Shifting ATM - Key messages

Total ATM is a performance management framework which can fundamentally improve the service provision performance of any air traffic organisation, by modernising the processes represented within the 8 Core Service Areas (CSAs). Although four of these CSAs are synonymous with the traditional EU Performance Scheme performance areas (Cost, Safety, Capacity and Environment), the Total ATM performance management approach has four additional CSAs: Customer Orientation; Culture and Communication; Staff Resourcing; and Resilience. Total ATM focuses first on delivering the necessary business process changes across these 8 CSAs, to meet the airline customers' requirements, and only then advocates the application of tools and systems to support the new processes - not the reverse!

The four additional CSAs specifically address the legacy issues inherent in quasi-governmental air traffic management organisations. For example, in a monopoly, where is the incentive to adapt the business model to meet new and fast-changing customer (airline) requirements? Today an airline that wishes to satisfy its customer base by flying to a specific airport is often held hostage by the monopoly provider. Whereas dissatisfied passengers can choose another carrier, the airline is forced to accept the monopoly provider's costs and services, regardless. Most legacy ATM organisations recognise their position of strength, and thus tend not to focus on changing their services to meet the adapted requirements of diverse customers..

Within the Total ATM Framework, Customer Orientation is the platform for all other CSAs, and is realised through a change in an ATM organisation's strategic business plan to reflect the importance of the customer's stake, whilst at the same time addressing the cultural legacy of customer apathy within ATM management structures.

Interdependencies are recognised within the Total ATM framework via two components. First, the additional core service areas provide for greater visibility of interdependencies and better understanding of their impact. For example, the Cost CSA and the Capacity CSA have a strong relationship (interdependency): increasing investment in infrastructure may positively address the capacity issues, whilst at the same time negatively influencing the cost implications. However, resolving staff management issues (e.g. rostering) within the Staff Resourcing CSA can mitigate for that particular interdependency. Investment in improved staff efficiency (staff costs being the most expensive element of any ATM system), rather than technological capacity enablers, can deliver capacity gains through higher productivity whilst simultaneously saving overall costs!

Second, the Total ATM framework maps interdependencies; it is assumed that any change in one performance CSA *will always* impact the other areas, and for every implementation affecting one CSA, the associated change management plan will be required to monitor and mitigate for the impact upon the other CSAs. In this way, the 8 Total ATM framework CSAs are considered as loci on an infinite loop. A very good example of this relates to the Safety CSA: as explained earlier, the prima facie objective of the first civil air traffic organisations was ensuring that any air traffic system is absolutely safe. But of course this objective is dishonest - it is perhaps surprising within a business whose daily ATC actions focus on balancing risks to ensure the 'safe and expeditious flow of air traffic', that too often the ATM business is unable

to apply a similar logic to risk management as an organisation. It is not the objective of an air traffic management unit to ensure absolute safety at all cost. If it were so, the most applicable implementation would be to forbid aircraft to fly at all! Instead, the objective remains to protect human life whilst ensuring that the international business of aviation can prosper. When things fail, as they inevitably will, they must fail in a progressive, predictable and controlled manner.

The Safety CSA in the Total ATM framework is based upon the dogma of 'Service First, Safety Always'. In practical terms, this means that proper consideration of the risks associated with a change in one CSA is necessary only, and not less than, to ensure that the safety performance remains within the target range (usually that target being zero accidents/fatalities). Increasing the safety margin in excess of the standard required to ensure the attainment of this target is redundant, and moreover is potentially an economic threat to the aviation industry and an impediment to the development of a 'just culture' of collective, open and honest safety accountability.

Although the technological development in the ATM industry seems never-ending, the shift rosters for operational staff have not developed significantly in decades. While the technical platforms and ATM system in general gets more and more efficient, the shift rosters applied are in many places still the inefficient legacy rosters dating as far back as the 1960's. Research on best practices in shift work, circadian rhythm, length of shifts, length of breaks, power-napping etc. continues to deliver new and important information, yet the ATM world seems hesitant to introduce real changes to the outdated shift rosters still in operation around the globe.

Changing shift rosters is a delicate process as it changes the professional and social life of the people involved. Total ATM focuses on creating and implementing efficient demand-based processes and procedures through the establishment of post-operational collection of data. This 'backcast' enables the creation of accurate forecasts supporting a performance based roster framework where the demand defines the required staffing level - not the other way around! The foundation when creating updated processes and in particular changes to shift rosters is the recommendations and best practices in the area of safety and health of shift worker staff - we are all human after all.