

# **The Chongqing Air Logistics Platform: Strategic Guidelines**

Report 4

Chongqing Air Logistics Platform  
Implementation Plan Guidelines

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## 4.1 Introduction

In the previous two reports, guidelines were provided for Chongqing Air Logistics Platform (CALP) infrastructure and facility design and for the development of a corresponding business plan with emphasis and developing world-class air logistics at CKG. Building on these two reports, this final report will present guidelines for an implementation plan for logistics-related development at and around CKG, including (1) elaboration of infrastructure, facility and marketing phasing, (2) incentives to attract and leverage appropriate air cargo service providers and industry, (3) coordination and harmonization with multimodal logistics hubs elsewhere, and (4) alternative institutional mechanisms for financing and managing CKG Air Logistics Park development and operation. This report concludes with recommendations for CKG and appropriate government agencies to improve prospects for successful development of the airport's air logistics park and greater Chongqing Air Logistics Platform.

## 4.2 Implementation Stages

Though prospects are excellent for rapidly developing key components of the CKG Air Logistics Park and broader CALP, the reality is that they will likely evolve over a 5 to 20 year period through a series of overlapping development stages. Understanding this is necessary for marketing and to making prudent investments in infrastructure and facilities timed to facility demand. Below I summarize key stages of an infrastructure and facilities implementation plan for CKG to cornerstone a leading multimodal air logistics complex.

### 4.2.1 Stage 1

During Stage 1, which can last up to five years, significant site improvements must be made in the future C<sub>3</sub> and C<sub>2</sub> cargo areas. At present these parcels are undeveloped land. Such improvements include utilities and internal and external highway connections as noted in Report 2. In addition to land parcelization, all C<sub>3</sub> and C<sub>2</sub> site plans should be initiated for utility, grading and soil issues. Top priority should be given to those parcels which will house the new northern cargo facility and other important receivers and distributors of increased air cargo volumes at CKG. The Chongqing Airport Group (CAG) should immediately execute the contract for the engineering, geological, and

topographical work plan for C<sub>3</sub> and prepare these sites in compliance with aeronautical safety requirements and physical restrictions.

Similar engineering and site work contracting should be done for area C<sub>2</sub> in the event that it is determined that C<sub>3</sub> will not meet the airport's long-term cargo capacity needs as was suggested it would in the March 2009 assessment report by China IPPR International Engineering Corporation. CKG management is concerned that that the 1 square kilometer C<sub>3</sub> area may be too small to handle all forecasted domestic and international cargo along with suggested logistics activities. Moreover, they are worried about the re-routing of the highway that currently goes through C<sub>3</sub> and internal road connections to C<sub>2</sub> (yet to be built) as well as future C<sub>3</sub> accessibility to the loop highway being possibly cut off by the bonded port freight area fence. These potential problems need to be looked into immediately by our project team and resolved before final recommendations are made.

#### 4.2.1.1 Success Drivers

Ultimately, air logistics park success of CKG will rest on two measurable outcomes: (1) substantially increasing cargo flows at the airport, and (2) attracting a critical mass of logistics tenants and users to the airport's air logistics park and its adjacent bonded port freight area. In addition to state-of-the-art

CKG infrastructure and support facilities, accomplishing these objectives may require regulatory and legal changes. These “soft” infrastructure changes should occur in Stage 1.

First, federal aviation policy initiatives may be necessary to attract international air cargo carriers. One of the most effective would be for Beijing to continue to fully liberalize China's air cargo environment, perhaps with special emphasis on interior provinces. Research done at the University of North Carolina’s Kenan Institute of Private Enterprise shows that air cargo liberalization not only attracts international freighter aircraft, it is also a major stimulus of job creation and foreign direct investment at and around airports where their air cargo regulatory environments were liberalized. It was also shown to substantially boost air exports, as was described in Report 1 for Subic Bay.

The above positive outcomes are consistent with further Kenan Institute multivariate analysis using data for a 63-nation sample which showed that international air cargo flows, foreign direct investment, and trade are highly correlated with air regulatory liberalization as well as with quality of customs. It should be pointed out that, as with the 2004 China-U.S. Air cargo bilateral agreements, air carrier rights to establish a cargo or express hubs at Chinese airports and related privileges such as rights to serve other domestic points and

change of gauge rights require a minimum guaranteed number of weekly flights at the hub by the air cargo carrier. In the case of China, this is 72 air-cargo movements (landings or take-offs) per week by air cargo or air express carriers.

Based on successful policy experiences in coastal China (e.g., Shanghai and Shenzhu) and elsewhere in the world in jump-starting and/or growing air cargo carrier service, cargo flows and air exports, the following policies should be pursued for CKG.

- Open Skies for Freighter Aircraft. This should include seventh freedom rights to operate hubs for cargo aircraft between CKG and other seventh freedom airports. Seventh freedom is the right for a carrier to take on or discharge cargo originating from or destined for a third country without reconnection to its home country. Seventh freedom rights provide optimal routing flexibility to carriers and are pivotal to hub operations.
- Change of Gauge Rights. This will allow international cargo carriers serving CKG to transfer cargo between small and large aircraft allowing these carriers to serve smaller regional market, thus boosting CKG cargo flows.

- Co-terminal Rights. Co-terminal rights at CKG would permit cargo carriers to stop at any point in China to drop off shipments which originate outside of China or to pick up shipments for points outside of China. This maximizes cargo payload, permitting additional cargo service at CKG which might not be justified based on non-stop origin-destination shipments alone.

#### **4.2.2 *In-Transit Bonded Status***

The bonded freight area is likewise important for boosting CKG's air cargo. This area will complement the CKG air logistics park and surrounding air logistics platform. In-transit bonded status permits goods to enter China via CKG, be processed and then returned to CKG aircraft for export, all without direct China Customs involvement.

In-transit bonded status will be necessary once the bonded port freight area is in full operation. In-transit bonded status can also be used on sealed containers trucked from the airport to Chongqing's free trade zones established in other industrial parks for value-adding activities in a customs-free (tax-free) environment. Once established, this can substantially reinforce Chongqing's other logistics and industrial parks for processing value-added exports.



### 4.2.3 Stage 2

Stage 2, estimated to be three to six years from present, will involve expanded operation of the bonded freight area and completion of infrastructure and main cargo facilities for the C<sub>3</sub> air logistics park; recruitment of logistics management companies, the expansion of air express and air cargo carriers at CKG, and improvements in CKG's northern internal road system and access to nearby highways. At this stage, with new northern cargo area facilities, including possible new perishables and air express facilities, CKG will serve primarily as a time-critical goods distribution center, a regional air express sort facility, and a cargo handling and perishables transshipment center, with on-site pick and pack, consolidation and breakdown, kit assembly, and cold-chain perishables management.

During this second stage, the Chongqing Airport Group should develop the CKG logistics and air cargo service support conditions to eventually become a comprehensive air logistics park. This involves attracting a critical mass of freight forwarders, third-party logistics providers and air cargo airlines.

#### 4.2.3.1 Attracting Logistics Management Companies to CKG

According to the Li and Fung Logistics Research Group, nearly ninety percent of China's larger manufacturers rely on freight forwarders and third-party logistics providers (3PLs) to manage and handle their shipments. As freight forwarders have grown and become more sophisticated in their IT and shipping management services, they have become known as third-party logistics providers (3PLs). So important are they now in determining which airport and which airline they will utilize for shipping products, a number are being gobbled up by airlines such as FedEx, Lufthansa, and Korean Air. Since the line has blurred between larger freight forwarders and 3PLs, I will refer to both as logistics management companies.

These logistics management companies (like Li and Fung) have the ability to direct cargo to CKG, predicated on having the air cargo service they require being available. Since this is a chicken-and-egg dilemma, special dual efforts need to be made with the logistics management companies operating in Chongqing and the air cargo airlines to ensure mutual benefit by shipping through CKG.

One serious problem CKG faces and one that will grow dramatically in the future as high-tech firm such as HP and Foxconn develop major production facilities in Chongqing is the "leakage" of Chongqing air cargo that is trucked to

other China airports for export (as discussed in Report 3). The freight forwarders and 3PLs doing this currently will no doubt tell you that they need more extensive and more frequent international air cargo service at CKG to keep them from trucking locally produced air exports to other China airports. Our project team should thus obtain information on how much cargo load could be directed through CKG from these logistics management companies that would constitute a real CKG regional market for the air cargo carriers to serve. Then go to the air cargo and air express companies with this information. I am currently working on key Asia target lists of top 3PLs to be recruited along with my list of air cargo dependent manufacturing firms that could prove helpful down the road if this strategy is pursued.

#### 4.2.3.2 Attracting Air Cargo Airlines to CKG

I described the changes in the regulatory environment required in Stage 1 (e.g., open-skies for cargo aircraft at CKG, change of gauge rights, co-terminal rights) that would make CKG more attractive to cargo and air express airlines. Yet, all this will go for naught unless the cargo airlines can be guaranteed weekly cargo loads. In short, cargo airlines are reactive not proactive – they go where the business is. This is why working with the logistics management companies (freight forwarders and 3PLs) to direct cargo to CKG is so critical.

Researchers at the Kenan Institute are currently pursuing international surveys and studies that determine whether a cargo airline will serve a particular airport or not. We are trying to find documentation of such factors as airport costs, control of operations, customs quality, quality of road access, et cetera, as well as the particular roles the forwarders and 3PLs play. We may be able to help the Chongqing Airport Group through summaries of this research and by my own personal contacts in the air cargo and air express industry.

#### **4.2.4 Stage 3**

During Stage 3, (six to ten years from now) both C<sub>2</sub> and C<sub>3</sub> should be in full operation as well as the bonded port freight area. The improved connections to 319 National Highway should be completed and the new northern cargo facility in full service (as described in Report 2). More logistics service providers will locate on or near the airport and more air cargo airlines will be added to CKG's growing set of air cargo service providers. Additional clusters of logistics businesses should form near the airport, being leveraged by growing air cargo flows at CKG.

It will be important to appropriately plan for and locate these outside the airport fence clusters to maximize economic, environmental and aesthetic returns

following the critical success factors discussed in Report 3. There may be zoning restrictions and terrain issues that will need to be addressed, and commercial development will have to adapt to these as well as to Yubai District land-use regulations.

#### 4.2.5 Stage 4

Stage 4 (the full-scale air cargo/logistics complex) will be reached when sufficient manufacturing and distribution tenants and multimodal transportation and multimodal logistics providers reach a critical convergent mass so that logistics and production at and around CKG become fully integrated. At this stage, estimated to be in the 10- to 20-year time frame, all the elements of the ultimate Chongqing Air Logistics Platform will be put in-place, including the CKG air logistics park and associated bonded port and the cargo transfer system discussed in Report 2 (providing off-ramp and off-site manufacturers and distributors with air freighter access) and external multimodal including a possible nearby intermodal rail yard with an inland port (as discussed in Report 3). The cargo transfer system will connect all CKG air logistics park facilities with each other and with those in the bonded port as well as potentially nearby extended logistics and manufacturing complexes. Freight forwarders and third-party logistics providers will locate in and around the air logistics park, as

will e-commerce fulfillment and time-sensitive distribution facilities. It is expected that by this phase the third runway will have been built allowing fully-loaded A380 and B747-800 cargo aircraft to operate at CKG.

### **4.3 Providing Appropriate Investor Incentives**

The CKG Air Logistics Park and broader Chongqing Air Logistics Platform should be designed and managed to attract and grow logistics service providers, industry, and air cargo. Therefore, incentives will play an important role. Since traditional government financial incentives are declining in importance, new incentives to attract and grow industry must be pursued. The CKG Air Logistics Park, itself, can be one of the most powerful incentives. This is because operational incentives will be at least equally important, and in the longer term possibly even more significant, than financial incentives in attracting fast-cycle goods-processing industries.

From the beginning, the CKG Air Logistics Park and its operations must be structured to promote speed and agility in supply chain management, unmatched at other western China airports. Key to this is Customs, as industry group after industry group around the world has argued. Components of computers assembled in Chongqing will be increasingly manufactured in several

other countries and imported on a just-in-time basis. Likewise, international orders for these products are also increasingly time-critical, requiring that assembled goods flow out rapidly and efficiently.

According to the US-ASEAN Business Council, “The productivity and profitability of a manufacturing plant depends in large part on cycle time – that is, its ability to process inputs into outputs as quickly as possible. Decreased cycle time leads to lower inventories, with correspondingly lower inventory costs. In order to support world-class manufacturing, customs clearance time must be measured not in weeks, or even days, but in hours. Any customs administration that can provide reliable, timely customs clearance, or immediate release based on pre-clearance, creates an enormous competitive advantage in attracting manufacturing.”

Customs clearance procedures at CKG should minimize dwell time and reduce the amount of attention required by customs agents. Modernization of clearance procedures depends on improvement in communications among the shipper (manufacturer, retailer, etc), forwarder, 3PL, carrier, consignee, customs administration, and other pertinent parties, as discussed in Report 3. Installation and extensive use of web-based, open architecture EDI at CKG by China Customs must ultimately be the cornerstone of improvements in clearance procedures and in tracking of cargo within any storage, transfer, or in-transit

facilities. I defined Electronic Data Interchange (EDI) as a digital cargo data management system that incorporates the latest in communications and data management technology to trace, track and control product movements. (Note: we have a laboratory at the Kenan Institute that focuses on EDI and RFID [radio frequency identification] that may prove helpful in future recruitment of air express and air logistics firms.)

#### **4.4 Coordination and Harmonization with Similar Facilities Elsewhere**

If parts, components, and finished goods are to flow rapidly and seamlessly between CKG and other transportation facilities within China and between CKG and facilities abroad, it is essential that their information technologies and materials handling systems be harmonized. This requires using standardized EDI messages with compatible or open architecture software systems, as described in Report 3. If not in use already, it is further recommended that CKG and China Customs take a good look at the ASYCUDA system developed by the United Nations Conference on Trade and Development (UNCTAD) which is already being used by 80 countries around the world.

Containerization must also be standardized across shipping modes so that containers arriving by vessel at Chongqing's ports can be transferred efficiently



to truck or rail and be moved to an appropriate inland container yard, including possibly one near CKG. Since some of these containers may, at future stages, also be air freighted via heavy-lift aircraft from CKG, they must also be made compatible with materials-handling equipment for loading on all-cargo aircraft. Multimodal materials handling harmonization will require close coordination between CKG and other modal freight centers.

When purchasing material-handling equipment, and building key infrastructure, careful consultations should be made with major air cargo, sea cargo, and surface cargo handlers throughout Asia and, indeed, the world. It would be a terribly expensive mistake not to coordinate design of technologies and facilities at the CKG Air Logistics Park with the predominant technologies, materials handling equipment and space utilization standards at major ports and airports which serve as China's trading partners.

In process of recruiting air cargo service providers to CKG, it is recommended that Chongqing Airport Group executives visit air cargo hubs at Memphis, Hong Kong, Incheon, Singapore, Frankfurt, and Amsterdam to examine state-of-the-art materials-handling systems being put in operation there. Though CKG will certainly not have the volume and scale of these global air cargo centers, an excellent vision can be obtained of the direction that air cargo handling is taking with a variety of automated and semi-automated cargo

operations as well as other processes and procedures being implemented at these airports to speed the flow of goods through the airport.

#### **4.5 Possible Financing and Management Options for CKG Air Logistics Park (CKG ALP) Development and Operation**

Option 1: Have the Chongqing Airport group Develop/Market/Operate the CKG ALP

Considerable thought and work has been done to date on appropriate financing, institutional and management plans for developing and operating a multi-modal air logistics park. One approach implemented elsewhere is to create a special public authority to develop, market, and operate the air logistics park. For CKG, such an organization would be superfluous since the Chongqing Airport Group already exists to accomplish virtually all of this. Thus, option 1 really is to keep the Chongqing Airport group (CAG) as the organization fully responsible for CKG ALP development and operation.

The advantages of this institutional option (Option 1) include the following:

- A single organization such as the CAG should be better able to coordinate and manage all aspects of the development of the project.

- A single line of authority would perform agency coordination, contact with engineers, designers, construction contractors, tenants, users and suppliers to the CKG ALP.
- The development of the project could be constructed in a series of phases which reflect market demands with limited multiple organizational conflicts.
- The creation and hiring of paid staff and management positions can be flexible according to need, recognizing that some political clout will be necessary to accomplish CKG ALP development objectives.

The disadvantages of this option include the following:

- The CAG may not have the logistics or commercial real estate experience to effectively develop, market and operate the CKG ALP. Nor would they have the time and skill set to manage it.
- There is no element of privatization and government funds would be utilized for most shared infrastructure and facility development.

Option 2: Private Enterprise Builds, Operates, and then Transfers the CKG ALP to the Chongqing Airport Group (CAG).

A private enterprise consortium could build and operate the CKG ALP for a stipulated concessionary period (say 30 years) then, in accordance with an agreement with appropriate government agencies, maintain concessions but transfer ownership of the ALP back to CKG. This option would eliminate the requirement for CAG to undertake the initial construction with its own or borrowed resources. CAG would provide an exclusive contract with a private enterprise to design, build and operate the air logistics park for a given period of time.

In this option, the private sector could develop the air logistics park using private-sector financing with or without government involvement. They would operate the complex, collect income from the operation and pay a limited concession fee to the CAG for a determined period of time before transferring the ALP back to the CAG.

With Option 2, on-site construction would be performed by the private sector and off-site infrastructure (e.g., highways) and utilities (e.g., water lines) would be provided by appropriate government agencies. This may require a mandate from local governments to the selected firm in this build, operate and transfer (BOT) approach to provide full cooperation to the project.

The advantages of Option 2 include the following:

- The project would be implemented by private enterprise, which may be more skilled, efficient, flexible, responsive and productive than government agencies.
- The timing of the development of the project could be accelerated to meet market demand.
- No new organization would have to be established.
- There would be no requirement for local public sector or other government financial resources to the project other than to support the provision of off-site services and external infrastructure.

The disadvantages of Option 2 include the following:

- New Chinese legislation may be required to enable private sector BOT.

- The private sector could have difficulty securing adequate financing for development and operating cash flow due to the size and complexity of the project.
- The private sector would expect to make an adequate return on its investment prior to the transfer back of the complex, leading to high service fees and long concessionary periods.
- Local jurisdictions (e.g., Yubai District) might not be able to provide adequate off-site infrastructure to facilitate the operation of the complex.

### Option 3: Public Sector Builds and Transfers to Private Enterprise

This option is a reversal to the previous alternative. The Chongqing Airport Group would be responsible for the construction of the air logistics park and would then transfer it to a private enterprise for operation and maintenance. Government resources would finance initial development of the project but would then utilize the expertise and related financial strength of a private enterprise to market and operate the air logistics park.

The advantages of Option 3 include the following:

- Public resources can be used to immediately jump-start construction of air logistics park facilities.
- No special legislation would likely be needed and no new government structure would have to be established.
- The private sector would not be required to secure significant financing for the construction phase of the project.
- The specific expertise of local and state public agencies could be employed in the design and construction phase.

- These agencies would have only limited responsibilities for marketing or operating the ALP, which would be done mostly by the private sector whose core competency would include logistics and for commercial real estate development.

The disadvantages of Option 3 include the following:

- Extensive up-front public resources would have to be allocated to the project.
- It would be difficult to construct the project as a phased development. There could eventually be conflict between the private developer and the public agency if construction continued after transfer.
- The need for close and significant coordination during the design and build phase between the private developer and public agencies could create delays and added costs, which in turn could create problems during the transfer process.
- The skills, efficiency, flexibility, relative high productivity and responsiveness of the private enterprise are utilized only during the operating phases of the project.

#### ***4.5.1 Getting the CKG Air Logistics Park Started***

At an appropriate point in the not-too-distant future, the Chongqing Airport group (CAG) should solicit an appropriate feasibility study that would include assessing the merits and liabilities (including legality) of contracting with a third party to build and operate the CKG ALP. The CAG would prepare the Terms of Reference and supervise the assessment. In moving the air logistics park toward reality CAG should then:

- Prepare and issue Terms of Reference necessary for CKG ALP design
- Draft bid and tender documents for the design
- Market the procurement opportunities
- Select the CKG ALP design consultant
- Negotiate and award a contract to the consultant
- Initiate dialogue and, if appropriate legislation is enacted, possibly put out to bid for potential private sector developers and operators of the CKG ALP
- Create and approve the arrangements for private sector and Chongqing Airport Group participation predicated on the development and management options selected
- Tender the proposals for CKG ALP development and operation
- Select a successful tenderer
- Prepare finalist contracts and concessionary arrangements.

The ultimate objective is to select the best public, private or public-private venture structure to finance, build, operate, and manage the CKG ALP as well as work with local governments to create effective logistical synergies with the greater Chongqing Air Logistics Platform.

## **4.6 Summary Recommendations and Action Steps for CKG Air Logistics Park and Chongqing Air Logistics Platform Success**

Building on my own research dealing with the heightened role fast-cycle logistics plays in the 21<sup>st</sup> century global economy and lessons I've learned from air logistics park experiments elsewhere, my four reports have provided the business rationale and competitive logic for a CKG Air Logistics Park and greater multimodal logistics platform along with the infrastructure, business plan and implementation guidelines for their planning and development. If followed, they should markedly improve the prospects of their successful development of the air logistics park and its broader multimodal platform, thereby generating its desired benefits for Chongqing.

Below I will present 21 recommendations and action plans for the air logistics park and its extended multimodal logistics platform to achieve their full potential and, thereby, bring about greater economic development and competitive outcomes.

1. It will be increasingly difficult in the future for Chongqing to attract new time-critical industries and generate quality job on cost factors and traditional government incentives. Competitive advantage will come through strategic focus on connectivity, speed, and agility.



These should become the CKG's and the metropolitan area's new competitive tools.

2. Competitive advantage fostering connectivity, speed and agility requires a new economic engine. The engine proposed is the CKG Air Logistics Park (CKG ALP) that will cornerstone and help drive a greater-Chongqing fast-cycle logistics platform. This larger multimodal logistics platform will integrate air, highway, rail, and river transportation modes with advanced telecommunications, sophisticated materials handling systems, and state-of-the-art support services to provide Chongqing industries superior capability to respond rapidly and flexibly to changing markets nationally and worldwide. Upgraded local highways and metropolitan expressways, and new and extended rail lines are required to integrate the CKG area with regional business clusters and major national and international transport modes. Similarly, state-of-the-art broadband, fiber optics, Wi-Fi, Wi-WAN, and satellite up-links and down-links are needed for the region's companies to trace, track, and control product movements, which in the future will increasingly be monitored and managed through RFID (radio frequency identification), GPS (Global Positioning System), and intelligent

software agents (via computer chips embedded in products, parcels, and containers).

3. Just as today's most successful business are innovative, flexible, and rapidly responsive, so too must infrastructure and facility planning and design at the CKG ALP. The air logistics park and greater multimodal logistics platform thus should not be so much a fixed physical plan as it is a flexible framework for accommodating a wide variety of tenants, users, facilities and layouts that can be modified when new technologies, industries, and infrastructure emerge. For example, the future northern cargo area should employ a modular layout for maximum flexibility and phased development. On-site cargo processing facilities should employ flex-tech principles and be reconfigurable to allow for expansion (or even contraction) as demand warrants. Ground transportation systems should incorporate redundant routings to minimize impact of congestion or accidents both within CKG and connecting transport systems. CKG management (the Chongqing Airport Group) itself must be agile, prepared to respond rapidly and creatively to evolving tenant and user needs and to coordinate "one-stop-shop" support from a variety of government and institutional sectors.

4. The CALP's intermodal transportation infrastructure should be designed to allow seamless and flexible flows of materials among convergent transportation modes and industrial and other commercial facilities both in the core and peripheral areas of CKG. A cargo transfer system (CTS) must be planned linking the New Northern Cargo Facility (NNCF) to cargo related tenants throughout the airport as well as to an off-site intermodal rail facility and via traditional rail connectors to an inland port off-site. The NNCF would provide off-ramp CKG tenants and off-site production facilities, warehouses, and distribution centers with efficient cargo sorting capability, customs clearance, and air freighter access.
5. CKG should be served by an improved ring road encircling it, providing quick access to all parts of the complex to local and regional highway systems and to an intermodal rail facility. Internal roads should likewise be designed efficiently to link the air logistics park, and its New Northern Cargo facility within CKG to the airport ring road and other highway connectors to and from the airport.
6. CAG should immediately execute a contract for the engineering, geological and topographical work plan for C<sub>3</sub> (and possibly C<sub>2</sub>) as well as to obtain solid estimates of the costs of constructing internal

roads, utilities and preparing each site or land parcel in the air logistics park for facility construction.

7. CAG should also commission preliminary site work for the entire new northern cargo area so it can obtain an initial feasibility assessment for logistics, cargo, transportation, manufacturing, and commercial infrastructure and facilities recommended at the full build-out phase of the air logistics park.
  
8. The CKG air logistics park and adjacent bonded port freight area will give a major boost to air cargo and time-critical goods processing. Yet, CKG must be planned as much more than these. Its full potential and ultimate success rest on creating a multimodal infrastructure and supporting business environment that will substantially improve sourcing, production, and distribution activities of all its tenants and users. In the longer-term this includes an enhanced automated customs environment operating 24/7 with open architecture electronic data interchange (EDI) capability, and an on-site distance education and worker training facility, one-stop-shop investment support, and high-quality road infrastructure and utilities throughout the CKG air logistics park.

9. Planning for the CKG ALP and its various areas should give high priority to aesthetics and environmental sustainability. CKG must support not only logistics activities but also leisure and business air travelers. To the extent possible, logistics, manufacturing, trucking, and cargo handling should be physically separated from flows of business and leisure travelers following cargo in the north, passenger in the south principles. High-quality design standards should be established in the broader airport area for buildings, landscaping, and industrial clusters.
  
10. CKG's accessibility to businesses in the Chongqing Metropolitan Area must be substantially improved. Highway bottlenecks, choke points and other forms of congestion must be addressed for the fast and efficient movement of products to and from CKG. This includes addressing the potential problem of the bonded port freight area fence impeding C<sub>3</sub> area access to 319 National Highway and Outer Ring Road.
  
11. Beijing should provide CKG with a regulatory environment that will allow it to offer special operational incentives to attract air express and air cargo carriers. Most effective would be an open skies policy for air freighter aircraft, change of gauge rights, co-terminal rights

and possibly even self-handling rights of air cargo and air express companies operating at CKG.

12. The bonded port freight area should have an In-Transit Bonded Status policy that would permit goods to enter China via CKG, then be carried by ground transport to bonded manufacturing sites throughout Chongqing, processed and then returned to CKG for export, all without direct customs involvement.
13. China Customs needs a modern flexible documentation and processing system that is harmonized with modern customs systems elsewhere. It is therefore recommended that China Customs carefully examine the ASYCUDA system developed and regularly updated by UNCTAD which is being used by 80 countries around the world.
14. The leakage of international air freight from Chongqing must be substantially curtailed for the CKG ALP to achieve its full potential. This will require joint agreements between logistics management companies (e.g., freight forwarders and third-party logistics providers) and the cargo airlines that the logistics management companies will fill the additional freighter aircraft if the airlines expand air cargo service at CKG.

15. Strong efforts must continue to attract additional passenger service as well as air cargo service to CKG, especially international flights.

Airlines must be viewed not just as companies, but more as basic transportation infrastructure, no different from roadways and rail.

Airlines, like public infrastructure, are shared by all (business, tourists, etc) providing “highways in the sky” that rapidly connect a region to the world. These highways in the skies are “public good” infrastructures that do not have to be maintained by public money as do roadways, rail and much other public infrastructure.

16. It is my understanding that CAG and Chongqing area economic development officials are trying to convince an integrated air express carrier (e.g., FedEx, DHL) to set up a regional hub or mini-hub at CKG. This is wise since international air express is growing at three times the pace of traditional air cargo and such service would provide the region’s time-sensitive goods-processing industries with a marked speed advantage. These efforts must continue since Chongqing’s strategic location as the gateway to western China and growing IT manufacturing center have a good chance of improving this prospect. Implementing recommendation #11 above would be of immense value here. I’ve also recommended in the text that CAG

executives visit a number of air express and air cargo hubs such as Memphis, Hong Kong, and Frankfurt to observe state-of-the-art air express and air cargo materials handling systems in place there.

17. Marketing of the CKG Air Logistics Park should emphasize the importance of its logistics-based capabilities in attracting time-sensitive goods-processing businesses. Such businesses will certainly continue to seek traditional investment incentives such as tax relief, investment offsets for land or facilities and workforce training. However, as noted above, as the competitive priorities of connectivity, speed and agile market response grow in importance, the relative power of traditional government tax incentives will lessen. Increasingly, firm siting decisions will be made at least as much on the basis of logistical capabilities of the site and access to national and global networks as on traditional government financial incentives. Such logistics-based marketing must be based on development realities of CKG, though, and therefore phased, predicated on its stage of its logistics capabilities. In each phase, the marketing effort should be designed to attract a targeted segment of air logistics park tenants and users based on capabilities offered at the



phase which, in turn, would serve as a catalyst to attract additional complementary firms to the complex and surrounding airport region.

18. Attracting time-sensitive manufacturing and distribution industries will require a thorough understanding of modern supply chain management principles and the fast-cycle logistics. To offer a truly marketable competitive advantage, CAG, with the assistance of Chongqing and Yubai District economic development agencies, should bring together experts in logistics and supply chain management, multimodal infrastructure development and information technology to help design applications that would properly integrate and leverage all CKG ALP elements for fast-cycle logistics. Few locations in the world are doing this, so Chongqing can have a first-mover advantage in attracting high tech and other time-critical industries if it takes the lead in seizing this opportunity.
  
19. CAG has three options for its air logistics park operation: (1) complete managerial control, (2) outsource control to a 3PL, and (3) create a joint venture with a sophisticated 3PL clearly specifying the division of labor and responsibilities. Since logistics is a national agenda and because the private sector brings experience and skills for logistics facility management, it is recommended that CAG explore

forming a strategic or joint venture partnership with a world-class 3PL that has demonstrated superior logistics zone management and operational skills.

20. CKG Air Logistics Park development will only occur if infrastructure and developable sites are in place. Work must begin immediately on this. In fact, I recommend that all infrastructure and utilities (both on-airport property and off airport) be pre-planned with a “virtual” development plan that would include costs and timetables to bring infrastructure to the sites. With such a plan you can show the potential logistics or industrial tenant where the infrastructure will be and when it will be in place.

21. Finally, speed and agility are going to be a trump card for the CKG Air Logistics Park and its broader logistics platform, local governments will have to move quickly and flexibly when a tenant comes along. Often prospective tenants cannot afford to wait a year or more (or even six months) to get their site plan and building permits approved. Again, it is highly recommended that appropriate government agencies establish an accelerated site and building plan approval process for the CKG Air Logistics Park and its designated

surrounding logistics development are that can be completed in under 90 days from application.