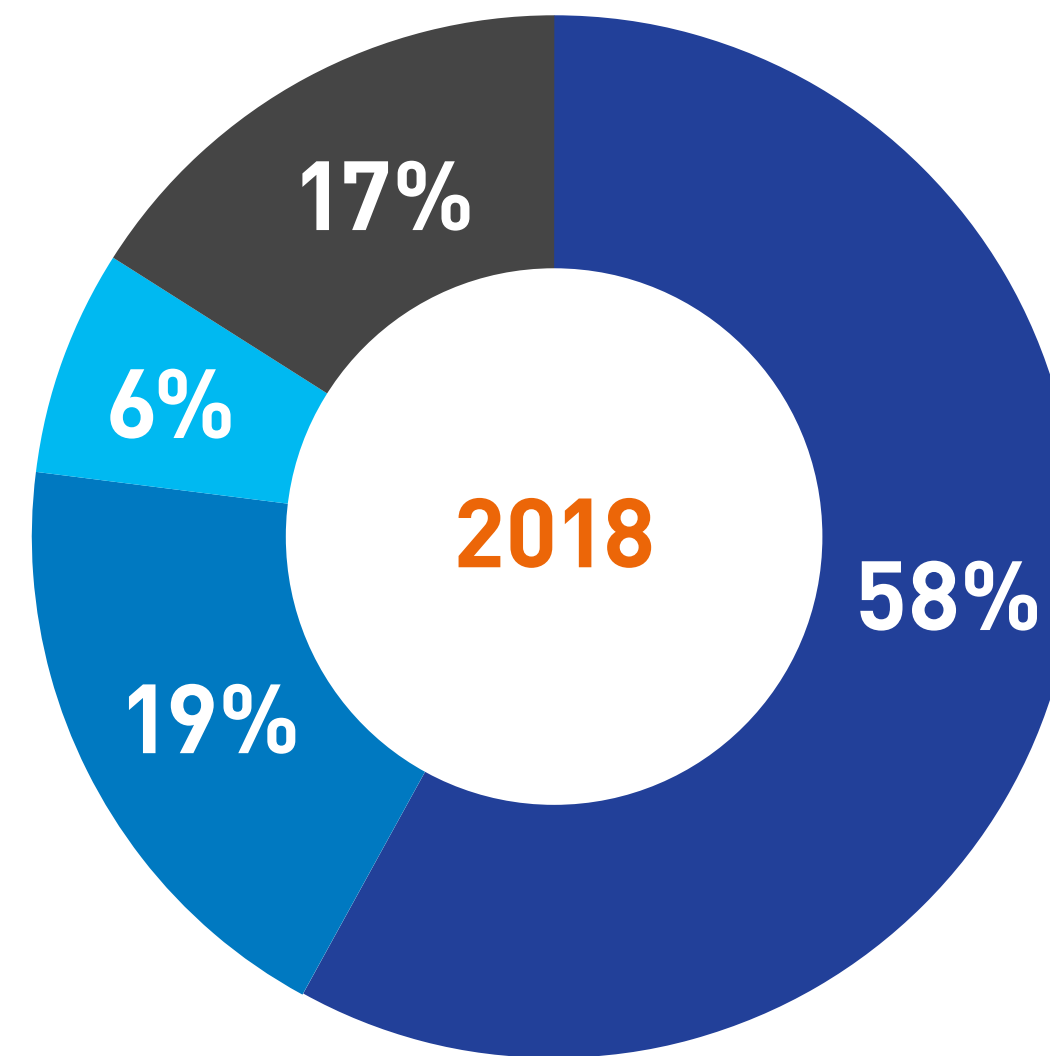
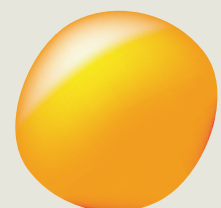
### ANALYSIS

#### IATA Resolution 753

Overall 8 out of 10 airlines think they will be compliant with IATA Resolution 753 by the end of 2018, and this is set to grow with 94% of airlines planning to be compliant by 2019. Only 6% of airlines have made no plans for compliance by 2019 (down from 26% in 2016).

The proportion of airlines (58%) being able to track bags for up to 50% of their route network has been stable since last year. Airlines are still optimistic though for 2019, with 52% planning to track bags beyond half of their route network by 2019.

Tracking bags across 100% of route networks will take some time. Only 6% expect to be able to track bags across 100% of their route network and 18% say they expect to be able to track 100% by this time next year – although we saw a similar prediction last year which has not come to fruition.



- Below 50% of route network
- More than 50% of route network
- Fully compliant
- No compliance readiness

% of airlines with bag tracking capabilities across their network routes.



# A STEP TOWARDS AUTOMATION WITH SELF-BOARDING

### ANALYSIS

#### More investment for aircraft boarding

Airlines are looking to achieve more automation thanks to identity and other technologies for aircraft boarding by 2021.

Self-boarding gates using biometrics – with or without ID documentation – are yet to take off, but may do in the near future.

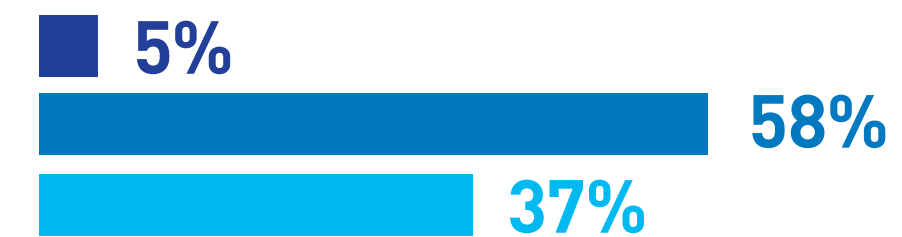
Currently only 5% of airlines have implemented this, but around half expect to do so by 2021.



**Staff checking & scanning ID documentation**



**Self-boarding gates using biometric & ID documentation**

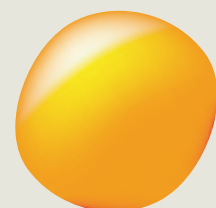


**Self-boarding gates using biometric only**



- 2018
- 2021
- No Plans

% of airlines with an implemented or planned passenger ID management solution.





## AIRLINE | INVESTMENT PRIORITIES ON BOARD

# ON-BOARD WIRELESS CONNECTIVITY CONTINUES TO BE TOP OF MIND



### ANALYSIS

#### On-board investment priorities

The main focus of investment on-board the plane is on providing wireless services.

Almost three quarters of airlines now have a major program or R&D in place to provide wireless in-flight services for passengers (90%) and wireless services for cabin crew/pilots (94%).

81% of airlines are taking a further step towards aircraft connectivity with full satellite broadband connectivity to the aircraft: 52% with a major program and 29% with an R&D pilot by 2021.

Passenger virtual reality services take a back seat. Despite promising moves last year with almost half (46%) of airlines having some sort of program in place, only 27% of airlines now have major programs or R&D in this area.



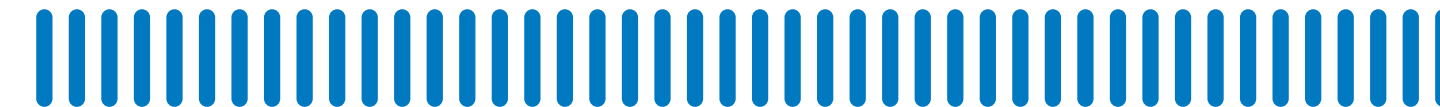
On board

Wireless services for cabin crew/pilots



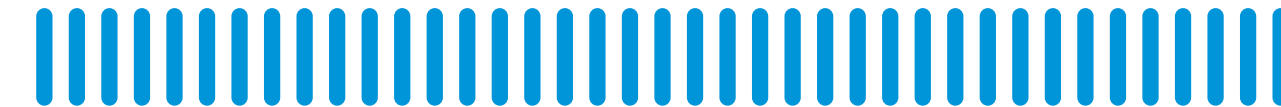
94%

Wireless in-flight services for passengers



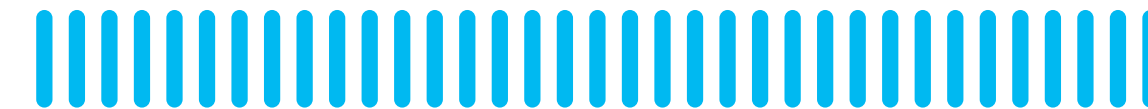
90%

Automatic aircraft data management



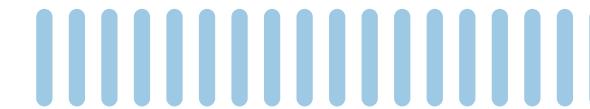
85%

Full satellite broadband connectivity to aircraft



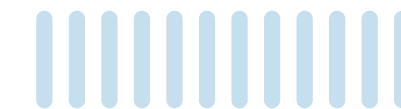
81%

Wearable services for passengers



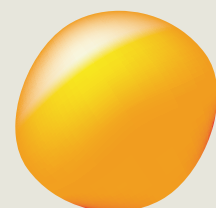
41%

Virtual reality services for passengers



27%

% of airlines planning major programs / R&D by 2021.



# A REAL DESIRE TO INCREASE MOBILE CHECK-IN BY 2021



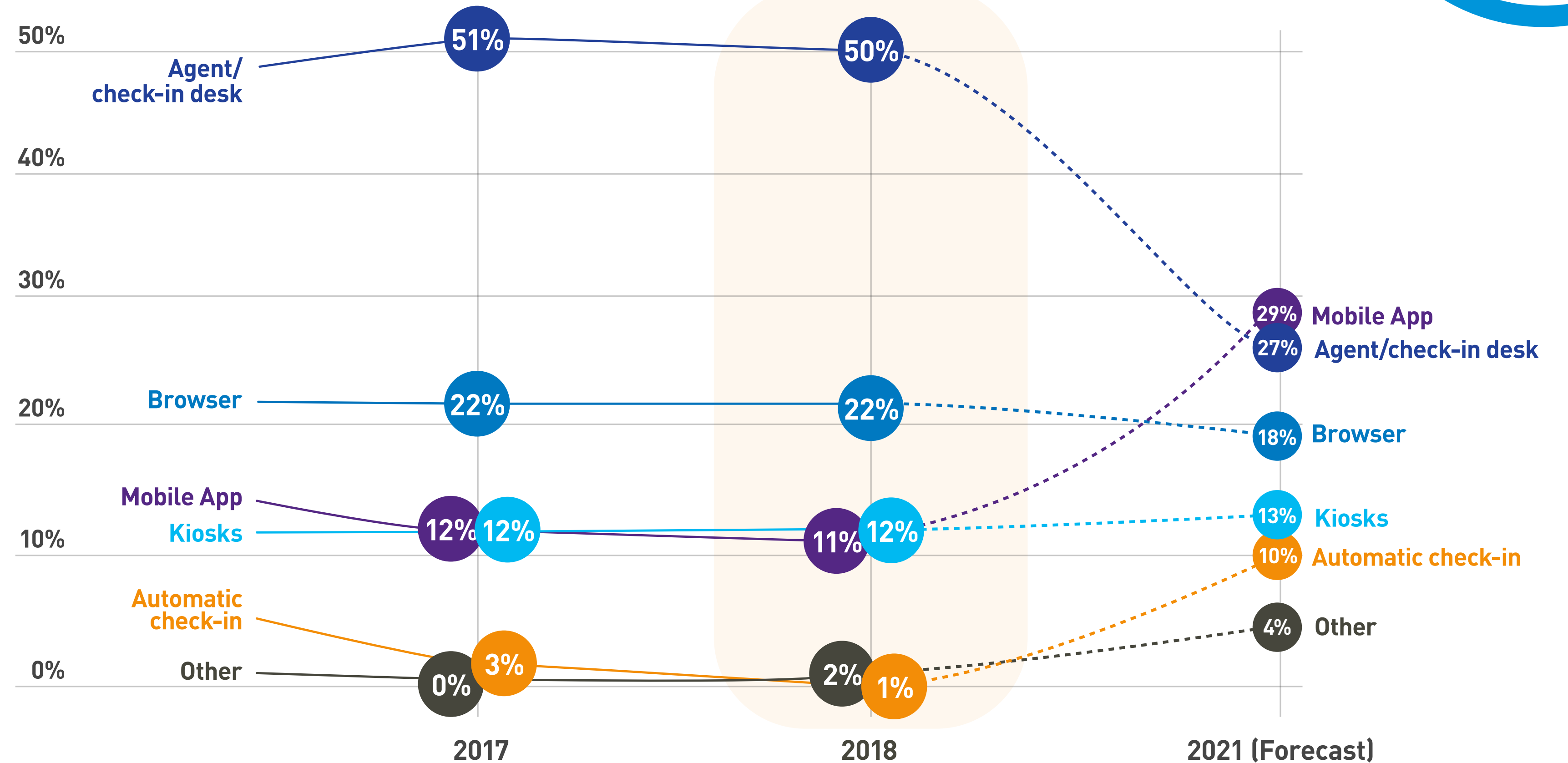
### ANALYSIS

#### Self-service check-in plans

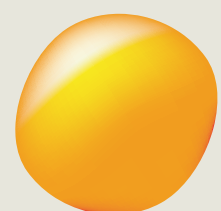
The level of self-service check-in has remained constant compared to 'traditional desk' check-in over the last three years.

The industry plans to swing from agent check-in desks towards mobile check-in by 2021, with mobile app check-in increasing from 11% to 29% and check-in desks decreasing from 50% to 27%.

Mobile app check-in is planned to be the main check-in method by 2021.



% of passengers using check-in methods stated by airlines.





## AIRLINE | SELF-SERVICE

# FOCUS ON KEEPING PASSENGERS INFORMED WITH MORE SELF-SERVICE OPTIONS



### ANALYSIS

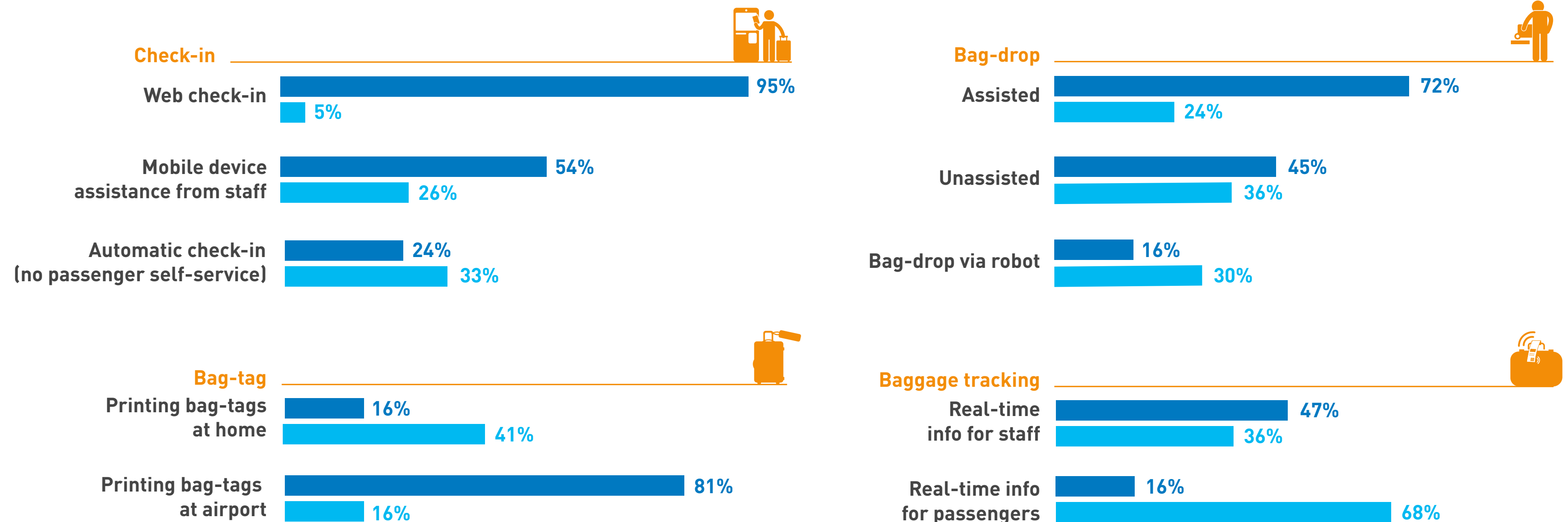
#### Airline self-service investment

Implementation of web check-in has been completed by 95% of airlines in 2018.

In terms of growth, bag-drop (assisted) implementation has grown to 72% over the past 12 months. Bag-drop (unassisted) has grown to 45% and 'real-time baggage status information' has increased from 36% to 47%.

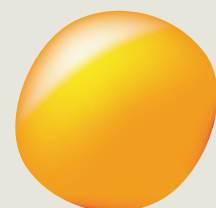
Bag-drop is becoming more automated, with unassisted bag-drop likely to be implemented by the vast majority of airlines by 2021. Robotic/autonomous machine bag-drop is predicted to be nearing 50% implementation in three years' time.

In the context of the IATA's Resolution 753, 68% of airlines also have plans to implement real-time bag tracking information for passengers by 2021.



% of airlines with implemented or planned self-service initiatives.

- 2018
- 2021



# MANY PASSENGER MOBILE SERVICES ARE NOW ALMOST UNIVERSAL



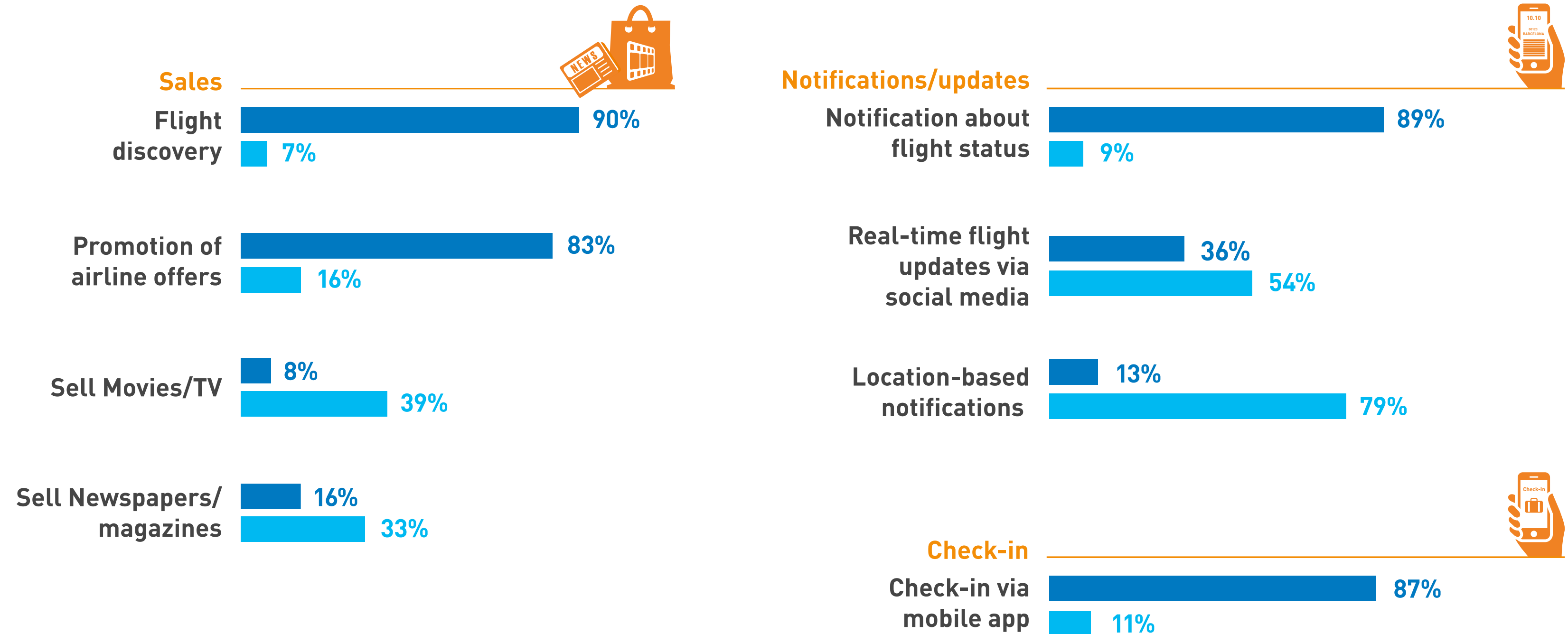
### ANALYSIS

#### Many mobile app services are becoming universal

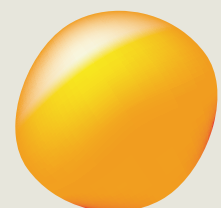
Airlines are increasingly implementing applications to promote sales, most prevalently, 'flight discovery' (90% implementation - up from 77% in 2017), and 'promotion of airline offers' (83% up from 77% in 2017).

More airlines are adding notification services to enhance the value of their mobile app:

- 'Flight status updates' are already almost universal with 89% implementation.
- But there is a surge in the number of airlines providing location-based notifications which is expected to reach 79% by 2021.



% of airlines with implemented or planned passenger mobile services by 2021. ● 2018 ● 2021



# INFORMATION SERVICES – THE NEXT WAVE OF AIRLINE MOBILE APP ENHANCEMENT



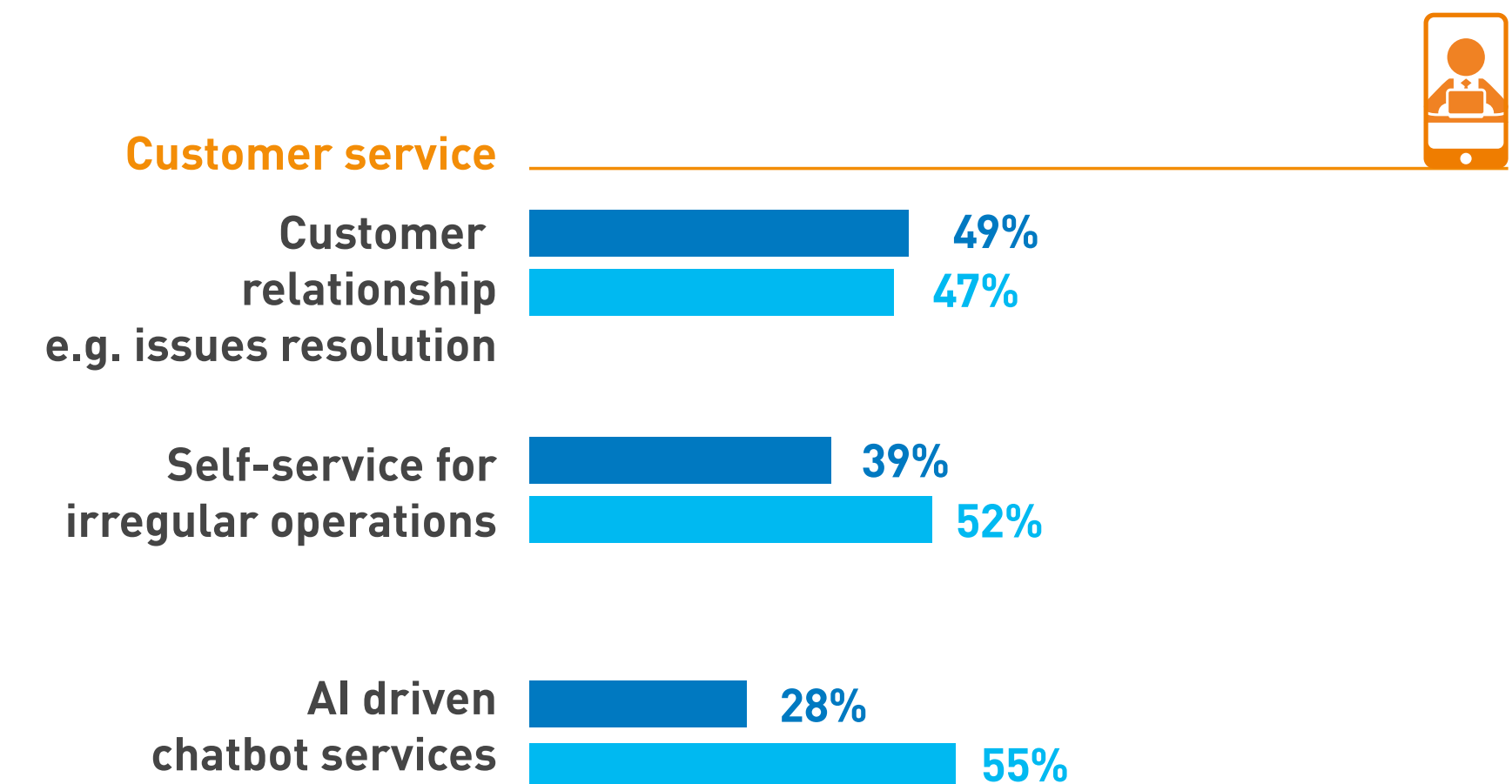
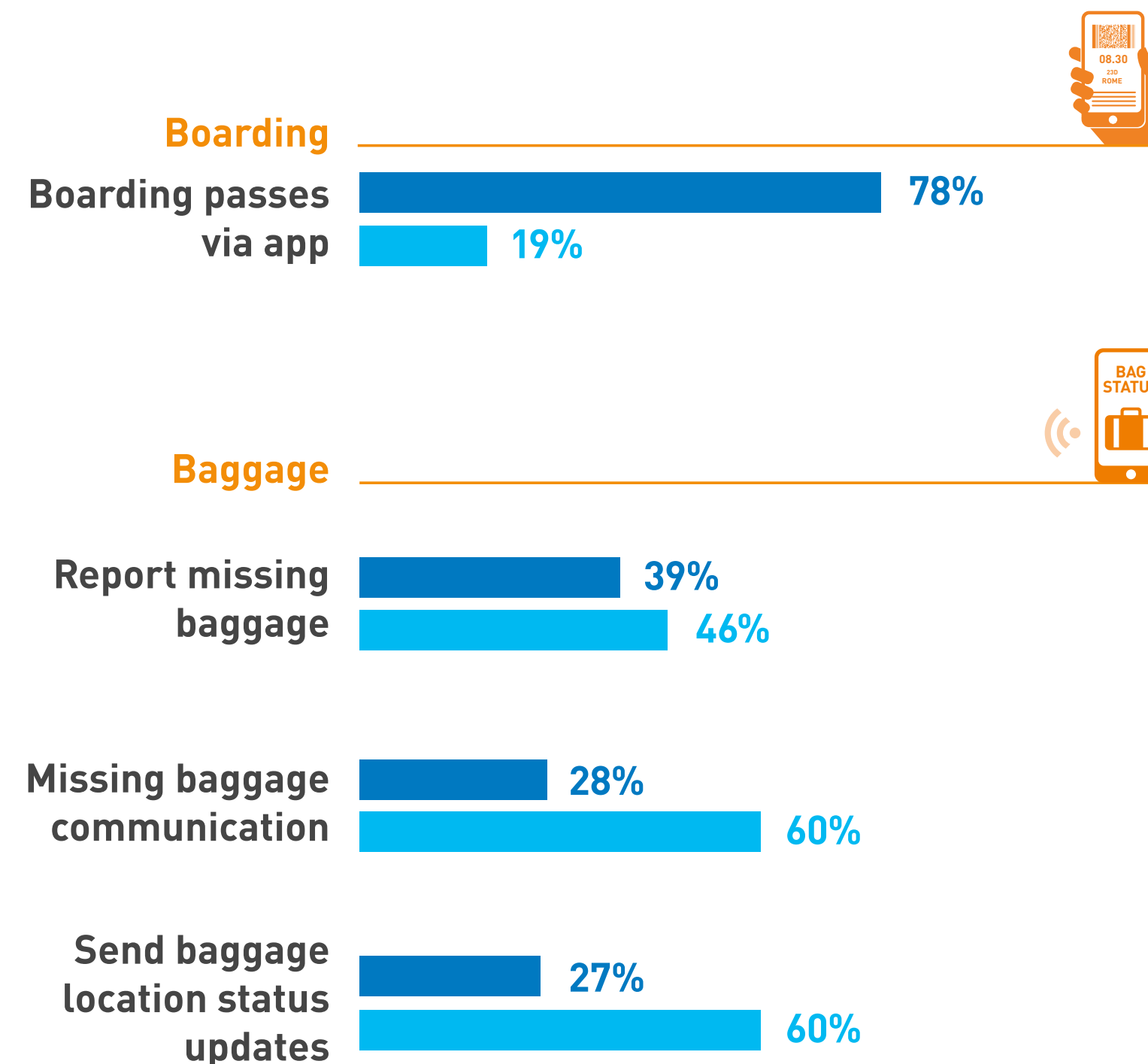
### ANALYSIS

#### Information services will enrich mobile apps

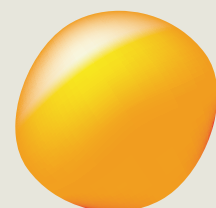
Resolving customer service issues is another functionality that is being added to mobile apps with 49% of airlines offering this in 2018.

By 2021, the majority of airlines plan to have implemented mobile services related to irregular operations (52%) and chatbot services (55%).

Also, 60% of airlines have plans to implement information services via mobile apps to inform passengers about missing baggage and baggage location status updates.



% of airlines with implemented or planned passenger mobile services by 2021. ● 2018 ● 2021





# NEW TECHNOLOGIES OFFERING AIRLINES STRATEGIC AND OPERATIONAL BENEFITS BY 2021

### ANALYSIS

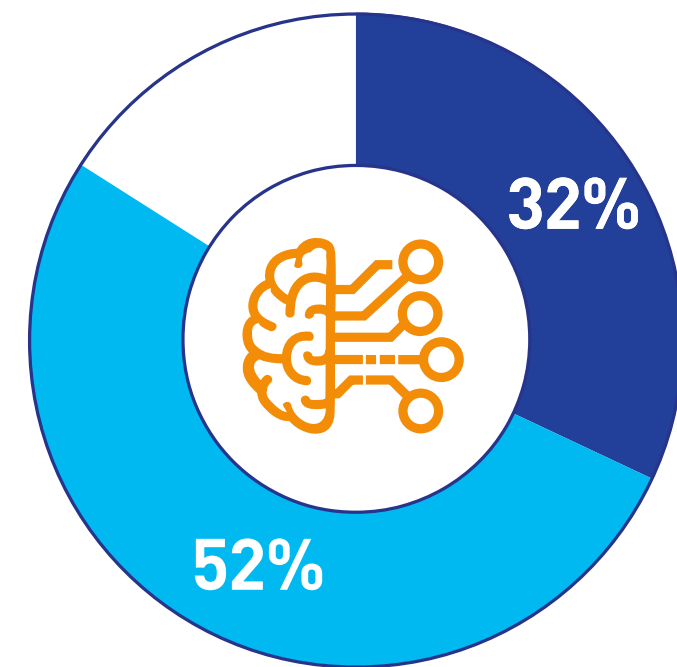
#### Airline CIO priorities for technologies

Airlines are continuing to invest in and implement new technologies which offer them strategic and operational benefits by 2021.

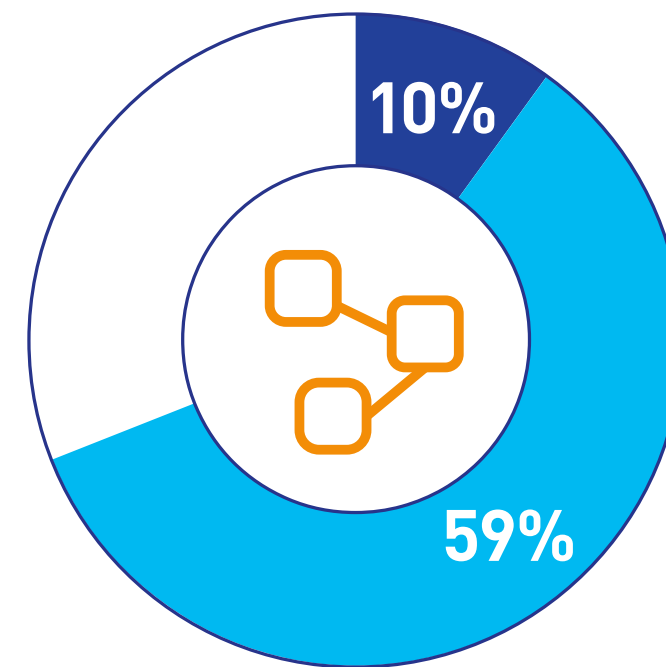
Artificial Intelligence is seen as beneficial across a range of airline operations with 32% of airlines having major programs and 52% with R&D programs in place (respectively up from 21% and 31%).

Currently, only 1 in 10 airlines have a major program for blockchain initiatives, the same as in 2017. However, 59% of airlines now have pilot or research programs in place, which is up from 42%.

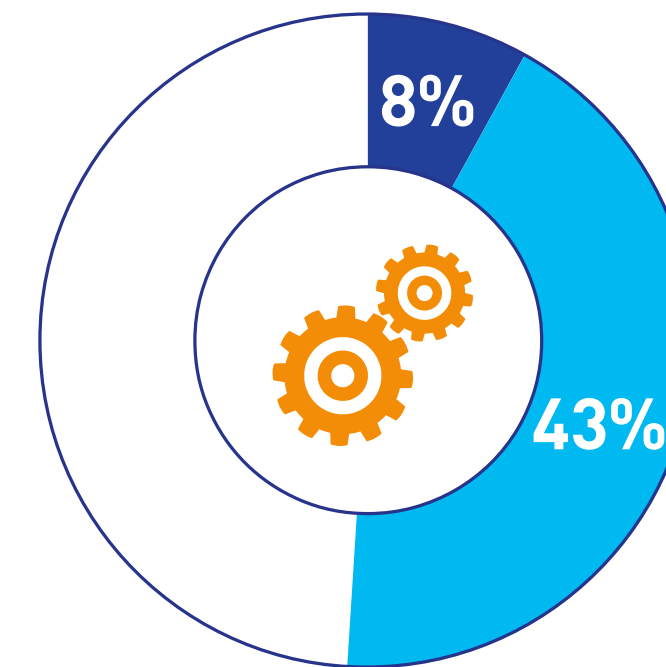
Cognitive computing and wearable technology are two other key areas where airlines are looking to invest further.



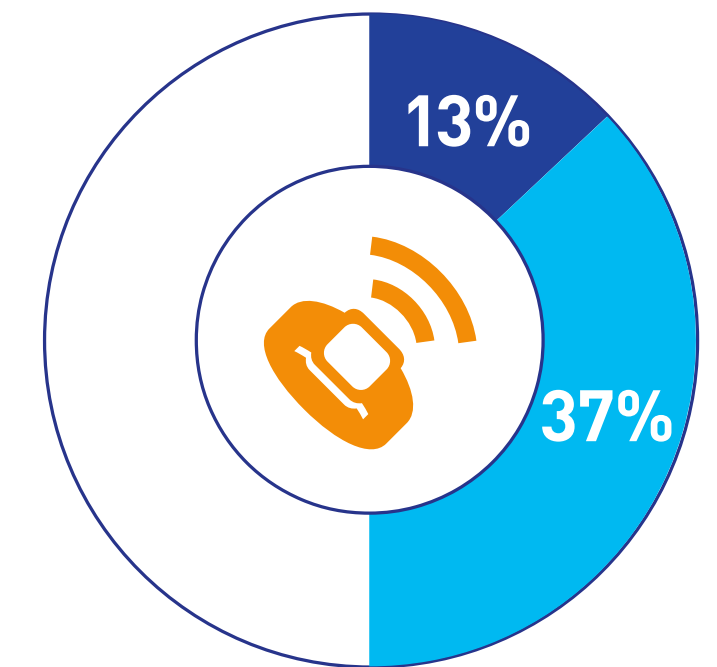
Artificial intelligence



Blockchain



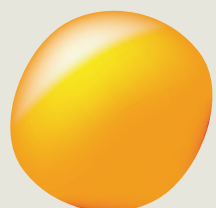
Cognitive computing



Wearable technology for staff

% of airlines planning major programs / R&D by 2021.

- Major Program
- R&D



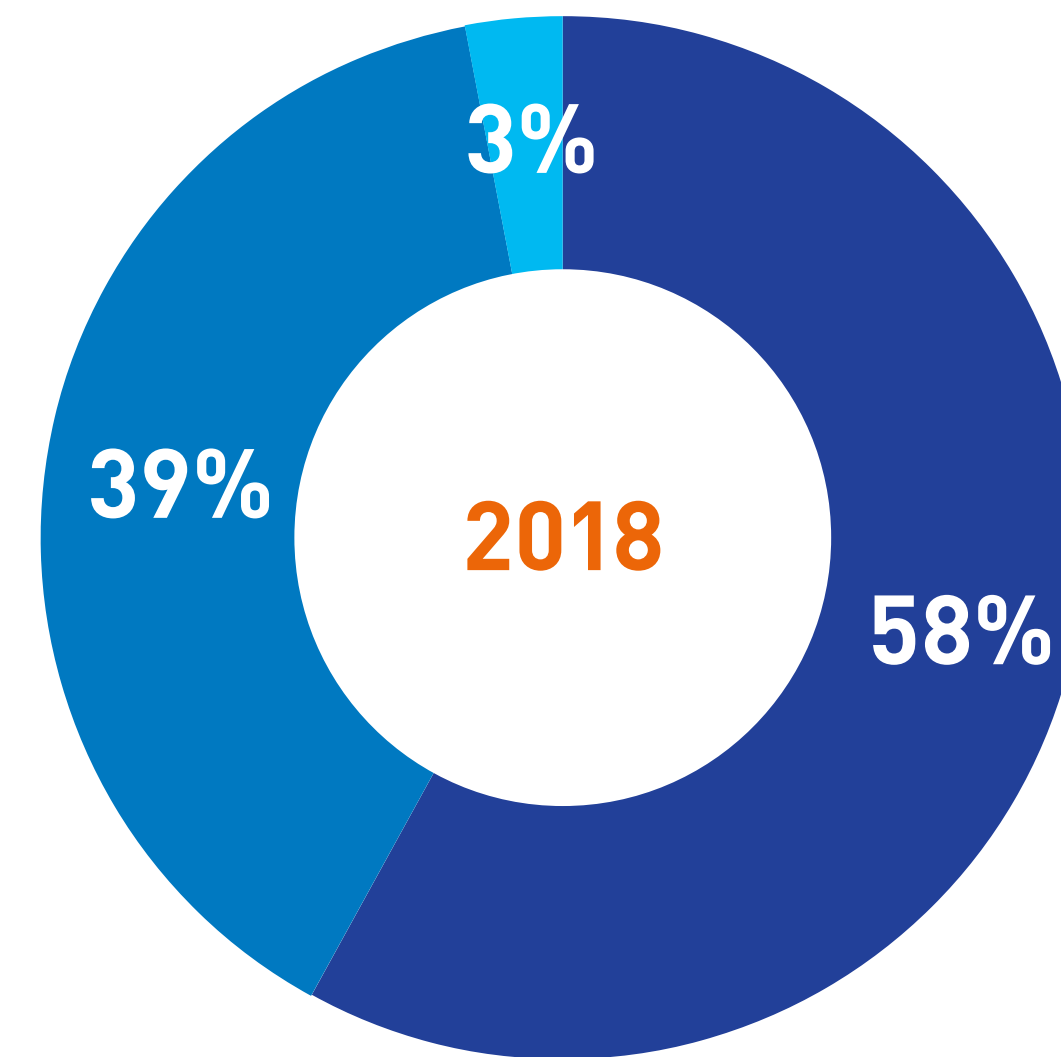


### ANALYSIS

#### Airlines are driving digitalization

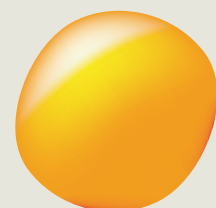
Airlines are not resting on their laurels when it comes to digitalization. They have almost unanimously invested in some way into a digital transformation strategy, with 58% already having a strategy in place, and 39% currently developing one. Even the 3% of airlines who are not yet in the development or implementation stage of a digital transformation strategy are planning to be in the coming years.

However, despite general agreement about the need to develop a digitalization strategy, only 9% of airlines currently have a Chief Digital Officer (CDO), and the vast majority of airlines (74%) have no plans to appoint a CDO.



- In place
- Ongoing
- Planned
- No plans

% of airlines with a Digitalization or Digital Transformation Strategy.





## AIRLINE | INNOVATION

# AIRLINES SEEK PARTNERSHIPS FOR INNOVATION



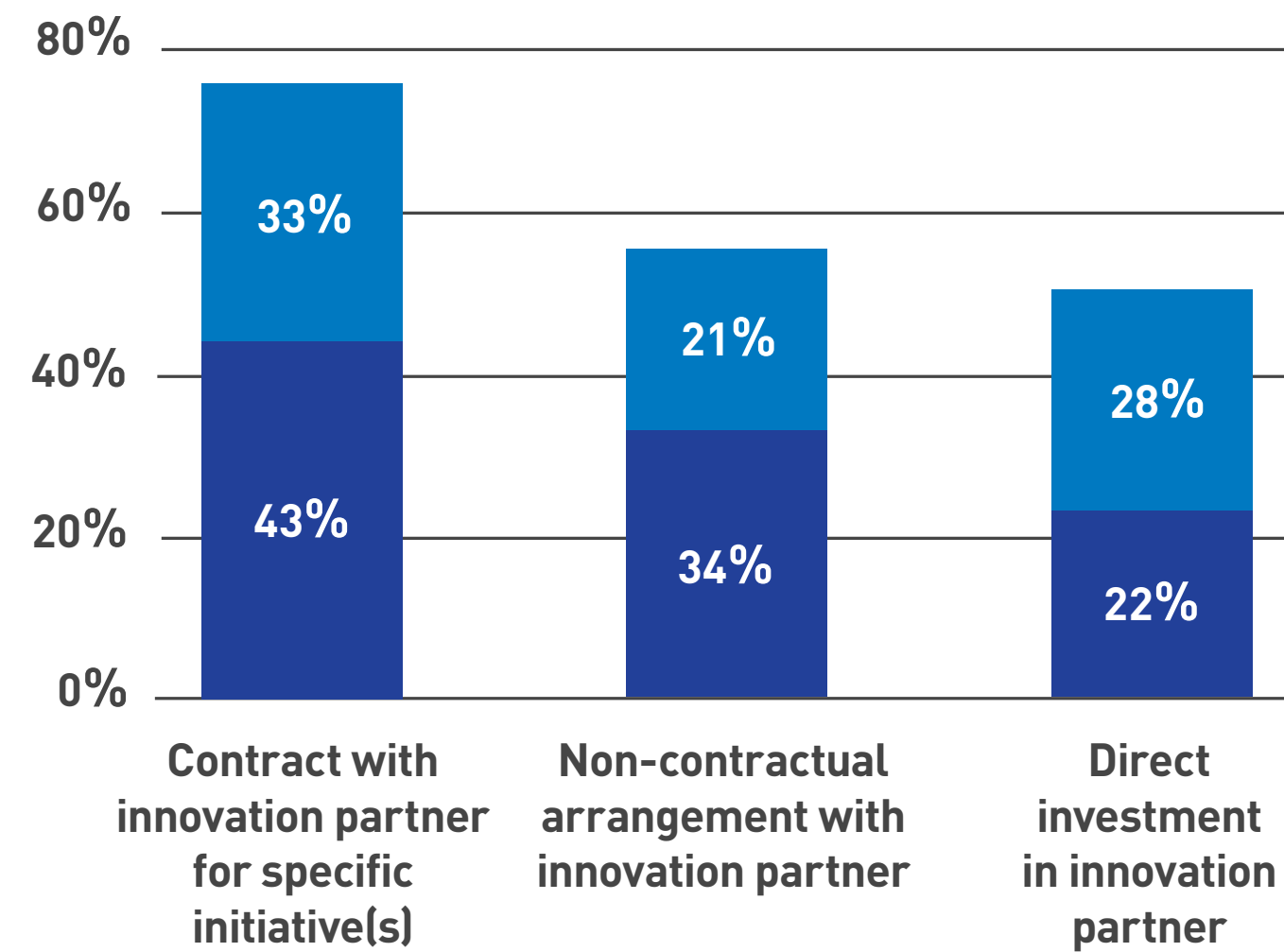
### ANALYSIS

#### Airline technology partnership strategies

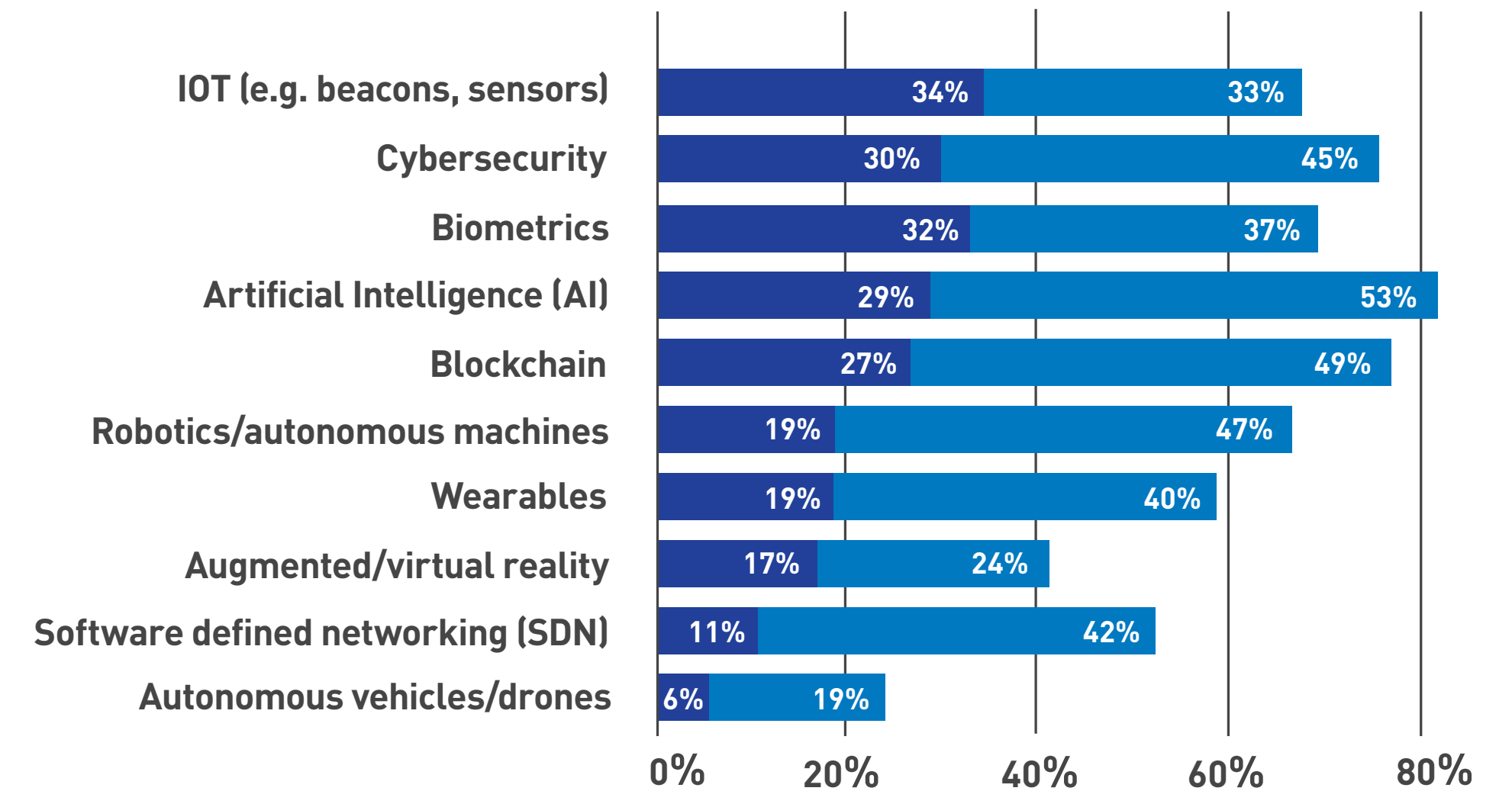
Airlines are embracing the opportunities that partnerships with third party tech specialists can bring. Almost half (42%) already have an innovation collaboration strategy in place, and a further 27% are currently developing a strategy.

These take various forms from having a 'contract with a partner for a specific project (43% have done this) or a non-contractual agreement (34%), all the way to direct investment (22%).

Airlines are establishing these innovation partnerships to develop their capacities in new technologies. The most common of these technologies are: Internet of Things (34% partnering currently), biometrics (32%), cybersecurity (30%) and Artificial Intelligence (29%). Looking at 2021, the data shows that the majority of airlines (53%) will further establish partnerships for AI.

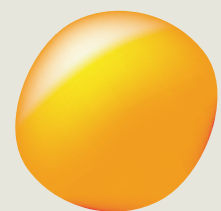


% of airlines with innovation partnership plan.



% of airlines with established partnership for specific technologies.

● 2018  
● 2021



# EMERGING TECH PRIORITIES: ARTIFICIAL INTELLIGENCE (AI)



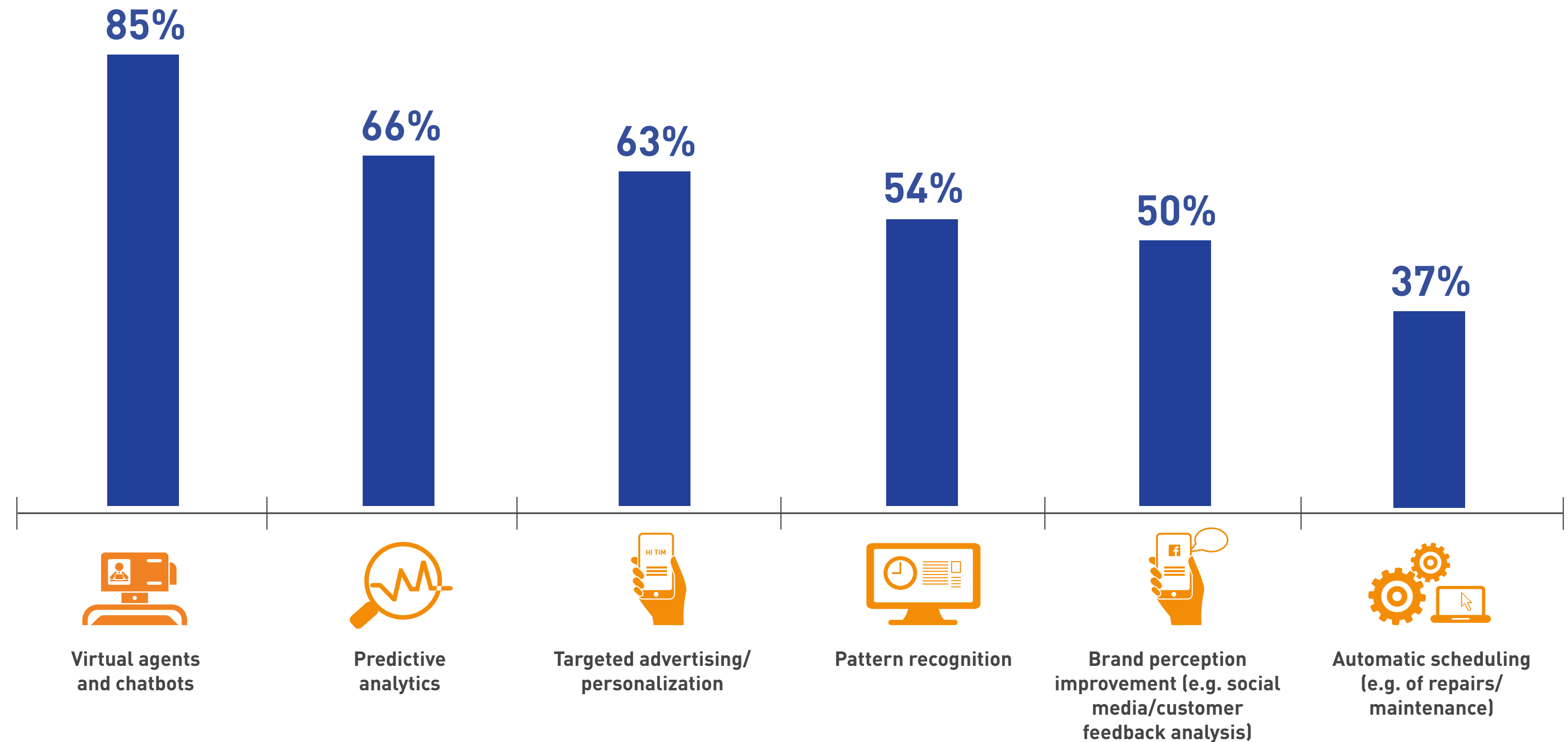
### ANALYSIS

#### AI investment plans

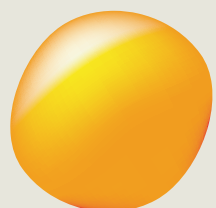
Artificial Intelligence (AI) is becoming more commonplace, with several AI initiatives having been implemented, or planned to be implemented by over half of airlines.

The most common use (or planned use) of AI is for virtual agents and chatbots (85%). Around half of existing virtual assistants and chatbots are able to assist passengers with FAQs (56% implementation) and flight status information (47%).

The second main use case for AI implemented or planned by airlines (66%) relates to investment in predictive analytics capabilities.



% of airlines with AI use cases currently implemented or planned by 2021.





## AIRLINE | INNOVATION

# EMERGING TECH PRIORITIES: INTERNET OF THINGS (IOT)



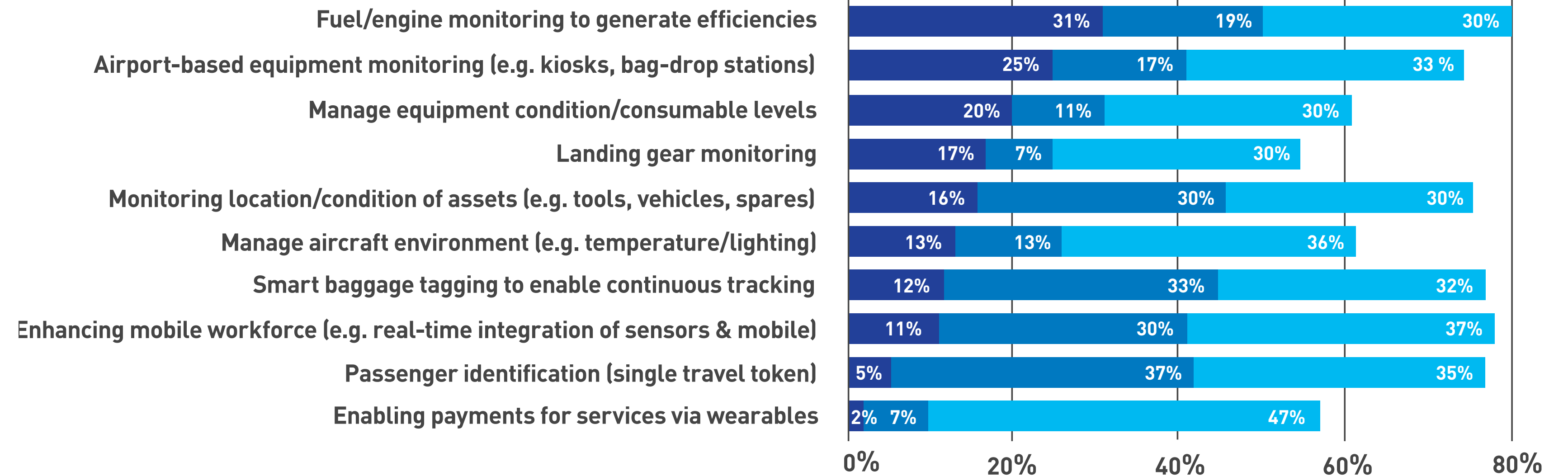
### ANALYSIS

#### Internet of Things (IoT) investment plans

In 2016 and 2017 very few airlines were undertaking initiatives enabled by the IoT, but in the last year there has been double digit growth in several areas.

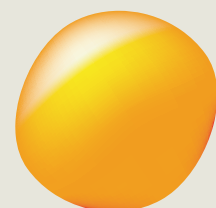
A third of airlines (31%) now use the IoT to monitor fuel/engines (up 18% on last year) and a quarter (25%) use IoT for 'monitoring airport-based equipment' (up 10%).

IoT investment is set to continue to grow with several other areas planned to be trialled by most airlines by 2021. The IoT use cases mostly implemented by airlines and explored by R&D pilots will be to monitor fuel/engines (100%) and to enhance mobile workforces (78%).



% of airlines with IoT initiatives implemented or planned by 2021.

- 2018
- R&D/Pilot in progress
- R&D/Pilot by 2021





# EMERGING TECH PRIORITIES: BLOCKCHAIN



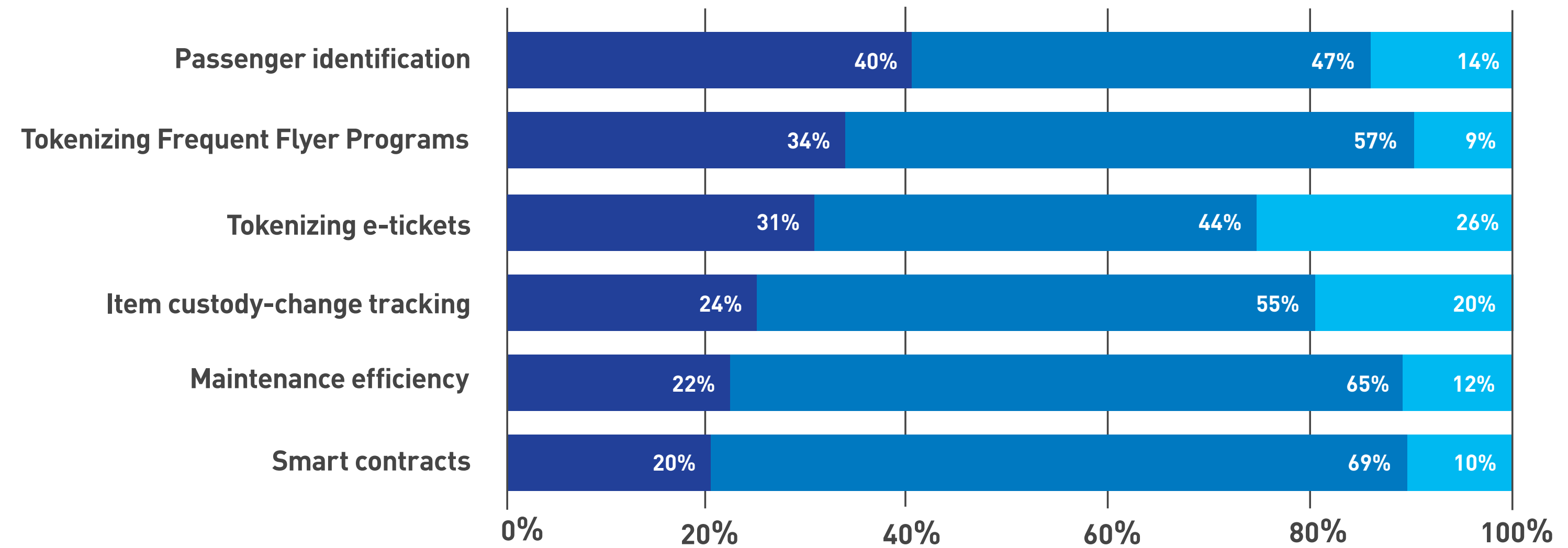
## ANALYSIS

### Blockchain investment plans

Currently, only 1 in 10 airlines have a major program for blockchain initiatives, the same as in 2017. However, 59% of airlines have pilot or research programs in place in 2018, which is up from 42%.

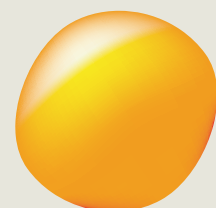
The most commonly expected use of blockchain at the moment is 'passenger identification' with 40% of airlines saying this would be a major benefit.

Another area where airlines stated they expected blockchain technology to provide major benefits is in the roll out of passenger tokens for Frequent Flyer programs (34%) and e-tickets (31%).



% of airlines expecting some benefits for the use of Blockchain technology.

- Major benefit
- Some benefit
- No benefit





# AIRPORT IT TRENDS

Airports are keenly embracing new digital technologies to deliver a secure and seamless journey and drive operational efficiencies. Airport IT spend is planned to rise this year – reaching 5.69% of revenues in 2018 – and it's poised to increase further in 2019. Self-service processes, cybersecurity and biometric ID management initiatives feature prominently among airport investment priorities. Crucially, airports are now ring-fencing much more of their IT budgets for cybersecurity.

A resounding theme is the momentum with which airports are automating passenger processes. Self check-in via kiosks is almost ubiquitous because of significant past investments. For future investments, 77% of airports

have set their sights on biometric ID management solutions. These include self-boarding gates using biometrics and ID documents: 59% of airports have implementations and/or plans by 2021. Thanks to the industry's focus on the seamless journey, these gates will be commonplace by the end of 2021.

The journey will also be made more seamless by a greater focus on wait-times, with well over half of airports planning notifications to passengers' mobile devices. Over 40% of airports have implementations in wait-time monitoring using sensors, helping them to publish wait-time, flight status, and route-to-gate information directly to passengers on the move.

Major technologies for airport investment include Artificial Intelligence (AI) and blockchain, areas where airports are maintaining spend. Nearly 8 out of 10 airports are using or planning to use AI for predictive analysis to improve operational efficiency. Airports see blockchain as offering the potential to improve passenger identification processes, by reducing the need for multiple ID checks. What's clear is that these new technologies are being increasingly utilized by airports as they strive towards the seamless passenger experience and streamlined operations.



# AIRPORT IT TRENDS



**IT SPEND**

PAGES 24-25



**INVESTMENT  
PLANS**

PAGES 26-30



**SELF-SERVICE**

PAGE 31



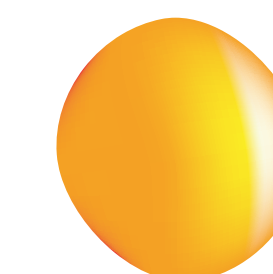
**MOBILE**

PAGES 32-33



**TECHNOLOGIES**

PAGES 34-39





## AIRPORT | IT SPEND

# AIRPORT IT SPEND NOW ON A GROWTH PATH



### ANALYSIS

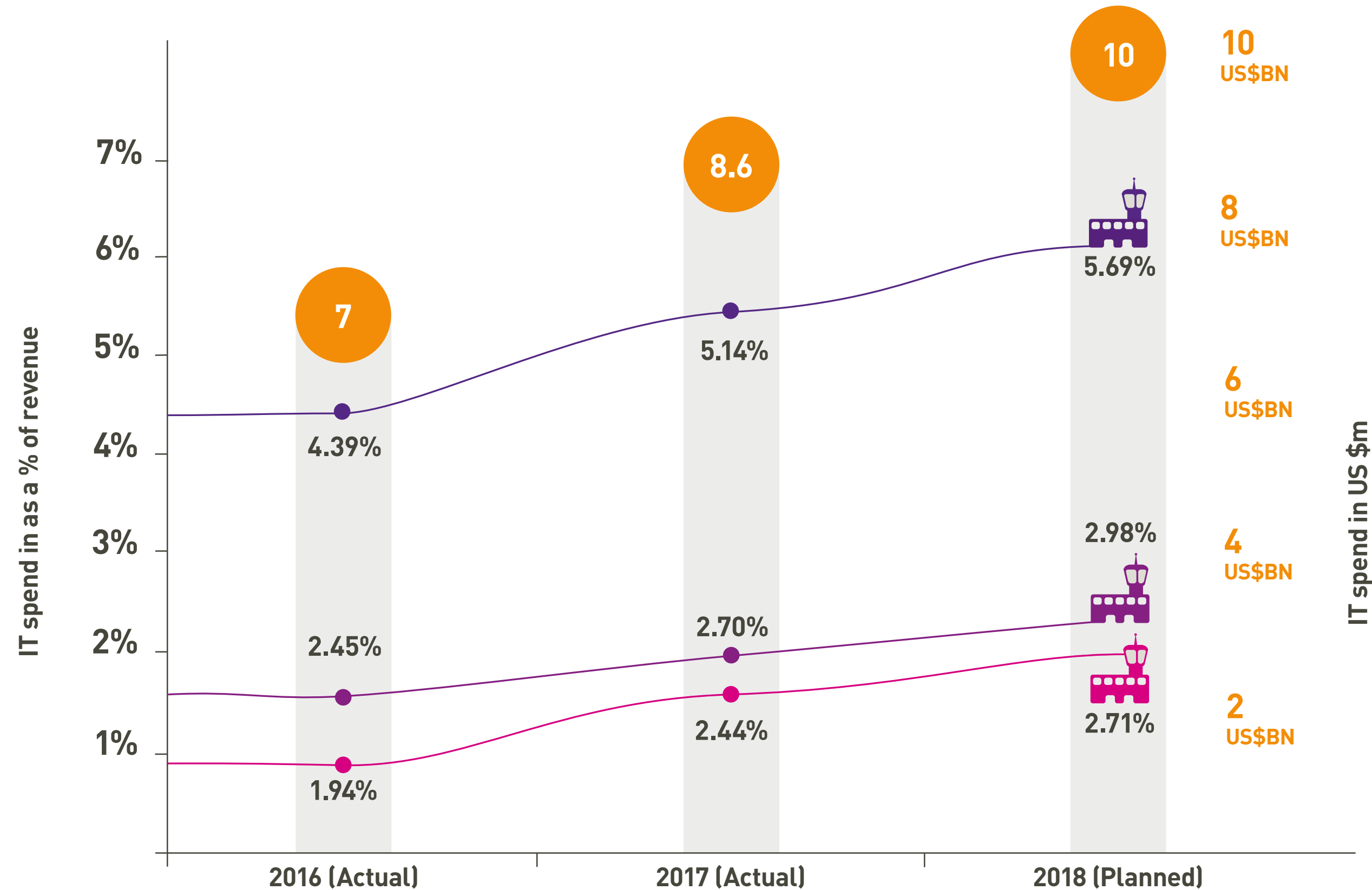
#### Airports IT spend on the up

In 2016 we saw a decrease in total airport IT spend down to the lowest we had seen in a few years: 4.39% total IT spend as a % of revenue.

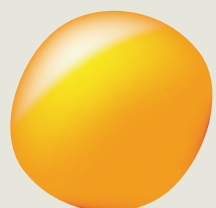
But, a growth trend has now returned with an actual 5.14% IT spend in 2017. Airports predict that this will increase again in the coming year up to 5.69% - close to the heights we saw in 2014.

The growth in spend comes from significant increases across both operating and capital expenditure. Operating spend rose by 0.25% in 2017, and capital expenditure by 0.5%. The forecast for 2018 remains positive with Opex predicted to increase by a further 0.28% and Capex by 0.27%.

Airports invested a total of US\$8.6 billion on technology in 2017 (up from US\$7 billion in 2016).



- Estimated value of IT spend
- Total IT spend
- Operating IT spend
- Capital IT spend



# AIRPORT IT BUDGETS CONTINUE TO RISE TOO

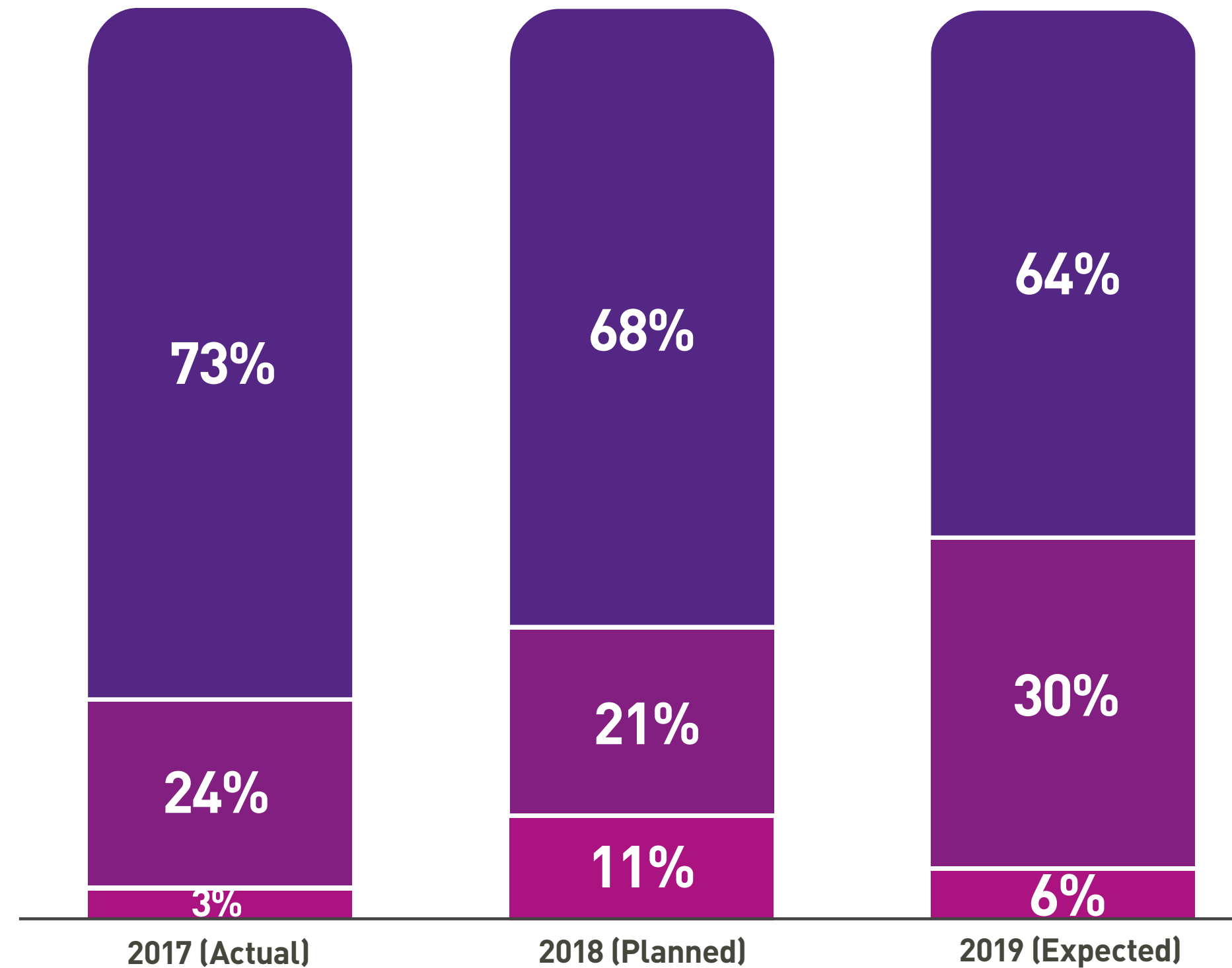


### ANALYSIS

#### Upward trend for airport IT budgets

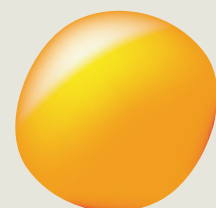
Absolute IT spend for most airports has also continued to increase. In 2017, 73% of airports cited a rise in absolute IT spend with only 3% reporting a drop from the previous year.

The outlook for 2018 is optimistic: 89% of airports expect their IT spend to rise or remain the same. Business confidence is high too, with only 6% of airports anticipating a fall in absolute spend in 2019.



Expected change in IT spend versus previous year.

- Increase
- Stay the same
- Decrease



# CYBERSECURITY AND SELF-SERVICE HIGH ON AIRPORT CIO AGENDAS



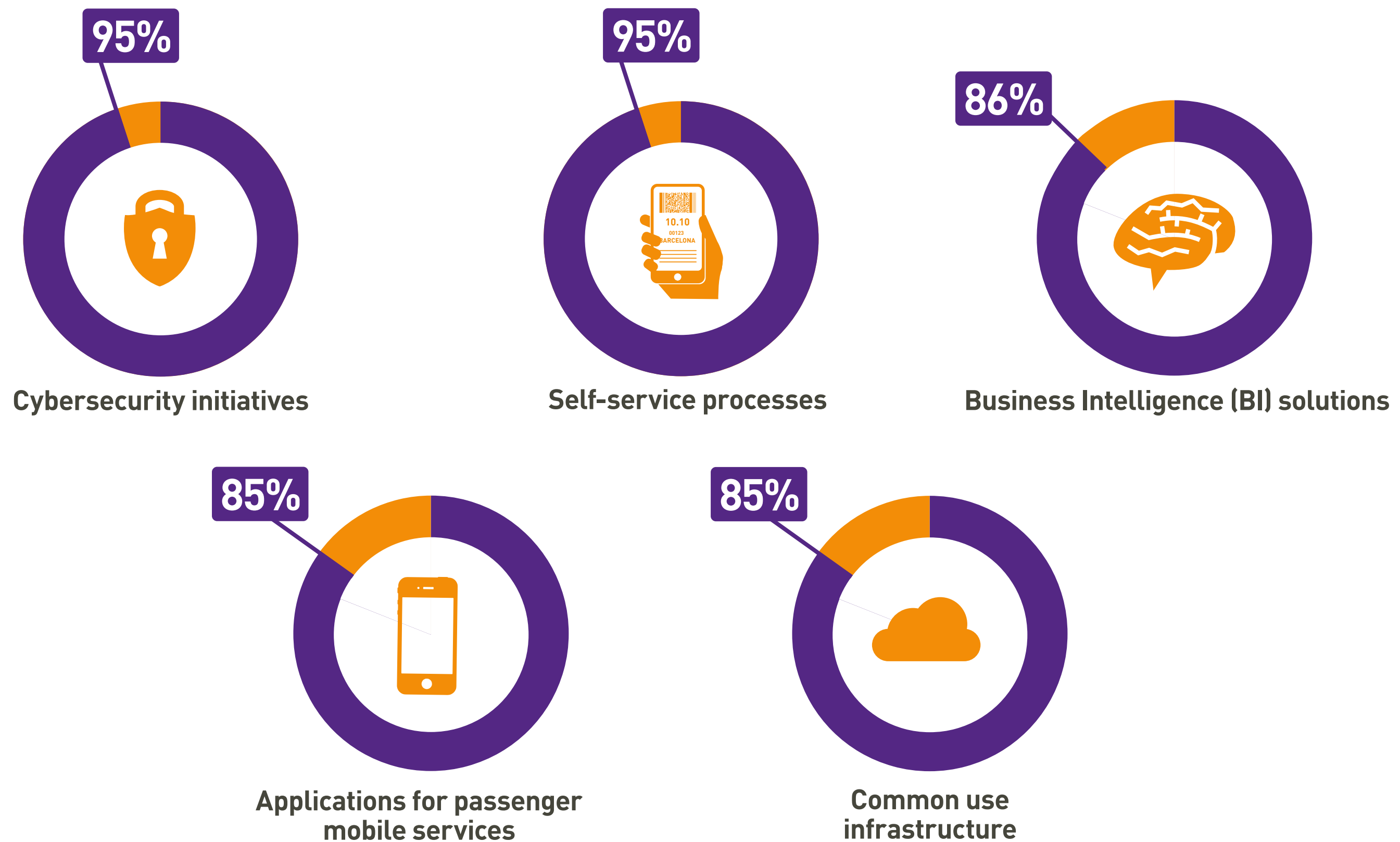
### ANALYSIS

#### The airport CIO agenda

Cybersecurity and self-service processes have clearly been on the agenda since 2017.

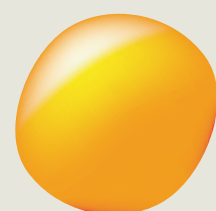
Some 95% of airports confirm that cybersecurity initiatives are a priority area for their IT investments, whether as a major program or for R&D.

Among the other priorities that have become well-established over recent years are passenger-facing initiatives such as self-service (95%) and mobile apps (85%), which receive a consistently high level of focus from airports.



% of airports planning major programs / R&D by 2021.

● 2018





# WAIT-TIME MONITORING INVESTMENT REMAINS A PRIORITY

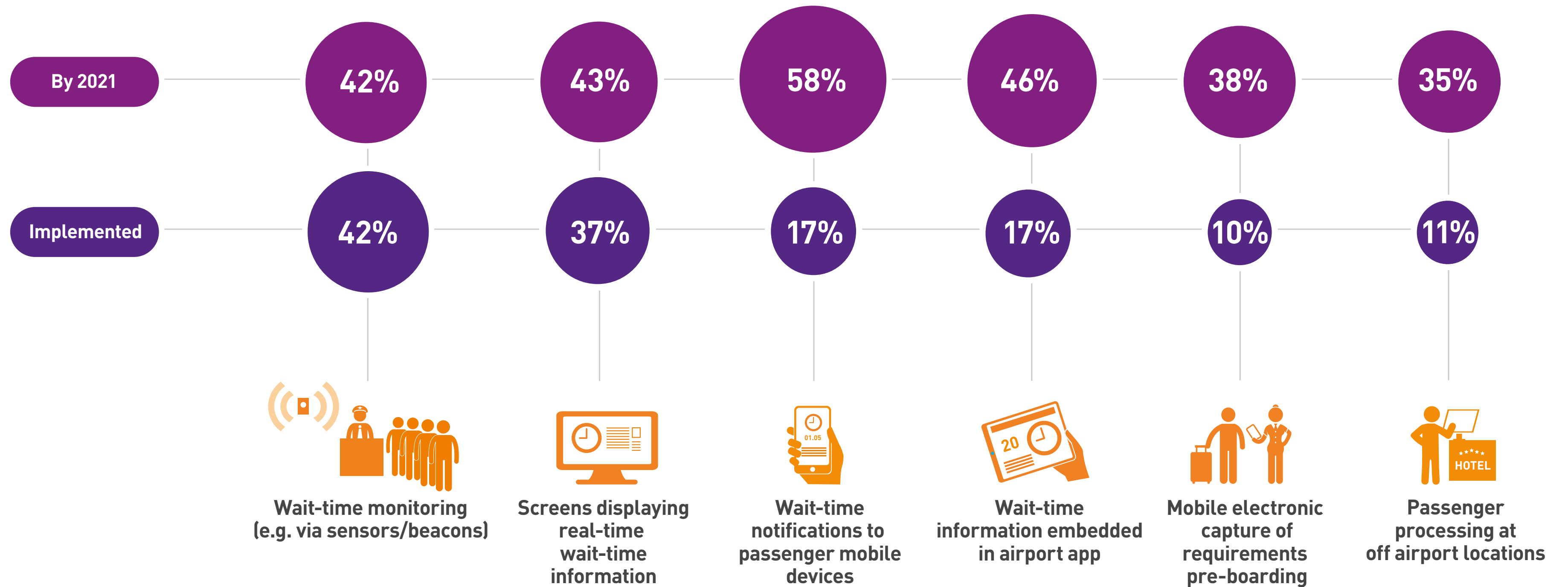
## ANALYSIS

### Passenger wait-time plans

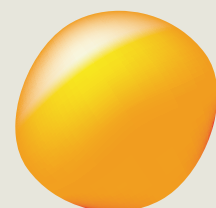
The implementation of 'wait-time monitoring' has jumped from 31% of airports in 2017 to 42% in 2018. Only 16% of airports have no plans to introduce this measure.

Keeping passengers up to date using 'screens to display real wait-time information' is more common than it was in 2017 (up to 37% implementation from 29%). 'Sending wait-time notifications to passengers' mobile devices' is an expected growth area with just 17% of airports currently offering this, but a further 58% are expecting to do so by the end of 2021.

Levels of implementation of pre-airport processes in order to reduce passenger processing times remain similar to in 2017. However, over half of airports do expect to have implemented each of 'assisted bag-drop (61%)', 'self-bag-tag at kiosks (53%)', and 'check-in via desks (51%)' pre-site by the end of 2021.



% of airports with solutions to reduce passenger wait-time in airport's land side by 2021.





# AIRPORTS UPPING THEIR INVESTMENT IN BAG TRACKING

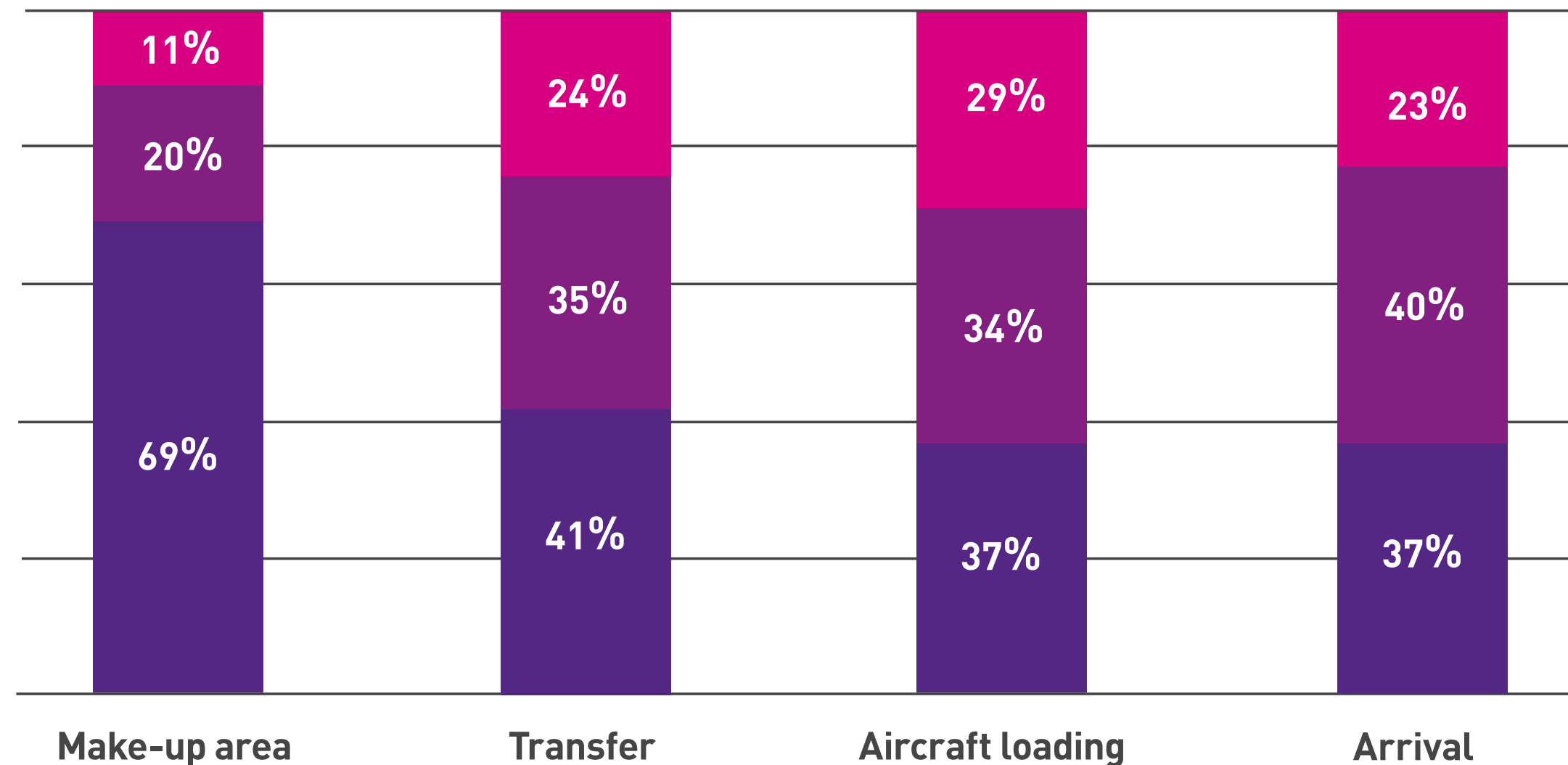
## ANALYSIS

### IATA Resolution 753

Airports have upped their investment to support the implementation of Resolution 753.

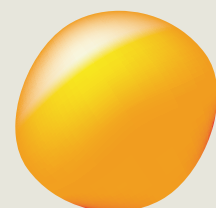
In 2017, 26% had already funded investment and a further 30% planned to. This year, 32% have funded investment and 40% plan to. The requests received from airlines to assist in their compliance with Resolution 753 have been wide-ranging.

The ability to track baggage at the 'make up area', 'aircraft loading', 'transfer' and 'arrival', have not increased over the past year. However, many more airports plan to be able to do this by 2021. In 2017, between 17% and 37% had no plans in each of these areas, whereas this year's figures have decreased to between 11% and 29%.



- Today
- By end of 2021
- No Plans

% of airports with implemented or planned bag tracking touch-points by 2021.





## SELF-BOARDING: THE NEXT STEP FOR ID MANAGEMENT

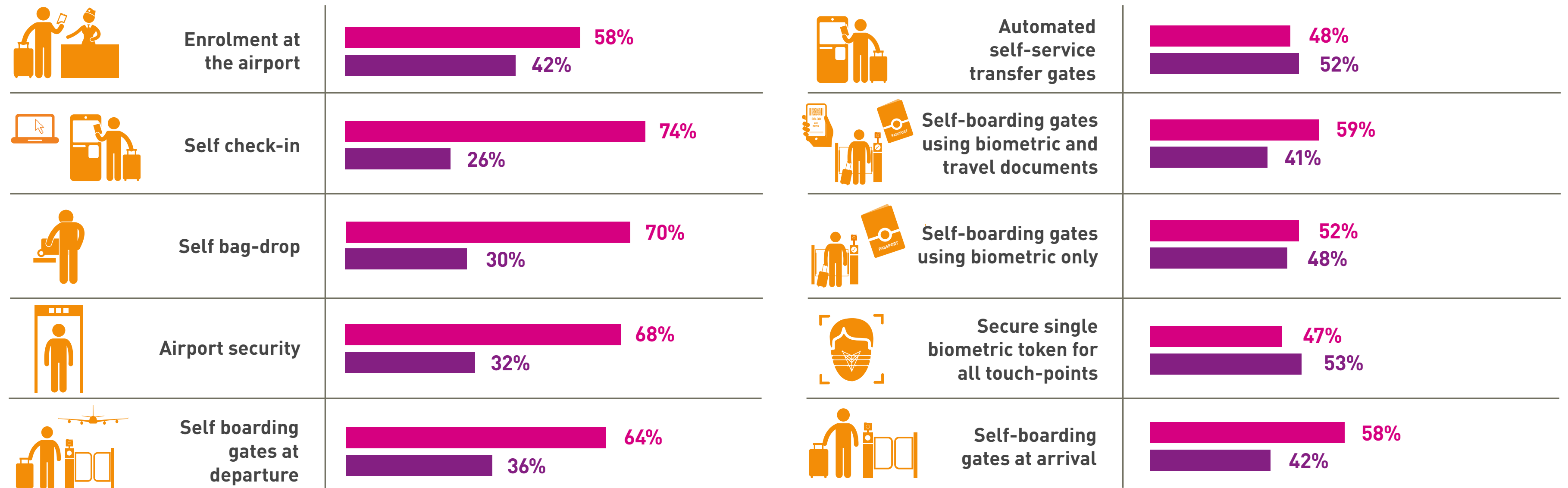
### ANALYSIS

#### More investment for ID management

There are a variety of areas where airports are implementing identity management solutions to facilitate secure passenger journey flow.

The most common is 'self-check in' with 74% implementation now and plans by the end of 2021.

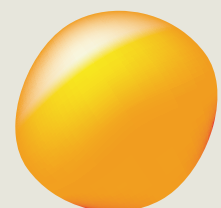
Self-boarding gates using biometrics – with ID documentation – are yet to take off, but may do in the near future. Currently only 9% of airports have implemented this, but around half expect to do so by 2021.



% of airports with implemented or planned ID management solutions by 2021.

● By end of 2021

● No Plans





## AIRPORT | INVESTMENT PRIORITIES

# THE NEED FOR DATA SHARING WITH OPEN AND API PLATFORMS



### ANALYSIS

#### More investment in open data and API platforms

As airports face more demand to offer digital services via various channels, they are searching for ways to broaden access to numerous apps in the travel industry. This will increase customer reach, while allowing internal and external developers to easily access their Application Programming Interfaces (APIs) and open data.

In 2018 airports demonstrated this shift by establishing internal open data sharing plans: 39% have already implemented such plans, and a further 32% will do so by the end of 2021. There is also strong activity to develop and implement open data sharing with external partners, with 23% offering a plan today and 39% expecting to by the end of 2021.

API platforms facilitating access for development and open data sharing will be commonplace by 2021, with 72% airports having an API platform for internal use and 68% with a platform for both internal and external use.

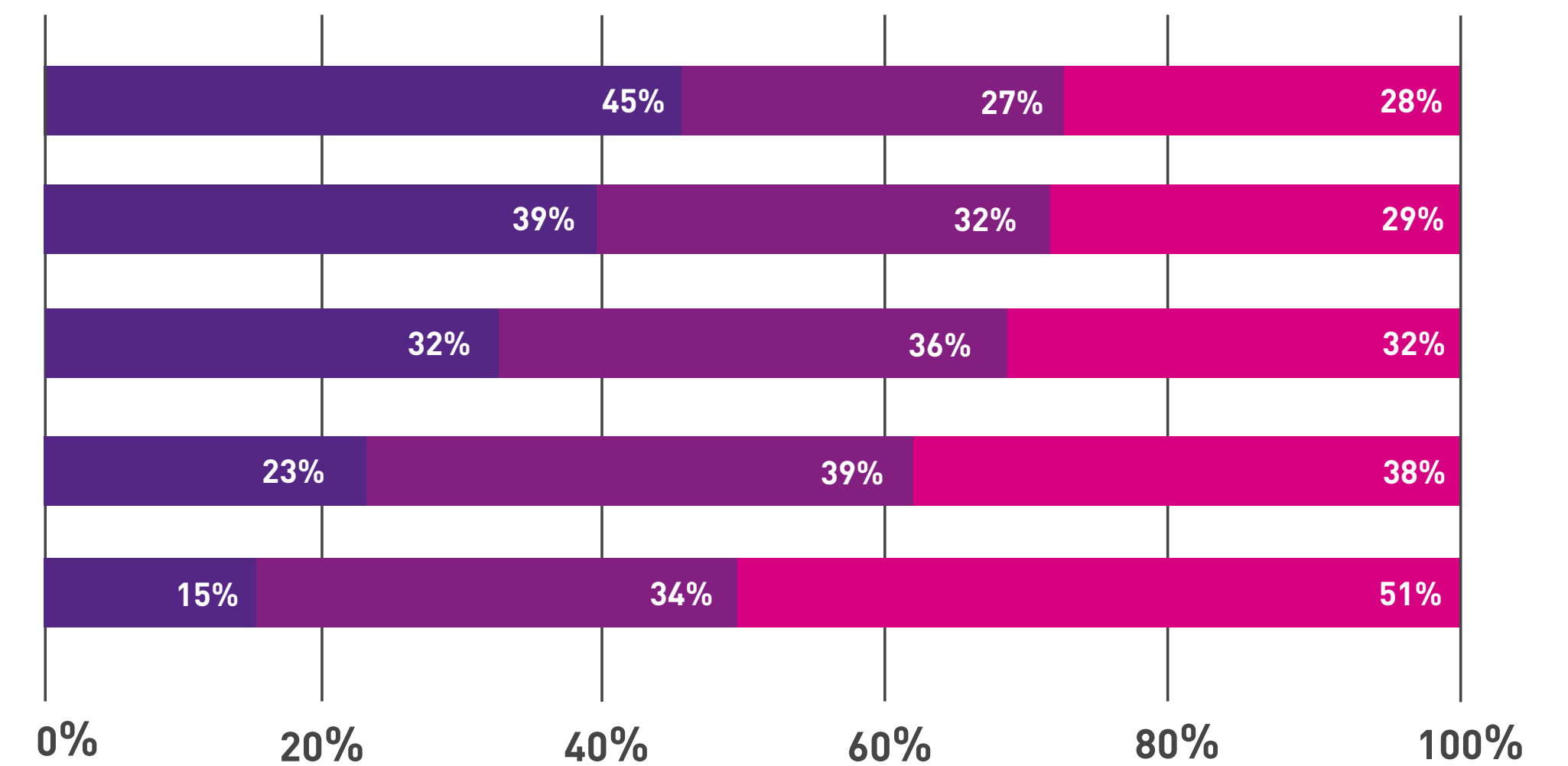
**The airport has an API platform for internal use only**

**The airport has an internal open data sharing plan in place**

**The airport has an API platform for both internal and external use**

**The airport has an external open data sharing plan in place**

**An API that follows ACRIS<sup>1</sup> or other Industry Standards**



% of airports with data sharing strategy plans.

- 2018
- By end of 2021
- No plans

# SELF-SERVICE OPTIONS: SELF-BOARDING COMES FIRST

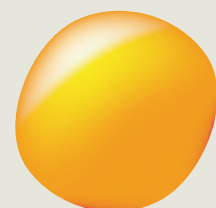
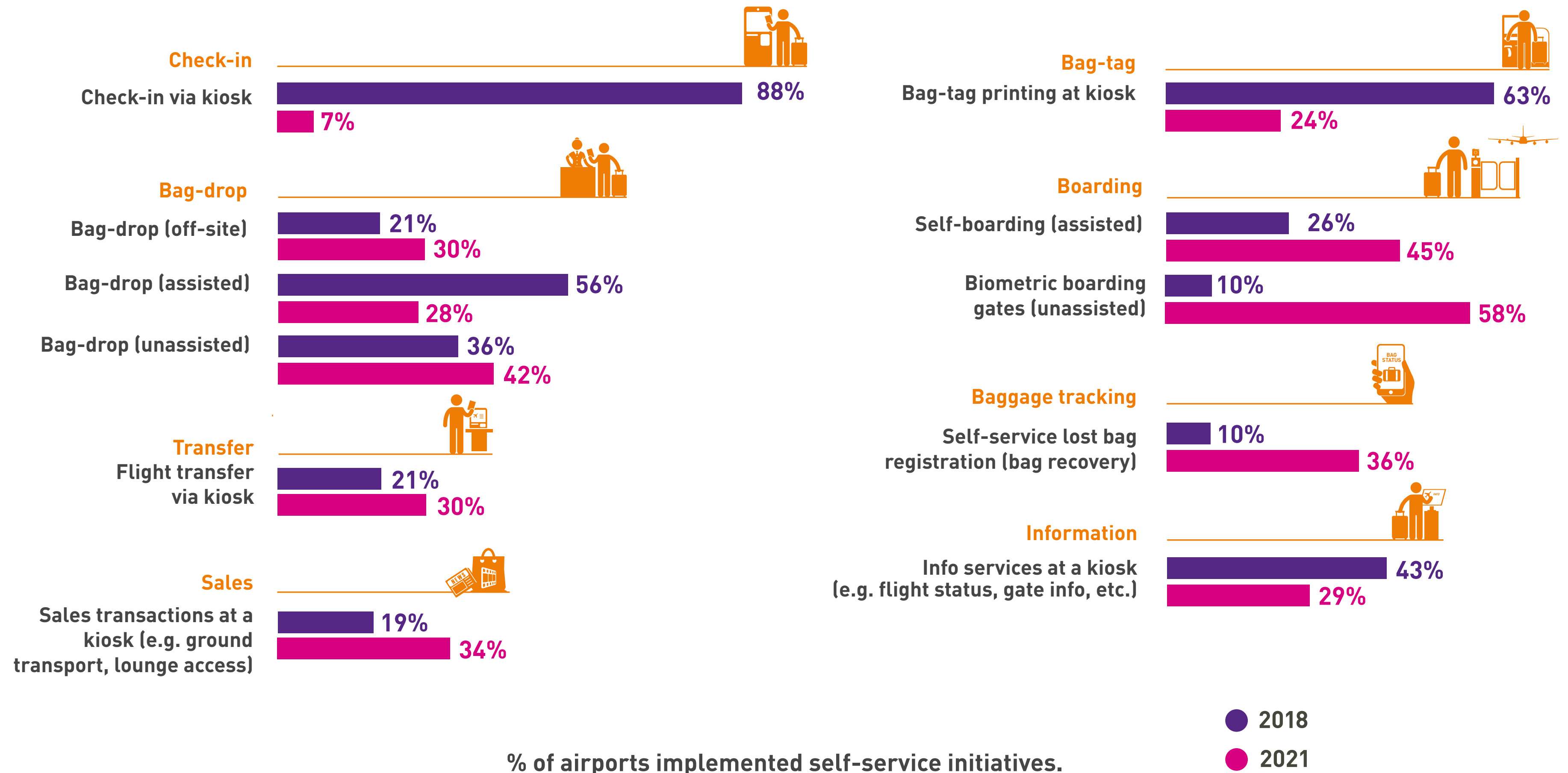


### ANALYSIS

**Airport self-service investment**  
‘Check-in via kiosk’ continues to be the most widely adopted self-service initiative with 88% of airports having implemented it, up from 84% last year.

In 2018, ‘bag-tag printing at kiosk’ has overtaken ‘assisted bag-drop’ as the second most common self-service initiative: 63% of airports already use it and another 24% plan to do so by the end of 2021.

As self-service activities for passenger and baggage check-in continues to mature we see the next area of focus moving to self-boarding with the majority of airports (58%) implementing biometrics self-boarding gates by 2021.



# SPOTLIGHT ON MAIN AIRPORT SERVICES USING BEACONS/SENSORS

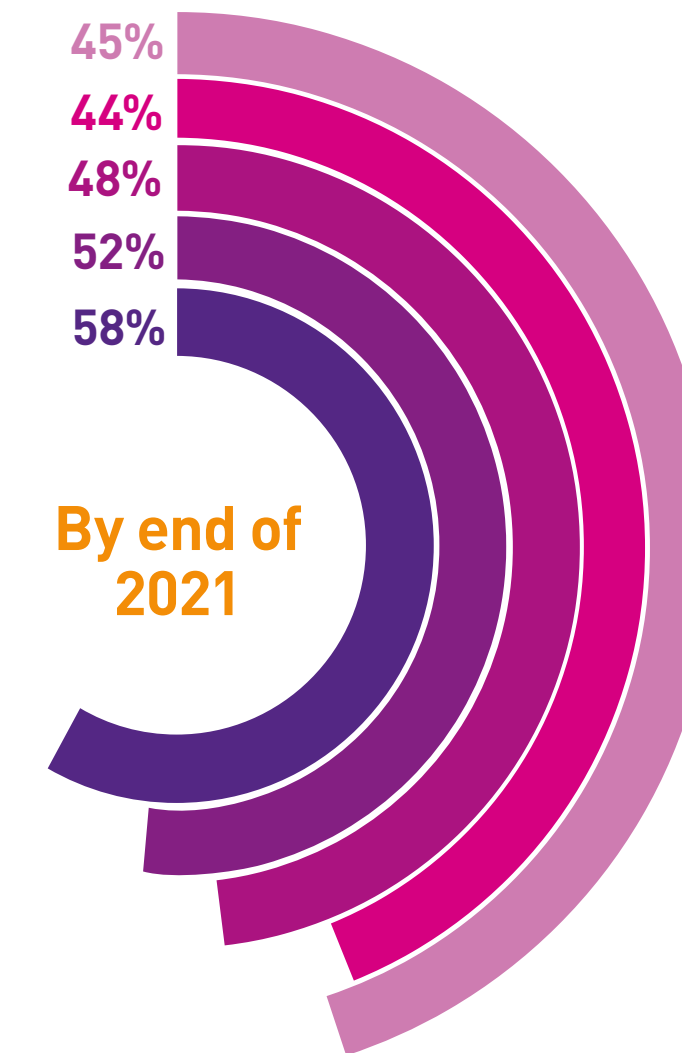
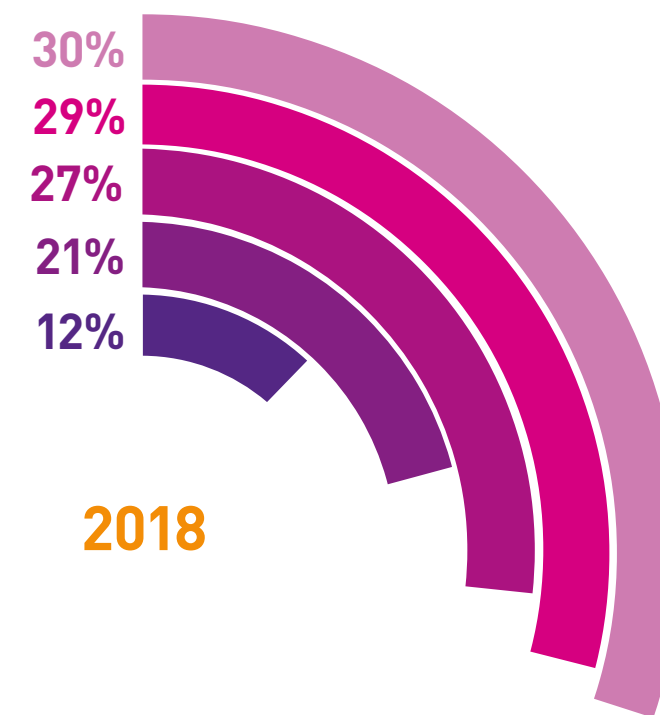


### ANALYSIS

#### Moving towards connected services leveraging beacons/sensors

In terms of location-based services, around a third of airports have implemented 'wayfinding sensors in some terminals' and the same number have implemented 'stand-alone battery powered beacons/sensors'. Only 16% have implemented wayfinding sensors throughout the whole airport ecosystem, but 46% plan to do so by 2021.

Last year we saw airports leveraging beacons/sensors for 'delivery of flight and gate info displays onto mobile' and 'route to gate/check-in desk/airline lounge'. These remain the most common services, with 30% and 29% implementation respectively. However, 'walk time to gate' has been implemented by 27% of airports (up from 14% in 2017).



Delivery of flight & gate info displays onto mobile with alerts



Route to gate/check-in desk/airline lounge



Walk time to gate

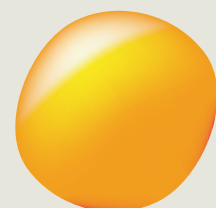


Food, beverage, and other retail concession offers



Route to car park/car rental pick up/intermodal transport

% of airports implemented/planning mobile 'connected' services leveraging beacons/sensors.



# KEEPING PASSENGERS INFORMED VIA NOTIFICATIONS IS KEY FOR CIO



### ANALYSIS

#### Airport mobile services plans

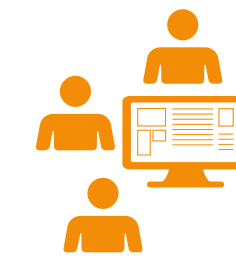
The provision of services via passengers' smart devices is on the rise. The biggest increase has been seen in 'customer relationship management' which can now be accessed via an app at over half of airports (52%, up from 39% in 2017). However, 'Notification about flight status' continues to be the most common passenger service available via smartphone, tablet or smartwatch (65% have implemented this and a further 25% are planning to by the end of 2021).



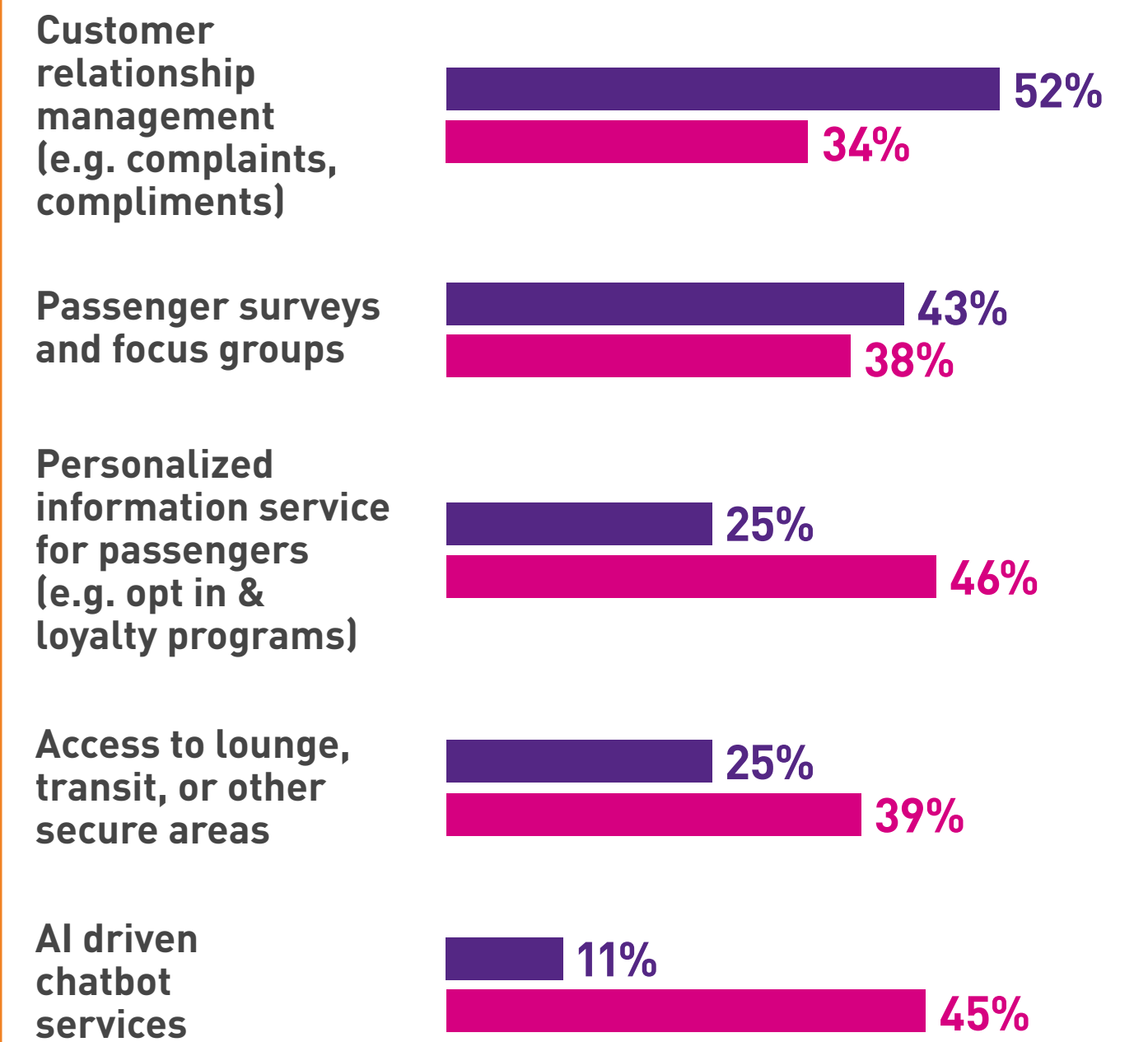
#### Sales



#### Notifications/updates

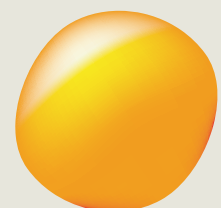


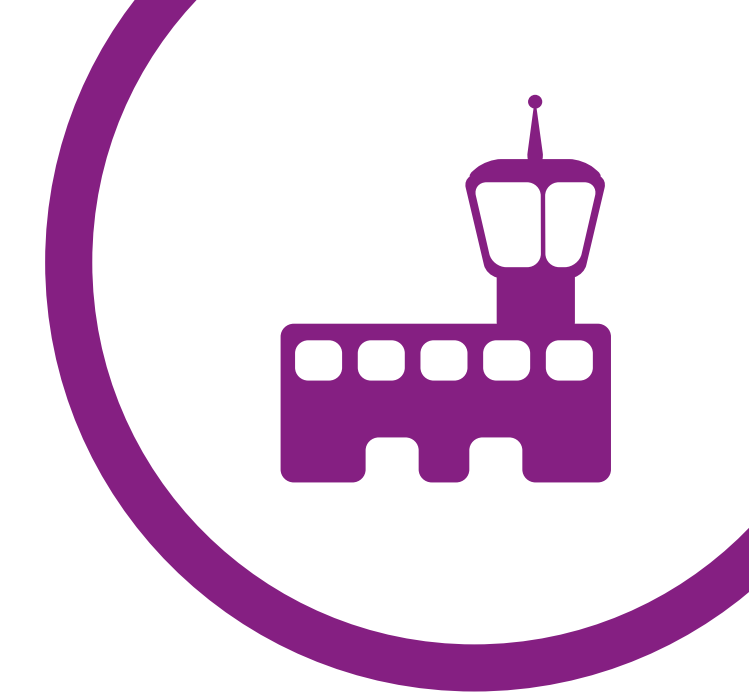
#### Customer service



% of airports with implemented or planned passenger mobile services by 2021.

● 2018  
● 2021





# NEW TECHNOLOGIES OFFERING AIRPORTS STRATEGIC AND OPERATIONAL BENEFITS BY 2021

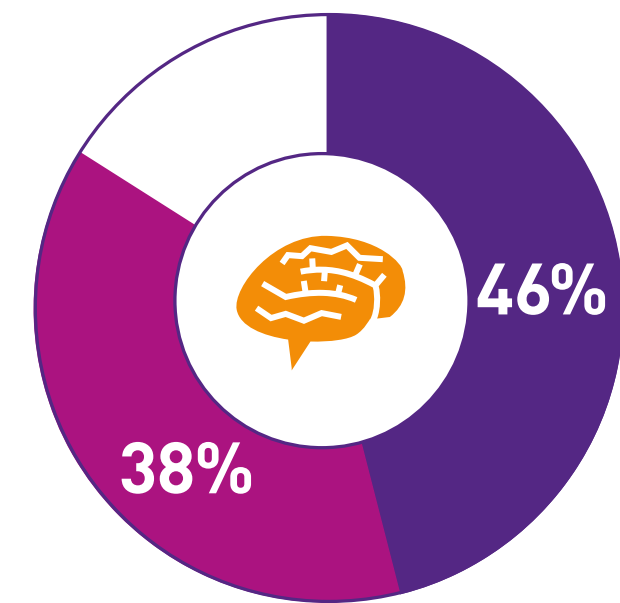
### ANALYSIS

#### Airport CIO priorities for technologies

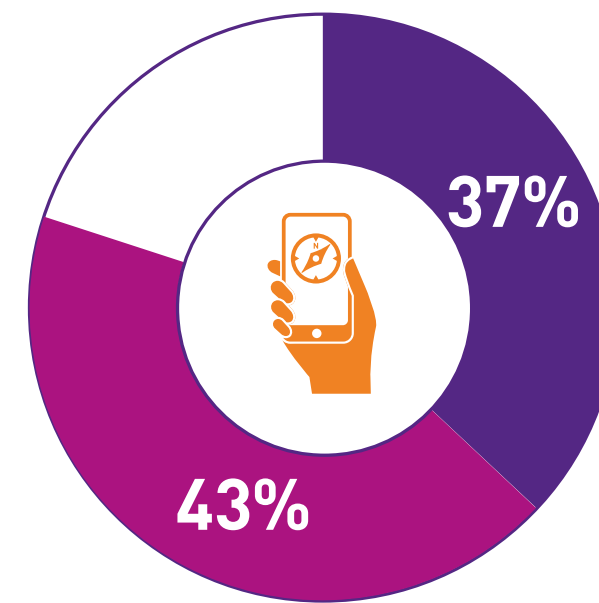
'Business Intelligence' is the only technology area where nearly half of airports (46%) have a major program.

Airports are, however, investing in other new technologies:

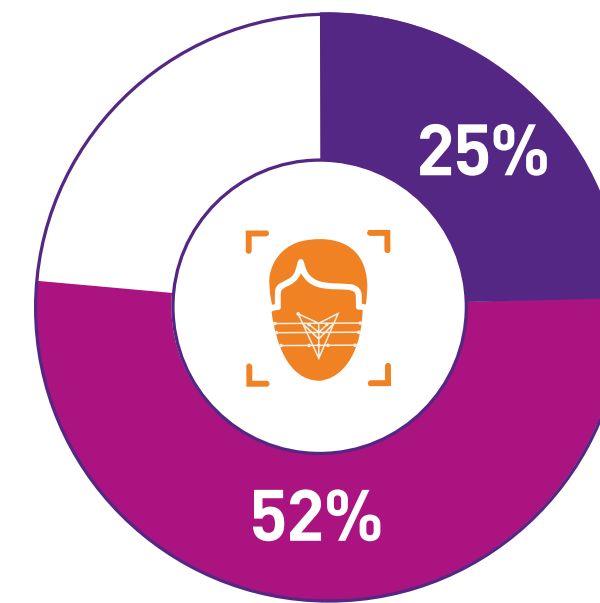
- Artificial Intelligence: a few airports have major programs but over half (52%) plan to run a trial or pilot in 2018 – up from just 34% in 2017.
- Biometric ID management: over half of the responding airports (52%), plan to run a trial or pilot in 2018 – up from just 44% in 2017.



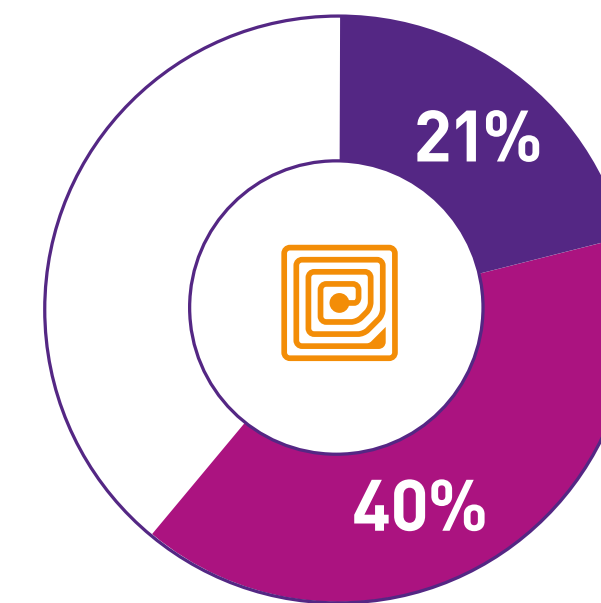
Business Intelligence



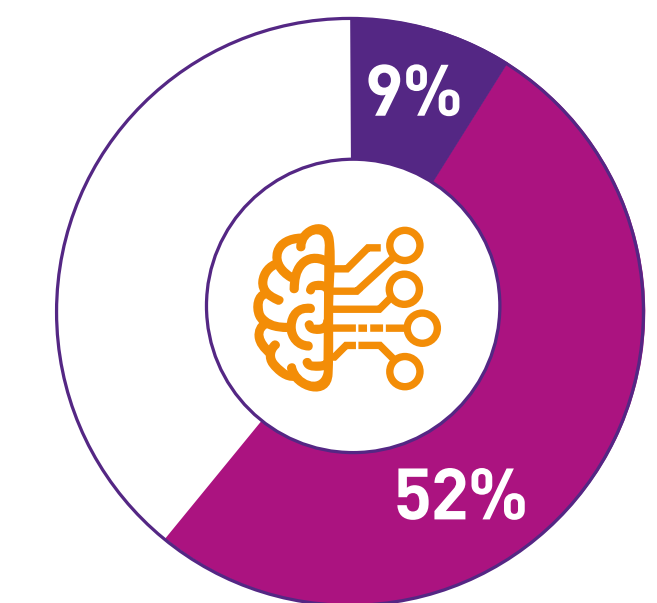
Interactive Navigation



Biometric ID Management



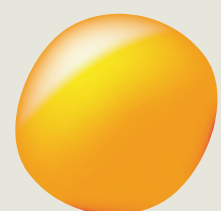
Digital Tags



Artificial Intelligence

% of airports planning major program / R&D by 2021.

- Major Program
- R&D





## AIRPORT | INNOVATION

# DIGITALIZATION: TOP OF MIND FOR AIRPORTS



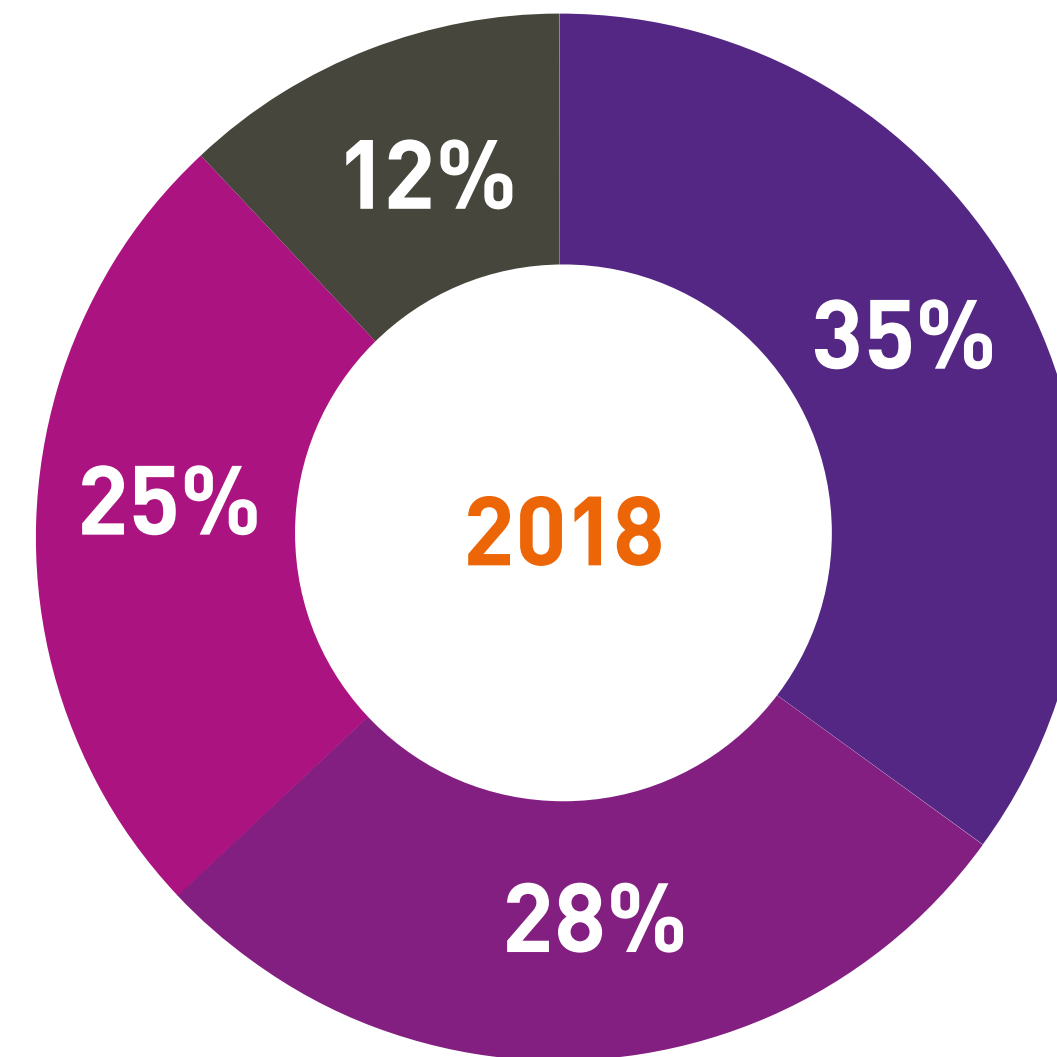
### ANALYSIS

#### Airports are driving digitalization

With a two-fold increase in the prevalence of digitalization strategies, airports realize the importance of having a dedicated strategy in place to make sure that they are responding to, and keeping pace with, technological developments.

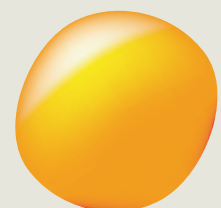
Over the last year the percentage of airports with a digitalization strategy in place has almost doubled from 19% in 2017 to 35% in 2018. Furthermore, 54% of airports are developing, or planning to develop such a strategy.

It is interesting to note that while digitalization is becoming a high priority, only a very small proportion of airports have a Chief Digital Officer (CDO) (8%), while the vast majority have no plans to create this role at their airport (83%).



% of airports with a Digitalization or Digital Transformation Strategy.

- In place
- Ongoing
- Planned
- No plans



# AIRPORTS SEEK PARTNERSHIPS FOR INNOVATION



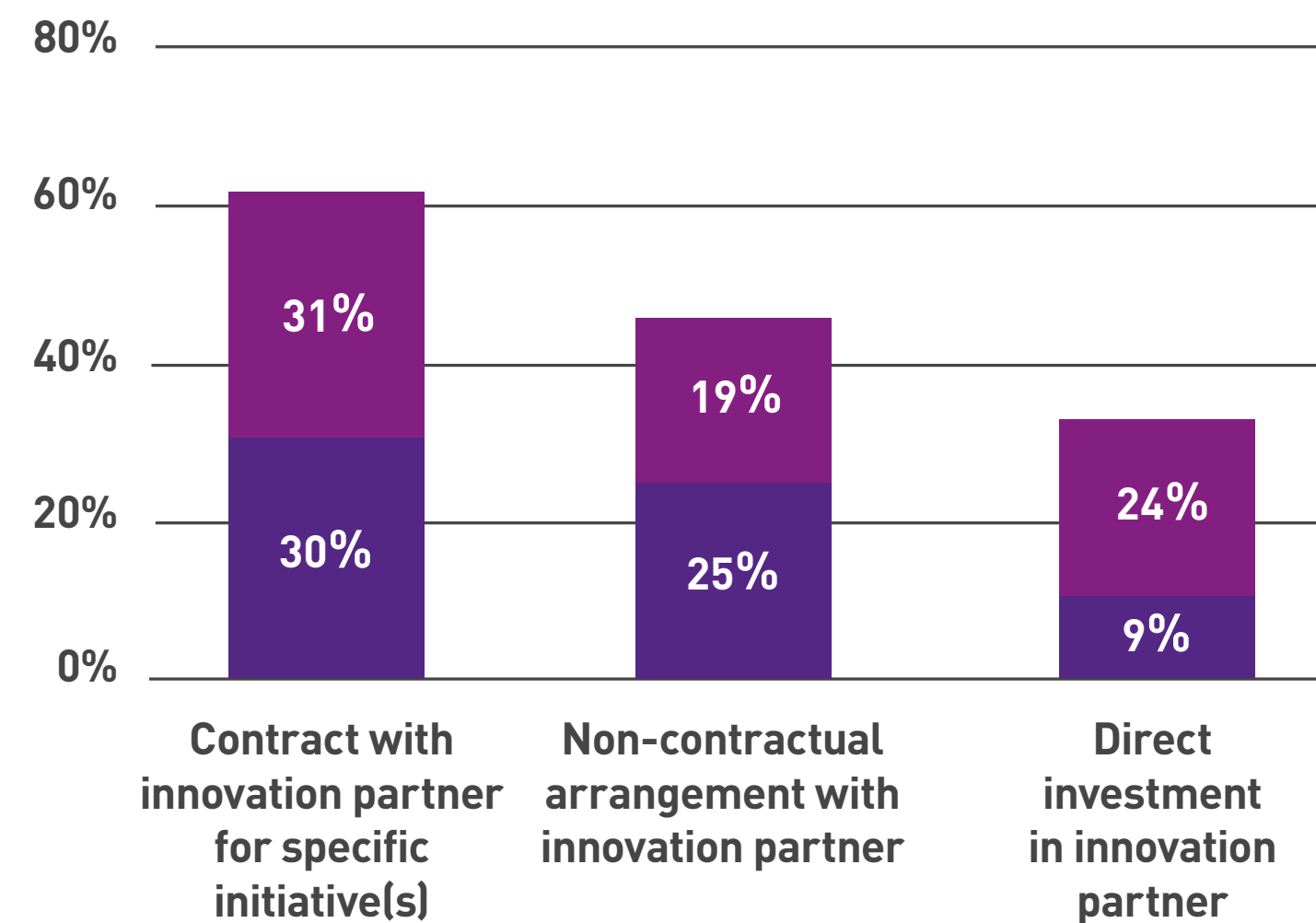
### ANALYSIS

#### Airport technology partnership strategies

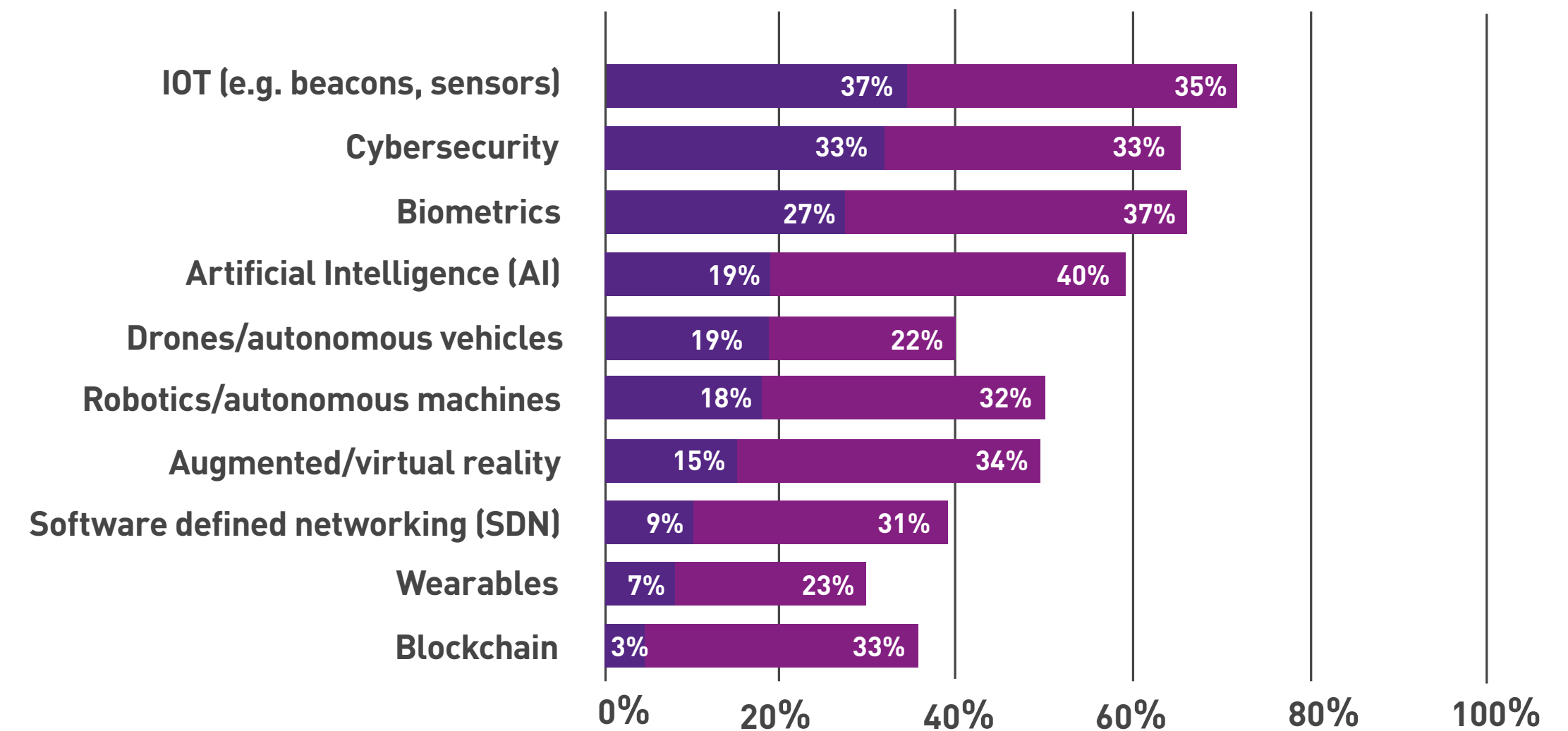
Airports are looking for opportunities to build innovation partnerships with third party tech specialists.

Airport CIO innovation collaboration strategies are taking various partnership forms, with the most common being via contracted parties (30%).

Airports are establishing these innovation partnerships to develop their capacities in new technologies. The most common of these technologies are: Internet of Things (37% partnering currently), cybersecurity (33%) and biometrics (27%) and this is planned to double by 2021.

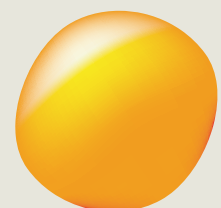


% of airports with innovation partnership plan.



% of airports with established partnership for specific technologies.

● 2018  
● 2021



# EMERGING TECH PRIORITIES: ARTIFICIAL INTELLIGENCE (AI)



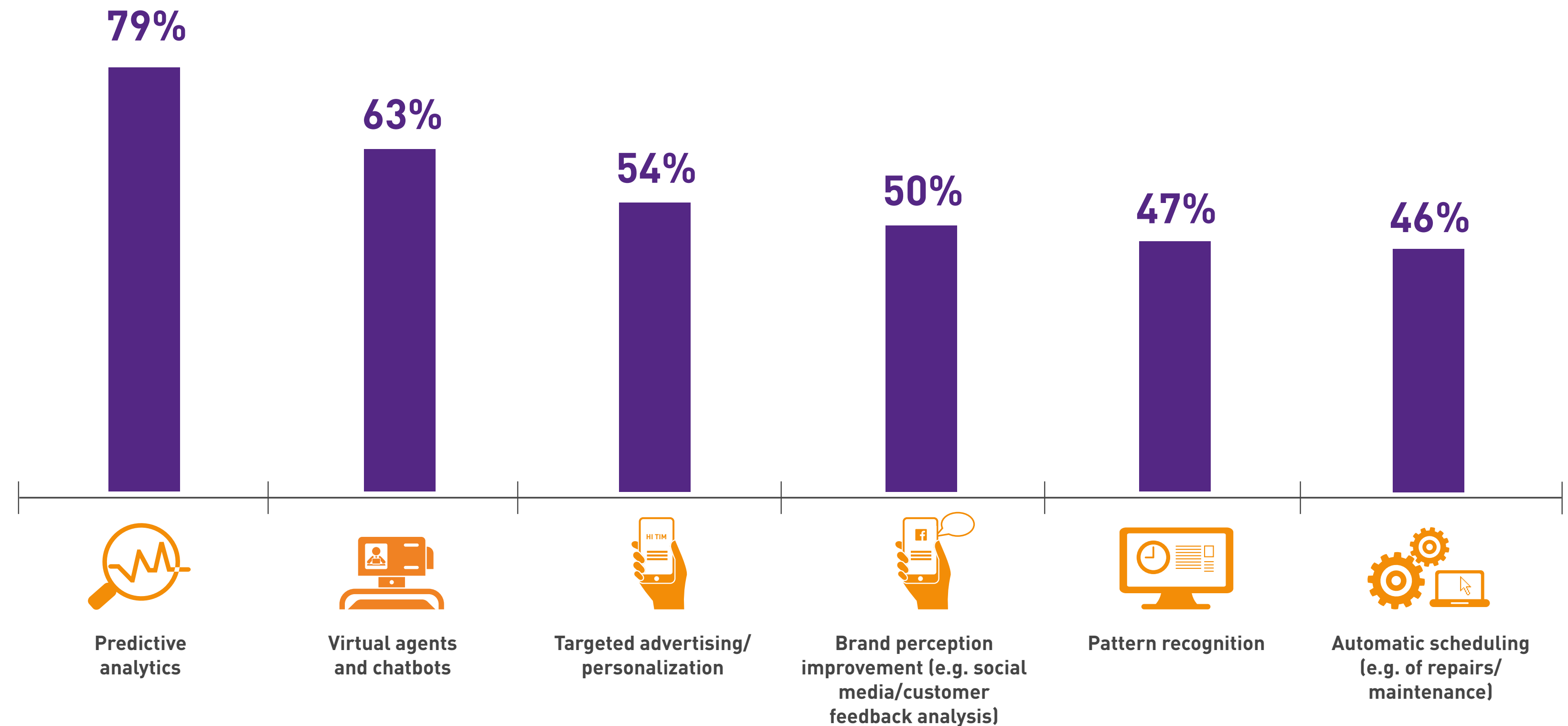
### ANALYSIS

#### AI investment plans

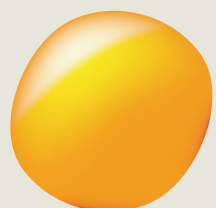
Nearly 80% of airports are currently using, or plan to use Artificial Intelligence (AI) for predictive analysis to improve operational efficiency.

We also see a high proportion of airports who plan to introduce AI into passenger service areas: 'virtual agents and chatbots' (63%), 'targeted advertising/personalization' (54%) and 'brand perception improvement' (50%).

When it comes to virtual assistants and chatbots, these most commonly assist passengers by 'displaying airport and flight status information' (28% implementation), and by 'answering FAQs' (26%).



% of airports with AI use cases currently implemented or planned by 2021.



# EMERGING TECH PRIORITIES: INTERNET OF THINGS (IOT)

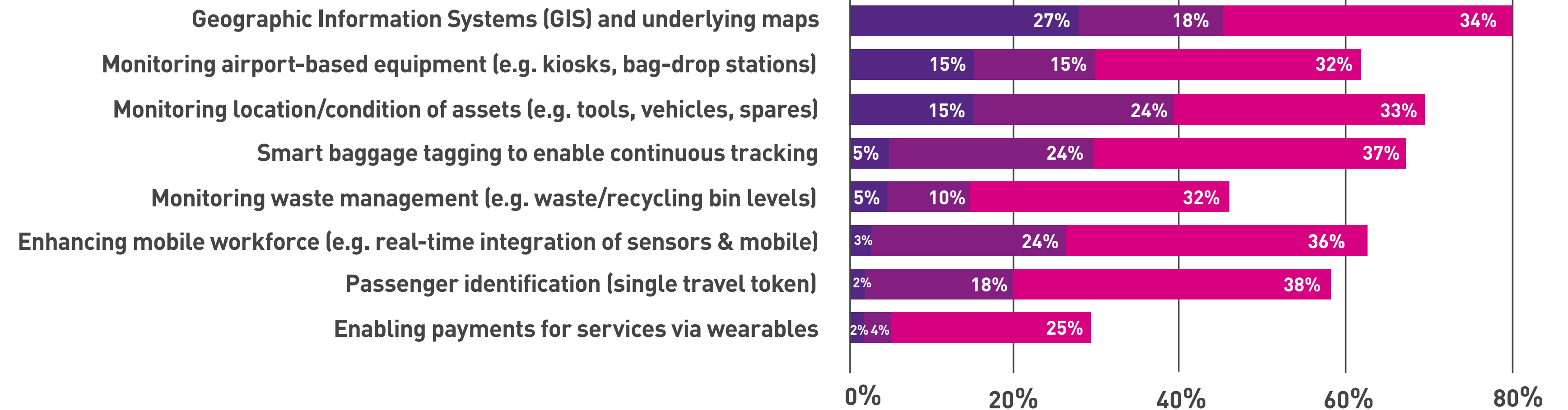


### ANALYSIS

#### IoT investment plan

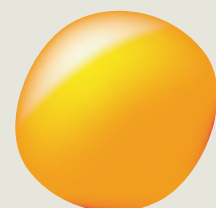
Implementation of Internet of Things (IoT) initiatives for airport-based *passenger services* remains low, with the most implemented initiative - 'smart baggage tagging to enable continuous tracking' - only having been adopted by 1 in 20 airports.

On the other hand, IoT initiatives for *operational services* at airports have seen higher implementation with 27% having adopted 'geographic information systems', and 15% having adopted each of 'monitoring airport-based equipment' and 'monitoring location/condition of assets'.



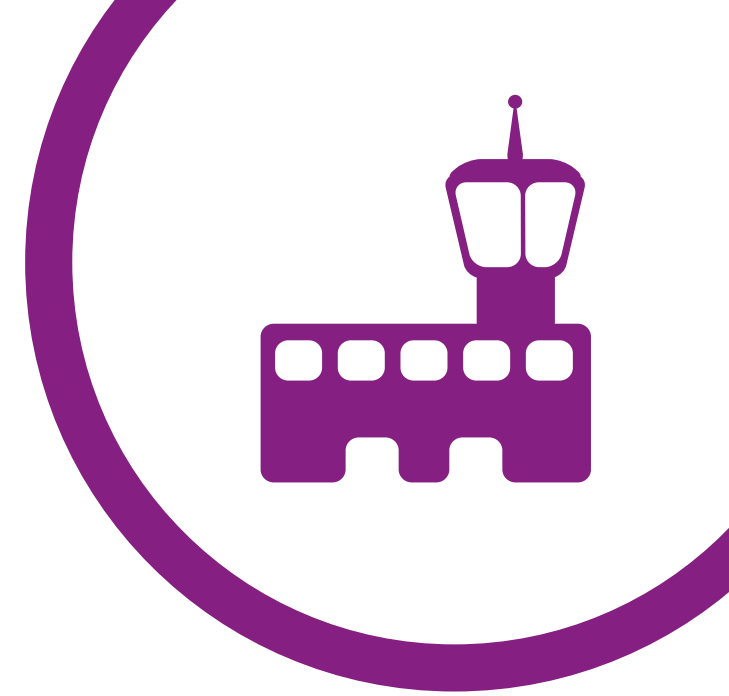
% of airports with IoT initiatives implemented or planned by 2021.

- Implemented
- R&D/Pilot in progress
- R&D/Pilot by 2021





# EMERGING TECH PRIORITIES: BLOCKCHAIN



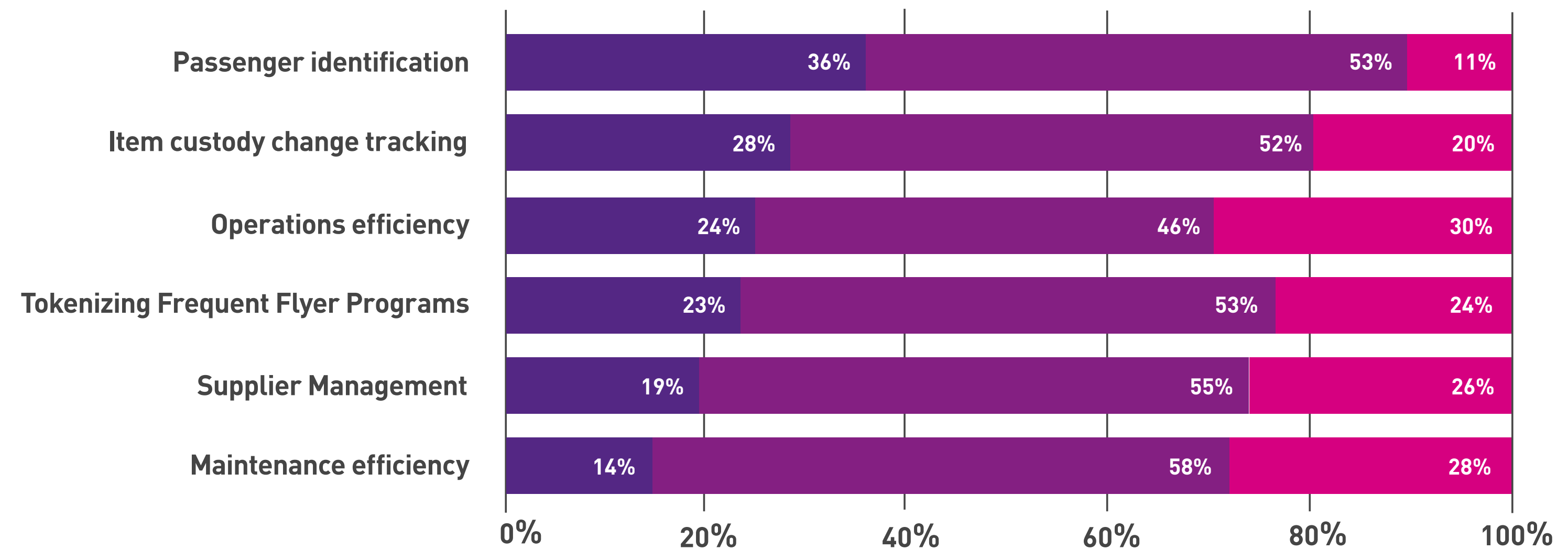
## ANALYSIS

### Blockchain investment plans

Airports continue to experiment with blockchain including 34% which are planning R&D projects by 2021.

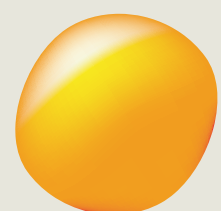
As was the case last year, airports believe that the main benefit blockchain can provide is to streamline the passenger identification process, for example, by reducing the need for multiple ID checks.

Some 36% say that this would be a major benefit, and a further 53% say it would be of some benefit.



% of airports evaluating Blockchain business benefits.

- Major benefit
- Some benefit
- No benefit



# METHODOLOGY



## SURVEY

SITA's Airline IT Trends Survey is well established as the global benchmarking survey for the airline industry.

The survey was first produced in 1999, and was designed to offer all air transport industry stakeholders the latest facts, figures and trends related to technology adoption and spending. Comparisons to previous surveys are made where appropriate, although the respondent sample may vary between years.

During Spring this year questionnaires were sent to senior IT executives in each of the top 200 passenger carriers, including low cost operators, together with carriers representing important players in the regional and leisure sectors.

The survey represents the views and insights of carriers representing 27% of the global passenger traffic, providing a clear insight into IT strategic thinking and developments for the industry.

## WEIGHTING

A weighting system is applied, based on annual passenger traffic statistics, to ensure that the results are a representative sample in relation to global passenger traffic and to compensate for annual fluctuations in the respondent group. This year, we have implemented a slightly altered version of the weighting for the non-IT-spend elements of the survey which better accounts for airline size. Direct comparisons with previous years data should therefore be treated with caution, although we have included references to re-weighted 2017 data in this report, which is comparable. Questions regarding IT spend remain weighted in the same way as previous years and therefore can be compared directly.

## RESEARCH

Independent market research agency Circle Research was commissioned to undertake the research on behalf of SITA. The research was conducted in strict confidentiality and the results are presented in an aggregated form. All source data remains confidential and the results of individual returns are not disclosed to the research stakeholders.



## SURVEY

The 15th annual Airport IT Trends Survey continues to be the most extensive study of IT trends within the global airport industry. The study took place during May and June of 2018 and focused on senior IT executives at the world's airports.

This year's survey results came from 101 respondents who collectively represent the views of 369 airports. The airports participating in this year's research represent 39% of global traffic (source: ACI passenger traffic data) or 3.26 billion passengers.



AIRPORTS COUNCIL  
INTERNATIONAL

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## SITA AT A GLANCE

### Easy air travel every step of the way. Transforming air travel through technology for Airlines, at Airports, on Aircraft and at Borders.

- SITA's vision is: 'Easy air travel every step of the way'.
- Through information and communications technology, we help to make the end-to-end journey easier for passengers – from pre-travel, check-in and baggage processing, to boarding, border control and in-flight connectivity.
- We work with about 400 air transport industry members and 2,800 customers in over 200 countries and territories. Almost every airline and airport in the world does business with SITA.
- Our customers include airlines, airports, GDSs and governments.
- Created and owned 100% by air transport, SITA is the community's dedicated partner for IT and communications, uniquely able to respond to community needs and issues.
- We innovate and develop collaboratively with our air transport customers, industry bodies and partners. Our portfolio and strategic direction are driven by the community, through the SITA Board and Council, comprising air transport industry members the world over.
- We provide services over the world's most extensive communications network. It's the vital asset that keeps the global air transport industry connected.
- With a customer service team of over 2,000 people around the world, we invest significantly in achieving best-in-class customer service, providing 24/7 integrated local and global support for our services.
- Our annual Air Transport and Passenger IT Trends Surveys for airlines, airports and passengers are industry-renowned, as is our Baggage Report.
- In 2017, we had consolidated revenues of US\$ 1.6 billion.

For further information, please visit [www.sita.aero](http://www.sita.aero)



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