



| ICAO

ECONOMIC DEVELOPMENT

NO COUNTRY LEFT BEHIND

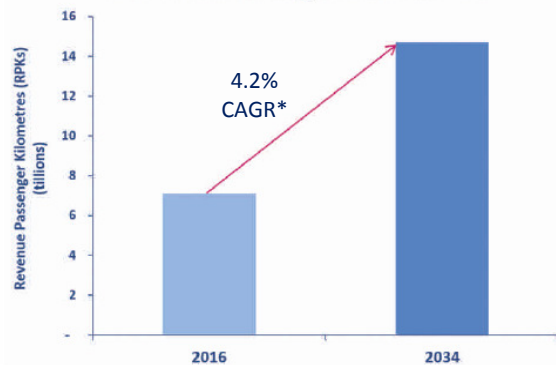


# CIVIL AVIATION MANAGEMENT PROGRAM UNDER NGAP

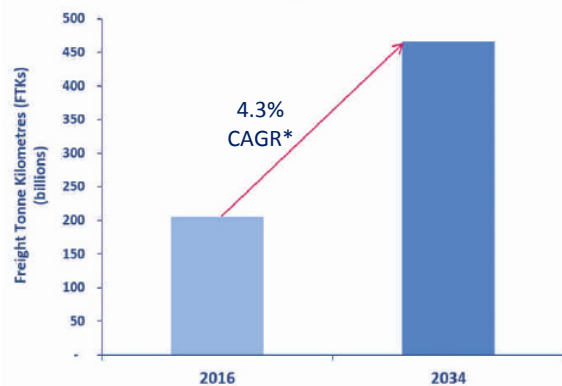




Forecasted Passenger Traffic in 2034



Forecasted Freight Traffic in 2034



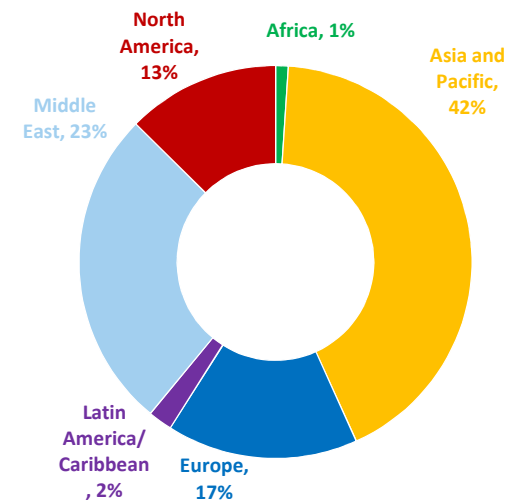
→ Air traffic will double by 2034

Projected Top 10 Routes 2040

Rank 2040	Rank 2015	Long Term Forecast Route Group	Share 2040	Share 2015
1	4	Central Southwest Asia - Pacific South East Asia	11.9%	5.4%
2	1	Intra Europe	11.5%	15.8%
3	8	Central Southwest Asia - Middle East	11.3%	3.9%
4	2	Europe - North America	9.0%	11.8%
5	3	Central Southwest Asia - Europe	7.3%	5.8%
6	5	Intra Pacific South East Asia	6.1%	4.5%
7	7	Central Southwest Asia - North America	5.9%	4.1%
8	18	Central Southwest Asia- North Asia	4.6%	1.9%
9	6	Europe - Middle East	3.6%	4.5%
10	9	Europe - Pacific South East Asia	3.5%	3.6%

## Air Traffic forecasts

Projected International Freight Traffic Breakdown by AOC 2040





# Education requirements

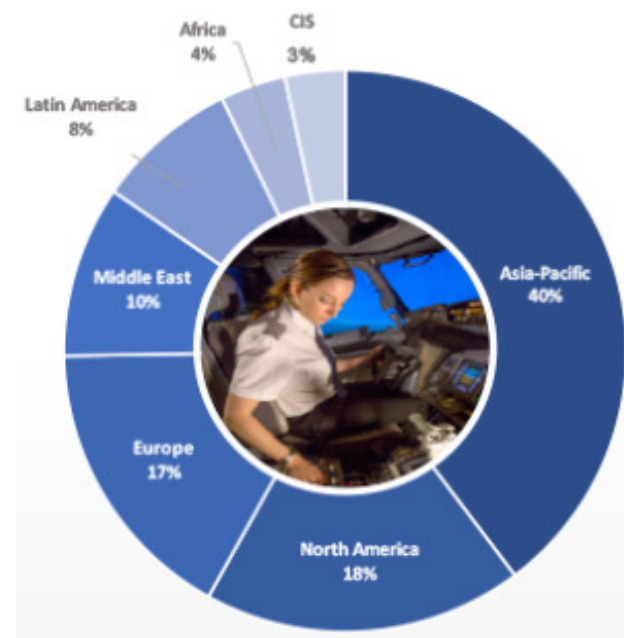
## Forecasts

2016

2036

Pilots <sup>(1)</sup>	<ul style="list-style-type: none"> <li>• 620,000 pilots in 2036</li> <li>• 67 new pilots / day</li> </ul>
Air Traffic Controllers <sup>(1)</sup>	<ul style="list-style-type: none"> <li>• 120,000 ATC in 2036</li> <li>• 13 new ATC / day</li> </ul>
Maintenance personnel <sup>(2)</sup>	<ul style="list-style-type: none"> <li>• 650,000 new needed</li> <li>• 89 new MRO personnel / day</li> </ul>
Cabin crew <sup>(2)</sup>	<ul style="list-style-type: none"> <li>• 840,000 new needed</li> <li>• 115 new flight attendants / day</li> </ul>

→ How to keep pace with those requirements ?



New pilots by region 2017 – 2036<sup>(2)</sup>

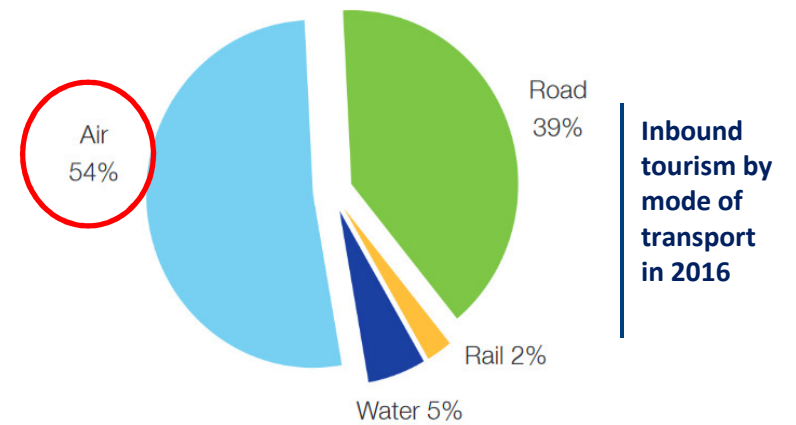
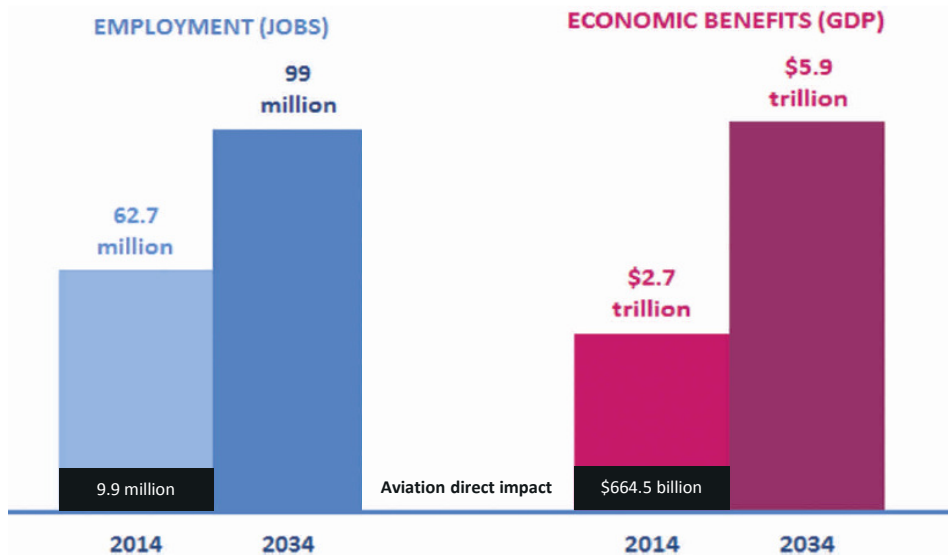
(1) ICAO Long Term Traffic forecasts (aircraft above 100 seats)

(2) Boeing, 2017, Pilot and technicians outlook



Air transport = **3.5%** of the world's GDP in 2016  
 \$1 output = **\$3.25** demand in other industries  
 1 job = **6.1 job** in other industries

## Economic contribution of Civil Aviation

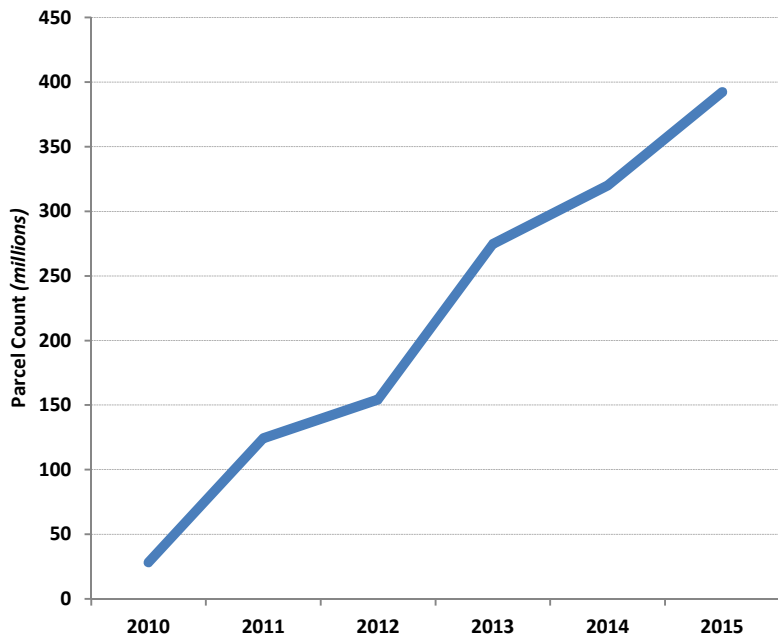


- Employment
- Economic benefits
- Global trade, imports/exports and e-commerce
- Tourism
- Social benefits

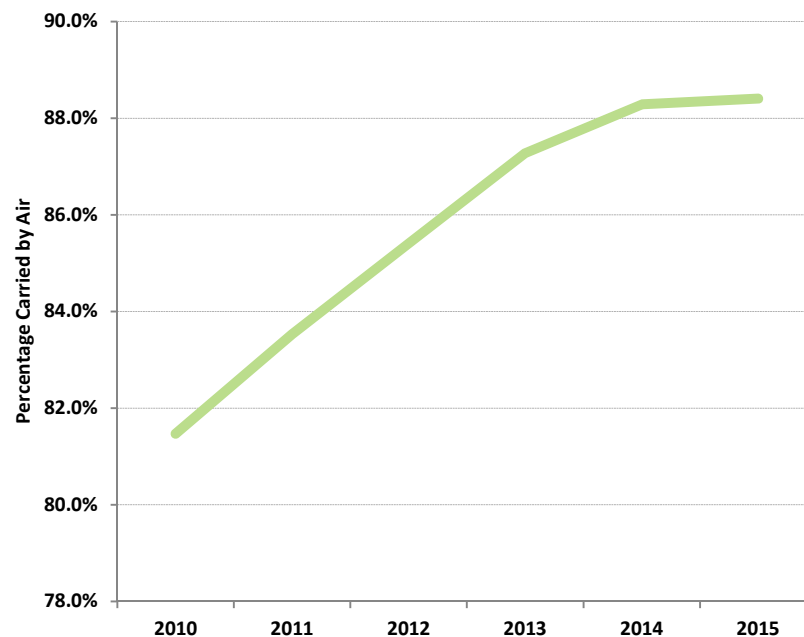


### Global Air B2C E-Commerce Activity Growth

#### Global Air E-Commerce Activity (Two Ways, Parcel Count)



#### Percentage of E-Commerce Parcels Carried by Air (Two Ways, Percentage Carried by Air)

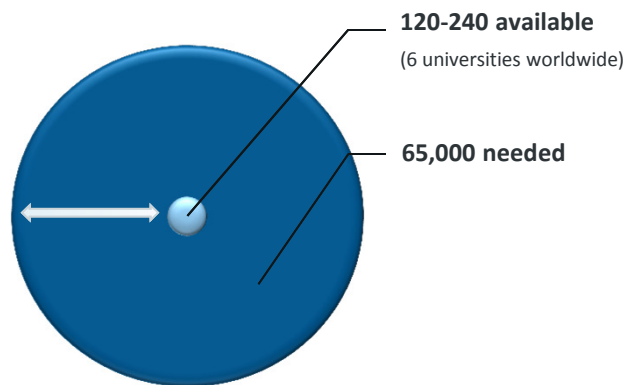


\* Air E-Commerce is estimated assuming parcels traveling a distance of above 1000 kilometres are delivered by air



## CAMP : Civil Aviation Management Program

Capacity for graduate CAMP in 2016 (in number of persons)



→ Each year, 5% of technical workforce move to management (study soon published on ICADS)

### Particularities of civil aviation

- very competitive industry
- volatile returns
- massive financing requirements
- managing risks is paramount
- **efficient management is key**

Less skills  
Less efficiency  
More costs



### Adverse effects on the growth of aviation

Impact on:

- Economic development
- Financing of the sector
- Tourism
- Trade and imports/exports
- E-Commerce
- Infrastructure development



## Qualifying and accredited degree for senior management

Coordination under NGAP Framework

→ **CAMP**

- Creation of a qualifying degree for Civil Aviation Management
- Network of partner universities worldwide
- Accredited program

Very positive first feedback from universities

**Further announcements at NGAP 2018**

