

How Do North American Airports Compare Internationally?

By Sasha N. Page

Since 2001, U.S. airports have focused on ensuring that their businesses are in line with the domestic post-2001 airport market—adjusting operating expenses, reducing capital programs and seeking new revenue sources. They have paid less attention to the international airport market.

With the recent signing of the Central American Free Trade Agreement, the pending growth of the European Community and the steady increase in manufacturing and services outsourcing to China and India, globalization—despite some setbacks—marches on. For many airports, international traffic grows at a pace equivalent to or greater than domestic traffic.

As U.S. airports internationalize, what do they know and what can they learn from their global counterparts? This Measure of the Month begins to address these issues using the recently published Air Transport Research Society's (ATRS) "Airport Benchmarking Report – 2003." On many measures, U.S. and North American airports perform well, yet as international traffic grows and airports abroad innovate, they will have lots to learn.

Pondering Productivity

International comparisons are difficult to make because of differences in regulations, currency regimes, business practices and culture. The ATRS Report attempts to overcome these differences by focusing on productivity measures that rely on more comparable statistics, such as passenger traffic, number of employees and physical capacity. The report also adjusts for certain airport characteristics that are out of airport management's control, such as international traffic share.

ATRS collected statistics from 90 airports worldwide: 43 in North America (37 U.S. and 6 Canadian), 26 in Europe and 21

in Asia. These tended to be the world's biggest airports; the 2001 average passenger traffic (defined as the total of enplaned and deplaned passengers, or PAX) for North American, European, and Asian airports had 31.3 million, 25.5 million, and 23.8 million PAX, respectively. The data came from a number of sources, including airport annual reports, ACI, FAA, IATA, and ICAO. The second edition of the report is based primarily on 2001 data.

Employee Productivity

The ATRS Report separates productivity measures into two categories: measures of operating inputs such as labor, utilities and administrative expenses and measures of capital inputs such as terminals and runway facilities.

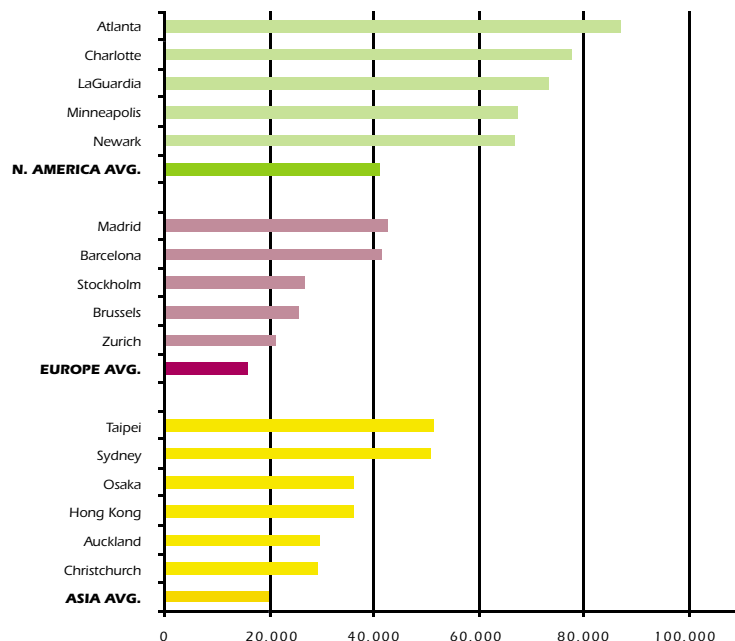
One of the more representative comparisons for operating inputs is PAX per employee. Since collecting employment data is straightforward and labor costs

can be as much as half of an airport's operating budget, this is a proxy for whether an airport's operating resources are being optimally utilized.

In the global comparison, the answer is yes for many North American airports. North American airports' employees tend to service at least twice as many PAX as their European and Asian counterparts, at 41,000 PAX per employee on average (see Figure 1, or Fig. 1). Atlanta, Charlotte, LaGuardia, Minneapolis, and Newark are some of the outstanding airports. Atlanta's traffic level (86 million PAX) and Charlotte's and LaGuardia's low employee levels (300 each) help to explain high productivity.

More importantly, many North American airports outsource functions to third parties; for example, Atlanta's and LaGuardia's passenger terminals are operated by airlines or third parties. European airports tend to take on more services

Fig. 1 PAX PER EMPLOYEE: TOP FIVE AIRPORTS PER REGION AND REGIONAL AVERAGES



such as ground handling. However, two Asian airports with high employee productivity, Taipei and Sydney, also contract out much of their airport services. As discussed below, the ATRS Report tries to take into account these outside contracting differences in an overall operating input productivity measure.

Gate Productivity

An illustrative measure of capital productivity is the number of PAX per gate. High gate productivity is a hallmark of most low-fare carriers. Airports are concerned with keeping capital programs in check and changing gate technical requirements as both smaller airplanes (regional jets) and very large aircraft (Airbus 380) often require gate modifications.

North American airports are as productive in this measure as European airports at about 300 PAX per gate, with Chicago Midway, San Francisco, and Atlanta among the highest (Figure 2). Asian airports, however, have almost 25 percent higher gate usage on average than the Europeans with Shanghai and Melbourne the leaders with a hefty 900 and 800 PAX per gate, respectively. Many European and Asian airports are making do with fewer and more constrained assets.

Do North American airports have any-

thing to learn from Europe and Asia? Yes, at least with regard to gates. Airports—and airlines—could squeeze in more PAX per gate by scheduling more turns per day as Southwest does or decoupling hubs as American Airlines is doing. Of course, what does this mean for customer service? At what point do passengers say “Enough!” to overcrowded gates and longer wait times?

Another way to increase PAX per gate is through larger aircraft. European aircraft PAX movement, a proxy for aircraft size, is about 25 percent higher than North America’s; Asia’s is about 50 percent higher than Europe’s. This reflects both the greater importance of point-to-point traffic and regional jets in North America and a crucial difference between North American and other airports: the share of international traffic. For North American airports, international traffic accounts for 14 percent of total traffic on average; for European and Asian airports this share is 75 percent and 51 percent, respectively

FIG. 3: AVERAGE SHARE OF INTERNATIONAL PAX IN 2001 BY REGION

NORTH AMERICA	14%
EUROPE	75%
ASIA	51%

(Fig. 3). Relative international traffic shares explain in part why North American productivity is higher.

Operating Productivity

To take into account many of the uncontrollable differences among airports, including international traffic share, airport size, non-aviation revenue share, cargo traffic share, outsourcing of terminal operators, and capacity constraints, the Report developed an overall operating productivity index, termed residual variable factor productivity (residual VFP). Residual VFP considers that measures such as PAX per employee do not address the multitude of approaches in categorizing staff: as employees; temporary staff; third-party managed contract labor, etc.

In operating productivity, North America’s airports are more similar to European and Asian airports with average index values of 0.52, 0.35, and 0.38, respectively, in 2001 (the higher the index, the higher the productivity, using Vancouver’s 2000 productivity index as 1.00, Fig. 4). This contrasts with the PAX per gate measure discussed earlier, which showed dramatically higher North American operational productivity. Atlanta, Charlotte and Vancouver are

Fig. 2 PAX PER GATE: TOP FIVE AIRPORTS PER REGION AND REGIONAL AVERAGES

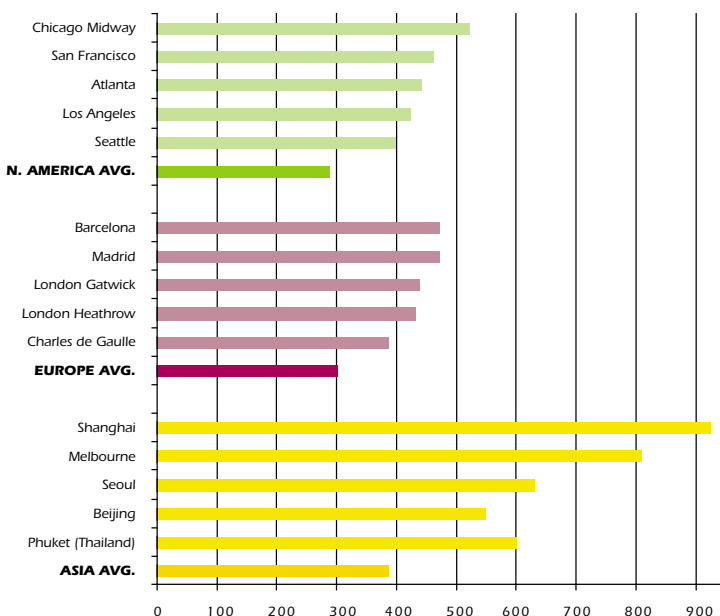
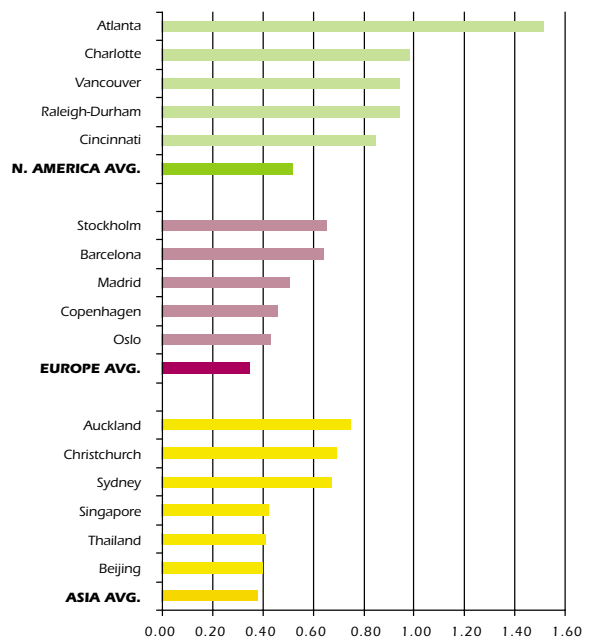


Fig. 4 2001 RESIDUAL VARIABLE FACTOR PRODUCTIVITY: TOP FIVE AIRPORTS PER REGION AND REGIONAL AVERAGES

Indexed on Vancouver’s Residual VFP in 2000



measure of the month

among the leaders as well as Barcelona, Stockholm, Auckland and Christchurch. The latter two are both in New Zealand, which like neighbor Australia has experimented with a variety of infrastructure sector public-private partnerships.

Total Productivity

The report defines an overall productivity measure as “residual total factor productivity” (residual TFP). Residual TFP is similar to residual VFP, with a key difference being that it also measures the productivity of capital assets, including terminal size, number of runways and number of air bridges.

The average North American airport is still more productive with an index of 0.67 than European airports at 0.58, yet less productive than Asian airports at 0.77 (Fig. 5). Atlanta, Raleigh-Durham and Indianapolis have high indices as do Barcelona, Stockholm, Auckland and Sydney.

Lessons from Going Global

While this analysis examines one slice of airports’ performance and may be subject to data pitfalls characteristic of international comparisons, the Report does point to several lessons:

- **International Costs:** As North American airports’ international traffic increases, these airports will be subject to new costs as well as opportunities. Besides extending runways, building customs facilities and installing international signs, they will need to provide more distinctive concessions and culturally aware staff. That will mean greater investments, resulting in a drag on some productivity measures. There are likely to be benefits as well, in terms of more revenue (i.e. duty free) and economic development from international linkages (i.e. being the chamber of commerce hero).

- **Global Innovators:** The report spotlights several airports and countries that may be innovators, including Amsterdam, Barcelona, Copenhagen, Stockholm, and airports in Australia and New Zealand. While the airports range in ownership structures, from public ownership (Stockholm) to public autonomous ownership (Amsterdam, Barcelona) to public/private ownership (Copenhagen, Auckland), most take a businesslike approach, devising comprehensive strategies and taking meticulous care in how they manage every element of their operations. To make the numbers

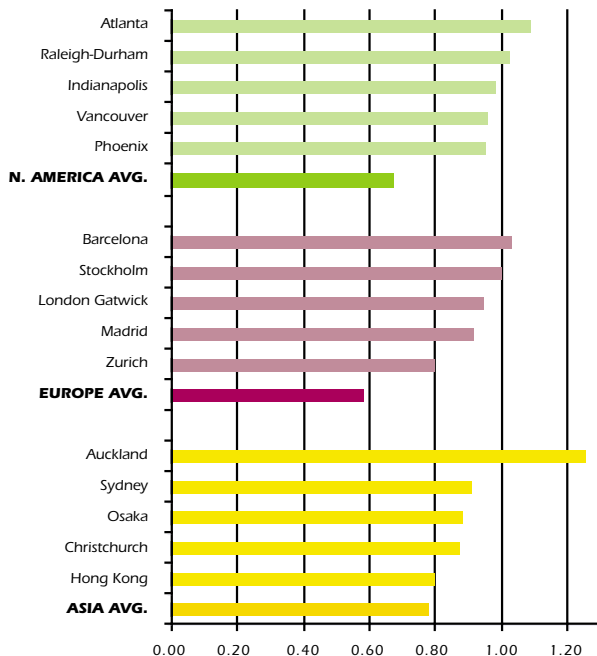
really meaningful, however, ATRS or researchers need to document the best practices that these airports employed to get these superior results.

- **Quality of Service:** While organizations should never give up trying to do more with less, that North American airports have high operational productivity (residual VFP), means that they may want to shift focus to forms of performance, such as customer service, in the future. Some airports may be stretched too thin in this post-2001 cost-cutting era to fulfill all of their mandates; even cost-obsessed Southwest Airlines is rumored to be considering an expensive investment in in-flight seat video screens to match low-fare competitors. Indeed, the IATA Global Monitor customer service ratings are lower for North American airports than for European and Asian ones (Fig. 6). Perhaps passengers want to be treated better and would be willing to pay a bit more for that benefit?

FIG. 6: IATA GLOBAL AIRPORT MONITOR CUSTOMER SATISFACTION INDEX, 2001: AVERAGE BY REGION, 5=HIGH, 1= LOW

NORTH AMERICA	3.50
EUROPE	3.63
ASIA	3.65

Fig. 5 2001 RESIDUAL TOTAL FACTOR PRODUCTIVITY: TOP FIVE AIRPORTS PER REGION AND REGIONAL AVERAGES, INDEXED TO VANCOUVER'S TFP IN 2000



As the world becomes smaller, U.S. airports need to share and learn more from their international counterparts. Understanding this will help them improve performance and innovate. As recent events such as the December 2003 cancellation of U.S.-bound Air France flights show, this greater global awareness is also essential to maintaining a key element of airport domestic performance: security. More about the ATRS report can be found at www.atrsworld.com.

How does this experience compare to your airport? If you would like to share your ideas and information, please e-mail spage@img-group.com.

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