



# HOW TO CUT AIR NAVIGATION COSTS?

Technological and organizational  
advances

## *Experiences from competitive markets: it works!*

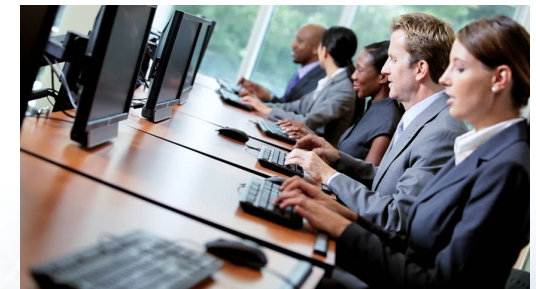
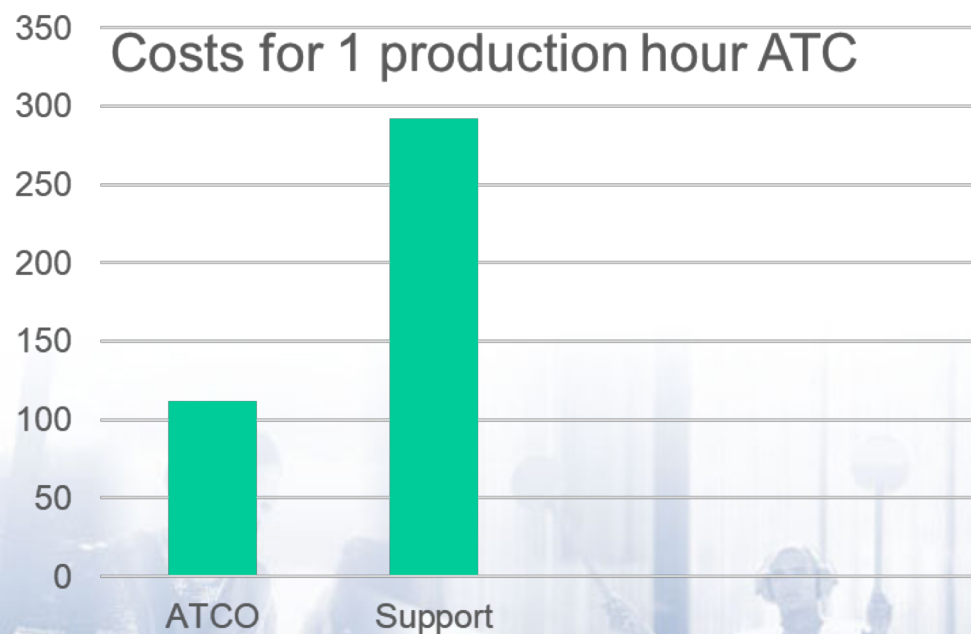
Country	Service	Cost Savings
Spain	TANS	46.7%
USA	TWR service at 253 VFR Airports	74%
Sweden	TANS	30-50%
Norway	TANS	35%

- Lower costs as 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%
- Support Cost vs Operator cost ratio: 69% vs 31% (ACE, 2015)
- As overhead/support costs drive system costs – savings are achieved through lean structures and reduced overhead



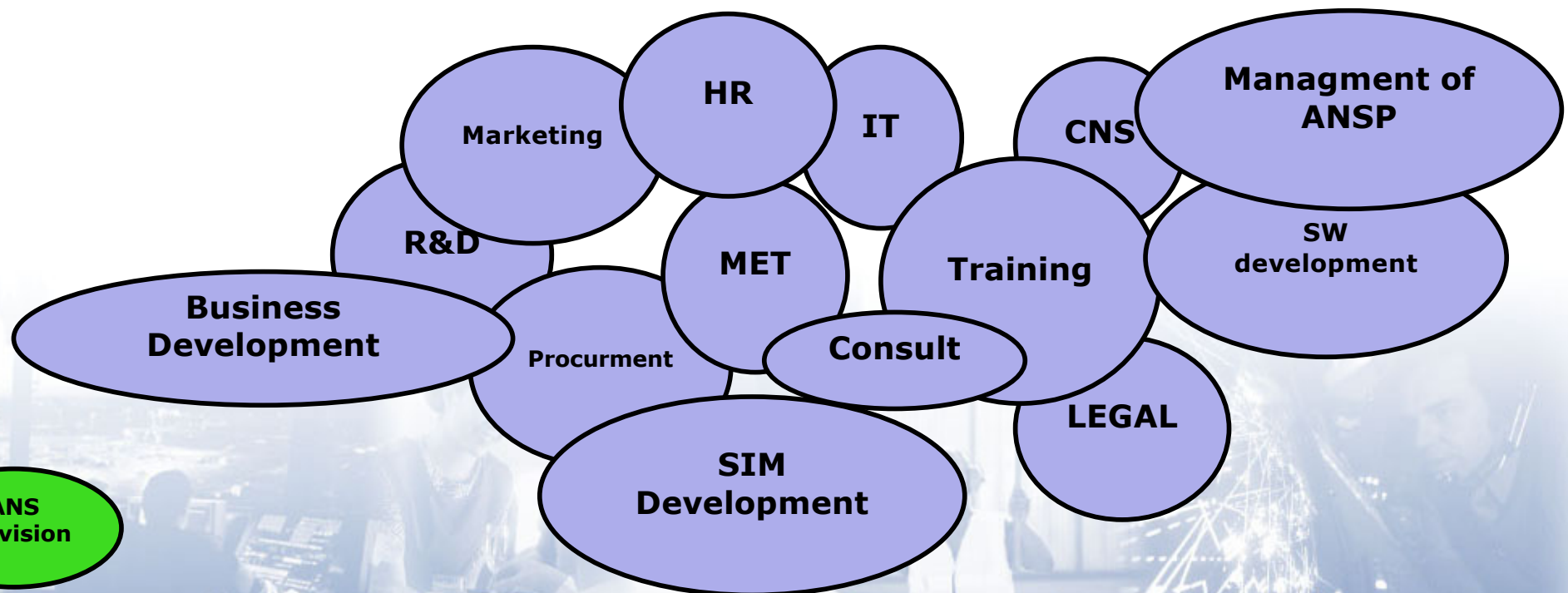
## What drives ATC Costs?

- According PRC (see also ACE Benchmark Report 2015) main cost drivers are Staff costs
- Average European ANS cost: 427 EUR /hour
- ATCO employment costs per ATCO hour is **EUR 132**
- While unit support costs (per output hour) **EUR 295**
- ATCO costs (salary, training,) not driving ANSP costs, ANSP overheads as main cost source



## What drives ATC Costs?

- 69% of total ANSP cost are support costs
- Governmental legacy, administrative burdens and a fragmented regulatory framework as drivers behind mushrooming overheads
- Support side growing as ANSP tend to do all sorts of services in-house
- Industry-wide massive duplication efforts (for example: Remote Towers development)





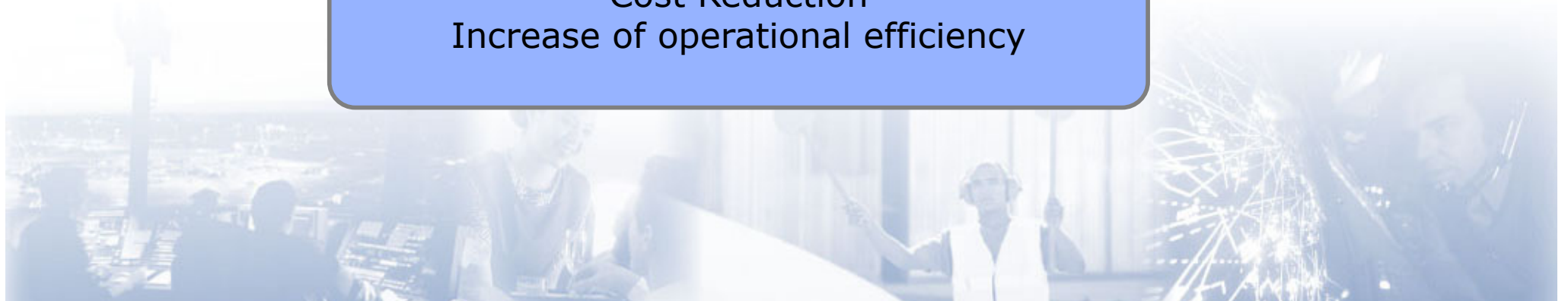
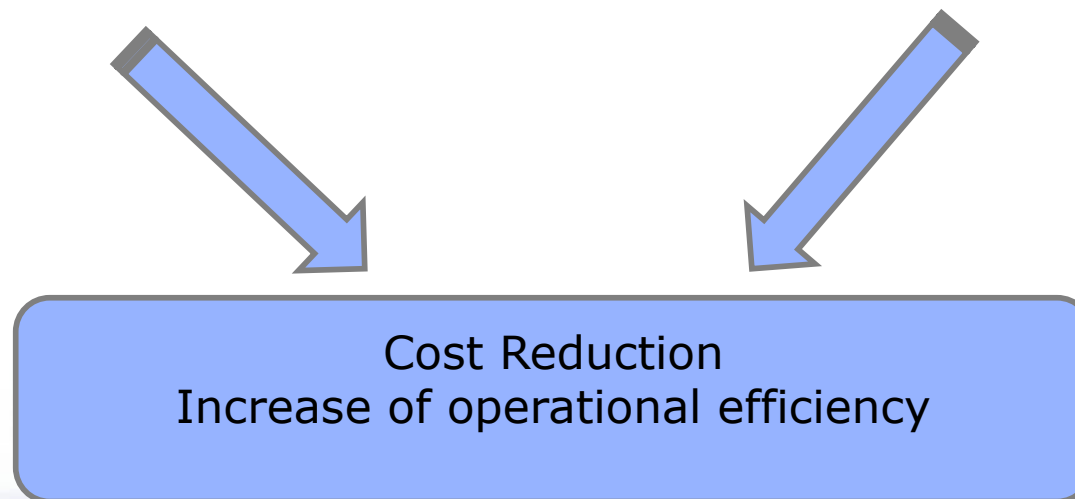
## Goals of Liberalization and new Technology in ATM

### Liberalization

- Innovation, cooperation with airport operators
- New business models
- M&A activities
- Market mechanisms

### Technology

- Productivity increase on operational sharp end
- Increased robustness of OPS
- Safety gains, redundancies



## Goals of Liberalization and new Technology in ATM

Hypothesis: Liberalization and technology do not address the same cost sources

### Liberalization

- Lean organizational structures, reduced overhead, focus on core business, organizational efficiency

### Technology

- AMAN; DMAN, SMGCS, CDPLC, Remote Tower, Virtual Centres, ATCO efficiency

