



CANSO Director General Remarks at SITA Europe ICT Forum, Vienna, 17 October 2013

Good afternoon.

The air traffic management industry will undergo major changes in the coming years. One of the key innovation drivers of ATM modernisation programmes, like SESAR here in Europe and NextGen in the US, is the shift from a structured route network to a trajectory-based network. In such a network, aircraft operators will be able to fly their selected trajectory instead of following a predetermined route structure made of airways and way points. This trajectory-based concept of operations should enable planes to fly more efficiently, safely and cost-effectively.

Air traffic flow management (ATFM) and Collaborative Decision Making (CDM) are areas which are already revolutionising ATM. ATFM is the science of improving aviation operations by using up-to-date flight information to anticipate future traffic demand; and controlling flows of flights to keep demand within safe and manageable bounds. CDM demonstrates the value of information exchange and collaborative planning.

Together, they will result in reduced airborne holding, fuel saving, reduced emissions, increased predictability, and flexibility for aircraft operators, ANSPs, ground handlers and airport operators.

There is a vast amount of data available, like radar data, flight data processing (FDP) system data, controller input, and system logs. That makes it possible to do things that just few years ago could not be done: spotting trends and patterns; preventing problems from worsening; and monitoring the performance of ATM systems.

Managed well, these data can unlock new opportunities and provide fresh insights into complex dynamic problems. Additionally, they give us unprecedented possibilities to understand and manage the system.

Today's ATM system comprises a wide variety of applications developed for specific purposes. With many custom-designed communication and information systems, the management of increased demand, economic pressures and attention to environmental impacts will rely on accurate and timely information.

This information must be organised and provided through more flexible means that support system-wide interoperability and secure seamless information access and exchange. Such a system will result in a more cost and time efficient exchange of information between providers and users.

The concept of SWIM – System Wide Information Management – covers a complete change in how information is managed along its full lifecycle and across the whole ATM system. SWIM will be able to provide the right information, at the right time, delivered to the right place, thus enabling the concept of net-centric ATM operations.

In the future, this will result in huge amounts of data that needs to be transferred and processed in real time for operational reasons; subsequently processed for performance and benchmarking analyses; and stored permanently as historical records.

This 'big data' issue represents a big opportunity that the ATM industry has hardly begun to realise. But, before looking at the strategic future for data management in ATM, I would like to look at one particular example and how it could revolutionise our industry.

There is one area where we are still in the dark ages, which costs ANSPs over six percent of their revenues. It is how ANSPs manage data to bill customers. This inefficient management of data is costing the industry money and is taking up too much valuable time that could be better spent on other matters. This is clearly unacceptable in an industry that is financially fragile.

Inefficient use of data - the revenue challenge

For ANSPs the management of their revenues is a growing and increasingly complex challenge. But the pricing mechanisms and systems used to provide revenue for ANSPs has not kept pace with the advances in technology that are transforming ATM performance globally.

Many ANSPs are simply not equipped to manage their existing revenue effectively, let alone cater for future demands. Today most revenues are collected through simple billing services which are still handled by the old back-office structures of the past. They are slow and ignore the hidden internal costs of inaccurate and incomplete data, invoicing delays, payment delays and other issues that plague today's customers.

Systems are often based on spreadsheets, using static flight plan and schedule data, and involve significant manual data entry and processing. These inefficiencies represent at least six percent of total revenue, and in some cases, significantly more.

A new approach to revenue management for ANSPs and airlines

We therefore need fresh thinking and a new approach to revenue management. Just as airlines and telecommunication providers have developed sophisticated yield management systems to provide user choice and optimise return on investments, ANSPs need a modern, sophisticated, and purpose-built solution to optimise yields on ATC investments and on the airspace assets being managed by them. Addressing the inefficiencies by implementing an effective revenue management system can deliver significant operational and financial benefits to ANSPs and their customers.

Flightyld: making efficient revenue management a reality

Flightyld is a new quality service from CANSO; a next generation aeronautical billing service for air navigation service providers (ANSPs), powered by SITA's ATI Cloud infrastructure.

CANSO has partnered with SITA (SBS), and Airways, the air navigation service provider of New Zealand, to develop Flightyld and bring it to market. It has the capability to transform aviation revenue management and will lead to reduced costs and increased efficiency. Instead of ANSPs manually collecting overflight fees from each airline separately, Flightyld will provide a single point of contact to automatically capture, calculate, rate, invoice and collect overflight fees from all airlines.

The good news is that Flightyld is producing results for the ANSPs that are using it. These ANSPs are reporting higher returns and lower costs.

However, the most important benefit and key value propositions of the Flightyld service is its ability to support the introduction of sophisticated charging regimes, without a resulting increase in cost and

complexity. With Flightyield, ANSPs can offer premium and performance-based services and increasingly granular 'user-pays' pricing. That's a significant financial and operational benefit to ANSPs whose existing systems don't allow for differential charging based on individual flight profiles.

Big data in ATM

Flightyield is just one example of how the industry is improving its data management, but we can leverage this data even more. We collect flight data for billing purposes for Flightyield, but we can use this same data for other purposes, for example, operational analyses and improvements.

There are huge opportunities for utilising data effectively across our industry. Effective data management can transform ATM in two important areas: first, in how data can contribute to the business model of individual ANSPs; and second, how data can contribute to our vision of seamless airspace globally.

Looking at ANSPs' business models, we have already seen how Flightyield will improve performance and increase revenues. If harnessed properly, data can tell ANSPs how they are performing as a business and help make better decisions. The problem we need to overcome is that data tends to be embedded within applications, making it difficult to pull out. It ends up in silos based on functions, making it difficult to access and share.

The key is to be able to capture and manage the various sources of data across different functions and turn them into useful information.

The second area is how data can help the ATM industry as a whole. CANSO's objective is to transform global ATM performance, and to enable airlines to fly in seamless airspace globally across 'invisible' borders. Our vision is of a globally harmonised and interoperable air navigation system, capable of delivering a safe, efficient and seamless service.

The development and management of safe, harmonised airspace globally, brings with it a huge requirement for information transfer and data management. We therefore need a global airspace information system that covers: safety data and management; business data and management, (including charges and revenue management achieved through Flightyield); and performance and benchmarking data and management.

This also ties in with the requirements of ICAO's recently approved Global Aviation Safety Plan and Global Air Navigation Plan, which includes ICAO's Aviation System Block Upgrades or ASBUs. Datalink features prominently in the ASBU modules.

Data Communications have revolutionised the way we manage airspace. They enable air traffic control to issue complex clearances to a pilot and the aircraft's flight management system via instantaneous electronic data transfer instead of time consuming voice transmission.

Data Communications enables more efficient ATM operations, safely increasing airspace capacity and reducing separations, and reducing voice congestion by transferring voice communications to data. However, with the greater reliance on the use of data communications, we must ensure acceptable levels of safety continue to be met. This is where CANSO has a role to play, and we are working on recommendations for a global system to monitor global performance of data communications.

Global approach for ATM data management

We have a global vision – to transform global ATM performance. We also need a long term approach for ATM data management to help achieve that.

We believe that a global airspace information system should be integrated and holistic, interactive, and able to be handled and used consistently to manage and transform the ATM business. The great enabler that will make this happen is cloud technology. Different systems can be 'plugged in' and utilise common interface specifications.

But we also need to consider a global governance mechanism to ensure we create a globally interoperable environment. A global governance framework will ensure that future information services for the ATM industry are in accordance with a set of 'global business rules', and so ensure and facilitate interoperability within the ATM industry, and other industry sectors including airlines and airports.

But it is important to do this now since it will be impossible to apply and control such a global governance framework retrospectively.

Conclusion

The ATM industry must seize the opportunities offered by Big Data. It holds significant promise for the aviation industry, and poses both opportunities and challenges. It can provide useful insights into the ATM system that would otherwise be impossible to attain.

At the same time, it requires proper systems and processes. ATM is still exploring the methods and tools for the best exploitation of large data sets. This involves applying the latest information technologies and new decision support tools and integrating them with legacy ATM systems.

In the area of revenue management, we are already putting it to work effectively with solutions like Flightyield. The widespread establishment of digital communication infrastructure can make possible increased use of current trends in ATM such as remote tower operation.

But this is just the start, and we need to spell out a big, long term approach for ATM and aviation industry data management. We cannot do it alone and this is where industry partners, such as SITA, which has valuable expertise in both data management and the cloud, and understands our industry, is so vital.

We look forward to working with partners across the aviation industry, within an appropriate global governance mechanism, to make the opportunities for ATM data management a reality.

Thank you.