

A person wearing a headset is shown in profile, looking at a tablet device. The scene is set in an airplane cabin, with a window visible in the background. The entire image is bathed in a red light, creating a monochromatic effect. The person appears to be a flight attendant or pilot, focused on the device.

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Philip Balaam
President
Inmarsat Aviation



“Wi-Fi in the skies is creating a wealth of new revenue opportunities for airlines”

The world we live in has never been more connected. Our daily lives have undergone rapid change in the past two decades as the internet has moved from infancy to ubiquity. There’s almost nowhere left on Earth where we’re completely disconnected.

Few places still exist where our devices don’t alert us, facilitate connections with family and friends, map our routes, stream our playlists, or share updates on what’s happening in the world beyond our desks and homes.

But, until recently, the sky has remained a communication white space. When we step onboard, we surrender to the fact that until we land, no calls will get through. Emails won’t send. Breaking news can’t reach us. Our productivity grinds to a halt, even when we’re travelling for business.

Before connectivity was such a fundamental part of life on the ground, this was an accepted part of the flying experience. But just as leaving home without a phone leaves most of us feeling half-dressed, in today’s always-on culture, most passengers want the option to get online when they fly. The advent of global high-throughput satellite networks is making this a reality, and airlines

are already embracing the opportunity by rapidly adopting high-speed, high-quality inflight Wi-Fi on their fleets. In bringing high-bandwidth internet to the skies above us, we have reached the final frontier in the race for a fully connected world.

Passengers on high-speed Wi-Fi-enabled flights now have the freedom to message, send emails, stream music and video and more, with a living room quality Wi-Fi experience in the cabin. This is signalling the end of ‘airplane mode’ as we know it.

Not only is this development transforming passenger experience, it’s also opening the door to a wealth of new revenue opportunities for airlines. Enhanced connectivity has the power to entirely re-shape the aviation industry, but as a relatively new development, the scale of the opportunity has never before been quantified. Since 2017, we have been working in association with the London School of Economics and Political Science (LSE) on an independent research series that comprehensively models the socio-economic impact of the connectivity revolution in the skies.

Chapter One: Quantifying the commercial opportunities of passenger connectivity for the

global airline industry – the first of three instalments - explores the revenue and economics of inflight passenger connectivity. As passenger numbers are set to double in less than two decades, the commercial opportunity for airlines – and a wider connected ecosystem of partners and providers – is set to be huge. The industry will capitalise on a variety of broadband-enabled ancillary revenues, including access fees, advertising, premium content and e-commerce opportunities.

The report finds that previously untapped revenue streams, enabled by Wi-Fi in the cabin, will deliver \$30 billion in ancillary revenues to airlines by 2035, of an overall \$130 billion market. From Europe to Latin America and beyond, many leading airlines across the world are already installing and flying with inflight Wi-Fi on their fleets. The race is on to roll out best-in-class services to passengers, in turn enhancing inflight experience and driving passenger loyalty and profitability. As the power of connectivity takes to the skies, airlines are seizing this opportunity. Bring it on!

Philip Balaam
President
Inmarsat Aviation

Broadband in the sky will be a \$130 billion market by 2035

The aviation industry is experiencing a connectivity revolution.

Though currently only a minority of aircraft offer some form of Wi-Fi, by 2035 it is expected to be installed on aircraft around the world. By then, annual passenger numbers are predicted to almost double, to 7.2 billion.

Passengers' expectations of the inflight experience are fast changing, as demographics evolve and the desire to be ever-connected continues to grow.

The advent of seamless inflight Wi-Fi, powered by mobile satellite communications, is transforming the passenger experience. Passengers' time in the cabin is more valuable to airlines now than ever before.

The potential for passengers to drive revenue is high if they can access onboard connectivity with appropriate content and pricing. With the technology now commercially available, there is a huge opportunity at stake. It's time for airlines to adopt a digital mindset by delivering and monetising a seamless inflight Wi-Fi experience.

The expectation from passengers before was: 'Give me something to entertain myself with'. Now they are just saying: 'connect me'."

Greg Saretsky
ex-CEO, WestJet

Broadband-enabled revenue streams

based on IATA data and industry sources, Sky High Economics pinpoints the value of the inflight Wi-Fi market for the first time. The report predicts that by 2035, the inflight connectivity market will be worth \$130 billion globally, with airlines standing to gain \$30 billion in broadband-enabled ancillary revenues.

"The airline industry is rapidly evolving to become retail-focused and airlines will have to reinvent themselves as retailers. Airlines could learn a lot from retail chains like Walmart and Tesco, especially when it comes to offering the right product to the right customer at the right time."

Aidan Brogan
CEO, Datalex

Airlines earn an average \$17 per passenger from 'traditional' ancillary services such as duty-free purchases and inflight retail, food and drink sales. Broadband-enabled connected ancillary revenues will add an extra \$4. New revenues are predicted to fall into four main streams: broadband access, premium content, e-commerce and advertising.

Broadband access

To date, generating revenue from broadband access fees has been the primary mode of monetising inflight connectivity - a trend set to continue. Broadband access revenue is forecast to reach \$15.9 billion for airlines by 2035 - more than half of the \$30 billion broadband enabled ancillary revenue opportunity.

E-commerce

Inflight connectivity opens the door to a wealth of e-commerce platforms for passengers. Destination shopping represents a large component of the retail opportunity. Research has shown that more than 40% of tour and activity bookings are made online, often after arrival at the destination. With inflight connectivity, passengers can defer trip purchases - including car hire, hotel and tour bookings - until they are en route. This creates opportunities for airlines to develop tailored inflight offers. Connectivity is also re-inventing the traditional duty-free cart. Overcoming the current restrictions of size, weight, time, inventory management and delivery, inflight Wi-Fi enables access to a broad product range that can be delivered straight to the gate or passenger's destination.

Broadband-enabled e-commerce is predicted to be worth more than \$6.8 billion in airline revenues by 2035, from a total estimated market of \$53 billion.

“The onboard retail offering is changing for the better. High-speed inflight connectivity, integrated with innovative onboard technology, is creating richer e-commerce experiences for passengers. Before long, this could signal the end of the traditional duty-free cart.”

Eric Plantaz
Regional Vice President,
Europe at Inmarsat Aviation

Advertising

The nature of airline travel offers advertisers a unique opportunity to target a ‘captive’ audience. Transcending the boundaries of the traditional inflight magazine, advertising onboard connectivity systems allows passengers to click through and buy products immediately. Not only does this increase conversion, it completely changes the nature of products and services that are appropriate to advertise on board. There is potential for airlines to generate revenue from advertisers on a revenue-sharing basis, offering tailored adverts and content specific to routes, destinations and target passengers via the onboard Wi-Fi system. This is bolstered by the ability to gather consumer data in exchange for access to services; around half

of passengers are willing to share personal information in exchange for personalised offers. Advertising enabled by broadband – encompassing page impressions, click-through in both paid and free broadband options, and interrupting-adverts within a free access broadband model - could yield an additional \$6 billion for airlines by 2035.

Premium Content

Content streaming has revitalised the music and video industry: online video now exceeds time spent by consumers on other platforms including social media, and the global terrestrial streaming market is forecast to grow from \$30.2 billion in 2016 to a potential \$104 billion by 2030.

This booming industry, driven by changing consumer behaviour, creates an immense opportunity to offer innovative streaming services to passengers inflight. Revenue from premium content includes premium live content, on-demand video, and bundled Wireless Inflight Entertainment Connectivity (W-IFEC). Content could be offered via a tiered pricing model: basic content including news and shows, with premium content including events, live transmissions and so on. This new broadband-enabled revenue stream is predicted to be worth \$1.4 billion to airlines by 2035.



Asia Pacific set to spearhead the global marketplace

Regionally, the greatest opportunity for broadband-enabled ancillary services is in Asia Pacific. The region will be the largest market by 2035, with IATA estimating it will account for more than 3 billion passengers annually.

Driven by passenger growth and availability of services, airlines in Asia Pacific will gain \$10.3 billion in connected ancillary revenues by 2035, followed by Europe (\$8.2 billion), North America (\$7.6 billion), Latin America (\$1.9 billion), Middle East (\$1.3 billion) and Africa (\$5.9 million).

The opportunity for LCCs and FSCs

Full service carriers (FSCs) look set to claim the lion's share of airline revenues, generating \$19 billion by 2035. Capitalising on longer flight times, additional revenue will come from the ability to maximise e-commerce platforms and striking deals with content providers to offer premium packages. Low cost carriers (LCCs) will generate \$11 billion, the bulk of which will come from broadband access fees.

For LCCs and FSCs, inflight Wi-Fi offering can be tailored to suit the requirements of the customer base. The ancillary revenue model is well suited to LCCs, who have in the main pioneered the 'a la carte' concept as the core of their strategies. That said, FSCs offer greater opportunity for accelerating revenues in some areas due to the large proportion of business travellers using them – including for long haul flights – and premium passengers seeking seamless customer experience when travelling.





The availability of global, seamless broadband coverage is delivering a step-change in the connected cabin. The sky is literally the limit for airlines to unlock entirely new revenue streams while enhancing passenger experience.

Airlines will be the gatekeepers to this emerging \$130 billion global market, by working with the world's most innovative organisations to develop lucrative new inflight services.

Dr Alexander Grous, Department of Media and Communications, LSE and author of Sky High Economics, said of the findings: "The opportunity available to airlines is enormous. Globally, if airlines can provide a reliable broadband connection, it will be the catalyst for rolling out more creative advertising, content and e-commerce packages."

"We will see innovative deals struck, partnerships formed and business models fundamentally changed for new players to lay claim to the \$100 billion opportunity away from airlines. Broadband-enabled ancillary revenue has the potential to shape a whole new market and it's something airlines need to be planning for right now."



Learnings for airlines

1

In today's always-on culture, **customer behaviour is rapidly changing**. Airlines need to move now to keep pace with the growing demand for connectivity.

2

By 2035, **airlines stand to gain \$30 billion** in broadband-enabled ancillary revenue, adding an extra \$4 per passenger by 2035.

3

FSC or LCC, emerging or mature market, long haul or short haul: **the inflight Wi-Fi model can be flexed to suit the needs of each individual airline** and its passenger demographic.

4

Inflight connectivity presents a unique opportunity for **advertisers to reach a 'captive' audience**. Targeted ads and personalisation, thanks to data capture, will unlock additional revenue for airlines – up to \$6 billion annually by 2035.

5

Onboard broadband enabling rich e-commerce and destination shopping services are signalling the **demise of the inflight duty-free cart as we know it**. Broadband-enabled e-commerce is predicted to be worth more than \$6.8 billion to airlines by 2035, but what will it mean for passengers? **A broader range of products**, delivered to the gate, home or hotel, and the freedom to book transfers and dinner reservations in the sky.



High-speed passenger Wi-Fi drives ancillary gains for AirAsia

With Asia Pacific airlines forecast to take the largest share in broadband-enabled revenues - \$10.3 billion by 2035 - AirAsia is pioneering as an early LCC adopter of Wi-Fi in the region.

Since AirAsia selected GX in 2017, the partnership with Inmarsat has gone from strength to strength with the airline's CEO Tony Fernandez describing GX as "the backbone of AirAsia's digital cabin offering."

Already lauded as one of the region's most innovative LLCs, digital transformation is central to AirAsia's strategy making the airline's alliance with Inmarsat critical.

Sky high demand for Wi-Fi in APAC

AirAsia's decision to adopt inflight connectivity (IFC) was largely driven by fast-growing customer demand. The airline receives close to 300 calls a month from passengers enquiring whether their upcoming flight has Wi-Fi.

Lalitha Sivanaser, CEO, ROKKI, observes: "It's only natural because

passengers have adopted the convenience of staying connected. Whether it's staying updated on social media, banking or getting assignments done, everything is done online now. Passengers constantly need that connectivity."

AirAsia is committed to providing its passengers with one of the richest digital inflight experiences available, delivering connectivity indistinguishable from what passengers are used to on the ground.

With demand for inflight Wi-Fi seen as a driver in forming passenger loyalty and satisfaction, AirAsia is using IFC as a gateway to further enhance the inflight experience.

Passenger experience

The passenger experience revolution is well underway and AirAsia puts its own improvements down to enhanced data capture, allowing the airline to serve its passengers in a more personalised and meaningful way.

Not only does GX Aviation provide AirAsia's customers with an

innovative inflight Wi-Fi service, but it enables its burgeoning digital ecosystem to flourish. High-speed broadband generates rich and sophisticated data that unlocks the airline's potential to provide passengers with a relevant and personalised service, immeasurably enhancing the inflight experience. "Now we know the preferences of the person who sits on 23H," Sivanaser points out. "We know he likes to eat spaghetti and have a hot drink. We know that he will also purchase some alcohol or chocolates. This means we can personalise his offer.

"It's only natural because passengers have adopted the convenience of staying connected. Whether it's staying updated on social media, banking or getting assignments done, everything is done online now. Passengers constantly need that connectivity."

Lalitha Sivanaser
CEO, ROKKI



Driving ancillary revenues

AirAsia is capitalising on broadband access fees with a range of price points for its connectivity plans: a 5MB Chats Plan, a 15MB Internet Plan for lightweight use, and a 50MB Internet Plan for data-hungry users. Payment can be taken online ahead of time, or on board with either cash from the cabin crew or by credit card.

Where ancillary revenues are concerned, AirAsia is throwing out the rule book. “For some time, airlines have been depending on baggage, food and seat selection on the low-cost carriers to bring in some ancillary revenue,” Sivanaser says. “Now... we can take ancillary revenues beyond those traditional mediums. Advertising, partnerships, things that touch the online space.”

Fernandez, has long spoken of his digital vision for the airline and connectivity underpins this dream. GX is enabling AirAsia’s digital ecosystem to flourish, unlocking new and unprecedented ancillary revenue potential. Rokki, AirAsia’s inflight entertainment and connectivity platform, has consistently hailed connectivity as the enabler of aviation’s digital revolution supporting its e-commerce, personalisation, analytics and mobile payments.

The airlines’ strategy is testament to the fact that it can be economically viable for LCCs to match premium flag carriers with quality inflight connectivity.

As ancillary revenue opportunities continue to multiply exponentially over the coming years, AirAsia is perfectly placed to capitalise on the inflight Wi-Fi boom.

“Now... we can take ancillary revenues beyond those traditional mediums. Advertising, partnerships, things that touch the online space.”

Lalitha Sivanaser
CEO, ROKKI



At the forefront of aviation technology, Inmarsat offers two passenger connectivity solutions to airlines today – GX Aviation, and the European Aviation Network (EAN).

THE GLOBAL SOLUTION

GX Aviation is the world's first and only seamless, global, high-speed inflight broadband service providing in-the-air-as-on-the-ground connectivity for the world's most respected airlines. From its conception, GX has been engineered for aviation; an intelligent network designed to anticipate and meet ever-growing customer demand for ubiquitous connectivity.

GX Aviation is powered by Inmarsat's four, Global Xpress Ka-band satellites, covering the globe and offering the most extensive coverage of airline routes. Unlike competitive solutions, GX's layered, targeted

capacity also provides the flexibility to add and redirect bandwidth where airlines need it most, across busy flight routes and over congested airport hubs.

As demand inevitably grows, so will the network. Inmarsat's fully-funded technology roadmap includes eight fully-funded next-generation payloads to expand capacity yet further. With the first of these due to launch in 2019, the evolution of the network will make GX the most agile and flexible constellation ever conceived, assuring customers that their requirements will continue to be met for decades to come.

A UNIQUE OFFERING FOR EUROPE

With more than one billion passengers travelling annually in one of the world's most congested airspaces, Europe is a uniquely challenging region for high-quality inflight Wi-Fi.

EAN, Europe's most advanced aviation connectivity service, has been built for Europe by Europe; a fusion of advanced technologies and the combined satcom, terrestrial, avionics, IFS and service delivery expertise of some of the most innovative companies in the region.

EAN is the fastest connectivity service in Europe with up to 75Mbps bandwidth to the aircraft and the lowest latency in the market. The remarkably lightweight, low drag equipment also means three times less fuel impact than any alternative system,

and with an installation time of just nine hours, it promises the continent's fastest ROI.

EAN has been specifically designed to deliver both high capacity and ubiquitous coverage for Europe, future-proofed for rapid growth with the fastest scalability, ready to satisfy increasingly data-hungry passengers across the region.

The key to unlocking ancillary revenue

High-bandwidth capacity is the key for airlines to unlock the \$30 billion connected ancillary opportunity by 2035, and with many already exploring this opportunity, the race for quality connectivity is on.





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