

An overview of the regional economic  
performance and challenges -  
**Economic challenges faced by ANSPs**

---

Joint Regional Aviation User Charges Workshop,  
29-30 October 2024

# 1. Introduction

---

Air Navigation Service Providers (ANSPs) manage the safe and efficient movement of air traffic within their assigned airspace. Their core responsibilities include air traffic control, communication, navigation, and surveillance support, aeronautical information management, and safety and compliance, all of which are critical for coordinating air travel from departure to landing.

ANSPs must keep pace with traffic growth by investing in infrastructure, advanced technology, and skilled personnel. However, they are challenged by rising operational costs, complex compliance demands, outdated technology, airspace fragmentation, restricted funds for system upgrades and training, and the need to support sustainability goals in a resource-limited environment.



# Economic challenges faced by ANSPs

---

## 2.1 Revenue volatility:

Strong regional economic performance correlates with increased travel demand, generating higher revenues for ANSPs through air traffic fees. However, during economic downturns, like those seen in the wake of the COVID-19 pandemic, decreased travel demand can sharply reduce ANSP revenue. This is especially challenging for ANSPs whose budgets rely directly on traffic volumes, limiting resources for operations, maintenance, and modernization when revenues drop.

# Economic challenges faced by ANSPs

---

## 2.2 Funding and Infrastructure Investment Constraints

ANSPs often rely on user fees as their primary revenue source, with limited external funding. This reliance on traffic volume-based income makes long-term investment planning challenging. ANSPs may struggle to secure the funding needed for upgrading aging infrastructure, investing in new technologies, and training personnel.

# Economic challenges faced by ANSPs

---

## 2.3 Impact of fuel price volatility on ANSP efficiency demands:

The need to save on fuel costs increases demand from airlines for optimized routing and fuel-saving operations. ANSPs must enhance operational efficiency through real-time data, advanced air traffic management systems, and coordinated flow control—often with limited financial and technological resources.



## 2. Economic challenges faced by ANSPs..

---

### 2.4 Inefficient Flight Routing in fragmented airspaces:

In fragmented airspace, aircraft may need to follow less direct flight paths to navigate between national airspaces or avoid restricted zones, increasing the total distance traveled. This means more fuel consumption, increased flight times, and higher operational costs for airlines. And for the ANSP, communication and coordination costs.

# Economic challenges faced by ANSPs

---

## 2.5 Regulatory Compliance

To align with international safety and efficiency standards, ANSPs must comply with regulations set by the States. This compliance requires ongoing investments in technology, training, and cybersecurity, which can be a heavy financial burden.

# Economic challenges faced by ANSPs

---

## 2.6 Exchange Rate Volatility:

ANSPs often face increased costs for imported equipment, technology, and training, which are typically purchased in foreign currencies. Exchange rate volatility can disrupt budgets, impacting ANSPs' ability to afford critical upgrades.



# Economic challenges faced by ANSPs

---

## 2.7 Dependency on Imported Technology:

ANSPs often rely on imported equipment and software for navigation, communication, and surveillance. High import costs due to weak local currency or import taxes create financial strain, limiting their ability to maintain or replace aging systems.

# Economic challenges faced by ANSPs

---

**2.8 Increasing Training Costs:** Modernizing air traffic management requires ongoing training for controllers and technical personnel, often using simulators and advanced technology. Covering these training expenses can be challenging.

**2.9 Staff Shortages in Emerging Markets:** In some regions, the demand for qualified air traffic controllers outpaces supply, driving up salaries and recruitment costs. For economically weaker ANSPs, this leads to workforce shortages and may reduce operational capacity and safety.



# Economic challenges faced by ANSPs

---

## 2.10 Increased focus on cyber security:

Evolving safety, environmental, and cybersecurity regulations require ANSPs to continually update systems and protocols. These requirements impose ongoing costs and resource demands

As digitalization expands, cybersecurity threats increase. ANSPs face unique risks, necessitating substantial investment in cybersecurity technology and expertise to maintain operational security and compliance.

# Economic challenges faced by ANSPs

---

## 2.11 Environmental compliance:

ANSPs play a critical role in reducing aviation emissions by implementing efficient routing, continuous descent operations, and other measures that limit fuel burn and emissions. This responsibility requires technological upgrades and staff training to enable eco-friendly operations across all flight stages.

Airlines' need to lower emissions brings additional demands on ANSPs, who need to adopt practices that support these sustainable initiatives, such as optimized route planning.

Meeting environmental targets involves modernization initiatives, like adopting satellite-based navigation and surveillance systems. While these systems enhance airspace efficiency and reduce environmental impact, their implementation is costly and often constrained by limited budgets and lengthy regulatory approval processes.



### 3. Summary of the challenges

---

1. Limited financial resources
2. High operating costs (staffing, infrastructure, energy)
3. Revenue volatility (air traffic fluctuations)
4. Inadequate investment in infrastructure and technology
5. Security concerns (cyber threats)
6. Environmental concerns (noise, emissions, optimal routes)
7. Workforce development and retention

## 3.1 Challenges specific to Indian ocean

---

1. Vulnerability to natural disasters (cyclones, tsunamis)
2. Remote and dispersed island states
3. Limited connectivity and infrastructure
4. High operating costs due to geographical challenges
5. Dependence on tourism and fragile economies



## 4. Strategies to address challenges

---

1. Investment in infrastructure and technology
2. Investment in workforce development (Capacity building and training, retention)
3. Revenue diversification (non-aeronautical services, consulting)
4. Investment in cost-saving technologies and innovations
5. Enhance safety and security measures
6. Develop strategic partnerships(industry, academia)
7. Improve operational efficiency
8. Enhance regional cooperation and collaboration
9. Invest in cybersecurity and data protection
10. Develop resilient and adaptable business models

## 7. Regulation of ANSP charges - Key challenges

---

- Balancing ANSP revenue needs with user costs
- Ensuring efficient investment in infrastructure and technology
- Managing stakeholder conflicts (ANSPs, airlines)
- Adapting to changing market conditions and technologies



## 5. Regional Cooperation Strategies

---

1. AFI Regional Cooperation Framework
2. Regional ATM planning
3. Shared services and resources
4. Joint training and capacity building
5. Harmonized regulatory frameworks
6. Regional safety and security initiatives

## 6. ICAO support

---

1. Global Air Navigation Plan (GANP)
2. Aviation System Block Upgrades (ASBU)
3. AFI Regional ATM Plan
4. Technical Assistance such as Infrastructure Development Support
5. Capacity Building
6. Policy guidance and support
7. AFI Plan
8. Regulatory Framework Development



The end

---