



New Songdo City, an aerotropolis built from scratch on a man-made island thirty miles southwest of Seoul, South Korea, is the best example of how airports are now the linchpin to urban development around the world. Photo courtesy of Gale International and TK/PR Public Relations.

CITIES FLOURISHED AS SEAPORTS. TOWNS SPROUTED AROUND RIVERS. RAILROADS OPENED THE HINTERLANDS, AND HIGHWAYS CONNECTED SUBURBS. NOW, THE FASTEST-GROWING CITIES IN THE WORLD ARE AIRPORT CITIES. BEIJING AND DUBAI AND BRISBANE HAVE ALREADY STARTED LISTENING TO A UNC BUSINESS PROFESSOR NAMED JACK KASARDA, WHO SAYS THAT

OUR NATION'S FUTURE IS UP IN THE AIR.

WELCOME TO THE AGE OF AEROTROPOLIS

BY MARK DEREWICZ

Downtown Detroit is a ghost town. Skyscrapers loom empty. Abandoned factories and warehouses skirt the Detroit River. Two million people lived in Motor City in 1950; fewer than 790,000 live there today. There are no jobs. Foreclosures have skyrocketed. You could buy a house for a thousand bucks, though it's likely already been gutted by vandals or swallowed by weeds.

There have been different plans to save the city, but only one has gained traction: to save Detroit, build another city twenty-five miles west of downtown, between Detroit Metro Airport and Willow Run Airport. This new city already has a name: Detroit Aerotropolis, an airport city, the future economic engine for all of southeastern Michigan. Express trains and wide roads would connect the airports with clusters of corporate headquarters, manufacturing outposts, residential areas, hotels, conference halls, retail stores, and entertainment centers. All this would provide tens of thousands of jobs, a huge infusion of tax money, and billions of dollars in economic activity.

Maybe it sounds too grand, too good, or even too disconcerting to become true. But our global economy is inextricably linked to air travel. Aerotropolises have sprouted up around airports in Dallas, Amsterdam, Dubai, Beijing, Hong Kong, Kuala Lumpur, and elsewhere. And Jack Kasarda's fingerprints are all over them. A sociologist turned global business guru, Kasarda has helped dozens of cities around the world transform airports into economic juggernauts. They've taken his ideas—actual blueprints in some cases—and invested billions of dollars to build new cities for a globally connected age.

Kasarda's research shows that the goods we send now from country to country are 3.5 times more valuable than the goods we sent three decades ago. The stuff we send by jet is 14 times more valuable. We're now loading 747s with expensive medicine, computer components, fresh fruit and flowers, digitized car parts, microelec-

tronics, jewelry, and anything else that isn't too heavy to let a jet freighter rise from the runway.

Boats used to carry nearly all of our traded goods. But now, according to Kasarda's research, more than a third of the total economic value of all goods shipped internationally is sent by jet. Companies have lined up next to airports to save time and cut costs. They've created millions of jobs, but they've also sometimes created immense urban sprawl. Kasarda's idea is to plan aerotropolises for smart growth instead of letting airport cities unfold willy-nilly.

The Detroit Aerotropolis is one of his projects. No one knows if it will save the Detroit region. But no one knows its chances—or how to build it—better than Jack Kasarda.

The man with the plan

In the late 1970s, as chair of UNC's sociology department, Kasarda saw Detroit's demise coming. He found that companies were no longer bound by waterways and railroads. Factories moved to the uncongested suburbs, transporting products by truck instead of train or boat. Detroit hitched its fortunes to the auto industry and then watched the Big Three—Ford, Chrysler, and General Motors—leave for the suburbs and then for Mexico and overseas.

Kasarda consulted for the Carter administration, arguing that to try to reindustrialize inner cities was a waste of time. Those days were over; the factories weren't coming back. Instead, he said cities should shift to information processing, administrative work, and knowledge-based jobs. The government should help unemployed workers leave inner cities for the suburbs, where there were more lower-skill jobs. "You'd have thought I was the devil incarnate," Kasarda says. The Carter administration wanted no part of thinning out cities, even if it would reduce unemployment and the number of people on welfare.



Jack Kasarda, 2006, at Brisbane Airport in Australia, where he helped create an aerotropolis. Brisbane is on a long list of cities that Kasarda has advised. Photo courtesy of Brisbane Airport.

Kasarda turned out to be right. As Detroit withered away, Pittsburgh, once shackled to the steel industry, rebounded because it slowly rebuilt around health care, higher education, and high-tech industry. But other towns weren't so visionary or lucky. Wilkes Barre, Pennsylvania, (Kasarda's hometown) was a failed coal mining town. King Coal left when the Susquehanna River flooded the mines in the late 1950s. The town was never the same.

As a teen, Kasarda worked at a factory assembling grenade launchers bound for Vietnam, and then attended Cornell University to study economics and business. He loved his sociology courses most, even though he clashed with professors who told him that human beings had an innate ability to shape the world. They taught that circumstances didn't matter that much. Kasarda didn't believe them. What choice had the Wilkes Barre coal miners really had?

Kasarda thought that competition between cities and how their economies were structured mattered much more than individual will. His professors compared him unfavorably to Amos Hawley, a UNC professor who had created the field called human ecology—the study of people and their natural, social, and constructed environments. Kasarda took the job as a compliment and came to Carolina in 1968 to study under Hawley.



Panatropolis: This city doesn't exist yet. But it will be built over the course of several decades near Panama City's Tocumen International Airport. Planners took Kasarda's ideas and designed an aerotropolis that will rival New Songdo City in South Korea. Photo courtesy of Panatropolis Ltd.

"I was looking at cities as not just concentrations of people but as economic enterprises," Kasarda remembers. He thought the primary function of cities should be to generate jobs for their inhabitants and competitiveness for the nation.

As a young professor at the University of Chicago, Kasarda thought that multinational companies would play a major role in determining which cities and regions would succeed or fail. And a lot would depend on how companies organized their supply chains—from corporate headquarters down to the mines for raw materials—and how efficiently those chains operated.

When Hawley retired in 1976, Kasarda took his place and in 1980 became chair of UNC's sociology department. In the mid-1980s, Kasarda traveled to Bangkok and Hong Kong, where he saw airports wedded to industry. Kasarda called them transparks—industrial developments where manufacturing plants merged seamlessly with airport taxiways. Kasarda realized that these transparks

were helping cities create lots of jobs. And they could be built anywhere, even in North Carolina or Michigan. He studied and wrote about how transparks functioned and how they could best be built. By the end of the 1980s, Kasarda had written enough; he wanted to help a city *build* a transpark.

Global TransPark

In 1990, the year Kasarda left the sociology department to head up UNC's Kenan Institute of Private Enterprise, he got a call from North Carolina Governor James Martin. The two spoke at length about what a transpark in North Carolina would look like. Kasarda rattled off his ideas: a pair of runways, each 2.5 miles long, would allow the largest jet freighters to land. Manufacturing plants would abut taxiways so products could be loaded onto planes the same way coal is loaded onto freight trains. Computerized conveyor systems would connect manufacturing plants to jet freighters (kind of like how passengers funnel onto planes from terminal gates). High-speed vehicles would connect factories to central distribution terminals. Freight would be weighed automatically. Kasarda's list went on and on. But what really got Martin excited was Kasarda's research showing that a transpark—if properly built and located—could create thirty thousand jobs.

Martin was sold. The state chose to build it in Kinston, even though Kasarda had told planners that Kinston's airport lacked access to highways and larger cities.

The Global TransPark wasn't finished until 2001, and for the next seven years Kinston was passed over as companies put factories near other airports. The first major multinational company to call Kinston home was a Boeing spin-off called Spirit AeroSystems in 2008. Today, critics call the Global TransPark an expensive failure. Some blame Kasarda. Still, ten companies and four state agencies call the park home. Progress has been slower than expected, but Kasarda still says, "It's eventually going to work."

His prediction is based on precedent. The global economy is now all about just-in-time manufacturing—make products, ship them, use them right away. Inventory is a waste of space, which means it's also a waste of money. A network of complex computer systems and the internet make just-in time possible. But, as Kasarda points out, "the internet can't move a box." We need airports. Good airports. A network of airports. "The physical internet," as Kasarda calls it.

Just like a website, a transpark should be efficient, tidy, and attractive. But during the 1990s this physical internet had already caused urban sprawl around cities such as Memphis, Chicago, and Newark. Like the first websites, the physical internet's original transparks were cobbled-together, sloppy, and ugly. Kasarda set out to fix that. He drew up his own designs for how industries should build near airports.

In 1995 Federal Express, which had helped create a vast urban development and thousands of jobs in Memphis, used Kasarda's transpark model to build a new Asian hub in the Philippines. Two years later the Subic Bay Freeport Zone, as it's called, had twelve Taiwanese computer component factories. Within ten years, more than one hundred companies had moved to Subic Bay, investing \$2.5 billion and employing seventy thousand people. Exports rose from \$24 million to \$1.3 billion.

While Kinston's Global TransPark was mired in delays, Subic



Detroit Metro Wayne County Airport is turning into an aerotropolis. Those woods in the distance will disappear. In their place will rise distribution centers, hotels, and other job-creators—the centerpiece, Kasarda says, of Detroit’s long-awaited revival. Photo courtesy of Aerotropolis Development Corporation.

Bay took off. Airport authorities in China, Thailand, Southern California, and Dallas-Fort Worth wanted Kasarda to help them deal with the deluge of companies moving in next to their runways. It was during those meetings in the 1990s when Kasarda realized that “transpark” wasn’t the right word for what he was talking about. Airports weren’t just conduits for transporting cargo and people. Kasarda found that the number of airline passengers had increased from 13 million to 500 million between 1950 and 1989, and over half of them were business travelers. As a result firms were relocating corporate headquarters and other offices near airports, and corporate employees were building houses in nearby developments.

Kasarda began reworking his transpark idea. He sketched what an airport city could look like, complete with hotels, conference centers, residential areas, manufacturing hubs, and elements of his transpark idea. While explaining his new scheme to Chinese government officials, Kasarda heard one of them whisper to another, “It’s an *aerotropolis*.”

The fifth wave

In a pair of articles in 2000, Kasarda laid out a concise history of the five waves of urban development and explained why we should pay close attention to the fifth one.

First, modern cities developed around seaports (Boston, Charleston, New York). Second, towns sprouted up along rivers and canals (Buffalo, Pittsburgh, Detroit). Third, railroads opened up inland areas to manufacturing and distribution (Atlanta, Omaha, Kansas City). Fourth, integrated highways dispersed people and companies throughout suburbia. The fifth wave is cresting

right now: airports as the primary drivers of urban growth, international connectivity, and economic success. Speed now matters most.

“The economy is no longer about individual companies battling it out with other companies,” Kasarda says. “It’s about supply chains versus supply chains.” Twelve companies in twelve countries might make different computer components, and a thirteenth might assemble the computers and ship them to retailers around the world. It’s crucial, Kasarda says, that none of those thirteen links in the supply chain be slow, inefficient, or expensive.

Kasarda came up with a short list of aerotropolis themes:

1. Developments should cluster together—manufacturing in one place, corporate offices in another, homes in a third, etc.
2. Manufacturing, warehousing, and trucking should be separate from other business areas and passenger flows.
3. Green space should separate developments.
4. Strip developments, such as strip malls, should be limited.
5. Expressways and express trains should connect the airport with major business and residential areas.
6. Truck-only lanes in busy areas would reduce traffic congestion and improve safety.
7. Businesses that use the airport the most should be closest to it.
8. Noise and emission-sensitive commercial and residential areas should lie outside high-intensity flight paths.

In those same articles, Kasarda showed how airport developments had already helped many cities. In 1995, Los Angeles International Airport generated \$14.7 billion in business just in the vicinity of the airport. But LAX has no room to grow. The economic

impact of Dallas–Fort Worth’s airport on the North Texas region was \$8.4 billion a year in 1995; now it’s \$39 billion. Airlines generate a third of that total. Surrounding commercial development, land leases, and hotels generate the rest. More than two thousand companies moved to Las Colinas, an instant city four miles from DFW Airport, full of companies, restaurants, hotels, and neighborhoods with tree-lined roads. But there’s no more land to develop near DFW; developers are now focusing on the six thousand acres of open land inside the airport’s fences.

In a single year, \$130.5 billion in freight moved through JFK airport, accounting for 130,000 jobs. JFK can’t expand. Chicago’s O’Hare International Airport area is the second-largest office market in the Midwest, but it has little room to grow. Dulles’s airport area registers more retail sales than any other U.S. “city” except Manhattan. In Memphis, Federal Express moved next to the airport, attracting hundreds of companies, creating 220,154 jobs, and helping to infuse \$29 billion into the region annually.

And Detroit? The Jones Lang LaSalle real estate firm has estimated that after twenty-five years of construction, the Detroit Aerotropolis would generate \$10 billion in annual economic activity, \$171 million in annual tax revenue, and 64,000 jobs. Although other cities and airports have a massive head start on Detroit, Kasarda points out that Detroit Metro Airport has nearly sixty thousand acres of developable land, one of the most prized possessions of the Instant Age.

Up in the air

Kasarda found that land near airports, which had long been some of the cheapest real estate, has become some of the most desirable and expensive acreage on the planet. And not just for industries. Homes—mansions, in some cases—are lining up near airports.

Consider Denver. Stapleton Airport was built far from residential neighborhoods in 1929. By the time the airport closed in 1995, neighborhoods had surrounded it. Some people complained about the noise and traffic. The city built Denver International



Amsterdam Airport Schiphol, twenty minutes from downtown Amsterdam, is now its own city. According to Jack Kasarda, it’s efficient, well-designed, attractive, and better than any of the aerotropolis prototypes in the United States, including Memphis. Photo by Maurits Schaafsma and Liesbeth Noorman.

Airport in the middle of nowhere twenty-five miles northeast of the city. Seven times the size of Stapleton, DIA set aside fifty more square miles for future runways. Still, residential neighborhoods—really nice ones—have encroached on DIA’s fences. Will it or should it become an aerotropolis? Denver’s leaders are moving in that direction.

Detroit is trying to move faster. Its economy is a shambles. Detroit Metro Airport is one of the only major assets the region has other than the University of Michigan. The Wayne County officials who oversee Detroit’s two airports read Kasarda’s papers and asked for his help. He drafted three reports detailing how Detroit Metro had the hallmarks of a future aerotropolis. Then Wayne County CEO Bob Ficano had to convince civic leaders from other municipalities to go along. And he needed Michigan’s legislators to commit to special incentives, given the dire state of the Detroit region.

As Ficano tried to assuage skeptics and build consensus, Kasarda waited. And waited. Meanwhile, he continued to hone his ideas and watch as the business of building aerotropolises boomed. Business travel alone is now a \$261-billion industry in the United States and nearly a \$1-trillion industry around the globe. This is why conference centers near airports are so popular and why residential areas have taken shape under flight paths. People who travel a lot aren’t afraid to live near airports. “On the contrary,” Kasarda says, “many people are drawn to them.”

It wasn’t supposed to be like this. People said air travel would decrease with the rise of the internet and newfangled telecommunications such as videoconferencing. But that didn’t happen.

Technology has made business and trade easier, but few people will sign major contracts without first looking the other person in the eye, Kasarda says. People like face-to-face contact. They like to meet, hash out ideas, eat together, get to know each other. In fact, Kasarda’s research shows that high-tech workers—some of the same people who created our new communications reality—travel by air 400 percent more often than the rest of us. “Every time we’ve had an advance in telecommunications,” Kasarda says, “we’ve seen an increase in air travel.”

Corporate executives, managers, analysts, consultants, high-tech workers, conference organizers, accountants, and marketing specialists have all clustered near airports. Kasarda found that one out of every six U.S. citizens works within a short drive of the twenty-five busiest airport hubs in the country. There are four hundred thousand jobs within a five mile radius of Dallas–Fort Worth’s terminals. He also found that aerotropolises near Chicago, Washington, D.C., and Dallas–Fort Worth are growing much faster than the cities and suburbs that spawned them.

The aerotropolis’s bible

It seems it’s the fate of airports to be loathed and loved, unwanted and desperately needed. Recognizing this, Kasarda’s plan is simple. We will build and live near airports; why not plan for it? Why not make airport cities function properly so that they are economically efficient, attractive, and environmentally sustainable?

“China, India, and Middle Eastern countries view airports as the primary infrastructure necessary to compete in the twenty-first century,” Kasarda says. “We view them more as nuisances and environmental threats to be controlled. And therein lies our chal-

lenge and our peril. If we continue to view airports that way, then we've already capitulated. We're already out of the game."

China is building one hundred airports, to be completed by 2020. Dozens will be aerotropolises. In Taiwan, the government spent \$8 billion for one airport project based on Kasarda's designs. In comparison, the U.S. allocated \$9 billion for all transportation infrastructure as part of the 2008 stimulus package; a tiny fraction went to updating airports. "Thirty years ago we had the best airports," Kasarda says. "Not anymore."

Dubai's aerotropolis is the world's largest, situated perfectly between the East and West. India took so well to Kasarda's ideas that he had to write an op-ed piece telling them to slow down; not every town in India can or should be an aerotropolis. Still, India wants to build five hundred airports in the next decade. In China, Guangzhou's new airport, where FedEx has a major hub, is becoming an aerotropolis based on Kasarda's designs.

President Obama, in his 2011 State of the Union address, said we need to boost employment by doubling our exports in the next five years, which means improving our trade infrastructure. "But the president only mentioned the internet, high-speed rail, and highways," Kasarda says. "None of that will increase exports that much. He gave little mention to airports and their surrounding infrastructure. *That's* where we need investment."

Kasarda has written ten books, including *Global Airport Cities*, which is for industry insiders, airport developers, and scholars. His latest book, *Aerotropolis: The Way We'll Live Next*, is for the rest of us, including politicians. It was cowritten with business reporter Greg Lindsay.

Made in Michigan

In a chapter titled "Aerotropolis or Bust," Lindsay writes about his trip to Amsterdam in 2007 to check out Schiphol International Airport and its aerotropolis, which Kasarda had told him was one of the best in the world. With Lindsay were two dozen delegates from southeastern Michigan, including Wayne County's Bob Ficano. All had come to hear Kasarda and to see Schiphol in action. Ten of the delegates were already on board to build the Detroit Aerotropolis. By the end of the trip, all twenty-four were in agreement to build it.

They saw Kasarda's point that Detroit Metro Airport could be the key to southeastern Michigan's future. It's one of the newest, most efficient, most passenger-friendly airports in the country—and one of the best airports in the world because of its new terminals, Delta hub, and better connections to Asia than any other U.S. city. From Detroit Metro, companies can reach 60 percent of the U.S. population overnight and have immediate access to Canada, our biggest trade partner. About 80 percent of that trade flows through Detroit.

In 2008, on Ficano's invitation, the Chinese auto company Tempo Group opened an engineering center near Detroit Metro Airport. It hired several American engineers to test brakes and steering gear. Then Tempo hired a few dozen more. And then several hundred. All had worked for the Big Three at some point. Tempo is now one of five Chinese automakers reopening factories and warehouses that U.S. auto companies left vacant. The Wanxiang Group, China's second-largest private company, bought a former Ford plant and moved it to the aerotropolis to build electric cars.



Hong Kong International Airport, the hub that makes Hong Kong hum as a manufacturing and business leader. Photo courtesy Hong Kong International Airport.

In *Aerotropolis*, Lindsay writes that the auto industry is heading to the East, and Detroit's aerotropolis will be the bridge to the West—a key node on the world's physical internet. It's ironic that Detroit Aerotropolis got its start testing and building Chinese cars. But Ficano is focused on jobs first and diversification second.

Later in 2008, Ficano flew to Beijing for the China International Auto Parts Expo. While CEOs of the Big Three were in D.C. begging Congress for mercy during the financial crisis, Lindsay writes, "Ficano took to the podium in the enormous Exhibition Center and invited everyone present to colonize his corner of Michigan." So far, twenty companies have moved near Detroit Metro Airport. And that was before Michigan legislators passed a bill making it easier for companies to develop land and do business near the airport.

Things could unfold as slowly in Wayne County as they have in Kinston. Or the aerotropolis could transform southeastern Michigan into another American high-tech hub, or at least a revitalized mecca for manufacturing. It's too soon to tell. But in 2009, Detroit got good news. General Electric announced plans to open its Advanced Manufacturing and Software Technology Center at the Detroit Aerotropolis. It's the kind of anchor Ficano had hoped for. If the history of aerotropolises means anything, then other companies will follow GE's lead.

The GE plant hired fourteen hundred people to create next-generation wind turbines, smart grids, CAT scanners, and jet engines. It's the kind of knowledge work Kasarda knew would be our future, even back when he was sparring with the Carter White House. And those American knowledge workers have set up shop not in downtown Detroit, not in the suburbs, and not in a foreign country. They go to work at the aerotropolis. ■

John D. Kasarda is director of the Frank Hawkins Kenan Institute of Private Enterprise at UNC. Greg Lindsay is a freelance writer whose work has been featured in Time, Fast Company, BusinessWeek, and Advertising Age. Their book, Aerotropolis: The Way We'll Live Next, was published in March 2011. New York Magazine ranked it number eight on a list of the most anticipated books of 2011. Kasarda's aerotropolis was one of TIME magazine's "10 Ideas that will Change the World" (see the March 28, 2011, issue).