FUTURE TRAVEL EXPERIENCE
ONBOARD 2025 THINK TANK

HONOUR · AIRBUS · Panasonic · norwegian.com · Avianca

THE OBJECTIVE

What could the passenger experience onboard **NARROW-BODY AIRCRAFT** look like by 2025, and what is needed to increase the speed at which the industry innovates and improves the passenger experience up in the air?

THE TEAM



Disclaimer: The views expressed in this work are ideas developed during brainstorming sessions by the Think Tank members, and are not necessarily the corporate views of the organisations these individuals represent.

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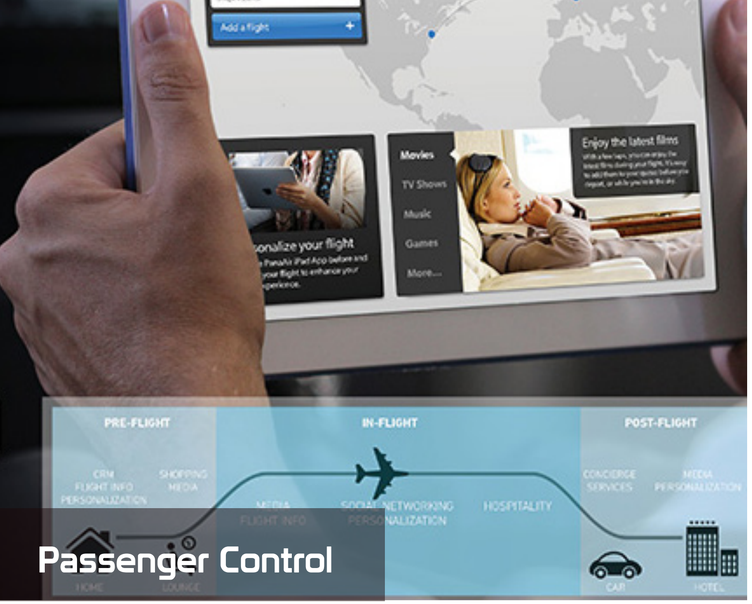

Passenger Control

Immersive Experiences

Multi Platform Availability

Optimised Content

CURRENT TRENDS IN MARKET

Meal Personalisation

bitcoin

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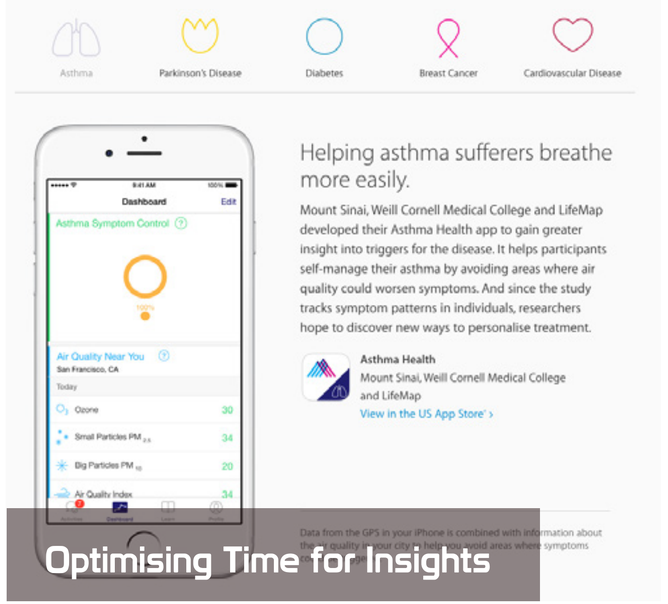
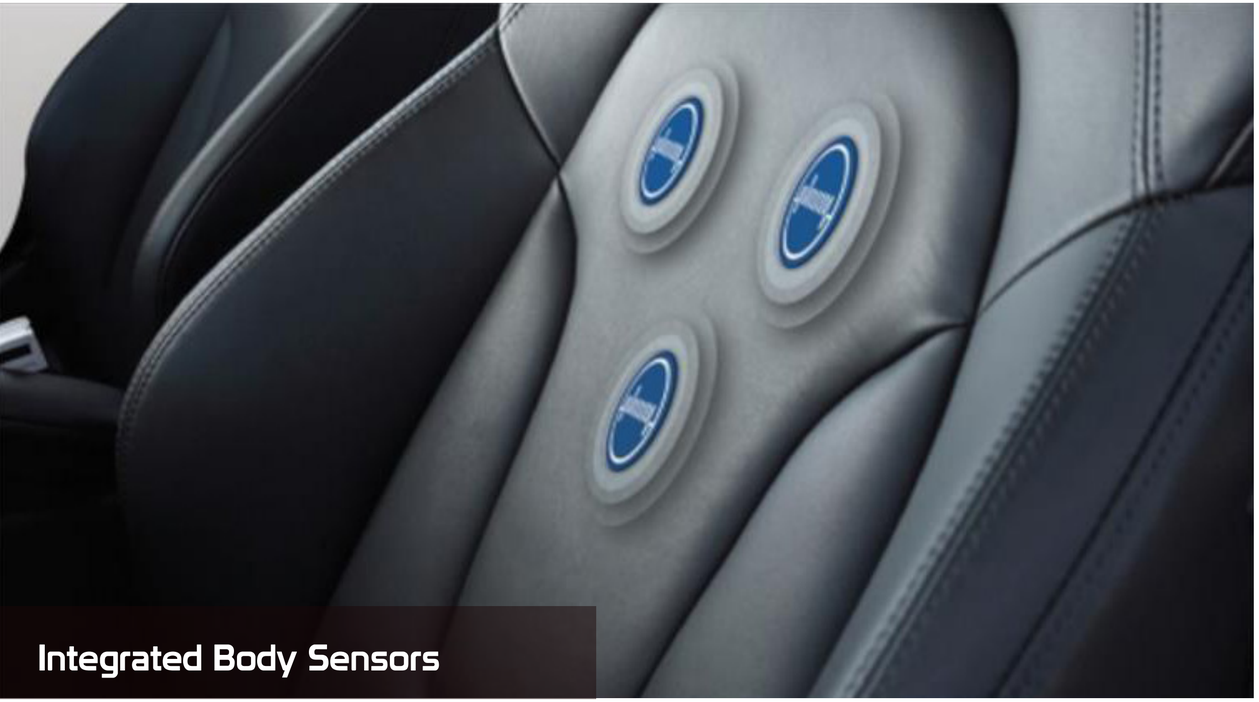
Intelligent Personal Assistant



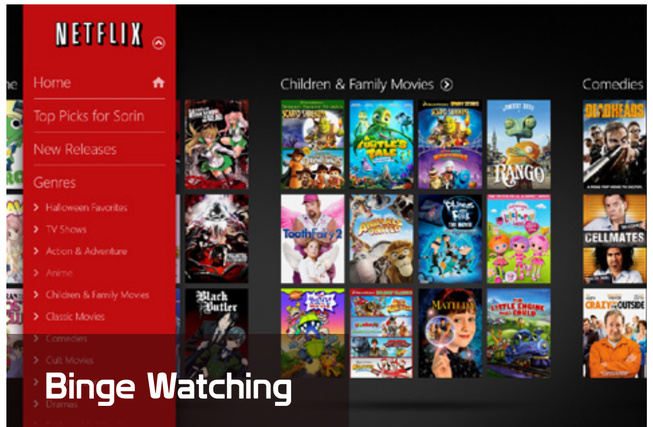
Optimising Time for Insights

Modular Upgrades



Integrated Body Sensors

PARALLEL INDUSTRY INSPIRATION



Binge Watching

Ambient Control

FUTURE TRAVEL EXPERIENCE UP IN THE AIR ONBOARD 2025 THINK TANK

FUTURE TRAVEL TRIBES

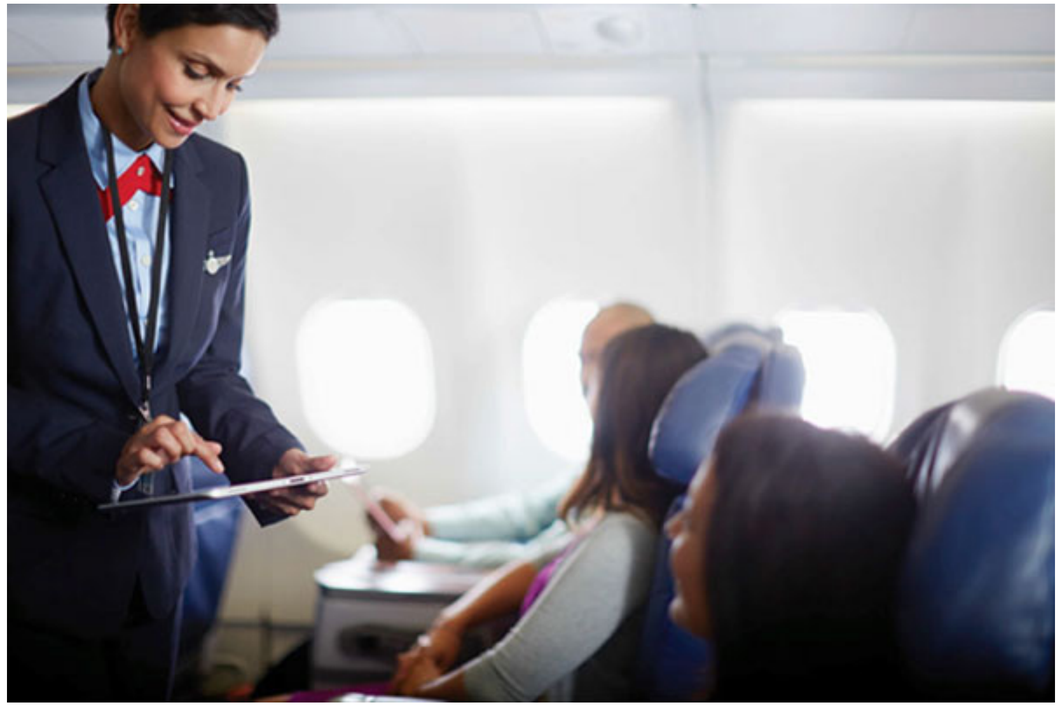
- Airlines have moved beyond simply segmenting passengers into First, Business or Economy – they now recognise that passengers are more complex and their needs and motivations may well be different each time they travel.

"Credit: Amadeus Future Traveller Tribes 2030”

PERSONALISING THE END-TO-END EXPERIENCE

- Travellers want to be more empowered throughout their journey and be able to define more elements of their experience, from the moment of booking through to the in-flight experience

- They are also demanding higher levels of personalisation throughout their journey

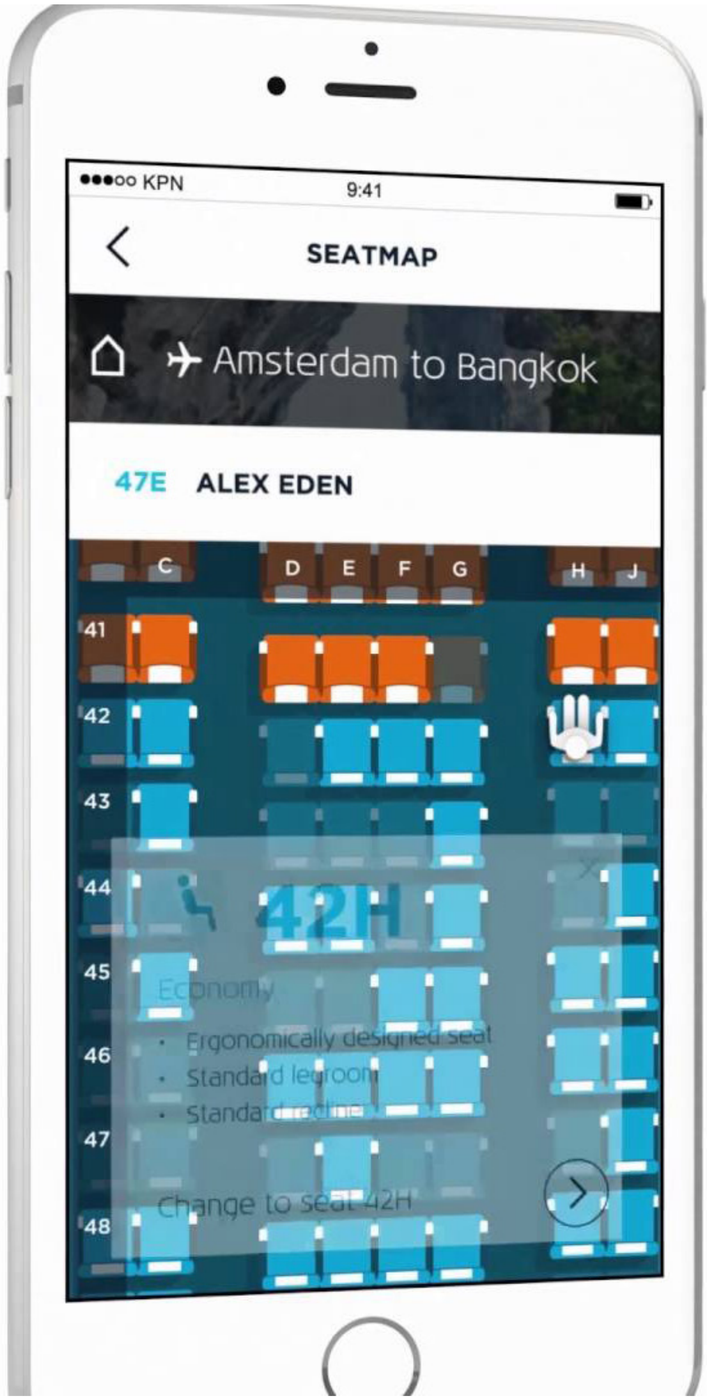


"For so long, the passenger experience has been about standing in a line, waiting, sitting on a plane and just becoming a seat number. Passengers have put up with this because it's what they've been used to. However, now we see a transformation. Passengers are thinking 'What if I didn't have to stand in line? What if there were no more counters? Why can't people engage more personally with me about my flight and my experience?' This has created huge potential for customer satisfaction."

MATT MUTA, VP INNOVATION & COMMERCIAL TECHNOLOGIES, DELTA AIR LINES AND FORMER GLOBAL HOSPITALITY MANAGING DIRECTOR, MICROSOFT

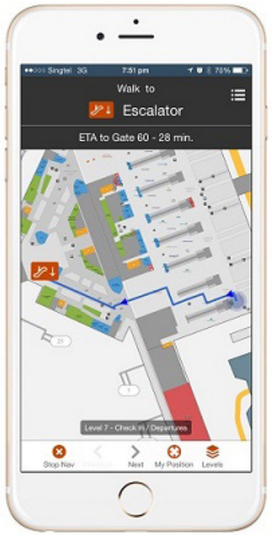
PRE-TRAVEL

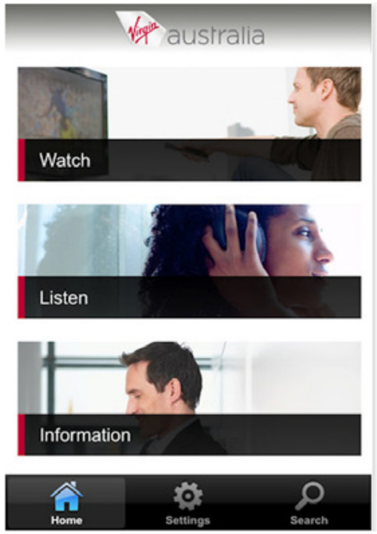
- New levels of personalisation from the moment of booking – passengers define their end-to-end experience to a far greater degree
- Majority of journeys will be planned, booked and managed on mobile devices
- Mobile will be the passenger's digital personal assistant throughout the end-to-end journey

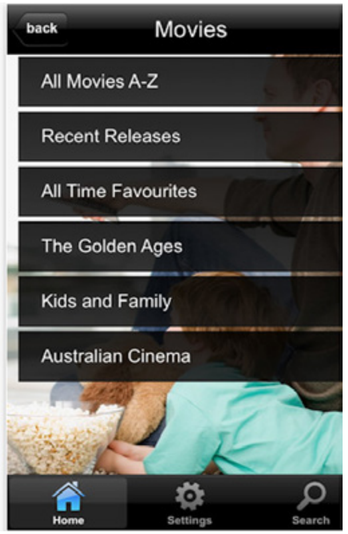


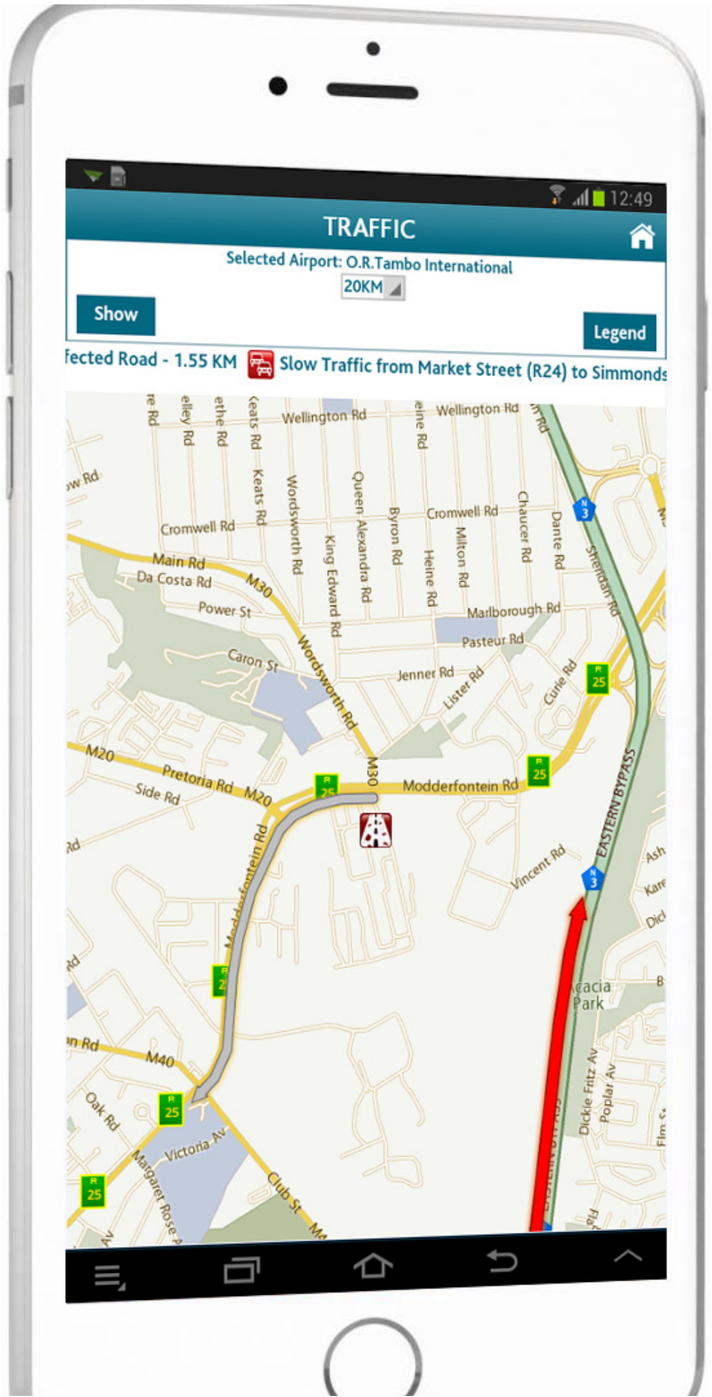
MOBILE SHAPES THE EXPERIENCE

- Booking, pre-ordering meals, traffic alerts for journey to airport, flight updates, wayfinding in terminal, personalised retail offers, IFE content, onward travel, accessing hotel room







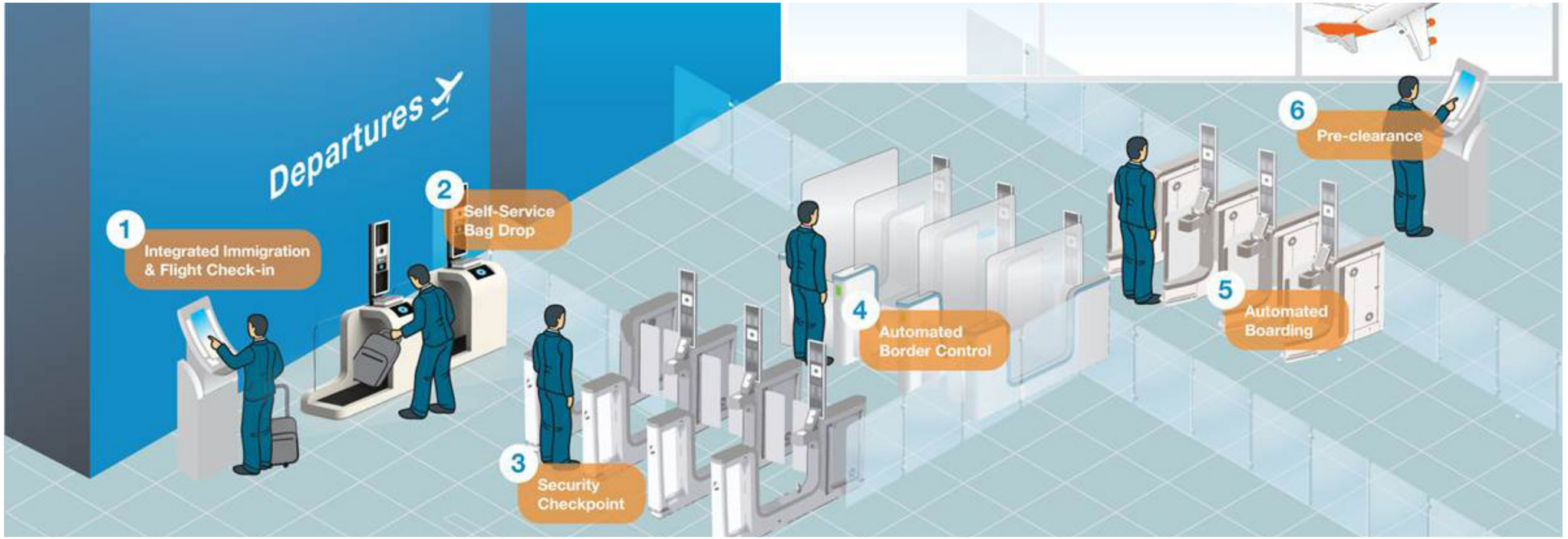


BAGGAGE REVOLUTION

- Passengers will arrive at the airport already checked in and with their bags pre-tagged with home-printed or permanent electronic bag tags, which can be tracked in real time

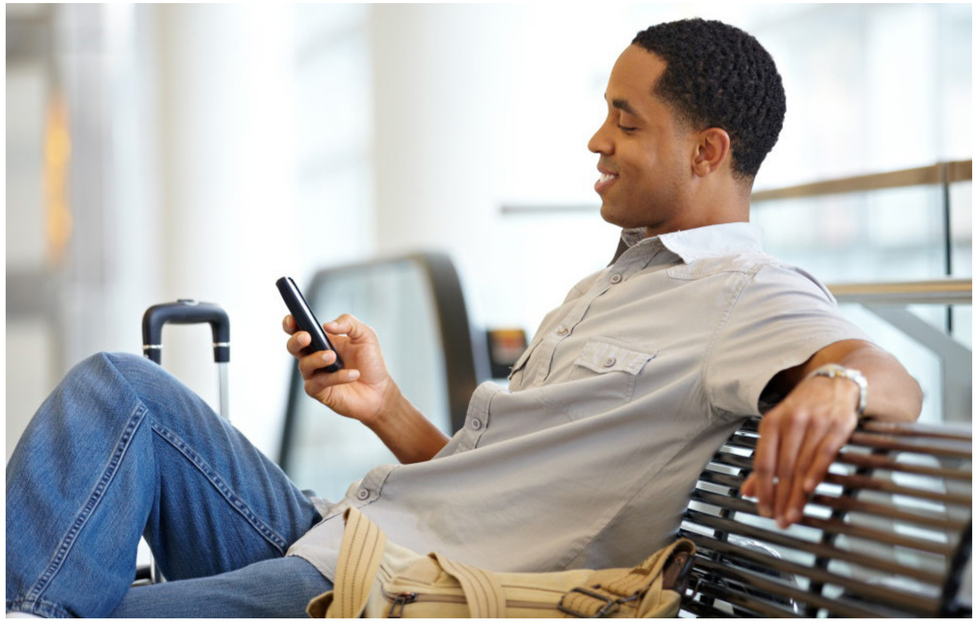
BIOMETRIC-BASED AIRPORT PROCESSING

- Biometrics will form the basis of a single passenger token (e.g. Aruba Happy Flow – check-in, bag drop, lounge access, boarding, immigration)



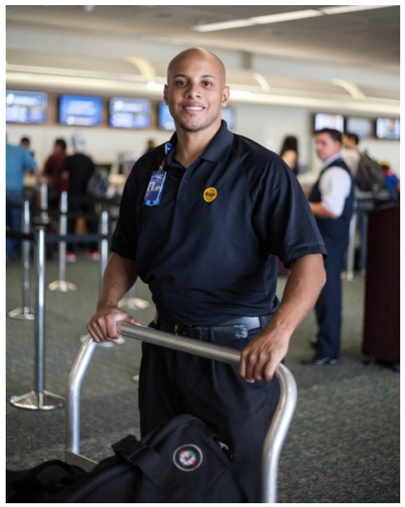
GATES & BOARDING

- Last opportunity to download content to smartphones and tablets
- The in-flight entertainment experience will start at the gate
- The destination will be promoted at the gate
- Airlines will make use of more effective boarding techniques



PRE-LOADING CABIN BAGS

- Baggage bins removed to create more space and speed up boarding
- Cabin bags will be pre-loaded onto aircraft
- Premium passengers' cabin bags collected by porters in the lounge and loaded onto aircraft above their seat
- All other passengers' cabin bags pre-loaded via new gate-based baggage handling system



CONTENT

1: CABIN DESIGN & PASSENGER COMFORT

CABIN DESIGN & PASSENGER COMFORT

KEY PASSENGER REQUIREMENTS

i. More seamless boarding and disembarkation process
ii. Greater comfort and personal space
iii. More space for carry-on bags
iv. BYOD compatibility
v. Personalised experience

CURRENT PAIN POINTS

i. Turnaround and boarding process is too slow
ii. Overhead lockers limit cabin space
iii. Capacity vs comfort
iv. Cabin is noisy and impersonal
v. Cabin is too rigid and inflexible
vi. Germs and viruses spread easily

ONBOARD ARRIVAL EXPERIENCE

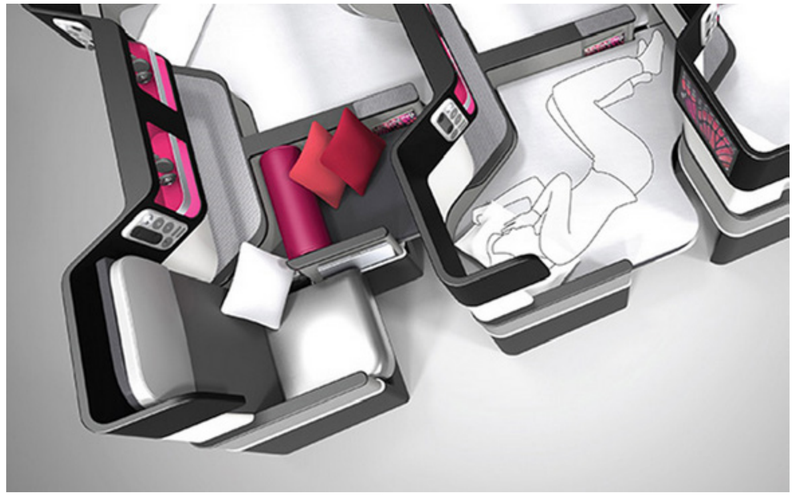
- Aircraft of 2025 will be designed around speed and efficiency of boarding, disembarkation and turnaround
- Boarding through central double doors to improve boarding efficiency
- More “wow factor” at aircraft entrance – hotel-style entrance
- Passengers guided to seat via seat numbers displayed on the floor, colours representing seat zones - boarding experience more intuitive and less stressful

RECONFIGURABLE CABIN

- Flexible seating will allow airlines to change configuration overnight or at turnaround to meet challenges of varied network demands

- Flexible monuments and galleys change function to meet the varied day-time/night-time flight characteristics – multi-purpose spaces that can also be used for relaxation zones and self-service F&B

- Flexible zones to add more business class seats for a specific flight, more space for cargo, adjustable pitch seating, zonal spaces to meet different passengers needs – such as family zones and booths

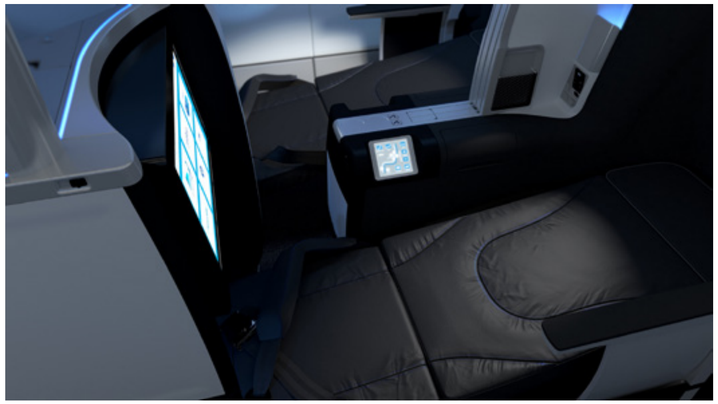


CABIN DESIGN

- More spacious environment, helped by lack of overhead bins
- Windowless aircraft – window panels, walls and ceiling panels become digital displays
- Lighting, smell and sound will be more important as part of the airline's brand DNA
- Sound-proofed zones – anti-noise/noise cancellation
- Anti-viral air conditioning – to stop spread of viruses and bacteria
- Self-healing materials used in the cabin

SEATING

- Ergonomic design and thinner profile seats – continued focus on creating more personal space for passengers
- Flexible seating zones suited to specific passenger needs – e.g. families, groups, older travellers
- Push to increase density without losing passenger comfort – using the Z-axis and height – e.g. overlapping seats concept
- Seating/IFE integration – leveraging the Internet of Everything, technology embedded into seats, passengers' mobiles and wearables, and biometrics work together to personalise the experience
- Seats will offer multiple charging options for PEDs – e.g. USB ports, inductive charging trays
- Speakers embedded into seating could help to enhance IFE experience



2: IN-FLIGHT ENTERTAINMENT & CONNECTIVITY

IFE & CONNECTIVITY

KEY PASSENGER REQUIREMENTS

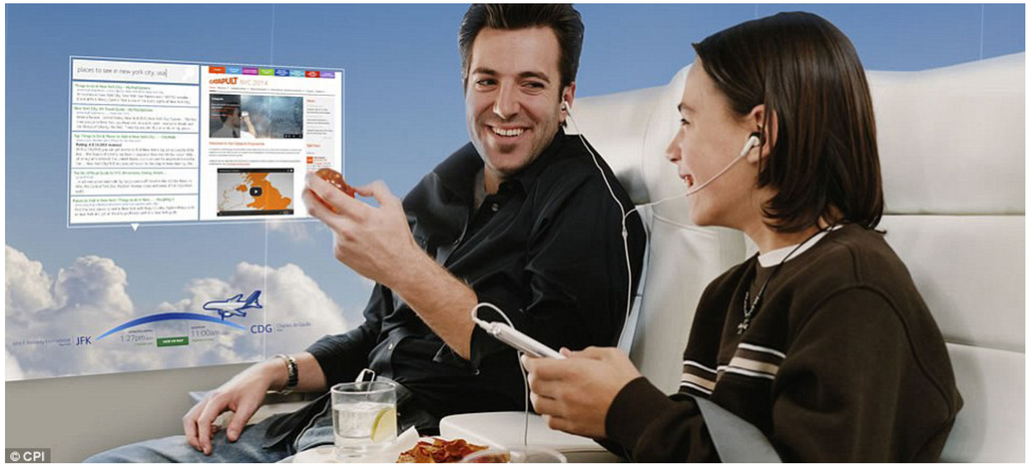
i. Reliable, high-speed Wi-Fi
ii. Gate-to-gate entertainment
iii. PED accommodation and compatibility
iv. Personalised entertainment
v. Power facilities

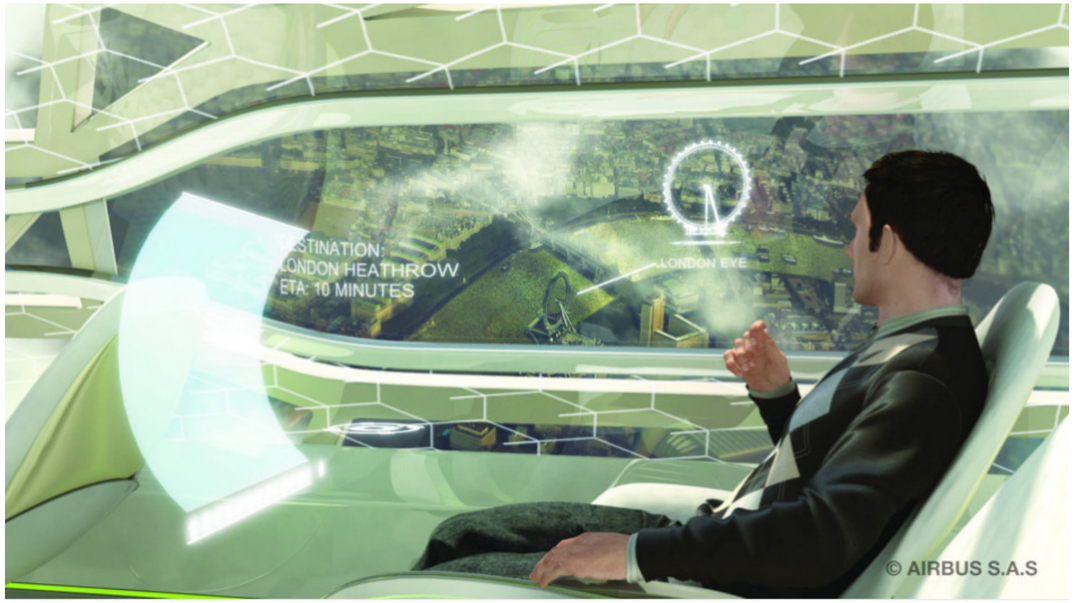
CURRENT PAIN POINTS

i. Lack of IFEC options on narrow-bodies
ii. Limited ability to charge PEDs
iii. Limited and expensive onboard connectivity
iv. Lack of personalised content

MULTI-PLATFORM IFEC

- Any surface can become an IFE platform – from plastic seat parts to windows
- “Airlines need to have a way of making sure that their products, services or interactions can be consumed through different types of screens and form factors, rather than just focus on mobile phones or phablets.” – Joe Locandro, IT Director, Cathay Pacific
- “Human PED Machine Interface” will be airline branded to tie in with the personality of the carrier – standard landing page across all platforms to create consistency





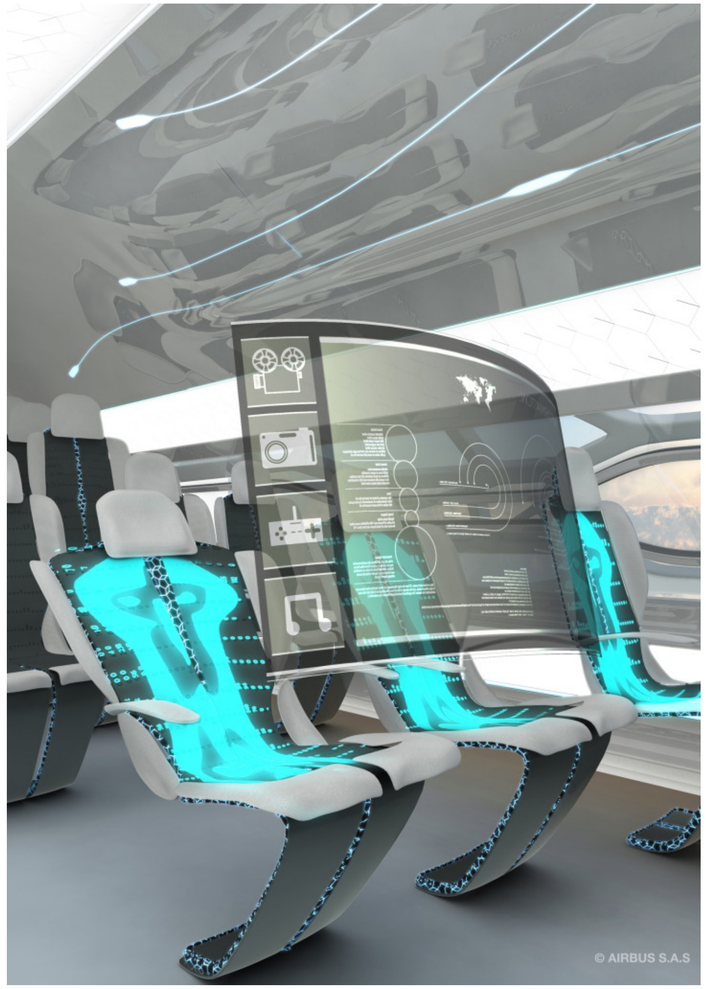
MULTI-PLATFORM IFEC

- For some carriers, embedded screens will still play an important role, especially at the front of the plane

- Majority of passengers will bring their own devices and content, and consume content via streaming services, but some airlines will still offer seatback IFE depending on their business strategy and network make-up. However, it will not be the norm to have embedded IFE screens on a narrow-body

WEARABLE AND HOLOGRAPHIC IFEC

- Wearable tech – virtual reality headset displays – can be used to give passengers the illusion of more space and to host IFE content
- Shoes, clothes, wristbands all interface alongside PED to onboard systems
- Smartwatches will be able to project images/movies onto surfaces within the aircraft (Bring Your Own Content)
- Holographic IFEC will provide another entertainment option, facilitated through aircraft infrastructure or passenger devices



IFEC CONTENT

- Everything now is visual – what we consider to be entertainment is starting to change – younger travellers are keen on more “snackable” content

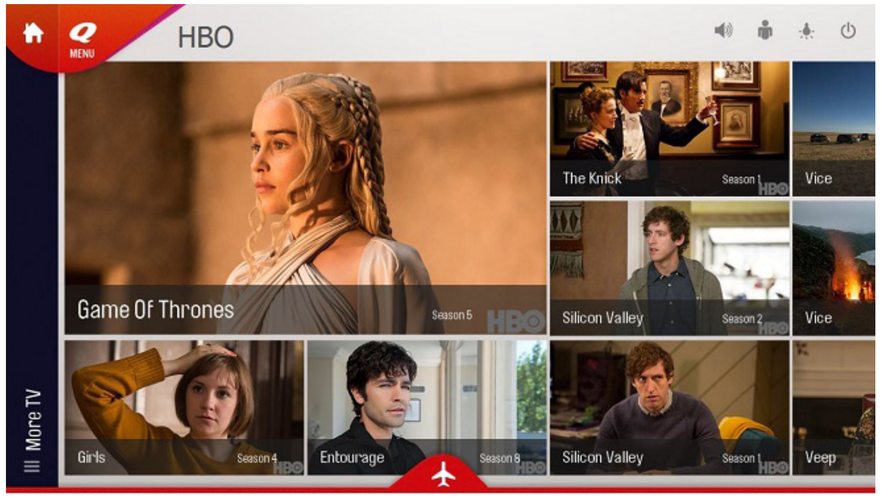
- Hollywood movies might not be the only option – box sets or a constant YouTube, Instagram or Periscope stream might be preferable – JetBlue/Amazon Prime-style partnerships will become far more common

- Passengers are demanding an end-to-end entertainment experience – they don’t want to have to wait to get started – airlines could even allow passengers to watch the safety briefing on their own device within an hour of departure, which then grants access to content

- Audio improvements are on the horizon and will help to address “audio fatigue” – smaller, higher quality headsets (HD audio), open ear headsets, PAC plug

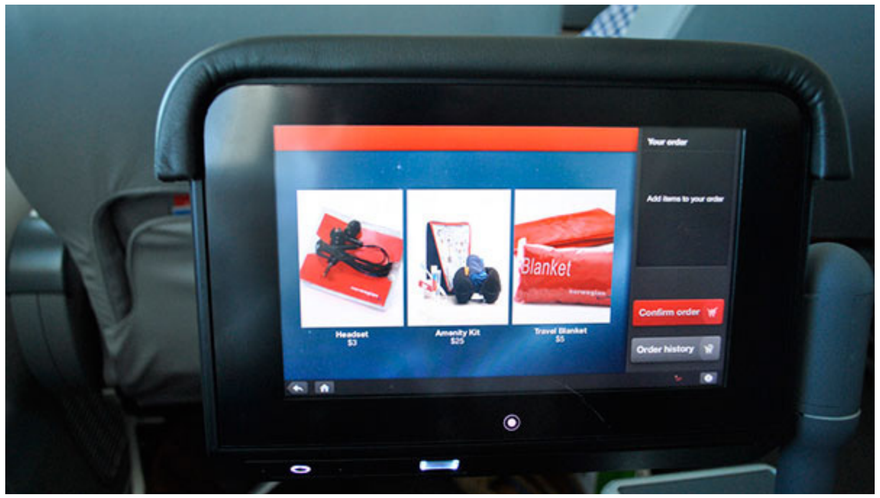
- Directional audio that removes the need for headphones could be possible, but difficult to deploy

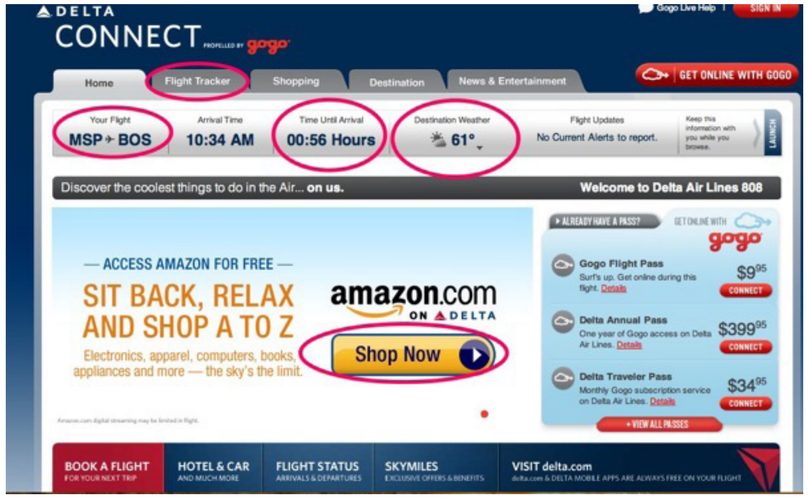
- Gesture control and voice recognition could become commonplace



IFEC-BASED RETAIL OPPORTUNITIES

- Seatback or PED , the airlines have a great opportunity to increase passenger engagement
- More focus on destination-based sales via the various IFEC platforms (e.g. tickets and activities, ground transport tickets)
- Self-service F&B and duty free ordering/payment via seatback IFE, tablets, smartwatches etc.
- Airlines will think more like retailers and partnerships with major retailers such as Amazon will create new opportunities – e.g. airlines can push passengers towards Amazon website and earn commission on in-flight transactions made





ONBOARD CONNECTIVITY

- Onboard connectivity will be ubiquitous by 2025
- Most airlines will offer at least two tiers of connectivity – a free basic product and a higher-speed paid-for product (the latter will be free for premium passengers)
- However, even the basic connection will have to provide a consistent and reliable connectivity experience to satisfy the increasing demands and expectations of the “always on” traveller
- The login process will be simplified, enabling a one-click login
- Airlines will demand different business models – some will be able to provide free connectivity thanks to the savings made through leveraging the operational benefits of the connected aircraft
- If passengers are willing to share their data with airlines, connectivity becomes intrinsically valuable, further justifying the initial investment

KA, KU & BEYOND

- In an ideal world, both will co-exist and a new generation of antenna will allow aircraft to switch seamlessly between Ku and Ka bands

- With the resources currently being put into Ku, and the delays facing Ka, Ku looks to be in good shape and appears to offer an element of sustainability beyond 2025

- We will have seen the introduction of flat antennas, which cover a larger area and are very thin and very light – this will bring about benefits in terms of drag and better RF performance

- There will be other new satellite technologies introduced e.g. Micro satellites

3: CREW & PASSENGER EMPOWERMENT

CREW & PASSENGER EMPOWERMENT

KEY PASSENGER REQUIREMENTS

i. Ability to stay connected at all times
ii. Self-service F&B options
iii. Simple ordering and payment
iv. Concierge-style services

CURRENT PAIN POINTS

i. Overstretched cabin crew
ii. Service not tailored to destination/culture
iii. Pax data not being utilised effectively
iv. Developing crew into concierges

THE CHANGING ROLE OF CREW

- Cabin crew will become concierges, leveraging phablets and wearables to add further value to passengers' end-to-end experiences and drive ancillary revenue generation – smartglasses will be preferable to smartwatches

- Connected crew will be able to relay real time information to passengers – e.g. if baggage has been mislaid or connecting flight has been missed, all communicated to passenger before landing

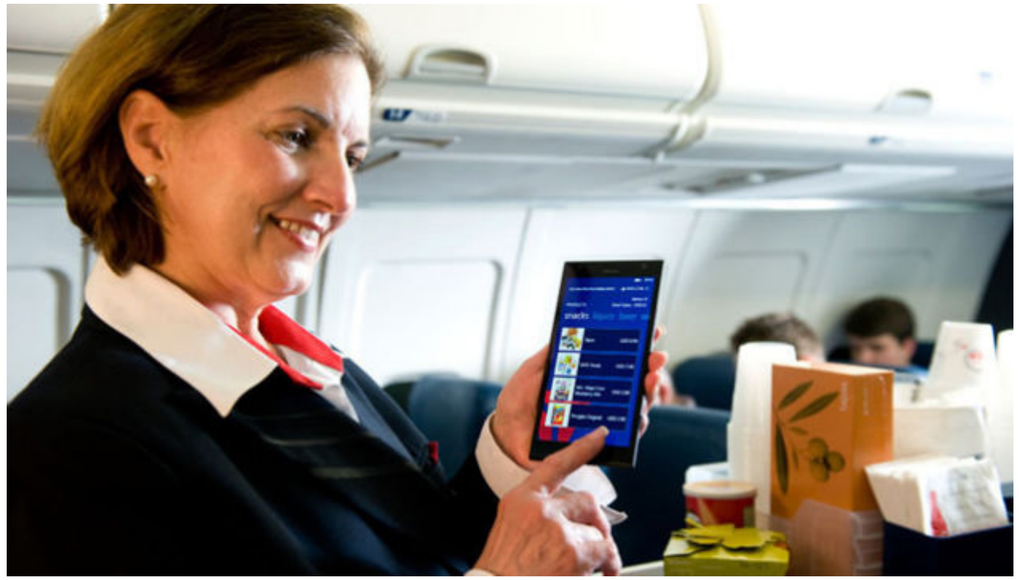
- Crew will be able to "read" what has happened to the passenger during their pre-flight experience, allowing them to further personalise the experience and acknowledge any previous issues

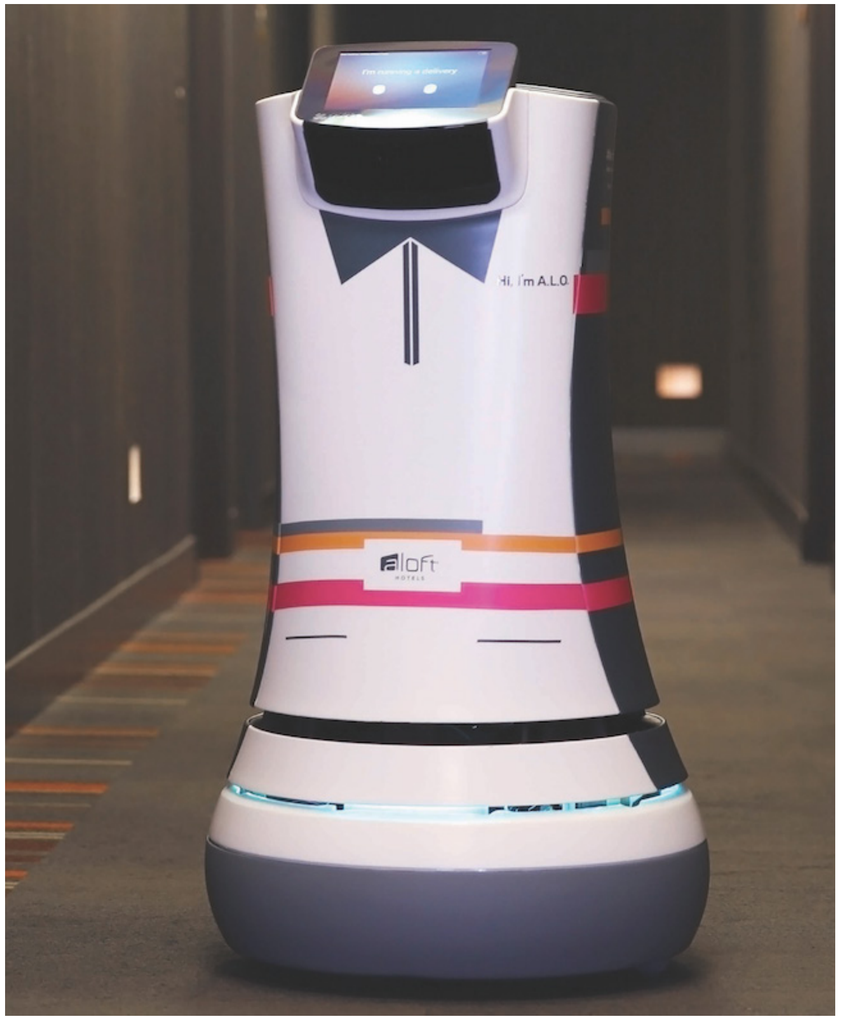
THE CHANGING ROLE OF CREW

- Crew will have better awareness of passenger health and wellbeing, and will be able to identify potential health-related emergencies before they occur, thanks to widespread use of personal sensors and the Internet of Everything

- Crew will be enabled to adapt to all cultures and languages through enhanced training and auto-translation technologies

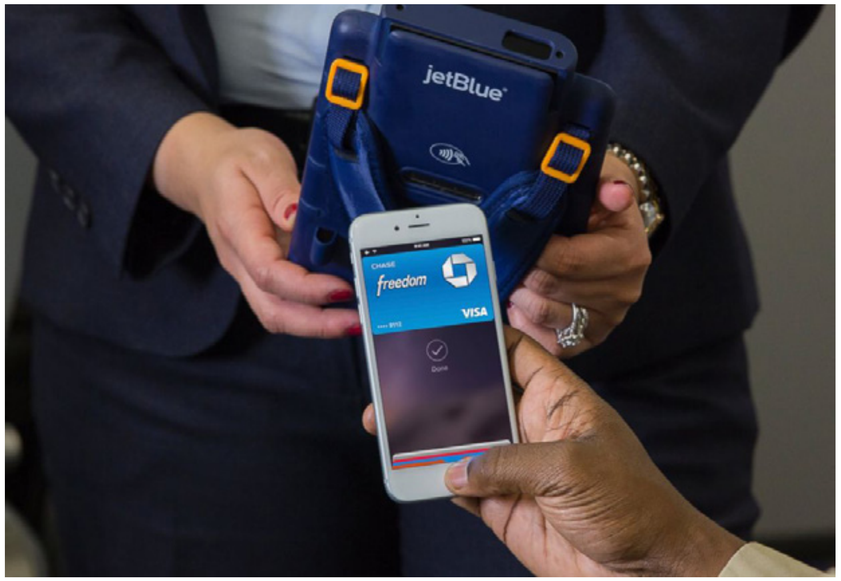
- By 2025, the service delivered by crew could be complemented by self-service and robotics technology, automating some tasks and allowing crew to focus more on passenger interaction and customer service





ONBOARD ANCILLARIES AND PAYMENT

- Duty free items will not be the key source of onboard ancillary revenues in 2025 – destination packages, entertainment, insurance etc. will become more important
- Crew will be better incentivised to drive ancillary sales and support the airline's objectives
- Onboard "holiday makers" can help passengers plan their ideal trip before they even land



ONBOARD ANCILLARIES AND PAYMENT

- By thinking more like retailers and leveraging passenger data, crew can offer personalised retail recommendations through virtual stores supported by a home delivery service
- Contactless payments will be the norm – onboard cash payments will be phased out
- Most airlines will accept payment by virtual currency, such as BitCoin
- Adoption of affiliate marketing models will allow airlines to earn commissions on purchases made via third-party websites during the flight
- Partnerships between airlines and online retailers and brands will enable airlines to leverage passenger data to target travellers with personalised retail offers via embedded or wireless IFE systems

bitcoin

4: CABIN CLASSES & DIFFERENTIATION STRATEGIES

CABIN CLASSES AND DIFFERENTIATION STRATEGIES

KEY PASSENGER REQUIREMENTS

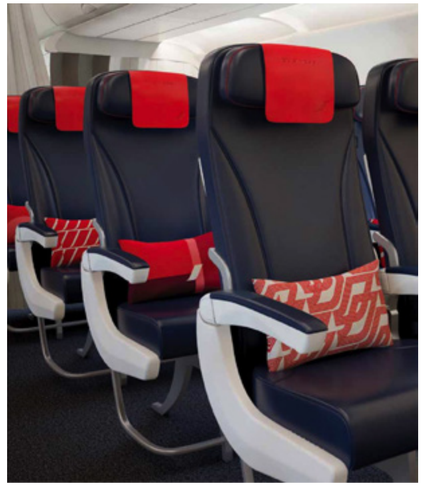
i. Greater convenience and functionality
ii. More choice
iii. Greater personalisation in all classes
iv. Getting value for money in Business Class

CURRENT PAIN POINTS

i. Lack of consistency
ii. Low standard of meals
iii. Creating product differentiation whilst maintaining flexibility for aircraft utilisation

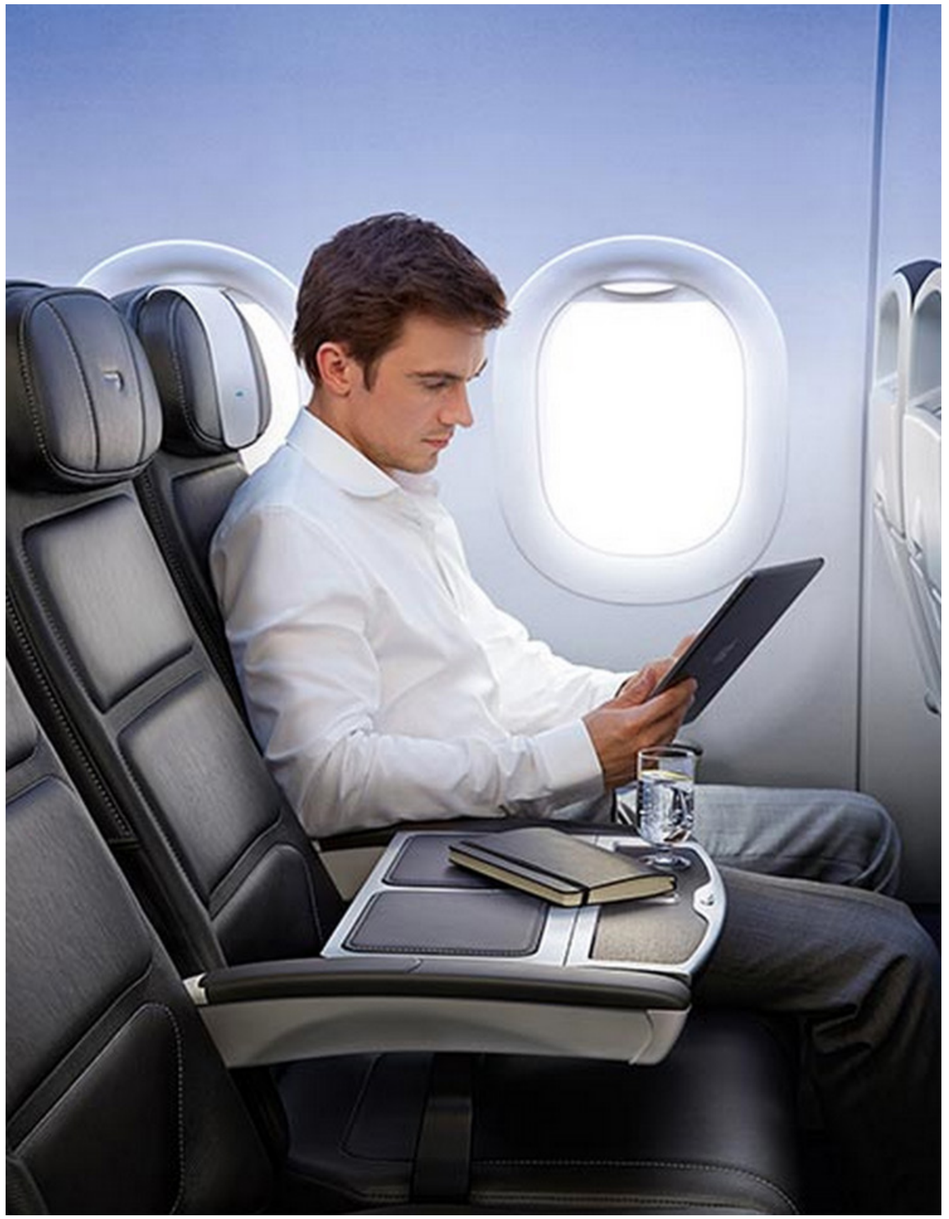
LEGACY VS LOW COST

- There is a shift in the way narrow-body aircraft are being utilised
- Legacies – increasing trend for flat beds installed on narrow bodies – e.g. Los Angeles-New York route
- At the other end of the spectrum, budget airlines are increasing seat density and looking for more innovative ways to maximise ancillary revenues
- While we could see more four-class long-haul aircraft in 2025, on a narrow-body aircraft we might expect two to three-class set-up for legacy carriers
- On longer flights (5-6 hours) legacy carriers might offer a higher density of lie flat seats in Business Class, enabled by the reconfigurable cabin



SHORT-HAUL BUSINESS CLASS

- Business class cabins will be configured 2x2 as standard – the European-style 3x3 business class seating with empty middle seat will be phased out
- Airlines may adopt a more flexible “bolt on” product strategy to meet the various customer needs. E.g. pay extra for a seat with more table/desk space to work on your morning flight, or pay extra to stretch out and relax on your evening return flight
- Either way, Business Class short-haul differentiation may be more about the levels of flexibility and personalisation in the cabin, not just a curtain divider



MID AND LONG-HAUL BUSINESS CLASS

- An increase in carriers offering flat beds on mid to long sectors will push the need for even more innovation as airlines look to maximise seat count and passenger comfort in an even narrower fuselage

- The trend of all-Business Class cabins in narrow-body aircraft will continue to grow as markets and routes develop, driving greater demand for this type of service from convenient city airports to international business and financial centres

- All-Business Class cabin operators could drive greater step changes in cabin configurations and layouts as standard aircraft galley/lav positions are not really optimised for these services

- Some forward-thinking airlines may adopt learnings from business jet aircraft interiors to further enhance and differentiate the onboard experience

PERSONALISATION & UNBUNDLING

- For majority of airlines, the base fares will be defined only by the seat (i.e. legroom, seat width, comfort) – level of service and personalisation, add-ons, meals and tailored content will be unbundled across all classes

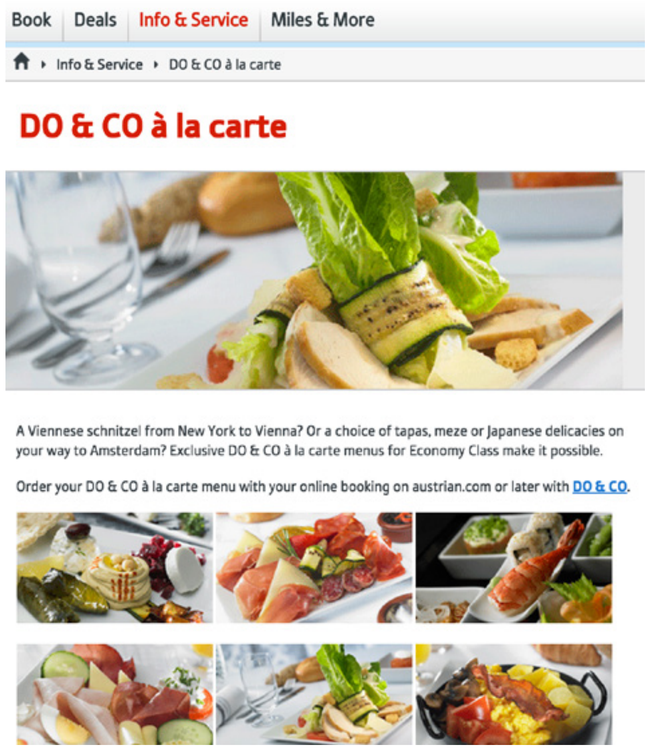
- We'll see more unbundling of products, so customers can mix and match to suit their own needs – an Economy Class passenger may be able to add Business Class elements to their experience as a paid-for extra/upgrade – Business Class passengers may also be offered more options as add-ons

PERSONALISATION & UNBUNDLING

- Passengers will be able to specify the type of service they'd like to receive (i.e. the level of personalisation and customer service)
- The level of personalisation will be far higher for premium passengers
- By leveraging passenger data more effectively, airlines will be able to create more surprise moments that contribute to a unique and memorable experience
- For legacy carriers, certain things will not be unbundled, but they will still want to give as much choice as possible to the passenger to satisfy demand for personalisation
- Some of this unbundling will be tailored to the varying passenger profiles (not just by travel class) – e.g. groups, couples, families – there will be a greater array of options to satisfy diverse customer demands

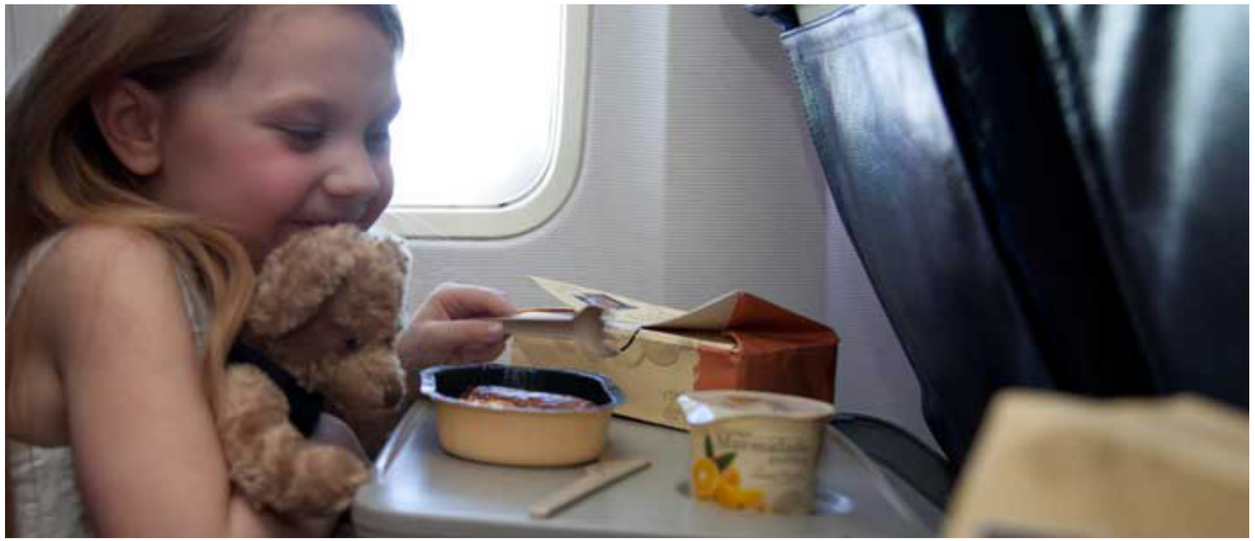
IMPROVING THE STANDARD OF MEALS

- Legacy carriers will have to up their game with meal services – LCCs often offer higher quality meals as a paid-for extra, not just a mediocre meal that's included in the ticket price
- Locally sourced ingredients and higher standards will help airline differentiation and loyalty
- We could see partnerships with major F&B companies to let them deliver the meal service (airline could outsource/rent the aisles) – or passengers eat in airport restaurant or gate ahead of flight



IMPROVING THE STANDARD OF MEALS

- Premium passengers can define the times at which they are served their meals and have far more expansive menu options
- Pre-ordering of meals ahead of the flight will become commonplace – from point of booking to ordering at the airport ahead of departure



CHALLENGES TO THE VISION

CHALLENGES TO THE VISION

Aircraft Cabin Specification

- Aircraft catalogue approach is seen by some as being restrictive for customisation
- Lead times for innovation too long
- Onboard technology-lag vs real world

Certification Process

- Costly and long lead times a barrier to entry for innovative new suppliers and start-ups
- Engaging with certification bodies early in a consultative way rather than at the end seeking approval

Crew Empowerment

- Training and recruitment require high investment
- Time restricted crew on majority of short-haul flights

Privacy vs Data Usage

- Use of Big Data to drive personalisation
- Majority of airlines not effective at leveraging Big Data to drive personalisation

Finance & Investment

- Product innovation and customisation financially restrictive for many airlines
- Collaboration across suppliers is sporadic and not customer driven
- Airlines continue to drive for differentiation and exclusivity

FINAL THOUGHTS

- If you are a small company you should be enthused by how aircraft manufacturers are now lowering the barriers to enable innovative new providers to work with them on creating the cabin of the future

- If you are a design company we hope this work gives you greater understanding of all the moving parts of a cabin programme, and how you might go about achieving differentiation within those parameters going forward

- If you are an established industry supplier you should be making greater efforts to align your innovation cycles with others in the market to enhance cabin integration opportunities

- If you are an airline we hope this work helps shape how you prepare your next RFP – there is a will by vendors to collaborate, but you need to find models that motivate all stakeholders to do so

- This work will inspire what FTE does next in this space, and we will do what we can to help find answers to the challenges identified through new initiatives in the future to inspire industry progress. This is just the beginning!

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Slide 6 – Amadeus Future Traveller Tribes 2030

Slide 7 – Microsoft/Delta Air Lines

Slide 8 – L-R: Qatar Airways; KLM

Slide 9 – L-R: Google Indoor Maps; Virgin Australia; Airports Company South Africa

Slide 10 – L-R: DS BAGTAG; RIMOWA Electronic Tag

Slide 11 – Top image: Futronics; bottom image: Aruba Happy Flow/Vision-Box

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