

# Plus ça change, plus c'est la même chose...

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2019

Four years ago...

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**The good, the bad and the ugly...**

A still from a Western movie showing a man (Tim Farrar) wearing a brown cowboy hat, a light blue shirt, and a tan vest. He is holding a cigarette in his right hand and looking off to the side with a serious expression. The background shows a rocky, hilly landscape under a clear sky.

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## Four years ago...

The good	The bad	The ugly
Deployment expanding rapidly outside North America	Ultimate market size is uncertain	Consolidation is “inevitable”
New models for monetization emerging	And expectations are excessively high	But there’s no-one to act as consolidator
But sources of revenue are limited		So for the time being airlines benefit from great deals
And is it best to maximize revenue or usage?		But when will the music stop?
Different approaches are required and cost of capacity becomes all important		

## And today...

The good	Today
Deployment expanding rapidly outside North America	Expected feature for new planes, while retrofits continue in Europe and Asia, especially in long haul
New models for monetization emerging	Sponsorship and low cost free solutions like messaging are driving (limited) incremental usage and revenues, but more engagement
But sources of revenue are limited	In 2015 we estimated airlines might be able to afford \$0.30-\$0.50 per boarded pax for free service vs \$0.80-\$1.00 in paid revenue
And is it best to maximize revenue or usage?	Airlines and service providers continue to believe onboard Wi-Fi will become a free service... EVENTUALLY
Different approaches are required and cost of capacity becomes all important	Cost of capacity and inability of most airlines to cover these costs is still a barrier to fully free service. Service providers who aren't satellite operators continue to struggle with low margins due to capacity costs

## And today...

The bad	Today
Ultimate market size is uncertain	Most airlines will install connectivity if they can afford it, but high costs and lack of clarity in the technology roadmap are delaying decisions
And expectations are excessively high	Projected ARPA of \$500K-\$800K per year been ditched, though current expectations of \$200K+ may still be optimistic

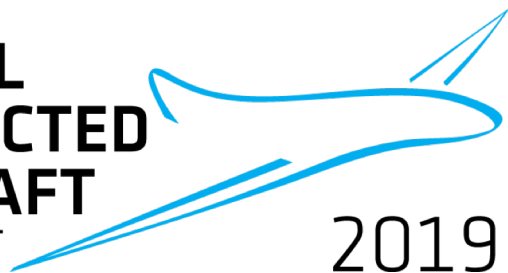
# And today...

The ugly	Today
Consolidation is “inevitable”	Predictions of consolidation continue, but not much has happened
But there’s no-one to act as consolidator	Mobile operators are not the answer and long term satellite capacity commitments are still an issue for any deals
So for the time being airlines benefit from great deals	Equipment subsidies drove many contracts in 2016-17 but also drove service providers to the verge of bankruptcy
But when will the music stop?	IT HAS!



## Then and now...

- “Ultimately, we believe that onboard Wi-Fi will become a free service, and a standard that customers will expect on a full service airline...But we face a slew of technical limitations – from speed and bandwidth availability and cost, to the supporting hardware and software” (Emirates, Nov 2014)
- “Customers are accustomed to having access to free Wi-Fi during nearly every other aspect of their journey, and Delta believes it should be free when flying, too...Testing will be key to getting this highly complex program right – this takes a lot more creativity, investment and planning to bring to life than a simple flip of a switch” (Delta, May 2019)



## Then and now...

- “How much blood do you have in your pockets? You’re bleeding out all this time. Everyone says, ‘Oh, it’s not a problem.’ But it is a problem. It is a real problem.” (David Bruner, Panasonic, 2015)
- “There are too many suppliers, not enough airlines” (Don Buchman, Viasat, 2015)
- “Over time we continue to believe that the IFC industry would benefit from consolidations and we'd like to play a role in that consolidation from a position of strength” (Oakleigh Thorne, Gogo, Mar 2019)





## So what's next?

- The role of satellite operators has become ever more critical
  - Viasat and Inmarsat have been the winners to date and both are continuing to invest in more capacity
  - But how much is really needed for IFC? 40Mbps x 25K planes is only 1Tbps!
- So how do SES, Intelsat, Telesat and Eutelsat respond?
  - Building more satellites? Ku or Ka? GEO or LEO?
  - Going direct to airlines? Or keep hoping that service providers will sell dollar bills for 50 cents for as long as possible, to realize their \$1B in backlog?

# What about the new constellations?

- OneWeb is now focusing on aero, maritime and government opportunities. But how will OneWeb sell these services? Will it go direct? Could it buy a service provider?
- SpaceX is racing to deploy its Starlink satellites without a business plan. Will build-it-and-they-will-come work any better this time around?
- What does Amazon want to do? Other than making SpaceX's life difficult, who knows? Will it acquire an existing LEO project?
- Telesat may have the best design (especially for mobility), but will it be too far behind, just like ICO vs Iridium and Globalstar in the 1990s?



# What about existing service providers?

- Existing satellite capacity contracts are a major burden, so can service providers reduce the cost per aircraft?
  - More aircraft equipped brings some economies of scale in provisioning
  - New modems and antennas deliver more bits per MHz
- But it's far less clear that the price of Ku GEO satellite capacity will come down, especially after the failure of IS-29e
  - And any shift to Ka or LEO capacity will be problematic for the current installed base of aircraft
  - No wonder many airlines are struggling to decide on their IFC strategy, especially when they need to pay the full cost of installing equipment



# What about existing service providers?

- Gross margins of 50%+ (similar to maritime VSAT) are needed if service providers are taking risk on capacity, but this may make any free IFC solution too expensive for airlines. HTS satellites also make capacity provisioning more difficult
  - So do we move to a resale model where service providers distribute a packaged solution and satellite operators bear more of the risks?
  - Or do airlines buy direct from satellite operators, leaving service providers to just deal with equipment and maintenance?



# Stability or disruption?

- Is consolidation amongst service providers really feasible? Or do satellite operators end up becoming service providers?
- Will new LEO constellations disrupt the market? Or will they end up repeating the failures of the late 1990s?
- Will there be a rapid shift to free-to-passenger IFC service? Or will the cost of capacity make airlines more cautious?
- Many are betting on disruption, but the last four years have taught us that any changes may be slower than most expect...



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