

A New Normal for Air Navigation Services

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Introduction

The COVID-19 crisis is making all industries and business go through unprecedented times, with the aviation industry being one of the worst affected. This crisis is redefining the way we think about aviation and, at the same time, is highlighting how vulnerable the current air navigation system is to fluctuations in demand. During times like this, we are reminded of the importance of a well-functioning air navigation system as a critical part of the national readiness and the backbone of national and global infrastructure. This paper focuses on the future financing of Air Navigation Services (ANS) and on what kind of ANS model we want, using Europe as an example. The suggestions and arguments presented here would need to be considered and evaluated also in a wider worldwide context.

It is with concern that the Guild of Air Traffic Control Officers (GATCO) in the UK and the Danish Air Traffic Controllers' Association (DATCA) have observed that the focus of most of the discussions around COVID-19 and aviation has been on returning to the comfort of the normal we once knew as quickly as possible. When is traffic going to go back to pre-COVID-19 levels? How much financial aid are the States going to provide to aviation stakeholders? Those have been the most common questions being asked recently. GATCO and DATCA suggest that we use this crisis to ask different questions, the difficult ones; the ones about the limitations of the current regulatory, financial and business framework for Air Navigation Service Providers (ANSPs). In particular:

- How do we finance ANSPs in the long-term in a sustainable way?
- What kind of ANSPs do we want in the future?

If we do not start discussing and answering these questions now, the consequences will be very familiar to anyone in the European Air Traffic Management (ATM) industry: a system whose inefficiencies perpetuate from one crisis to the next. As it is commonly said, we should not waste a good crisis to reinvent an industry. If the industry as a whole is going to embrace the opportunity to rock its own foundations, it might be useful to remind ourselves of and apply the concepts expressed by the American theologian Reinhold Niebuhr: let's have the serenity to accept the things we cannot change, the courage to change the things we can and the wisdom to know the difference.

What the crisis has taught us so far

First of all, ANSPs form an integral part of the aviation infrastructure, carrying out a State function, stemming from the Chicago Convention, on behalf of the States. Due to this mandate, ANSPs cannot stop providing services when traffic demand is reduced – the skies need to remain “open” to maintain the infrastructure necessary for the functioning of the entire aviation system. This crisis has confirmed just that: ANS is part of a State's critical infrastructure.

It has become clear that the core business of ANSPs is making sure they provide capacity and safety for the users of the airspace, but the users of the airspace are many more than the airlines serving the flying public. In these unprecedented times, we have seen many smaller airports being busier than ever before, an increased number of cargo flights, medical flights and the military making more use of the airspace

available. This has highlighted what we have known for a long time, that the airspace is not only used by the airlines but a whole range of airspace users.

The crisis has also taught us that treating essential services (like healthcare and air navigation) as enterprises that need to follow pure financial rules, i.e. making profit, showing growth and competing with one another in the open market to survive does have its limitations. In order to be able to provide this essential service, ANSPs need to have the financial resources to do so also in times of no revenue (in Europe, ANSPs are financed according to the performance and charging scheme regulation).

ANSPs need to be resilient to deal with normal ups and downs in traffic numbers. This has not been handled well in the past and has been highlighted in the last 30 years over and over again (Gulf War 1 1991, 9/11 2001, SARS 2002, Gulf War 2 2003, economic crisis 2008, Iceland's volcanic eruption 2010, Ukraine 2014) and today. The result has been many ups and downs in capacity and a constant dissatisfaction by the airlines with the quality or cost of the service provided. Any resilience plan by ANSPs includes the implementation of buffers in operational staffing, for sudden increases in traffic, for training or for projects that require operational staff input. But that resilience plan must also include buffers in finances, not just for investments but for unexpected traffic declines, something which has been missing.

How are ANSPs financed?

Today, ANSPs in Europe are financed mainly through a charging system, in line with International Civil Aviation Organization (ICAO)'s charging policies and the Single European Sky (SES) regulations. Simplifying, airspace users are billed on a monthly basis (i.e. route charges) and that revenue is used to cover the predefined cost of the provision of ANS. A mechanism for regulating the cost is in place, which basically means that ANSPs can either raise or reduce their route charges in the following years.

In fact, when the current charging scheme in Europe was devised, it was decided to implement a traffic risk-sharing system. The system establishes traffic level bands around the forecasted traffic. Without going into too much detail, there is a band where ANSPs can keep the additional revenue or must borne the loss in revenue. There is another band where airlines and ANSPs share either the additional revenue or the loss in revenue (not an even split). Finally, if the actual traffic level differs from the forecasted level by more than 10%, we simply go back to the old system of full cost recovery. The justification for not looking beyond a 10% at the time was that such unexpected traffic situation had never been attained. And guess what? We are precisely in that situation which had never been attained. Since that was not even considered when the system was devised, it should come as no surprise that the charging scheme is not fit for purpose just at a time where we need it the most, amidst an aviation crisis never seen before.

This system also leads to several bizarre situations. First of all, despite attempts to make ANSPs run as for-profit organisations, the fact that they can only keep a small percentage of their profits and that regulation is required to establish how profit is divided means they are not for-profit organisations in the traditional sense. Furthermore, because ANSPs are allowed to recover their lost revenue in situations where there is less traffic than predicted in the years following a crisis, the users of the airspace have to pay most when they have less financial resources. In our view, this system is unfair to both airlines and ANSPs.

The system has also created a difficult political environment with huge conflicts of interest. On one side, airlines need to fight to stay in business when there is no revenue, while at the same time they need to pay higher route charges. On the other side, ANSPs have to continue to deliver a service to other airspace users in times of crisis without being able to reduce their fixed costs. How do we get out of this catch 22 situation? We cannot think of better opportunity than this crisis to look precisely at that.

Do not waste a good crisis to reinvent an industry

This crisis presents us with a great opportunity to reinvent our industry and the structure and role of ANSPs. What kind of future do we want for ANSPs? We, on behalf of our organisations, would like a future where we do not go from crisis to crisis and from restructuring attempt to restructuring attempt like in the past three decades. We would like a future where we do not take short-term decisions that lead to long-term problems for the airspace users. A future where ANSPs focus on providing capacity and safety for all airspace users. All that could be summarised by the following:

- ANSPs must be financially equipped to handle downturns in traffic
- ANSPs must focus on service provision

A crisis is an opportunity to make changes. It is widely accepted that a crisis is where industry leaders show their leadership, their decision-making and their management skills in a very challenging environment. It is a time when difficult decisions need to be made; concentrate on what can be done better and let go off business, financial and organisational concepts which have been proven wrong by the crisis. If we were given the opportunity to discuss the current situation with the aforementioned industry leaders, we would like to stress the need for fundamental changes in ANS. A new system needs to be devised but, how can we assess its suitability? We would like any proposal for ANS to be evaluated against the following:

- Is the system resilient and flexible enough to react to upturns and downturns in traffic?
- Are all stakeholders likely to cooperate in all circumstances?
- Is the system achievable at the European network level?

Let us have a look at two scenarios chosen by GATCO and DATCA and see how they would fare in the above assessment. These examples are by no means the only options, but have been chosen to spark a much-needed debate about the current system.

The 100% State-financed ANS system

One possibility, familiar to all of us, could be to finance ANS via public taxes or make ANS part of the governmental budgets. The most famous example of this type of arrangement is the Federal Aviation Administration in the United States of America. Going back to a State-financed system from the current one is not an easy exercise but it would remove some of the problems highlighted in the current and previous crises. In this case, ANS would become a not-for-profit business and States would need to raise taxes in other areas of the aviation industry to cover the cost of ANS.

Such system should, in principle, be able to react positively to a crisis either in the wider economy or in the aviation industry itself. ANSPs would remain State-owned, which would safeguard ANS as a national infrastructure and protect it from the devastating effect this crisis is going to have on the current ANS system. At the same time, such system could be flexible, scaling up to cope with an upturn in traffic would be relatively easy. Scaling down would be more complex but it could be carried out in a more organised fashion than what we are likely to witness in the near future.

Discussions about the level of funding would take place fundamentally between the State and the ANSP. It should be straightforward for all aviation stakeholders to cooperate and pull in the same direction.

Is the system realistic? First of all, it would be fairly complex to implement such system throughout Europe at this point in time and it could certainly affect the network-centred approach we have moved towards in

the last two decades. However, if we removed the financial and route charges aspect from any network discussions, we could find ourselves in an environment where a joined-up approach to operations is more easily achievable. We could even make steps towards tackling the biggest problem of the network: its unpredictability (we shall leave that lengthy topic for a future paper).

A State and airspace user financed hybrid ANS system

Another possibility would be to finance ANS via taxes and airspace users' fees. For argument's sake, let us assume a 50/50 split in funding. The current crisis has shown us that even with a very limited number of airlines using the airspace, we still need around 60% of the staff to maintain the required level of ANS. We could claim that a 50/50 split in funding would be fair on all stakeholders and increase the chances of them cooperating in all circumstances.

This hybrid system has the potential to be resilient and flexible enough to navigate its way through upturns and downturns in traffic. It would definitely require some kind of reserve funds to deal with a significant crisis, something insurance companies and travel agencies have experience with. At the same time, those reserve funds together with State funds would allow the ANS system to scale up and down to offer the required capacity when necessary. Technological and operational improvements would also need to be considered and could be addressed with those reserve funds.

Stakeholders would have some kind of incentive to pull in the same direction. The topic of airline fees would still be part of the discussions, though. The different business models of ANSPs and airlines would still create some tension and perpetuate the call for cost cutting at times when investments might be more necessary for the sustainability of the industry in the long-term. In any case, we believe the situation would improve compared to the current one.

The effects on the network would be positive compared to today's system. User fees would play a smaller part on the overall bill for airlines so discussions could move towards optimising the network as a whole and making the required trade-offs, instead of revolving almost exclusively around cost.

What happened to the free market?

We said we were only going to look at two cases so what happened to the current system and the focus on creating competition and applying market mechanisms? Shall we forget about the market? Well, yes and no or, like they say in Germany, jein. Remember, in the introduction, when we said "having the serenity to accept the things we cannot change"? This is now.

The international ATM industry is structured as a series of national monopoly providers (let us leave aside airport and terminal navigation services in some cases). Economic regulation has been brought in, as in many other industries, because we are in an infrastructure industry with inherent monopolistic features. There are no market signals and economic regulation and the performance scheme are trying to create artificial market signals to emulate a competitive environment. Except for airport and terminal navigation services in some countries, ANSPs cannot or do not go out and compete for the provision of ANS in other States.

One of the arguments towards a more commercialised approach to funding ANSPs, exclusively through route charges, was that it was not fair on all taxpayers to fund a service for the benefit of only people and goods using air traffic. However, this crisis has reminded all of us of the critical infrastructure nature of ANS. Medical flights, essential cargo flights and repatriation flights have continued to receive ANS throughout the crisis, providing an essential service for the entire society. In the same way the taxpayers in

some countries fund their national healthcare system but not all of them use it to the same extent. ANS is much closer to being an essential State service than some in the industry would care to admit.

One thing the current system has shown in recent weeks is that when “the going gets tough”, stakeholders tend to protect their territory, pull in different directions and not necessarily work as cooperatively as they claim when things are running smoothly.

However, we did say that we do not have to forget about competition completely. We have talked about a hybrid system where airspace users’ fees help fund ANS, but are there any other steps we can take towards adopting market mechanisms and competition for the benefit of our industry?

The clue is in the name

ANSPs are organisations which provide ANS. The business focus should be the provision of those services to all airspace users. As such, ANSPs could potentially be very lean organisations where operational staff represent the majority of the employees (the example of ACR in Sweden comes to mind), which are more flexible and more resilient in the face of traffic and financial downturns. Granted, there are ancillary tasks within those organisations which require a support structure and additional staff but with those come also wider and deeper management structures and business enterprises which are not directly connected to the provision of ANS. We have observed how privately owned ANSPs have gone to great lengths to become also ATM development companies and increase their non-regulated revenue to the benefit of the shareholders.

The first SES legislative package in 2004 required National Aviation Authorities (NAAs) and ANSPs to be independent, separating the regulatory oversight and the service provision. NAAs would exercise their powers impartially and transparently and ANSPs could concentrate on service provision. We could see that as one initial step towards leaner organisations. At the same time, the SES ATM Research (SESAR) project was set up as the technological pillar of the SES initiative. Anything to do with the modernisation of the European ATM system via technical and operational solutions goes through SESAR.

SESAR, despite its multiple benefits, has brought about behaviours within our industry which have compromised the ability of ANSPs to become leaner, more flexible and more resilient organisations. The lack of standards has meant that SESAR funds have been used to improve and develop isolated national systems, some of them legacy, to create proprietary solutions and to foster technological development in silos. In the same way that ANSPs and NAAs had to separate in the past, we should consider whether separating ANSPs and their ATM development activities could enable the development of standards to the benefit of our industry. By separating the service provision from the equipment and technology supply, we could prevent the conflict of interests within SESAR and the use of public funds for proprietary solutions which do not help achieve the defragmentation of the European ATM system. And it might be that the only way to achieve that is through regulation to that effect, as it has happened in other industries, so that large ANSPs stop having a strong ATM development arm and go back to becoming leaner service providers.

Such bold move could, in turn, create a market for technology providers, once the required standards are in place. The implementation of a digital infrastructure to support communication, navigation and surveillance as well as flight data services through market mechanisms is possible but it would require the separation of technology and service provision. Effectively, that is just one step beyond the unbundling of vertically integrated ANSPs and the ATM data service provision model proposed by SESAR in its Airspace Architecture Study. Furthermore, the collection, transfer, analysis and storage of data are not fundamental activities in terms of service provision so a decoupling there is certainly possible, becoming more market-based activities.

Conclusion

As it is often the case with this type of papers, they present more questions than answers but that was precisely the aim. We do not claim to have all the answers but we certainly have a strong idea about the questions that need to be asked and discussed to solve the aviation and ANS issues highlighted by the current crisis. Admitting one has a problem is the first step towards fixing it. We now have to follow that through, seat all the stakeholders at the table and have those difficult conversations. If we only concentrate on getting aviation restarted as quickly as possible in the same way as it was before, we will not be helping ourselves in the long run. We owe it to ourselves to create ANS which are able to function long-term, are resilient, are fair to all stakeholders and are financed to cope both with upturns and downturns in the aviation industry.

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