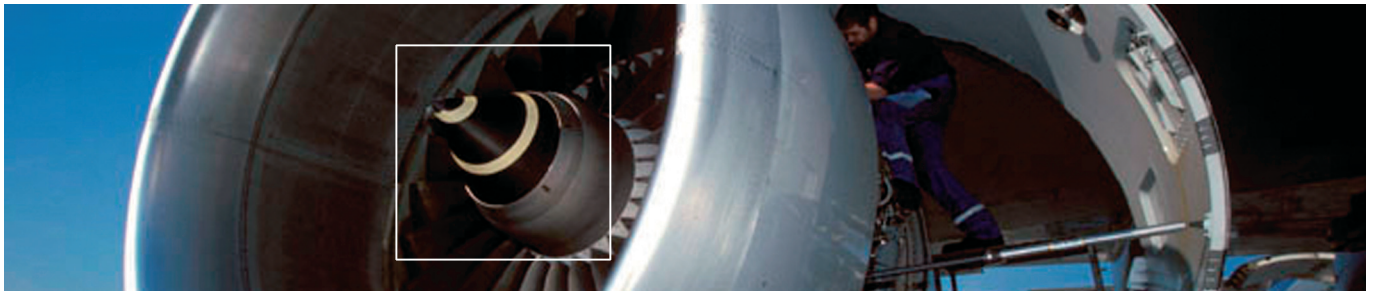


## Turbulence Ahead

### *Global Study of Airport Passenger Traffic –2007 Edition*



**In 2007 growth in global airport passenger traffic is expected to exceed 6%, following growth of 4.9% in 2006 and 6.2% in 2005. Likewise, most of the world's regions with the exception of Asia Pacific are expected to grow faster than in 2006. This abstract presents the conclusions of a global study led by Arthur D. Little, based on an extensive analysis of the traffic figures from over 1,000 airports throughout the world, including 82 intercontinental and continental hubs.**

#### 2007 key results

- The economy is slowing slightly. World GDP is forecast to increase by 3.3% to 3.6% in 2007, 0.5pp lower than 2006. However international tourism continues to grow with an estimated growth rate of 5.7% in 2007. In most regions, increases in airport traffic are in line with economic growth. European countries have outperformed their weak economic performance and the strong Euro.
- On a global level, European airports and Asian airports accounted for over 75% of world airport growth in 2006. Growth was driven globally by European and Asian regional platforms as well as Asian intercontinental hubs. Beijing was the fastest growing hub. It moved up six places in 2006 to become the world's ninth busiest airport after its traffic rose by 7.5m passengers. The airport expects an additional 5m passengers in 2007.
- Growth in European airport traffic is likely to exceed 6% in 2007, as it did in 2006. The regional platforms led the 2006 increase, benefiting from dynamic low-cost carriers (LCCs) and regional airlines and several saturated intercontinental hubs.
- Asia and South Pacific airports are expected to grow by more than 8%, marginally down on their 2006 performance (+9%). The sustained growth rate actually masks mixed performances: top performers such as India and China achieved growth rates of +32% and +15% respectively in 2006, while the worst performers such as New Zealand and Japan achieved just -0.2% and +0.8%. The deregulation of the aviation sector, especially in India, made a major contribution to the growth in traffic.
- North American airports are expected to recover from their weak 2006 performance (estimated +4% in 2007 against +0.7% in 2006). Despite economic expansion, 2006 records were dragged down by the rationalization effort undertaken by a number of airlines in 2005 and 2006, which in turn affected several intercontinental hubs (-1.4%). Delta's and Northwest's hubs suffered the most.
- Middle East airports are likely to enjoy a new record year with an increase in traffic expected to exceed 10%, following growth of +9.1% in 2006.
- The impact of low-cost carriers on airport activity was strong in North American but seems to be weaker in Europe in comparison with past years, especially in the more mature markets. In Asia, the low-cost effect was very similar across all platform types.

### Looking ahead

Considering the results of 2007, airports should be ready to deal with several issues in 2008:

- Factor Cost, especially fuel, is dramatically raising. The impact on the aviation industry will be strong, sorting out economically vulnerable airlines from those with robust balance sheets.
- Capacity is a major issue for many airports in Europe, Asia and North America and they will have to optimize the use of their resources or increase capacity in order to meet growing demand.
- Overcapacity may be an issue for some airports such as those in the Middle East; airports and investors will have to consider future demand carefully before financing new capacity.
- Sustainable growth is a question for those markets, especially in Europe and North America, that have based their terrific past development on LCCs and whose future growth is now jeopardized by market maturity.
- Airports will need to adapt in order to meet the needs of new airline business models. The largest regional platforms will have to address the emergence of long-haul point-to-point carriers whereas hubs will have to increase their efforts to support their home-based majors or attract new carriers—such as low-cost ones. In particular, US hubs will have no choice but to adapt to the shift of US majors' seats from domestic to international routes.
- Airports need to be proactive in addressing growing environmental questions before strong environmentally-driven constraints and detrimental

taxes are placed on airport activity. For example, an "eco tax" on air tickets to and from the Netherlands is to be implemented on 1 July 2008.

### WORLDWIDE

With an estimated increase in traffic of over 6%, 2007 is set to be another record year for airports. Most regions are expected to exceed the rate of growth they experienced in 2006 when global airport traffic increased by 4.9%. Only Asia and Oceania are expected to be slightly down on their 2006 rate. (See Fig.1).

Africa and Middle East airports are forecast to record the highest growth in 2007, followed by Latin America and Asia-Oceania. Europe's growth should reach the world average while North America's growth is set to remain at least 2% below the world average despite a significant recovery from 2006.

Preliminary traffic figures for 2007 confirm the return to traffic growth in line with economic indicators. Global traffic actually grew 1.3 times as fast as world GDP in 2006 and is expected to grow 1.7 to 1.9 times in 2007 and approaches the historic correlation factor of 2.

For the third year in a row, airports in Western Europe outperformed the region's weak economy as traffic rose between 6% and 7.5% while GDP growth was less than 2% and the Euro was at its highest level.

International tourism was a major driver for airport growth especially in the developing destinations of Asia, the Middle East and Africa and in the emerging

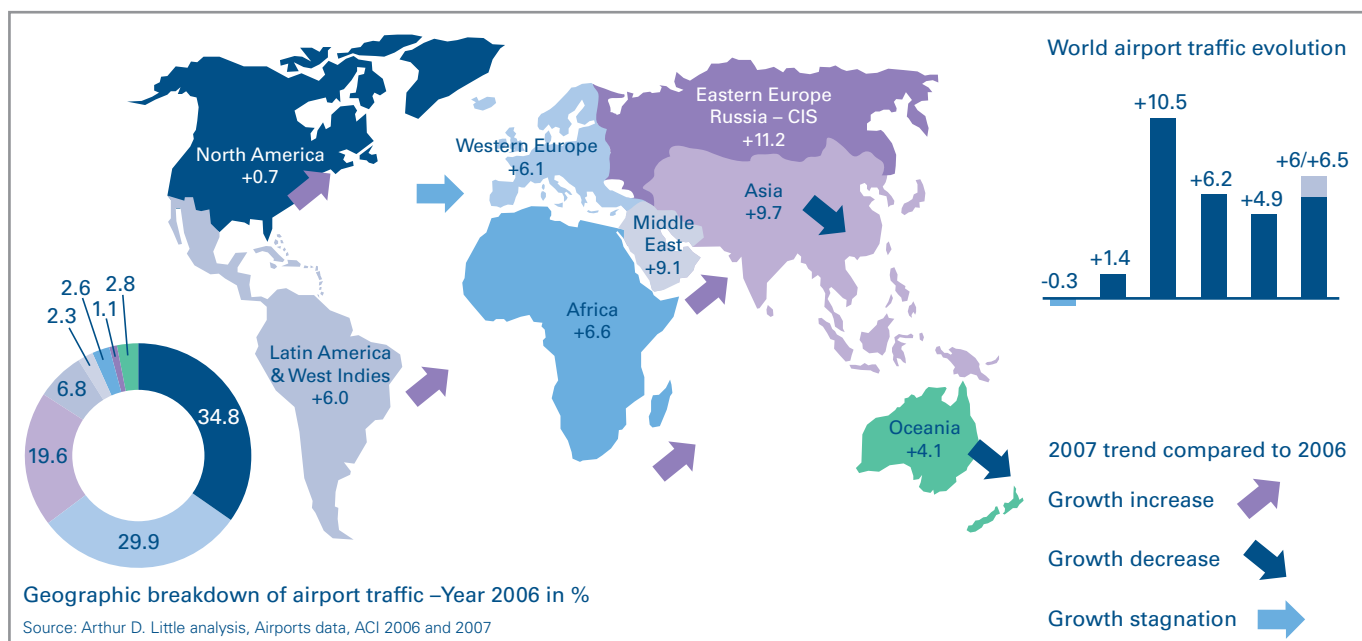


Figure 1: Evolution of airport traffic between '05 and '06 by region and '07 growth trends in %

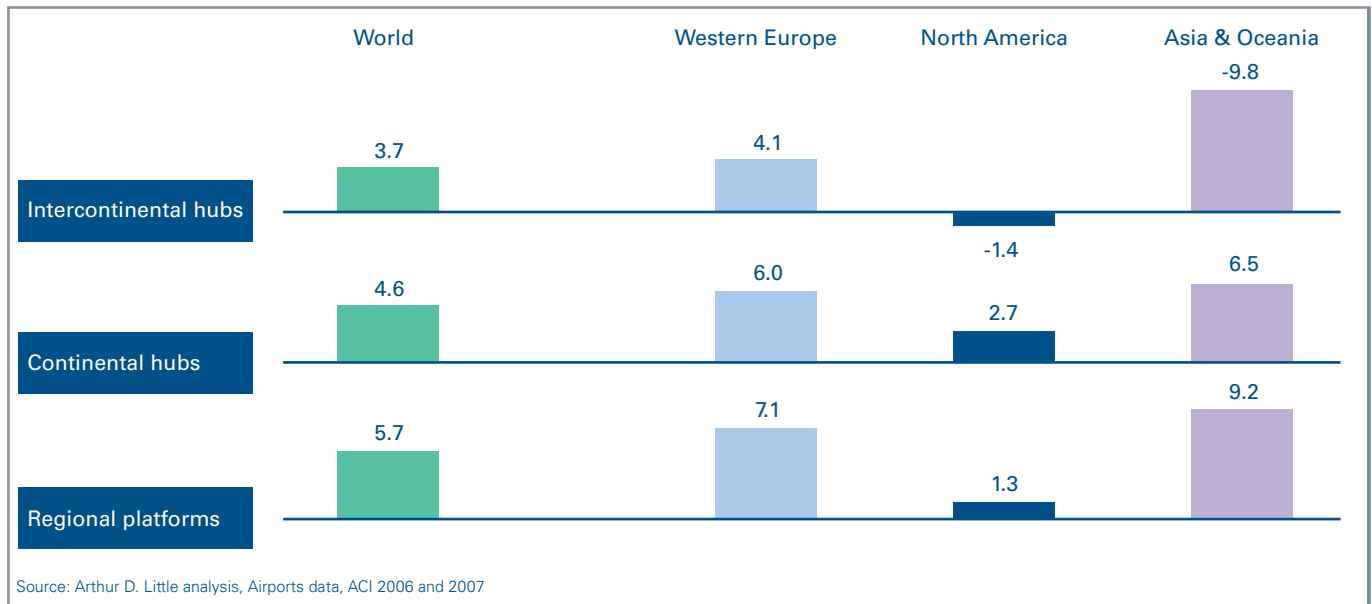


Figure 2: Airport traffic growth by regions and airport types – '06 vs. '05 in %

outbound markets of Brazil, Argentina, Korea and Russia.

In 2006, the regional platforms were the fastest growing airports (+5.7%) thanks to the performance of European regional platforms (see Fig.2), such as Istanbul's secondary airport, Sabiha Gokcen airport (+186%), and Grenoble's secondary airport close to Lyons (+60%).

The continental hubs experienced a global rise in traffic of 4.6% with the Chinese hubs such as Kunming (+22.3%) and Chengdu (+17.1%) being the most impressive.

Intercontinental hubs recorded the weakest global growth (+3.7%) despite their strong performance in Asia (+9.8%), which has five out of the ten fastest growing intercontinental hubs in the world, including Delhi (+28%) and Mumbai (+23%). In 2006, Beijing added 7.5m passengers, doubling its traffic over the last five years (from 24m passengers in 2001 to 48m passengers in 2006 and over 53m passengers in 2007) and moving up 22 positions to ninth place in the world's busiest airports ranking.

**EUROPE**

Western European airport traffic grew by 6.1% in 2006, an addition of 75m passengers over 2005. 2007 figures are expected to be in line with 2006 ones, slightly down compared with 2005 (+7.4%).

International tourism to Europe (+4%) was a strong driver for growth in 2006, boosted by several major events such as the Winter Olympic Games and the FIFA World Football Cup. Tourism is forecast to continue supporting traffic in 2007 despite the strength of Euro. The enlargement of the European Union (EU)

accounted for 20% of traffic growth at European airports in 2005 and had a weaker effect in 2006. Only Poland actually benefited from EU expansion in 2006.

During 2006, regional platforms kept driving the growth in Western Europe, recording a strong 7.1% increase in traffic (see Fig.2).

The regional platforms benefited from the dynamism of both the regional carriers (+8.2% for ERAA airlines members) and the low-cost carriers (+20%). Hubs grew at a slower pace (+6% for continental hubs and +4.1% for intercontinental ones), driven by three main factors:

Hubs benefited to a lesser extent from the low-cost carriers' effect on traffic.

- The strong Euro affected the demand for long-haul flights in particular, penalizing the intercontinental hubs.
- Capacity shortages, traffic disruptions and environmental restrictions constrained traffic at three major hubs (LHR -0.6%, FRA +1.1% and AMS +4.4%).

Excluding Frankfurt and Heathrow, the other European intercontinental hubs recorded an honorable 6.7% increase in traffic in 2006. In particular, Madrid-Bajas led the growth (+8.5%), adding 12m passengers between 2001 and 2006. In 2007, Madrid, which has recorded impressive growth of 14% over the first eleven months of the year, is expected to pass Schiphol and challenge Frankfurt airport in terms of passenger numbers, entering the world's top ten airports as a result.

*“Nevertheless, Arthur D. Little has observed that the effect of low-cost carriers on European airports-*

seemed to weaken in 2006, especially on the bases with numerous LCCs.”

The low-cost effect continued to drive growth at European airports and especially the regional ones (see

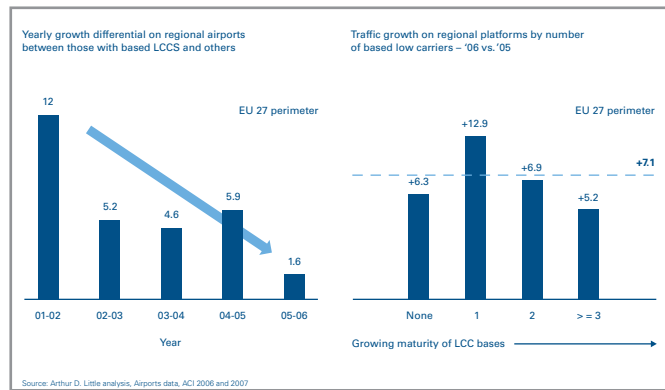


Figure 3: Low cost effect on European regional airports in %

Fig.6). Arthur D. Little estimates that European low-cost carriers carried about 155m passengers in 2006, an increase of about 20% over 2005. In addition, LCCs entered several major hubs such as Madrid and Milan-Malpensa, offering these hubs alternative and strong growth drivers.

Nevertheless, Arthur D. Little has observed that the effect of low-cost carriers on European airports seemed to weaken in 2006 (see Fig.3), especially on the bases with numerous LCCs:

- For the first time in several years, the European regional platforms that host based LCCs grew only

a little faster than other regional airports (+7.9% vs. +6.3%).

- EU27 regional airports with two and more LCCs grew at the same pace as the regional airports without any LCC (+6.3%).

Four countries – Spain, Italy, Germany and the United Kingdom – accounted for about 50% of European growth in 2006. For the second year in a row, Spain made the largest contribution to growth (+12m passengers) and the United Kingdom was not in Europe’s top three. Spain continued to benefit from strong LCC growth on the Spanish coasts and from new facilities and infrastructure in Barcelona and Madrid. In 2006, the two leading Spanish airports recorded the strongest growth among the European hubs (+10.6% and +8.5% respectively) and are reportedly improving their outstanding performance in 2007 (+14.6% and +10% respectively based on November year-to-date results).

### ASIA AND OCEANIA

Asian airports experienced a strong 9.7% increase in traffic in 2006 and although growth will continue in 2007, the rate is expected to be slightly lower. Several factors have contributed to growth in demand in Asia:

- Strong economic development, particularly in China and India, fueled by an emerging upper class.
- An increase in international inbound tourism (+7.6% in 2006) as well as outbound.
- Progressive deregulation of the aviation industry: domestic deregulation in India (+32% in 2006), the

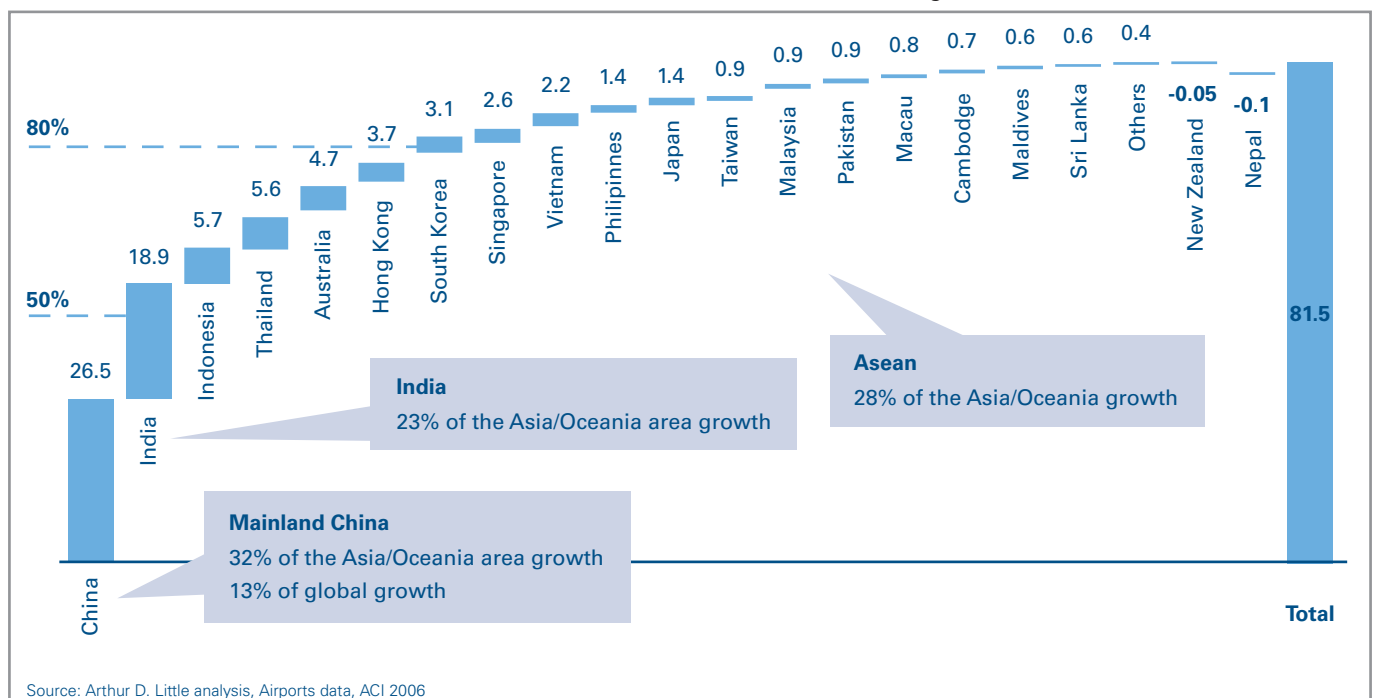


Figure 4: Incremental passenger volume per country in Asia - '06 vs. '05 in Mpax

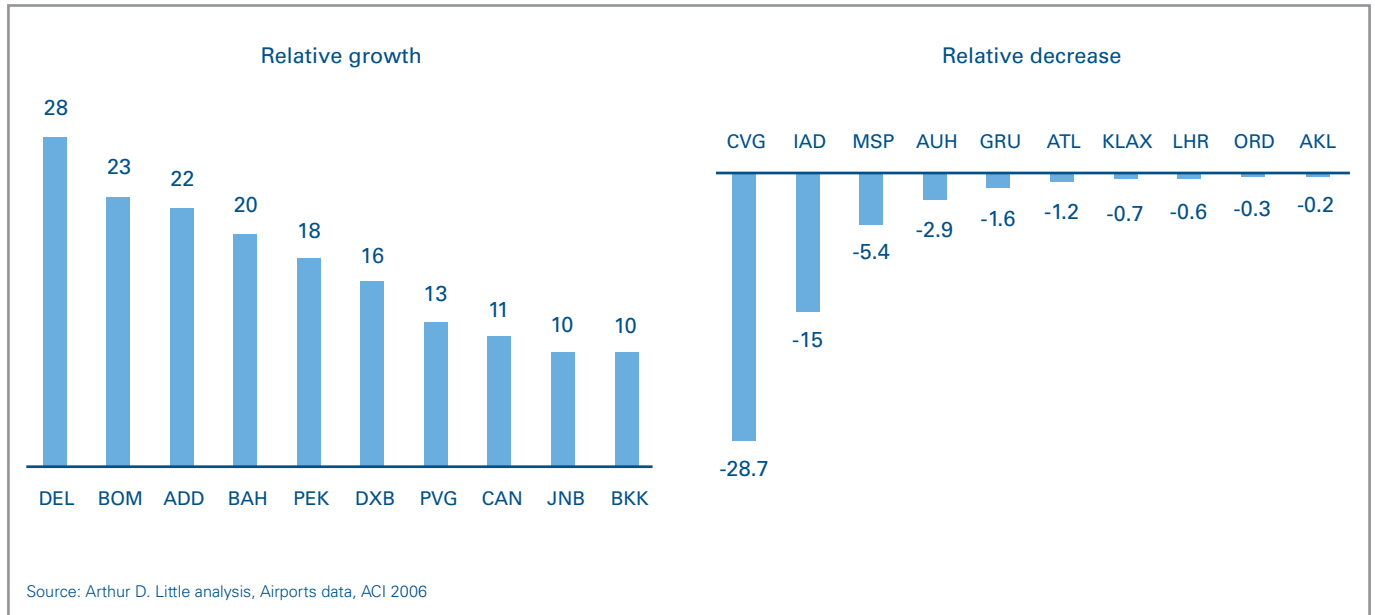


Figure 5: World's top 10 and worst 10 performer intercontinental hubs - '06 vs. '05 in %

opening of new traffic rights resulting in the ongoing development of low-cost carriers.

China and India accounted for 55% of the 82m additional passengers traveling through Asian airports in 2006 (see Fig.4).

The intercontinental hubs experienced the fastest increase in traffic in Asia (+10.7% in 2006), with five of the world's ten best-performing intercontinental hubs being in India and China (see Fig.5): Delhi (+28%), Mumbai (+23%), Beijing (+18%), Shanghai (+13%) and Guangzhou (+11%).

The tremendous growth of the Chinese hubs was driven mainly by Chinese carriers. The "Big 3", China Southern, China Eastern and Air China, have accounted for about 60% of the seat increase at the main Chinese hubs since 2004. The other Chinese airlines represented about 25% of the growth and the foreign carriers made a small 15% contribution. The situation was quite different in India where low-cost carriers have accounted for 90% of the seat increase at the main Indian hubs in recent years. Air India, Indian Airlines and foreign carriers have played a small role in airport development. The continental hubs experienced the slowest growth (+7% in 2006) due to the weak performance of some of the largest Asian continental hubs, such as Tokyo-Haneda (+3.1%) and Seoul-Gimpo (+2.4%). The Asian low-cost carriers had a very strong impact on traffic in 2006 and their development boosted growth at all types of airport. Several factors are favorable to the development of low-cost carriers in Asia:

- Trade and tourism growth in the Asia/Oceania region.

- The proactive role of governments: extension of open-sky agreements, creation of new airlines and building of new terminals.

As a key milestone in 2006, both Kuala Lumpur and Singapore airports opened terminals dedicated to low-cost carriers. The effect on traffic is still unclear as both airports grew below the regional average in 2006 and 2007 (SIN: +8% and KUL: +4%) in 2006.

*“Oceania hubs in general suffered from a more mature market and a strong currency which gave rise to slower growth in international tourism.”*

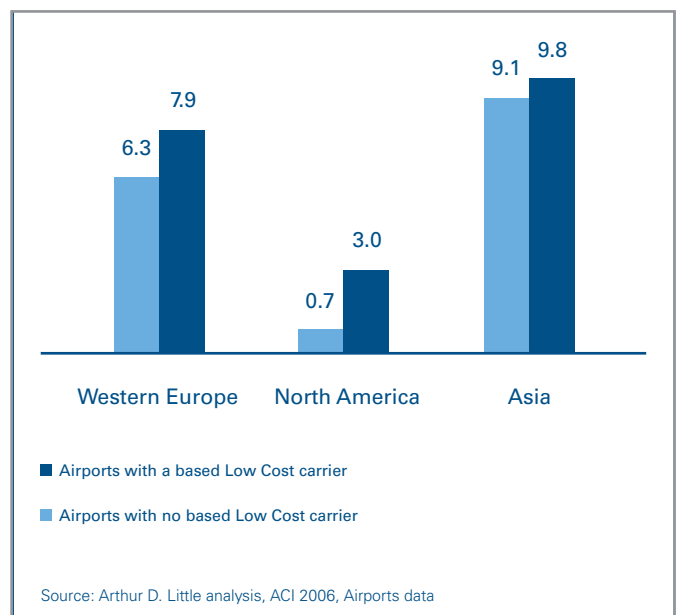


Figure 6: LCC effect on regional airport traffic '06 vs. '05 in %

Oceania airport traffic grew by 4% in 2006. As in past years, regional platforms led growth (+5.7%) as the established hubs.

### NORTH AMERICA

North American airport traffic stagnated in 2006 (+0.6%) but is expected to pick up again in 2007 (close to +4%). North America remained the busiest region, accounting for 35% of global airport traffic.

In 2006, the wealthy economy (US GDP: +3.4%) and the increase in international arrivals (US: +3%) fueled by the low dollar were not enough to support a growth in traffic.

The North American intercontinental hubs (-1.4%) were hit strongly by the poor economic conditions at several American airlines:

- The bankruptcy of Independence Air resulted in a 15% decrease in Washington-Dulles traffic.
- The dramatic turnaround strategies led by the US majors, in particular Delta Airlines and Northwest, severely affected the hubs. Between 2004 and 2007, Delta reduced its seat offer by 20% at Atlanta and by more than 50% at Cincinnati as Northwest cut capacity by 10% at both Detroit and Minneapolis.
- The change in network strategy operated by the US majors, shifting aircraft from domestic routes to international ones, accompanied a strong decrease in seat volume. For instance, over the last four

years, Delta Airlines has added only one international seat at its hub for every 12 domestic seats removed.

As a consequence, in 2006, six of the world's ten worstperforming intercontinental hubs were US ones (see Fig.5). The situation is expected to improve in 2007 as the US majors posted a 2% increase in domestic traffic on the first semester, reversing a -0.2% loss in 2006.

Continental hubs (+2.7% in 2006) and regional platforms (+1.3%) did better, benefiting from the strong performance of regional carriers and low-cost carriers (see Fig.6).

*“The situation is expected to improve in 2007 as the US majors posted a 2% increase in domestic traffic on the first semester, reversing a -0.2% loss in 2006.”*

### MIDDLE EAST

Middle East airports, while still small in terms of relative numbers (2.3% of global traffic), kept growing strongly in 2006 (+9.1%) and faster than average global growth. Even stronger growth, exceeding +10%, is expected in 2007. Persian Gulf intercontinental hubs, especially in the United Arab Emirates, in Oman and in Bahrain, were the fastest growing platforms in the Middle East. The busiest and fastest growing hub in the Middle-East, Dubai (+16%), ranked only 37th in 2006 but even so 34 places ahead of its 2001 rank.

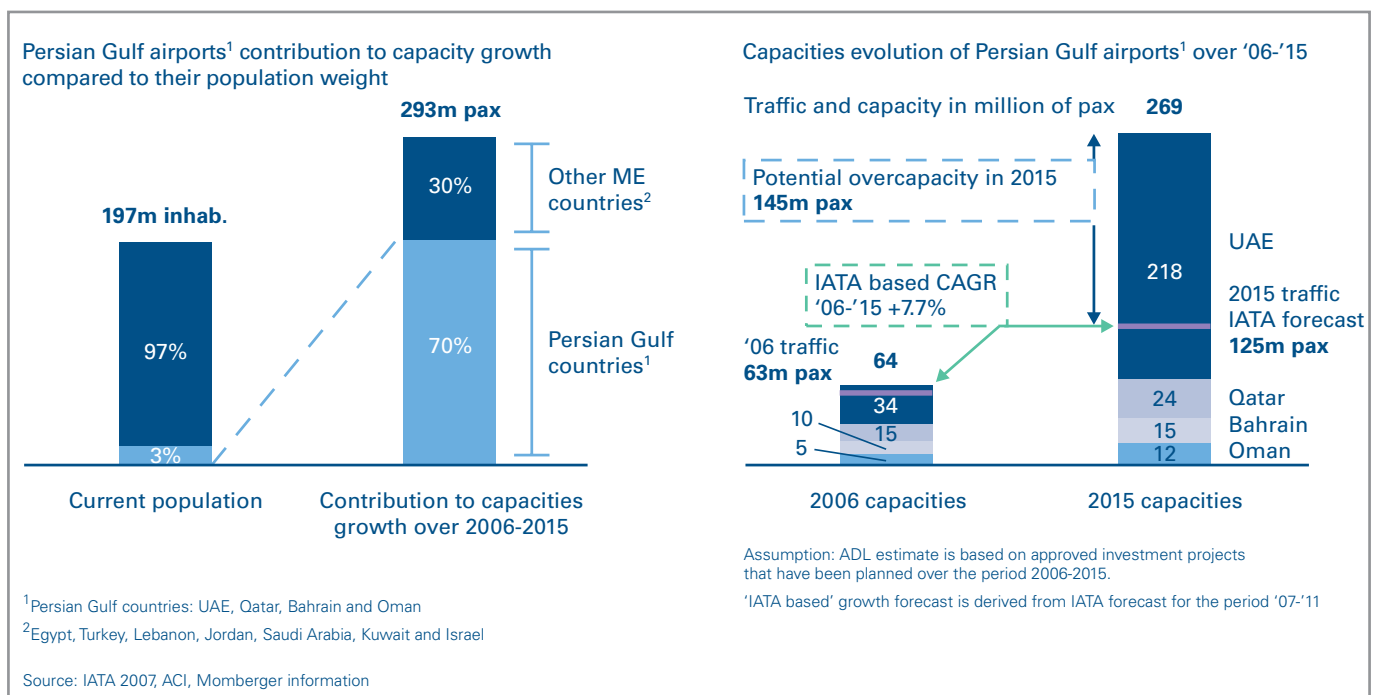


Figure 7: Persian Gulf airports potential overcapacity

Airports in the Persian Gulf (Oman, Bahrain, Qatar, UAE) were able to rely strongly on their home carrier to generate growth. For instance, Etihad accounted for about 70% of the seat offer development at Abu Dhabi from 2004 to 2007 and Qatar Airways represented 60% of Doha's development. As a consequence, the airports without any home-base carrier delivered below average performance (+5.9% for the regional platforms in 2006).

Platforms outside the Persian Gulf had to turn to foreign airlines to sustain traffic: El Al, MEA and Saudi Arabian Airlines accounted for less than 5% of the seat offer increase at their main base.

Persian Gulf countries are reportedly expanding their airport facilities and are planning to quadruple their current capacity, from 64m passengers in 2006 to about 270m passengers in 2015. Overcapacity could be an issue for some of the airports (*see Fig.7*); airports and investors will have to consider future demand and capacity carefully before financing new capacity.

*“Persian Gulf countries are reportedly expanding their airport facilities and are planning to quadruple their current capacity, from 64m passengers”*

*If you would like more information or to arrange an information discussion on the issues raised here and how they affect your business, please contact:*

**Survey Manager**

Mathieu Blondel  
+33 1 55 74 29 45  
blondel.mathieu@adlittle.com

**Asia & Middle East**

Thomas Kuruvilla  
+971 4 329 7447 (Dubai)  
+65 62 97 23 00 (Singapore)  
kuruvilla.thomas@adlittle.com

**Belgium/Netherlands**

Bernhard Gustin  
+32 2 7617 382  
gustin.bernard@adlittle.com

**China**

Thomas Schiller  
+86 21 64478866  
schiller.thomas@adlittle.com

**France**

Vincent Bamberger  
+33 1 55 74 29 47  
bamberger.vincent@adlittle.com

**Germany, Switzerland & Central Europe**

Axel Boss  
+49 89 38088 791  
boss.axel@adlittle.com

**Italy**

Mario Turner  
+39 02 67376 240  
turner.mario@adlittle.com

**Nordic**

Petter Kilfors  
+46 8 50 30 6542  
kilefors.petter@adlittle.com

**South Korea**

Allen Song  
+82 2 720 2040  
song.allen@adlittle.com

**Spain**

Jesus Portal  
+34 91 702 74 34  
portal.jesus@adlittle.com

**United Kingdom**

James Catmur  
+44 870 336 6780  
catmur.james@adlittle.com

**USA & South America**

John Brennan  
+1 617 532 9500  
brennan.john@adlittle.com

### Contacts

**Axel Boss**

Head of Aviation Competence Center  
D-80802 Munich  
boss.axel@adlittle.com



**Ralf Baron**

Practice Manager Travel & Transportation  
D-40213 Dusseldorf  
baron.ralf@adlittle.com



### About Arthur D. Little

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