

The Global TransPark

JOHN D. KASARDA



Logistical Infrastructure for Industrial Advantage

Dramatic changes are occurring in the way businesses operate around the world. Underlying those changes is the emergence of a new competitive environment in which price and quality are necessary—but no longer sufficient—for commercial success. Increasingly, customers from both established and emerging markets are demanding fast and reliable delivery of products with distinctive, personalized features. Industrial advantage is gained by firms that respond flexibly and rapidly to their domestic and global customers, delivering lower cost, high-quality products quickly and efficiently.

Staying on top of the competition also requires more efficient global supply-chain management. Manufacturers must be able to draw on an international network of suppliers of raw materials and subassemblers in order to obtain the best-quality products at the lowest possible price. At the same time, increased flow of information worldwide is leading to faster changes in market demands. Companies that can detect these changes, design and produce the desired products, and deliver them more quickly than other producers will capture the market. Speed also reduces warehousing

A new kind of industrial park/airport fuses modern manufacturing and distribution facilities with multimodal transportation, advanced telecommunications, sophisticated materials-handling systems, and state-of-the-art support services.

and inventory costs, stock-outs, and remaindered goods. The speed advantage becomes a cost advantage as well.

New industrial strategies emphasizing speed, agility, and efficient supply-chain management, however, often are constrained by existing transportation and logistics barriers. What is needed is a logistics infrastructure system that overcomes these barriers. The Global TransPark (GTP) is one such infrastructure system designed specifically to meet industry needs in these strategic areas. (Glob-

al TransPark®, TransPark®, and GTP® are registered service trademarks of the North Carolina Global TransPark Authority. The concept and initial design were developed by the author.)

What Is a Global TransPark?

The GTP system uses many proven elements of a modern industrial park, but what sets it apart is the fusion of modern manufacturing and distribution facilities with multimodal transportation, advanced telecommunications, sophisticated materials-handling systems, and commercial support services that link tenants to both domestic and international suppliers and customers.

A well-equipped international cargo airport with runways capable of handling fully loaded wide-body air freighters lies at the heart of the GTP system. Manufacturing and distribution facilities can be located directly along customized taxiways and ramps, allowing air freighters to come virtually to the “factory door.”

A computer-guided cargo transfer system (CTS) carries materials, components, and finished products throughout the GTP on an internal network of dedicated rights-of-way. This network links off-ramp tenants to the central cargo area, a state-of-the-art intermodal complex providing access to air freighters, trucks, and materials-handling systems. In addition, the CTS connects tenants and the central cargo area to an intermodal rail facility (IRF) containing multiple rail sidings, loading platforms, and truck cross-docking. The IRF handles primarily bulk and heavy cargo and is a particularly valuable connection to port facilities.

The hub of the central cargo area and cargo transfer system is the central cargo facility (CCF) located along the airfield’s main taxiway. The CCF provides off-ramp and off-site factories, warehouses, and distribution centers with automated sorting capability, customs clearance, and air freighter access. Since most GTP tenants will not have the volume of cargo to justify direct air-freighter docking, the central cargo facility offers them air access via the cargo transport system and/or direct truck cross-docking at the rear of the facility.

The entire complex is served by a loop multilane freeway system encircling the airport and providing high-speed access to all parts of the GTP, to regional and interstate highway systems, and to the intermodal rail facility. Internal roads connect the central cargo area and tenants to the loop road.

Along with its multimodal transportation and cargo-handling systems, the GTP system supports its tenants and users with comprehensive electronic-commerce capabilities. Electronic data interchange (EDI) and other telecommunications systems using the latest technologies, including fiber optics, multimedia networks, and on-site digitized satellite uplinks and downlinks, offer tenants

The Global TransPark’s central cargo facility, located along the airfield’s main taxiway, contains factories, warehouses, and distribution centers, with airplane access via a computer-guided cargo transfer system (see illustration on page 107) and direct truck cross-docking at the rear.



superior electronic access to the global commercial world. EDI improves supply-chain management and a variety of other logistical practices as it tracks, coordinates, and controls materials and product flows across both domestic and international transportation modes. Plug-in software systems allow tenants real-time access to worldwide supplier, distributor, and customer databases.

Expedited customs procedures using automated manifest systems and express customs clearance facilitate tenant import and export activities. The GTP’s foreign trade zone status allows tenants to defer, reduce, or eliminate payment of duties normally associated with importing goods into the United States. It also reduces bureaucratic barriers often associated with importing and exporting.

To ensure that tenants have enough skilled workers and managers, a wide range of worker training, management education, and technology-transfer functions are provided through an on-site education and training center. A key feature of the center is its distance-learning capability, providing tenants with real-time audio, video, and tactile worker training customized to their needs, from virtually any location in the world.

GTP Design Principles

The GTP system was designed by economists, manufacturing consultants, planners, industrial and civil engineers, and others with an understanding of current and anticipated global business requirements. Recognizing that some changes cannot be predicted, however, they made reconfigurability a central feature of the master plan. Thus, the GTP is not so much a fixed physical plan as it is a flexible framework accommodating a wide variety of tenants, facilities, and physical layouts that can be modified when new technologies and advances in infrastructure emerge.



The central cargo area, for example, employs a modular layout for maximum flexibility and phased development. Ground transportation designs incorporate redundant routings and intelligent highway systems to minimize the impact of congestion or accidents, both within the GTP and in connecting transport systems. Rights-of-way are sized to allow future expansion without negatively affecting ongoing highway operations. The GTP's long-range runways are equipped with state-of-the-art navigational aids to eliminate weather delays. Extensive zoning controls in flight paths minimize potentially conflicting land uses and noise problems that could impede the required 24-hour airport operation.

GTP management also must be prepared to respond rapidly and creatively to evolving tenant needs and an ever-changing business environment; hence, GTP management itself must create or coordinate "one-stop shop" support for tenants from each logistical or institutional sector. In this sense, GTP management not only will develop, market, and administer the shared infrastructure, but it also will operate as a strategic partner with tenants in dealing with customs and other government agencies and in seeking access to a full range of technical, financial, and political resources.

Consistent with ISO 14000 standards (international standards that enable companies to systematize and improve their environmental management efforts), the GTP's designers have made maintaining environmental quality and safety a fundamental objective of the TransPark. The GTP system provides facilities and procedures for the handling, storage, transportation, and disposal of environmentally sensitive materials as a continuous process. Likewise, modern GTP utility systems offer high-quality and reliable power, water, natural gas, wastewater treatment, and solid-waste disposal to meet tenant needs.

Each potential tenant should be evaluated for its compatibility with environmental regulations and standards. The GTP management/tenant partnership will address the requirements for operating within acceptable environmental parameters jointly. Innovative site planning and design will ensure visually attractive development with ample landscaping and preservation of environmentally sensitive areas, making the GTP more appealing to potential tenants. The GTP thus will appear more like a university campus than a traditional industrial park.

Although cost savings remain important in today's industrial location decisions, the GTP system is being designed and developed on the assumption that tenants will pay more for its integrated, high-quality, reliable services and sound environmental planning. Because a delicate tradeoff exists between costs and on-site services, however, the GTP's cost effectiveness will be achieved by the phasing of development to minimize initial investment and location costs for tenants. Development of the overall site infrastructure will be incremental, demand-driven, modularized, and reconfigurable. Further flexibility will be achieved by oversizing and reserving spacious rights-of-way for future infrastructure and plant expansion. The internal transportation corridors linking the transportation modes and production facilities also will be oversized to meet increasing traffic levels and to accommodate future developments in vehicles and transport systems. The same corridors will have all the underground utility channels needed for powering and servicing production and distribution facilities. This includes designing corridors with rapid and flexible plug-in capability for tenants, as needed.

The North Carolina GTP

The first Global TransPark is now being developed around a large, underused airport approximately 80 miles east of North Carolina's Research Triangle Park and near major interstate highways, rail corridors, and ports. Over 15,000 contiguous acres will serve as integrated industrial and commercial sites. The master-planning process, which involved many of the nation's leading engineering and consulting firms (Bechtel, Kimley-Horn, Greiner, Andersen Consulting, and so forth) was completed in 1994, and the Federal Aviation Administration and U.S. Army Corps of Engineers approved and finalized a comprehensive environmental impact statement last September.

Funding for shared infrastructure development, expected to total approximately \$200 million, is being provided by federal, state, and local governments and by a private foundation. The project is based on the understanding that the public sector will provide the planning, infrastructure, and institutional framework and that businesses will

An international network of TransParks is envisioned, allowing the seamless, flexible, and uninterrupted flow of goods and materials worldwide. Three GTPs are now being developed, in North Carolina, Thailand, and the Philippines.

build on that framework through private investment and development.

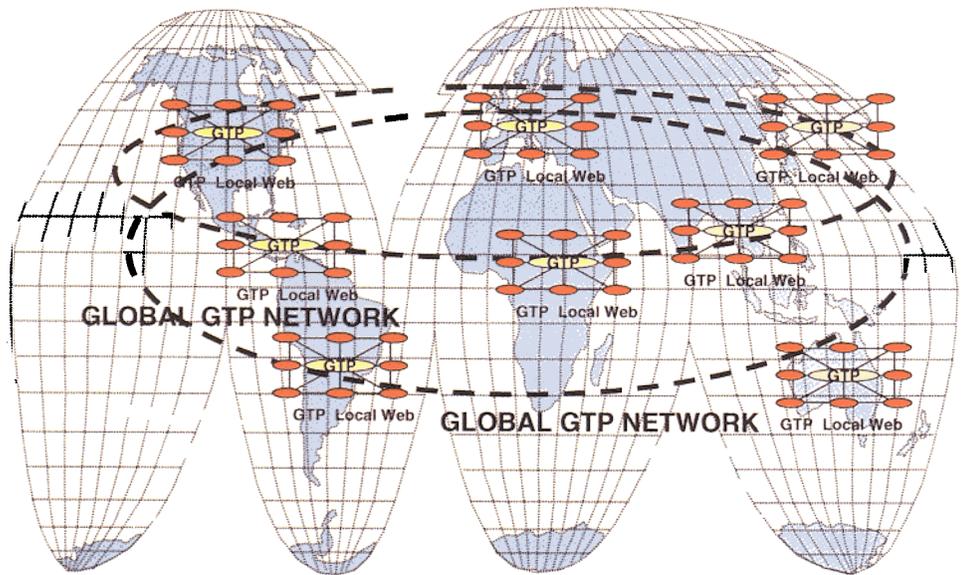
The public sector role in the GTP is being led by a state agency, the North Carolina Global TransPark Authority, chaired by Governor James B. Hunt, Jr. The authority has been given a broad range of powers, including land-use zoning up to six miles from the GTP periphery, eminent domain, and the ability to issue industrial development and general revenue bonds. In coordination with the authority, a nonprofit private corporation, the Global TransPark Foundation, Inc., will provide a wide range of services and financial resources for the project. Its board of directors (chaired by former governor James Martin) is composed largely of business leaders throughout the state.

In addition, a 13-county GTP Development Commission was formed in 1993 to facilitate economic development initiatives and environmental planning in the region surrounding the GTP. With the nearly unanimous support of the counties' legislative leaders, a \$5 annual registered vehicle fee within the counties was approved to provide additional infrastructure support resources.

Marketing efforts already have commenced, and the first tenant, Mountain Air Cargo/Mountain Aircraft Services, which operates regional cargo aircraft for Federal Express, moved into its new 70,000-square-foot maintenance facility at the GTP in summer 1996. As of early this year, construction of the GTP's FAA-approved and -supported runway extension to 11,000 feet and connector highway upgrades had begun, foreign trade zone status had been designated, and the education and training center was well on its way to completion.

A Global Network

Ultimately, multiple TransParks are envisioned to form a global network for industrial air commerce. This network, which also will include multimodal regional webs of interconnected hubs, satellites, and feeders, will offer an integrated worldwide logistical infrastructure system for flexible manufacturing and supply-chain management. Each TransPark hub will be linked to its sister hubs by dedicated cargo flights, and all infrastructure and technology (including intermodal connectors, containerization, EDI, and so forth) will be harmonized; therefore, whether an air freighter lands at a GTP in



Asia, Europe, or the United States, materials-handling conditions will be identical.

The international network of TransParks can be an important strategic tool for tenants requiring quick and efficient global reach. The synthesis of transportation and information technologies across the network will allow seamless, flexible, and uninterrupted flow of goods and materials from suppliers to manufacturers to customers worldwide. The Global TransPark network will provide maximum 36-hour delivery (and, in most cases, considerably less) between any two points on the globe.

In addition to the North Carolina GTP, two Asian GTPs are well along in development: at U-Taphao, a large former U.S. B-52 air base in the heart of Thailand's rapidly developing eastern seaboard manufacturing zone, and at Subic Bay port and airbase in the Philippines. The master plan for the GTP at U-Taphao is complete and, despite current national economic difficulties, is proceeding with strong implementation support from the Thai government. Subic Bay already is functioning as the Asian hub for Federal Express and has attracted more than \$1.5 billion in industrial facility investment adjacent to the base. Plans are being explored or pursued for potential GTPs in Germany, Brazil, Panama, South Africa, and the Middle East.

Whereas the precise timing of the complete development of the GTP worldwide network remains to be determined, there seems little doubt that logistical infrastructure systems of this nature will evolve over the next five to ten years. Success in an increasingly fast-paced global economy will demand it. ■

JOHN D. KASARDA, A ULI SENIOR FELLOW, IS THE KENAN DISTINGUISHED PROFESSOR OF BUSINESS AND DIRECTOR OF THE FRANK HAWKINS KENAN INSTITUTE OF PRIVATE ENTERPRISE AT THE KENAN-FLAGLER BUSINESS SCHOOL OF THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL.