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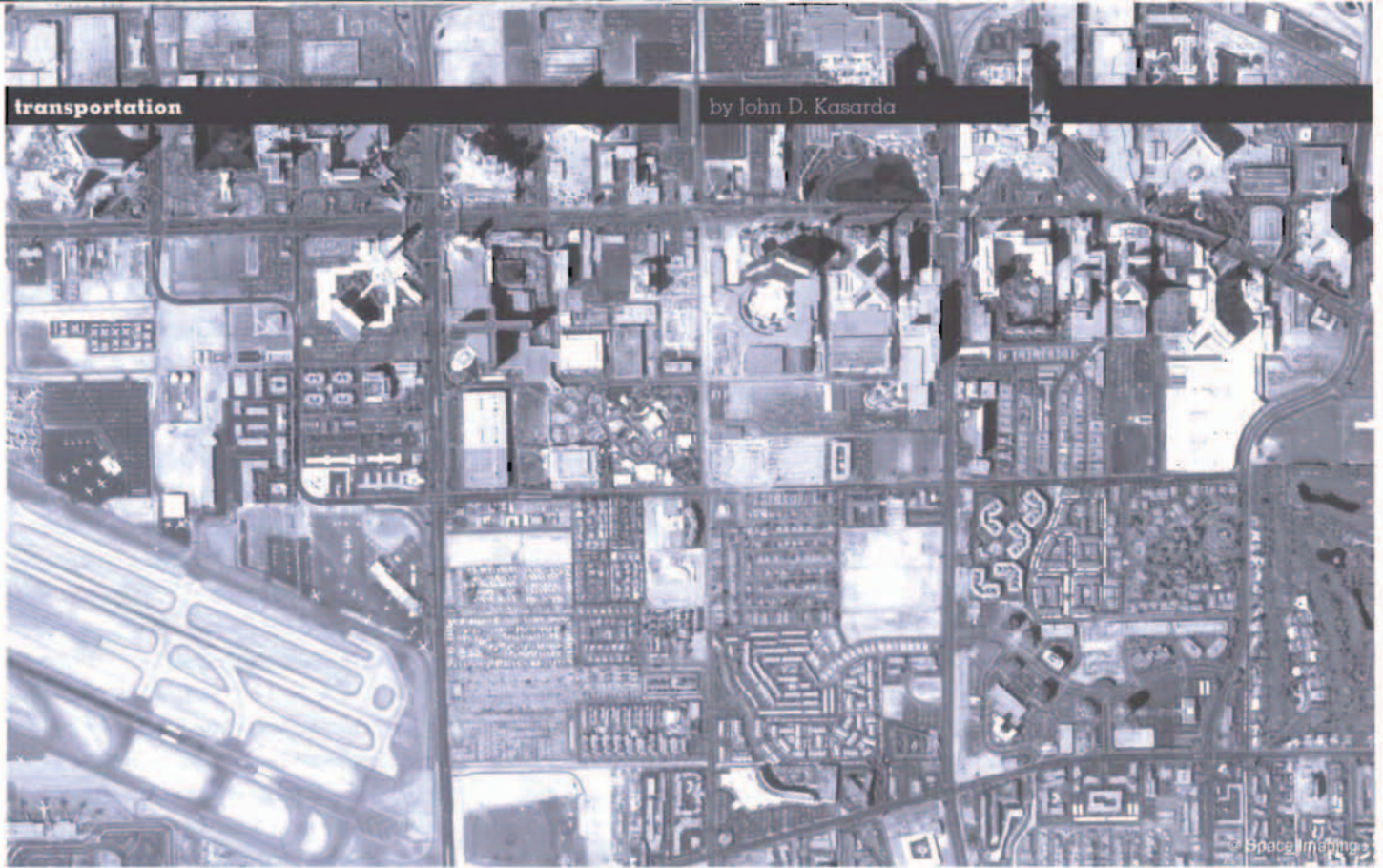
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The McCarran Airport and the Las Vegas Strip. Photo courtesy John D. Kasarda.

The Rise of the Aerotropolis

AIRPORTS ARE NO LONGER SIMPLY places where airplanes land and passengers and cargo transit. Amsterdam's Schiphol Airport is a case in point. About 58,000 people are daily employed on the airport grounds. Its passenger terminal—containing an expansive mix of shopping, dining, and entertainment arcades—doubles as a suburban mall that is accessible both to air travelers and the general public. Amsterdam residents regularly shop and relax in the airport's public section, especially on Sundays and at night when most city stores are closed.

Across from Schiphol's passenger terminal, one finds the World Trade Center, which contains conference facilities as well as the regional headquarters of such firms as Thomson-CFS and Unilever. Two five-star

hotels adjoin this complex. Within a ten-minute walk is another complex of class-A office buildings that house financial and consulting firms which serve the aviation industry. Clustered along the A4 and A9 motorways linking the airport to downtown Amsterdam are large business parks for companies in industries that make intensive use of the airport, such as telecommunications, logistics, and distribution. With the airport and its immediate area serving as a multimodal transportation and commercial nexus, a new economic geography is taking shape: property near the airport commands premium office rental prices for the Amsterdam area, even above those in Amsterdam's central business district.

Schiphol is but one example of how major airports are beginning to drive busi-

ness siting and urban development in the 21st century, much as highways did in the 20th, railroads in the 19th, and seaports in the 18th. As aviation-oriented businesses cluster at and near major airports, a new urban entity is emerging: the Aerotropolis. Similar in shape to the traditional metropolis of a central city and its commuter-heavy suburbs, the Aerotropolis consists of an airport city core and an outlying area of businesses stretching fifteen miles along transportation corridors.

Survival of the Fastest

Aerotropoli are emerging because of the advantages airports provide to business in the new speed-driven, globally networked economy. Today's most competitive manufactur-

ers, for example, use advanced information technology and high-speed transportation to provide fast and flexible responses to customers' unique needs. Such firms build agile production systems that quickly connect them to their suppliers and customers, allowing them to source parts and ship assembled products as needed. A manufacturer's ability to meet customer demand depends on the existence of a comprehensive ground-to-air shipping network of air cargo carriers, trucking companies, freight forwarders, and logistics providers. This network has been strengthened as demand for time-sensitive manufacturing and distribution grows. Made possible primarily by proximity to an airport, a ground-to-air shipping network allows manufacturers to minimize their inventories, shorten production-cycle times, and quickly access novel inputs for custom products that create additional value.

Like the manufacturing industry, the service sector has increasingly found airports to be an attractive location. Airports have become magnets for regional corporate headquarters, trade representative offices, professional associations, and information-intensive firms that require executives and staff to undertake frequent long-distance travel. Business travelers benefit considerably from access to hub airports, which offer greater

choice of flights and destinations and more flexibility in rescheduling.

Firms specializing in information and communications technology and other high-tech industries consider air accessibility especially crucial. High-tech professionals travel by air at least 60 percent more frequently than other professionals, giving rise to the term "nerd birds" for commercial aircraft connecting "techie" capitals such as Austin, Boston, Raleigh-Durham, and San Jose. Many tech firms are locating along major airport corridors, such as those along the Dulles Airport access corridor in Northern Virginia and the expressways leading to Chicago's O'Hare International Airport. In this sense, knowledge networks and air travel networks increasingly reinforce each other.

Lastly, as illustrated by the Schiphol Airport example, commercial services of all types have begun relocating to airport areas in order to attract a dual customer base of travelers and locals. Airports now offer on-site or nearby hotels, restaurants, shopping, fitness centers, and entertainment facilities. As these offerings grow, areas within five miles of major airports are adding jobs considerably faster than suburbs located at similar distances from a metropolis' center, but not near an airport. Job growth, in turn, stimulates residential projects—further fueling Aerotropolis development. Airport areas are even develop-

ing their own "brand" image—"the DFW Area" and "the O'Hare Area," for instance.

As a result of these changes, the airport itself is undergoing a metamorphosis, taking on many of the commercial functions of a metropolitan Central Business District (CBD). With the growing number of boutiques, restaurants, meeting facilities, and entertainment and cultural attractions, passenger terminals begin to resemble parts of downtown. Frankfurt Airport, for instance, has a hospital; Denver International has art galleries; and Las Vegas' McCarran has a museum. Many airports also have the density of highway and transit connections that are usually associated only with CBDs.

The Future Aerotropolis

To serve the economic demands of connectivity, speed, and agility, the Aerotropolis will require localized infrastructure planning of unprecedented scale. To date, Aerotropolis have evolved largely spontaneously, with existing nearby development often creating arterial bottlenecks. In the future, strategic infrastructure planning could reduce this congestion. Dedicated expressway links (aerolanes) and high-speed rail (aerotrails) could efficiently connect airports to business and residential clusters near and far. Special truck-only lanes could be added to airport expressways, as could improved highway interchanges to reduce congestion.

Even the physical infrastructure of global computer networks may begin to take shape around the Aerotropolis. Advanced information processing technologies and multimedia telecommunications systems served by high-density fiber-optic rings and satellite uplinks and downlinks are most likely to develop near airports. Such technology could instantly connect companies to their global suppliers, distributors, customers, and branch offices and partners. Companies that require the fastest possible networking will thus have an additional reason to locate in the Aerotropolis. Such computer infrastructure is appearing not only around major passenger airports like Dallas-Ft. Worth and Las Vegas but also around air express and cargo hubs such as Memphis (which serves global shipper FedEx) and Louisville (which serves United Parcel Service).

As transportation and technological infrastructure develops near airports, businesses will have even more reason to move to an Aerotropolis. The principal determinant of value, lease rates, and the type of commercial use on a given property will be the cost of moving people and products to and from the airport and, via the airport, to distant markets. This cost will be measured primarily in time to the airport—a function of the site's place on local transportation arteries, and not necessarily of spatial distance. For example, a

site 20 miles away, but one stop on a high-speed train line, from the airport will be worth more than a site 5 miles away with poor road and rail connections. To put it another way, the three "A's" (accessibility, accessibility, accessibility) will become the critical component of the three "L's" (location, location, location).

At first glance, one might misconstrue Aerotropolis land uses as simply additional sprawl along main airport transportation corridors. In reality, the Aerotropolis grows according to a rational system based on time-cost access gradients radiating outward from the airport. Constructing ground transit and locating commercial facilities consistent with the form and function of the Aerotropolis will contribute substantially to the emerging needs of business and to the future competitiveness of urban areas. ●

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