AGENDA ITEM 6: ECONOMIC DEVELOPMENT OF AIR TRANSPORT

ASIA PACIFIC AIRPORT INFRASTRUCTURE CAPACITY AND CAPITAL INVESTMENT PLANNING

(Presented by International Air Transport Association)

SUMMARY

According to IATA’s 20-year air passenger forecast, Asia Pacific will be the biggest driver of demand with more than half of the new passenger traffic coming from the region. It is disconcerting however that infrastructure capacity is already at or nearing breaking point at many major airports in the region.

This paper presents industry best practices relating to airport infrastructure capacity and capital investment planning, drawing from IATA’s global engagement experience on this subject to facilitate engagements with stakeholders in the decision-making process to better meet the projected growth in traffic.
ASIA PACIFIC AIRPORT INFRASTRUCTURE CAPACITY AND INVESTMENTS PLANNING

1. INTRODUCTION

1.1 Over the next 20 years, the expected growth in the frequency of air travel of the average citizen will occur in the emerging markets.

1.2 By 2038, seven out of the top 10 largest air transport markets globally will be from the Asia Pacific region (China, India, Indonesia, Philippines, Vietnam, Thailand and Malaysia) in addition to Mexico, Brazil and Russia.

1.3 The number of trips per person is forecast to increase by 4-8% per year for many emerging countries but could be as high as 10-11% per year in the case of China and India. In contrast, trip frequency is likely to grow much more slowly, at just 1-2% per year in the developed countries.

1.4 Asia Pacific is expected to see an additional 2.8 billion passenger journeys in 2038 vs 2018 with the highest compound average growth rate of 5.2% compared to other regions.

1.5 An analysis by IATA based on publicly available data found that infrastructure capacity is already critical at many major airports in the region. More than 65% of the top 100 airports in the region monitored by IATA through our Airport Capacity Database have already exceeded their terminal capacity. A more in depth analysis of key major airports in the region in the same database found that 69% are already operating beyond their terminal capacity, and by the end of 2020 this figure will increase to 81%. This illustrates the challenge and trend that needs to be addressed, however, it should in no way be interpreted that the only solution is to build expensive new capacity before first ensuring existing infrastructure is being used as efficiently as possible.

1.6 There is a general lack of a cohesive infrastructure and capital investment planning to meet the envisaged growth in passenger (and air) traffic in partnership with airlines and the airport community.

1.7 A direct cost relation exists between airport charges and infrastructure investments that airlines fund, whether capital or operating expenditures. Airport infrastructure investments therefore need to be affordable, fit for purpose and deliver a return on the investment made.

2. DISCUSSION

Airport Master Plan and Infrastructure Planning Process

2.1 All airports should develop a master plan in order to guide future infrastructure and facility development programs in a logical, sustainable and cost efficient manner.

2.2 The master plan should allow for unfettered incremental expansion of all facilities until the ultimate capacity of the site is attained. No development should proceed until a master plan is in place.

2.3 Airport infrastructure development is iterative and requires a regular, ongoing dialogue with the airline community. “One-off” or irregular meetings to provide updates to the airline community on pre-determined outcomes does not constitute consultation.

2.4 IATA recommends capital investment programs to cover the short (0 – 5 years) and medium (5 – 10 years) terms and be reviewed annually.
Consultation with the airline community is required at key decision points by engaging the community in a timely manner at relevant stages of the planning process.

Please refer to IATA’s best practice Airport Master Planning guidance in Appendix A for more details.

Infrastructure Investment – Best Practice Consultation

Meaningful and effective airline community consultation is essential to align airport-airline infrastructure objectives, secure airlines buy-in and maximize the benefits of infrastructure investments.

Best practice airport-airline community consultation should achieve the following objectives:

• A phased, prioritized and flexible capital investment plan agreed and endorsed by airlines, resulting in clearly defined airline benefits and affordable airport charges.
• Cost efficient infrastructure investment that is demand led, fit for purpose and delivers best value for airlines.
• Investment plans that are compatible with the airport’s Master Plan taking account of longer term developments.
• A transparent consultation process that values airline inputs, works towards consensus and results in informed decision making.
• Equitable treatment, non-discrimination and open access resulting from airline community consultation and adoption of ICAO mandated principles.

Please refer to IATA’s Airport Infrastructure Investment Best Practice Consultation guidance in Appendix B for more details.

IATA is committed to supporting airports and authorities to help facilitate the necessary infrastructure planning framework to deliver demand driven, timely, cost effective and functional aviation infrastructure. This can be achieved through:

Private Sector Participation in Airports

IATA is mindful that some States have cited the lack of resources to fund the capital investments needed and is considering private sector participation in funding infrastructure developments and to operate airports.

To better support decision makers in the process, IATA published the “Airport Ownership and Regulation” guidance booklet in June 2018 and presented this at the 55th DGCA meeting last year. The booklet sets out recommendations for alternative ownership and operating models for airports globally, improved governmental decision-making, and required regulatory safeguards for privatized airports. The Ownership and Regulation report (see extract below) details how there is a broad range of ownership and operating models that can often meet government objectives for increased financing or service improvement, without the need for sale of assets and loss of strategic control of the airport.

Ownership and Operation Options

If a government still does decide to pursue privatization, this can be either through a sale of an asset (equity sale) or through a concession agreement for the private sector company to build and/or operate the airport facility. IATA strongly recommends this to be defined in a business case which justifies the intended benefits for all stakeholders for a move to the private sector.

The large majority of airport privatizations are based on concessions (shown in the red box above). That is where the government retains ownership of the asset (it could just be the land for a new airport) and brings in a private operator to finance, build and or operate the airport.

There are many models of concessions for airports which typically represent a contractual relationship negotiated between the government as the asset owner and the private sector concessionaire. To assist the decision-makers in government institutions in this process, IATA published the “Balanced Concessions for The Airport Industry” guidance booklet in December 2018, detailing the concept and principles to structure contracts with “win-win” outcomes through aligned incentives for all stakeholders, which include customers, consumers, communities, asset owners and concessionaires.

The process of defining the Balanced Concession comes under four main principles – Collaboration, Transparency and Information Sharing, Mutual Interest and Balanced Risk and Reward Sharing. Any potential solution should be bound by principles that work for all stakeholders, including:
- Appropriate return on investment for the concessionaire over the concession period.
- Meeting the requirements of customers and consumers for new capital assets.
- Maximizing the reversionary value of the airport asset for the government.
- Payment for infrastructure over its useful life and not the concession life.

The balanced approach should be applied across the various key elements of an airport concession life cycle as depicted below:

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3. ACTION BY THE CONFERENCE

3.1 The Conference is invited to:

a) Ensure an airport master plan is developed for each airport, and reviewed periodically with participation from stakeholders;

b) Recognize the need to address the infrastructure capacity constraint issue urgently through operational efficiencies and new infrastructure when required;

c) If privatization is pursued, adopt the balanced concessions framework proposed by IATA;

d) Champion collaborations through joint-up thinking with airlines and key stakeholders;
Master Planning

All airports should develop a master plan in order to guide future infrastructure and facility development programs in a logical, sustainable and cost-efficient manner.

SITUATION

Many airports currently lack a master plan or vision of the future. As a consequence they run the risk that their short to medium term capacity enhancement projects are ill-judged, misconceived, inappropriate sized and poorly located, thereby restricting their ability to attain the airfield’s ultimate potential.

IATA POSITION

IATA seeks to ensure that all airport capacity enhancement programs are closely tied to an airport master plan.

The master plan should be prepared by independent consultants with global experience and a proven history of delivering plans that enable all stakeholders to expand their operations and undertake profitable business.

Airlines and their representative associations should be fully involved in the creation, development and review of the master plan. Infrastructure should be designed to be as cost-efficient as possible and facilities should not be “gold plated”.

The master plan should allow for unfettered incremental expansion of all facilities until the ultimate capacity of the site is attained. No development should proceed until a master plan is in place.

PLANNING PROCESS

- Engage all airlines in a full consultation to review the proposed discounts or incentives and agree on clear and measurable objectives related to these rebates.
- Clearly define the scope of the project and the terms of reference
- Review statistical data and forecast potential demand
- Assess existing system capacities and the site’s ultimate development potential
- Undertake an analysis of the different requirements
- Make strategic choices and identify primary strategic drivers, e.g. airfield configuration, location and size of airside, landside and airport support elements
- Input airport and airline priorities
- Develop different options
- Review preferred options, undertake an environmental evaluation, and determine best option(s) for further analysis
- Outline the preferred short (0 – 5 years) to medium (5 – 10 years) term development programs, with these tied to the airport’s master plan
- Estimate a 10 year capital expenditure program and input to the financial model
- Project the estimated impact on the level of airport charges and review the affordability of the 10 year program.

If, following consultation with airlines, development is determined to be unaffordable then:
- Look to minimize costs and make efficiency savings
- Break large projects into smaller, more manageable phases
- Further simplify the architectural / engineering solution

RELATED AIRPORT CHARGES PRINCIPLES

ICAO key charges principles.

In setting user charges for the airport, charges principles as stated in ICAO’s Policies for setting Airport and Air Navigation charges (Doc. 9082) should be adhered to:

- Non-discrimination – between different groups of users
- Consultation – engaging users before any changes in the level or structure of charges and giving proper consideration to users’ views
- Transparency – providing users with transparent and appropriate financial, operational and planning data
- Cost-relatedness – setting charges based on the cost of providing services
PLANNING GUIDELINES

When developing a master plan, consultants should wherever possible cater for the following:

Airside Infrastructure

- For midfield passenger terminal development, staggered independent parallel runways with a minimum separation of 2,000\(^1\) meters
- Capability to construct dual parallel taxiways in phases, as required to support increasing peak hour aircraft movement rates
- Shortest possible and most direct taxiway routes between rapid exit taxiways and aircraft parking positions
- Shortest possible and most direct taxiway routes between aircraft parking positions and holding / bypass positions at runway thresholds
- No single taxi-lane cul-de-sacs
- Aprons capable of accommodating multiple aircraft types in the ultimate stage
- Apron vehicular traffic reduced to a viable operational minimum at head of stand only

Landside Infrastructure

- All airlines, and at large airports all alliance partners, collocated under one roof
- Support for emerging technologies that enhance and streamline the customer experience, e.g. self service check-in and bag drop, self boarding, etc.
- Low cost linear terminals, piers and satellites available to all airlines and capable of incremental expansion
- Single below apron level people mover system with minimum possible number of transfer nodes if necessary

Surface Access Systems

- Capability to accommodate multi-modal transport interchanges
- High-speed, regional and local rail through the site and directly under the main terminal building

Land Use Planning

Land beyond the current airport boundary should be zoned and safeguarded to ensure:

- Airspace around aerodromes is maintained free from obstacles
- Noise sensitive developments are not permitted to encroach on key operational areas
- Ultimate development potential can be realised

RELATED ICAO DOCUMENTATION

- Doc. 9184, Airport Planning Manual – Part 1 Master Planning
- Annex 14, Vol. 1, Aerodrome Design and Operations

\(^1\) Other configurations are possible – see ICAO Doc. 9184. The land available for airside, landside and support infrastructure should support the capacity potential of the runway(s).
Airport Infrastructure Investment -  
Best Practice Consultation

1. INTRODUCTION

As airports are only built to serve as aviation infrastructure enabling airlines to operate, airlines are the primary customers of airports and a major source of revenue for airport authorities and operators, ancillary industries and services.

A direct cost relatedness exists between airport charges and infrastructure investments that airlines fund, whether capital or operating expenditures. Airport infrastructure investments therefore need to be affordable, fit for purpose and deliver a return on investment for airlines.

Investments should only proceed where a clear Business Case exists, supported by a positive cost benefit analysis and the explicit agreement of airlines.

Meaningful and effective airline community consultation is essential to align airport – airline infrastructure objectives, secure airlines buy-in and maximize the benefits of infrastructure investments.

The alternative will result in disparate, uncoordinated strategies and investments that are incorrectly prioritized, mistimed, and neither functional nor cost effective. Inefficient or poorly planned airport development adversely affects traffic growth and the broader economic benefits the airport delivers.

Ultimately an airport’s goal should be to enable the success of airlines to ensure the economic benefits for all parties are maximized.

2. OBJECTIVES & BENEFITS

Best practice airport-airline community consultation should achieve the following objectives:

- A phased, prioritized and flexible capital investment plan agreed and endorsed by airlines, resulting in clearly defined airline benefits and affordable airport charges.
- Cost efficient infrastructure investment that is demand led, fit for purpose and delivers best value for airlines.
- Investment plans that are compatible with the airport’s Master Plan taking account of longer-term developments.
- A transparent consultation process that values airline inputs, works towards consensus and results in informed decision making.
- Equitable treatment, non-discrimination and open access resulting from airline community consultation and adoption of ICAO mandated principles.

The benefits of best practice airline community consultation are clear:

- Business Cases that clearly demonstrate a return on investment for airlines. Project investments should only proceed that result in operating cost reductions and efficiencies with the airline community’s agreement i.e. a reduction in operating cost per passenger.
- Airport development plans phased to balance capacity with demand to avoid over or under investment and supply.
- Infrastructure that meets the airlines’ functional airport passenger and operational requirements.
- Improvements in passenger experience and airport service quality taking account of alternative innovative solutions and technology.
- The support and buy-in of airline customers.
- Airport investments that are independently benchmarked and demonstrate assurance and value for money to airlines.
- Resilient investment plans phased to minimize operational disruption during construction.
- Open access to facilities and services at an agreed minimum service standard and lowest possible cost.
- Infrastructure designed to be flexible and adaptable, safeguarded for modular expansion and able to accommodate changes in functionality over time.
- A quality check with airline subject experts that investments deliver the intended outcomes taking account of industry best practices.
3. SCOPE OF INVESTMENTS
The scope of infrastructure consultation is broad ranging and should include the following elements:

- Airport Master planning.
- Airside infrastructure i.e. runways, taxiways, aprons, stands and gates.
- Passenger terminal i.e. departure forecourt, check-in or baggage drop hall, passenger security, emigration and immigration, airside departures lounge, retail concessions, piers, stands, gates, jet bridges, arrivals hall, baggage handling systems, wayfinding.
- Surface access within the airport boundary i.e. roads, car parks, rail, sea.
- Cargo terminal developments.
- Airport support elements.
- Asset replacement.

4. Best Practice Consultation & Governance
User consultation is essential from an early stage in the infrastructure development process before irreversible decisions are made:

- Identify the common airlines-airport business drivers that form the basis of the investment plan.
- Agree an affordable capex threshold for investments considering airport user charges.
- Establish an airport-airlines consultation Governance structure that ensures timely and well-informed decisions with airline inputs.
- Capture airline functional requirements and agree planning inputs and assumptions.
- Analyze the positive and negative effects on Airports operating expenses.

A jointly agreed airport-airline community Governance structure is required that ensures a structured and planned approach to consultation. This should also include:

- Meaningful discussions between subject matter experts experienced in airport infrastructure planning, airport charges and commercial areas, who are empowered to take decisions.
- Clear objectives, decision making and alignment between steering groups and working groups.
- Terms of Reference (ToR) for each working group including objectives, scope, accountabilities, frequency, attendees, and dependencies with other work streams.
- Sufficient time for consultation dialogue typically between 6-12 months before business plans approvals.

Meeting schedules agreed in advance to ensure airline subject experts are able to attend and a structured approach is implemented.

A Consultation "protocol" or “charter” setting out the behaviors required for effective consultation:

- Work towards airport-airline community consensus decision making.
- Transparency is a critical aspect of any commercial agreement between airport providers and airline customers.
- Commitment from airport and airlines to provide the necessary resources to participate in a regular, structured dialogue.
- A “Constructive Engagement” based on mutual respect, collaboration, openness and trust between business partners.

5. Infrastructure Planning Process
Airport infrastructure development is iterative and requires a regular, ongoing dialogue with the airline community. “One-off” or irregular meetings updating the airline community on pre-determined outcomes does not constitute consultation.

IATA recommends capital investment programs should cover the short (0 – 5 years) to medium (5 – 10 years) terms and be reviewed annually.

Consultation with the airline community is required at key decision points by engaging the airline community in a timely manner at the relevant stages of the planning process.

Consideration should be given to identify break points in programmes and projects should demand not materialise as anticipated.

5.1 Program Level Consultation
Programme management is recommended to provide an overview of project investment activities and to align airport and airline objectives in order to:

- Prioritize projects depending on airlines willingness to fund investments considering airport charges.
- Provide an overview of constructability and project phasing to minimise operational disruption.
- Identify key milestones supporting informed airport-airline community decisions.
- Ensure projects align to business plan objectives.
- Address major changes or resolve any escalated issues.
- Monitor and track the performance of multiple projects to support successful delivery.
- Manage project risks across multiple projects.

Programme and project assurance is important to assess the reasonableness of all key decisions made on selected projects. Independent third-party checks to assess at key stages in the development process is recommended.
Project Business Cases should be developed in parallel with the key design and development stages to analyse costs, benefits and ensure the intended project outcomes are on track.

Setting criteria to determine which projects are targeted for airline community consultation is recommended:

- Capital threshold above a certain monetary value threshold.
- Project scope and/or complexity.
- Project timeframes.
- Airlines impact.
- Strategic impact.

### 5.2 Project Level Consultation

Best practice requires airports to consult with the airline community at key stages common to most projects. Noting different project processes and terminologies exist this typically includes:

- Initiate/Concept stage – agree investment objectives and identify project options.
- Options Selection stage – identifies design solutions and how project benefits will be delivered.
- Estimated 50% cost and design certainty.
- Scheme Design stage – development of the preferred option:
  - Estimated 85% cost and design certainty.
- Fixing project costs and programme is recommended.
- Implementation and Delivery phase – construction and engineering works focusing on implementation and delivering the agreed benefits and outcomes:
  - Operational Readiness and Airport Transfer (ORAT) is a critical project element to involve Users in.

“Gateway” events for each of the key project stages consulted upon with airlines are required as a prerequisite to progressing to the next stage of feasibility:

- Airline queries or issues should be fully resolved before moving to the next stage.
- A formal sign-off based on airline community consensus.

### 5.3 Business Case Consultation

The purpose of a project Business Case is to clearly set-out all relevant information as to why the project is required, what benefits will be achieved for airlines typically funding the investments, and alternatives available to airlines. A detailed cost-benefit analysis is required to clearly demonstrate the monetary return on investment for airline stakeholders.

Typical elements of the Business Case are:

- Project justification or need i.e. capacity development projects should be clearly linked to passenger growth or defined Levels of Service outcomes agreed with the airline community.
- Link to strategic objectives and the master plan.
- Expected benefits and outcomes.
- Capital costs associated with constructing the infrastructure.
- Operating costs for airlines and airports. Capital investments should result in efficiencies and lower operating costs.
- Depreciation – the rate at which assets reduce in value and its cost is re-allocated over its useful life in-line with industry norms.
- Project dependencies.
- The impact on aeronautical and non-aeronautical charges.
- Assurance that existing assets are being used as efficiently as possible.

### 5.4 Efficient Airport Investments

Capital investments should aim to deliver cost efficient outcomes by optimizing a project’s scope, specifications, time, costs and risks supported by a well-managed, structured development process.

Investments should take into account what is being constructed, how it is being constructed, and when facilities are required, in addition to capital cost benchmarks.

The airline community should be closely involved in agreeing the optimum balance between elements that have a material impact on costs and the efficiency of the solution:

- Scope – ensure the functional requirements of airlines are captured and Business Case benefits are delivered.
- Specifications – airlines require functional airport facilities that deliver their required levels of service at the lowest possible cost. Over-specifying terminal finishes is to be avoided.
- Timeframes – efficient project delivery focused on the beneficial use of assets for airlines, taking account of construction phasing to minimize airline and operational disruption.
- Procurement and contracting strategy – selecting the appropriate tendering and contracting strategy to maximize the efficiency of projects and purchasing power of airports.
- Capital costs – benchmarking and independent checks by a third party to ensure estimates are in-line with the market.
- A rebate mechanism should be introduced if assets are not delivered to the defined timeframes, at lower than the estimated costs, or when projects are delayed.
6. Common Issues

Airline and airport subject expert feedback highlight some issues to be aware of:

▪ Avoid done deals and “lip-service” consultation.
▪ Recognize airlines affordability and airport charges as a fundamental criterion.
▪ Avoid over specifying and “gold-plating” investments – consult with Users.
▪ Operational disruption – plan to minimize disruption during the construction phase.
▪ Project priorities – balance operational requirements with airport commercial revenues.
▪ Alternate options to optimize the use of existing infrastructure and “do-nothing” scenarios.

7. Supporting Documents

This paper provides a framework for other papers and related to airport infrastructure development:

▪ IATA Airport Consultative Committee (ACC) - Terms of Reference.
▪ IATA Airport Service Level Agreements (SLA) – Best Practice.
▪ IATA Levels of Service (LoS) – Best Practice.
▪ Additional relevant papers and guidance materials:
  ▪ EC Airport Charges Directive 2009/12/EC.
  ▪ IATA Airport Charges - Transparency paper.
  ▪ IATA Airline Engagement in Consultations paper