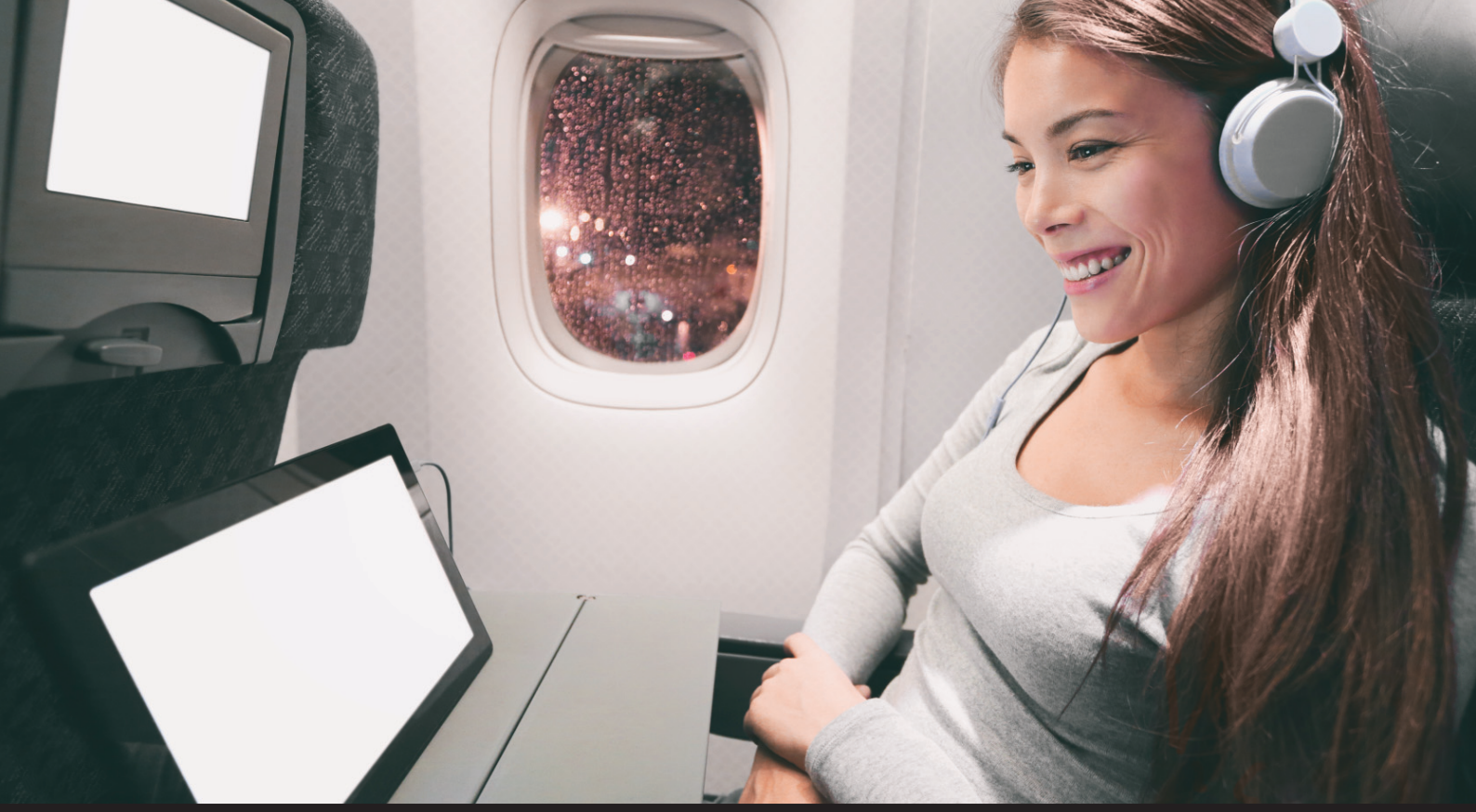

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Inflight connectivity: Onwards and upwards

The inflight connectivity (IFC) segment has taken a major hit since the COVID-19 outbreak, with the majority of global flights effectively grounded for months at a time. With so few flights, operators and service providers have been pushed to breaking point.

Amy Saunders, Editor, Satellite Evolution Global

It's been an extremely tough couple of years for the mobility sector, with land, air and sea segments all impacted severely by the break of the COVID pandemic early in 2020. The inflight connectivity (IFC) sector is very much in the thick of it, reporting an approximate 80 percent reduction in air traffic in most world regions. Many companies have exited the market or been rendered bankrupt as a result.

NSR estimates that satcom IFC in-service units (cockpit and cabin) reduced by 11,500+ units year-on-year in 2020, primarily owing to the dwarfed operations and grounded aircraft in the commercial aviation segment. In addition, these grounded aircraft are likely to generate little to no ARPUs/ARPAs to service providers. Service providers were forced to renegotiate their upstream capacity lease contracts (fixed cost), impacting satcom capacity demand and/or satellite operators. NSR estimated that IFC satcom capacity demand dropped by around 42 percent and 45 percent for HTS and FSS, respectively. On the equipment end of things, with manufacturers shrinking their production rate, the immediate impact was online fit equipment revenues. For the contracted retrofits (upgrades or new installations), the immediate outcome included cancellations and many executions being delayed. Overall, NSR estimates total retail revenue (equipment and service) fell by 38 percent in 2020.

Sunnier news came in June 2021, when NSR's latest 'Aeronautical Satcom Markets, 9th Edition (Aero9)' report announced a rebound on the horizon for IFC services, with a U-shaped recovery underway and revenue expected to reach US$38.8 billion through 2030. A clear trend of accelerated migration to HTS networks drives growth, and with recovery from COVID-19 losses by 2023, aero HTS capacity demand will reach 924Gbps by 2030. While second wave restraints moved COVID-19 recovery timelines further into the future, the trend of accelerated migration to HTS networks is evident in the technology roadmaps of top service providers and integrated operators such as GoGo's recent transition to the 2Ku network. Overall, the coming improved IFC experience will drive user take-up rates and bandwidth utilization.

MONEY, MONEY, MONEY

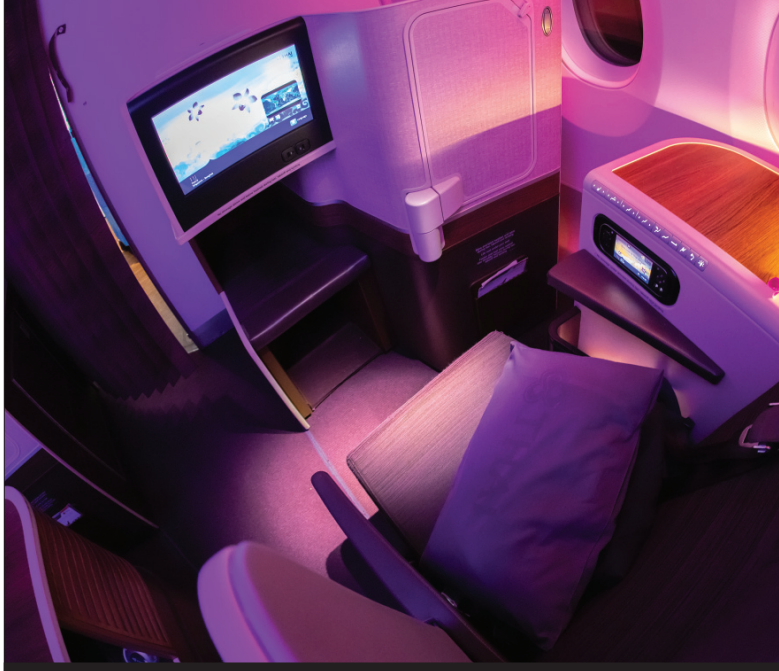
Given the last terrible two years for the IFC sector, it's no surprise that service providers are exploring options to increase monetization for airlines, securing themselves new business in the process. While the past decade has seen the airlines focus largely on delivering connectivity at an at least acceptable speed, often for free to compete with rivals, as standard, now we're seeing an increasing drive to level up services to more directly benefit the airlines themselves.

Indeed, research from Valour Consulting reports that in recent years, airlines have continued to increase their focus on unlocking new revenue streams through broadband-enabled ancillary services. The market for digital inflight advertising alone is forecast to grow at a CAGR of 42.9 percent from US$266 million in 2020 to US$3.3 billion by 2030.

In August, Panasonic Avionics announced a series of connectivity bundles designed to help airlines maximize their IFC investment. The bundles provide cost certainty, remove data limitations, and help airlines increase revenue generation.

"These new bundles give airlines the flexibility to build an inflight connectivity offering to drive impact on passenger experience, customer loyalty, and operations with Panasonic Avionics' enterprise-wide solutions," said Hernan Abbes, Vice President, Global Sales at Panasonic Avionics. "It's the latest way that we are leveraging our market experience and expertise to help airlines differentiate themselves from their competitors and help drive Net Promoter Score (NPS)."

Each bundle comes with promotional recommendations and templates to support the airline's on-board and off-board marketing efforts. Airlines looking to maximize revenue generation will benefit from a passenger payment platform that offers choice and simplifies payment options with Apple Pay and Alipay, mobile services and a team that can monitor and measure performance to further optimize the solution. For airlines focused on the passenger experience, the bundles provide live sports and news content through Sport 24 and Sport 24 Extra, BBC, CNN, CNBC and more incremental bandwidth packages for dynamic web browsing, high-speed streaming, and more. Moreover, to improve airline operations, Panasonic Avionics' passenger portal provides access to the Internet, its ZeroTouch capabilities enable remote software and operational updates from the cloud, and a suite of solutions such as analytics to improve forecasting, monitor usage, and business intelligence to optimize the airline's connectivity service even further.



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"Each of the bundles is based on airline feedback and from our experience in delivering inflight entertainment and connectivity services to more than 300 airlines," said Abbes. "More importantly, they offer the flexibility to airline customers who want to further enhance their offering with additional solutions including Panasonic Avionics' Advertising, Marketplace, Destination Services, our Arc™ 3D inflight moving map, and our Panasonic Technical Services global support team."

Meanwhile, September saw Inmarsat launch its innovative new OneFi customer experience platform (CXP) for airlines. The first-of-its-kind solution will help monetize IFC by bringing a host of onboard services together within a single portal interface, which passengers can easily access using their own personal devices.

OneFi delivers an airline-branded digital platform to enhance the passenger experience onboard flights. It allows passengers to order food and beverages, purchase

seat upgrades, receive the latest flight and destination information, and sign-up to the airline's frequent flyer programmes, all in real-time from the comfort of their seat. In addition, passengers can browse the Internet, stream videos and audio, shop online and enjoy other ecommerce offerings, using high-speed inflight broadband that airlines could choose to offer free-of-charge, funded through OneFi's sponsorship and advertising features.

"For many years, Inmarsat has advocated the vast commercial opportunities of inflight connectivity. However, until now, airlines have struggled to realize the full potential of the business model. OneFi is a step change for those looking to monetize their Wi-Fi services and ensure they keep pace with evolving passenger needs. It will empower a digital transformation in the cabin, which is especially important at this critical time for the aviation industry," said Philip Balaam, President of Inmarsat Aviation. "OneFi allows airlines to improve their brand experience and secure passenger loyalty, with the flexibility to incorporate their own services and use existing and new partners, such as content providers, advertisers and retailers."

What sets OneFi apart is its industry grade targeting features, media inventory and calls-to-action that are made available to the airline and its partners. These ensure that content is contextual and relevant to the individual passenger. It also enables partners to engage in more meaningful ways with passengers and boost sales lead generation rates. The platform's intuitive, user-friendly interface will enable airlines to boost passenger take-up rates and create a frictionless funnel to purchase. In addition, OneFi is network agnostic and uses open architecture, meaning it can integrate with any technology infrastructure and Internet service providers (ISPs) used by airlines, ensuring a uniform experience across mixed aircraft fleets. The platform is also scalable, giving airline customers the flexibility to add new third-party services over time and helping to future proof their onboard offering.

DEFINING STANDARDS

Standardization has proven key to the ongoing development and fine-tuning of many aspects of the communications sector, from mobile generations 1G through to 5G, IoT and wireless connectivity options. However, until now they have never been applied to the IFC segment…

Back in February 2021, the Seamless Air Alliance brought about a new milestone for the IFC sector with the publication of the first-ever standard for IFC. Developed in collaboration with industry experts, Seamless Release 1.0 establishes the world's only Modular Platform Architecture for IFC.

By using a modular structure based on open interfaces, the system enables rapid adoption of new technologies without requiring customization or the complete replacement of equipment on the aircraft or fleet. The standard enables long-term technical flexibility for airlines, provides a secure and easy-to-access service for

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"Passenger demands for inflight connectivity are still ahead of the performance of systems putting increasing pressure on airlines to find a way to meet these expectations and gain passenger loyalty," said Jack Mandala, Seamless Air Alliance CEO. "Seamless Release 1.0 changes the game by enabling airlines to take advantage of new capacity and innovations faster and more cost-effectively than ever before."

Seamless Release 1.0 includes a comprehensive set of unique, testable, requirements for airlines to use when developing sourcing requests. In addition to saving the airline time and money to develop these requirements, standards eliminate the risk of trying to predict how future developments will impact their choice of systems. The publication of the standard enables airlines and mobile operators to easily deploy, integrate and operate on-board networks by having a choice of different suppliers and open interfaces from where they can source modular parts, subsystems and software. This design means multi-supplier IFC systems can be built quickly to support future technology upgrades that do not require customizations.

Later in November, the Seamless Air Alliance updated the standard with the completion of Seamless Release 3 (SR3), which provides another industry-first with a series of breakthrough discoveries for measuring and managing the IFC experience. SR3 defines an automatic control system that compares QoS, QoE, and user experience (UX) measures against an acceptable IFC product performance level. Any difference is used to adjust network resources to achieve the desired IFC experience, with minimum resources, in a closed-loop manner. In addition to development of a new closed-loop transfer function, the group defined 96 new IFC measures that advance the management and control of IFC.

SUNNIER DAYS AHEAD?

Experts predict that the worst is behind us as far as the IFC goes. With the advent of multiple COVID-19 vaccinations and accurate tests, commercial flights are once again taking to the skies en masse, carrying passengers with ever-increasing connectivity demands.

We can expect to see significant market consolidation over the next two years as the IFC segment re-settles itself in the wake of the pandemic, according to NSR. This consolidation will counteract the 'distressed' downstream players in survival mode, and the market shrinkage, which is expected to continue for another 1-2 years. This is very much a short-term situation, however.

Longer-term, IFC is expected to more than rebound from the pandemic, promising great reward for those who survive this extremely challenging time. Overall, the changing market will afford a stronger value chain, with weaknesses exposed by the pandemic overcome by those who survive.

With an eye on increased monetization and new standards, the future is bright indeed for IFC.

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