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At Variance

While noting some real progress in the digital space, Conor Mullan mulls the paradox that besets the development of digital tower technology

I know what you're thinking.

You're thinking 'I've read this article before. It might not have been this article but I've heard it before'.

You're thinking 'what can possibly be different in this article compared to the dozens of other remote tower articles in countless magazines over the past however many years?'.

You're thinking 'any minute now Punxsutawney Phil is going to pop his head above the ground and 'I Got You Babe' is going to come on the radio'.

Well, in fact, it's precisely *because* it's 2019; precisely where we are in this moment of remote tower history that makes 2019 unique.

I don't think this article could have been written in 2017 and I sincerely hope it won't be valid in 2020 either! The reason I think 2019 is unique in remote tower history is because we have arrived at what we might want to consider as the 'Remote Tower Paradox'.

A paradox is: a situation or statement that seems impossible or is difficult to understand because it contains two opposite facts or characteristics.

Yes. 2019 marks the moment in time when we have heard enough (too much?!) about remote or digital towers to understand their proposition, but have not yet experienced enough of it to believe it to be true! So, what do we think we know about remote

tower, and how true is it at this moment in time? Let's look at a few of the current contradictions, see if they are temporary paradoxes and what we can do about them.

Paradox 1: when disruption is conservative

Disruptive Technology. Game Changer. *'It sort of came from nowhere'*.

All of the above have been said about remote tower. The impression is that while some in the industry have been spending the last 20 years trying to figure out how to make 4D trajectories work (note, purely an example!), a few Swedes threw a few cameras at a few snowy airfields and that was that.

We aren't using an allegedly disruptive technology to….well…. disrupt! Here again, through market moves by ANSP and industry collaborators, by larger and more complex aerodromes such as Changi now seriously looking at remote or digital tower and research coming out of SESAR showing that multiple remote tower can work, I think and hope that 2019 will be the last year of the 'non-disruptive' remote tower.

Paradox 2: when first isn't first

It was Ayrton Senna who said, 'being second is to be the first of the ones who lose'. I have never known another market so completely committed to seeing a given project or installation claiming to be a first. In some cases, basic facts and principles of ATC have fallen by the wayside. Even in the UK, I've seen four different installations all claiming to be the UK's 'first'. You don't need to be a mathematical genius to know that at least three of those claims are wrong.

Again, I think this is a product of our times. The basic technology is mature enough for a reasonable number of aerodromes to decide that they should implement.

However, the actual rollout is still on a small enough scale for industry, ANSP and regulators to not yet be old hands at it. It is still taking time from decision to implementation because we don't yet have a broad enough range of experience in different environments to either allow us to estimate development time more accurately, or have a COTS-type product that can be rolled out in quick time. As a result, those who started first and could reasonably have expected to finish first are finding out that time is not a constant.

In fact, in the UK the actual first wasn't one that made any bold, advance claims at all. In December 2018, Cranfield Airport opened its digital air traffic control centre thereby taking the crown. Not wishing to admit defeat we still have Jersey Airport hoping to be first commercial UK airport and London City hoping to be first remote UK digital tower. No news yet on who will be the first to say they weren't the first.

And what's so important anyway? My first wish for 2019 is that we stop becoming obsessed with the race to be first. It doesn't matter and the titles will fall anyway. 2019 will see more firsts actually happen so that in 2020 and beyond, we will be in a much better place for the seconds, thirds, fourths and beyond. That's the uptake levels we need for a proper movement. If we are still in a place where everything is a first then we aren't far enough along. Meanwhile, if you're not convinced, ask Google, Apple or ▶

Björn's your uncle as they might not say in Stockholm.

The problem with this perception is two-fold and I think 2019 will see both put to rest. For a start, we are moving beyond the belief that it came from nowhere, not least because we've been saying the same thing for over five years. While we are waiting for something to actually happen, we are experiencing for ourselves the origins of the concept and that's helping us become more understanding as to why we aren't moving at the speed of light. We're becoming more aware of the years the concept spent in R&D not just in Sweden, but in Germany, the United Kingdom, The Netherlands and Canada. Those are the hard slog years.

The years, the effort and the investment that happens out of the spotlight. Can something that spent 10 years in R&D really be considered disruptive?

Secondly, being disruptive isn't just about how quickly something becomes real. It's also about what it does to the traditional methods or markets and this is another wrong I hope 2019 puts right. I think remote tower is a disruptive technology or rather, it has the potential to be disruptive. The problem now is that we are using it to do exactly what we used to do with traditional towers. All it currently does is allow the same people to provide the same service with every attempt taken to minimise the differences.

Facebook about the benefits of being a fast follower, rather than just first.

Paradox 3: when it costs a fortune to achieve cost effectiveness

The next paradox of life in Remote Tower 2019 concerns its very raison d'être. The most widely held view of remote tower is that it is a solution which small to medium aerodromes can use to lower their costs. The main driver behind remote tower has long been considered as one of cost effectiveness. The equation is simple: get remote tower, get cheaper ATS.

Well, if it was that simple, we'd be well beyond firsts. If it was that simple:

• feasibility studies wouldn't conclude that a return on investment on today's prices for some aerodromes might take 20 years;
• vendors wouldn't whisper about their rivals having to 'buy' a contract;
• the (publicly available) accounts for remote tower providers wouldn't show a need for huge upfront investment, venture capitalist backing or large Year 1 losses.

To paraphrase Dolly Parton, it's costing a lot of money to be this cheap. Whether you're an ANSP, an industry provider or an aerodrome, it's hard to make money from remote towers in 2019. The cost of entry is still high for the very small airports. The cost of development is still a risk for vendors trying to sell into large and complex airports.

The economies of scale are not yet in the market to make it truly accessible while still making it financially viable for the vendors.

What will change in 2020 and beyond? Aside from better economies of scale and better ability to judge final costs through wider rollout, we will see business models change. For example, the idea that equipment can be rented rather than bought will immediately alleviate the biggest cost of remote tower entry – the airport CapEx. For me it's the business models that will be the biggest short-term advance in remote or digital towers and something which will truly – *finally* – disrupt and accelerate the market.

A final thought

As I conclude, I hope that this time next year we will be able to note some real progress in the digital tower space and exit the remote tower Twilight Zone. In particular, I want to raise the challenge of a final paradox and one about which I am aware is possibly the most contentious. This is the paradox that a concept designed in part to reduce staffing levels will lead to more jobs.

I am well aware of the technical hurdles that must be overcome and the safety concerns that must be addressed before multiple (simultaneous) remote tower can be considered mature but that's a problem the equipment suppliers are only too keen to address. For our part, I think we need to spend the next year reconsidering

the human arguments surrounding this variant. The established view - or perhaps the view of the establishment - is that multiple remote tower will lead to our favourite euphemism: more efficient use of resources (read: job losses). People are understandably scared of this. Those who stand to gain from technological advancement (ANSP and industry partners) are always going to be more positive than those who stand to lose (local airport controllers, AFISO and engineers).

As the idiom goes: 'twas ever thus. As far back as the industrial revolution we have raged against the machine when our livelihoods were under threat. But history and economics proves over and over again that while technological improvements do at first lead to pain and some displacement of workers, inevitably in the longer term we end up taking advantage of the new information, cost savings and productivity to find new things to do. New highly skilled jobs will be created at airports and within ANSPs purely *because* we have digitised our aerodrome control. Wouldn't it make for a better discussion in 2019 if we faced down the final paradox and our focus was on what new jobs a fully digital aerodrome control service would create, rather than on those it would remove?

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