

Competition for Air Traffic Management: "The Air Navigation Service Provider's perspective"



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Who is ACR: Some Key data

- Aviation Capacity Resources (ACR) is a private, international ANSP
- SES Certificate through Swedish CAA: ACR is certified according to all requirements for ANSPs operating in Europe and ISO 9001 / 14001 standards
- Established in 2004 – delivering ATS/ATC and MET services to Regional Airports since March 2011
- Operates 15 ATS-units in Sweden and provides ATM solutions for airports internationally
- 110 employees, 95 ATCO, 5 ATSA and 10 Admin: results in a ATCO to Support staff ratio of 0.1 (European ANSP average is: 2.2) (ACE Benchmark Report 2015)
- Turnover for 2016: 138 MSEK
- 2017 – Expanding it's operations and consultancy outside Sweden
- Focusing for the time exclusively on TANS segment

ANS market in Europe before RP 3: snapshot of an industry

- The 2015 analysis of cost-effectiveness of European ANSP (ACE) shows that ATM/CNS provision costs (per ANS hour) reduced by 1.2%
- However: Main reason is that the traffic growth outpaced the growth of costs
- Overall unit cost (cost for composite flight hour) increased by 3.2%
- 25 out of 37 ANSP saw increase in ATM/CNS costs (although 22/25 experienced traffic increase)
- In total ANS/CNS costs in Europe of 8.124 Billion EURO
- Until 2019 it is expected that average European ATM /CNS unit costs raise with 1.7% - per year



SES in Europe before RP 3: snapshot of an industry

- 69% support costs are the main cost element for ANSP and consist of: Costs of non-ATCO in OPS employment, non staff operating costs, capital related costs, cost of capital, Project Costs, R&D, etc.
- ATCO employment costs per ATCO hour is **EUR 112**
- While unit support costs (per unit/hour output) is **EUR 292**
- On average 2.2 additional staff employed for every ATCO in Europe
- ATCO number percentage of total staff in Europe typically between 25-30% with a strong variability between smaller organizations (Finavia 54%, Cyprus 47%)
- And larger and/or more bureaucratic organizations (DHMI (Turkey) 19%, LPS (Slovakia) 17%, UkStase (Ukraine) 18%)
- Results in a ratio of total of 17600 ATCO in Europe to a workforce of 39000 staff (supporting & enhancing ATCO productivity)



Is ATM industry a Natural Monopoly?

Properties of Natural monopolies :

- If a single firm can serve that market at lower cost than any other or combination of two or more firms
- Can arise as a result of very high fixed costs or start-up costs of operating a business in a specific industry
- Can be found in industries that require unique raw materials, technology or other similar factors
- Arise where the largest supplier in an industry, often the first supplier in a market, has an overwhelming cost advantage over other actual or potential competitors (as scale economies can be achieved)
- A natural monopoly occurs when the most efficient number of firms in the industry is one

Is that true for ATM?

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ATM Industry and the different operational environments

The diagram illustrates the operational environments of Air Traffic Management (ATM). It shows a flight path starting from the left, passing through three distinct service areas, and ending on the right. The service areas are defined by dashed boxes:

- EN-Route Service:** ENR service controls flights between terminal areas. This area is represented by a green line.
- Approach Service:** APP service controls flights arriving or departing aerodrome. This area is represented by a blue line.
- Aerodrome Control Service:** TWR service controls vicinity traffic, runway and surface movements. Alternative AFIS service provides traffic information to pilots but not separation control. This area is represented by a red line.

A label **TANS Services** with arrows points to the Approach and Aerodrome Control Service areas. A small black silhouette of an airport is shown at the bottom center, representing the aerodrome.

- In ATM, a distinction must be made between the operational environments: En-Route, Approach (Departure), Aerodrome Control Service
- En Route with higher operational complexity and relatively high fixed costs and sovereignty issues
- Approach / Aerodrome Service (TANS) a 'natural' candidate for competition: low complexity, low investment thresholds,
- Segment of smaller /mid-sized airports outside the performance regulation

TANS as a part of the European ANS system

- SES regulations (Performance scheme, charging regulation, etc.) focus primarily on the overall network performance and 'simulate' market conditions
- TANS function crucial in connecting the airport level with the Network
- Of the 700 European airports, 42.5% are loss making....but
- 75% of European airports below 1M PAX go in that category
- 93% of all airports worldwide are below 1M Pax
- Net Profit Margin at these airports is on average -6%
- ANS Provision Costs for smaller Airports proportionally higher than for larger airports: typically in the range between 20%-50%
- Airport Operators forced to procure ANS from monopoly: no influence on service levels, cost, type of service
- If ANS costs considered 'inelastic', cost reduction for airports can only be achieved through:
 - Reduced Opening Hours
 - Reduction in Service

TANS competition requires a deregulated market

- Deregulation is the reduction or elimination of government power in a particular industry, usually enacted to create more competition within the industry.
- The underlying motivation & rationale for deregulation is that fewer and simpler regulations will lead to a raised level of competitiveness, therefore higher productivity, more efficiency and lower prices overall.
- Within ATM, deregulation is aimed at un-locking the ATM market for the open offering of ANS (ATC /AFIS) and support services and the
- Prevention of market monopolies unwilling (or unable) to improve cost-efficiency and service quality (customer focus)
- Safety Regulations are all remaining in place
- SES regulatory framework setting the fundament for a 'level playing field'
- National SES certification process as tool to assure full compliance with the regulatory framework

TANS in a competitive market : does it work?

| Country | Service | Cost Savings |
|---------|---------------------------------|--------------|
| Spain | TANS | 46.7% |
| USA | TWR service at 253 VFR Airports | 74% |
| Sweden | TANS | 30-40% |
| Norway | TANS | 35% |

- Cost efficiency main benefit as result from increased competition in the market
- Data on UK and Germany not available but estimated to be in the range of between 30 % and 40%
- In addition, airports report increased customer focus, innovation and price transparency as result of competitive process
- Results in line with experiences from other deregulated industries

Effects of Competition on the ATM Market

- Based on the operator / support ratio, real cost-efficiencies are achieved by establishing tailor-made, 'lean' organizations (not ATCO salaries)
- the creation of new business-, cooperation models (with suppliers, Partner organizations)



- ATC Provision as fully regulated industry: Training, separation criteria, quality assurance, financial stability, requirements to equipment, documentation, data integrity, working conditions, etc.
- Full compliance with the complete regulatory framework as pre-condition to a SES certification
- Other de-regulated industries have not seen decrease in safety levels

Summary of ACR view on a competitive ATM market

- Market Deregulation and introduction of competition is not the 'golden bullet' that solves all problems
- Deregulation and competition does not tackle externalities such as capacity issues or the fragmented institutional framework but focuses primarily on cost savings achieved through competition
- Risks in liberalization: formation /development of a real monopoly or oligopolies (see supplier market)
- Un-ethical and pure capital maximising behaviour of new competitors must be prevented – Just culture, Human factor principles must be adhered to (as part of the certification process?)
- ATM as part of the National transport and emergency infrastructure service provision continuity must be assured
- Requires a strong regulative / legal framework – a situation that does not (yet) fully exist in Europe

Summary of ACR view on a competitive ATM market

- EC regulatory framework must assure a level playing field for competition
- Guiding principles for a competitive market shall be applied by all member states and include rules for (not limited to):
 - Ownership of airport infrastructure blurring cost allocation calculation
 - Pricing of IPR elements such as Operating Manuals and Procedures
 - Pricing rules regarding 'public service' data: radar data, AIM services
 - Strict rules ensuring smooth transition from incumbent to new provider to ensure safe operations
 - Guidelines regarding pension plan roll-over for ATCO staff
 - Guidelines for knowledge transfer assurance from incumbent to new provider

Sources: 2015 ACE Benchmark Report / European Airport Data from ACI / Helios White
Paper from the ATM Policy Institute