Missed Opportunities: The Restructuring of Berlin’s Airport System and the City’s Position in International Airline Networks

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Abstract
After its history as a divided city, Berlin was expected to become a major world city following reunification. While the city has grown in terms of investment and social capital, it has not attained the preeminent status on the global stage that was expected. One important reason for this is that Berlin remains no more than a secondary hub in the global airline industry. In this article, we measure the city’s importance in airline networks at four points from 1989 to 2006. We then explain the city’s stature in those networks today as a product of both larger forces in the airline industry and circumstances more specific to Berlin. The former include liberalization and the development of airline alliances. In Berlin, meanwhile, the fractured airport system, which the city inherited from the Cold War, has been an obstacle to Berlin’s aspirations for centrality in the airline industry. We trace the history of airports in Berlin, including the long planning process for Berlin Brandenburg International Airport, which will eventually replace the three separate airports still in use. Although Berlin’s history is unique, we argue that it is the larger economic and political forces affecting all airports that have fostered the city’s continued marginalization within the world’s air transportation system.

Keywords: Berlin, air transportation networks, German reunification, liberalization, airline alliances
Introduction

In April 1990, about midway between the fall of the Berlin Wall and the formal reunification of Germany, the German newspaper Die Zeit predicted that Berlin would become a “magnet-city and a political-economical-cultural supernova” (quoted in KULKE, 2003:219). A decade and a half later, it is fair to say that that rosy scenario has failed to come to fruition. Although Berlin was made the German capital again in 1991 and some parts of the economy have been revitalized, the city has not regained the economic and cultural primacy it enjoyed before World War II. Indeed, Berlin has suffered from high unemployment rates, even by German standards (KULKE, 2003). More broadly, Berlin has not attained the world city status that once seemed its certain destiny (GORNIG and HÄUSSERMANN, 2002).

A significant reason for the yawning gap between expectation and reality has been the absence of a well-connected international airport. In the 1930s, Berlin’s Tempelhof was Europe’s greatest airport (HUGILL, 1993; PEARMAN, 2004); but the division of Europe, Germany, and Berlin during the Cold War relegated the fractured city to a marginal position in the networks of the rapidly developing postwar airline industry. Although German reunification has improved its air services, Berlin remains poorly connected compared to other European cities of its size. To remedy that situation, a major element in the development strategy for Berlin and the surrounding Brandenburg state has been to replace three existing airports with a single, much larger Berlin-Brandenburg
International Airport (BBI). In this article, we examine the evolution of air services in Berlin and the controversies surrounding BBI. We argue that the controversy and delays in the planning for the new airport made the city a passive participant in the spatial reconfiguration of Europe’s airline industry, which has been transformed by jarring changes of its own during the same decade and a half. The net result is that, while the sheer volume of airline capacity in Berlin has surged, the city’s stature within the global airline network has languished.

The story of Berlin and its airports is unique. Certainly, no other city has experienced such extraordinary political changes in the past sixty years. However, despite this unique context, many elements of the airport expansion debate in Berlin and the larger airline industry forces affecting the city are quite similar to those found elsewhere (CIDELL, forthcoming). First, like other new airports, BBI has been inspired by its potential significance as an engine of economic growth. The belief in the transformative power of major airports is long-standing, and recent globalization has only served to augment the economic salience of airports. Recognizing the significance of air transport networks as a manifestation of power in the global economy, many scholars have used centrality in those networks as a measure of the rank of places in the world-city hierarchy (SMITH and TIMBERLAKE, 1995; SMITH and TIMBERLAKE, 1998; SHIN and TIMBERLAKE, 2000; BOWEN, 2002; MATSUMOTO, 2004; DERUDDER and WHITLOX, 2005; ZOOK and BRUNN, 2006). There is also a substantial literature documenting more specific links between centrality in airline networks and economic development (IRWIN and KASARDA, 1991; IVY, FIK, and MALECKI, 1995; DEBBAGE, 1999; BUTTON and TAYLOR, 2000; DEBBAGE and DELK, 2001).
example, airline hubs and international air gateways are more likely to attract headquarter functions, “high-tech” jobs, and foreign investment.

Those places consigned to the margins of airline networks, on the other hand, suffer markedly poorer accessibility, in terms both of travel time and travel costs (ZOOK and BRUNN, 2006). Furthermore, for “spoke” cities and regions, increased demand for air traffic often ends up benefiting other places. For example, if passengers coming from an area such as the Baltic region do not have direct overseas connections, but must transfer through airports such as London or Frankfurt, "the connections to the rest of the world would be channeled through external hubs. That would mean that the strong magnetism such centers have on businesses would lead to growth and development outside the region, but based on the dynamism of the region" (MATHIESSEN 2004, 202).

Second, airports are potent symbols, not just economic engines. A city’s airport is the place where first and last impressions are made. The world’s most talented architects, members of the so-called global intelligence corps (OLDS, 1995), compete for the biggest airport terminals, which are second only to major museums in their prestige. No wonder the newest airport terminals offer cathedral-like grandeur within and distinctive rooflines without, from the gigantic outstretched wings of the avian Pudong in Shanghai to the sea of peaked white meringue atop Denver International. These airports have become signatures for the cities they serve.

Third, new airports – like airports of old – are lightning rods for controversy. Major airports impose a heavy burden upon their neighbors: noise, air and water pollution, road congestion, and the loss of vast swaths of land to other uses. Particularly in Europe, there
is also a growing awareness of the farther-reaching implications of airport development, including the massive financial cost of new airports and aviation’s rapidly escalating role in contributing to greenhouse gas emissions. As we describe below, noise and environmental concerns have figured prominently in citizen opposition to the BBI.

Finally, the remarkable political changes in Germany and Berlin took place at about the same time that the European airline industry went through a watershed of its own. Airline industry liberalization has been one front in a broader shift away from state-owned industries and towards deregulation throughout Europe (BRENNER 1999, 2004; BRENNER and THEODORE 2002, GRAHAM 1997, SWYNGEDOUW 1997, SWYNGEDOUW et al. 2002). Specifically, three packages of reforms implemented in 1988, 1990, and 1993 were designed to gradually remove restrictions on intra-European flights, privatize airlines and airports, and move towards a more integrated Europe. Collectively, these changes have fostered a more competitive and dynamic airline industry. The resulting shifts in the geography of air transport in Europe offer new opportunities but also formidable challenges for aspiring hubs like Berlin.

It was in this context that the story of BBI unfolded. Before turning to the more recent chapters in that story, we first track the historical development of aviation in Germany and the airport system in Berlin before 1990. We then analyze how Berlin’s position in European airline networks has changed since German reunification. That analysis sets the stage for an examination of the BBI project. Finally, we offer an assessment of the likely future development of aviation in Berlin and the broader implications of this case.
The Development of German Aviation and Berlin’s Airports to 1990

The first Berlin airport was opened in Tempelhof in 1923 (Figure 1). Tempelhof has been described as “perhaps the single most important airport in the history of aviation” (PEARMAN, 2004: 53). Orville Wright made demonstration flights there when it was still just a parade ground in 1909. Between World War I and World War II, it was the major hub of Europe and the world’s largest airline, Deutsche Luft Hansa (DLH). With German power on the ascent both politically and economically in the 1930s, the Nazi Government rebuilt the airport on a massive scale. Only after World War II was Tempelhof overshadowed by two newer airports, one for each of the two sides of the only city split in two by the Cold War. In order to understand the development of Berlin’s airport system it is necessary to describe its history in the context of the development of aviation in Germany more generally.

The Interwar Years: Berlin as Europe’s Preeminent Hub

Ironically, although World War II ended Berlin’s rank at the forefront of European aviation, Germany’s loss in World War I a generation earlier indirectly augmented the city’s stature in the nascent airline industry (DAVIES, 1964). Among the terms of the 1919 Versailles Treaty was a clause limiting the kinds of airplanes Germany could manufacture. So while Britain and France invested in both military and civil aviation in the 1920s, Germany’s efforts were confined to the latter. The emphasis on civil aviation was well-timed because the decade after World War I brought the first real flowering of the passenger airline industry. A decade after Orville Wright’s demonstration flight at Tempelhof, the earliest sustained passenger airline service in the world was launched by
Deutsche Luft Reederei (DLR) on February 22, 1919 between Tempelhof and the country’s temporary capital at Weimar (DAVIES, 1964).

Defeat alone, however, cannot explain the singular importance of Germany and Berlin in early European aviation. German “air-mindedness” (DAVIES, 1964: 23) also mattered. As a largely landlocked power with a still incomplete land transport network, aviation had particular appeal to Germany. Reflecting their faith in the future significance of air travel, local patriotism, and inter-urban rivalry, city and state governments joined the central government in subsidizing air routes across the country and beyond after World War I (HUGILL, 1993).

Through the 1920s, Germany ranked first in the world with respect to travel by air; and DLH, formed in 1926 through the amalgamation of DLR and other startups, was the largest airline in the world (DAVIES, 1964). By 1931, when Britain’s flag carrier Imperial Airways had only 22 aircraft, DLH had 145 and linked forty-nine other European cities to its Tempelhof hub. Beyond Europe, DLH flights reached as far west as Santiago, Chile, and as far east as Bangkok, Thailand. By 1939, DLH flew to twenty-five destinations in Asia, Africa, and Latin America, nearly as many as Air France and Imperial Airways (DAVIES, 1964). The two latter carriers integrated overseas empires, but DLH catered primarily to German business interests. The airline was also an important political symbol of Germany’s power. As the Nazi government’s flag carrier, DLH literally carried the swastika everywhere it flew, and its pervasive presence across Europe foreshadowed the German military expansion to come.
The Development of Berlin’s Airports during the Cold War

The outbreak of war severed many of Berlin’s links to the rest of the world. The same was true, of course, for the other great European capitals; but when the dust settled in 1945, the situation of Berlin in the airline industry was transformed far more radically than that of London, Paris, Rome, or Moscow. After the German capitulation, the Allied Forces occupied Berlin and jointly administered the city. Almost immediately rifts started to develop between the Western Allies (France, the United Kingdom, and the U.S.) and the Soviet Union over how Germany and Berlin should be controlled and what reforms should be carried out. When the Western Allies decided to cooperate closely in their respective zones of occupation and implemented a currency reform, the Soviets responded by blocking all land access routes to the western sectors of Berlin in 1948. The only way to supply West Berlin was through the air, prompting the famed Berlin Airlift. Since the runway capacity at Tempelhof in the American sector and Gatow, a small military airport in the British sector, was too small to handle all the supply planes, Tegel airport was hastily built on a former shooting range in the French sector of the city (HUSCHKE, 1999).

In 1950, the Allies returned the operation of the airports in their respective sectors to the Germans; however, the former remained responsible for organizing air traffic from and to Berlin. The Western Allies decided that each of the Allies would use only one airline to serve Berlin (Air France, British European Airways (BEA), and Pan Am). Deutsche Luft Hansa, using simply Lufthansa as its brand name after the war (Davies, 1964), was resurrected in 1954; but neither Lufthansa nor any other German airline was allowed to fly to or from West Berlin (MECHAM, 1990b). By contrast, the East German
Lufthansa, later transformed into Interflug, continued to serve Schönefeld Airport on the outskirts of East Berlin (VON PRZYCHOWSKI, 1996).

During the Cold War, airline service in the two Berlins developed along separate tracks. Ironically, although West Berlin was heavily dependent upon air services to maintain its links to the rest of West Germany and Western Europe, the city lost, perhaps irrevocably, the airline network centrality it had once enjoyed. The imposition of the Berlin Wall severed West Berlin from its natural hinterland, which would otherwise have generated traffic for air services from the city and adjacent region. In West Berlin itself, important sectors of the economy atrophied, undermining business traffic. Before World War II, Berlin had been Germany’s foremost center of manufacturing and business (KULKE, 2003). Berlin was the “Elektropolis”, a world-class center of electrical engineering and home to the headquarters of industrial giants like Siemens and AEG. The country’s leading financial institutions and culture industries were also centered in Berlin. And of course Berlin was the capital of a large country and an expanding imperial state. After World War II and the division of the country and city, the capital was moved to Bonn, advanced manufacturing shifted to Munich and Stuttgart, and Frankfurt emerged as the chief German financial center. The functions that remained in Berlin included local public administration, university education, tourism, and heavily subsidized manufacturing (e.g. the German cigarette industry). These generated air traffic, of course, but on a more modest scale than would have been true if Berlin had retained its broad economic primacy.

Throughout the Cold War, the dominant airlines in West Berlin were Pan Am and British Airways (BA), the successor of BEA. Together, the two airlines accounted for the
vast majority of commercial flights between West Berlin and the rest of West Germany.
In the highly politicized airline industry of the post-World War II era, it was very unusual
for a carrier to have the right of cabotage (permission to carry traffic between two
domestic points in a foreign country). However, a handful of Allied carriers not only had
the right of cabotage for decades in West Germany, but also faced no German
competition. Moreover, there was little competition between Pan Am and BA. The two
foreign carriers agreed to a route swap so that each enjoyed a monopoly on most of the
routes it flew from the city beginning in 1975.

With little fear of competition and with the further bonus of subsidies from the
German government, the foreign carriers found Berlin a profitable destination (Aviation
Week & Space Technology, 1988), but services to the city were more weakly developed
than would have been expected based on the size and wealth of the city. In 1988, for
instance, the number of passengers handled by West Berlin’s two airports (Tegel and
Tempelhof) was just 5.6 million on all flights and 1.2 million on international flights. By
comparison, Frankfurt, which Lufthansa had made its hub after World War II, handled
eight times as much total traffic and fifteen times as much international traffic.
Dusseldorf, Hamburg, Munich, and Stuttgart also handled much higher volumes of traffic
than West Berlin (ICAO, 1990).

Meanwhile, East Berlin’s air linkages were also warped, though less severely, by
the Cold War. Although Interflug’s network from its Schönefeld hub eventually extended
to Asia and Africa, East Berlin’s external links were, like other East European capitals’,
primarily to fellow Warsaw Pact countries. In the aggregate, then, Berlin had good air
links to both sides of the Iron Curtain; but there was no integration of those links to make
the city the continental and intercontinental hub it had been in the interwar years. Of the 57 cities with nonstop scheduled airline service to Berlin in early 1989, only three (Amsterdam, Copenhagen, and Stockholm) were connected to more than one of Berlin’s airports (Figure 2). Indeed, both Tegel’s and Schönefeld’s connections to other cities were characterized by an extraordinary degree of direction bias, the former having no links to the east and latter almost none to the west. A further distinction was that Schönefeld’s links were much more diverse but also less densely trafficked than those of Tegel.

**The Restructuring of Berlin’s Airport System after Reunification**

After the fall of the Berlin Wall in 1989 and German reunification in 1990, the united Berlin found itself with one of the most unusual airport systems in the world. Berlin had three airports with a total of six runways administered by different organizations that were now in competition with one another (BÜRGERBEWEGUNG-FLUGHAFENSYSTEM, 2006; BVBB, 2003). Berlin immediately began to call for a new large international airport to support its new role as the German capital and to serve as a gateway to Eastern Europe. As the development of the international air network is intertwined with the planning for the new Berlin Brandenburg International Airport (BBI), we first examine the evolution of Berlin’s position in the networks of the international airline industry.
The Place of Berlin’s Air Services in Reunified Germany and the New Europe

The fall of the Berlin Wall, the reunification of Germany, and the broader collapse of the Iron Curtain had major ramifications for the city’s air service. Perhaps most importantly, Lufthansa returned to the city. In October 1990, the German flag carrier commenced operations with seventy-four daily flights from Berlin to European destinations as well as service to important distant gateways such as New York and Tokyo (MECHAM, 1990a). Lufthansa’s rapid recovery of its long ago dominance in Berlin was facilitated by the collapse of Interflug, which ceased flying in 1991 (VON PRZYCHOWSKI, 2001).

The expansion of Lufthansa services was partially offset by the diminished role played by Pan Am and BA. Their last cabotage services from Berlin were flown in 1992 (VON PRZYCHOWSKI, 2001). Nevertheless, the incorporation of Berlin into the networks of foreign carriers accelerated sharply in the early 1990s. Singapore Airlines, El Al, Egyptair, Japan Airlines, and Air Lanka all commenced scheduled services to Schönefeld by 1992; and Alitalia, American Airlines, Delta Air Lines, Iberia, KLM, Olympic, TAP, and Turkish Airlines launched flights to Tegel (VON PRZYCHOWSKI, 2001). The jump in services manifested the confidence in the future importance of Berlin as a well-positioned hub in a Europe now free of its Cold War divisions. Still, the patterns of the past were not easily shed. Western European airlines tended to use the city airports in West Berlin, and airlines from Eastern Europe, the Balkans and Asia primarily used Schönefeld, making it difficult for Berlin to evolve into an intercontinental hub. Overall, because Western European airlines led the way into reunified Berlin, Tegel and
especially Tempelhof rapidly increased their share of overall Berlin air traffic; conversely, between 1989 and 1992, Schönefeld’s share, in terms of scheduled seats per week, fell from twenty-five percent to nine percent (Figure 3).

Overall, the expansion of services both to the east and especially to the west did increase the connectivity of Berlin in Europe’s airline networks (IVY, 1995). One way that a city’s connectivity in a transportation network can be measured is by summing the number of links (e.g. nonstop flights in this analysis) necessary to connect a node (e.g. a city) to every other node in the network. IVY (1995) applied such a methodology to data drawn from the Official Airline Guide, a monthly publication containing schedules for virtually every airline in the world. His analysis found that Berlin’s connectivity improved markedly between 1989 and 1993. In terms of first-order (i.e. nonstop) connections to a sample of 36 European cities, Berlin’s three airports together ranked thirteenth in 1989. Moscow (first), Frankfurt (second), and Paris and London (tied for third) led the list. Berlin ranked lower than both Prague and Warsaw, despite those cities’ smaller populations. By 1993, Berlin’s rank had improved to ninth, pulling ahead of its two Eastern European rivals, while Frankfurt displaced Moscow to take first place in first-order connections within Europe. Similarly, when first-order and higher-order connections (that is, connections requiring at least one stop) are considered together (but with first-order connections weighted more heavily) to produce a measure of total connectivity, Berlin again showed a sharp increase in its stature within European airline networks between 1989 and 1993.

Yet the early 1990s marked something of a high-water mark for Berlin’s aspirations to centrality in international airline networks. In 1994, Lufthansa announced that it would
make Munich its second hub rather than Berlin because of the difficulties associated with air services fractured among three airports (VON PRZYCHOWSKI, 2001). Additionally, Air Lanka, Air Canada, American Airlines, Japan Airlines, and Singapore Airlines all abandoned the city by the end of the 1990s because traffic from the German capital fell short of expectations.

We repeated Ivy’s analysis for the year 2003, again using data from the Official Airline Guide. In terms of first-order connections, there were significant changes in the ranking of European cities (Table 1). Vienna ascended to first place with respect to both first-order connections and total connectivity. Other cities whose rank among the sample of 36 improved sharply included Stockholm, Dublin, Prague, and Rome. Conversely, only Sofia suffered a worse setback than Berlin. The German capital’s rank in first-order connections fell from ninth in 1993 to fifteenth in 2003 (tied with Brussels, whose connectivity eroded following the collapse of the Belgian flag carrier Sabena in 2001). Similarly, in terms of total connectivity, Berlin’s rank fell from ninth in 1993 to sixteenth in 2003.

It should be noted that the methodology employed here and in Ivy’s analysis does not take account of the density of linkages. If the number of flights or seats is incorporated in the analysis, the degree to which Berlin is overshadowed by major European hubs is even more striking (Figure 4). In particular, hubs like London, Paris, and Frankfurt are served at higher frequency by much larger aircraft on average. In its metropolitan population, Berlin ranks ninth in Europe but in terms of total seats on scheduled air services it ranked twentieth in 2003, having less capacity than even Dublin and Helsinki despite the latter two cities’ much smaller populations.
Furthermore, because Berlin’s air services remain fractured among three airports, its ranking in the preceding analyses is somewhat misleading. For instance, Berlin is ill-suited to serve as a hub for a traveler between Milan and Minsk because flights from the former arrive at Tegel but those to the latter depart from Schönefeld. More generally, of the twenty-five other cities in Ivy’s sample to which Berlin had nonstop links in 2003, twenty-one were served from Tegel, six from Schönefeld, and four from Tempelhof; London was the only city served from all three Berlin airports. Nevertheless, by 2003, the former east-west partition of services between Tegel and Schönefeld had eroded significantly (Figure 5).

The subordinate position of the city in Europe’s airline networks is particularly clear when intercontinental routes are considered. Berlin’s nonstop services in 2003 beyond Europe were few and directed primarily at tourist destinations such as Varadero in Cuba and Hurgada in Egypt (Figure 5). In fact, holiday destinations, particularly along the Mediterranean, comprised most of the new points to which Berlin gained nonstop services between 1992 and 2003. Conspicuously absent were links to distant financial centers such as Tokyo that one would have expected given Berlin’s stature as the capital of the world’s third largest economy. Japan Airlines pulled out of the market after just two years in 1992, severing Berlin’s nonstop service to Tokyo. Delta Air Lines’ withdrawal in 1998 ended nonstop service to New York for seven years (VON PRZYCHOWSKI, 2001; CONNELLY, 2005).

Yet even as some flag carriers – including Germany’s own Lufthansa (see below) -- lost their enthusiasm for Berlin, a new kind of airline was emerging in Europe that would have dramatic consequences for the city and for the region. Since the early 1990s, dozens
of low-cost carriers (LCCs) have flourished in Europe’s liberalized airline industry. LCCs such as EasyJet and Ryanair have changed travel patterns throughout Europe, opening up new destinations to tourism and generally increasing the number of flights and passengers (PANTAZIS and LIEFNER, 2005; BIEGER and WITTMER, 2006; PAPATHEODOROU and LEI, 2006). One of the main reasons LCCs are able to offer flights at very low costs is their use of secondary airports serving major hubs (e.g., Frankfurt-Hahn, a ninety-minute bus ride from the city) and airports underserved by the major flag carriers, including those in Berlin. LCCs have therefore changed not only the geography of air travel from the passenger point of view, but in terms of the spatial distribution of airports as well.

The structure of the airline industry in Berlin has been strongly affected by the rise of the LCCs (Table 2). In early 1989, all but one of the ten most important airlines serving the city were flag carriers (the solitary exception was a subsidiary of Air France). A few years later in 1992 Lufthansa dominated the Berlin market, providing 60 percent of seats through the German capital. Yet by 2003, Lufthansa had shifted course. It remained the top carrier in the market; but, as we discuss below, Lufthansa no longer viewed Berlin as a potential hub. Conversely, Air Berlin, a rapidly growing LCC, did, and by 2003, it was the city’s third largest carrier.

Like many other European LCCs, Air Berlin evolved from a charter operator and therefore its present network of scheduled services reflects an emphasis on tourist traffic with many flights to Mediterranean destinations. Indeed, partly because the airline has such a big presence in the Mediterranean, it established a hub at Palma de Mallorca (BAKER, 2006). The leisure emphasis of this and other European LCCs is important
because they tend not to carry the kind of traffic that defines world cities. Furthermore, LCCs are unlikely to restore Berlin’s prominence inasmuch as other cities in Europe and in Germany more specifically (especially Cologne) have attracted LCC operations, too. Nevertheless, LCCs are expected to be an important part of the future mix of airlines at Berlin, and a dedicated low-cost terminal is part of the redesign for BBI (PILLING, 2004).

Although the LCCs have gained a significant share of traffic within Europe, they play only a minor role in traffic to and from other regions. Instead, the flag carriers of the past generally remain dominant at that scale. To perpetuate their advantage and to circumvent the continued regulatory barriers to their globalization, major carriers have formed world-encircling alliances. The three most important are the Star Alliance, oneworld, and Skyteam. Alliances mesh the schedules, frequent flyer programs, and information technology systems of member airlines in order to create nearly seamless air transportation partnerships whose scale and scope would be impossible for any one airline to operate (BURGHOUWT and HAKFOORT, 2001). Geographically, alliance traffic is funneled into a relative handful of intercontinental hubs. Both Frankfurt and Munich have the advantage of being well-served by members of the Star Alliance, the largest alliance. Of the Star Alliance’s sixteen members, including Lufthansa, fourteen fly to Frankfurt and eleven to Munich. Indeed, the new Terminal 2 at Munich’s Franz Josef Strauss Airport was designed to cater to the Star Alliance (BAKER, 2000). Conversely, of the sixteen Star Alliance members, only the four with nearby hubs – Lufthansa, LOT Polish, Austrian, and Scandinavian – fly to any airport in Berlin. Similarly, Berlin is
weakly served by the airlines that make up the oneworld, though most of the carriers in Skyteam do serve Berlin.

The nearly simultaneous emergence of LCCs and global alliances as important new features of the airline industry has had mixed implications for Berlin. On the one hand, the LCCs are responsible for a substantial surge in the volume of traffic through Berlin, particularly in the past decade. Yet, the LCCs have done little to give Berlin any kind of advantage that might propel it back towards the top tier of world cities. Moreover, the increased power of the alliances is an important factor ensuring that relatively few cities are dominant at the global scale; and Berlin is not one of them. One reason these changes in the structure of the airline industry are crucial is because they have reduced the power of governments to control the geography of the airline industry. Gone are the days of state-owned flag carriers flying with little competition along tightly regulated routes at tightly regulated fares. Still, government does affect the geography of industry, particularly through the provision of airport infrastructure. Berlin pinned great hopes on the power of a new airport to alter that geography in its favor. The replacement of its fractured airport system with a single, larger airport was expected to not only keep pace with potential increases in air traffic but also be instrumental in the capital’s development and enhance Berlin’s international prestige.

A New Old Airport for Berlin

We now turn to the controversies surrounding the restructuring of Berlin’s airport system. Our analysis is based on a newspaper analysis of over 200 articles published between 2000 and 2006 in the Berliner Zeitung, Berliner Kurier and Die Welt (Berlin
Edition), all widely circulated newspapers in Berlin, as well as the *Chronique Scandaleuse*, an archive compiled by the citizens’ initiative BVBB, which was at the forefront of the opposition to building BBI.

Shortly after reunification, the three main political actors—the city of Berlin, the surrounding state of Brandenburg, and the Federal Government—created the Berlin-Brandenburg Airport Holding. This placed Berlin’s three airports under a joint administration for the first time. Even more importantly, the holding was created to coordinate and facilitate the planning of BBI. Berlin and Brandenburg each have a 37 percent share in the holding, and the Federal Government has 26 percent (VON PRZYCHOWSKI, 2001).

From the beginning, the three holders did not agree on the future of the Berlin airports. Berlin and Brandenburg promoted the construction of a new international airport, BBI, while the Federal Government expressed preference for continuing to operate a network of several airports. This disagreement would permeate the discussions for years to come. In 1992 a study commissioned by Berlin and Brandenburg concluded that Sperenberg, a former military airport south of Berlin, would be an excellent location for a new international airport. However, a number of other sites were proposed as well: Michelsdorf, Jüterbog, Borkheide and Parchim, all in Brandenburg (Figure 1). An additional idea was to expand Schönefeld into the new airport. The search committee’s criteria were that the new airport had to be reached in 45 minutes from Berlin and could not be more than 60 kilometers away from Lehrter Bahnhof, the planned new main train station in central Berlin.
As soon as the location-finding stage in the process began, major differences became apparent in the interests of the main actors. The state of Brandenburg favored a location within its borders, south of Berlin. Brandenburg is an economically weak region, so the state government hoped that the airport would provide an important economic stimulus. Brandenburg considered Schönefeld unsuitable because this location would not be conducive to the intended ‘dispersed concentration’ (the region’s main planning goal that redirects development from Berlin to several core regions) and would have a major impact on the dense population in the area. The state government therefore favored Sperenberg (BÜRGERBEWEGUNG-STANDORTSUCHVERFAHREN, 2006). For its part, Berlin also had an interest in having the airport on its territory or in very close proximity to reap the economic benefits. The political parties in Berlin, however, did not agree either, with the governing Christian Democratic Union (CDU) favoring expanding Schönefeld, and its rival party, the Social Democratic Party (SPD), supporting Sperenberg.

Ignoring the earlier study, which had declared Schönefeld an unsuitable location for BBI, the Airport Holding declared that Sperenberg, Jüterbog, and Schönefeld would be considered in the Raumordnungsverfahren, a planning procedure aimed at evaluating the proposed locations (BÜRGERBEWEGUNG-RAUMORDNUNGSVERFAHREN, 2006). Sperenberg was home to a military airport, so many necessary facilities already existed. Much of the land was already owned by the government, and otherwise land costs were low. Because of its previous military usage, the surrounding area was only thinly settled, making 24-hour flight traffic possible. Additionally, it would be easy to connect the airport to other transportation lines—it was already connected to the railroad, and the
highway linking Berlin to Leipzig and Dresden could be easily extended to the airport (BVBB, 1999). Jüterbog had a slightly less attractive profile. It, too, had the advantage of low population density and property costs. However, the site was farther away from Berlin. Schönefeld was closest to Berlin and easiest to connect to transportation infrastructure, but the noise would impact a large number of people so that 24-hour air traffic would be undesirable. Based on a list of fifteen criteria the 1994 study concluded that Sperenberg and Jüterbog were suitable sites, while Schönefeld was not appropriate to house BBI. Even though this was a clear statement against Schönefeld, the Airport Holding declared that the result of the Raumordnungsverfahren was not binding and that they would continue to consider Schönefeld as an option (VON PRZYCHOWSKI, 2001).

In addition to the location question, a second controversy developed over how to finance BBI. A 1995 report concluded that the additional infrastructure needed for Sperenberg would cost 1.3 billion DM (0.9 billion US dollars at the time), while Schönefeld would only require 700 million DM (490 million US dollars at the time). Berlin and Brandenburg agreed to investigate whether the latter could cover the extra expenses; but Brandenburg’s Premier Stolpe soon after admitted that Brandenburg could not contribute enough money. At the same time he declared that he would favor a multiple-step solution—expanding Schönefeld for now, but later building a new airport in Sperenberg. This delay might make it possible to come up with the necessary funds. This left the financial question unanswered and added fuel to the location debate. At this time, too, the CDU–led Federal Government declared that it was not willing to pay for the extra expenses associated with Sperenberg. A bit later, the Federal Government
threatened to leave the Airport Holding if the dispute between Berlin and Brandenburg about the location continued.

A third heated debate developed in Berlin over the future of the existing Berlin airports, especially Tempelhof. The CDU wanted to keep Tempelhof open as a city airport, while the SPD wanted to close it as soon as possible. A citizens’ initiative supported the CDU’s stance, as did Lufthansa, who argued that Tempelhof had to remain open as a safety valve for Tegel. By 1994, even the members of the Airport Holding did not agree about the future of Tempelhof.

*Berlin Brandenburg International in Schönefeld*

The year 1996 promised to be a break-through year as politicians finally agreed on a location for BBI. Federal Minister of Transportation Wissmann, Berlin’s CDU Mayor Diepgen and Brandenburg’s Premier Stolpe (SPD) reached a ‘consensus decision’ to build the new international airport in Schönefeld with private investments. Tempelhof would be closed as soon as possible, and Tegel would cease operating as soon as BBI opened (BVBB, 1999). After these plans were made public, the airlines serving Tempelhof immediately stated that they would not move from Tempelhof to Schönefeld. A move to Tegel, however, was impossible because the airport could not handle any more passengers. Consequently the CDU promoted the expansion of Tegel, which was opposed by the SPD, creating another deadlock in the process.

Now that there was consensus that BBI would be built in Schönefeld, the draft plan was presented to the public for comment (*Planfeststellungsverfahren*). In total, citizens filed more than 132,000 complaints against the expansion of Schönefeld into BBI (VON
PRZYCHOWSKI, 2001), focusing on noise pollution, the expected decline in property values, and the impact on the ground transportation infrastructure. According to German planning law, hearings have to be organized to listen and respond to all the complaints brought forward by citizens. The sheer volume (approximately 4,000 separate arguments) meant that the beginning of construction of the airport (scheduled for 2003) was delayed.

At the same time as the hearings were taking place, a new federal government initiative reduced permissible noise levels around airports. These stricter regulations meant that BBI could not be operated late at night, and that a significant amount of money had to be budgeted to provide citizens with mandatory noise insulation. Since the noise evaluation in the Planfeststellungsverfahren had been done based on the previous regulations, it was questionable whether it was still valid.

The debate concerning the financing of BBI also went into another round. According to the ‘consensus decision’, private investors should pay for the airport. After several potential investors dropped out early in the process, two serious contenders remained—Hochtief (an international construction services provider with experience in numerous large infrastructure projects) and IVG (one of the largest real estate companies in Europe). In 2000, Hochtief was excluded from consideration because of charges that it had obtained an unfair advantage in the competitive bid (RICHTER, 2001). However, just months later the Oberlandesgericht (regional court) in Brandenburg overruled the decision and said that Hochtief should be allowed to bid. Rather than restarting the entire privatization procedure again with IVG and Hochtief as competitors, a consensus was reached that the two companies should cooperate on the airport project. It appeared as if the privatization issue was solved.
However, in 2001 the consortium of the two companies made its offer, which was significantly lower than expected: 50 million DM, rather than the 650 million DM first offered by Hochtief and the 350 million DM originally promised by the IVG (RICHTER, 2001). After additional negotiations and extended deadlines this amount was increased to 70 million DM. This unacceptably low offer ended all hopes for privatization. Assuming that the investors were hesitant because of the large risk involved in building BBI—after all there was a possibility that lawsuits would stop the entire project—the Airport Holding now considered building the airport with government loans and privatizing it once it was fully operational. By 2003, the estimated cost for the airport alone was 1.7 billion Euro (1.9 billion US dollars). Additional funds would be needed to connect it to the highway and rail system and pay for noise protection measures and environmental cleanup at the site. Berlin and Brandenburg were heavily indebted, so they needed the help of the Federal Government to build BBI.

While these controversies were based on the assumption that BBI would be built in Schönefeld, a variety of different parties continued to argue in favor of other locations including Sperenberg, other Brandenburg sites, and even a military airfield in Poland. The lack of consensus was hardly resolved when, in 2004, the results of the hearings were made public. The 1,200-page document imposed strict limitations on night flights in Schönefeld and mandated that 42,000 people were entitled to receive noise-proof windows. Immediately citizens started to compile a list of points against BBI for a lawsuit at the upper court in Leipzig (Bundesverwaltungsgericht). The lawyers representing the citizens were positive that the ten-point list addressing issues such as noise, pollution and other environmental issues, and safety concerns would stop the
project—in their opinion every single point would be enough to convince the judge (SCHWENKENBECHER, 2004). However, the supporters of BBI were equally convinced that they would receive permission to build the airport. In April 2005 the Bundesverwaltungsgericht stopped the construction until a final decision could be reached, a step never before taken in Germany in the planning phase of a large infrastructure project.

However, the airport opponents celebrated their victory prematurely: in March 2006 the court announced its final decision that the airport could be built in Schönefeld. The premier of Brandenburg hailed the ruling as the “most far-reaching since reunification for the future of the entire region” (quoted in BENOIT, 2006:6); and the director of Germany’s largest science and technology park (located near Schönefeld) said the judgment was a “green light” to American and Japanese investors (BENOIT, 2006). The decision cannot be appealed, finally closing the door to further changes in plans.

However, the court imposed a number of restrictions: There cannot be any flights between midnight and 5 am, and only a limited number of flights between 5 and 6 am, as well as 10 and 12 pm. Citizens are entitled to compensation if they live in the area where the average daily noise level reaches more than 62 decibels. The court also enlarged the area in which people have to receive sound-proof windows (“Wann starten die ersten Flieger?” 2006).

Much about the future of BBI remains uncertain. The most recent cost estimates for BBI are 2.1 billion Euro. The city of Berlin and Brandenburg will each pay 159 million Euro and the Federal Government will contribute 112 million Euro. The remaining costs will be covered through loans. Critics, however, have pointed out that even this price tag
may not be correct, as the temporary expansion of Tegel and legal disputes also have to be factored in (BVBB, 1999). Second, businesspeople and airlines believe that the restrictions on night flights seriously diminish the attractiveness of the airport for cargo as well as LCCs (LAVALL, 2006). Third, several airlines, backed by CDU politicians, continue to protest against the closing of Tempelhof and Tegel.

Nevertheless, work on the runways is scheduled to begin in 2007. The new southern runway will be 4000 meters long, enough to accommodate the new 555-seat Airbus A380, although it is unlikely that any airline will operate the “superjumbo” to the city (DUPONT and BURGER, 2003). The existing southern runway will be extended from 3000 meters to 3600 meters and will then be the northern runway. The current northern runway will be closed (Figure 6). As part of this reorganization, the space between the two runways will be enlarged to permit simultaneous parallel landings. Work on the new terminal is planned to start in 2008, with an estimated completion in 2011 (“Wann starten die ersten Flieger?” 2006).

Conclusions

The March 2006 decision giving the final go-ahead for BBI is but the latest chapter in a long and important story. Once a premier hub, Berlin lost its status during the Cold War as severe limitations were imposed on airlines serving Berlin. German reunification and the concurrent lifting of restrictions provided the opportunity to improve its position once again; and at first, it looked as if Berlin could regain its status as numerous airlines flocked to Berlin in the early 1990s. An early analysis of the impacts of post-Communist restructuring on transportation in the region foresaw that "Berlin, Prague, Budapest and
Warsaw will all be competing for major hub status in the region in the coming decade" (HALL 1993, 32). In fact, air traffic has increased dramatically in Germany (BEHNEN, 2004), but Berlin’s stature in German, European, and global airline networks has eroded.

VON PRZYCHOWSKI (2001) declared that a decade after the German reunification, Berlin’s and Brandenburg’s airport politics had failed miserably. Not only had construction not begun on BBI, but the development of all three existing airports was hindered by the threats to close Tempelhof and Tegel permanently. In short, rather than taking the fall of the Berlin Wall and the German reunification as an opportunity to improve the system by getting rid of redundancies, improving service, and preparing for future needs, the endless debates and controversies only made the situation worse (BÜRGERBEWEGUNG-FLUGHAFENSYSTEM, 2006; BVBB, 1999). Even if BBI is built now without any further delays, it seems unlikely that it will notably increase Berlin’s position in the international airline networks. Major opportunities were lost for Berlin that are unlikely to be regained under the current trends of concentrating traffic at fewer major airports. In fact, two-thirds of German air traffic is now served by just three airports: Frankfurt, Munich, and Dusseldorf (URBATZKA and WILKEN, 2004).

In Berlin, meanwhile, the LCCs have largely eclipsed the flag carriers that once dominated air traffic there (Table 2). Air Berlin remains the city’s third most important airline, Britain-based EasyJet has ascended to second place, and several other LCCs rank in the top ten carriers in Berlin. As a result of their expansion, air traffic to and from the German capital grew at a phenomenal pace between 2003 and 2006; and a principal beneficiary of that growth has been Schönefeld, which increased its share of scheduled capacity in Berlin from a nadir of 8 percent in 2003 to 27 percent just three years later.
Much of the growth of traffic to and from Berlin continues to focus on European leisure destinations as well as secondary cities in northern Europe served by the LCCs (Figure 7).

In this most recent period LCCs have had an indirectly positive effect on the city’s intercontinental connections, too. Virtually chased from US domestic routes by relentless LCC competition, American carriers have returned to Berlin. In 2005 both Delta and Continental added Berlin to their rapidly expanding international networks. But like the LCC phenomenon itself, the return of major American carriers to Berlin (and perhaps later Asian carriers, too, inasmuch as LCCs are gaining market share there as well) will not necessarily improve Berlin’s stature in European airline networks, for American carriers are adding other secondary cities like Bucharest and Venice, too. Berlin remains and is likely to remain at best a secondary hub.

Ultimately, two developments in the past decade and a half are to blame for this. First, Berlin had a big disadvantage compared to other cities: Its Cold War legacy of a system of three airports made it unsuitable as a hub. This was recognized as a problem soon after the fall of the Berlin Wall, but the failure of the key parties to agree on whether, where and how to build a new international airport meant that Berlin was largely powerless to affect its position in the rapidly changing airline industry. Second, the ongoing liberalization of air transportation has reorganized European airline networks in a way that did not leave much room for Berlin. Although liberalization and globalization have transformed the organization of the airline industry, they have tended to reinforce the advantages of privileged places and the disadvantages of marginal ones (BOWEN, 2002).
During the Cold War, West Berlin and East Berlin found themselves on the edges of the First World and Second World, respectively. Now, long after the reunification of Berlin, Germany and Europe, the odds against Berlin becoming one of the region’s foremost hubs seem very long. In that regard, Berlin is like many other places. For although Berlin’s history has been extraordinary, its disadvantage in the geography of the airline industry is ordinary. As air transportation continues to grow in importance, Berlin is hardly alone in looking to new infrastructure and new carriers as the means by which it can shed that disadvantage. Yet the globalization and liberalization of the airline industry mean that major hubs will probably continue to be few and far between. The expectations that Berlin could become a major hub between East and West were perhaps overly optimistic from the beginning; and local opposition to a rapid rationalization of the city’s air services, combined with inter-jurisdictional strife, both of which are common to airport expansion projects worldwide, meant that Berlin would not get the chance to try. Ultimately, Berlin has had neither the time nor the space to reclaim the centrality it enjoyed in aviation’s infancy.
References


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Table 1: Measures of European Airline Network Connectivity

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Sources: Ivy, 1995; authors’ analysis of information in OAG, 2003.

C = rank as measured by number of first-order (nonstop) schedule air passenger connections to other 35 sample cities. T = Rank as measured by total connectivity (taking account of first-, second-, and higher-order connections) to other 35 sample cities. See text for details. * = rank tied with that of at least one other city.
Table 2: Market Share of Leading Airlines in Berlin (All Three Airports Combined)

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<td>3.0</td>
<td>Germanwings</td>
<td>L-Germany</td>
<td>5.2</td>
</tr>
<tr>
<td>6</td>
<td>Aero Lloyd</td>
<td>R-Germany</td>
<td>2.9</td>
<td>Hapag Lloyd</td>
<td>L-Germany</td>
<td>4.9</td>
</tr>
<tr>
<td>7</td>
<td>Swiss</td>
<td>F-Switzerland</td>
<td>2.8</td>
<td>British Airways</td>
<td>F-UK</td>
<td>2.3</td>
</tr>
<tr>
<td>8</td>
<td>KLM-Royal Dutch</td>
<td>F-Netherlands</td>
<td>2.0</td>
<td>Swiss</td>
<td>F-Switzerland</td>
<td>1.9</td>
</tr>
<tr>
<td>9</td>
<td>Aeroflot</td>
<td>F-Russia</td>
<td>1.9</td>
<td>Air France</td>
<td>F-France</td>
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</tr>
<tr>
<td>10</td>
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<td>1.9</td>
<td>Ryanair</td>
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<td>1.5</td>
</tr>
<tr>
<td></td>
<td>Other Airlines</td>
<td></td>
<td>20.8</td>
<td>49 Other Airlines</td>
<td></td>
<td>22.9</td>
</tr>
</tbody>
</table>

F= a full-service flag carrier (i.e. principal international carrier for its home country)
R = a full-service carrier operating primarily intra-regional routes
L = a low-cost carrier
& = SAS is the flag carrier for Denmark, Norway, and Sweden
Source: authors’ analysis of information in various issues of the Official Airline Guide.
Figure 1: Berlin Airport Sites
Figure 2: Direct Berlin Flights, 1989
Figure 3: Direct Berlin Flights, 1992
Figure 4: Flights by Destination, 20 Largest European Airports
Figure 5: Direct Berlin Flights, 2003
Figure 6: Berlin Brandenburg International

http://www.berlin-airport.de/DE/Presse/FilmUndFoto/Bildarchiv/BBI/BBIKarte.html

[We have already received permission from BBI to use this illustration]
Figure 7: Direct Berlin Flights, 2006

Legend

- Number of inbound seats
- SCHÖNEFELD
- TEMPELHOF
- TEGEL