...Inflight Connectivity

As we enter the 5G generation and the world becomes ever more connected, the reality of inflight entertainment becomes increasingly high tech and data driven. Given the economic uncertainties brought on in 2020, has anything changed regarding the revolution 5G and NGSO promised us, and how soon can we expect to see true connectivity in flight?

Digitizing inflight connectivity

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We live in an age sat at the very threshold of an always-online world.

In developed nations, it’s rare that our connections are interrupted by some blip in our routers, or when visiting an especially rural spot data coverage has trouble reaching. Very rarely are we faced with the reality that an Internet connection simply isn’t possible.

This unfortunately remains the case in the world’s most remote and underserved regions, but we might think it strange that the same has long been true while travelling by air. Children of our time raised with the constant comfort of an unbroken Internet connection often find it hard to understand why a cutting edge commercial airliner, which can cost thousands to book passage with, can’t squeeze out the bandwidth we’ve come to associate from virtually any public building in our day to day environment. Who could blame them?

A digitising world

Since inflight connectivity (IFC) was successfully introduced to aeroplanes, one of the most common remarks users are known for making are along the lines of: “Why don’t all planes have this?” or “What took you so long to get this working?” In a world where network connectivity is considered a human right, being forced offline for the duration of an already uncomfortable flight feels especially palpable.

Our world is steadily digitising, a revolution that has well and truly reached air travel infrastructure. Aircraft cabins and flight decks have become connected, with sensors and Internet of Things (IoT) devices designed for comfort, operations and maintenance. An overarching inflight network capable of delivering to the standards of an at-home connection remains the all-important missing piece of the puzzle. The path to inflight connectivity began in the early 2000s, though offerings at that time weren’t particularly sustainable. For one thing, the systems that supported them were often so heavy that they exceeded many airlines’ weight requirements. We’ve come a long way since then, though plenty of obstacles remain. A limitation that has followed the market to this day is one of coverage. Whilst certain airlines are now quick to advertise their inflight connectivity service, a reliable and fast connection that you can swear by isn’t quite as common.

A fragmented market

The most apparent solution for making inflight connectivity a wider reality comes from the LEO/MEO satellite boom. With
New Realities of Network Traffic

Internet traffic is increasing globally based on the new realities of remote connectivity – teleworking, distance learning, telemedicine, webinars and video conferencing. It’s likely we’ll see long-lasting changes to the way we live and work. Given the higher traffic volumes and network complexities, it is imperative for operators and service providers to have satellite infrastructure solutions that provide performance, reliability and quality of experience. At Comtech EF Data, we have the solutions for the new realities of network traffic!

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the promise of uninterrupted global coverage via HTS constellations, aircraft will no longer be forced to grapple with awkward air-to-ground solutions, when and where they’re available, but instead connect to the satellites above them.

Though GEO satellites have long been capable of this, much has been said of these platforms providing a high latency experience to planes. Gogo CEO Oakleigh Thorne explained that LEO satellites “are much closer to earth, so packets from the teleport from the satellite to the aircraft travel a much shorter distance, and hence arrive much faster than with GEO.”

The apparent inevitability of the booming inflight connectivity market is underpinned by findings from the world’s premiere satcom research groups. In 2019, NSR predicted a US$36 billion in IFC cumulative revenue by 2028 on the back of HTS fleet rollout, which Euroconsult supported the same year, positing that the number of connected aircraft would also increase to 20,500 planes by 2028.

NSR Research Director, Claude Rousseau explained that: “New and future customers have watched and learned from early adopter mainline carriers and understand better what they can get today from an IFC service onboard aircraft. As a result, the expectation of cheaper and better IFC with higher capacity and more reliable service is a deeply-rooted impression amongst airline customers.”

Similarly, Xavier Lansel, Euroconsult Senior Consultant, claimed that: “With less than 20 percent of the world’s airlines providing Internet connectivity to their passengers at the end of 2018, and more ‘Smart Plane’ connectivity coming, there is lots of room for expansion.”

As a relatively young and fragmented market, inflight connectivity is a developing space vulnerable to a degree of market disruption as new players and well-invested start-ups spring into the sector. This makes the exact nature of the landscape a malleable one, as working models develop and lines are redrawn.

Viasat VP & General Manager of Commercial Aviation Don Buchman stated: “Each airline’s brand identity and promise are unique, which explains why there cannot be a ‘one size fits all’ approach to free IFC. Over 2020, we expect to see a number of creative deals that span free, freemium, and other sponsored content initiatives. The critical thread tying it all together is a reliable, capacity-rich IFC network that can scale - like the service Viasat offers - where capacity is the crown jewel of the system.”

Additionally, Gogo’s Thorne suggested that “The issue in the commercial aviation IFC space is that there are too many competitors, and nobody yet has enough scale to build a sustainable business for the long-term.” He continued: “Consolidation will occur specifically within the commercial airline in-flight connectivity industry to compensate.”

New trends
However the framework of IFC is forged, we can agree that the technology has the potential to bring unprecedented value to the aviation experience, allowing travellers to stay connected while they work as they would in a conventional office space, or even enjoy quality mobile gaming online while connected to the player base on the ground.

Suitably, an important facet to IFC lies in the Bring Your Own Device (BYOD) trend, which if successful could change the world inflight entertainment by rendering the public hardware at a traveller’s seat obsolete, and instead focus the service on delivering to the customer’s personal phone, tablet, mobile game console, or laptop.

This trend is driven by universal findings that passengers prefer using their own devices over the alternative, at which point an airline’s inflight entertainment portfolio would become a more streamlined and explicitly value-added service attached to connectivity.

As an emerging market, the challenges to cultivating thriving IFC sector are numerous and complex. Despite the outstanding setbacks faced in 2020, the implementation of LEO has progressed fairly well under the circumstances, and with it the actualisation of bringing the stratosphere into our connected world.
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