



Deloitte.

Airport Governance Toolkit

December 2020



PURPOSE

This Guidance Booklet ("Booklet") is designed as a toolkit to identify best practice solutions across airport governance domains with tools for governments, oversight entities and airport operators to evaluate the quality of their established governance structure to improve it.

ACKNOWLEDGEMENTS

This Booklet incorporates inputs from a broad range of senior aviation industry experts, including representatives of IATA and other industry participants. We wish to thank everyone who participated in this study.

AUTHORS

Dorian Reece

Global Airport Lead,

Deloitte Professional Services (DIFC) Limited

dorreece@deloitte.com

Toby Robinson

Government and Infrastructure Advisory,

Deloitte Professional Services (DIFC) Limited

tobyrobinson@deloitte.com

IATA Guidance Booklet:

Airport Governance Toolkit

December 2020

Contents

Executive Summary	6	Mapping the Stakeholder Positions within Each Domain	46
Who Needs an Airport Governance Toolkit Now?	6	Key Takeaways	92
What is Airport Governance?	6	Best Practice Guidelines and Tools	94
Basics of Airport Governance	7	Governance Self-Assessment Checklist	95
How to Go Beyond The Basics	7	Decision Making Process: RACI Matrix for Airport Governance	100
Introduction to this Toolkit	8	Recommended Airport Governance Mechanisms	101
What is Airport Governance?	8	Description of Best Practice Governance Mechanisms	102
Need for Airport Governance Toolkit	8	Implementation Guidance for Better Airport Governance	106
Purpose of this Toolkit	9	Key Takeaways	108
Structure of this Toolkit	10	Appendix 1. Glossary	109
Overview of the Airport Governance Ecosystem ...	12	Appendix 2. Reference Library	113
Good Infrastructure Governance	12		
Airport Ecosystem Stakeholder Analysis	12		
Key Airport Governance Domains	15		
Airport Governance Layers	16		
Key Takeaways	18		
Basics of Airport Governance	19		
Keys to Successful Governance	19		
Airport Governance Foundations	22		
Summary of Airport Governance Foundations	34		
Key Takeaways	35		
Best Practice Solutions for Airport Governance	36		
Introduction	36		
Lessons Learned from Other Sectors	36		
How to Implement Best Practice in Airport Governance	46		

This toolkit is designed to support governments and aviation industry stakeholders to define and implement effective airport governance solutions that create “win-win” outcomes, reduce risk and maximize value to all parties.





Executive Summary

Who Needs an Airport Governance Toolkit Now?

Airports globally have a wide range of different and bespoke governance arrangements. This includes varying levels of regulatory and governance maturity. While there should be some commonalities in governance frameworks based on the foundations defined by the International Civil Aviation Organization (“ICAO”), in practice these frameworks are not consistently applied and do not define all aspects of airport governance.

Variations in national and airport-specific governance arrangements can be justified due to differing local circumstances. However, in many cases the governance applied is simply the result of an airport’s history. As a consequence, it is often unclear to decision-makers whether and when specific governance arrangements should or should not be applied. The lack of properly designed governance arrangements can lead to sub-optimal strategic and operational decision-making and performance, as well as an inability to resolve disputes when they arise.

The current crisis facing the industry requires increased collaboration to help the industry recover. Until recently, rapidly growing demand for air transport services created significant requirements for new airport infrastructure, as well as capacity enhancements at existing airports. Now, re-thinking or re-designing some of these facilities, stronger resilience and flexibility has become urgent with financial pressure mounting.

Compounding the circumstances which cry out for greater collaboration, the nature of airport operations have become more complex and technology-dependent, increasing the number of stakeholders involved. Aiming to drive airport efficiency, airports make increased use of specialist suppliers and a range of Private Sector Participation (“PSP”) models. At the same time, communities are holding airports to higher standards and demanding closer consideration of environmental and social impacts. There is increased focus on airport resilience and flexibility as the aviation industry is subjected to external shocks and stresses ranging from economic downturns to pandemics and climate change.

The increased complexity between stakeholders drives a need for improved and innovative models of airport governance, but also significant opportunities for those who “get it right”. Collective value can be achieved through more systemic and ordered collaborative relationships. Airports that manage their ecosystem effectively stand

to create real benefits in terms of increased productivity, improved performance of joint solutions and operations, and improved compliance with contract terms, regulatory requirements and other goals such as positive community and sustainability outcomes.

This *Toolkit on Airport Governance* (“Toolkit”) addresses a gap in existing literature to assess airport governance best practices and provide guidance to governments, airports and other stakeholders on how to improve airport governance best practice and the tools to apply it. Its purpose is to create value for the aviation industry and the communities it serves through a clear framework and decision-making tools for airport governance that are robust and actionable.

There are three primary target audiences for this Toolkit:

- 1. National Governments** - this Toolkit explains the obligations for the State and the optimal structure and roles and responsibilities for national airport governance;
- 2. Oversight and Implementation Entities** - this Toolkit explains the roles and responsibilities of different entities within the airport governance ecosystem and the best practices in rule-setting and decision-making through engagement with other stakeholders;
- 3. Airport operators and developers** - this Toolkit provides guidance on governance measures for specific subjects or trigger events that require mechanisms for consultation and collaboration across stakeholder groups.

What is Airport Governance?

Historically, much of the literature on “airport governance” has focused on the ownership and operating model for an airport, i.e. whether it is owned and managed by government, the private sector, or through alternative models.¹ Airport governance is much more than “just” the role of corporate ownership and regulators, but who has the responsibility and the mandate for different types of rule-setting and decisions and what the role is of different stakeholders in that process.

In many cases airport governance is even more complex than in other public infrastructure sectors and includes unique governance challenges due to the quantum of stakeholders and the level of interdependencies.

¹ IATA’s recent guidance booklet, *Airport Ownership and Regulation*, covered this topic in detail.

This toolkit looks at five domains where governance is key to success:

- Policy, Regulation, and Government Affairs;
- Community and Environment;
- Safety and Security;
- Operations;
- Capital Projects.

In each domain and between domains, there are different layers of governance that may exist already or need to be established. This is what makes airport governance more complex than some other infrastructure-related industries:

- International and Regional Governance;
- National Governance;
- National Legal and Regulatory Frameworks;
- Airport Operating and Regulatory Environment;
- Airport Ownership Model;
- Airport Development and Operations.

Basics of Airport Governance

The aviation industry is unique in its international outlook. As a result of this there are a range of basic foundations that set minimum requirements for airport governance, drawing on minimum standards and obligations set out by ICAO for an airport to operate in the international system based on the Convention on International Civil Aviation, and other requirements from regional and international organizations.

The key foundations that should be adopted for an effective national aviation governance system can be summarized as:

1. Adherence to ICAO requirements and recommendations;
2. Ultimate accountability of the State, irrespective of national legal or regulatory framework, or airport ownership and operating model;
3. Enactment of primary legislation for aviation sector;
4. Establishment of effective regulatory framework with a CAA to monitor technical / safety and economic performance of aviation sector, and compliance with ICAO obligations, SARPs and policy guidance;
5. Awareness and mitigation of potential conflicts of interest inherent in the regulatory framework or ownership and operating model through clear separation of powers, for example conflicts between economic oversight and shareholding arrangements, and separation of regulatory and operational functions;

6. Certification of aerodromes by technical / safety regulator under ICAO requirements;
7. Independence of regulatory authority from government, and preference for separation of economic regulation from technical / safety regulation;
8. Establishment of an Aircraft Accident Investigation Authority, preferably independent of the CAA;
9. Transparent reporting of variances to SARPs by CAA within AIP;
10. Adherence to regional initiatives, where relevant (for example, EASA in the EU).

How to Go Beyond The Basics

The key foundations set a broad framework and minimum requirements for airports, but these do not by themselves cover all of the best practices for effective airport governance that can improve an airport system and generate significant benefit to a range of stakeholders.

Going beyond the basics, this Toolkit identifies best practice solutions in each of the five airport governance domains with tools for governments, oversight entities or airport operators to evaluate the quality of their established governance structure and to improve it:

- A **"Checklist"** in each domain allows airports, governments and their stakeholders to assess governance at a specific airport against best practices and identify areas for improvement;
- A **Responsible-Accountable-Consulted-Informed ("RACI") matrix** is developed in each domain to define the roles and responsibilities and decision-making processes by key stakeholders for key airport functions;
- **Best practice governance mechanisms are set out with case studies and comparisons with other sectors.** These include the forums, committees and working groups that all airports should have in place to implement better governance and an overview of good practices to manage these mechanisms. The recommendations have been drawn together from the best practices and lessons learned from a review of the airport industry and other industries with best in class examples to draw upon. Good practices suggest the need to be deliberate in the design of these governance mechanisms, their ongoing management, and in ensuring that their effectiveness is evaluated, and a feedback loop applied to improve their effectiveness over time;
- **Other useful tools** are provided for implementing improved airport governance, including a stakeholder mapping and analysis framework, and implementation guidance for a stakeholder-inclusive airport governance operating model.

Introduction to this Toolkit

What is Airport Governance?

Historically much of the literature on airport governance has focused on the ownership and operating model for an airport, i.e. whether it is owned and managed by government, the private sector, or in alternative models. IATA's recent guidance booklet, *Airport Ownership and Regulation*, covered this topic in detail, and this Toolkit takes a broader conceptual perspective of what airport governance means.

Governance of public infrastructure can be defined as "the processes, tools and norms of interaction, decision-making, and monitoring used by governmental organizations and their counterparts with respect to making infrastructure services available to public and private users, including citizens"

OECD, 2017

This perspective on airport governance draws on the special characteristics needed for the effective governance of public infrastructure, which can be defined as "the processes, tools and norms of interaction, decision-making, and monitoring used by governmental organizations and their counterparts with respect to making

infrastructure services available to public and private users, including citizens".²

However, this Toolkit also reflects that in many cases airport governance is even more complex than in other public infrastructure sectors and includes unique challenges due to the quantum of stakeholders and the level of interdependencies. Governance is required at many levels given the nature of the aviation industry, and the airport governance landscape is defined in this Toolkit as multi-dimensional, comprising six layers that impact an airport's development and operations:

- International and Regional Governance;
- National Governance;
- National Legal and Regulatory Framework;
- Airport Operating and Regulatory Environment;
- Airport Ownership Model;
- Airport Development and Operations.

Need for Airport Governance Toolkit

There is a gap in existing guidance literature for governments and other stakeholders on the practical actions to improve outcomes in design and delivery of airport governance based on a detailed, evidence-based review of best practices. Most importantly, it is not always clear to governments, airport owners and operators, and other aviation industry stakeholders what the best practices are for airport governance, and how they can be effectively adopted in practice.

IATA frequently engages with respect to airports across the globe which have a wide range of different and bespoke governance arrangements, and levels of regulatory and governance maturity. Whilst there are base governance foundations defined in international aviation obligations, including through the International Civil Aviation Authority ("ICAO"), they are not always consistently applied and do not define all aspects of governance best practices for airports.

In practice, national and airport-specific application of governance arrangements varies significantly, and it is often unclear to decision-makers whether and when specific governance arrangements should or should not be applied. In some cases, it may not be clear who the rule-setters and decision-makers are in the first place. The lack of standardization in governance arrangements creates challenges in its own right and can lead to sub-optimal strategic and operational decision-making and performance, as well as an inability to resolve disputes when they arise.

It is also noted that industry trends are driving the need for improved governance to facilitate collaboration in increasingly complex environments. These trends include:

- Increased professionalization and sophistication of airport operations, becoming more complex and technologically driven;
- Increased focus on maximizing capacity of existing assets, frequently in geographically constrained locations;
- Increased use of specialist suppliers and a range of Private Sector Participation ("PSP") models;
- Increased focus on improved asset utilization;

² OECD, *Getting Infrastructure Right: A Framework for Better Governance* (Paris: OECD Publishing, 2017)

- Increased global focus on transparency of service delivery, and community and environmental accountability;
- Focus on the need for consistent application of health and safety standards (and potentially supporting data) across all stakeholders' operations; and;
- Increased importance of airport resilience as the aviation industry is subjected to external shocks and stresses ranging from economic downturns to pandemics and climate change.

These trends are making airports more complex operating theatres, with a wider range of stakeholders having different responsibilities and control of the end-to-end processes relating to airport development and operations. These challenges, and the varying and sometimes conflicting stakeholder objectives, are increasing integration requirements and risks and the need for formal and informal mechanisms to ensure alignment. However, it is frequently observed that airport authorities do not engage sufficiently with their key internal and external stakeholders, or do not have formal mechanisms or clear definitions of roles and responsibilities for rule-setting and decision-making.

In response to these constantly evolving airport requirements there are growing trends towards more open and collaborative relationships between airlines, airports and other stakeholders to facilitate more informed decision-making. Unfortunately, there continue to be governance failures at airports at both strategic and day-to-day operational levels.

Purpose of this Toolkit

This Toolkit provides best practice guidance as to what governance solutions best serve the mutual interest of all stakeholders, based on local and airport-specific conditions, to ensure the efficient growth of the aviation industry and the corresponding stakeholder benefits.

The core purpose of this Toolkit is to create value for the aviation industry and the stakeholders and communities it services by providing a clear framework for airport governance that is robust and actionable. This includes detailed analysis to outline airport governance best practices, frameworks and tools to enable decision-makers and stakeholders to identify and implement optimal governance solutions. Two fundamental questions are addressed:

1. What is the optimal process to take decisions regarding airport development and operation?
2. What should the role of different stakeholders be in this process, and why?

³ IATA and Deloitte (2018). Airport Ownership and Regulation. [online] Available at: <https://www.iata.org/contentassets/4eae6e82b7b948b58370eb6413bd8d88/airport-ownership-regulation-booklet.pdf> [Accessed 29/01/2020]

There are three primary target audiences for this Toolkit:

- **National Government and Related Stakeholders**, which are responsible for national aviation, airport and related policy. These groups are primarily interested in national aviation and airport infrastructure policy decisions and can use this Toolkit to understand the obligations for the State and the optimal structure and roles and responsibilities for national airport governance;
- **Oversight and Implementation Entities**, which are responsible for putting in place and monitoring adherence to national policy, including regulators, Civil Aviation Authorities, airport owners and operators. These entities can use this Toolkit to understand the roles and responsibilities of different entities within the airport governance ecosystem and the best practices for their contribution to rule-setting and decision-making through engagement with other stakeholders;
- **Airport Development and Operations Stakeholders**, which are impacted by or may have an interest in airport capital investment and operating decisions. These include various airport-specific stakeholders and entities involved in day-to-day management of airport decisions and activities. This Toolkit can be used by these stakeholders to understand governance mechanisms for specific subjects or trigger events that require consultation and collaboration across stakeholder groups.

Whilst tackling a new topic, this Toolkit also builds on two recent guidance manuals published by IATA in response to a lack of clear guidance for governments related to airport ownership and operating models for the aviation industry, "*Airport Ownership and Regulation*"³ and "*Balanced Concessions for the Airport Industry*"⁴. At the heart of these manuals was the idea that in many cases issues or points of frequent dispute between different stakeholders at an airport, such as over- or under-investment, limited information sharing, or inefficiency of operations, arise not because of a fundamental misalignment of interests but because of insufficient stakeholder engagement and alignment. Alternative and more collaborative approaches were identified to address these issues and create "win-win" outcomes.

This Toolkit builds on many of the frameworks and concepts set out in these previous publications. The focus is similarly on creating implementable solutions built on collaboration for mutual benefit amongst airports and their stakeholders to reduce risk and maximize value to all parties, including the travelling public.

⁴ IATA and Deloitte (2018). Balanced Concessions for the Airport Industry. [online] Available at: <http://www.iata.org/policy/infrastructure/Documents/Balanced-concession-for-the-airport-industry.pdf> [Accessed 29/01/2020]

Structure of this Toolkit

Firstly, an [Overview of the Airport Governance Ecosystem](#) is defined to set the foundations for the Toolkit. This overview includes the basic definitions and boundaries of what is meant by airport governance and the stakeholders that are involved in or impacted by airport governance arrangements.

Secondly, the [Basics of Airport Governance](#) are assessed. This provides guidance for national government and related stakeholders which are seeking to understand the basic and "non-negotiable" requirements of airport governance at the national level.

This includes the keys to successful governance, drawing on non-airport literature on best practices and principles for infrastructure governance. Minimum requirements for airport governance and the roles and responsibilities for different identities are identified from standards and obligations set out by ICAO and other requirements from regional and international organizations.

Thirdly, [Best Practice Solutions for Airport Governance](#) are identified and summarized. This reflects that beyond the basic requirements of airport governance, there are significant gaps in existing guidance on how to implement governance arrangements in practice, and the best practices for day-to-day management of airport decisions and activities.

The guidance explores lessons learned in other sectors, and an analysis of best practice learnings and solutions in the airport sector drawing on case examples. These are structured by five airport governance domains. Although they may not capture every aspect of airport development and operations, they represent the key areas where airport governance is experienced, and allow a reader to identify best practice recommendations based on their domain interest and specific situation:

- Policy, Regulation, and Government Affairs;
- Community and Environment;
- Safety and Security;
- Operations;
- Capital Projects.

Finally, [Best Practice Guidelines and Tools](#) are defined, summarising the solutions identified in the preceding analysis by each domain. It is recognized that once appropriate governance solutions have been identified, implementation and the ongoing monitoring of their effectiveness is a critical concern. Practical recommendations and tools are provided to support this, including a governance checklist to allow airports and their stakeholders to self-assess their governance framework, the definition of roles and responsibilities by stakeholder for key airport functions, and guidance

on defining and implementing an effective governance operating model.



Overview of the Airport Governance Ecosystem

Good Infrastructure Governance

Good and effective governance has been on the agenda of international and national government organizations, regulators, professional associations, corporate boards and the public for a long time. High profile governance failures from Enron to, more recently, the collapse of Carillion in the UK, as well as increased focus on the environmental and social impacts of business from investors and consumers have unfortunately brought “suboptimal practices” into the spotlight. This re-enforces the need to identify the best practices in governance and ensure they are promoted globally.

Corporate governance can be defined as “the framework of rules, systems and processes put in place to control and monitor – or ‘govern’ – an organization”.⁵ However, the governance of an airport, like many infrastructure assets, is different because of the public economic and social impact of infrastructure assets and services. A broader lens is therefore required to consider best practices in airport governance. The intention of this Toolkit is not a detailed examination of airport company corporate governance; this is well-documented, and an overarching expectation is that, whatever the ownership or operating model, best practice corporate governance is adopted by the airport company.

Governance of public infrastructure can be defined as “the processes, tools and norms of interaction, decision-making, and monitoring used by governmental organizations and their counterparts with respect to making infrastructure services available to public and private users, including citizens”

OECD, 2017⁶

This definition of airport governance is used across the Toolkit, as airports share many features with other infrastructure sectors that make the need for good governance particularly acute. In addition to public benefits associated with efficient development and

operation, airports like other infrastructure sectors are impacted by specific risks such as market abuse due to relatively monopolistic markets, and in some economies relatively high vulnerability to corruption, regulatory capture and government failure, and financial mismanagement.⁷

However, in many cases airport governance is even more complex than in other public infrastructure sectors and includes unique governance challenges due to the quantum of stakeholders and the level of interdependencies. Governance is required at many levels, including international, given the nature of the aviation industry. The aviation industry is strategically significant for national and local governments, and an airport is a highly complex, dynamic operating environment with a broad range of stakeholders.

Airport Ecosystem Stakeholder Analysis

An airport is a complex operating environment requiring collaboration between multiple stakeholders and counterparties to deliver service excellence. This complexity is closely linked to the number and nature of interfaces between different actors in the airport ecosystem.

There are a broad range of examples where multi-stakeholder solutions are required. For example, national aviation strategies naturally impact the planning and delivery of capital expansion projects at airports, which in turn significantly impact community stakeholders and the environment. Major disruptors such as one or more airlines suspending operations or longer-term disruptive trends due to changes in market conditions or technology require collaboration across a range of stakeholders.

The focus of the solutions in this Toolkit is therefore on identifying governance solutions that manage the interrelationship between stakeholders to enable improved airport performance.

Figure 1 (“Airport Ecosystem Stakeholder Map”) provides an overview of some of these different actors. Key definitions for these stakeholder groups include:

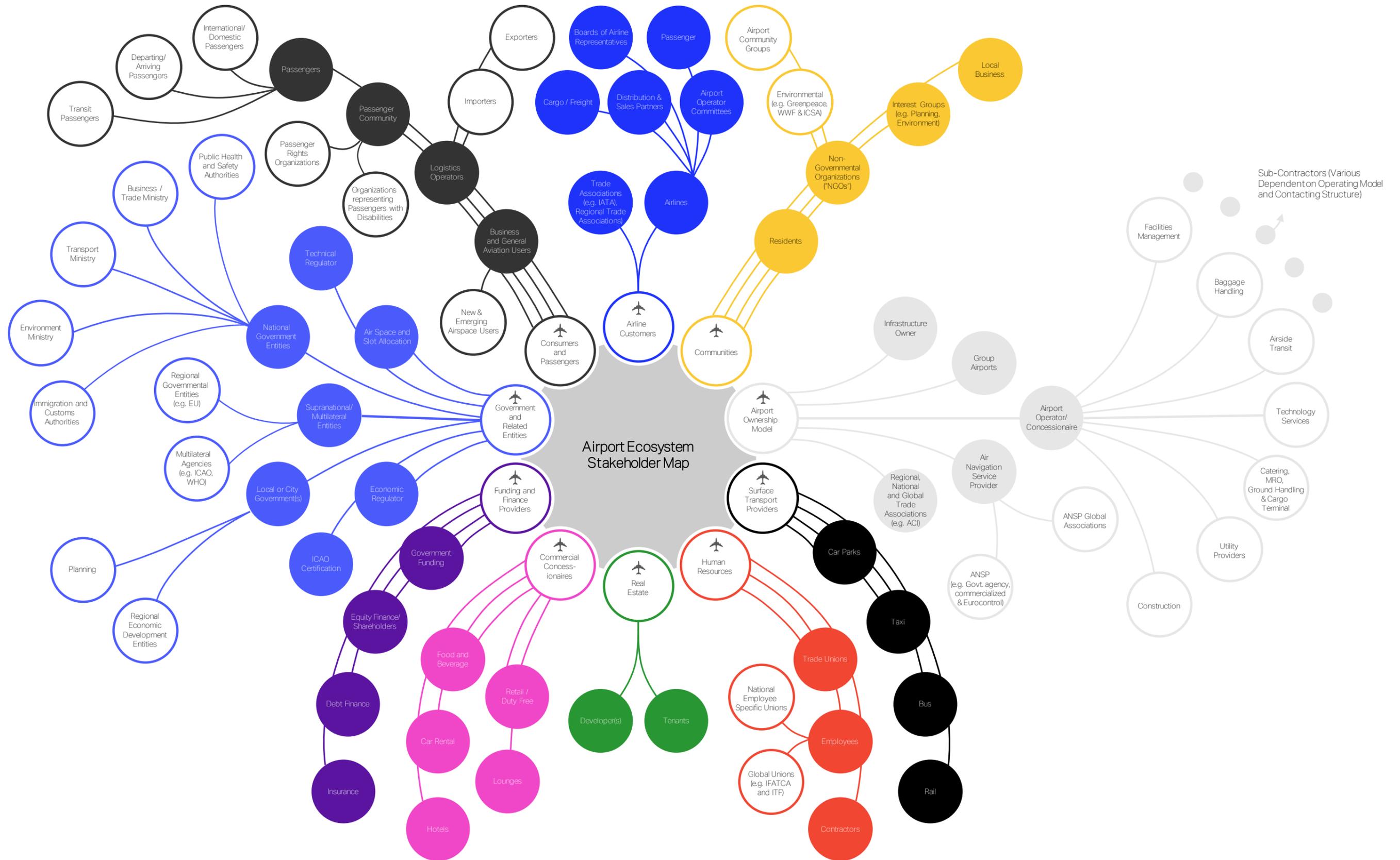
⁷ The OECD Foreign Bribery Report 2014 found that two-thirds of all foreign bribery cases occur in four sectors highly related to infrastructure, including transport. OECD, *Getting Infrastructure Right: A Framework for Better Governance* (Paris: OECD Publishing, 2017)

⁵ Australian Institute of Company Directors (2017). *Guiding Principles of Good Governance*. [online] Available at: <https://aicd.companydirectors.com.au/-/media/resources/director-resource-centre/governance-and-director-issues/guiding-principles-of-good-corporate-governance.ashx> [Accessed 29/01/2020]

⁶ OECD, *Getting Infrastructure Right: A Framework for Better Governance* (Paris: OECD Publishing, 2017)

- **Government and Related Entities** – The wide range of local and central government agencies, departments or ministries that are impacted by or may have an interest in airport capital investment and operating decisions, as well as entities formed under government-supported mandates (for example, regulators). The roles for different actors in this stakeholder group can be very varied; they range from strategic mandates (for example, national transport planning, or cross-industry mandates such as health and safety management) through to being embedded within airport operations (for example, customs and immigration);
- **Consumers and Passengers** – Travelling public, cargo operators, and other users of public airport services which rely on efficient and functional access and connectivity;
- **Airline Customers** – Passenger airlines and cargo users. The users of the airport facility and the parties which are directly impacted by airport services and costs;
- **Communities** – Impacted stakeholders at a local, regional, national and global level, with a focus on Environmental, Social and Governance (“ESG”) factors. Such stakeholders include employees, local communities impacted by noise and air quality, and broader Non-Governmental Organizations (“NGOs”), national and supranational organizations concerned with issues such as security, climate change and trafficking;
- **Airport Ownership Model** – All stakeholders involved in the delivery of airport infrastructure and services. This includes both prime contractors but also sub-contractors and the supply chain. As airports seek to access more specialized service capability, supply chains have become more complex with integration often required between multiple specialized suppliers, increasing interface risk. A more complex supply chain therefore leads to more complex ecosystem governance requirements. Accompanying this key industry trend is a move towards seeing airport operations through a customer journey or user experience lens, which is explored further in the solutions identified;
- **Surface Transport Providers** – Providers of transport infrastructure and services which are required to integrate with and are impacted by airport infrastructure and service provision, for example car parks, roads, taxi, bus and rail transport;
- **Human Resources** – Employees and contractors impacted by decisions at an airport;
- **Real Estate** – Both developers of commercial real estate and their tenants. Real estate development has been a growing focus for airport companies to enhance financial returns and capture some of the local economic benefits achieved through investment in airport infrastructure;
- **Commercial Concessionaires** – Occupiers or tenants of commercial space at an airport, including food and beverage, car rental, retail and duty free, lounges and hotels;
- **Funding and Finance Providers** – Providers of funding and finance for airport operations, working capital or capital investment. Frequently these involve private sources of finance, including equity and debt finance, as well as insurance products to provide funding in the case of specific trigger events. However, airports are often also dependent on government funding given the wider economic and social benefits associated with air transport services. This may deepen the level of public scrutiny on the efficiency and effectiveness of airport investment decisions and operations.

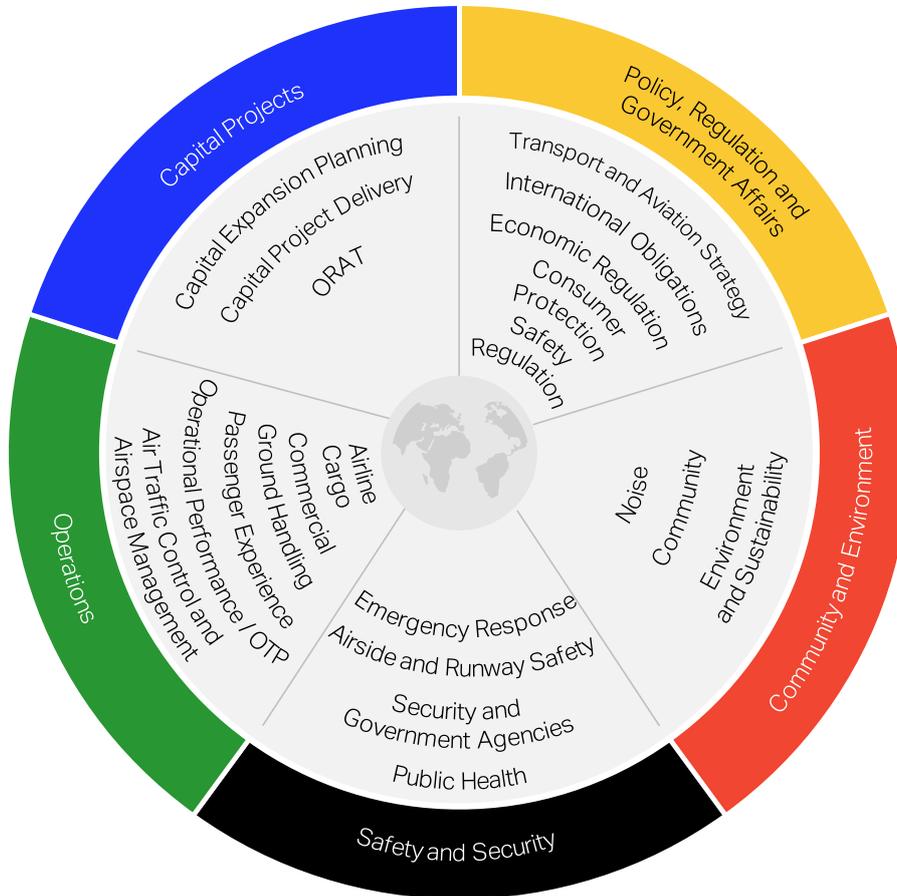
Figure 1 Airport Ecosystem Stakeholder Map⁸



⁸ Developed incorporating inputs from Air Transport Action Group. Available at: <http://www.atag.org> [Accessed 29/01/2020]

Key Airport Governance Domains

Figure 2: Airport Governance Domains and Functions



This Toolkit also identifies five key domains where airport governance is required. Although these domains may not capture every aspect of airport development and operations, they are the key areas where collaboration between stakeholders, and therefore good governance, is required to improve outcomes in airport oversight, management, development and operations. These include:

- Policy, Regulation, and Government Affairs;
- Community and Environment;
- Safety and Security;
- Operations;
- Capital Projects.

Each of these domains and the key functions within them is outlined in Figure 2 (“Airport Governance Domains and Functions”) and the descriptions below. These domains are used within the Toolkit to structure best practice solutions, to allow stakeholders to quickly identify solutions relevant to them based on their domain of interest.

ICAO has defined five Strategic Objectives “to support and enable a global air transport network that meets or surpasses the social and economic development and broader connectivity needs of global businesses and passengers”⁹ These Strategic Objectives are: Safety; Air Navigation Capacity and Efficiency; Security and Facilitation; Economic Development of Air Transport; and, Environmental Protection.

Collectively, the domains set out here capture the areas defined by ICAO’s Strategic Objectives, but also capture additional aspects of airport development and operations that give rise to governance requirements.

Policy, Regulation and Government Affairs

This focuses on the strategic and “big picture” requirements of airport development and operation at international, national and regional layers of government and government regulation over the industry. Whilst infrastructure governance “covers

⁹ ICAO. Strategic Objectives. [online] Available at: <https://www.icao.int/about-icao/Council/Pages/Strategic-Objectives.aspx> [Accessed 29/01/2020]

the entire lifecycle of the asset ... the most resource intensive activities will typically take place in the planning and decision-making phase for most assets”, strategy, and the ownership and operating model.¹⁰

Key components include:

- **International Obligations** – Rules set to govern the aviation industry, such as obligations of the State set by ICAO to harmonize the air transport framework, or regional requirements set by regional bodies, like for example the European Union (“EU”);
- **National Aviation Strategy** – The setting and execution of national aviation and airport strategy and plans, considering national objectives for social and economic development, environmental protection, and other factors;
- **Ownership Model** – Strategic decisions on the optimal ownership and operating model for a given airport, which may impact the governance risks and measures required;
- **Regulatory Framework** – The setting and execution, including ongoing monitoring, of roles and responsibilities for different stakeholders in respect of economic regulation and pricing of airport services, consumer protection, and safety regulation.

The first two of these components represent fundamental foundations of airport governance, including the basic requirements for an airport to operate in the international system, and other national baseline governance such as environmental protection, consumer protection, health regulations and recommended practices, and definition related to planning applications for major infrastructure development.

Community and Environment

This considers the public interest components of airport infrastructure development and operations, in particular the positive and negative impacts on communities (including local residents and businesses). This includes environmental impacts, such as noise and local air quality. Opportunities to minimize and manage negative externalities associated with airport infrastructure, and to maximize the positive externalities are best accessed through close consultation with impacted parties.

Safety and Security

This captures the requirements for safe and secure global civil aviation. ICAO dictate the requirement for State regulatory oversight of aviation safety, but institutional roles and responsibilities in civil aviation safety, aviation and border security may vary significantly. Key governance functions within this domain include

airside and runway safety, border security, emergency and response planning, and adherence to health and safety-related regulations and requirements, with several agencies typically responsible for these.

Operations

This considers the governance required to deliver Business as Usual (“BAU”) operations and provide airport infrastructure and services. It includes all the key aspects of airport operations which may require different stakeholder roles and responsibilities for effective governance, including:

- Air Traffic Control and Airspace Management;
- Airline;
- Operational Efficiency and On-Time Performance (“OTP”);
- Commercial;
- Ground Handling;
- Cargo.

In addition to each of these key aspects of airport operational management, there are also cross-cutting issues that may require specific governance solutions. For example, new technology disruptions that require amendments to the end-to-end passenger journey or collaborating with stakeholders to meet changing health-related regulations and put mitigation measures in place.

Capital Projects

This considers the requirement for governance in planning and delivering airport capital investment projects. This ranges from conceptual design and master planning of new greenfield airports based on the aviation strategy determined, and in line with national planning policy, through to capital expansion planning at an existing, brownfield airport, with the objective of improving airport infrastructure and systemic performance. It also includes the delivery of capital projects from detailed design and execution of construction, and their transition and handover to effective operations on completion, specifically Operational Readiness and Airport Transfer (“ORAT”).

Airport Governance Layers

Identifying the stakeholder map or listing the domains where cooperation is needed is common practice. What makes airports more complex is that there are different layers where rule-setting and decision-making take place. Each layer of this governance ecosystem has a different impact on airport development and operations:

¹⁰ OECD, *Towards a Framework for the Governance of Infrastructure* (Paris: OECD Publishing, 2017)

Layer	Description
International and Regional Governance	International governance structure(s) which impact airport governance and activities (for example, ICAO policy and regulations, air services agreements), as well as regional arrangements that impact aviation markets (for example, European Union regulation).
National Governance	Configuration of national governance which impact airports' governance and activities, including political system and public administration, national infrastructure planning, and rules relating to state-market interactions (for example, economic regulation, competition authorities, corruption safeguards) and civil society (for example, consumer protection agencies, applicable health regulations and recommended practices etc.).
National Legal and Regulatory Framework	Laws and regulations that impact airport governance and activities, including sector specific laws and regulations, specific legislation, consumer protection, and other public financial management or related laws.
Airport Operating and Regulatory Environment	Application of national frameworks to airport governance and activities, including roles of national and sub-national government agencies/entities, and application of airport regulatory framework and models.
Airport Ownership Model	Airport-specific ownership and operating model, including level of public versus private ownership and control by different assets, services and functions of the airport. There is a spectrum of ownership and operating models that may impact airport governance and required safeguards to protect stakeholder interests. ¹¹
Airport Development and Operations	Airport-specific governance mechanisms for day-to-day management of decision-making and airport activities. Multi-stakeholder engagement is required to manage key strategic decisions, such as planning for capital expansion or reviewing an airport masterplan, as well as response to specific operational events or challenges.

Effective airport governance depends on the interaction of multiple actors across each of these layers. Clarity on the roles and responsibilities for rule-setting, and the mandate and obligations of different entities in this ecosystem is critical to effective, stakeholder-inclusive governance that obtains the best outcomes for all participants in the ecosystem. These take many forms and can be mandatory, such as airport specific by-laws or airport user agreements, or voluntary such as participation in airport working groups typically aligned to specific airport functions, such as a cargo working group or terminal operations.

It should be noted that this Toolkit is not seeking to dictate airport corporate governance arrangements, although there are a range of corporate governance structures, policies and practices that impact airport operations, including:

- Enterprise governance, including shareholders assembly or general meeting, board of directors, board committees, senior management, internal audit, external audit, principal management units;

- Shareholder and finance provider reporting requirements and obligations;
- Charters, by-laws and statutes;
- Corporate governance policies, codes, charters, and terms of reference (for example, internal control policies, ESG policies, code of ethics, governance of stakeholder engagement).

Although good corporate governance itself tends to promote positive outcomes for customers, consumers and other impacted stakeholders, there is already significant literature on corporate governance best practices.

Instead, this Toolkit focuses on the governance roles and responsibilities for different stakeholders in the airport governance ecosystem. The focus is on managing inter-stakeholder complexity rather than intra- or internal airport company policies, processes and procedures.

¹¹ For further detail please see IATA and Deloitte (2018). *Airport Ownership and Regulation*. [online] Available at: <https://www.iata.org/contentassets/4eae6e82b7b948b58370eb6413bd8d88/airport-ownership-regulation-booklet.pdf> [Accessed 29/01/2020]

Key Takeaways

Airport governance is “the processes, tools and norms of interaction, decision-making, and monitoring used by governmental organizations and their counterparts with respect to making infrastructure services available to public and private users, including citizens” (OECD, 2017).

In many cases, airport governance is even more complex than in other public infrastructure sectors.

There is a common and increasing need for multi-stakeholder collaboration and solutions at airports. A thorough understanding of all airport stakeholders is a pre-requisite to effective airport governance.

Literature on airport governance has typically focused on ownership and operating models for an airport. This Toolkit takes a broader view of the airport governance landscape, which is defined as multi-dimensional, comprising five key domains where airport governance is required. These are the key areas where governance mechanisms are needed to manage effective collaboration between stakeholders. Governance entities can interact in any of these domains across six layers ranging from international institutions to local airport operations and development.

Before assessing best practice governance solutions for airport governance in each of these domains, the next section of the Toolkit focuses on the “Basics of Airport Governance”, providing guidance for national government and related stakeholders which are seeking to understand the basic and ‘non-negotiable’ requirements of airport governance at the national level.

Basics of Airport Governance

The previous section defined what this Toolkit meant by airport governance and what makes it a highly complex area to “get right”. This section outlines some of the basic requirements for airport governance. This starts with an analysis of the basic requirements for good governance across all sectors, before outlining the core, “non-negotiable” foundations of airport governance.

Keys to Successful Governance

Framework for the Governance of Infrastructure

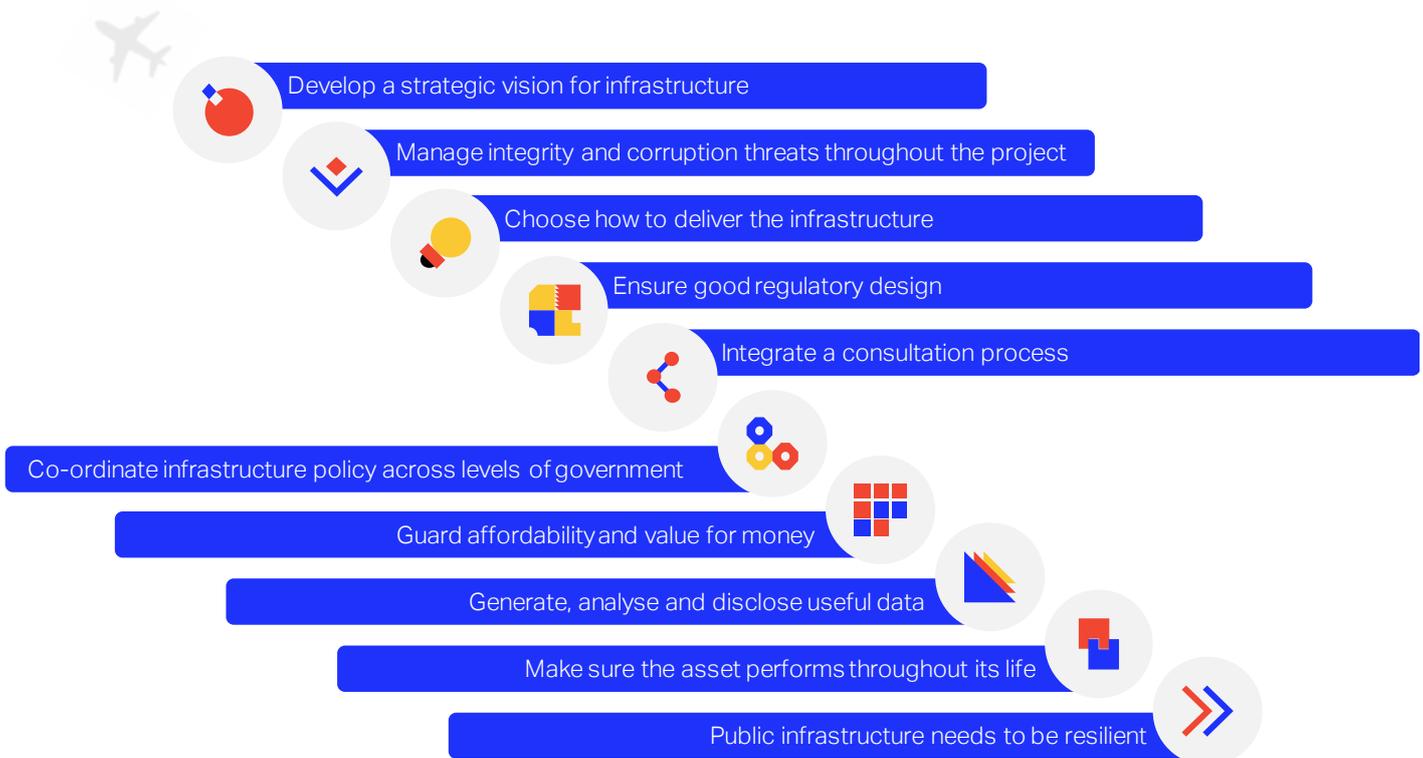
In recent years, the OECD have published a cross-sector series on governance of infrastructure, which includes analysis of key governance challenges in infrastructure, and the role of regulators in addressing some of these.¹²

The intention of this work is to move towards a framework for the governance of infrastructure, and this Toolkit draws on and extends some of this thinking to apply it to the specific governance challenges identified in the airport sector.

Through this work, the OECD recognize that “infrastructure is mainly a governance challenge” and that “poor governance is a major reason why infrastructure projects often fail to meet their timeframe, budget, and service delivery objectives”.¹³ Ten key challenges are identified through an OECD survey that are common across countries and orient the priorities for a framework for the governance of infrastructure, outlined in Figure 3 (“OECD Framework for the Governance of Infrastructure”).

“Infrastructure is mainly a governance challenge”
OECD, 2017

Figure 3 - OECD Framework for the Governance of Infrastructure



¹² OECD, Getting Infrastructure Right: A framework for better governance (Paris: OECD Publishing, 2017)

¹³ OECD, Getting Infrastructure Right: A framework for better governance (Paris: OECD Publishing, 2017)

Role of Regulators

The OECD identify the critical role of regulators in good governance of infrastructure. Regulators are defined as “the ‘referees’ of markets [that] ... help ensure access to and the quality of key public services, facilitate infrastructure management, including investment, and enhance market efficiency”¹⁴. Different regulators have different roles and responsibilities; these can include economic, financial, competition, consumer protection, and technical standards or safety.¹⁵ These roles and responsibilities are enshrined in law to enable regulators to fulfil their mandates.

Economic regulators seek to address market failures and promote competition. They are “part of an effective infrastructure governance framework. They ensure that a lack of competition for infrastructure services (usually where services are delivered by monopolies or entities with limited competitive pressure) does not result in excessive prices and poor service quality”.¹⁶

The OECD research recognizes that the greatest infrastructure governance risks exist in the early strategy and planning stages of infrastructure development, and that the delivery roles and responsibility of different parties matter, with varying regulatory and governance risks associated with different ownership and operating models. A common challenge identified by regulators across sectors is a potential tension between economic regulators and government policy objectives, for example in relation to regulatory control imposed on privatized assets.

Case Study: Regulation for Privatized Infrastructure in Australia

“In response to the {OECD 2017} survey, the ACCC noted that it agreed that there is a tension between government policy objectives and economic regulatory outcomes, particularly in the case of privatized infrastructure.

It considered that it is supportive of privatizations and has noted that State and Territory Governments are increasingly adopting a model in which commercial operations are run by the private sector unless there is a clear public policy objective that can demonstrably best be met by continuing public ownership.

The ACCC considers this to be an effective approach to privatization.

However, there are concerns that assets are being privatized in a manner that limits competition in order to maximize sale proceeds.

For example, some Governments are privatizing ports without appropriate regulatory regimes, or controls on pricing (e.g. the Port of Darwin). The ACCC has described this approach as one that increases the one-off sale proceeds by effectively taxing future generations and Australia’s future competitiveness. The privatization of Sydney Airport illustrates the tension between maximising sale proceeds and facilitating future economic efficiency. During the 2002 privatization process the Australian Government provided the acquirer of Sydney (Kingsford Smith) Airport with the right of first refusal to develop and operate any second airport within 100 kilometres of the Sydney CBD”¹⁷, [although this right has not in practice been exercised](#).

The OECD also noted common challenges identified by regulators, with the three most common challenges being:

- Encouraging efficient investment;
- Obtaining the necessary data to perform their roles and functions (with a prevalence of data and information asymmetry, where infrastructure owners and operators have significantly more data than regulators);
- Impact of governance arrangements on ability to fulfil mandate¹⁸.

In meeting these challenges, financial independence, sufficient funding, and clarity on mandate with the right powers are important requirements for effective regulators.

There are several key trends that can be identified in the OECD research and other literature with potential for consideration in governance solutions in the airport sector. These include:

- New technologies create challenges in delivering regulatory functions in a rapidly changing environment, seen, for example, within the telecommunications industry and with changing business models impacting the taxi industry;
- Generation, analysis and disclosure of data represents a major challenge but also opportunity for improved regulation;

¹⁴ OECD, Being an Independent Regulator, The Governance of Regulators (Paris: OECD Publishing, 2016)

¹⁵ OECD, The Governance of Regulators, OECD Best Practice Principles for Regulatory Policy (Paris: OECD Publishing, 2016)

¹⁶ OECD, The Role of Economic Regulators in the Governance of Infrastructure, The Governance of Regulators (Paris: OECD Publishing, 2017)

¹⁷ OECD, The Role of Economic Regulators in the Governance of Infrastructure, The Governance of Regulators, (Paris: OECD Publishing, 2017).

¹⁸ OECD, The Role of Economic Regulators in the Governance of Infrastructure, The Governance of Regulators (Paris: OECD Publishing, 2017).

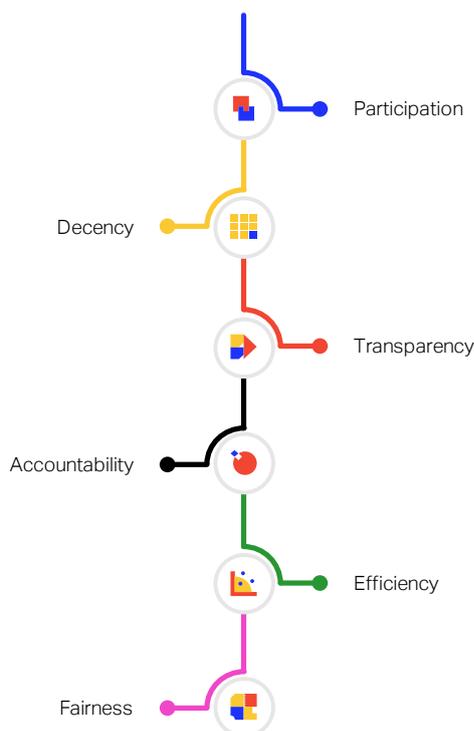
- Trends towards increased levels of private sector participation create new regulatory and governance risks to be addressed through effective governance arrangements.

Guiding Principles for Better Governance Solutions

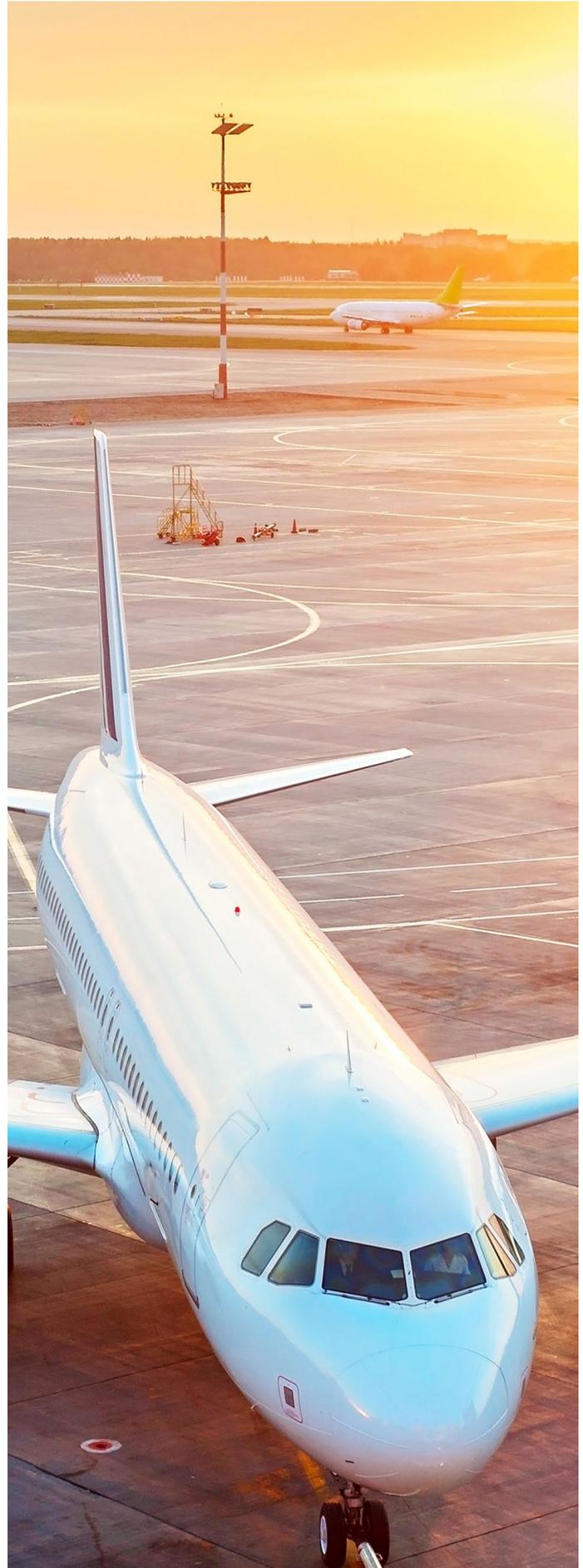
Of course, all governance solutions need to meet principles of good governance. What comprises good governance is open to interpretation, but some basic principles are widely accepted when it comes to public infrastructure, and consideration and implementation of proposed solutions should ensure adherence to these¹⁹:

- **Fairness:** the degree to which rules apply equally to everyone in society;
- **Participation:** the degree of involvement of all stakeholders;
- **Decency:** the degree to which the formation and stewardship of the rules is undertaken without harming or causing grievance to people;
- **Transparency:** the degree of clarity and openness with which decisions are made;
- **Accountability:** the extent to which political actors are responsible to society for what they say and do;
- **Efficiency:** the extent to which limited human and financial resources are applied without waste, delay or corruption or without prejudicing future generations.

Figure 4 - Principles of Good Governance (UNECE, 2008)



¹⁹ UN Economic Commission for Europe, Guidebook on Promoting Good Governance in Public-Private Partnerships (2008)



Airport Governance Foundations

This section provides an overview of the basic foundations for airport governance, drawing on minimum standards and obligations set out by ICAO for an airport to operate in the international system based on the Convention on International Civil Aviation, and other requirements from regional and international organizations.

The focus is on “what” governance is required for airports at a national level, considering the different entities involved in setting obligations and the required roles and responsibilities of different bodies involved in national airport governance. The subsequent section covering best practice solutions for airport governance then focuses on “how” this guidance, and additional best practices in airport governance, can be put into practice.

Airport Governance Entities’ Roles and Responsibilities

There are different bodies involved in defining and executing national airport governance, all influencing national aviation and airport infrastructure policy decisions, from international to national organizations. These entities have differing responsibilities and roles and authority for rule-setting.

International and Regional Governance International Obligations

The International Civil Aviation Organization (“ICAO”) is the United Nations agency in charge of managing the administration and governance of the Convention on International Civil Aviation, also referred to as the Chicago Convention. The Chicago Convention was signed in 1944, with ICAO being formally formed in 1947.

ICAO’s main goals are defined in Article 44 of the Chicago Convention, which “states that ICAO’s objective is to ensure the safe and orderly growth of international civil aviation, ‘encourage the development of airways, airports, and air navigation facilities for international civil aviation’, ‘prevent economic waste caused by unreasonable competition’, give every member State ‘a fair opportunity to operate international airlines’ and avoid discrimination between member States”²⁰. Almost every nation State is a member of ICAO and a signatory to the Chicago Convention.

20 European Parliament (2016). The International Civil Aviation Organization [online] Available at: http://www.europarl.europa.eu/RegData/etudes/ATAG/2016/593483/EPRS_ATA%282016%29593483_EN.pdf [Accessed 30/01/2020]

21 For example Article 14 of the Convention requires States to prevent the spread of communicable disease by air navigation. A number of SARP’s address the implementation of this Article.

22 Oliveira, G. P. Abuse of dominance in the airport sector, *Journal of Transport Literature* (2013), vol. 7, n. 1, pp. 8-51

The rules of the Chicago Convention are binding on signatory States, governing sensitive areas such as discrimination against foreign airlines, and commitments to manage risk in areas like the spread of disease through air travel²¹. States are required to pass primary legislation (Acts of Parliament or Statute) covering aviation law consistent with the requirements of the Chicago Convention to regulate civil aviation and enforce such regulations.

ICAO Standards and Procedures

ICAO also establishes rules applicable to international civil aviation with the aim to facilitate the development of the global aviation system, which States are requested or urged to comply with²². These standards and procedures are called Standards and Recommended Practices (“SARPs”) and Procedures for Air Navigation Services (“PANs”).

The “amendment process” or “standards-setting process” for developing SARPs is structured and transparent, and includes multiple layers of review, including by technical and non-technical subject matter experts, States, industry and civil society, before a final recommendation is made to the ICAO Council.

SARPs are published by ICAO as annexes to the Chicago Convention. SARPs are not legally binding like the Chicago Convention, but represent best practices addressing the implementation of the Convention, and ICAO is responsible for auditing the legislation and resources of aviation safety and security oversight capacities of its 193 member States to ensure that they effectively and continuously implement the SARPs, through ICAO’s Universal Safety Oversight Audit Program (“USOAP”) and Universal Security Audit Program (“USAP”). Since 2013, a Continuous Monitoring Approach (“CMA”) has been applied which allows ICAO to monitor the activity of contracting States and allocate audit resources appropriately.²³

ICAO Policy Guidance

ICAO also publish and promote a range of guidelines and policies which relate to best practices in aviation governance. These include, for example, ICAO’s Policies on Charges for Airports and Air Navigation Services (Doc. 9082), ICAO’s Airport Planning Manual (Doc. 9184 Part 1). Such policy guidance does not have the same legal standing as ICAO’s international standards and recommended practices but are considered as best practice and represent international consensus as they are usually developed through major international conferences.²⁴

23 ICAO. ICAO Standards and Recommended Practices . [online] Available at: <https://www.aviation.govt.nz/about-us/who-we-work-with/international-civil-aviation-organization-icao/> [Access date: 30/01/2020]

24 ICAO, Airport Economics Manual (Third Edition, 2013)

ICAO also promotes leading practices developed by other international and national organizations, for example IATA's guidelines for Airport Consultative Committees²⁵, or the Australian government's Guidelines for Community Aviation Consultation Groups²⁶.

However, it is the responsibility of States to comply with the SARPs and to apply the leading practices developed and promoted by ICAO. States are actively encouraged to put these into national legislation, regulations or policies, but are not legally bound to do so.

Regional Governance

Regional organizations may also have a role in airport governance by developing aviation legislation and civil aviation regulations on a regional level in order to ensure appropriate aviation safety oversight and effective policymaking.

In all instances these are required to be consistent with the commitments of signatory States under the Chicago Convention, but they may impact the roles and responsibilities of different entities.

For example, within the European Union ("EU") the European Aviation Safety Agency ("EASA") assists all member States in fulfilling their Chicago Convention obligations in certain areas. All member States of the European Union are subject to the aviation safety regulations developed by the EASA and implemented as part of European law.

EASA also ensures that the regulations it develops are consistent with ICAO standards and recommended practices. It sets out regulations on aerodrome certification, continuing airworthiness, flight crew licensing, air traffic management, inter alia. EASA regulations allow rulemaking for the fields covered by the regulation and issuing certificates and approvals in those fields²⁷.

Other key regulations at a regional level under the EU cover a range of areas, including:²⁸

- Directive 96/67/EC, which deals with the vertical relations between the airport and ground handling providers;
- Council Regulation (EEC) 95/93, which lays down the slot allocation rules;
- Directive 2009/12/EC, which is concerned with levying charges in the EU airports.

²⁵ IATA (2017), Airport Consultative Committees, Operating Terms of Reference. [online] Available at: https://www.icao.int/SAM/Documents/2018-ADPLAN/IATA_ACC%20TOR_2017APR.pdf [Accessed 30/01/2020]

²⁶ Australian Department of Infrastructure and Regional Development (2016), Community Aviation Consultation Groups (CAGG) Guidelines. [online] Available at: https://www.icao.int/SAM/Documents/2018-ADPLAN/Australia_CACG_Guidelines_2016.pdf [Accessed 30/01/2020]

Case Study: EU Directive 2009/12/EC on Airport Charges

Directive 2009/12/EC sets out principles that member States are required to embody in national law. It was developed to supplement recommendations from ICAO and "establish a common framework regulating the essential features of airport charges and the way they are set".

While the European Commission considers that the Directive has not fully met its objectives, there have been improvements across Europe regarding Airport Charges. At the time of publication, an evaluation of whether the Directive needs to be enhanced is underway. Member States were given until March 2011 to implement the Directive, which included the following principles:

- Non-discrimination - the airport charges should not discriminate between airport users, except for reasons of public interest (e.g. environmental issues) and should comply with relevant, objective and transparent criteria;
- Consultation – a compulsory consultative procedure regarding charges and service quality must be put into effect by the Member States' airport managing body;
- Transparency - the Directive stipulates the minimum standards required for the disclosure of information by the airport before the consultative process. It also requires the airport users to provide the airport managing body with relevant information such as traffic forecasts, fleet composition and use, etc.;
- New infrastructure – Member States must ensure that airports operators discuss any project for developing new infrastructure with the airport users before it is finalized;
- Charging system – Changes to the charging system or the level of airport charges should be decided on the basis of an agreement between the airport managing body and the airport users, whenever possible. In the event of a disagreement, either party may seek the intervention of an independent supervisory authority whereas Member States that have legislation that governs the fixing or approval of airport charges by an independent authority can enforce their national laws;

²⁷ EASA. [online]. Available at: <https://www.easa.europa.eu/> [Accessed: 30/01/2020]

²⁸ Oliveira, G. P. Abuse of dominance in the airport sector, Journal of Transport Literature (2013), vol. 7, n. 1, pp. 8-51

- Differentiation of services – Airport operators can vary the quality and scope of specific airport services to provide tailor-made services or a designated terminal, as long as airport users have access to it on a non-discriminatory basis. Where access is not possible, it must be ensured that this is decided in a relevant, objective, transparent and non-discriminatory way;
- Independent supervisory authority – the Directive requires the Member States to establish or appoint an independent supervisory authority to implement the measures once they have been ratified by national law.

Examples of other organizations providing guidance in different regions include:

- Union Economique et Monétaire Ouest Africaine incorporating several States in West Africa;
- Agence pour la Sécurité de la Navigation Aérienne en Afrique et à Madagascar.

These organizations establish best practice requirements for national authorities specialized in aviation on security systems oversight and processes to conform to external oversight such as audits or standardization inspections.

International Cooperation Initiatives

States are not only recipients of top-down guidance from ICAO but are active participants in working with ICAO to achieve collective objectives. For example, the UK's Aviation 2050 Strategy specifically includes its role in providing targeted support and expertise to implement key programs, such as the USAP, and working closely with ICAO to engage industry to assess the social and environmental impacts of regulation, and be more agile in standard-setting for new and emerging technology.²⁹

There are also a range of bilateral arrangements in place to develop a safe aviation industry.

Case Study: UK State Safety Partnership³⁰

"In 2016, a UK airline approached the State Safety Partnership team {in the UK} with serious concerns about the lack of wildlife hazard management at a foreign airport. A serious bird strike had recently occurred, and the airline's internal safety management system had raised concerns about further operation into this airport if the system could not be mitigated.

... A State Safety Partnership was established through the Department {of Transport} and the local Consulate. This enabled the UK government to hold workshops on safety management, aerodrome infrastructure, and wildlife hazard management with local airport staff. On-the-job training and shadowing were organized for six of the airport staff at a UK airport with a mature wildlife hazard management program/ The airport has since established a medium-long term wildlife hazard management plan and flights from the UK have continued."

National Governance and Legal and Regulatory Framework

There are a range of "non-negotiable" requirements for States to meet their international obligations, as well as best practices to draw upon. These and the optimal institutional structure for a national airport governance framework are assessed here, drawing on standards and obligations set out by ICAO and other best practice documentation from international organizations.

It is recognized that legal and institutional set-up will differ dependent upon jurisdiction but is not a focus of this Toolkit. However, there are several baseline requirements for effective airport governance, including:

- National planning policy frameworks (in support of the development and expansion of airports) – establishing strategic planning decision frameworks and development plan policies;
- Consumer law and protection – enforcing legislation related to (for example) pricing transparency, unfair contract terms, passenger's rights during flight disruption, data privacy, access for passengers with reduced mobility;
- Environmental law and protection - enforcement legislation setting a framework or specific requirements to address the environmental impacts of airport and aircraft operations by addressing noise, emissions and other environmental impacts imposed by the airport.

Aerodrome Certification and Safety

ICAO Manual on Certification of Aerodromes

ICAO's *Manual on Certification of Aerodromes*³¹ provides guidance for States in establishing their regulatory system for the certification of land aerodromes, limited to safety, regularity and efficiency aspects, but excluding financial or service level considerations. Guidance includes aerodrome certification and the organizational aspects of the regulatory authority.

²⁹ UK Department of Transport, Aviation 2050 Strategy (Consultation, December 2018)

³⁰ UK Department of Transport, Aviation 2050 Strategy (Consultation, December 2018)

³¹ ICAO, Manual on Certification of Aerodromes, (First Edition, 2001)

The guidance includes the requirements of a State to meet the obligations in the Chicago Convention and the SARPs developed by ICAO, including for aerodrome design and operation. The State are also required to retain an oversight responsibility over airport operators in respect of safety, regularity and efficiency, and the manual provides several recommendations (and supporting detail) to deliver these objectives, including:

- Establishing a separate safety oversight entity;
- Enacting basic legislation to provide for the development and promulgation of civil aviation regulations;
- Vesting the regulatory authority or Civil Aviation Authority ("CAA") with the necessary powers to enforce compliance, noting the increasing trend towards privatization and corporatization of aerodromes;
- Coordination of Air Traffic Services ("ATS") regulations, which normally have their own regulatory framework, with that of aerodromes.

The manual also includes model regulations for States to adopt, guidance material on the aerodrome certification procedure, and guidance on the organizational aspects of the national CAA for implementation of the regulatory system.

Further, obligations are also extended directly to aerodrome operators. There are several detailed obligations, but these include:

- Development of an aerodrome manual as a living document by an operator to enable the CAA to grant an aerodrome certificate;
- Safety audits and safety reporting, including in respect of other users of an aerodrome (for example, fixed-base operators, ground handling agencies, and other organizations).

ICAO Safety Oversight Manual

ICAO's *Safety Oversight Manual*³² outlines the duties and responsibilities of States with respect to aviation safety oversight based on the Convention on International Civil Aviation. It presents the State's safety responsibilities for a safety oversight system in respect of:

- Primary aviation legislation;
- Specific operating regulations;
- State civil aviation system and safety oversight functions;
- Technical personnel qualification and training;
- Technical guidance, tools and the provision of safety-critical information;

- Licensing, certification, authorization and approval obligations;
- Surveillance obligations;
- Resolution of safety concern.

The *Safety Oversight Manual* re-iterates ICAO's achievements in respect of agreeing with States "on the necessary level of standardization for safe, efficient and regular operations of air services", documented through SARPs, but with States retaining the responsibility for integrating SARPs into national regulations and practices. ICAO also define the critical elements of a State civil aviation system to meet these requirements, as set out in Figure 5 ("Example Organization Structure of State Civil Aviation System (ICAO)").

Compliance with SARPs

If a Civil Aviation Authority ("CAA") considers implementation of SARPs impractical they are required to consult with the relevant government authority (for example, the transport ministry), notify ICAO, and publish the difference in a national Aeronautical Information Publication ("AIP").

European Organization for the Safety of Air Navigation

EUROCONTROL is an example of a regional organization that has established best practice requirements for national oversight, through the *Manual for National ATM Security Oversight*.³³ This manual provides guidance to national authorities responsible for aviation and ATM security on:

- The understanding, context and scope of ATM security and its interfaces with the broader aviation security;
- How to carry out the oversight of ATM security management systems;
- How to be prepared for external ATM security oversight e.g. in the context of ICAO, ECAC and EASA audits or inspections.

This is also aligned with ICAO's ATM Security Manual, in a regional context. States are accountable for the security oversight, with National Supervisory Authorities required to carry out security inspections of air navigation service providers and being subjected to European Union Aviation Safety Agency ("EASA") standardization inspections.

³² ICAO, *Safety Oversight Manual*, The Establishment and Management of a State's Safety Oversight System, (Second Edition, 2006)

³³ European Organization for the Safety of Air Navigation (2013, Version 2). *Manual for National ATM Security Oversight*. Available at: https://www.eurocontrol.int/sites/default/files/2019-06/13_121_manual_for_national_atm_security_oversight_v2_0_signed.pdf [Accessed 02/02/2020]

There are additionally governance and coordination functions performed on a regional level. For example, the NSA Coordination Platform was established in 2009 to contribute to the implementation of the Single European Sky ("SES").³⁴

Economic Oversight

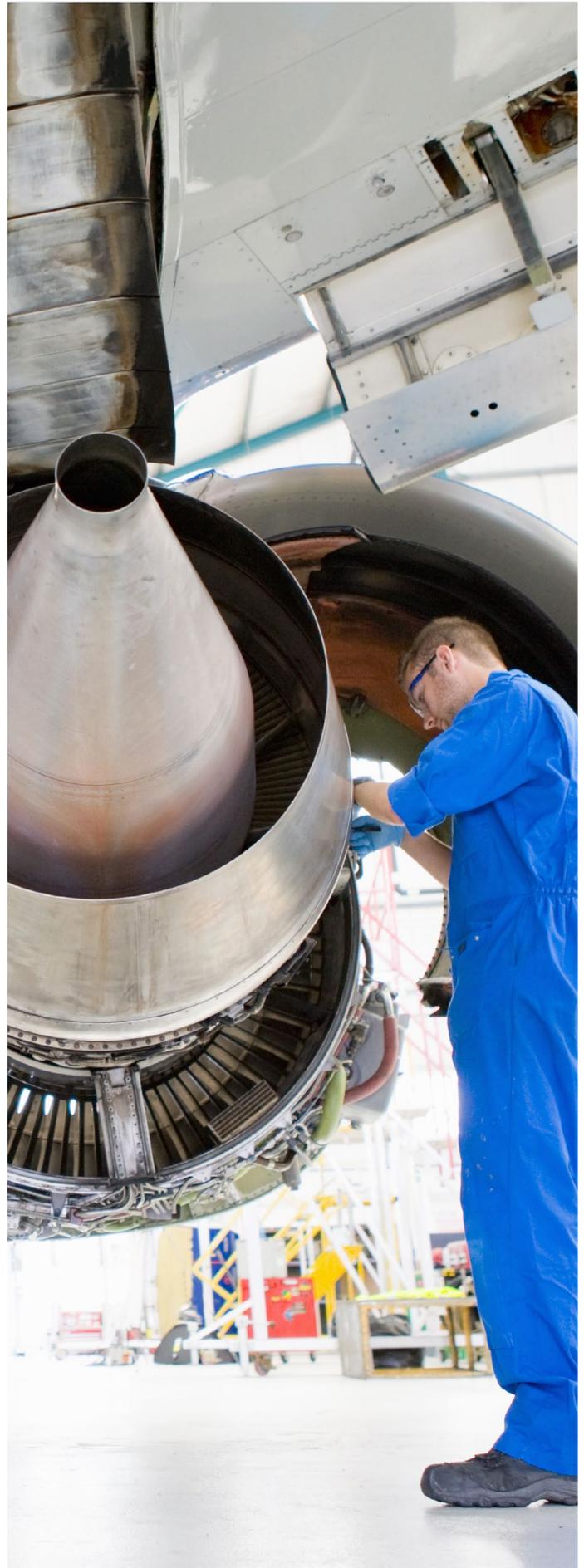
Economic oversight is a much-debated topic, reflecting market power inherent in the airport industry and the need to maximize economic efficiency and fair outcomes. ICAO is clear that economic oversight is a responsibility of the State and an inherent requirement of the aviation sector; "a State, in view of the potential abuse of dominant position of airports, is responsible for the economic oversight of their operations".³⁵

Analysis: Objectives of Economic Oversight ³⁶

ICAO's "Policies on Charges for Airports and Air Navigation Services" (Doc. 9082, Ninth Edition, 2012) defines the objectives of economic oversight as including:

- Minimize the risk of airports and ANSPs engaging in anti-competitive practices or abusing any dominant position they may have;
- Ensure non-discrimination and transparency in the application of charges;
- Ascertain that investments in capacity meet current and future demand in a cost-effective manner; and
- Protect the interests of passengers and other end-users.

However, whilst ICAO is clear on the four key charging principles to be adhered to of non-discrimination, cost-relatedness, transparency and consultation with users, ICAO is not prescriptive on the institutional form or roles and responsibilities that are required to deliver this. ICAO instead recommends that governments select the appropriate form of economic oversight, depending on factors including the degree of competition, the legal, institutional, and governance frameworks.³⁷



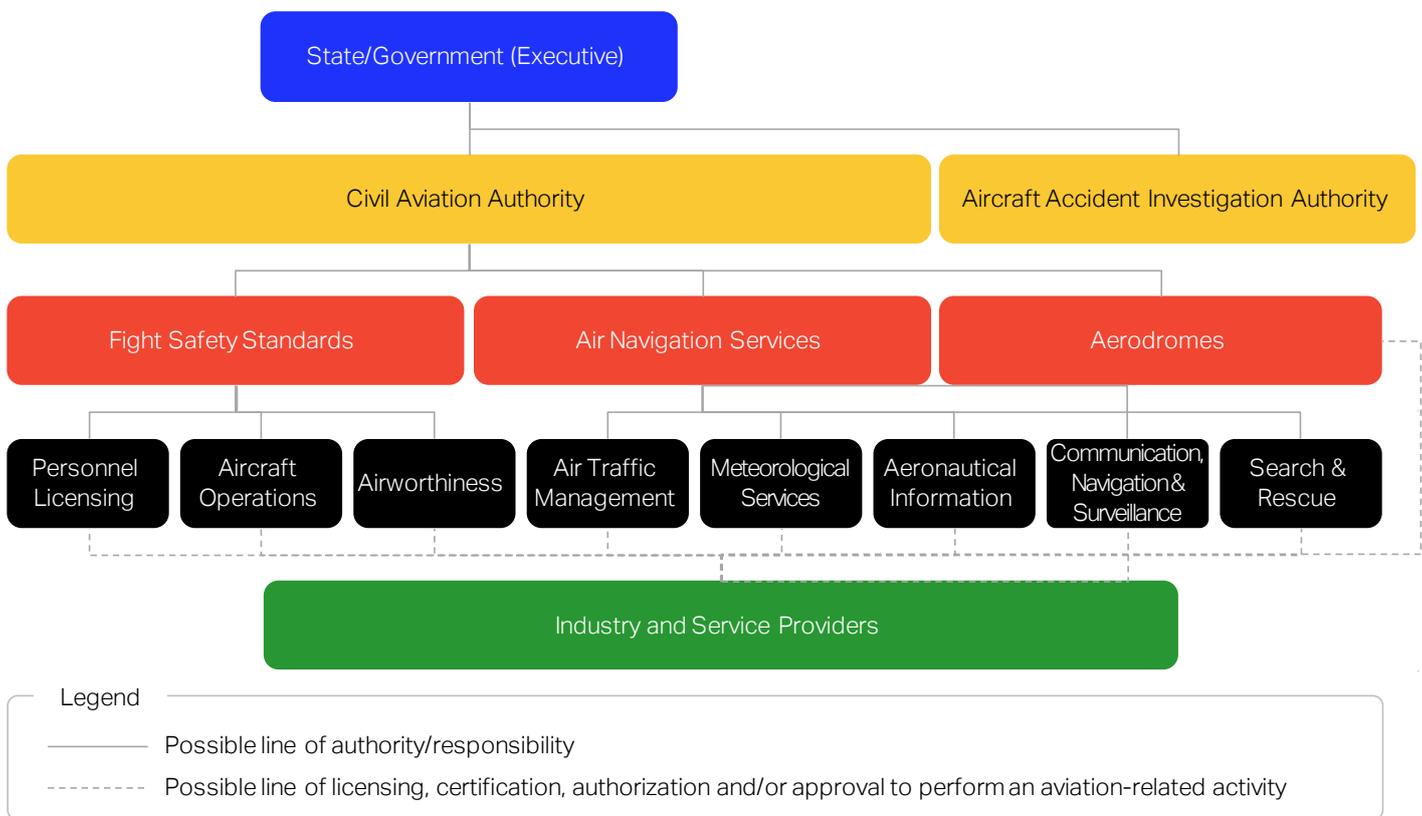
³⁴ European Commission (2013). NSA Coordination Platform, Terms of Reference [online] Available at: https://ec.europa.eu/transport/sites/transport/files/modes/air/single_european_sky/doc/2012_08_13_tor_for_nsa_coordination_platform.pdf [Accessed 02/02/2020]

³⁵ ICAO, *Airport Economics Manual* (Third Edition, 2013)

³⁶ ICAO, *Policies on Charges for Airports and Air Navigation Services* (Doc. 9802, Ninth Edition, 2012)

³⁷ ICAO, *Airport Economics Manual* (Third Edition, 2013)

Figure 5 - Example Organization Structure of State Civil Aviation System (ICAO)



In some instances, there are examples where the functions of economic regulation, airport ownership, airport operation and policy-setting reside with the government or overlap amongst different entities. This clearly gives a risk of conflicting and contradictory objectives for the government and may result in a substantial loss of airport efficiency, growth and performance. Moreover, contradictory decision making by the government may hinder the effectiveness of policymaking. For instance, it may decide to keep charges excessively low, for strategic reasons such as encouraging economic growth, but without providing any stable sources of financing or grants, putting the airport's ability to invest into basic airport infrastructure at risk, which may impact airport service quality or safety. By contrast, there may also be an incentive to raise airport charges to grow the operator's profitability, particularly where the government holds shares of the operator or is seeking to maximize capital receipt from the sale or partial sale of airport infrastructure.

The potential conflicts of interest emphasize the need of ensuring that the determination of airport charges is conducted by impartial and independent regulators, and that there is a strong case for independence of economic regulation and broad consultation. Economic regulatory independence is in line with international best practices; the OECD and IATA recommend that regulatory agencies

carry out their duties in an independent manner, with the OECD arguing that "there is a need for the regulator to be seen as independent from politicians, government and regulated entities, to maintain public confidence in the objectivity and impartiality of decisions and effective operation for trust in the market".³⁸

There are several examples in the aviation industry where there are potential conflicts of interest between service provision and regulation, or between the government as both shareholder and regulator. The World Bank identifies such institutional challenges to effective regulation; such examples point to a clear need for an independent regulatory function, and governments need to clearly define the role of and relationship with regulators in statute to ensure independence and accountability.³⁹ However, there are different models as to the separation of a technical or safety regulatory function from economic regulation.

In the UK, as shown below, the CAA has both a safety and economic regulatory role but is importantly independent from government in statute. Additionally, the CAA's recommendations are required to be assessed by the Competition Commission as the competition authority. Competition legislation and competition authorities are typically a bare minimum requirement for economic oversight, with a broad mandate to prevent abuses of

38 OECD, *The Governance of Regulators: Creating a Culture of Independence* (2014)

39 World Bank, *Investment in Air Transport Infrastructure: Guidance for Developing Private Participation* (2010)

market power at the expense of economic welfare. It is commonplace for competition provisions to run in parallel to airport sector regulations, but clarity is needed as to the roles, responsibilities and rights of different entities.

Case Study: Role of the UK Civil Aviation Authority⁴⁰

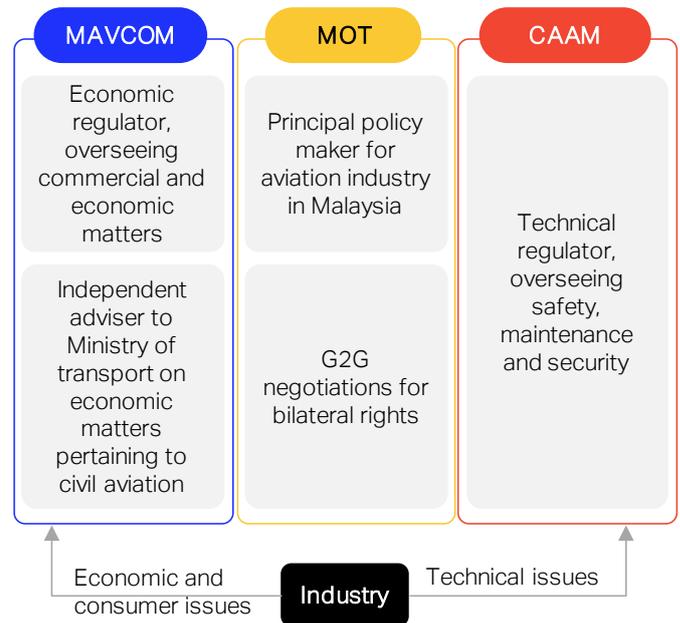
“Our principal functions and duties are set out in primary legislation (the Civil Aviation Act 1982, the Airports Act 1986, the Transport Act 2000 and the Civil Aviation Act 2012) and in secondary legislation (principally the Air Navigation Order 2009).”

The main statutory functions for the CAA deriving from this include:

- Regulating civil aviation safety;
- Advising and assisting the Secretary of State on all civil aviation matters, including policy for the use of UK airspace so as to meet the needs of all users, having regard for national security, economic and environmental factors, while maintaining a high standard of safety;
- The economic regulation of certain airports and of the provision of certain air traffic services;
- The licensing of airlines, including assuring their financial fitness;
- The licensing of air travel organizers;
- Enforcing general consumer protection law through Part 8 of the Enterprise Act and EU legislation, such as denied boarding compensation and persons with reduced mobility; and
- The regulation of aviation security functions.

By contrast, in Malaysia, as set out below, there has historically been a clear separation of the roles of different entities between policy, economic and technical regulation. In response to news in 2019 the economic regulator and the technical regulator will be merged, there has been considerable industry concern as to the impact this will have on the independence of economic regulation, departing from the independent economic regulator model applied by the likes of India, New Zealand, Ireland, South Africa, Italy and France.⁴¹

Figure 6 - Roles and Responsibilities of Aviation Oversight Entities in Malaysia



Case Study: Independence and Separation of Powers in Malaysia⁴²

“The Malaysian Aviation Commission (“MAVCOM”) was formally established on 1 March 2016 under the Malaysian Aviation Commission Act 2015 as an independent entity to regulate economic and commercial matters related to civil aviation in Malaysia. Our goal is to promote a commercially viable, consumer-oriented and resilient civil aviation industry which supports the nation’s economic growth.

Our functions, as laid out in the Act, include to:

- Regulate economic matters relating to the civil aviation industry;
- Provide a mechanism for protection of consumers;
- Provide a mechanism for dispute resolution between aviation industry players;
- Administer and manage air traffic rights; and
- Advise the Government, administer and manage routes under public service obligations.”

The role of MAVCOM differs from both the Ministry of Transport (“MOT”) and the Civil Aviation Authority of Malaysia (“CAAM”).

⁴⁰ Civil Aviation Authority (2015). Our statutory duties. [online] Available at: <https://www.caa.co.uk/Our-work/Corporate-reports/Strategic-Plan/Our-statutory-duties/> [Accessed 30/01/2020]

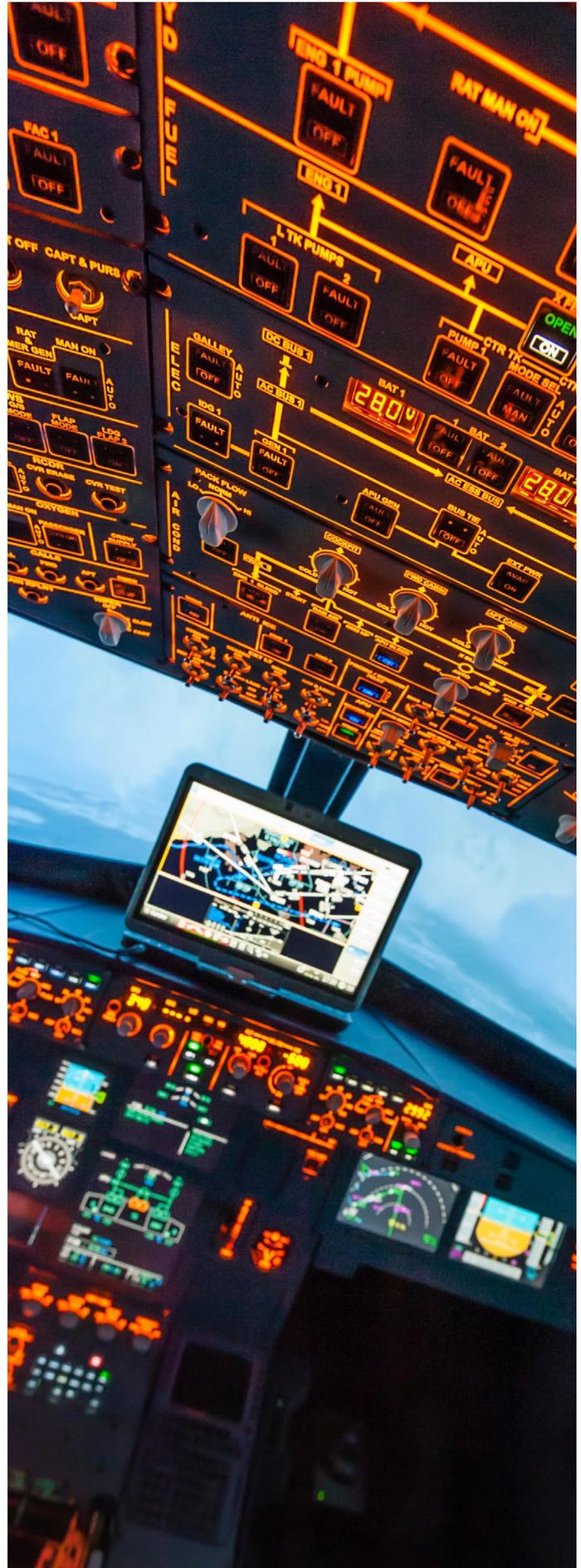
⁴¹ Yusof, A. (2019). Reconsider MAVCOM-CAAM merger: IATA. [online] Available at: <https://www.nst.com.my/business/2019/12/550179/reconsider-mavcom-caam-merger-iata> [Accessed 30/01/2020]

⁴² Malaysian Aviation Commission. Who We Are. [online] Available at <https://www.mavcom.my/en/who-we-are/> [Accessed 30/01/2020]

Further Airport Governance Reference Documentation

Further global best practice documentation includes IATA's *Airport Development Reference Manual*⁴³, which is a joint publication between IATA and Airports Council International ("ACI") and regarded as the industry best practice guide for planning new airports or expanding existing infrastructure. The goal of the ADRM is to ensure that airport facilities efficiently meet user needs, are adaptable to future changes and are cost effective to develop and operate.

This includes through involvement of airlines in the planning process, for example through an Airport Consultative Committee ("ACC") and Airline Operators Committees ("AOCs") mechanisms, as well as the involvement of local community representatives. There are also many other manuals and supporting documents, including the ICAO Airport Planning Manual, ICAO Aerodrome Design Manual, ICAO Airport Services Manual, as well as applicable international and national guidelines and standards. Details on these documents are included in Appendix 2. Reference Library and where applicable further details are assessed in the airport-level governance solutions set out in the following sections.



⁴³ ACI and IATA, *Airport Development Reference Manual* (Edition 11, 2019)

Typical National Airport Governance Structure

It is important to recognize that the trend towards changes in airport ownership and operating models, particularly towards corporatization and greater private sector

“Commercialization and privatization may have reduced the awareness of, and adherence by airports to, States’ international obligations including ICAO’s policies on charges. These responsibilities can only be assumed by the State itself.”

ICAO, Airport Economics Manual (Third Edition, 2013)

participation, do not fundamentally change the responsibilities for national airport governance. Whilst ICAO suggest that with transition of airports into autonomous entities “their overall financial situation and managerial efficiency have generally tended to improve” and therefore recommend such

options are assessed, “States should bear in mind that they are ultimately responsible for safety, security and economic oversight of these entities”.⁴⁴ Corporatization or privatization does not impact a State’s international obligations, particularly the Chicago Convention, its Annexes, and air services agreements. Further, States should ensure such airport entities continue to adhere to good corporate governance practices.

It is also recognized that there are many examples of airport systems (“two or more airports serving the same major metropolitan area and operated under a single ownership and control structure”) and airport networks (“a group of airport within a State operated under a single ownership and control structure”)⁴⁵. Further, with the growth and increasing professionalization in the industry has come the growth in international airport alliances and groups, with airport management contracts, concessions and privatizations increasingly being awarded to specialized international operators and investors. Of course, neither of these factors remove the obligations at an individual airport or at the State level.

Whilst bearing in mind these overarching obligations for the State, ICAO leaves signatory States to determine the airport ownership and industry structure that best aligns to local circumstances.

Illustrative National Airport Governance Structure

Drawing on the above analysis, a typical, best practice national airport governance structure and the roles and responsibilities of different entities is set out in Figure 7 (“Illustrative National Airport Governance Structure”). This is illustrative of good practices only, reflecting the

broad range of options available for certain roles and responsibilities by jurisdiction at a national level, many of which are assessed in more detail in the assessment of airport-specific governance layers.

As set out above, **ICAO** ultimately set the context for international obligations, including those from the Chicago Convention and those developed in SARPs and other policy guidance.

National **State / government (executive)** is ultimately responsible for setting primary legislation to define the aviation law, and secondary legislation, regulation and policies. This legislation should provide for the development and promulgation of civil aviation regulations.

Typically, responsibilities for policies, regulation and oversight fall to a **transport line ministry / department** which has responsibility for the aviation sector, including aviation policy making and national infrastructure planning. As the bureaucratic branch of the executive responsible for transport, this ministry is typically responsible for integrating SARPs developed by ICAO into national regulations and policies and establishing a regulatory framework for continuous monitoring of compliance with such obligations, and other regulatory functions such as consumer protection.

This ministry will need to work closely **with other government entities** on specific issues, such as planning for capital expansion (which may heavily involve local or municipal government), or ministries or agencies responsible for environmental protection.

A **Civil Aviation Authority (“CAA”) or National Aviation Authority (“NAA”)** is a required independent government statutory authority in each State to oversee the approval and regulation of technical safety and standards for civil aviation. It is paramount in the airport governance structure that civil aviation safety is regulated by ensuring that aerodromes under the jurisdiction of the State offer a safe operational environment in accordance with the Chicago Convention, and subsequent SARPs.

ICAO also provides guidance on the organizational aspects of the national Civil Aviation Authority for the implementation of their regulatory system, as set out in Figure 5 above. The CAA typically advises and assists the transport ministry on all civil aviation matters with regards to national security, economic and environmental factors, such as policy for the use of the State’s airspace. It is also in charge of licensing airlines and ensuring that they are financially fit to operate and regulating aviation security functions such as immigration and customs.

Effective **economic oversight** is another requirement for States, and it is generally good practice to have an independent economic regulator dedicated to the

⁴⁴ ICAO, Airport Economic Manual (Third Edition, 2013)

⁴⁵ ICAO, Airport Economic Manual (Third Edition, 2013)

aviation industry. The role of this regulator may involve price setting or monitoring, subject to local design, and often the statutory functions also include enforcing general consumer protection law, for example monitoring compliance of requirements for persons with reduced mobility or facilitating compensation claims. An economic regulator with an airport-specific mandate typically works in parallel to general consumer protection law, and broader anti-trust competition authorities.

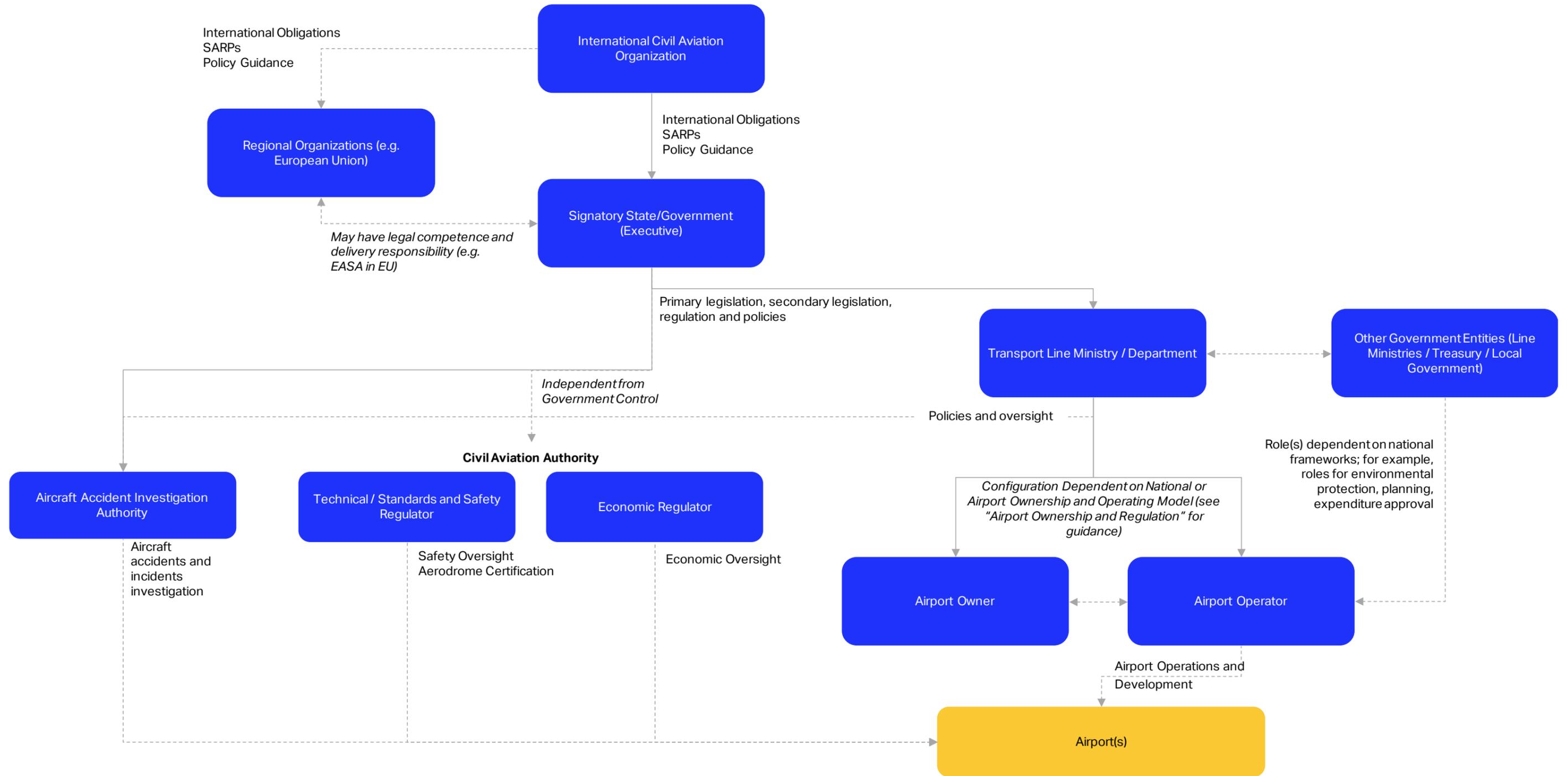
This economic regulator may form part of the CAA, but critically it should be independent from government, and an independent body to the technical regulator is often preferable to ensure clarity of roles and responsibilities and true independence. In all instances, the regulatory authority(ies) should be clearly defined in statute to be clear on and protect its role.

The Aircraft Accident Investigation Authority is responsible for investigating civil aviation accidents in a State, determining their circumstances and causes. The CAA may be involved in the investigation of aircraft accidents, although in 2016 the ICAO implemented new standards requiring that member States hold an accident investigation authority that is independent of civil aviation authorities and related entities. This is encouraged so that accident investigations are conducted objectively, as the regulatory environment and air traffic control system may fall within the remit of an investigation. ICAO officials only participate in accident investigations upon special request from the State responsible for conducting the investigation.





Figure 7 - Illustrative National Airport Governance Structure



Legend

- Typical line of Direct Authority/Responsibility
- Devolved Authority/Responsibility or Advisory/Oversight Role

Summary of Airport Governance Foundations

Figure 8 - Summary of Foundations for Effective Aviation Governance



The structural configuration of national aviation governance and the relationship between airport-related entities and stakeholders has a major impact on governance activities and outcomes, from rules relating to state-market interactions and civil society, to the political system and national infrastructure planning.

The key foundations that should be adopted for an effective national aviation governance system can be summarized as:

1. Adherence to ICAO obligations, SARPs and policy guidance;
2. Ultimate accountability of the State, irrespective of national legal or regulatory framework, or airport ownership and operating model;
3. Enactment of primary legislation for aviation sector;
4. Establishment of effective regulatory framework with a CAA to monitor technical / safety and economic performance of aviation sector, and compliance with ICAO obligations, SARPs and policy guidance;
5. Awareness and mitigation of potential conflicts of interest inherent in the regulatory framework or ownership and operating model through clear separation of powers, for example conflicts between economic oversight and shareholding arrangements, and separation of regulatory and operational functions;
6. Certification of aerodromes by technical / safety regulator under ICAO requirements;
7. Independence of regulatory authority from government, and preference for separation of economic regulation from technical / safety regulation;
8. Establishment of an Aircraft Accident Investigation Authority, preferably independent of the CAA;

9. Transparent reporting of variances to SARPs by CAA within AIP;
10. Adherence to regional initiatives, where relevant (for example, EASA in the EU).

Key Takeaways

There is a wide range of bespoke governance arrangements applied at airports globally, with different roles, responsibilities and mandates for different stakeholders and bodies. This can result in large variations in the effectiveness of airport governance, poor decision-making, and performance and other shortfalls.

However, there is a gap in the existing literature to assess airport governance best practices and provide guidance to governments, airports and other stakeholders on how to improve airport governance, based on local and airport-specific conditions, to ensure the efficient growth of the aviation industry and the corresponding stakeholder benefits.

This Toolkit addresses this gap by setting out a comprehensive overview of the airport ecosystem, including a much broader definition of governance than “just” the ownership and operating model of an airport, the key stakeholders and domains where airport governance takes place. The purpose of this Toolkit is to create value for the aviation industry and the communities it serves through a clear framework and decision-making tools for airport governance that is robust and actionable.

There are a range of best practices for airport governance, including some basic airport governance foundations and international obligations defined through the Chicago Convention, ICAO and other international organizations. These define the minimum requirements for airport governance at a national level.

Having outlined and summarized these foundations for effective airport governance, the following sections assess airport-specific governance requirements to define best practice solutions.

Best Practice Solutions for Airport Governance

Introduction

This section of the Toolkit assesses best practices and lessons learned for airport governance through case examples to inform the design of solutions for better airport governance, structured by each of the five key domains of airport governance identified:

- Policy, Regulation, and Government Affairs;
- Community and Environment;
- Safety and Security;
- Operations;
- Capital Projects.

Guidance is provided for best practice governance in each domain, including a Responsible-Accountable-Consulted-Informed (“RACI”) matrix defining roles and responsibilities for key airport governance functions, recommended airport governance mechanisms, and a governance checklist.

Prior to this, an analysis of lessons learned from other sectors is also performed to identify where parallels can be drawn, and best practices identified to support the proposed solutions for the airport industry.

Lessons Learned from Other Sectors

Whilst it is recognized that airports have many unique characteristics, there are lessons to be learned from other infrastructure sectors, and other industries, on how similar governance challenges are addressed, prior to identifying appropriate airport-specific solutions.

A lot of existing literature on the topic is focused on project governance, so highly relevant to the capital-intensive nature of the airport industry, but as much as is possible a broader lens on governance is applied in line with the approach taken within this Toolkit. A range of lessons learned and key trends is identified below by each of the five governance domains, before conclusions are summarized.

Policy, Regulation and Government Affairs

Regulation, Planning and Consumer Protection in the Energy Industry

Like the aviation industry, the energy industry make-up typically comprises of multiple stakeholders across the value chain, and an interdependence of roles between different stakeholders to enable an efficient supply of energy to end customers. It is also a capital-intensive industry which has tendencies towards high levels of market power, and has similarly seen trends towards privatization and liberalization, accompanied by unbundling of roles in the value chain and regulatory interventions designed to stimulate competition. There are frequently different entities involved in infrastructure provision and its use.

Strong and clear policy and regulatory design and implementation are therefore key to creating a competitive and open market, safeguard and improve service provision at an appropriate cost for users and end consumers. There is also significant opportunity to improve industry performance through collaboration and consultation in the planning process.

Case Study: Role of Bundesnetzagentur in the Electricity Transmission Planning Process

“The German multisector economic regulator, the Bundesnetzagentur has a role in the electricity transmission network planning process.

The electricity transmission system operators (“TSOs”) work together to draw up a draft scenario framework, which describes the anticipated developments in the fields of renewable energy sources, conventional energy sources and energy consumption and load in Germany.

The Bundesnetzagentur publishes this draft and gives the general public and downstream network operators an opportunity to express their opinions. Taking the results of this consultation phase into consideration, the Bundesnetzagentur approves the scenario framework.

With this as a basis, the TSOs then draft the Grid Development Plan and the Offshore Grid Development Plan. This plan “must contain all effective measures for the necessary optimization, development and expansion of the network, which are required over the next ten years to ensure safe and reliable network operation.” (Section 12b I 2 German Energy Law (EnWG)).

The Grid Development Plan is again published and consulted with the public, before being approved (possibly subject to alterations) by the Bundesnetzagentur. If an investment measure is included in an approved Network Development Plan, the TSOs have a legally binding obligation to implement that measure”.⁴⁶

Within this case example there is a clear emphasis on community consultation and communication between TSOs and regulators. There is also a binding framework in place to ensure that the final and agreed upon result is implemented, although of course this creates rigidity in capital planning that risks investments being made that are no longer necessary if planning assumptions change.

The energy industry is also consumer-facing, and this creates specific requirements for addressing issues like regulatory oversight and data protection that impact consumers. Changes are often encouraged through recommendations by independent consumer organizations, which are not binding on energy companies, but represent the voice of the end customer. Smart technologies have also been disruptive to the energy market, and through these there is a growing trend to actively engage the consumer and general public, taking consumer opinions into account. Innovative solutions are being applied which seek to provide transparency to customers, protect consumer data, and to improve consumer engagement using new, smart technologies.

Case Study: Beuc X - Flexible Electricity Contracts Report 2019, Regulation, Customer Protection and Operational Good Practice

In 2019, a report was prepared by The European Consumer Organization ('BEUC') on governance issues across a series of energy companies in the EU. Across these companies, three key issues were found to be present:

- Consumers can easily get confused about tariffs, have no tools to protect themselves and no explanations of the risks linked to sometimes very sharp price increases;
- None of the companies assessed were seen to be GDPR compliant, meaning none of the contracts had data protection clauses that would be acceptable from a consumer perspective;
- The energy industry offers lack flexibility in switching and in contract termination. With all providers including clauses that have the potential to lock consumers in, include disproportionate termination fees and other barriers.

Based on these findings BEUC have advocated for recommendations on:

How to guide consumers along the pricing structure and potential risks linked to it, protecting them from tariff clauses.

Address security and data operating structure by designing provisions to create a demand for GDPR compliant contracts, turning compliance to the providers' benefit by generating competition for the most customer-friendly contract.

Engage consumers more directly in contract choices to allow them to become active players in electricity markets, such as using smart technologies (e.g. mobile applications) to enable consumers to become much more engaged in the market than in the past.⁴⁷

Regulation and Governance in the Water Industry

Like the energy industry, the water industry has monopolistic tendencies, and has historically been highly regulated on pricing decisions and capital investment to protect consumers and safeguard efficiency. Unlike the energy industry, unbundling across the supply chain has been less prevalent, although it is a growing trend.

In the UK, the water industry has experienced tremendous change over recent years. The Water Bill in 2013 intended to set a level playing field by giving the authorization to parties to provide services in areas that were previously monopolies. The aim of this bill is to reduce regional water monopolies that are the dominant water providers operating both upstream and downstream in the market, increasing competition and encouraging new entrants.

⁴⁶ OECD, *The Role of Economic Regulators in the Governance of Infrastructure*, The Governance of Regulators (Paris: OECD Publishing, 2013). Citing information provided in Bundesnetzagentur survey response.

⁴⁷ The European Consumer Organization BEUC (2019). *Flexible Electricity Contracts Report*. [online]. Available at: <https://www.beuc.eu/publications/beuc-x-2019-016-flexible-electricity-contracts-report.pdf> [Accessed: 30/01/2020]

Case Study: Governance Arrangements in the UK Water Market

The UK Government's Water Bill, introduced into Parliament in 2013, proposed changes to the legislative framework for the water sector in England to address the current and future challenges faced within the sector, including through market reform. These changes were expected to deliver £2 billion of benefits to the economy over 30 years. It aimed to increase competition and encourage new entrants to the market.

Rules in the forms of codes with which all parties in all elements of water and sewage delivery comply, clearly set out the responsibilities and activities required of them to enable the newly competitive non-domestic water market to operate efficiently. If codes are effective and complied with, there will be less need for regulatory intervention to deal with specific issues arising, and the market can be managed by its participants.

The codes also include sets of processes for the governance of codes and how the codes themselves can be changed over time as the market evolves. These balance the responsibilities of all water industry players, ensure sufficient regulatory oversight and recognize the importance of sector involvement to enable benefits to be realized for customers. The bill also promotes customer participation in the market and seeks to ensure appropriate privacy and security of customer data.⁴⁸

This case example highlights the role of government mechanisms to introduce competition in a naturally monopolistic market, and the growing recognition of a governance model that is capable of adapting to change, with governance mechanisms in place to facilitate change.

Community and Environment

Community Engagement in the Rail Industry

Positive examples of community participation and engagement are also present in the rail industry, such as in the case of rail stations in London. These seek to strengthen public confidence in station and railway services, and create a stronger community affinity to them.

⁴⁸ Ofwat, *Water market governance arrangements* (2013): https://www.ofwat.gov.uk/wp-content/uploads/2015/11/pap_tec201309marketgovernance.pdf

⁴⁹ National Rail. *Station friends groups*. Available at: <https://www.networkrail.co.uk/communities/community-rail/station-friends-groups> [Accessed 30/01/2020]

Case Study: Creation of "Station Friends Groups" at Network Rail Stations

The majority of Network Rail's rail stations include "Station Friends Groups", formed as part of the Association of Community Rail Partnerships ("AcoRP") in order to provide additional engagement mechanisms with passengers and local communities. These local groups mainly work with the train operating company that manages the station, and carry out activities that include:

- Reporting problems and maintenance issues;
- Developing station gardens; and
- Actively promoting station adoption.

The station friends groups create a sense of community within the different stations by promoting community gardening and food growing, local arts projects, workshops and visits with children and young people.⁴⁹

The case example above demonstrates that public participation and engagement in the governance process could result in improving the railway stations' function. By taking all users' opinions into account – from station managers, to employees, users and political institution – and enabling them to participate in the decision making process, this helps to enable transparent station management and an improved passenger experience.

Public Engagement in the Renewable Energy Developments

Whilst renewable energy developments do not involve the public as direct users of the asset, as in the airport industry, they are capital intensive, often contentious, and involving stakeholders in both the public and private sectors as well as impacted communities and the public. In addition, similar to the aviation industry, there are widely-acknowledged public benefits of renewable energy, but the benefits and costs may not be proportionate to all stakeholder, resulting in misalignment of stakeholder interests.

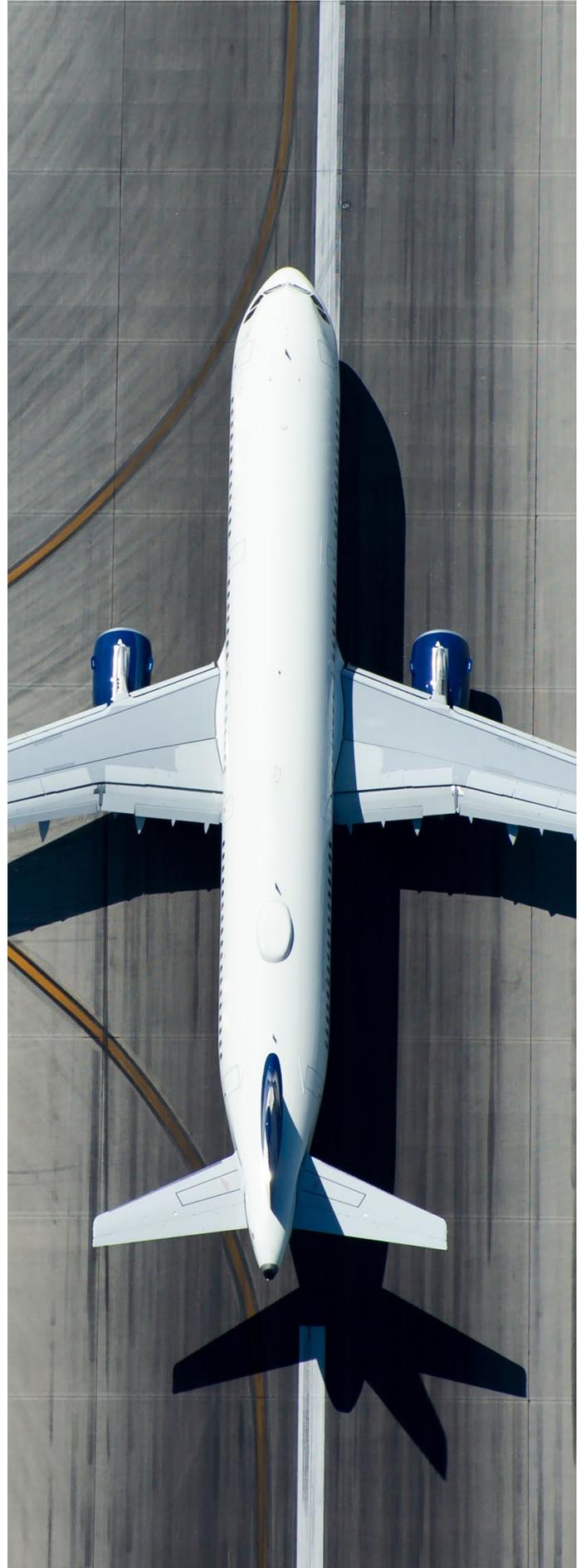
Case Study: Governance Challenges in the Offshore Cape Wind Farm, Massachusetts

The Wind Farm demonstrates the difficulties of marine energy developments in the US as a result of wide spread public opposition due to visual intrusion and the high cost from the public budget. The wind farm has still not been built in 2020, despite the initial

permit application being requested in 2001. The delay in part was due to a lack of a nested system for energy governance and overlapping jurisdiction between states and the federal level. The governance structure was not set up to carry out public engagement with local communities.

“A disconnect between federal level power dynamics and politics, and priorities at lower levels, such as the state and the local level were mentioned as one of the key challenges for progress.”⁵⁰

Effective models for addressing such interests have drawn on nested governance models, where a single integrated governance structure is applied without overlapping jurisdictions and roles of multiple stakeholders. For example, a nested governance model, clear regulation and a single streamlined process in Denmark, have proven successful in engaging with the public and managing public challenges in the early stages of the project developments.



⁵⁰ Marcus Lange, Glenn Page, Valerie Cummins, *Governance challenges of marine renewable energy developments in the U.S. – Creating the enabling conditions for successful project development*, (2018): <https://www.sciencedirect.com/science/article/pii/S0308597X17307029>

Case Study: Management of Stakeholders by the Danish Environmental Agency

Denmark has a single streamlined process for all marine renewable energy developments. The process is unique to Denmark, Italy and the Netherlands. Three permits are required and the process has been designed specifically for the sector and is not built on existing regimes.

“The Danish Environmental Agency (“DEA”) is the single ‘one-stop-shop’ authority for developers to manage often-opposing interests in the marine environment. It conducts hearings with other regulatory authorities and relevant local municipalities at pre-establishment phase of a project to address major concerns.”

As a result, Denmark has been ranked number one in the world for renewable energy performance by the World Bank due to its ambitious policy goals and streamlined consenting process.⁵¹

Safety and Security

Risk Governance in the Dams Industry

Dams are critical national infrastructure assets, with a range of potential economic, environmental, and social benefits, as well as risks and the potential for negative impacts on stakeholders. Similar to the aviation industry, it has many interdependencies with other sectors and stakeholders, including the agricultural and food sector, the transportation systems sector, the water sector, and the energy sector.⁵²

Moreover, the industry is highly security driven, like the aviation industry, due to the high consequential risks of failure or damage to the dams. Potential risks include significant destruction, loss of life, and loss of water supply, power, flooding. All of the risks can result in severe economic and social impact. The safety and security risks posed by dams are relatively unique. The US Government in particular have developed a risk management framework and guidance for operators and owners that focuses not only in risk-based management, but also on managing the consequences of failure and crisis management.

⁵¹ Marcus Lange, Glenn Page, Valerie Cummins, Governance challenges of marine renewable energy developments in the U.S. – Creating the enabling conditions for successful project development, (2018): <https://www.sciencedirect.com/science/article/pii/S0308597X17307029>

⁵² US Homeland Security, *National Infrastructure Protection Plan – Dams Sector*. Available at: https://www.dhs.gov/xlibrary/assets/nipp_snapshot_dams.pdf

⁵³ US Homeland Security, *National Infrastructure Protection Plan – Dams Sector*. Available at: https://www.dhs.gov/xlibrary/assets/nipp_snapshot_dams.pdf

Case Study: US Risk Management Approach

The US Sector Specific Agency for dams has developed a series of reference documents that provide a guide to sector partners on how to manage risk. The guides use research to develop and implement protective measures for dams, and provide a key resource to operations to implement a risk-based management program. These guides include: The Dams Sector Security Awareness Handbook and Dams Sector Security Awareness Guide Provides sector specific technical information to assist in identifying security concerns, coordinating a response, and establishing partnerships with local emergency services.

The Dams Sector Protective Measures Handbook Assists owner/operators in selecting protective measures addressing physical, cyber, and human elements. It includes recommendations for development of site security plans.

The Dams Sector Crisis Management Handbook Provides owner/operators with sector-specific technical information for emergency response and preparedness issues, and includes recommendations for development of emergency action plans and site recovery plans.⁵³

Dams Sector Crisis Management Plan Training The US Department for Homeland Security have also developed a public training course to provide dam owners and operators with information relating to emergency response and preparedness issues. The course identifies a range of steps to management crisis:

- Identify potential consequences, vulnerabilities, and threats;
- Determine thresholds for or gaps in protective programs;
- Evaluate the feasibility of closing these gaps; and
- Prioritize the order in which security gaps are addressed.

The training course emphasizes the objectives of a risk management plan to contain the damage and prevent failure, as well as minimize the safety and economic impacts caused by the damage or failure.⁵⁴

⁵⁴ US Department for Homeland Security, *Dams Sector: Crisis Management Overview Course*. Available at: <https://emilms.fema.gov/IS0870a/DCM01summary.htm>

Moreover, the United States Army Corps of Engineers (“USACE”), owner and self-regulator of over 700 large dams in the US, identified the importance of using subject matter experts to develop risk-management plan, and developed from the early-2000s national risk management centres to manage risk governance and interactions with national and international stakeholders.

Case Study: USACE Risk Management Centers

In order to implement risk governance processes for infrastructure management of the dams, the USACE developed national risk management centers in the early 2000s made up of engineers and scientists who are experienced in the functionality and risks of dams. Furthermore, the centers work with other agencies, and industry and international partners to implement policies and technologies that can manage risk governance unique to each of the dams. The agency is also responsible for training and policy and methodology development in the sector. The centers have been considered a success internationally and to date “over seven billion dollars has been saved or cost avoided through the implementation of risk-informed governance.”⁵⁵

Other countries have followed the US example; for example, Spain have developed national-level reference guides to support operators and owners across the country, and ensure a standardized approach to risk-management of dams.

Case Study: SPANCOLD Technical Guide on Risk

The Spanish Ministry of Agriculture, Food and Environment (“MAGRAMA”) own and operate one third of the large dams in Spain. The Ministry is responsible to enforce and develop integrated water resources planning and management, flood control and environmental protection.⁵⁶

The Ministry developed the Spanish National Commission on Large Dams (“SPANCOLD”) Technical Guide on Risk in 2012, that is applied to the management of dam safety.

The Guide aims to bridge the gap between historic risk management approaches for Dams, where the focus was on controlling risk through rules and practices and provide an approach for dealing with the consequences of a failure of the dams.⁵⁷

The guide today serves as a reference guide towards risk governance for many operators in Spain and other countries.⁵⁸

Operations

User Consultation in the Ports Industry

The relationship between asset owners, port operators and their customers is in many ways similar to the airport industry, albeit that there are additional complexities and services required in the airport industry associated with passenger movement and one may consider greater surrounding community impact that needs to be engaged with and managed.

The port sector is increasingly turning to integrated governance solutions to consult and collaborate between each of these different stakeholder groups and achieve more balanced outcomes.

Case Study: Building Port Communities to Increase Port Performance and Efficiency

The Global Institute of Logistics carried a research on the reasons behind the lack of efficiency in the global port operating system, identifying improvement areas with the establishment of port communities.

One key issue identified in the study is that port authorities are not sufficiently involved in port operations and management. Most of them adopt the role of a “landlord”, where they own port assets while leasing them to private operating companies under a range of PPP and other commercial models.

The performance of a port is not dependent on a single player, but on the whole value chain of interdependent services. Port entities need to collaborate and work together to achieve sustainable competitive advantage and increase customer satisfaction.

As a result, the study recommends the creation of port community groups to provide the drive for port authority leaders to create a more comprehensive and focused strategy for integrated port activities.

Through an established framework, port community leaders would put in place and communicate a clear direction for all port stakeholders, instilling a code of ethics, a culture of collaboration, and a governance

⁵⁵ Ignacio Escuder-Bueno & Eric Halpin, *Overcoming failure in infrastructure risk governance implementation: large dams journey* (2015). Available at: <https://www.tandfonline.com/doi/full/10.1080/13669877.2016.1215345>

⁵⁶ Refer to footnote 59.

⁵⁷ SPANCOLD, *Risk Analysis Applied to Management of Dam Safety*, (2012). Available at: https://www.spancold.es/Archivos/Monograph_Risk_Analysis.pdf

⁵⁸ Refer to footnote 59.

structure for the port stakeholders. By implementing port communities, participants would have a clearer vision of their responsibilities and collaborate to collectively bring improvement and performance in ports. This solution aspires to a more balanced distribution of power and authority among the numerous independent entities comprising the port ecosystem.⁵⁹

Contract Management in the Healthcare Industry

The healthcare industry, particularly in more mature markets, has adopted a range of PPP models for the delivery of hospital assets and clinical services, with health systems being highly complex. These include complex, integrated PPP models where the supply of hospital infrastructure is integrated with clinical services, but it is also very common for private sector partners to provide infrastructure and other assets under a design, build, finance, operate and maintain model, with ancillary services such as cleaning, catering and security.

As in the aviation industry, there is a need for strong governance between the provision and end users of infrastructure assets and equipment. Effective governance is required in the strategic and operational management of such PPP contracts, with a range of challenges in achieving this, including the pace of technological change demanding flexibility in contrast to the typical rigidity of long-term PPP contracts.

Case Study: UNECE, WHO, and ADB Report on Contract Mechanisms in Healthcare PPPs

Robust contracts and contract management are critical to the success of a PPP initiative, both for infrastructure and service contracts. The noted report identified a number of key common governance challenges within PPP contracts on the industry: Shifting the specifications in contracts from inputs to outputs. This places considerable challenge on the public administration to define the KPIs and to link 'rewards' to the same.

Establishment of long-term (20-30 years) performance-based contracts and effective performance monitoring and management regimes, including the setting of and enforcing of penalties. The incompleteness of contracts is unavoidable, because long-term contracts will necessarily face

technological, demographic, managerial, and political changes, and the need for robust risk allocation and management mechanisms to address such challenges.⁶⁰

Capital Projects

Capital Project Planning and Execution in the Transport Industry

Governance is recognized as a critical issue in other parts of the transport industry. Mechanisms to avoid excessive political influence and to ensure consultation and involvement of users and communities are also topical issues.

Case Study: Reforming The Port Authority of New York and New Jersey to Address Governance Failures

The Port Authority of New York and New Jersey is currently undergoing a program to reform its governance and operational structures, believing reform suggestions can benefit the New York and New Jersey region's ability to deliver improvements in daily operations, system maintenance, new investments, and long-term regional infrastructure planning. Specifically, a 2017 policy workshop report attempts to address the following key failures:

- Overt political interference in decision-making processes;
- Failure to adequately represent the needs of those in the Port District;
- Lack of a long term vision of capital planning and investment;
- Increasing reliance on a financing structure that is ill-equipped and unable to meet the infrastructure needs of the region in the immediate and long-terms.

The report categorizes reform recommendations in three areas in order to address the above concerns: governance, operational structure, and finance.

Governance

To address the issue of governance, the Board of Commissioners was recomposed of nine directly-elected commissioners representing the Port's covered jurisdictions. Furthermore, the position of Executive Director was to be dissolved with all duties inherited by an independent CEO with no capacity for

⁵⁹ Global Institute of Logistics, *Building Port Community* (2017): http://www.globeinst.org/research/building_port_community/ [Accessed 30/01/2020]

⁶⁰ UNECE, WHO and ADB, PPP Health Sector Discussion Paper, https://www.uncece.org/fileadmin/DAM/ceci/images/ICoE/PPPHealthcareSector_DiscPaper.pdf

a veto vote as a representation of the state's constituents, since citizens' interests are already represented via direct representation.

Operational Structure

In addressing the concerns attributed to operational structure; the port authority refocused the Board's priorities on long-term capital planning and financing, as well as enhancing the efficiency of operations, it was intended to bring new transparency and scrutiny to the operation of their two business lines: Public Private Partnerships and Subsidiary Entities and Private Operators.

Finance

Finally, the Port Authority addressed the key topic of finance; exploring the use of a general taxation tool, be it for sales, property or income tax to finance specific projects or capital plans rather than be used for a general fund.⁶¹

There are many positive examples of community engagement and feedback that have been incorporated into the planning and execution of projects in the transport sector, such as in design of the new HS2 Euston Terminal in London.

Case Study: HS2 and Best Practice in the Development and Implementation of the New Euston Train Terminal

From 2017-2019, HS2 Ltd developed the design that was provided to UK Parliament in September 2015, known as Additional Provision 3 ("AP3") for Euston Station. The feedback received as part of two community events on the station design held in June and July 2017 has been considered as part of the ongoing station design development.

The scope of the design development work has included aspirations to make the HS2 Euston station a world class transport interchange which integrates with the surrounding area. With that in mind HS2 established a series of forums intended to seek the views of the community on the ongoing project and any other aspects of the developing design. Subsequent to this process, the design for the HS2 Euston station was submitted to the London Borough of Camden for approval, and further public

engagement was required to take place to gain views on the station architecture before final applications are filed. The layout for the HS2 station is also intended to make it easier for people to move through the station, opening up public routes previously restricted or ticketed by the facility.⁶²

In the execution of major capital programs, there are also best practices to be drawn upon. Crossrail's Learning Legacy Program is a framework which acts as a way of encouraging knowledge sharing across contractors, to move beyond basic "backwards looking" compliance and move towards improved performance across a number of key areas, including health and safety, sustainability and quality.

Further, Crossrail's Health and Safety Performance Index (HSPI) drives positive behaviours and a culture that helps to prevent accidents occurring in the first place. Fostering a 'leading' vs 'lagging' method of operation.

Case Study: Crossrail Learning Legacy Program on Best Practice and Transparent Insight Exchange

With over £400bn of infrastructure projects identified in the UK Government's National Infrastructure Plan, Crossrail's Learning Legacy initiative seeks to collate knowledge and share good practice on a wide range of topics, including Health & Safety, Project Management, Engineering and the Environment. The benefits of Crossrail's 'Performance Assurance Framework', which compares contractor performance and shares best practice as a way of encouraging contractors to go beyond basic compliance and driving world-class standards. The framework measures contractor performance across a number of key areas including Health & Safety, Social Sustainability and Quality.

Some of the early examples of lessons learned include:

- The use of 'leading' Health & Safety indicators, that measure the steps being taken to create safe and healthy working environments, rather than just traditional 'lagging' indicators, such as Accident Frequency Rates. Crossrail's Health and Safety Performance Index (HSPI) drives positive behaviours and a culture that helps to prevent accidents occurring in the first place;

61 Woodrow Wilson School of Public and International Affairs (2017). *Reforming the Port Authority of New York and New Jersey*, Graduate Policy Workshop Report. [online] Available at: <https://www.princeton.edu/sites/default/files/content/WWS%20591a%20Port%20Authority%202017.pdf> [Accessed 30/01/2020]

62 HS2. *HS2 Euston station design development*. [online] Available at: <https://hs2ineuston.commonplace.is/schemes/proposals/hs-2-euston-station-design-development/details> [Accessed 30/01/2020]

- The processes used to meet stringent emissions control standards, manage construction vibration impacts on listed buildings and source construction materials ethically. Crossrail has also taken significant steps to reduce its carbon footprint, both during construction and once trains are operational, which has included research into the capture of heat from trains as a potential sustainable energy source.

The scheme has allowed contractors to learn from one another and has helped to embed a culture of continuous improvement.⁶³

Capital Projects Delivery using PPPs for Infrastructure Delivery

Across infrastructure sectors there are common challenges to balance the public sector focus on the delivery of a public utility, against the private sector focus on efficiency of operations and private gains. Similar to the aviation industry, multiple stakeholders need to be coordinated and aligned over different lifecycle stages, and governance processes must reflect the differing demands of each party.

Public and private sector partners have developed practices and mature institutional frameworks to manage risks and demands of a long-term contract between the different parties, as well as conflicts of interest.

The Australian case shows that the relationship between private investors and private infrastructure service providers can be made clear and can be governed so that long-term stewardship of the asset is promoted.

Case Study: Australian Infrastructure PPP Market

The maturing of the Australian PPP market has revealed the need to manage potential conflicts of interest and governance challenges implicit in infrastructure service delivery by private counterparties.

It is argued that the longer the equity investment is held by PPP/concessionaires, the more closely their goals are aligned to the public sector objective of long-term, low-cost, high-quality service delivery, reducing conflicts of interest.

Financial investors, like pension funds, would in theory be aligned to this. However, in early Australian PPP

road concessions investment banks acting as initial equity investors packaged the projects and sold equity investments, resulting in listed shares losing value when demand forecasts shown to be overly-optimistic.

As a result of this experience and conflicts of interest identified between long-term financial investors, the PPP market in Australia has seen the following changes:

Government agencies typically exert some control over the identity and ownership structure of their counterparty to the SPV agreement across the project lifecycle, although not over its internal governance.

SPV concession agreements now typically contain “change of control” restraints of the SPV to avoid equity participants selling out their stakes.

Strong fiduciary requirements in its corporation laws that require corporate directors to act strictly in the interests of the companies on whose boards they serve.

Many states engage “probity auditors” across the phases of tendering to operations to assure good governance of the SPV companies.

The appointment of independent board chairperson is also identified as a mitigation to potential conflicts of interest.

The use of long-term contracts aligns the goals more of the parties, which has seen a reduce in conflicts of interest in Australian infrastructure PPPs.⁶⁴

Conclusion

Other infrastructure sectors provide various insights and key trends that support ongoing governance initiatives in the airport industry. The lessons learned from other sectors that can be applied to the airport industry can be summarized as:

1. Engage customers and the general public by taking their opinions into account in the decision-making, design and planning processes;
2. Develop smart and user-friendly technologies to provide transparency to customers and enable them to voice their opinions while protecting their personal data;
3. Make use of community consultations along all stages of a project;
4. Ensure clear and transparent rules for all stakeholders across the value chain, with clear;

⁶³ Global Institute of Logistics (2017). Building Port Community. [online] Available at: http://www.globeinst.org/research/building_port_community/ [Accessed 30/01/2020]

⁶⁴ Ignacio Escuda-Bueno, *Overcoming failure in infrastructure risk governance implementation: large dams journey*, (2016): Available at: <https://www.tandfonline.com/doi/full/10.1080/13669877.2016.1215345>

mechanisms to govern the development and change of these rules;

5. Reduce political interference in the decision-making process;
6. Robust and transparent contract management and enforcement of penalties where infrastructure assets and services are provided under contract (for example, PPP);
7. Develop frameworks that encourage knowledge sharing across different entities in the supply chain, and transparent performance measurement frameworks and indicators;
8. Create governance forums that allow for consultation, collaboration and innovation with key stakeholders.



How to Implement Best Practice in Airport Governance

As identified in the Basics of Airport Governance section above, a significant part of the basic foundations of airport governance focus primarily on the international obligations flowing from ICAO, the Convention on International Civil Aviation, and related SARPs, and other international and regional organizations.

These often have a specific focus on aviation safety and security, and there is relatively limited formal guidance on other key airport functions required to be addressed by airport governance in a national, regional and local context. Further, mandates for different stakeholders are often defined informally as an airport develops over time and not clearly defined or written down.

Through a review of case examples in each of the airport governance domains, this section seeks to build on the basic guidance available and identify lessons learned in airport governance, including examples where airports are already structuring solutions that are delivering mutual benefits with stakeholders, to inform improved governance solutions.

This section is structured so it can be read end-to-end or on stand-alone basis for each domain. For each domain the section covers:

- **Overview:** Definition of each domain and an overview of the main challenges;
- **Best Practices and Lessons Learned:** An overview of best practice in airport governance and how this is implemented, illustrated with case studies;
- **Best Practice Guidelines:** Guidelines and tools covering:
 - **Governance Self-Assessment Checklist:** A self-diagnosis tool to enable States to assess whether appropriate governance is in place, and recommendations on how to address shortcomings;
 - **Decision Making Process:** A Responsible-Accountable-Consulted-Informed (“RACI”) matrix to identify the roles and responsibilities of key stakeholders in airport functions and decision-making processes. A simplified set of stakeholders is used for this analysis to exclude stakeholders with minimal roles in these key functions. A RACI matrix is a tool to assign and be clear on roles and responsibilities for specific functions, activities or decisions. There are alternative frameworks that can be adopted, for example a Recommend-Agree-Perform-Input-Decide (“RAPID”) framework, but a RACI matrix is used for simplicity here, as follows:

- **Responsible** for completing an activity or making a decision;
- **Accountable** for the activity or decision, even where responsibility for completing it is devolved to another party;
- **Consulted** organizations or people need to be actively engaged and input to activities or decisions;
- **Informed** organizations or people need to be kept updated, but do not contribute directly;

- **Recommended Airport Governance Mechanisms:** Summary of best practice governance mechanisms, forums, committees and working groups that an airport should have in place to implement better governance.

Additionally, a summary of this guidance across all domains is included in the Best Practice Guidelines and Tools section that follows. This also includes implementation guidance for better airport governance.

Mapping the Stakeholder Positions within Each Domain

Prior to implementing any airport governance solution, a good understanding of the stakeholder ecosystem is required to ensure inclusive governance arrangements. While key stakeholders are identified in each section below, however it is impossible to document the roles of every possible stakeholder on the map on page 14.

Stakeholder mapping and analysis is a useful tool to use in a specific airport to ensure the full ecosystem of stakeholders are captured, and their interests well-understood. Analysis of stakeholder interests and their influence is an important step to be able to determine how to effectively engage them. An illustration of this technique is included in (“Figure 9 - Illustrative Example of Airport Stakeholder Mapping by Domain”) by each of the five airport governance domains identified within this Toolkit.

This is necessarily broad given the nature of these domains, and as a technique is most effective when applied to airport-specific circumstances or identified governance requirements.



Figure 9 - Illustrative Example of Airport Stakeholder Mapping by Domain



The Core: Policy, Regulation and Government Affairs

Overview

Aviation policy and regulation aims to ensure that the aviation industry meets a set of strategic objectives at a global, national and regional level. Such objectives include:

- High standards of aviation safety;
- Cost efficient provision of appropriate infrastructure;
- Effective management of security within the airport ecosystem;
- Efficient use of the airspace with minimal impact on the environment and on local communities;
- Consumer protection, and increasing choices and benefits.

Such strategic objectives may also vary by country, airport, or overtime. For example, reducing reliance on government funding might be specific objectives at different points in the economic cycle, or based on political imperatives.

There are a broad range of stakeholders involved in the airport ecosystem that are responsible for achieving these and other objectives, and governance is required to manage the provision of airport infrastructure and services across a number of functions, including:

- International Obligations;
- Transport and Aviation Strategy;
- Regulation and Consumer Protection.

Best Practices and Lessons Learned

Meeting International Obligations

Meeting international obligations is a bare minimum requirement of airport governance, and it is an overarching assumption of this Toolkit that nation States will adhere to these, although it is noted that there are frequent cases of shortfalls against ICAO and other requirements, such as aerodrome certification. An overview of such obligations is included in the Airport Governance Foundations section on page 22.

This includes, for example, the ultimate accountability for national governments to enact primary aviation legislation and establish the regulatory framework, including establishing a CAA.

Setting Transport and Aviation Strategy

In setting national transport and aviation strategy, including strategic choices on the development of the industry and the optimal structure of the airport industry,

there is typically a requirement for broad consultation and involvement of different stakeholders.

Case Study: Airports National Policy Statement in the UK

In the UK, there is a requirement for National Policy Statements to be produced providing a supporting rationale for policy decisions made in nationally significant infrastructure sectors, including energy, transport and water, waste water and waste. A draft Airports National Policy Statement ("ANPS") was published for a second consultation in October 2017, outlining the need for additional airport capacity in the south-east of England, the rationale for this being best met by a new runway at Heathrow Airport, and requirements for development consent. The revised draft was subject to public consultation and Parliamentary scrutiny, before being designated as a national policy statement in June 2018.⁶⁵ These documents as well as a summary of the consultation responses and a change log showing changes incorporated between the draft and final ANPS are all readily available online for stakeholders. This followed significant public and parliamentary on the findings of the Airports Commission, which had been established as an independent commission in 2012 to "propose measures to maintain the UK's status as a global hub for aviation".⁶⁶

It is clearly the case that a transparent and well-publicized consultation process on key, nationally-strategic decisions, that involves industry and the public, can improve outcomes in national airport planning. This requirement for open and peer-to-peer consultation is becoming more important as economies and transport networks become more heavily integrated, congested and complex, driving the need for improved collaborative planning processes.

In defining the optimal structure of the airport industry, there are also significant benefits to consultation, and ensuring clarity and transparency in the ultimate structure. Appropriate separation of roles and responsibilities to prevent actual or perceived conflicts of interest is an important feature of national airport sector governance.

⁶⁵ UK Department for Transport (2018). *Airports National Policy Statement*. [online] Available at: <https://www.gov.uk/government/publications/airports-national-policy-statement> [Accessed 30/01/2020]

⁶⁶ Airports Commission, *Airport Commission: Final Report* (London, 2015)

Case Study: Malaysian Aviation Commission Position Paper on Malaysia's Airports Industry Structure⁶⁷

The Malaysian Aviation Commission published a position paper in December 2019 outlining challenges in the Malaysian airport sector, and recommendations on how the sector should be structured.

Challenges identified included overlapping roles in the industry structure, with the Government of Malaysia playing a role as policy-maker, shareholder and funder, and a lack of clarity on the airport funding model. All of these are seen to “have adversely affected the competitiveness and attractiveness of the airports industry in particular, and the aviation sector in general”, and shortfalls in service quality.

Aside from a near-monopoly market structure, the position paper points to a “lack of clarity regarding the delineation of governance, as well as, funding responsibilities among the industry’s policymaker, independent regulators, and operators”. This includes separation of responsibility for development and operational CAPEX, seen to undermine the commercial nature of operations, and a lack of transparency and clarity in the funding model. Further, the paper finds that overlapping roles give rise to potential conflicting objectives; the government’s “overlapping roles within the airports sector can contradict each other. For instance, as an ultimate shareholder, its priority should be ... to maximize returns. However, this could come at the expense of safeguarding passenger welfare, particularly in making sure that air travel costs are reasonable”. It was for this purpose that MAVCOM was established.

Defining Ownership Model

Once key national policy decisions are established, the funding and financing of new airport infrastructure has been a consistent national policy challenge, including the ownership and operating model and its ability to demonstrate value for money for government investment and/or support external, private sector investment.

These topics are well-covered in IATA’s recent “*Airport Ownership and Regulation*” and “*Balanced Concessions for the Airport Industry*” guidance booklets. It is recognized in “*Airport Ownership and Regulation*” that the move towards more private sector participation and commercial models for airport management have been driven in part by the need to finance capital expansion.

⁶⁷ Malaysian Aviation Commission, *Position Paper: Malaysia’s Airports Industry Structure* (2019)

The ownership and operating model of any given airport may impact the ability to raise finance, with specific constraints on funding, financing and deploying capital based on different legal forms and regulatory environments. It is also identified within “*Balanced Concessions for the Airport Industry*” that airport concessions can give rise to an ‘agency problem’ whereby the interests of the contracting parties, the government and concessionaires, may take precedence over those of other stakeholders, giving rise to a number of issues.

Funding and financing new airport infrastructure typically involve a wide range of stakeholders and complexities in setting policy and regulation in respect of airport development and capital expansion. There is a requirement to regularly review and update legislation and regulatory mechanisms to ensure efficient and effective provision of airport infrastructure.

Case Study: Community Airport Governance Challenges in Canada

At the other end of the spectrum from large, international hub airports are small, community airports that serve local economic development objectives, providing critical community infrastructure and services.

Muskoka Airport is an airport owned and operated since 1996 by the District Municipality of Muskoka in Canada, managed through the District’s Planning and Economic Development Department. It is one of a number of similar community airports transferred to local authority ownership following the 1994 National Airports Policy.⁶⁸

This ownership and management structure provides a number of benefits, including an ability to manage the airport for community benefit, but there are also a range of governance challenges reported.

These challenges include the number and range of responsibilities undertaken by council members responsible for overseeing the airport, a reported lack of clarity related to the roles and responsibilities of government as compared to airport, limitations on the development of airport land, and multiple layers of decision-making resulting in delays.⁶⁹ Further, agreement to funding capital expansion at the airport are a contentious local political issue.

A number of proposals have been tabled to establish a Board of Directors with the relevant professional experience to run the airport.

⁶⁸ YQA (2013). *About Muskoka Airport*. [online] Available at: <https://www.muskokaairport.com/about/> [Accessed 30/01/2020]

⁶⁹ District Municipality of Muskoka (2016) *Review of the Governance Structure and Issues at Muskoka Airport*. [online]. Available at: <https://muskoka.civicweb.net/document/28786> [Accessed 30/01/2020]

There are a wide range of impacted stakeholders that need to be effectively engaged to be able to reach optimal solutions. These include:

- Economic regulators;
- Airports, which are impacted by funding and financing constraints on their growth aspirations;
- Airline customers and the travelling public, which are impacted by airport infrastructure and its charges, and are interested to pay proportionately and fairly for their use;
- Regional and local governments, which may hindered in local economic development initiatives through constraints in airports' abilities to support increasing aviation demand, or may be able to provide funding and financing solutions to safeguard future access to these economic development benefits;
- Funding and financing providers, which require financial and commercial structures which allow for bankable investments in long-term infrastructure provision.

There is a range of different economic regulatory and other mechanisms that have been used or tested to address funding and financing challenges globally. Robust and stakeholder-inclusive national and regional transport and aviation strategies, and detailed and agreed masterplans for individual airports, can help to ensure improved value for money, efficiency and effectiveness. In developing the optimal solution to deliver airport infrastructure efficiently and effectively, there is a clear governance challenge in ensuring that all impacted stakeholders are engaged in development of new financing solutions and that they are fit for purpose. Engaging this broader pool of industry input can help to ensure the optimal funding solution and explore alternative arrangements.

In some instances, challenges in funding and financing necessary airport development activities and operating costs can arise where national or regional strategic policy choices, particularly in respect of budget allocations, impact airport development and operations.

There are of course legitimate benefits sought from local government control of an airport, which is a critical asset for local social and economic development. However, the case of Muskoka Airport demonstrates common governance challenges associated with non-corporatized and non-commercial management of airports. There are frequent examples globally where local government management of an airport, particularly on a non-corporatized basis, leads to performance shortfalls and a failure to take advantage of commercial opportunities as well as governance challenges because of bureaucratic constraints, budget approval issues, lack of clarity and accountability for performance, political influence and limited access to appropriate expertise.

⁷⁰ ATRF (2017). [online] Available at: <http://www.atrf.info> [Accessed 30/01/2020].

Case Study: Financial Sustainability and Government Support, Australia

With the wave of privatization in Australia that saw the larger Tier 1 airports privatized, smaller airports were transferred to local government and state government ownership.

In some instances, local government authorities have encountered difficulties in supplementing funding shortfalls that exist amongst many of the smaller airports, particularly with funding constraints and competing infrastructure and community services demand funding.

The smaller regional airports have begun investigating various models of ownership to bridge the funding and financing gaps for new infrastructure that local and state government are not able to fulfil.

The adoption of any of these models will be dependent on a number of local and regional factors which would ultimately attract private investors.⁷⁰

There are common learnings to be drawn on the importance of clarity and clear definition of roles and responsibilities across all stakeholders in both these case examples. Roles and responsibilities need to be clearly defined, and also consider practicalities of execution; the shift of execution responsibility to local government needs to consider governance in respect of budget and maintaining the effectiveness of airport operations and continuation of important projects.

Regulation and Consumer Protection

Governance in respect of economic regulation is a critical issue given the relative market power of airports and the need for cost and allocative efficiency. Often the formal roles and obligations for economic regulation do not include sufficient provisions for consultation and meaningful involvement of stakeholders in decision-making, and it may be the case that regulatory provisions are not fully enacted or put into practice. In some instances a lack of full engagement of stakeholders and their ability to influence such decisions can result in challenges to the legitimacy of the prevailing regulatory regime, as in the case of multi-stakeholder calls for dispute resolution in Australia.

Case Study: Multi-Stakeholder Dispute Resolution in Australia

In October 2019, a broad range of airport stakeholders joined forces in Australia to call on government to

introduce a new dispute resolution mechanism to challenge fees and charges, against the backdrop of what stakeholders regard as “super profits”. The coalition formed by the airlines, airport tenants and ride-share drivers, called for a dispute resolution mechanism aimed at applying pressure to lower increasing costs across a range of fees and charges. Frontier Economics estimated that eliminating inflated prices would create \$650 million in savings per year, and a further \$90 million in cost savings from improved connectivity if airport charges are tackled, stimulating other forms of connectivity interfacing with the airports. In relation to these concerns, the consumer watchdog the ACCC, as an independent economic regulator, had previously recommended a dispute resolution pathway and other recommendations to the Productivity Commission. An example of this in practice was found to be effective when tried and tested as part of the gas pipeline reforms in Australia. An inquiry into the gas industry which highlighted significant changes that focus on the provision of information and better encourage commercial negotiations. The transparency applied to pipelines pricing and contract terms have opened the market up to commercial negotiations with more than 25 contracts negotiated in the first six months, resulting in a more productive sector within the Australian energy sector.⁷¹

Further, it is argued by the OECD that “regulatory institutions need independence and democratic control”. There are frequently examples where there is a lack of independent regulatory institutions, which may create conflicts of interest with stakeholders. Faced with these conflicts, some governments modify regulatory frameworks or the scope of influence of economic regulators in order to remove the conflicts, but the result is often that independent regulators see their powers undermined through restrictive laws or concession agreements.

It has historically been the case in some jurisdictions that economic regulation is implemented or enhanced in parallel to increased private sector involvement, with publicly owned and operated airports being seen as having a natural balance associated with their public policy objectives. However, there are numerous conflicts of interest that have arisen as a result and a robust economic regulatory framework is required to safeguard

⁷¹ Qantas Airways (2019). *Australians Are Getting a Dud Deal*. [online] Available at: <https://centreforaviation.com/members/direct-news/australians-are-getting-a-dud-deal-496985> [Accessed 30/01/2020].

systemic economic value from an airport in all instances, irrespective of ownership model. Further, government cannot always rely on antitrust law and enforcement alone to provide a satisfactory governance regime for economic oversight of airports, although it is of course a minimum requirement.

In addition to robust economic regulation, it is also the case that economic oversight requires effective consultation and dispute resolution mechanisms. The effective implementation and adoption of dispute resolution within the airport ecosystem can amongst other issues support agreement on the pricing and its relationship to service standards. Due to close working relationships across the airport ecosystem, there are clearly governance challenges that are evident where there are no dispute resolution processes in place to work through both strategic and day-to-day operational issues.

Such processes help to safeguard escalation of minor issues to a more formal legal process, reducing costs to different parties and potentially providing a process to more immediate resolution.

When it comes to governance in respect of consumer protection, there are a number of core principles to be adhered to. ICAO have published Core Principles on Consumer Protection for passengers before, during and after travel⁷², and IATA also have a suite of Core Principles on Consumer Protection⁷³. These include:

- Consistency with international treaty regimes, established by the Warsaw Convention (1929) and the Montreal Convention (1999);
- Allowing airlines to differentiate themselves through individual customer service offerings, giving consumer choice;
- Clear and transparent access to passengers on: their legal and contractual rights; fare information, and the airline operating the flight in case of a codeshare service;
- Obligations for airlines, including to keep passengers regularly informed of a service disruption, establish clear complaint handling procedures, and assist passengers with reduced mobility.

Further, consumer protection is a key regulatory function. For example, in the UK, the CAA states “Protecting consumers is at the heart of everything the Civil Aviation Authority does”, including monitoring of compliance with Regulation (EC) 261/2004 which underpins financial compensation for passengers. The CAA have a dedicated

⁷² ICAO (2015). *ICAO Core Principles on Consumer Protection*. [online] Available at: https://www.icao.int/sustainability/SiteAssets/pages/eap_ep_consumerinterests/ICAO_CorePrinciples.pdf [Accessed 30/01/2020]

⁷³ ICAO (2015). *ICAO Core Principles on Consumer Protection*. [online] Available at: https://www.icao.int/sustainability/SiteAssets/pages/eap_ep_consumerinterests/ICAO_CorePrinciples.pdf [Accessed 30/01/2020]

Consumer Protection Team, and in 2016 introduced an Alternative Dispute Resolution (“ADR”) mechanism for consumer complaints, bringing the aviation sector in line with other industries such as telecoms, energy and financial services.⁷⁴

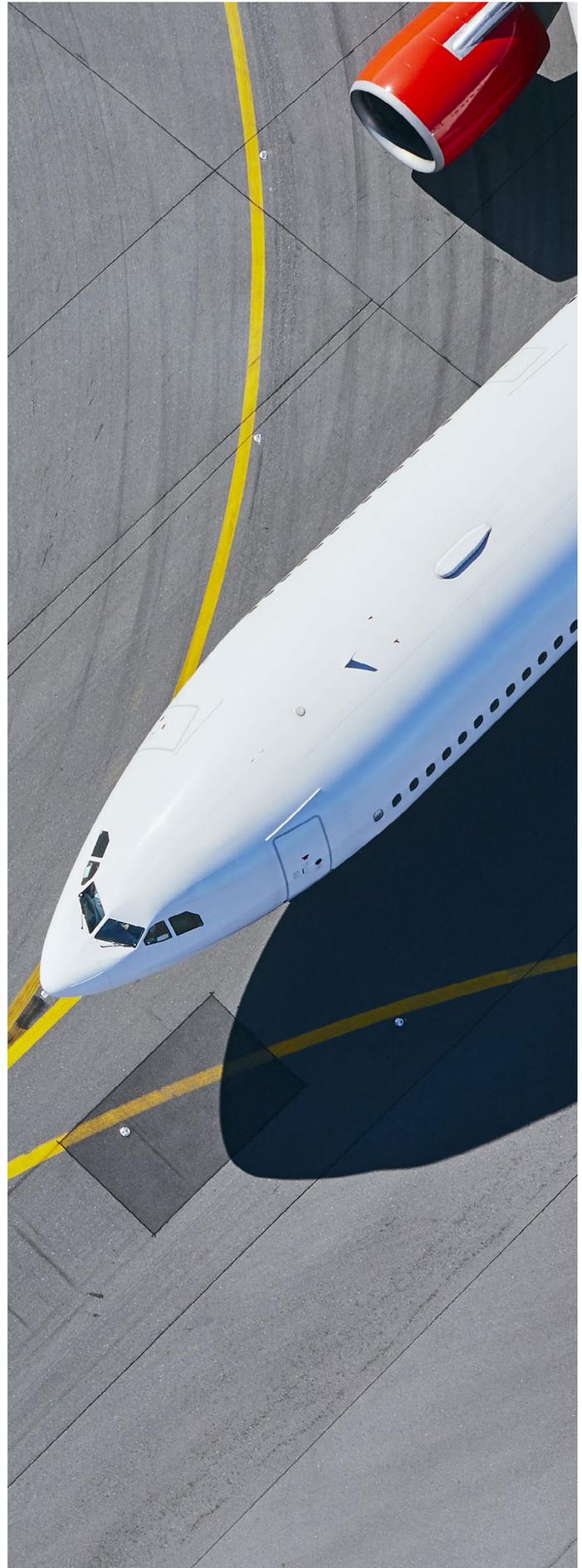
Airport Stakeholder Consultation

As identified in this analysis, there are a broad range of topics in setting strategic direction for the airport sector and delivering against it that create a requirement for consultation. Consultation requirements may be defined within legislation in some jurisdictions, whereas others are based on best practice documentation and experience. For example, ICAO’s policy guidance in the “Airport Planning Manual” (Document 9184, Part 1) and “Policies on Charges for Airports and Air Navigation Services” (Document 9082) both stress the importance of consultation between users and providers, although it is for States to put in place appropriate consultation mechanisms. ICAO’s policies on noise management, detailed in the Guidance on the Balanced Approach to Aircraft Noise Management (Document 9829), also introduce comprehensive consultation requirements. These requirements are reflected in air services agreements and regional and national legislation (for example EU Regulation 598/2014).

For governance arrangements to truly have effective consultation – all parties need to understand what consultation means. Consultation implies an open discussion before any decisions are made in order to take stakeholder feedback into account. If consultation simply takes the form of information sessions, this could foster further conflict and defeat the point of having sound governance arrangements.

Many of these requirements for consultation are cross-cutting across domain. For clarity, best practices on a number of these consultation mechanisms are dealt with in different domains within this Toolkit, including:

- Broader community consultation mechanisms are described within the Community and Environment domain from page 57;
- Airline Operator Committees (“AOC”) are described within the Operations domain from page 71;
- Airport Consultative Committees (“ACC”) are described with the Capital Projects domain from page 83;



⁷⁴ CAA, *How the CAA protects consumers and promotes the legal rights of UK air passengers* (2017)

Best Practice Guidelines: Policy, Regulation and Government Affairs

Governance Self-Assessment Checklist

The below is a self-diagnosis tool to enable States to assess whether appropriate governance is in place for

each domain. Lessons learned and best practices to address shortcomings are included in the narrative for each domain, and summarized across each domain in the Best Practice Guidelines and Tools section from page 94.

Governance Self-Assessment Checklist: Policy, Regulation and Government Affairs	Yes/No
Adherence to ICAO obligations, SARPS and policy guidance, and relevant regional initiatives?	{Yes/No}
Ultimate accountability of the State, irrespective of national legal or regulatory framework, or airport ownership and operating model?	{Yes/No}
Transparent reporting of variances to SARPs by CAA within AIP?	{Yes/No}
Enactment of primary legislation for aviation sector?	{Yes/No}
Certification of aerodromes by technical / safety regulatory under ICAO requirements?	{Yes/No}
Clearly defined roles and responsibilities of all stakeholders in airport operation, ownership and regulation, or clear business case and rationale for any blending of roles?	{Yes/No}
Clearly defined and legally enforced mandate, terms of reference and funding and resources for economic and safety regulators?	{Yes/No}
Government-independent regulatory authorities, separate from operations, ownership and political influence?	{Yes/No}
Separation of economic and safety regulatory functions?	{Yes/No}
Clearly defined legal rights for regulator, including ability to demand financial and operational performance data and transparent reporting?	{Yes/No}
Mandate for regulator to participate in all relevant industry forums and working groups?	{Yes/No}
Separation and independence of Aircraft Accident Investigation authority?	{Yes/No}
Regulatory framework established and fully implemented by regulator?	{Yes/No}
Regulatory working group to facilitate interaction between regulator and airport owner/operator, airlines and key stakeholders?	{Yes/No}
Multi-stakeholder aviation dispute resolution mechanism to deal with complaints, in line with regulatory framework?	{Yes/No}
Regulatory mechanism for capital investment planning to assess capital expenditure changes with multiple stakeholders?	{Yes/No}
Multi-stakeholder participation in national infrastructure planning framework?	{Yes/No}
National aviation planning committee for coordination with national aviation strategy-related stakeholders, and national aviation plan approved and implemented?	{Yes/No}

Governance Self-Assessment Checklist: Policy, Regulation and Government Affairs	Yes/No
Regional infrastructure planning group for feedback on town planning and related infrastructure development?	{Yes/No}

Decision Making Process: RACI Matrix

The following are the best practice roles and responsibilities by key stakeholders for a selection of key airport functions and decisions. A simplified set of stakeholders is used for this analysis to group and exclude stakeholders with minimal roles in these key

functions, recognising that there are dozens of airport stakeholders that have been identified in the Airport Ecosystem Stakeholders analysis from page 12. Again, these are summarized across each domain in the Best Practice Guidelines and Tools section from page 94.

Key Functions	Key Stakeholder Roles and Responsibilities: Policy, Regulation and Government Affairs						
	ICAO and International / Regional Agencies	Government / Transport Ministry	Economic Regulator	Technical / Safety and Standards Regulator	Airport / ANSP Operator	Airline Customers	Community
Define international obligations and SARPs	Responsible and Accountable (ICAO)	Consulted	Consulted	Consulted	Informed	Informed	Informed
Enact primary aviation legislation	(Provide Guidance)	Responsible and Accountable	Informed	Informed	Informed	Informed	Informed
Define national aviation strategy	(Provide Guidance)	Responsible and Accountable	Consulted	Consulted	Consulted	Consulted	Consulted
Define ownership and operating model	(Provide Guidance)	Responsible and Accountable	Consulted	Informed	Consulted	Consulted	Informed
Deliver changes in ownership and operating model	(Provide Guidance)	Responsible and Accountable	Consulted	Informed	Consulted	Consulted	Consulted
Define regulatory framework (oversight), including CAA, and specific operating regulations	(Provide Guidance)	Accountable (ensure independent regulator in place)	Responsible	Responsible	Consulted	Consulted	Consulted
Conduct regulatory reviews	(Provide Guidance)	Accountable (ensure independent regulator in place)	Responsible	Responsible	Informed	Consulted	Consulted

Recommended Airport Governance Mechanisms

The following are the best practice governance mechanisms forums, committees and working groups

that all airports should have in place to implement better governance. Again, these are summarized across each domain in the Best Practice Guidelines and Tools section from page 94.

Best Practice Airport Governance Mechanisms: Policy, Regulation and Government Affairs

<p>Regulatory Working Group</p>	<p>A working group or forum with representation from the regulator, airport owner/operator, airlines and other key stakeholders including airport users, with terms of reference in line with the mandate of the regulator. Its purpose is to explore regulatory issues and disputes impacting all stakeholders, as well as solutions to be adopted and implemented. There should be an obligation for all relevant parties to provide a rich data set of information to provide cost-benefit analysis and other evidence associated with different topics, such as airport charges, service quality and infrastructure.</p>
<p>National Infrastructure Planning Committee</p>	<p>A nationwide committee to assess a country’s current and future infrastructure requirements. For airports this will be informed and supported by the national aviation planning committee, and would be a forum for all relevant stakeholders responsible for national infrastructure planning to support the long-term planning of infrastructure requirements. It will allow the aviation sector and airports to benefit from integration with other national infrastructure and transport planning.</p>
<p>National Aviation Planning Committee</p>	<p>A committee with representation across government and industry focused on continuing to enhance and enable the aviation industry for the betterment of the country through relevant consultation and representation of senior aviation stakeholders influenced by nationally-strategic decisions impacting the sector. Its aim is to facilitate the coordination between aviation and airport stakeholders and national planning organizations and committees related to national aviation strategy. It will also allow airports to benefit from the industry insight airport operators, investors, airlines and their service providers can input to optimizing future plans.</p>
<p>Regional Planning Working Group</p>	<p>A working group comprising national, regional and local planning representatives to provide feedback on town planning and related infrastructure development, such as road access and airspace.</p>
<p>Capital Investment Planning Regulatory Mechanism</p>	<p>A mechanism to order the planning stages of a capital investment to enable impacted stakeholders the opportunity to be adequately informed regarding the capital expenditure and resulting impact on airport charges. This forum should also be able to call upon appropriately informed advisors to consider alternative options and the ability to undertake cost-benefit analysis of short listed options.</p>
<p>Multi-stakeholder Aviation Dispute Resolution Mechanism</p>	<p>A mechanism to deal with complaints between the airport, airlines and customers.</p>

Community and Environment

Overview

The relationship between an airport and the community it serves is critically important. The airport is a source of economic growth and connectivity for the community; the community provides airport employees, passengers and buy-in to its development and operation, in particular the airport neighbour communities which are impacted by airport noise and pollution. Additionally, local government, regional development authorities, and the local business community are important stakeholders within an airport operating environment.

The importance of the community and environment surrounding an airport has seen increased focus, and many airports are struggling to identify and address some of the key issues that arise. There are various airports that have been actively engaged with the community and have established governance mechanisms to ensure this engagement.

Lessons learned in this domain are particularly important given the fast pace of social change taking place, increasing awareness of environmental, social and governance-related issues, and the requirements for a more collaborative decision-making environment. Governments and other decision-makers are increasingly pressured by local communities to enact change, and to deliver a broader sustainability agenda at a macro-level.

Key areas of governance in relation to community and environment explored here are:

- Noise, air quality and similar impacts from aviation operations to the communities around airports;
- Local business and economic development;
- Broader sustainability issues, such as water and waste management.

Best Practices and Lessons Learned Need for Stakeholder Engagement

Multi-stakeholder engagement mechanisms in the form of Airport Consultative Committees ("ACCs") and Airline Operators Committees ("AOCs") are covered under the Capital Project and Operations domains on pages 83 and 71, respectively.

However, these governance mechanisms have a relatively narrow focus on specific topics and stakeholders, and there is a continued trend towards broader forms of consultation with airport stakeholders, neighbour communities and the organizations representing them that are explored here.

It is clear why this is the case; it is commonplace to find examples where a failure of local stakeholder engagement impacts airport development and operations.

Case Study: Community Organization for Prevention of Westchester Airport Expansion

The Coalition to Prevent Westchester Airports Expansion ("CPAE") has been established to oppose the expansion of Westchester County Airport in New York.

The Coalition draws a number of different groups together with the likes of the local community, environmental organizations, individuals, and businesses, who all have an interest in the impact the expansion will have on the Kensico Reservoir and within the County environmentally.

The airport is reported to have a lack of community engagement by the CPAE, the primary reason for the Coalition's formation, and fails to present any policies that enable the airport and community to engage on a regular basis with the provision of transparency and provision of an open forum for the community to feedback through.

The Coalition has proposed the adoption of a "Good Neighbour Policy" that is designed to allow the municipalities and the local residents to have an input into any of the decision-making processes that involve airport activities in the surrounding area, and that have an impact on both the community and environment.⁷⁵

Of course, there are a range of stakeholder and airport neighbour views on airport development and operations, and despite the benefits of enhanced engagement it is clearly not a solution to all challenges for contentious or politically charged projects. Potential trade-offs between measures addressing environmental impacts also need to be considered; for example, a steeper departing procedure may result in reducing the noise exposure of certain areas around the airport, which may be viewed as a priority by the affected local communities and airport neighbours, but will result in greater fuel usage and related CO₂ emissions, which may be viewed negatively by other stakeholders.

In reality these are complex issues that do not have easy resolutions. Such matters require government to work with different stakeholder groups, develop and build consensus, but ultimately set clear rules and guidelines that can be followed and are aligned with best practices

⁷⁵ CPAE (2019). *Coalition to prevent Westchester airport expansion*. [online] Available at: <https://www.coalition-to-prevent-westchester-airport-expansion.org> [Accessed 02/02/2020]

developed in ICAO. However, it is clear that a lack of community engagement and consultation undermines the chances of successfully addressing environmental concerns, particularly in relation to airport expansion planning, denying the local community a platform to provide feedback and resolve issues and concerns that can help to build consensus and support.

Case Study: Heathrow Third Runway Expansion

There is a long history of expansion proposals for Heathrow since it was first designated as a civil airport. In December 2013, the Airport Commission shortlisted three options for possible expansion; foremost of which was the north-west third runway option at Heathrow. The full report was published on 1 July 2015, and backed the third runway.

Some reactions to the report were negative, and there was a large degree of local community backlash against the decision, with many angered that there had not been more extensive community consultations.

On 25 October 2016, the government confirmed that Heathrow would be allowed to build a third runway; however, a final decision would not be taken until winter of 2017/18, after a defined process of consultations and government votes.

This continues to be a contentious project, with a judicial review launched in 2018 by four London local authorities affected by the expansion—Wandsworth, Richmond, Hillingdon and Hammersmith and Fulham—in partnership with Greenpeace and London mayor Sadiq Khan.⁷⁶

Consultation Frameworks and Governance Mechanisms

The benefits of a broader consultation framework are well-supported by airport and non-airport-specific best practice literature. In some jurisdictions requirements for community consultation are defined as requirements by government within the national policy or legislative framework, and it is in such jurisdictions that some of the best practices can be found.

In Australia, the government has produced Guidelines for Community Aviation Consultation Groups (“CACG”), which are requirements to be adhered to by leased federal airports subject to the provisions of the Airports Act 1996.

⁷⁶ Airports Commission (2015), *Runway 3 final report*. Available at: <https://www.gov.uk/government/news/airports-commission-releases-final-report> [Accessed 02/02/2020]

Within this framework there are proposed terms of reference for a CACG, but recognition of the need for flexibility in their implementation as they need to align to local issues. Above all, independence and transparency are key principles that such groups need to adhere to.

Case Study: Australian Guidelines for Community Aviation Consultation Groups⁷⁷

“Membership of the CACG should include persons who can contribute views representative of:

- Aviation services and operators at the airport;
- Community organizations, resident groups or individuals, ensuring the representation of residents affected by airport development and operations;
- Representatives from State, territory or local government bodies; and
- Local tourism bodies and business groups.

Terms of reference might include, but are not limited to, the following:

- Impacts of existing development and operations;
- Plans for future development and steps being taken to implement the airport’s Master Plan or develop a new plan;
- Proposals to increase or change aviation services;
- Noise (including aircraft noise) and environmental issues;
- Ground transport and access issues;
- Access issues for passengers, including people with disabilities;
- Planning, regulatory, and policy changes affecting the airport;
- Improvements or changes to airport facilities;
- Airport procedures for effective complaints-handling;
- Reports from Airservices Australia and the Civil Aviation Safety Authority on issues affecting the community;
- The contribution of the airport to the local, regional and national economy; and
- Strategies to ensure the broad community is informed of issues discussed in the CACG.”

⁷⁷ Australian Department of Infrastructure and Regional Development (2018). *Community Aviation Consultation Groups*. Available at: https://www.icao.int/SAM/Documents/2018-ADPLAN/Australia_CACG_Guidelines_2016.pdf [Accessed 02/02/2020]

“Whilst committees are not dispute resolution forums and they do not have any executive or decision-making power over the aerodrome, they can facilitate constructive discussion and help resolve differences”

UK Department for Transport, “Guidelines for Airport Consultative Committees” (April 2014)

The UK Department of Transport has also published Guidelines for Airport Consultative Committees⁷⁸, which are again far broader in their requirements for stakeholder and airport neighbour consultation than the narrower airline/airport ACCs described within the Capital Project domain below.

Similar to Australia, these committees are a requirement in law, applying to the 51 designated aerodromes under section 35 of the Civil Aviation Act 1982.

Case Study: UK Guidelines for Airport Consultative Committees⁷⁹

It is considered best practice to meet the requirements for statutory consultation through a single committee that allows for simultaneous consultation across different stakeholder groups, which include:

- Users of the aerodrome, both airlines and passengers;
- Local authorities; and
- Other groups with an interest in the aerodrome, which may vary depending on local circumstances.

The UK guidelines are based on a number of basic principles; these are deemed to be universal, although it is recognized that local circumstances may determine how they are applied:

- Independent;
- Representative;
- Knowledgeable;
- Transparent;
- Constructive and effective.

Whilst an airport is expected to provide facilities and fund the committee, this should not impair its independence. The size of the committee may depend on local circumstances, but it should be designed to ensure it is manageable and meets the principles set out. Other features are also defined in the guidelines, with frequency expected to be at least three times a year. Terms of reference are at the discretion of

individual committees, but should sufficiently broad to allow it to consider all relevant matters; example items to include in the terms of reference include:

- To foster communication and build understanding between the airport and its users, local residents and the business community;
- To stimulate the interest of the local population in the development of the aerodrome;
- To consider and comment upon the impacts of the airport’s administration, operation and development in relation to:
 - The environment;
 - Surface access issues associated with the airport;
 - Employment;
 - The local, regional and national economy;
 - The circumstances of local communities and their residents;
- To protect and enhance the interests of users of the aerodrome, particularly those of passengers;
- To consider and, if appropriate, comment upon any factual and consultative reports, from Governmental and other sources, that are material to the future character, operation and development of the airport.

Clearly, the application of these principles depend on local circumstances. For example, larger airports may require sub-groups for specific issues.

Gatwick Airport’s Consultative Committee (“GATCOM”) is a good example of the application of these principles to an airport-specific consultative committee.

Case Study: GATCOM Consultative Committee⁸⁰

GATCOM is constituted to meet the requirements of Section 35 of the Civil Aviation Act 1982 for an airport “to provide adequate facilities for consultation with respect to any matter concerning the management or administration of the airport which affects the interests of users of the airport, local authorities and any other organization representing the interests of persons concerned with the locality in which the airport is situated”.

⁷⁸ UK Department for Transport, *Guidelines for Airport Consultative Committees* (2014)

⁷⁹ UK Department for Transport, *Guidelines for Airport Consultative Committees* (2014)

⁸⁰ Gatwick Airport Consultative Committee. [online] Available at: <http://www.gatcom.org.uk/> [Accessed 02/02/2020]

GATCOM operates in line with the principles set out in the guidelines above, and includes members from user groups, local authorities and local interest groups. Select GATCOM members are also involved in Gatwick's Passenger Advisory Group, and the Noise and Track Monitoring Advisory Group ("NATMAG"). GATCOM meets four times a year, meetings are open to the press and public, and meeting agendas and minutes are freely available online.

Collaborative Planning with Local Government and Business

To fully achieve the benefits of airport development and expansion requires collaborative planning across different stakeholders, including local government, economic development entities, and local business.

It is often the case that involvement of regional and local government is sub-optimal, even where such entities have equity shareholding in an airport. The benefits of their involvement include aligned master-planning and an ability to support economic development and growth with enabling investment in and around an airport. However, it is also important that such involvement does not create political blockages to growth and development.

It is also often the case that identifying and mapping the most relevant stakeholders to an airport, particularly local business, can be a challenge; by their nature the areas impacted by airport developments are porous, and building a shared vision for the long-term development of an airport area can generate multi-stakeholder alignment and cooperation for mutual benefit.⁸¹

Achieving this is fundamentally a governance challenge, requiring forums for different stakeholders to engage on complex and cross-cutting issues where roles and responsibilities of different stakeholders (for example, planning and other regulation) may overlap.

Case Study: Barcelona Airport Area Development⁸²

Relative to other airports in Europe, Barcelona Airport has historically had relatively limited airport city developments. It has been argued that prior to its partial privatization in 2015, there was historically a relatively limited commercial focus, and the "network effect" of AENA meant that decisions were often made at group rather than individual airport level.

Whilst formal committees existed to include the airport, local authorities and economic stakeholders, there has reportedly been challenges in formally bringing together the visions of local communities and stakeholders to collaborate on the development of the airport or other planning and economic development issues. The Air Routes Development Committee includes members responsible for tourism and business, but the scope is relatively limited to airline marketing.

There are a number of good examples where governance mechanisms to ensure engagement with these stakeholders has been structured to deliver benefits.

By contrast to the example of Barcelona, Amsterdam Schiphol Airport has seen structured governance mechanisms in place to secure regional economic benefits for the broader airport area. "Although the airport area is not precisely defined, various public and private bodies have partnered to form Amsterdam Airport Area ("AAA") to promote and attract business to a broad area". The Schiphol Area Development Company ("SADC") is a joint venture vehicle between the airport and local governments to develop business, industrial and logistics parks.⁸³

Case Study: New Airport Site Selection in South of Korea⁸⁴

A successful case example which addressed the typical conflict between key stakeholders was the selection of a new airport site in southern Korea. The environmental impact was assessed against identified economic benefits through consultation and evaluation at multiple levels involving a range of relevant stakeholders in a predefined governance structure.

"Proposals for a new airport for Korea's Youngnam region had been discussed over many years, with earlier plans cancelled but tensions raised between the local and regional governments. In order to prevent political deadlock and deliver a solution the government invited the five regional governments to a discussion on decision-making process before feasibility and site selection studies commenced.

81 Metro Airports, *Planning, Governance and Economic Development in Airport Areas* (2019)

82 Metro Airports, *Planning, Governance and Economic Development in Airport Areas* (2019)

83 Metro Airports, *Planning, Governance and Economic Development in Airport Areas* (2019)

84 International Transport Forum (2017). *Airport Site Selection*. [online] Available at: <https://www.itf-oecd.org/airport-site-selection> [Accessed 02/02/2020]

Only after formal agreement on the process was made with a commitment to abide by the outcome did the government embark on project evaluations.”

Site selection was undertaken by an international consulting firm, assessing three principle options..

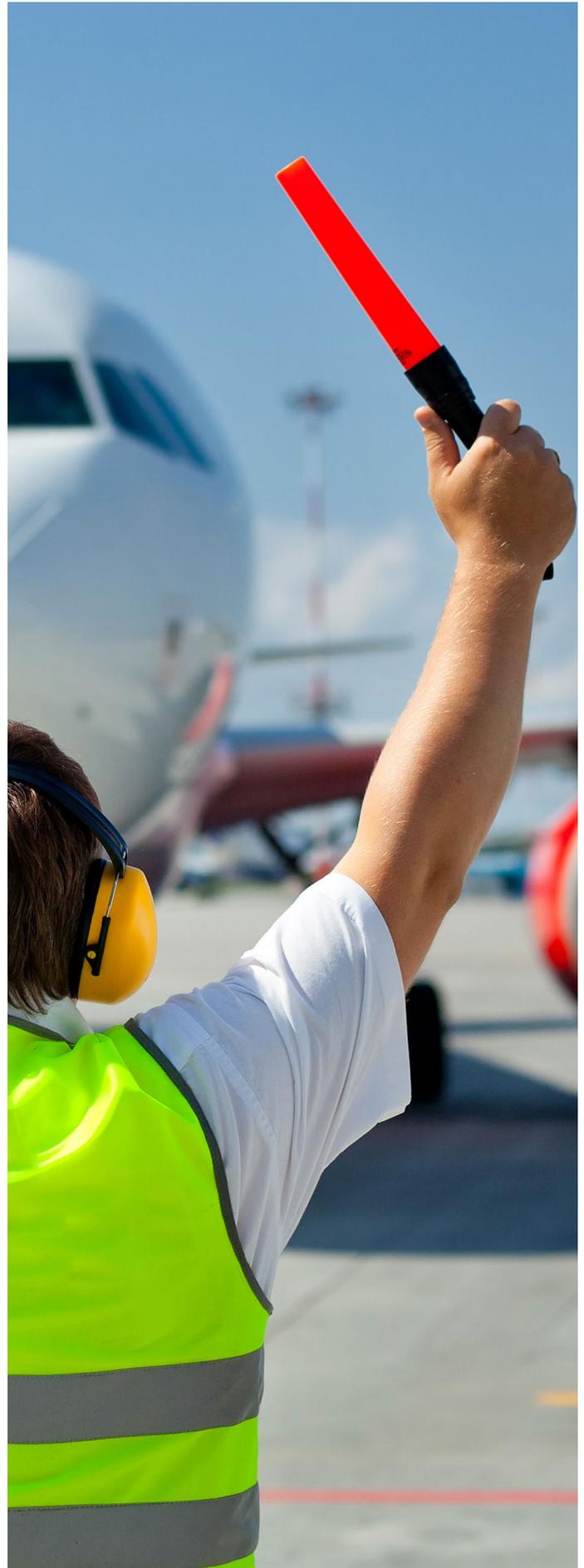
The study was released on a date chosen away from local elections and other significant political events.

“Eight rounds of discussions with the local authorities were organized to monitor progress with the study with three sessions to examine the work in an advisory board of experts nominated by the five governments to ensure transparency. The selection process ended successfully with full agreement on the result; extension of the existing airport.”

Considering all levels of airport governance

With climate change becoming an increasingly pressing issue for many governments, various airport stakeholders are striving to do their part in regards to limiting CO2 emissions. Airports are part of the industry coalition which called on Governments to address aviation’s emissions through a global approach and a single global market-based measure known as CORSIA. CORSIA is the result of long and careful negotiations between all States. When CORSIA was adopted, States agreed that emissions should only be accounted for once in order to avoid “double-counting” and that CORSIA should be the only market-based measures for international aviation in order to avoid a patchwork of measures at different levels (see Annex to Assembly Resolution A40-18, and in the Recital of A40-19 and para 18 of A40-19. M.).

Unfortunately, some airports stakeholders neglect to consider the different layers of governance presented in Airport Governance Layers and have gone to the extent of suggesting CO2-based modulations for charges despite the international agreements in this matter. This example illustrates the need for decision makers to review the full set of layers involved in any decision including the impact local or national measures may have on progress and agreements reached at the global level.



Best Practice Guidelines: Community and Environment

Governance Self-Assessment Checklist

The below is a self-diagnosis tool to enable States to assess whether appropriate governance is in place for

each domain. Lessons learned and best practices to address shortcomings are included in the narrative for each domain, and summarized across each domain in the Best Practice Guidelines and Tools section from page 94.

Governance Self-Assessment Checklist: Community and Environment	Yes/No
Defined and open consultation framework (preferably in law) for engagement with all airport stakeholders on the airport's social, economic and environmental impacts?	{Yes/No}
Passenger advisory group to improve quality of passenger services through airport current operations and future expansion plans?	{Yes/No}
Airport environmental working group?	{Yes/No}
Airport noise monitoring consultative group?	{Yes/No}
Enforcement of airport reporting on environmental, social and governance matters?	{Yes/No}
Defined processes for engagement with local government and related entities, for example formation of regional transport working group?	{Yes/No}

Decision Making Process: RACI Matrix

The following are the best practice roles and responsibilities by key stakeholders for a selection of key airport functions and decisions. A simplified set of stakeholders is used for this analysis to group and exclude stakeholders with minimal roles in these key

functions, recognising that there are dozens of airport stakeholders that have been identified in the Airport Ecosystem Stakeholders analysis from page 12. Again, these are summarized across each domain in the Best Practice Guidelines and Tools section from page 94.

Key Functions	Key Stakeholder Roles and Responsibilities: Community and Environment						
	ICAO and International / Regional Agencies	Government / Transport Ministry	Economic Regulator	Technical / Safety and Standards Regulator	Airport / ANSP Operator	Airline Customers	Community
Manage community relationships	N/A	Accountable	N/A	Informed	Responsible	Consulted	Consulted
Manage environmental and sustainability impact	N/A	Accountable	N/A	Informed	Responsible	Consulted	Consulted
Manage noise	N/A	Accountable	N/A	Informed	Responsible	Consulted	Consulted

Recommended Airport Governance Mechanisms

The following are the best practice governance mechanisms forums, committees and working groups

that all airports should have in place to implement better governance. Again, these are summarized across each domain in the Best Practice Guidelines and Tools section from page 94.

Best Practice Airport Governance Mechanisms: Community and Environment

<p>Community Consultation Framework</p>	<p>A consultation group or committee used to exchange information and promote dialogue between an airport and interested stakeholders, including consultation and feedback on current operations and future developments. It should be independently chaired and comprise membership from stakeholders including local communities, business groups and airport users. The group should explore the social, economic and environmental impacts of the airport and create a forum to foster effective interaction with the local community and travelling public. Following best practices in the UK and Australia, such a framework should ideally be mandated by law.</p>
<p>Airport Environmental Working Group</p>	<p>A working group that provides a platform for all relevant airport and environmental stakeholders such as the environment ministry to work through current and developing environmental issues and initiatives. There should be a statutory obligation to share relevant environmental data and monitor performance, such as local air quality. It is advocated for a continual improvement target to be set to reduce environmental impact across all agreed KPIs.</p>
<p>Passenger Advisory Group</p>	<p>A group that aims to improve the quality of service for passenger through the airports current operations and future expansion plans. It comprises of organizations, representing a diverse range of passengers, who meet several times a year to monitor and assess facilities to make further recommendations.</p>
<p>Noise Monitoring Consultative Group</p>	<p>An independent group comprising of airport operators and local community representatives set out to advise on and review the impact of aircraft noise exposure on the surrounding community and make recommendations to minimize the effect of aircraft noise. It meets on a quarterly basis with the aim of gathering inputs in the planning and communication of the modernisation of an airports airspace, and agreeing on relevant studies and analysis to be carried out to establish historic changes to flight paths.</p>

Safety and Security

Overview

Airside and runway safety aims to protect passengers, goods and airport assets from unlawful interference and accidents. This covers a number of different elements within an airport that contribute to airside and runway safety, such as: runway incursion, runway confusion, local runway safety teams and airside drivers. Stakeholders include airlines, baggage handlers, aircraft operators and anyone else who operates around the runway.

More broadly, the emergence of pandemics such as COVID-19 has highlighted the critical importance of adherence to health and safety-related regulations and requirements, with a number of agencies typically responsible for these.

This section of the Toolkit focuses on governance in respect of delivering these functions:

- Security and Government Agencies;
- Airside and Runway Safety;
- Emergency Response;
- Public Health.

This section of the Toolkit does not cover the overall roles and responsibilities for safety and security defined in international obligations, and set out in the Basics of Airport Governance section above. It should be noted that, as defined by ICAO, States are ultimately responsible for safety and security oversight, irrespective of the airport ownership or operating model. In particular, the CAA retains responsibility under primary legislation to oversee technical safety matters.

The safety standards typically required to adhere to include:

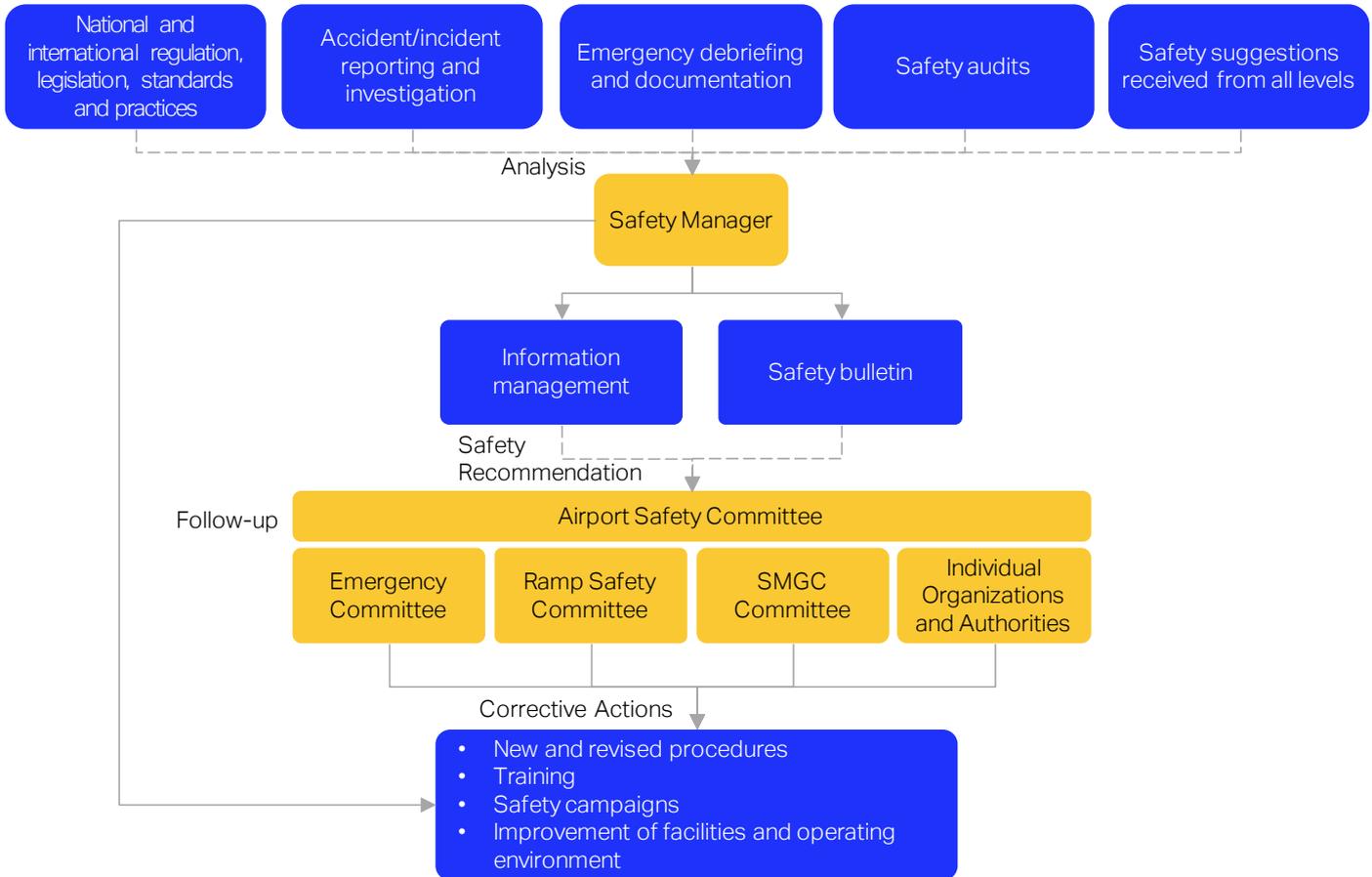
1. National rules and regulations, such as labor laws and health and safety rules and regulations, which may not be airport-specific;
2. International obligations as translated into primary legislation and national regulations, for example ICAO Annexes to the Chicago Convention such as:
 - a. Facilitation (Annex 9);
 - b. Aircraft Accident and Incident Investigation (Annex 14);
 - c. Security: Safeguarding International Civil Aviation Acts of Unlawful Interference (Annex 17);
 - d. The Safe Transport of Dangerous Goods by Air (Annex 18).

Of course, a more complex operating model and the involvement of multiple actors in delivery safe and secure airport operations creates an enhanced need for governance to manage the integration between different parties. Delivery of safety and security functions in itself is a complex, multi-stakeholder requirement because

customs, border, emergency response and other safety and security functions are typically undertaken by different government agencies which are required to operationally interface with the airport authority. Operational integration and adoption of common standards is also critical with on-airport contractors.

Best Practices and Lessons Learned Safety Management System (“SMS”)

Figure 10 - Overview of a Safety Management System



The ICAO require that all aerodromes have a Safety Management System (“SMS”) in place, with the overview of an SMS provided by ACI in Figure 10 (“Overview of a Safety Management System”). This is a critical part of core airport operations.

Deep Dive: ACI Guidance on Airport Safety Committee ⁸⁵

“An Airport Safety Committee should be hosted by the aerodrome periodically to review safety in the airside areas. The Committee should consist of different aerodrome divisions, airlines, handling agents, aircraft catering companies, aircraft cleaning companies, refuelling companies, ATC, government agencies, emergency response services – ideally all large organizations that operate in airside areas.

The Terms of Reference for an Airport Safety Committee should include:

- Promotion of safety awareness through training, licensing and the publication of safety bulletins;
- Establishment and discussion of local safety procedures and guidelines;
- Accident, incident and near-miss reporting and investigation, subsequent data analysis and dissemination of trends, common causes etc.;
- Generation and evaluation of safety suggestions;
- Preparation of regular joint safety campaigns;
- Discussion of forthcoming airside works program.

The meeting should be held in a relaxed and open atmosphere where discussion and sharing are promoted so as to maximize the learning and development of ideas to improve safety. It is suggested meetings are held either monthly or quarterly. Depending upon the size of operation of

⁸⁵ ACI. *Safety Management Systems (SMS)*. [online] Available at: <https://aci.aero/about-aci/priorities/safety/sms/> [Accessed 30/01/2020]

the aerodrome, the functions responsible for safety could be covered under an Airport Safety Committee or be separated into a Runway Safety Team and an Apron Safety Committee.”

Further guidance on the development and implementation of an SMS are available from ACI, including an Airside Safety Handbook.

Case Study: Security Preparedness and Adherence, Wilson Airport, Kenya

A recent study sought to assess Wilson Airport’s security preparedness and adherence to the ICAO standards.

The study had drawn on information gathered from interviewing over 216 individuals across the airports ecosystem to gain their insight and understanding of the airports safety and security standards. Data that had been compiled was sourced from questionnaires, focused group discussions and secondary data that was collected from published records and maps kept by the Kenya National Bureau of Statistics.

The study concluded with results showing nearly 40% of participants stating that the airport was not safe. Significant issues identified included the lack of tight security at the entry gates, at the entrances of the airport and the lack of proper training for security personnel.⁸⁶

At Wilson Airport, whilst the airport had sought to meet the measures identified by the ICAO standards, there were major gaps in implementation. A stakeholder-inclusive approach to assessing these was able to identify these gaps in a way that a siloed assessment would not have done.

It is well-recognized that many States suffer from capacity constraints when it comes to implementing ICAO SARPs and policies. ICAO’s “No Country Left Behind” initiative explicitly recognizes this, and “focuses and expands ICAO’s support to States for globally harmonized implementation of SARPs so that all States have access to the significant socio-economic benefits of a safe and reliable aviation system”.⁸⁷

Mechanisms ICAO use to deliver this include advocacy and advice, facilitating development banks, funds and financial institutions, and partnering with international organizations. There are many collaborations for

86 IOSR-JHSS (2016). *Assessment Of The Security Preparedness And Adherence To International Civil Aviation Standards At Wilson Airport*. [online] Available at: www.iosrjournals.org [Accessed 30/01/2020]

improved safety and security outcomes, for example the UK government’s “State Safety Partnership”, as well as regional knowledge sharing and capacity building.

Case Study: Rwanda and East African Community’s Civil Aviation Safety and Security Agency

The transport sector is considered to be one of the key engines of growth for Rwanda, who have prioritized the development of the sector since 2008 to address historic under investment in transport infrastructure. The government has enacted a law governing civil aviation and introduced a Presidential Order relating to Rwanda civil aviation regulations. Other measures undertaken include:

- Rwanda Civil Aviation Authority (“RCAA”) recruitment of qualified staff to carry out safety oversight functions in flight operations, airworthiness, air navigation services, aerodromes and aviation security;
- Development of a training policy and program (based on FAA ITS program);
- Development of technical guidance material in the form of orders (for RCAA Inspectors) and advisory circulars (for industry);
- Establishment and implementation of a surveillance program.

The RCAA is also working closely with other regional Civil Aviation Authorities (CAAs) under the East African Community’s Civil Aviation Safety and Security Agency (CASSOA) in order to share available resources in areas where there are shortfalls, particularly in the fields involving safety awareness and regulation. The preliminary conclusions from the ICAO audit report of 2012 indicate that RCAA has successfully passed the audit as all safety concerns have been addressed. However, a number of challenges, typical of many countries in the region, remain including capability development, infrastructure capacity and service provision.⁸⁸

Above all, safety and security are cross-functional and multi-stakeholder issues. Inter-stakeholder solutions are required to develop solutions to complex issues in this domain, at both a strategic and a more tactical, day-to-day level.

87 ICAO (2015). *Annual Report of the ICAO Council*. [online] Available at: <https://www.icao.int/annual-report-2015/Pages/all-strategic-objectives-ncib-initiatives.aspx> [Accessed 30/01/2020]

88 African Development Bank Group (2013). *Rwanda Transport Sector Review and Action Plan*. [online] Available at: <https://www.afdb.org> [Accessed 30/01/2020]

Case Study: Aviation Security Advisory Committee's Working Group⁸⁹

"On January 8, 2015, the Transportation Security Administration's (TSA's) Acting Administrator asked the Aviation Security Advisory Committee (ASAC) to identify new security measures for industry employees to address potential vulnerabilities related to the sterile areas of US airports. The catalyst for this request was the news that an employee gun-smuggling ring had been uncovered at the Hartsfield-Jackson Atlanta International Airport. The ASAC convened a broad cross section of leading experts from airports, airlines, law enforcement, labor, and airport users to create the Working Group on Airport Access and Control (the WG) for the purposes of this tasking. The WG was given 90 days to study how vulnerabilities are addressed through existing TSA security programs, industry best practices, methods of employee screening within and outside the US, and visit a few US airports. The WG developed recommendations to address concerns prompted by the discovery of a gun smuggling ring operating, but they also go well beyond that concern. The ASAC's recommendations were developed within the context of Risk-Based Security (RBS), a holistic approach to aviation security endorsed throughout every level of the Department of Homeland Security (DHS). This approach acknowledges the globally interconnected aspects of the US air transport system, the varied infrastructures supporting it, the availability of robust employee pre-screening systems, and the need to apply finite aviation security resources efficiently and effectively. The recommendations also acknowledge the view that there are significant differences in the threats posed by criminal activity and terrorism and that the risks and proposed mitigation efforts must recognize this difference."

In the UK, London Luton Airport has sought to improve standardization of ground-handling, developing leading practice thinking that has improved safety and performance.

⁸⁹ Aviation Security Advisory Committee (2015). *Final Report of the Aviation Security Advisory Committee's Working Group on Airport Access Control*. [online] Available at: <https://www.hsd.org/?abstract&did=764926> [Accessed 30/01/2020]

⁹⁰ UK Department of Transport, *Aviation 2050 Strategy* (December 2018 Consultation)

Case Study: London Luton Airport "Safety Stack" Forum⁹⁰

"London Luton Airport has developed a "Safety Stack" Forum which sets out detailed codes of practice and standards which all service providers operating at the airport – including the three ground-handlers – are required to sign up to be considered as stack partners and operate in the airport. The airport believes this work, alongside its proactive approach of sharing ground-handling best practice thinking, has led to improvement in both safety and performance. Luton is amongst the first airports to standardize ground-handling procedures and equipment in this respect. After working with handlers on requirements and specifications, the airport tendered for an external company to provide the requisite equipment and as a result of this standardization, Luton believes the number of airside collisions and incidents have reduced".

This example from London Luton Airport demonstrates innovation in standardization across contractors. When engaging with a range of different contractors at an airport it is also very important to ensure that there are clear and integrated standards across contractors.

Case Study: Contractor Regulations, Abu Dhabi Airport Company

As is common in many airports, the Abu Dhabi Airport Company ("ADAC") have adopted a series of Airport Working Rules that apply to all contractors conducting work at their facilities. While this was implemented primarily to comply with health and safety regulations, it also ensured a high standard of work from its contractors as well as the safety of passengers travelling through the airport, despite the airport company outsourcing some operations. The Airport Working Rules also include training manuals to be carried out for relevant activities, such as airside manoeuvring areas and service road training, and inspection guides to be followed.⁹¹

Formal working groups that allow for participation of peers across the airport community and the passenger lifecycle are to be actively encouraged so as to improve safety and security outcomes.

⁹¹ Abu Dhabi Airports Company (2011). *ADAC Airport Working Rules*. [online] Available at: <http://www.adac.ae> [Accessed 30/01/2020]

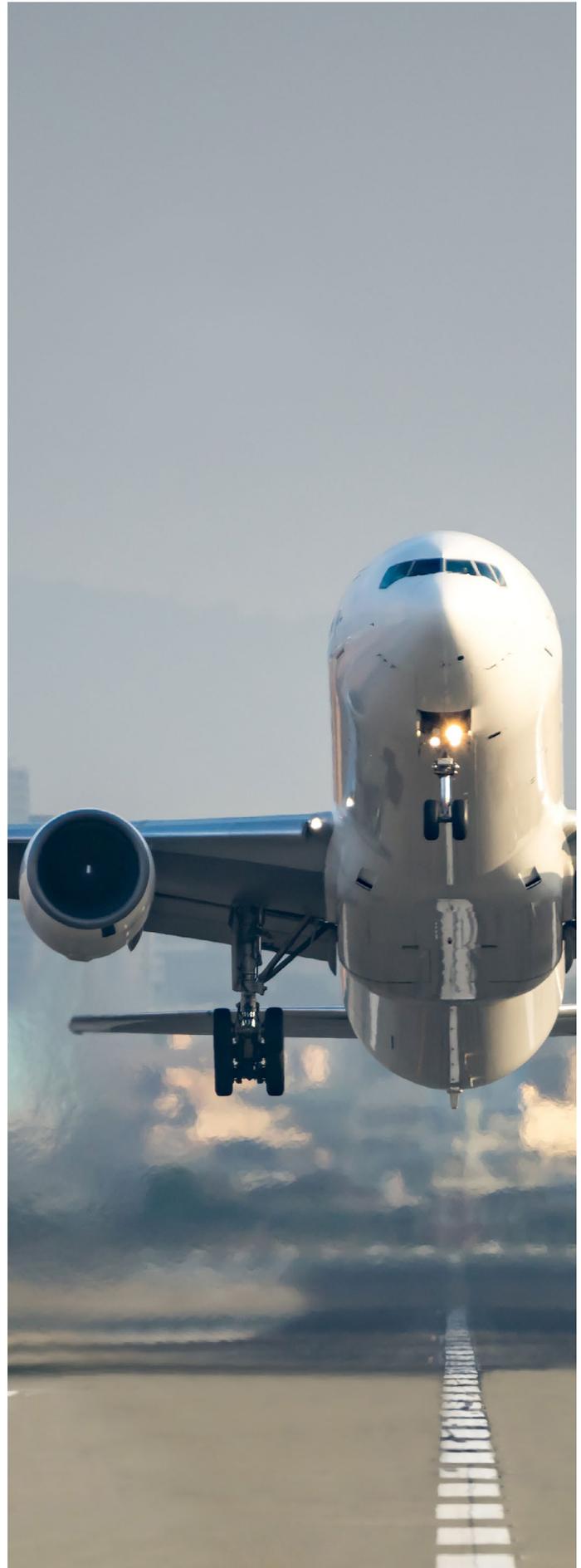
One of the key stakeholder groups when it comes to security in particular are staff members. In the US, for example, the Transportation Security Administration (“TSA”) has had well-publicized staffing challenges, with high turnover rates, dissatisfaction and demotivation over pay and progression opportunities, exacerbated by the US government shut-down in 2019.⁹² This example demonstrates the critical importance of a workforce to safe, secure and effective airport operations, and the risks that may emerge when there are breakdowns between a workforce and other stakeholders, particularly industrial action.

Given security and border control is provided by government agencies, this reinforces the need for governance to focus on the relationships between airports, relevant governance agencies, their workforce, and other stakeholders to identify and address concerns, risks and issues. A lack of transparency and trust between these stakeholders and frequently-large workforces can erode trust and create negative outcomes.

Public trust is of course a key concern when it comes to public health. The emergence of COVID-19 has led to a number of responses at airports globally and requiring airport operators to work closely with international organizations, national and local governmental entities and public health authorities, their airline customers and passengers. A holistic view is required across the customer journey, including between countries, to manage risks and protect the health and welfare of travellers, staff and the public.

There have been rapid responses across the industry. For example, IATA and ACI have worked closely with the WHO, ICAO and other partners to support the industry response and recovery. This includes the development of the ICAO Council Aviation Restart Task Force Recommendations.⁹³

Individual airports have needed to work closely with relevant government officials to adhere to relevant health guidance and rapidly adopt new operational processes and technologies.



⁹² Davidson, J. (2019). *Your airport security line could get longer next year – and TSA officers are not a happy crew.* [online] Available at: https://www.washingtonpost.com/politics/your-airport-security-line-could-get-longer-next-year/2019/06/11/497dc292-8c8a-11e9-adf3-f70f78c156e8_story.html [Accessed 30/01/2020]

⁹³ ACI World. *Industry Information on COVID-19.* [online]. Available at www.aci.euro [Accessed 02/09/2020]

Best Practice Guidelines: Safety and Security Governance Self-Assessment Checklist

The below is a self-diagnosis tool to enable States to assess whether appropriate governance is in place for each domain. Lessons learned and best practices to

address shortcomings are included in the narrative for each domain, and summarized across each domain in the Best Practice Guidelines and Tools section from page 94.

Governance Self-Assessment Checklist: Safety and Security	Yes/No
Adherence to international obligations as translated into primary legislation and national regulations?	{Yes/No}
Safety Management System ("SMS") defined and in place in accordance with ICAO requirements?	{Yes/No}
Airport Safety Committee consisting of all large organizations that operate in airside areas?	{Yes/No}
Airport Security Committee to advise on all aspects of security and ensure national standards are adhered to?	{Yes/No}
Aerodrome Emergency Committee ("AEC") responsible of preparing an aerodrome's emergency planning, readiness and testing?	{Yes/No}
Safety teams in charge of ensuring a safe environment and recommending mitigation strategies for ramp and local runway operations?	{Yes/No}
Fire Safety Committee to advise and auction fire safety strategy across the airport?	{Yes/No}
Incident-response protocols clearly defined and adhered to?	{Yes/No}
Multi-stakeholder continuous improvement programs in place for emergency services, security services, border control and health and safety?	{Yes/No}
Adherence to international and national health standards with plans and procedures in place?	{Yes/No}

Decision Making Process: RACI Matrix

The following are the best practice roles and responsibilities by key stakeholders for a selection of key airport functions and decisions. A simplified set of stakeholders is used for this analysis to group and

exclude stakeholders with minimal roles in these key functions, recognising that there are dozens of airport stakeholders that have been identified in the Airport Ecosystem Stakeholders analysis from page 12. Again, these are summarized across each domain in the Best Practice Guidelines and Tools section from page 94.

Key Functions	Key Stakeholder Roles and Responsibilities: Safety and Security						
	ICAO and International / Regional Agencies	Government / Transport Ministry	Economic Regulator	Technical / Safety and Standards Regulator	Airport / ANSP Operator	Airline Customers	Community
Oversee safety system for civil aviation and implementation of SARPs	(Provide Guidance)	Accountable	N/A	Responsible	Informed	Informed	Informed
Certify aerodrome	(Provide Guidance)	Accountable	N/A	Responsible	Informed	Informed	Informed

Key Functions	Key Stakeholder Roles and Responsibilities: Safety and Security						
	ICAO and International / Regional Agencies	Government / Transport Ministry	Economic Regulator	Technical / Safety and Standards Regulator	Airport / ANSP Operator	Airline Customers	Community
Manage airside and runway safety	(Provide Guidance)	Accountable	N/A	Accountable	Responsible	Consulted	Informed
Respond to security or emergency incident	(Provide Guidance)	Responsible and Accountable (for government emergency response)	N/A	Accountable	Responsible	Consulted	Informed

Recommended Airport Governance Mechanisms

The following are the best practice governance mechanisms forums, committees and working groups

that all airports should have in place to implement better governance. Again, these are summarized across each domain in the Best Practice Guidelines and Tools section from page 94.

Best Practice Airport Governance Mechanisms: Safety and Security

Airport Security Committee	A committee responsible of informing airport operators on national and international aviation security requirements within the airport ecosystem and updating operators on any changes to policy and regulation on a biannual basis. The committee includes all airport operational stakeholders and spans across all elements of security.
Ramp Operation and Safety Committee	A committee that develops and promotes an airside safety culture to ensure a safe airside environment. Such committees typically meet on a quarterly basis and include representatives from air traffic service providers, airlines and/or aircraft operators, pilots, air traffic controllers associations and any other group with a direct involvement in runway operations.
Local Runway Safety Team	A team that advises on the appropriate management of potential runway safety risks and issues and recommends mitigation strategies. It comprises of stakeholder representatives from air traffic service providers, airlines and/or aircraft operators, pilots, air traffic controllers associations and any other group with a direct involvement in runway operations. Most safety teams are guided by the ICAO Runway Safety Team Handbook, a widely adopted guideline containing relevant terms of reference, roles and responsibilities and methodology to implementing runway safety for an aerodrome.
Aerodrome Emergency Committee ("AEC")	A committee aimed at coordinating the responses of different aerodrome and emergency agencies to manage any emergency in or around the aerodrome. It is chaired by a nominated Aerodrome Operator and includes primary emergency services, airlines and other support agencies. Representation is essential for all relevant stakeholders to ensure there is thorough an understanding and stakeholders are prepared for any potential incident.
Airport Fire Safety Committee	A group of individuals tasked to ensure continued cooperation is maintained between the airport, national fire emergencies services and national or international fire and rescue services associations. It is responsible for advising on and actioning the fire safety strategy across the airport. The committee is to maintain airport accreditation, meet on a regular basis and ensure representation from all on-airport stakeholders and that their employees are appropriately trained.
Border Control Agencies Group Forum	A forum where issues are identified, and solutions are jointly developed in response to changing border control obligations and conditions impacting passenger experience.

Operations

Overview

The airport “operating theatre”, whatever the size of the airport, is dynamic with operational issues and challenges arising throughout any given day, requiring clearly defined lines of communication and the ability to escalate issues to decision makers as they arise. The operational impact of issues is typically felt by a range of stakeholders who may all be impacted in differing ways.

Further, the increased adoption of technology, continued growth of air transport demand, and fragmentation of operations across multiple and more specialized service providers are just some of the industry trends increasing the need for effective governance amongst airport stakeholders at an airport level. For example, the growth in the number of slot-constrained airports worldwide is a key feature of the global aviation landscape, with some global hub airports like Heathrow, Amsterdam Schiphol and Hong Kong now “super congested”.⁹⁴ Planning and executing airport expansion and capital projects can only go so far, and the better use of existing airport capacity is key and is a multi-stakeholder challenge for which governance is a critical matter. Airport operations are therefore clearly complex, multifaceted, and involve a broad range of stakeholders to deliver efficiently and effectively.

Case Study: On-Time Performance in China

While both the scale and rate of expansion in China is impressive, the on-time performance of the Chinese aviation sector also highlights the need for an integrated approach to capacity management, across all stakeholders in the aviation ecosystem, if potential benefits are to be fully realized. According to Flightstats data reported by CNC, in August 2019, the five global hubs with the longest lead times were all in Mainland China. This implies that, while capacity on the ground may be expanding at pace, in order to deliver a high-performing aviation capacity system that is capable of delivery consistently strong On-Time Performance, there is a need to make integrated decisions that encompass both runway and airspace capacity.

Typically, operations are split across airside and landside operations due to the increased level of commonality of the relevant stakeholders. The differing security protocols between the two areas is a further reason for the

definition of operations being split between landside and airside.

Commonality of issues and stakeholders are typically the factors around which formal or informal working arrangements and governance structures are formed. Typically, the following operational functions are seen within an airport ecosystem:

- Airport-Airline Relations;
- Airport-Airspace Congestion;
- Environmental Issues;
- Cargo Problems;
- Air Traffic;
- Safety and Security.

Governance solutions in a range of operational contexts are explored below:

- Cargo;
- Commercial;
- Ground Handling;
- Passenger Experience;
- On-Time-Performance;
- Air Traffic Control and Airspace Management.

Best Practices and Lessons Learned National and Regional Industry Collaborations

To meet challenges associated with congestion and event-driven factors such as adverse weather, there are a range of innovations taking place around multi-stakeholder operational solutions at a national or regional level. Airport-Collaborative Decision Making (“A-CDM”) is an example of this, where data is shared between a range of parties, such as airlines, ground handlers, airport operators and air traffic providers. Put simply, “an A-CDM implementation involves the interaction of multiple stakeholders, processes and systems”.⁹⁵

Whilst the best-known adoption of a formal A-CDM program is under EUROCONTROL in the EU, the concept of improved sharing of data and resources is growing globally and there are a range of stakeholder-led integrated programs in place to facilitate collaborative decision making and have formal governance to facilitate data sharing and the resulting innovations.

⁹⁴ IATA (2019). *Worldwide Airport Slots: Fact Sheets*. [online] Available at: <https://www.iata.org/en/iata-repository/pressroom/fact-sheets/fact-sheet---airport-slots/> [Accessed 30/01/2020]

⁹⁵ IATA (2018). *Airport-Collaborative Decision Making: IATA Recommendations*. [online] Available at: <https://www.iata.org/contentassets/5c1a116a6120415f87f3dadfa38859d2/iata-acdm-recommendations-v1.pdf> [Accessed 30/01/2020]

Case Study: FAA and Collaborative Decision Making in the US

In the US, the FAA support a joint government/industry Collaborative Decision Making (“CDM”) initiative to improve air traffic flow management through increased information exchange among aviation community stakeholders. “By sharing information, values and preferences, stakeholders learn from each other and build a common pool of knowledge, resulting in {air traffic management} decisions and actions that are most valuable to the system”.⁹⁶

Membership of the program is limited to entities which meet the data-sharing criteria and subscribe to the FAA CDM Memorandum of Agreement, including maintaining specific data quality requirements.⁹⁷ By collaborating in this program, members have access to CDM tools, including flight schedule monitoring and live alerts. The FAA also host a call with all CDM participants every two hours to provide specific updates over the coming hours. This reflects the dynamic and complex nature of the system in the US and North America, with many smaller aviation markets having similar collaborative discussions much less frequently.

There are other industry-led initiatives that build on multi-stakeholder collaborations to deliver system-wide benefits.

Case Study: Regional Airport Coordination in North America

The North American market has also witnessed a growing trend for multi-stakeholder and inter-airport collaborations to manage improved on-time performance, particularly under extreme weather events.

In 2018, PASSUR Aerospace announced a contract with Dallas/Fort Worth International Airport which launched a new, innovative and collaborative solution, PASSUR Regional Diversion Manager, to minimize the impact of weather events and diversions. The tool provides real-time information for over 20 airports in

the region and provides instant information exchange between users to enable effective decisions on diversions. This is intended to reduce costs and improve passenger experience.⁹⁸

The Greater Toronto Airports Authority (“GTAA”) similarly adopted this solution in 2019.⁹⁹

Enhanced data sharing across the aviation system such as these regional diversion initiatives clearly enhance resilience and response to extreme events, and there are significant opportunities to continue extending such initiatives across stakeholders.

“One airport might have as many aircraft and passengers as it can handle, and the pilots wouldn’t know it until they were already on the ground,” says DFW Vice President of Operations Paul Sichko.¹⁰⁰

“The most important aspects are active stakeholder participation and data sharing in real time—executed in a way that everyone benefits,” summarizes Douglas Hofsass (Senior Vice President, PASSUR Aerospace).¹⁰¹

Need for On-Airport Collaborative Operating Models and Plans

For all of the different actors involved in airport operations, there is a common shared interest in ensuring safe, efficient and effective transition across the end-to-end passenger journey, set out in Figure 11 (“Airport Stakeholders and Passenger Journey”). Throughout this journey there are a range of roles and responsibilities with different airport stakeholders, which may be managing a number of bespoke processes and systems to deliver these, but which have significant impacts on the abilities of other stakeholders to execute their own mandates.

There is an increased trend to focus on the passenger journey rather than historically siloed operating models, tilting towards collaborative working to ensure the efficient movement of passengers through an airport and improved passenger experience. The aspiration to have one operating plan at an airport that captures all the activities at an airport may be considered unrealistic. However, there may be the case and the justification for jointly developed operating plans for all stakeholders relevant across the core function of passenger movement.

99 Passur Aerospace (2019). *Greater Toronto Airports Authority (“GTAA”) Contracts With PASSUR Aerospace For Regional Diversion Manager*. [online] Available at: <https://www.passur.com/2019/02/greater-toronto-airports-authority-gtaa-contracts-with-passur-aerospace-for-regional-diversion-manager-provides-irregular-operations-resilience-to-delay-less-cancel-les/> [Accessed 30/01/2020]

100 Vanderhey Shaw, K. (2018) *Dallas Fort Worth International Improves Diversion Process with New Software*. [online] Available at: <https://airportimprovement.com/article/dallas-fort-worth-int-l-improves-diversion-process-new-software> [Accessed 30/01/2020]

101 Vanderhey Shaw, K. (2018) *Dallas Fort Worth International Improves Diversion Process with New Software*. [online] Available at: <https://airportimprovement.com/article/dallas-fort-worth-int-l-improves-diversion-process-new-software> [Accessed 30/01/2020]

96 Federal Aviation Administration. *Improving Air Traffic Management Together*. [online] Available at: <https://cdm.fly.faa.gov/> [Accessed 30/01/2020]

97 Federal Aviation Administration. *Improving Air Traffic Management Together*. [online] Available at: <https://cdm.fly.faa.gov/> [Accessed 30/01/2020]

98 Passur Aerospace (2018). *PASSUR Aerospace Contracts With Dallas/Fort Worth International Airport to be The Launch Customer For PASSUR’s New Solution to Help Airlines Stay on Schedule During Major Weather Events*. [online] Available at: <https://www.passur.com/2018/04/passur-aerospace-contracts-with-dallas-fort-worth-international-airport-to-be-the-launch-customer-for-passurs-new-solution-to-help-airlines-stay-on-schedule-during-major-weather-events-regi/> [Accessed 30/01/2020]

This can become more complex as more specialized entities and service providers are involved, increasing the need for integration and effective governance to identify and resolve operational issues, and continuously improve cost, time and quality factors in operations. Other industry trends towards more collaborative operating models are helping to address this. The need to deal with congestion and capacity pressures, as well as new digital technologies, means an increasingly seamless and integrated passenger journey with shared platforms and processes across key handoffs. There is a growth in common standards and interoperability of technology platforms and enhanced data sharing, driven by the likes of IATA, and also industry IT service providers like SITA and Amadeus.

Case Study: Operation, Management and Development Agreement Mumbai, Ministry Of Civil Aviation

The Operation, Management and Development Agreement was initially signed in 2006, between the Airports Authority of India (“AAI”) and Mumbai International Airport Private Limited (“JVC”). The Agreement involved AAI transferring a number of functions including operation, maintenance, development, design, construction, upgradation, modernization, finance and management of the Chhatrapati Shivaji International Airport (“CSIA”) to JVC.

For CSIA, the concession agreement only mandates for information to be shared with government but there are no requirements or mechanisms for sharing key information such as the annual maintenance program or operational KPI reporting with airlines or other critical stakeholders.

This lack of communication has been identified as an issue creating operational inefficiencies. As a result airlines do not have access to critical operational data which is now resulting in issues such as scheduling conflicts, sub-optimal OTP and weakened customer experience.¹⁰²

As identified in the challenges experienced with CSIA, a failure to enable transparency and sharing of relevant data amongst key stakeholders, such as the airport authority and across the governance layers, can create inefficiencies, and a clear data governance model is required to address this.

¹⁰² Mumbai International Airport Private Limited (2006). *Operation, Management and Development Agreement April* [online] Available at: http://www.civilaviation.gov.in/sites/default/files/moca_000979.pdf [Accessed 02/02/2020]

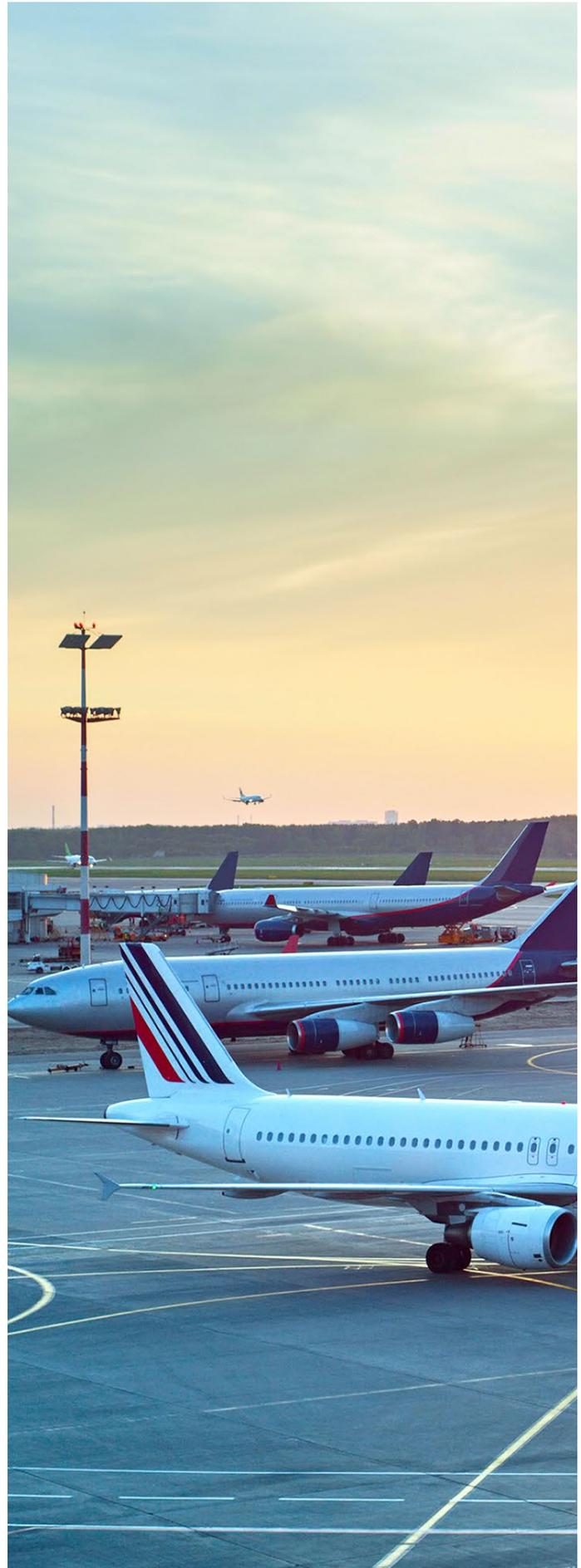
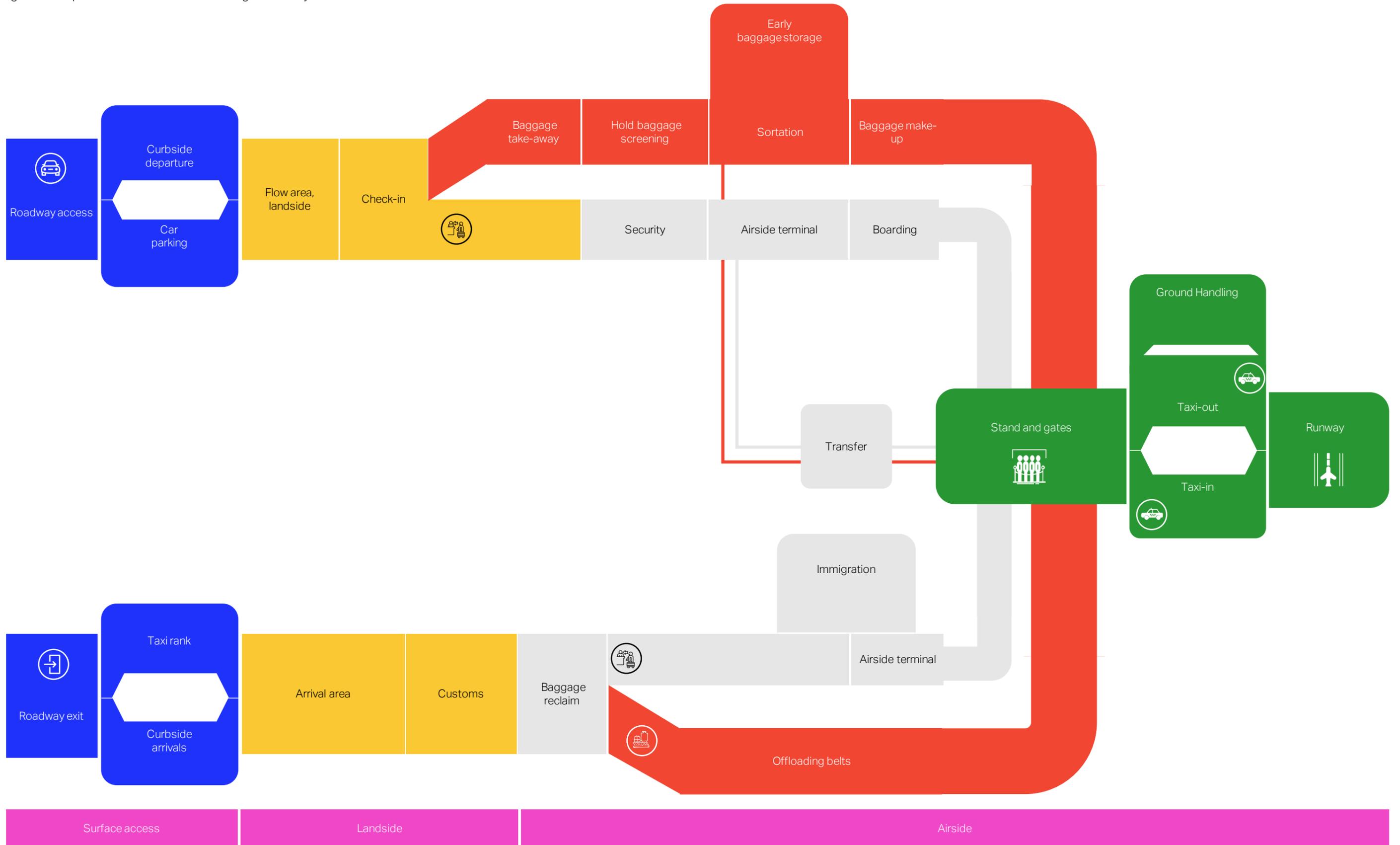




Figure 11. Airport Stakeholders and Passenger Journey



Typical Airport Operational Governance Forums

A lack of regular operational touch-points between on-airport stakeholders can lead to operational failures with material consequences.

Case Study: Stakeholder Collaboration for Improved Operational Performance in North America

In 2018, a severe winter storm led to “breakdowns” at JFK Airport in New York, including “loss of luggage, failure of equipment, the cancellation of thousands of flights, planes being diverted to other airports, a pipe bursting and a brief power outage in one of the terminals”.¹⁰³

Following this, the Port Authority of New York and New Jersey appointed Ray LaHood, the former federal transportation secretary, to undertake an independent review of what had gone wrong.

At the core of the issues identified was a breakdown in operational governance and communication mechanisms across multiple stakeholders.

“Deficiencies in communication” were identified as a key issue, exacerbated by fragmentation in the operating model, with each of the six terminals being under the management of airlines or other private operators; it was reported that much of the communication across the stakeholders was by cellphone without a modern system for coordinating communication.¹⁰⁴

This demonstrates some of the challenge associated with increasingly complex, specialized and as a result frequently fragmented airport operating models, and the need for stronger governance and day-to-day working arrangements, enabled by real-time data sharing and use of technology, to mitigate risks and challenges. The traffic profile for JFK is also unique in terms of the popularity as an international destination and there being a high number of different, international users.

The report made 50 recommendations for improvements, including a new emergency operations center for command and control to improve overall coordination. This center is a central point of contact for 26 entities comprising airlines, terminal operators and government agencies. This was also

recommended to be implemented as a year-round, 24/7 Airport Operations Center¹⁰⁵. Other recommendations included a gate management system and building remote gates to prevent delays where airlines miss arrival windows.

Industry insiders have reported that JFK is one of the most improved airports in terms of collaboration between stakeholders in advance and during disruptions, with full multi-stakeholder involvement now starting to move beyond reporting of tactical and short-term incidents and issues through to longer-term planning.

Of course, finding the “sweet spot” in terms of number of touch-points for collaboration, frequency and stakeholder attendance at key forums requires a balancing act and it is possible to have too many forums that detract from day-to-day operations. Enhanced inter-stakeholder arrangements need to be considered where there is greater complexity inherent in the aviation and airport system as well as specific event-driven factors, such as a planned runway upgrade. For example, the number of users or the different participants in the operating model, as demonstrated in JFK, creates complexity that needs to be managed through communication; other factors are dependent on airport-specific characteristics, for example more international, long-distance flights create more schedule time deviation that needs to be managed, and the level of capacity utilization and congestion of airport infrastructure is an important consideration. Early scenario planning across multiple stakeholders can of course mitigate risks associated with such projects.

Role of the AOC

One important form of governance that is common and recommended is an Airline Operators Committee (“AOC”). An AOC is recommended as a separate mechanism to an ACC, which is typically more strategic and planning-focused and covered under the “Capital Projects” domain section below, although the AOC should nominate a representative to participate in the ACC. As an airport moves from development to become more operational the AOC assumes an increasingly active role, although

¹⁰⁴ Mcgeenhan, P. (2018). *Report Offers 50 Ways to Avoid the Chaos That Crippled Kennedy Airport*. [online] Available at: <https://www.nytimes.com/2018/05/31/nyregion/kennedy-airport-snowstorm-report.html> [Accessed 02/02/2020]

¹⁰⁵ Mcgeenhan, P. (2018). *Report Offers 50 Ways to Avoid the Chaos That Crippled Kennedy Airport*. [online] Available at: <https://www.nytimes.com/2018/05/31/nyregion/kennedy-airport-snowstorm-report.html> [Accessed 02/02/2020]

¹⁰³ Sackel, A. (2018). *Improvements to be made at JFK*. [online] Available at: https://www.qchron.com/editions/queenswide/improvements-to-be-made-at-jfk/article_4b6bc77d-0db6-57d9-bb4a-2d20b8d4ef4e.html [Accessed 02/02/2020]

both governance mechanisms are expected to run in parallel.¹⁰⁶

Deep-Dive: Role of the Schiphol Airline Operators Committee (“SAOC”) ¹⁰⁷

“The Schiphol Airline Operators Committee (SAOC) is an association of airline companies operating fixed or regular services to, from or via Schiphol Airport. This in in [sic] conformity with the “Guidelines for the establishment of Airline Operators Committee” recommended by the International Air Transport Association (IATA). The purpose of the SAOC is to provide opportunities for dialogue, advancement and improvement of all aspects of the airport operations and represents the interests of its members at Schiphol for safe, cost effective and customer focused operations.

SAOC aims to be a strong independent organization that strives to deliver high standards on operational requirements, innovate for the future and protect the generic interests of its members. We represent the interests of our members at Schiphol for safe, cost effective and customer focused operations and to drive for continued excellence by offering a platform that informs, refers, represents and unites the member airlines in matters of general interest at Schiphol Airport.

The SAOC board consists of the executive committee and additional board members who are appointed by the airline members. The officers who constitute the executive committee are; the president (chair), vice-president (vice-chair) and treasurer/secretary. All members of the board are official representatives of member airlines. All board members execute their role on a voluntary basis.”

Other Operational Forums

A number of airports make their operational governance forums publicly available and transparent for the stakeholder community. Perth Airport, for example, publicize their “Forums for Operational Engagement”. The stated aim of these committees, working groups and forums is “to provide a platform for engagement, collaboration and innovation”, an extract of which is included below:

¹⁰⁶ IATA (2018). *Airport Consultative Committees: Airport Planning Seminar for the SAM Region*. [online] Available at: https://www.icao.int/SAM/Documents/2018-ADPLAN/2.6%20Airport%20Consultative%20Committees_MarkRodrigues_v1.0.pdf [Accessed: 02/02/2020]

¹⁰⁷ Schiphol Airline Operators Committee. [online] Available at: <https://saoc.genkgoeweb.com/> [Accessed 02/02/2020]

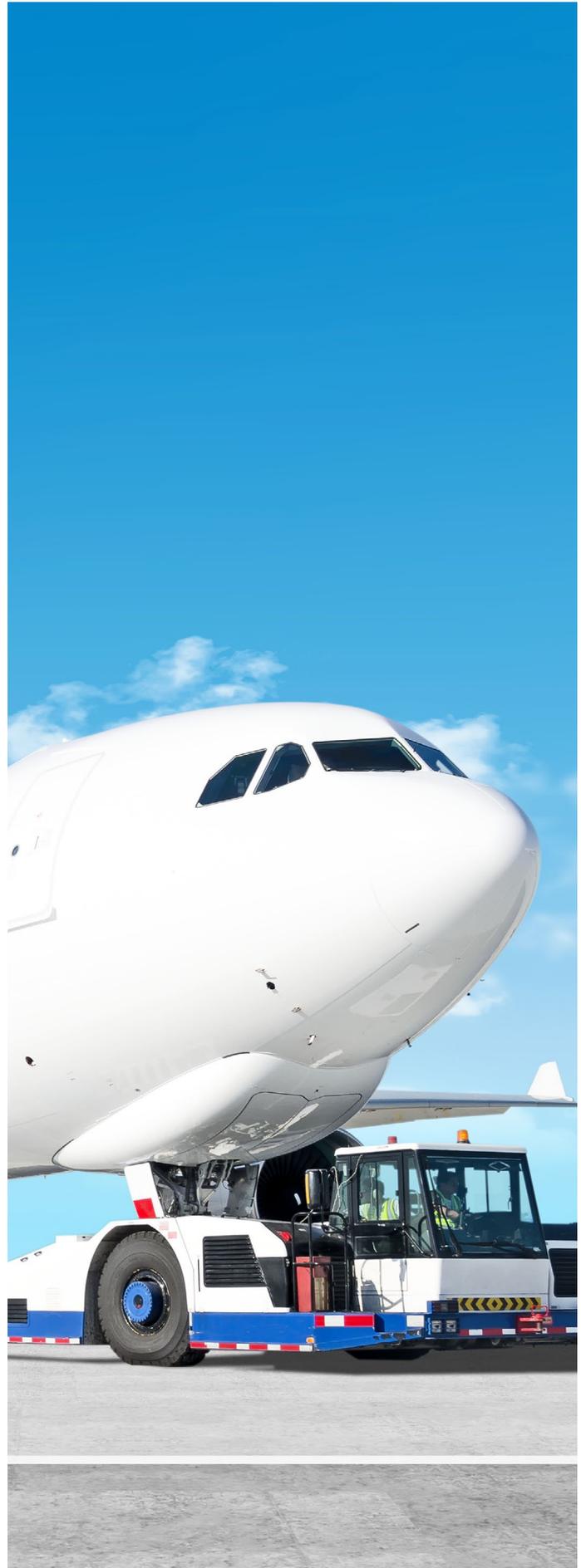


Figure 12. Perth Airport Forums for Operational Engagement ¹⁰⁸

Group	Aim	Membership	Meeting Frequency
Ramp Safety Committee	To develop & promote a safety culture on the airside to ensure a safe airside environment.	Operators involved in the turn-around of aircraft	Quarterly
Local Runway Safety Team	To promote runway safety and mitigate against the risk of runway incidents.	ATC, Airlines, Category 4 Vehicle Operators	Biannual
Airport Security Committee	To develop & promote a security culture at the airport to ensure a secure airport environment.	Major Domestic Airline Operators, Border Control Agencies, Law Enforcement Agencies	Biannual
Airport Security Consultative Group	To update airport operators on aviation security measures at the airport and regulatory changes.	All airport operators	Biannual
Aerodrome Emergency Committee	To develop, maintain & communicate emergency response procedures at Perth Airport. Includes sub-committees as required.	Airline Operators, Ground Handling Agents, Emergency Response Agencies.	3 times a year
Airport Fire Safety Committee	To consider fire safety strategically across the Perth Airport Estate.	DFES, ARFFS, Airport Building Controller	3 times a year
Aircraft Facilitation (FAL)	To provide an overview of the runway slots for the upcoming season schedule.	Airport Coordination Australia, Airline Operators, Border Control Agencies	Biannual
Border Control Agencies Discussion Group	To consider improvements and/or upcoming changes affecting border control and customer experience.	Border Control Agencies	Fortnightly
Ground Handling Agents Discussion Group	To consider improvements and/or upcoming changes to operations.	Ground Handling Agents	Monthly
Airport Consultative Environmental and Sustainability Group	To inform and discuss relevant updates on Perth Airport developments and topics related to environmental management of the Perth Airport Estate.	Major tenants, Government departments (local, state and federal)	Quarterly

Proactive Engagement Across Supply Chain

Governance forums like those identified above can provide opportunities to generate significant benefits with on-airport stakeholders.

Case Study: Gatwick Airport Supply Chain

Gatwick Airport have taken the approach to strengthen their supply chain by setting up long term framework contracts with local and regional suppliers. This has seen to encourage stronger partnerships

amongst the partners and ensures a sustainable supply chain is developed.

The program has seen a success over the years with it reinforced through the Gatwick Diamond where senior management and procurement have noticed the benefits of further strengthening these relationships through the informal networking the event hosts. The management at Gatwick are also able to cascade their key messages and requirements down to suppliers allowing them to better understand the airport's business needs.¹⁰⁹

¹⁰⁸ Perth Airport. *Operational Engagement*. [online] Available at: <https://www.perthairport.com.au/Home/corporate/work-with-us/operating-at-perth-airport/operational-engagement> [Accessed 02/02/2020]

¹⁰⁹ Gatwick Airport (2019). *Gatwick Supply Chain*. [online] Available at: <https://www.gatwickairport.com> [Accessed 02/02/2020]

Case Study: Collaborative Planning with Ground Handlers

Currently for many airports operating at capacity or forecast to in the near future there is increased focus on optimizing capacity, particularly through improved use of technology. Major airports like Gatwick and Heathrow are at the forefront of this, having the most to gain from unlocking current capacity constraints. Gatwick in particular is utilizing predictive insights around stakeholder performance (typically airline and ground handler) to enter proactive discussions on performance improvement with their partners. This includes, for example, working with ground handling partners to identify and mitigate potential resourcing shortfalls in peak periods.

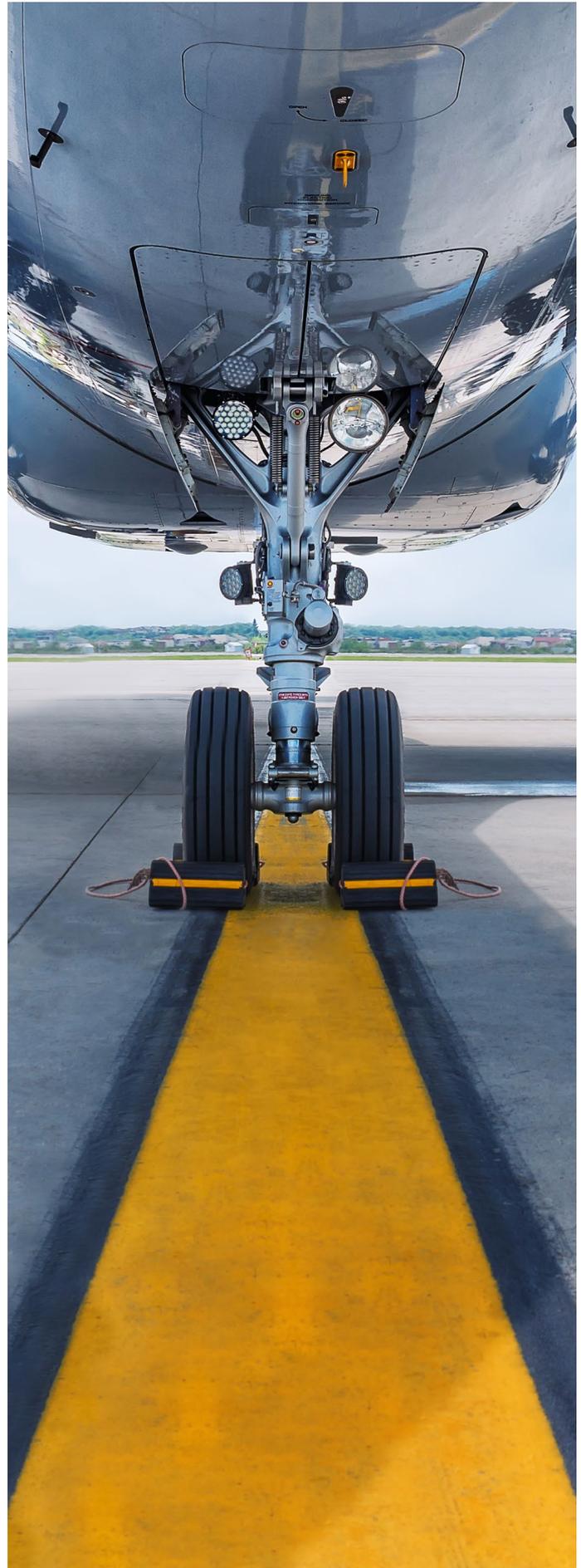
Such interventions based on data-driven collaboration can deliver tangible performance improvement. Outside of operational planning, there are also more strategic approaches being taken to build and maintain a sustainable supply chain.

Managing Operational Continuity

Having established governance forums and lines of communication can also help manage around one-off events, whether planned or unplanned, as identified in the example above with JFK. Transparent and open forms of communication with users and stakeholders can mitigate adverse impacts of such events for mutual benefit.

Case Study: Dubai Southern Runway Rehabilitation ¹¹⁰

Dubai International Airport (“DXB”) frequently releases guidance announcements to its airlines, notifying them of any upcoming disruptions or changes. In the summer of 2019, DXB closed one of its two primary runways, which caused a significant reduction in capacity. To address this, airport officials were transparent with their user community, releasing details regarding the closure as early as April of the previous year. They further organized a coordination committee in 2018, ensuring participation by airlines and airport staff as well as working collaboratively to establish a set of regulations that would be fair to all involved.



¹¹⁰ Dubai Airports (2019). Slot Performance Committee & Slot Adherence Policy for Airlines & Aircraft. [online] Available at: <https://www.acl-uk.org/wp-content/uploads/pdf/DXB%20SPC%20Policy%2020APR15.pdf> [Accessed 02/02/2020]

Best Practice Guidelines: Operations Governance Self-Assessment Checklist

The below is a self-diagnosis tool to enable States to assess whether appropriate governance is in place for each domain. Lessons learned and best practices to

address shortcomings are included in the narrative for each domain, and summarized across each domain in the Best Practice Guidelines and Tools section from page 94.

Governance Self-Assessment Checklist: Operations	Yes/No
National or regional platform for real-time data operational data sharing between stakeholders to optimize airport operations and on-time-performance?	{Yes/No}
Airport Collaborative Decision Making (A-CDM) process to improve operational efficiencies of all airport operators?	{Yes/No}
Design of operational governance arrangements, forums and working groups agreed by stakeholders (drawing on example designs set out in this Toolkit) and made publicly available?	{Yes/No}
Committee to provide oversight of obligations of all aerodrome operating procedures and planning processes?	{Yes/No}
On-airport bylaw with contractual obligations for suppliers to adhere to by-laws?	{Yes/No}
Slot performance committee to improve carrier performance and reliability, and mitigate slot misuse?	{Yes/No}
Establishment of a multi-stakeholder Airport Operations Center?	{Yes/No}
Airline Operators Committee ("AOC") to structure operational engagement between airport and airlines?	{Yes/No}
Implementation of an Aircraft Facilitation Program (FAL) to maximize efficiency of border clearance?	{Yes/No}

Decision Making Process: RACI Matrix

The following are the best practice roles and responsibilities by key stakeholders for a selection of key airport functions and decisions. A simplified set of stakeholders is used for this analysis to group and

exclude stakeholders with minimal roles in these key functions, recognising that there are dozens of airport stakeholders that have been identified in the Airport Ecosystem Stakeholders analysis from page 12. Again, these are summarized across each domain in the Best Practice Guidelines and Tools section from page 94.

Key Functions	Key Stakeholder Roles and Responsibilities: Operations						
	ICAO and International / Regional Agencies	Government / Transport Ministry	Economic Regulator	Technical / Safety and Standards Regulator	Airport / ANSP Operator	Airline Customers	Community
Conduct asset management	N/A	N/A	Informed **	Consulted	Responsible and Accountable	Consulted	N/A
Manage operational performance / OTP	N/A	N/A	Informed **	N/A	Responsible and Accountable	Consulted	Consulted

* Dependent upon the role of the regulator and its mandate to oversee the development of airport expansion

** Dependent upon the regulatory model adopted and obligations for performance disclosure

Key Functions	Key Stakeholder Roles and Responsibilities: Safety and Security						
	ICAO and International / Regional Agencies	Government / Transport Ministry	Economic Regulator	Technical / Safety and Standards Regulator	Airport / ANSP Operator	Airline Customers	Community
Manage commercial performance	N/A	N/A	Informed **	N/A	Responsible and Accountable	Consulted	N/A
Manage ground handling and air cargo	N/A	N/A	Informed **	N/A	Accountable	Responsible	N/A
Manage ATC	N/A	Accountable**	N/A	Consulted	Responsible (ANSP)	Consulted	Informed

* Dependent upon the role of the regulator and its mandate to oversee the development of airport expansion

** Dependent upon the regulatory model adopted and obligations for performance disclosure

Recommended Airport Governance Mechanisms

The following are the best practice governance mechanisms forums, committees and working groups

that all airports should have in place to implement better governance. Again, these are summarized across each domain in the Best Practice Guidelines and Tools section from page 94.

Best Practice Airport Governance Mechanisms: Operations

Operational Data Governance Program	<p>A program that encompasses a multitude of stakeholders associated with governing data to monitor and improve the quality of data, leading to improved operational efficiency and capacity utilization of an airport. The program focus can be on:</p> <ul style="list-style-type: none"> Privacy and protecting sensitive data through classification and the appropriate handling of sensitive data resources; Improving data integration and analytical capabilities through management of big data and other data resources; and Improving compliance and reporting capabilities to appease industry, governmental rules and regulatory bodies.
Airport Collaborative Decision Making ("A-CDM")	<p>A process aimed at drawing stakeholders together to achieve operational efficiencies and facilitate resilience of airport operations through optimization of resources and improving air traffic predictions. It enables stakeholders to provide transparency, promote collaboration and allow the exchange of relevant, accurate and timely information.</p>
Ground Handling Agents Working Group	<p>A working group with representation from ground handlings, airlines, airport operators that allows to effectively communicate improvements and changes to operations, as well as resolve issues in a transparent manner.</p>
Air Cargo Working Group	<p>A group capturing all ground handling agents that meets monthly to discuss improvements and changes to the day-to-day air cargo operations and improve service delivery. The proximity of operations, the high level of interdependence, and the level of international oversight to operations - dynamic in nature - requires close consultation between stakeholders in the air cargo sector and how they interface with other airport stakeholders.</p>

Best Practice Airport Governance Mechanisms: Operations

Aerodromes Operations and Planning Working Group	<p>A working group with a clearly defined mandate that provides oversight of obligations of all operating procedures and planning processes on an aerodrome. It also suggests ways in which to improve airport operations.</p>
Aircraft Facilitation Program ("FAL")	<p>A ICAO program set out to foster the implementation of Standards and Recommended Practices and the development of modern and innovative strategies for addressing any issues. It is tasked with maximizing the efficiency of border clearance formalities, maintaining high-quality security and effective law enforcement.</p>
Slot Performance Committee	<p>A committee that meets on a regular basis to advise on enhancing airline OTP and support with the effective utilization of an airport's capacity in an independent manner. It aims to enhance carrier performance and aid effective utilization of airport infrastructure.</p>
Airline Operators Committee ("AOC")	<p>An AOC is recommended as a separate mechanism to an ACC, which is typically more strategic and planning-focused and covered under the "Capital Projects" domain section below, although the AOC should nominate a representative to participate in the ACC. As an airport moves from development to become more operational the AOC assumes an increasingly active role, although both governance mechanisms are expected to run in parallel. IATA provide "Guidelines for the Establishment of Airline Operators Committee".</p>

Capital Projects

Overview

The development of a new airport, major capital expansions at existing airports, or ongoing capital development and renovation of any of the existing airport infrastructure, involve a large number of impacted stakeholders, including the surrounding community and the catchment the airport serves.

There is a need for there to be established national governance related to major infrastructure construction and expansion, such as national planning policy and/or local government planning legislation. The processes for major capital projects are typically clearly defined due to the considerable impact and the broad required consultation for all relevant stakeholders at a national, regional, local and direct stakeholder level.

A clear example of this is the work undertaken for the evaluation of the additional runway to serve the South East of the United Kingdom and the process that has been defined to guide the approval of Heathrow's third runway. These clearly define the level and extent of consultation, and is highly prescriptive, being one of the options for national governments to consider in the absence of the national planning framework for major infrastructure projects such as airports. Due to the broad availability of information and guidance on these topics, these are not the focus of this Toolkit. Further, the broader mechanisms for community consultation are defined in greater detail in the "Community and Environment" domain guidance above.

Where it has been observed that there is more limited guidance to draw upon is when it relates to the assessment of incremental capital projects at existing airports, such as terminal enhancements or new buildings or surface access connections, and the complexity associated with these, which can include:

- Assessing stakeholder requirements from capital project;
- Defining the business case for the incremental capital project, the proportional impact on all stakeholders, and mechanisms to manage disproportionate benefits and challenges for different stakeholders;
- Managing adverse impact on existing operations;
- Share of cost, risk and reward from capital investment.

This Toolkit is therefore focused on the governance in relation to such capital projects, with a specific focus on:

- Capital Expansion Planning;

- Capital Project Delivery;
- ORAT.

Best Practices and Lessons Learned Capital Expansion Planning

A frequent challenge observed in planning for capital expansion is that airports limit the level of consultation with relevant stakeholders. When a capital project is identified it is frequently defined whilst not incorporating all stakeholders' views and opinions as they relate to the future capital program or project.

Many airports face capacity constraints and an ongoing need for planning, execution and funding or financing of capital expansion plans over the short, medium and long term to alleviate the growing demand for airport infrastructure.

There are a number of factors that impact the expected requirements for capital projects and their funding, including expectations for traffic growth, ability to deliver operational performance improvements, and, in some instances, the cost of capital expected to finance projects. Clearly different views exist on these different expectations, and governance mechanisms are required to manage these accordingly.

A primary risk emerging from a lack of formal and structured engagement to define clear and agreed needs and a commonly agreed business case for capital expansion is inefficient capital spend. This is seen in many cases where there is insufficient economic regulation, or perverse incentives arising from regulatory mechanisms, as well as a lack of consultation and agreement on capital plans.

Case Study: Regulatory Oversight and Capital Investment Planning in Canada

In the early 1990s the Canadian Government moved airport management from federal government to not-for-profit authorities, with an intention to improve financial sustainability and bring access to better management practices.

A range of industry stakeholders argue that "there is a consensus across Canada and beyond that the country's airports are too expensive, and high charges to airlines trickle down to the passenger".¹¹¹

A number of different factors are identified for this, including ground rental charges the airport is expected to pay back to the federal government

¹¹¹ CAPA (2016). *Airport Privatization in Canada: Transport Policy Review*. [online] Available at: <https://centreforaviation.com/analysis/reports/airport-privatization-in-canada-transport-policy-review-271346> [Accessed 30/01/2020]

equates to 12% of gross revenue, increasing a financial burden on the airport authorities which is passed on through charges to airlines and passengers.

Additionally, the not-for-profit structure has meant that the airports have not been subject to direct economic regulation to regulate capital investments and aeronautical charges; it has been argued that this led to “gold plated” investments, ultimately resulting in higher charges.¹¹²

This not-for-profit Canadian airport model is relatively unique and not commonly applied in other countries or at large, international airports globally. However, the challenges associated with oversight and stakeholder participation in the capital investment planning process is a common governance-related challenge.

Multi-stakeholder governance mechanisms in respect of capital investment planning, independently assessing required investments and business cases, and incorporating multi-stakeholder feedback, can be used to mitigate this for the benefit of a broad range of airport stakeholders.

For this reason, there is a range of best practice documentation available to support airport planning that emphasizes the importance of consultation, including:

- “Airport Infrastructure Investment – Best Practice Consultation” (IATA). This provides a framework for other papers and related to airport infrastructure development:
 - “Airport Consultative Committee (ACC) - Terms of Reference” (IATA);
 - “Airport Service Level Agreements – Best Practice” (IATA);
 - “Levels of Service (LoS) – Best Practice” (IATA);
- “Airport Planning Manual” (ICAO Document 9184 Part 1), which stresses the importance of consultation and cooperative planning.

One common and recommended mechanism to facilitate this is an Airport Consultative Committee (“ACC”), which can be established to provide meaningful dialogue between airports and airlines when it comes to key decisions across the capital investment lifecycle.

Deep Dive: Role of an Airport Consultative Committee (“ACC”) ¹¹³

IATA provide detailed guidelines for establishing ACCs, which are recommended to be formed “where no other form of regular, best practice dialogue between the airline community and airports exists or is mandated through regulation”.

IATA recommend that the ACC is separate from the Airline Operators Committee (“AOC”), which is defined in more detail in the “Operations” domain above, although the AOC should nominate a representative to participate in the ACC.

The ACC has a more strategic rather than operational focus in respect of airport development; “The ACC is typically concerned with airport infrastructure developments, strategic planning issues and the associated CAPEX program”.

The scope should typically be focused around the business case and lifecycle for major capital projects, including options and costs, covering:

1. Airport Master Plan;
2. Aircraft Parking;
3. Passenger Terminal;
4. Airside and Landside Infrastructure and Surface Access Systems;
5. Cargo Terminal Developments;
6. Airport Support Facilities;
7. Operational Readiness and Testing.

There are a number of tangible benefits for both airports and airlines to developing and working within an ACC framework.

Deep Dive: Benefits of an ACC ¹¹⁴

A London Airport Consultative Committee (“LACC”) is active for all major CAPEX projects at London Heathrow, such as the Terminal 5 development, Terminal 2 redevelopment, and surface access projects.

The 15 year CAPEX plans are agreed and monitored through ongoing airline consultation in the LACC,

¹¹² David, G (2008). *Airport Governance and Regulation: the Evolution over Three Decades of Aviation System Reform*. [online] Available at: <https://www.researchgate.net> [Accessed 30/01/2020]

¹¹³ IATA (2017). *Airport Consultative Committees (ACCs): Operating Terms of Reference*. [online] Available at: https://www.icao.int/SAM/Documents/2018-ADPLAN/IATA_ACC%20TOR_2017APR.pdf [Accessed 30/01/2020]

¹¹⁴ IATA, *Airport Consultative Committees* (Presentation for the Airport Planning Seminar for the SAM Region, 2018)

and airport-wide service level agreements have been negotiated and implemented, supported by the UK CAA.

The LACC is involved in ongoing consultation and oversight in the design and implementation of Heathrow's third runway project.

In Beijing, the ACC framework played an important role in the development of a second hub airport, including facilitating terminal design improvements, optimizing stand layout, and improvements to the operational readiness program.

In many cases there is a legislative framework to support the need for consultation, for example in the UK. In other cases, political will may be required to put such a mechanism in place, but for these reasons an ACC is a strongly recommended governance mechanism to create mutual benefit in planning and delivering capital projects.

Capital Project Delivery

Once a capital investment need is identified and agreed, a lack of stakeholder engagement can also undermine the effectiveness and efficiency of the design. Ensuring a project addresses as efficiently as possible the needs of stakeholders, as well as the detailed execution planning is required to undertake projects being delivered within a complex operating theatre whilst also seeking to minimize the impact on stakeholders.

Case Study: San Francisco International Airport Formal Stakeholder Engagement Process

San Francisco International Airport ("SFO") has created and formalized a stakeholder engagement mechanism for capital projects with their Stakeholder Engagement Process ("SEP"). The SEP requires project teams to have early inputs, review of alternatives, and collaborative planning with stakeholders during planning and programming phases of a capital project.

"SFO uses the Stakeholder Engagement Process to ensure our designers develop plans that meet the needs and expectations of our stakeholders" (Christopher McManus, SFO Project Manager).¹¹⁵

At the point of the airport undergoing expansion or renovation, the execution of this project typically impacts operational performance and passenger experience. Without appropriate awareness of the program of work, emerging plans, risks and issues, stakeholders may

be left unable to minimize the negative impact. Limited collaboration between airlines, airport and primary contractor in capital delivery can result in disruption, and increased cost and operational challenges, for all.

Case Study: Design Process and Stakeholder Management Tools in Airport Construction

A number of issues have arisen when managing large and complex construction projects at airports. These issues frequently emanate from failures in the required level of complex stakeholder management during the design phase. There is frequently a lack of integration between the design process and stakeholder management, raising issues between the different disciplines and stakeholders within the airport ecosystem which are required to work together to effectively deliver on time and budget.

There are improved methodologies for such construction programs which can improve outcomes, including the adoption of both the Analytical Design Planning Technique ("ADePT") methodology and the Process Protocol ("PP").

Such methodologies can assist with overcoming compromised design processes containing inevitable cycles of rework together with associated time and cost impacts in both design and construction. The development of a framework facilitates the management of the design process and the different stakeholders involved during the early stages of a complex project life cycle.¹¹⁶

Of course, there are challenges associated with overly-fixed and rigid capital planning, and governance mechanisms are required to provide flexibility in execution of capital planning, and managing the impact of change, including on capital and operating costs and revenues defined within the original business case.

¹¹⁵ Long, J. (2017). *Importance of Airport Stakeholder Outreach*. [online]. Available at: <https://www.aviationpros.com/airports/blog/12388063/importance-of-airport-stakeholder-outreach> [Accessed 30/01/2020]

¹¹⁶ Wahab, H. and Dulaimi, M. (2013). *Design Process and Stakeholders Management in Airport Construction*. [online] Available at: <https://www.irbnet.de> [Accessed 30/01/2020]

Deep Dive: IATA Guidance and Role in Airport Development¹¹⁷

IATA provides significant existing guidance on airport development which is recommended reading for stakeholders involved in airport capital expansions.

For IATA, it is essential that airport planning and infrastructure development encompasses safe, functional, capacity balanced and user-friendly airports. Working closely with airlines, airport authorities, regulators and design consultants, IATA seeks to ensure that airport development strategies result in affordable, flexible facilities that support airline operational and customer experience requirements now and in the future.

PRIORITIES AND WORK PROGRAM

Airline priorities and IATA’s work program are determined at Regional Airport Steering Group meetings in consultation with member airlines, as well as meetings with the IATA Financial Committee.

PEER REVIEWS

IATA also works in association with airline members and airports to evaluate the physical and operational elements of an existing airport and to recommend means of improving capacity and the customer experience for passengers and other airport user groups.

AIRPORT CONSULTATIVE COMMITTEES

The Airport Consultative Committees (ACC) facilitate constructive engagement between key business partners and stakeholders on airport infrastructure expansion projects, as well as new airport developments and airport infrastructure expansion projects. ACCs are chaired by IATA on behalf of the airline community and attended by airport authorities and airline groups - including airline/airport planning experts, Boards of Airline Representatives (BAR), local Airline Operators Committees (AOC) and IATA.

KEY TO AIRPORT EFFICIENCY: THE MASTER PLAN

The airport master plan ensures that all airside, landside and airport support facilities can improve and/or expand their operations in a coordinated manner that benefits all parties.

Master plans should be based on common airline and airport business development strategies. Once the master plan is determined, the facility development programs can be organized in phases, allowing modular, incremental growth in accordance with traffic forecasts and the business strategies of the airline community, the airport and other key stakeholder groups.

TECHNICAL MISSIONS

Technical missions are undertaken at the request of member airlines. Their role is to determine the exact parameters, circumstances and potential impact of specific airport development projects and to examine issues related to that airport.

The major elements of an initial development scheme are usually contained in a 10-year rolling capital expenditure (CAPEX) program. IATA helps to validate the strategy and resulting development plan in consultation with the involved parties. This exercise is essential in determining the affordability of the plan in terms of costs, benefits and the overall impact on airport charges.

IATA GUIDANCE MATERIAL

As well as the Airport Development Reference Manual, which is the industry reference for designing airports with user needs in mind, IATA provides guidance on a variety of aspects of airport development and planning:

- Airport level of service best practice;
- Airside capacity and level of service;
- Airside infrastructure;
- Conceptual planning reviews;
- Environmental issues;
- Infrastructure Investment - Best Practice Consultation;
- Master planning;
- New airport checklist procedures;
- Passenger terminal design;
- World class airports best practice.

www.iata.org/airport-development

¹¹⁷ IATA. *Airport Development*. [online] Available at: <https://www.iata.org/en/programs/ops-infra/airport-infrastructure/airport-development/> [Accessed 30/01/2020]

In delivery, capital projects have their own unique challenges and delivery requirements. They require specialist expertise and are increasingly becoming technologically enabled. Projects themselves need to have their own defined governance framework, documenting Responsible-Accountable-Consulted-Informed (“RACI”) roles, responsibility and decision-making frameworks. A failure to apply best practices and use the right skills and expertise, particularly for large and complex projects with interfaces with complex operational arenas like airports, can easily result in failure.

Case Study: Governance Failures in Berlin Brandenburg Airport Capital Delivery

The highly anticipated new Berlin Brandenburg Airport (“BER”) has just opened, with several years of delays with considerable issues being attributed to a failure of governance in the construction of the airport and oversight provided by responsible government entities.

Based upon the OECD 2016 report on governance failures, a key root cause of the airport design and construction management challenges is attributed to the decision to make the construction of the airport a public project.

The OECD note that, with limited experience in a major capital project of this nature, the public sector undertook a project of such complexity that it had led to inaccuracy of budgets, inexperienced management of supervision, poor planning and procurement, changes and variations and overall lack of communication amongst stakeholders.

The development of BER was managed within a governance framework where there was a lack of expertise on multiple levels and a lack of assurance equivalent with the level of public investment. The project lacked a comprehensive governance framework which resulted in hundreds of completion issues.

Stakeholder complexity was created with the disaggregation of the construction project into a large number of sub-contracts with insufficient oversight related to the interface / interdependences between these contracts, resulting in gaps in the overall program and failure to identify these earlier so they could be rectified.¹¹⁸

Given the complexity of capital projects, they are often prone to disputes between different stakeholders. As

118 OECD, *Governance failures in the management of the Berlin-Brandenburg International Airport* (OECD Publishing Paris, 2016)

outlined below, dispute boards are a common mechanism used during construction programs which, unlike other forms of alternative dispute resolution mechanisms are involved throughout, and have had considerable success. These are commonly between the airport authority and sub-contractors, but there is potential to extend this kind of mechanism for major capital projects to multi-stakeholder groups.

Case Study: Commercial Dispute Resolution, Chek Lap Kok International Airport, Hong Kong

The construction project “cost more than \$20 billion, involved four major public and private sponsors, 10 separate but interrelated projects, 225 construction contracts and subcontracts, and over 1,000 critical interfaces”.

Despite this complexity, the development of Chek Lap Kok is widely considered a successful project, delivered on time and on budget despite considerable scale and complexity.

This has been attributed to the alternative dispute resolution mechanisms put in place, relying on pre-selected panel of experts to independently address emerging issues. Contractors were required to contractually-commit to alternative dispute resolution mechanisms aimed at mitigating risks of delay, cost overrun and litigation, and the numerous other problems that frequently plague complex construction projects.

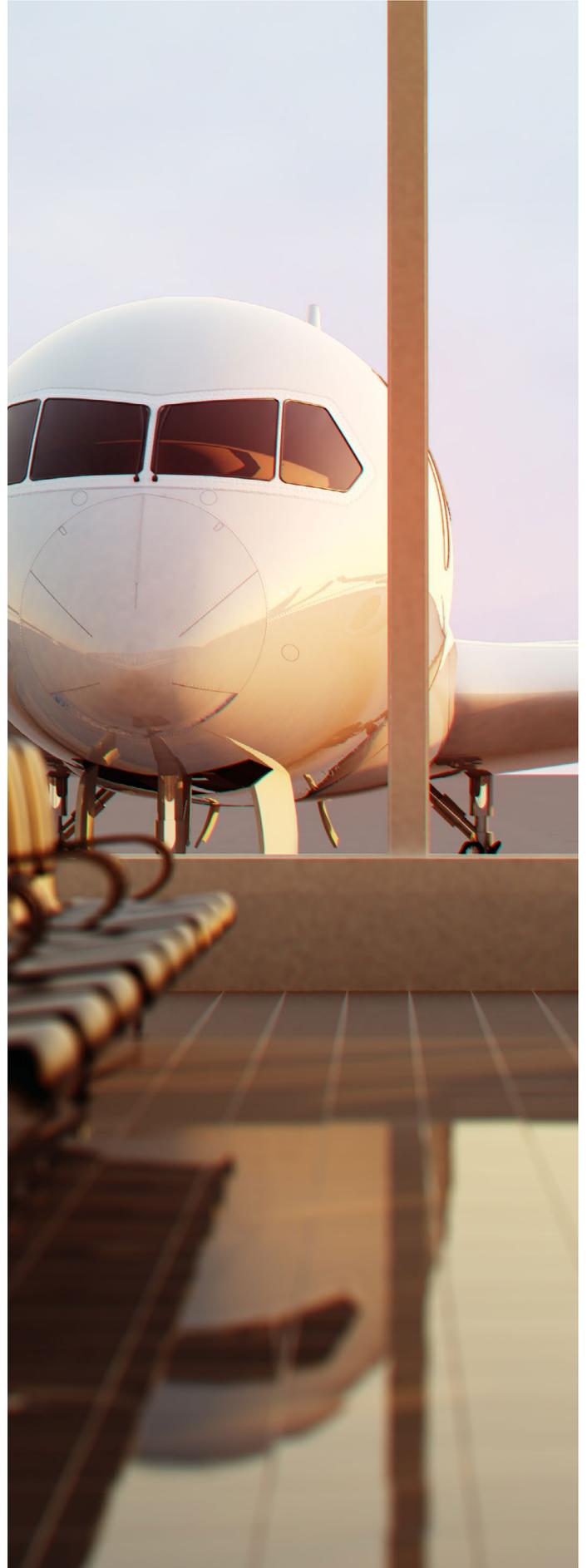
Based on these successes, the Hong Kong government now uses a “Dispute Resolution Advisor Board” for major public construction projects.¹¹⁹

Operational Readiness and Airport Transfer (“ORAT”)

Once a capital program is identified and agreed, planning for effective execution and handover is critical. Again, given the complexity and multiple stakeholders involved in the project itself (for example, contractors and government authorities responsible for inspections and approvals) as well as the on-airport stakeholders responsible for different parts of the passenger journey, mean that this is a multi-stakeholder challenge, requiring integration and governance to facilitate it across a range of different stakeholder groups. A robust and inclusive ORAT program is critical for success, and it should be fully-integrated within a capital project rather than left to the end.

119 Robert K. and Wrede, J.D. (2009). *Dispute Resolution Boards and the Hong Kong Airport*. [online] Available at: <https://www.mediate.com/> [Accessed 30/01/2020]

With a major capital project like the opening of a new terminal, the effective implementation of an ORAT program is crucial to the operational performance and success of an airport. The program acts as a mechanism to take newly developed airport infrastructure and turn it into a functioning facility that operates business as usual from day one. There is significant complexity to commencing operations in a new operational facility which stakeholders need to familiarize themselves with.



Best Practice Guidelines: Capital Projects Governance Self-Assessment Checklist

The below is a self-diagnosis tool to enable States to assess whether appropriate governance is in place for each domain. Lessons learned and best practices to

address shortcomings are included in the narrative for each domain, and summarized across each domain in the Best Practice Guidelines and Tools section from page 94.

Governance Self-Assessment Checklist: Capital Projects	Yes/No
Adherence to IATA's "Airport Infrastructure Investment – Best Practice Consultation"?	{Yes/No}
Airport Consultative Committee ("ACC") in place to consult with users on airport infrastructure requirements?	{Yes/No}
Airport master plan based on common airline and airport business plan?	{Yes/No}
Pre-agreed cost-benefit analysis or business case mechanisms for capital projects?	{Yes/No}
Pre-defined interaction between capital project business case and economic regulation?	{Yes/No}
Mechanisms for stakeholder engagement and collaboration in planning and programming phases?	{Yes/No}
Mechanisms for regular stakeholder engagement during capital project delivery to minimize operational disruption from live capital projects?	{Yes/No}
Operational Readiness and Airport Transfer ("ORAT") program with representation of all relevant stakeholders?	{Yes/No}

Decision Making Process: RACI Matrix

The following are the best practice roles and responsibilities by key stakeholders for a selection of key airport functions and decisions. A simplified set of stakeholders is used for this analysis to group and

exclude stakeholders with minimal roles in these key functions, recognising that there are dozens of airport stakeholders that have been identified in the Airport Ecosystem Stakeholders analysis from page 12. Again, these are summarized across each domain in the Best Practice Guidelines and Tools section from page 94.

Key Functions	Key Stakeholder Roles and Responsibilities: Capital Projects						
	ICAO and International / Regional Agencies	Government / Transport Ministry	Economic Regulator	Technical / Safety and Standards Regulator	Airport / ANSP Operator	Airline Customers	Community
Develop airport master plan	(Provide Guidance)	Accountable / Consulted*	Accountable or Consulted*	Consulted	Responsible	Consulted	Consulted
Define future growth and congestion	N/A	Accountable / Consulted*	Consulted	Consulted	Responsible	Consulted	Consulted
Develop airport conceptual design	(Provide Guidance)	Accountable / Consulted*	Consulted	Consulted	Responsible	Consulted	Consulted

Key Functions	Key Stakeholder Roles and Responsibilities: Capital Projects						
	ICAO and International / Regional Agencies	Government / Transport Ministry	Economic Regulator	Technical / Safety and Standards Regulator	Airport / ANSP Operator	Airline Customers	Community
Plan capital expansion and capacity augmentation initiatives	N/A	Accountable / Consulted*	Accountable or Consulted*	Consulted	Responsible	Consulted	Consulted
Deliver capital project	N/A	Consulted	Consulted or Informed**	Consulted	Responsible and Accountable	Consulted	Consulted
Deliver ORAT and handover	N/A	N/A	Consulted or Informed**	Consulted or Informed**	Responsible and Accountable	Consulted	Consulted

* Dependent upon the role of the regulator and its mandate to oversee the development of airport expansion

** Dependent upon the regulatory model adopted and obligations for performance disclosure

Recommended Airport Governance Mechanisms

The following are the best practice governance mechanisms forums, committees and working groups

that all airports should have in place to implement better governance. Again, these are summarized across each domain in the Best Practice Guidelines and Tools section from page 94.

Best Practice Airport Governance Mechanisms: Capital Projects

Airport Planning, Design and Development Process	A structured approach to enable end-users to provide input to the planning of an airport development, comprising a process to develop, implement and oversee capital planning collaboratively amongst stakeholders. The stakeholders consist of external stakeholders as well as the airport’s leadership teams, capital project team and the other internal stakeholders who meet on a regular basis and share information that allows for an institutionalized and sustainable process during planning. This forum would also enable airport owners and airlines to explore technology solutions and the cost benefit associated with these when compared to capital expansion. It would also provide a structure for incremental capital spend to be assessed and considered in consultation with all relevant airport stakeholders, such as airlines.
Airport Master Planning Working Group	A working group represented by an airport owner and airport users to support long term future infrastructure planning with representation from the local and national government or environmental agency. This group would oversee the development of the airport master plan, addressing issues and working towards realizing the airport’s ultimate vision. It is anticipated that the formal structure and ongoing obligation to have this group permanently established is likely to be influenced by national policy, such as the UK’s obligation for airport’s to review their airport masterplan on a regular basis.
Capital Project Delivery Working Group	A working group established and operational throughout a major airport expansion program. Typically due to the ongoing nature of airport operations and the complexity of these in parallel with construction activities, there are benefits that can be realized by establishing a working group who are tasked with multi-stakeholder collaboration to minimize operational disruption and ensure availability of program data to accommodate operational flexibility. Representation from airport stakeholders and key contractors undertaking works with reliable program data is critical when seeking to minimize disruption.

Best Practice Airport Governance Mechanisms: Capital Projects

ORAT Program	<p>A mechanism that enables coordination between stakeholders and assists in the implementation of a defined operational readiness program and testing for new infrastructure or services, covering operations and maintenance from the design phase through to operational implementation.</p> <p>The program provides clear guidelines to all stakeholders and their respective roles and responsibilities on the overall handover process. The availability of test data and respective operational protocol for data-sharing is critical to ensure plans appropriately reflect the requirements of all stakeholders.</p> <p>Since a major ORAT program is not a steady-state activity for an airport, typically the use of external consultants with experience delivering an ORAT program is recommended.</p>
Airport Consultative Committee ("ACC")	<p>A committee to provide dialogue between airports and airlines for key decisions across the capital investment lifecycle, "typically concerned with airport infrastructure developments, strategic planning issues and the associated CAPEX program"¹²⁰. IATA provide detailed guidelines for establishing ACCs, which should be focused around the business case and lifecycle for major capital projects, including options and costs, covering: Airport Master Plan; Aircraft Parking; Passenger Terminal; Airside and Landside Infrastructure and Surface Access Systems; Cargo Terminal Developments; Airport Support Facilities; and, Operational Readiness and Testing.</p>

¹²⁰ IATA (2017). *Airport Consultative Committees: Operating Terms of Reference*. [online] Available at: https://www.icao.int/SAM/Documents/2018-ADPLAN/IATA_ACC%20TOR_2017APR.pdf [Accessed 02/02/2020]

Key Takeaways

An airport ecosystem is faced with a number of intricate challenges, with some of the world's biggest airports challenged with capacity constraints, funding and financing challenges, and greater disruption from innovation. Local and broader community stakeholders are increasingly demanding more from airports.

The growing number of changes airports are required to adopt are stimulated by increasing demand for efficiency in an airport ecosystem. These drivers lead to new and diverse stakeholders within the airport ecosystem.

There are a number of lessons learned from within the airport industry, and from governance solutions in other industries, that provide insight into the importance of good governance and what is, and is not, required to deliver it in the airport ecosystem.

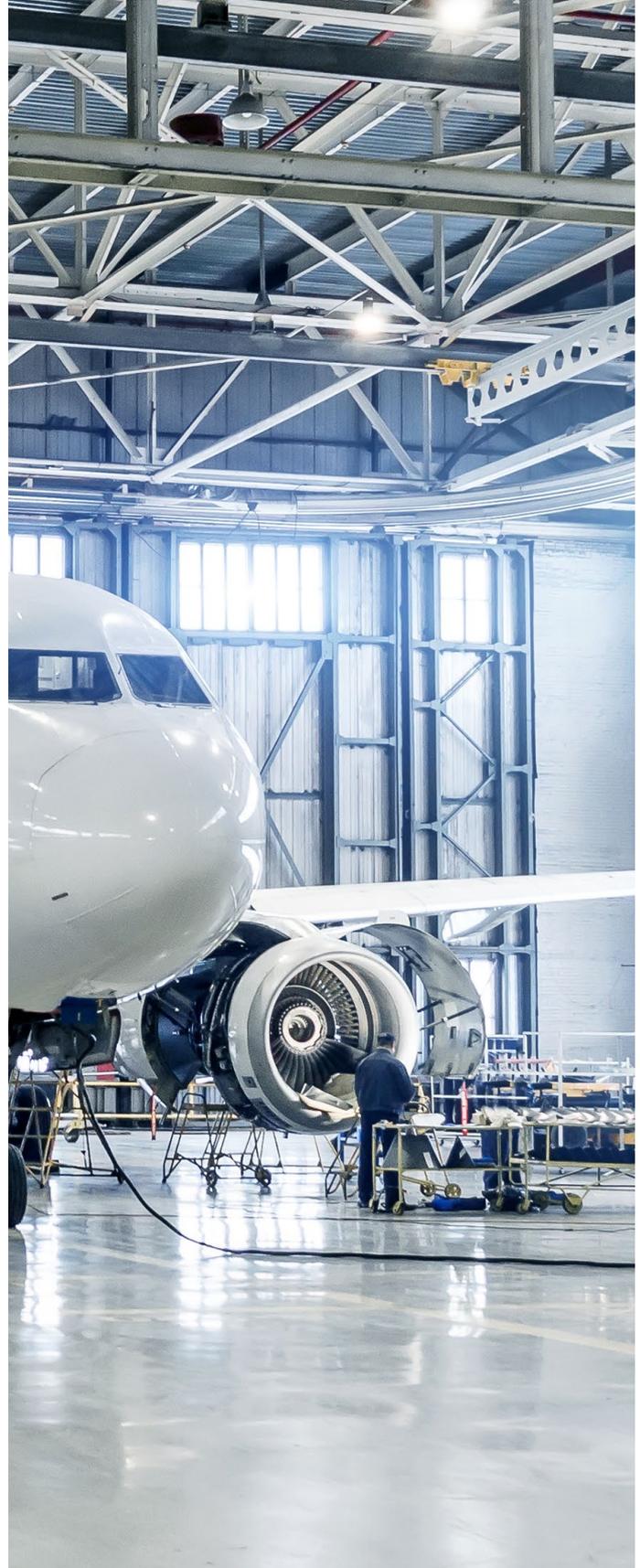


Best Practice Guidelines and Tools

This section summarizes the specific guidance and tools to put effective airport governance into practice and specific solutions that should be adopted, based on the analysis in previous sections of the Toolkit.

This includes:

- **Governance Self-Assessment Checklist:** A self-diagnosis tool to enable States to assess whether appropriate governance is in place, and recommendations on how to address shortcomings with references to lessons learned and best practices within the Toolkit;
- **Decision Making Process:** A Responsible-Accountable-Consulted-Informed (“RACI”) matrix to identify the roles and responsibilities of key stakeholders in airport functions and decision-making processes. A simplified set of stakeholders is used for this analysis to exclude stakeholders with minimal roles in these key functions. A RACI matrix is a tool to assign and be clear on roles and responsibilities for specific functions, activities or decisions. There are alternative frameworks that can be adopted, for example a Recommend-Agree-Perform-Input-Decide (“RAPID”) framework, but a RACI matrix is used for simplicity here, as follows:
 - **Responsible** for completing an activity or making a decision;
 - **Accountable** for the activity or decision, even where responsibility for completing it is devolved to another party;
 - **Consulted** organizations or people need to be actively engaged and input to activities or decisions;
 - **Informed** organizations or people need to be kept updated, but do not contribute directly;
- **Recommended Airport Governance Mechanisms:** Summary of best practice governance mechanisms, forums, committees and working groups that an airport should have in place to implement better governance;
- **Implementation Guidance:** A summary of the key steps to design and implement a stakeholder-inclusive governance operating model.



Governance Self-Assessment Checklist

The following checklist summarizes all areas of airport governance best practice by domain, drawing on the analysis of best practice solutions in this Toolkit. It is intended to be used by government entities, airports and their stakeholders to assess the components of airport governance in place and identify gaps to address in the

governance operating model.

Where a required governance solution is not in place a reference is provided to the relevant section within the Toolkit to identify lessons learned, best practices and relevant guidance on this topic. Further, guidance is provided on defining, designing and implementing a new governance operating model to incorporate all of these requirements in the following section.

Governance Domain	Category	Governance Self-Assessment Checklist	Yes/No	References to Lessons Learned and Best Practices
Policy, Regulation and Government Affairs	Regulation and Structure	Adherence to ICAO obligations, SARPS and policy guidance, and relevant regional initiatives?	{Yes/No}	States are legally bound to meet ICAO obligations, and SARPs represent internationally agreed best practice. Further detail on how to comply with these requirements is available in the Airport Governance Foundations section from page 22.
		Ultimate accountability of the State, irrespective of national legal or regulatory framework, or airport ownership and operating model?	{Yes/No}	
		Transparent reporting of variances to SARPs by CAA within AIP?	{Yes/No}	
		Enactment of primary legislation for aviation sector?	{Yes/No}	States are required to pass primary legislation (Acts of Parliament or Statute) covering aviation law consistent with the requirements of the Chicago Convention to regulate civil aviation and enforce such regulations. Further detail on the requirements for primary legislation is available in the Airport Governance Foundations section from page 22.
		Certification of aerodromes by technical / safety regulatory under ICAO requirements?	{Yes/No}	States are obliged to meet obligations under the Chicago Convention, and significant guidance is available to meet this and ICAO's SARP best practices for certification of aerodromes. Further detail is available in the Airport Governance Foundations section from page 24.
		Clearly defined roles and responsibilities of all stakeholders in airport operation, ownership and regulation, or clear business case and rationale for any blending of roles?	{Yes/No}	Best practices support the clear separation of different roles and responsibilities for different regulatory functions from airport operations to create clarity and prevent conflicts of interest. A summary of Economic Oversight is provided on page 26 within the Airport Governance Foundations section, followed by a Typical National Airport Governance Structure on page 30.
		Clearly defined and legally enforced mandate, terms of reference and funding and resources for economic and safety regulators?	{Yes/No}	
		Government-independent regulatory authorities, separate from operations, ownership and political influence?	{Yes/No}	
		Separation of economic and safety regulatory functions?	{Yes/No}	
		Clearly defined legal rights for regulator, including ability to demand financial and operational performance data and transparent reporting?	{Yes/No}	

Governance Domain	Category	Governance Self-Assessment Checklist	Yes/No	References to Lessons Learned and Best Practices
Policy, Regulation and Government Affairs (Cont'd.)	Regulation and Structure (Cont'd.)	Mandate for regulator to participate in all relevant industry forums and working groups?	{Yes/No}	In addition to the basic foundations of airport governance in relation to sector regulation and structure, there are a number of important best practices for its implementation. Regulatory frameworks need to be fully implemented and allow for meaningful engagement between different stakeholders. Best practice guidance and lessons on this are identified in The Core: Policy, Regulation and Government Affairs section, particularly the sub-sections on Regulation and Airport Stakeholder Consultation from page 51.
		Separation and independence of Aircraft Accident Investigation authority?	{Yes/No}	
		Regulatory framework established and fully implemented by regulator?	{Yes/No}	
		Regulatory working group to facilitate interaction between regulator and airport owner/operator, airlines and key stakeholders?	{Yes/No}	
		Multi-stakeholder aviation dispute resolution mechanism to deal with complaints, in line with regulatory framework?	{Yes/No}	
		Regulatory mechanism for capital investment planning to assess capital expenditure changes with multiple stakeholders?	{Yes/No}	
	Policy and Planning	Multi-stakeholder participation in national infrastructure planning framework?	{Yes/No}	Jurisdictions often do not always have a formal national aviation sector plan in place, and this does not always incorporate appropriate stakeholder feedback at all of the required levels. This can undermine efforts to maximize economic benefit from the aviation industry. Further detail on such mechanisms is included in The Core: Policy, Regulation and Government Affairs section from page 49.
		National aviation planning committee for coordination with national aviation strategy-related stakeholders, and national aviation plan approved and implemented?	{Yes/No}	
		Regional infrastructure planning group for feedback on town planning and related infrastructure development?	{Yes/No}	
Community and Environment	Consultation Framework	Defined and open consultation framework (preferably in law) for engagement with all airport stakeholders on the airport's social, economic and environmental impacts?	{Yes/No}	Lessons learned show a clear need for effective stakeholder engagement mechanisms, including with airport neighbors, passengers and other impacted stakeholders. Leading practices have included consultative frameworks and governance mechanisms within a legislative framework. Further guidance on the best practice examples, participation and example terms of reference for such mechanisms are included in the Community and Environment section from page 57.
		Passenger advisory group to improve quality of passenger services through airport current operations and future expansion plans?	{Yes/No}	
		Airport environmental working group?	{Yes/No}	
		Airport noise monitoring consultative group?	{Yes/No}	
		Enforcement of airport reporting on environmental, social and governance matters?	{Yes/No}	

Governance Domain	Category	Governance Self-Assessment Checklist	Yes/No	References to Lessons Learned and Best Practices
Community and Environment (Cont'd.)	Consultation Framework (Cont'd.)	Defined processes for engagement with local government and related entities, for example formation of regional transport working group?	{Yes/No}	In addition to consultation with the public, close working relationships between an airport, local government entities and business can improve local economic development and attract investment. Further best practice detail is available within the Community and Environment section, specifically the Collaborative Planning with Local Government and Business sub-section from page 60.
Safety and Security	Safety and Security	Adherence to international obligations as translated into primary legislation and national regulations?	{Yes/No}	As defined by ICAO, States are ultimately responsible for safety and security oversight, and the CAA retains responsibility under primary legislation to oversee technical safety matters. Detail on international obligations is provided in the Airport Governance Foundations section from page 22, and the Safety and Security section from page 64.
		Safety Management System ("SMS") defined and in place in accordance with ICAO requirements?	{Yes/No}	ICAO require that all aerodromes have a SMS in place, and guidance on the requirements of an SMS are included within the Safety and Security section from page 64.
		Airport Safety Committee consisting of all large organizations that operate in airside areas?	{Yes/No}	Given the criticality of safety and security, and the involvement of different stakeholders in delivering them, a range of committees and governance mechanisms are recommended to safeguard airport safety and security. Guidance in relation to these is included within the Safety and Security section from page 64.
		Airport Security Committee to advise on all aspects of security and ensure national standards are adhered to?	{Yes/No}	
		Aerodrome Emergency Committee ("AEC") responsible of preparing an aerodrome's emergency planning, readiness and testing?	{Yes/No}	
		Safety teams in charge of ensuring a safe environment and recommending mitigation strategies for ramp and local runway operations?	{Yes/No}	
		Fire Safety Committee to advise and auction fire safety strategy across the airport?	{Yes/No}	
		Incident-response protocols clearly defined and adhered to?	{Yes/No}	
		Multi-stakeholder continuous improvement programs in place for emergency services, security services, border control and health and safety?	{Yes/No}	
Adherence to international and national health standards with plans and procedures in place?	{Yes/No}			

Governance Domain	Category	Governance Self-Assessment Checklist	Yes/No	References to Lessons Learned and Best Practices
Operations	Airport Network	National or regional platform for real-time data operational data sharing between stakeholders to optimize airport operations and on-time-performance?	{Yes/No}	There is a growing best practice trend for national and regional collaboration mechanisms to improve network and individual airport performance. Best practices and lessons learned are included in the Operations section in the National and Regional Industry Collaborations sub-section from page 71.
		Airport Collaborative Decision Making (A-CDM) process to improve operational efficiencies of all airport operators?	{Yes/No}	
	Governance Design	Design of operational governance arrangements, forums and working groups agreed by stakeholders (drawing on example designs set out in this Toolkit) and made publicly available?	{Yes/No}	Best practices support transparency in the design of governance arrangements, forums and working groups, including their publication to ensure airport stakeholders are aware of these, and have opportunities to contribute to continually improve their effectiveness. A wide range of examples of such forums and how they can be put into practice are included in the Operations section in the Typical Airport Operational Governance Forums from page 76.
		Committee to provide oversight of obligations of all aerodrome operating procedures and planning processes?	{Yes/No}	
		On-airport bylaw with contractual obligations for suppliers to adhere to by-laws?	{Yes/No}	
	Operational Governance	Slot performance committee to improve carrier performance and reliability, and mitigate slot misuse?	{Yes/No}	
		Establishment of a multi-stakeholder Airport Operations Center?	{Yes/No}	
		Airline Operators Committee ("AOC") to structure operational engagement between airport and airlines?	{Yes/No}	
		Implementation of an Aircraft Facilitation Program (FAL) to maximize efficiency of border clearance?	{Yes/No}	
	Capital Projects	Capital Expansion Planning	Adherence to best practices for consultation, for example, IATA's "Airport Infrastructure Investment – Best Practice Consultation"?	{Yes/No}
Airport Consultative Committee ("ACC") in place to consult with users on airport infrastructure requirements?			{Yes/No}	
Airport master plan based on common airline and airport business plan?			{Yes/No}	
Pre-agreed cost-benefit analysis or business case mechanisms for capital projects?			{Yes/No}	
Pre-defined interaction between capital project business case and economic regulation?			{Yes/No}	

Governance Domain	Category	Governance Self-Assessment Checklist	Yes/No	References to Lessons Learned and Best Practices
Capital Projects (Cont'd.)	Capital Project Delivery	Mechanisms for stakeholder engagement and collaboration in planning and programming phases?	{Yes/No}	Specific mechanisms for engaging with on-airport stakeholders during a capital project have been shown to reduce the impact on different stakeholders as well as reduce failure that may negatively impact time, cost or scope. Best practice guidance is included within the Capital Projects section, specifically the Capital Project Delivery sub-section from page 85.
		Mechanisms for regular stakeholder engagement during capital project delivery to minimize operational disruption from live capital projects?	{Yes/No}	
	ORAT	Operational Readiness and Airport Transfer ("ORAT") program with representation of all relevant stakeholders?	{Yes/No}	The need for an ORAT program is well-established, and a summary is included within the Capital Projects section, specifically the Operational Readiness and Airport Transfer ("ORAT") sub-section from page 87.

Decision Making Process: RACI Matrix for Airport Governance

key stakeholders for a selection of key airport functions, structured by each of the domain areas in this Toolkit. A simplified set of stakeholders is used for this analysis to group and exclude stakeholders with minimal roles in these key functions, recognising that there are dozens of airport stakeholders that have been identified in the Airport Ecosystem Stakeholders analysis from page 12.

The RACI matrix defines the roles and responsibilities by

Governance Domain	Key Functions	Key Stakeholder Roles and Responsibilities						
		ICAO and International / Regional Agencies	Government / Transport Ministry	Economic Regulator	Technical / Safety and Standards Regulator	Airport / ANSP Operator	Airline Customers	Community
Policy, Regulation and Government Affairs	Define international obligations and SARPs	Responsible and Accountable (ICAO)	Consulted	Consulted	Consulted	Informed	Informed	Informed
	Enact primary aviation legislation	(Provide Guidance)	Responsible and Accountable	Informed	Informed	Informed	Informed	Informed
	Define national aviation strategy	(Provide Guidance)	Responsible and Accountable	Consulted	Consulted	Consulted	Consulted	Consulted
	Define ownership and operating model	(Provide Guidance)	Responsible and Accountable	Consulted	Informed	Consulted	Consulted	Informed
	Deliver changes in ownership and operating model	(Provide Guidance)	Responsible and Accountable	Consulted	Informed	Consulted	Consulted	Consulted
	Define regulatory framework (oversight), including CAA, and specific operating regulations	(Provide Guidance)	Accountable (ensure independent regulator in place)	Responsible	Responsible	Consulted	Consulted	Consulted
	Conduct regulatory reviews	(Provide Guidance)	Accountable (ensure independent regulator in place)	Responsible	Responsible	Informed	Consulted	Consulted
Community and Environment	Manage community relationships	N/A	Accountable	N/A	Informed	Responsible	Consulted	Consulted
	Manage environmental and sustainability impact	N/A	Accountable	N/A	Informed	Responsible	Consulted	Consulted
	Manage noise	N/A	Accountable	N/A	Informed	Responsible	Consulted	Consulted
Safety and Security	Oversee safety system for civil aviation and implementation of SARPs	(Provide Guidance)	Accountable	N/A	Responsible	Informed	Informed	Informed
	Certify aerodrome	(Provide Guidance)	Accountable	N/A	Responsible	Informed	Informed	Informed
	Manage airside and runway safety	(Provide Guidance)	Accountable	N/A	Accountable	Responsible	Consulted	Informed
	Respond to security or emergency incident	(Provide Guidance)	Responsible and Accountable (for government emergency response)	N/A	Accountable	Responsible	Consulted	Informed
Operations	Conduct asset management	N/A	N/A	Informed **	Consulted	Responsible and Accountable	Consulted	N/A
	Manage operational performance / OTP	N/A	N/A	Informed **	N/A	Responsible and Accountable	Consulted	Consulted
	Manage commercial performance	N/A	N/A	Informed **	N/A	Responsible and Accountable	Consulted	N/A
	Manage ground handling and air cargo	N/A	N/A	Informed **	N/A	Accountable	Responsible	N/A
	Manage ATC	N/A	Accountable**	N/A	Consulted	Responsible (ANSP)	Consulted	Informed
Capital Projects	Develop airport master plan	(Provide Guidance)	Accountable / Consulted*	Accountable or Consulted*	Consulted	Responsible	Consulted	Consulted
	Define future growth and congestion	N/A	Accountable / Consulted*	Consulted	Consulted	Responsible	Consulted	Consulted
	Develop airport conceptual design	(Provide Guidance)	Accountable / Consulted*	Consulted	Consulted	Responsible	Consulted	Consulted
	Plan capital expansion and capacity augmentation initiatives	N/A	Accountable / Consulted*	Accountable or Consulted*	Consulted	Responsible	Consulted	Consulted
	Deliver capital project	N/A	Consulted	Consulted or Informed**	Consulted	Responsible and Accountable	Consulted	Consulted
	Deliver ORAT and handover	N/A	N/A	Consulted or Informed**	Consulted or Informed**	Responsible and Accountable	Consulted	Consulted

* Dependent upon the role of the regulator

** Dependent upon the regulatory model adopted and obligations for performance disclosure

Recommended Airport Governance Mechanisms

The following are the best practice governance mechanisms, forums, committees and working groups that all airports should have in place to implement better governance. The recommendations have been drawn together from the best practices and lessons learned from the prior sections of the Toolkit, with a brief overview of good practices to implement and manage these mechanisms.

Good Practices for Governance Mechanisms

There are common challenges frequently identified in the establishment and ongoing management of formal forums, committees and working groups. These include members being over-committed to too many governance forums, forums being too large or too small, and a lack of discipline in running meetings preventing their desired objectives being met.

Good practices suggest the need to be deliberate in the design of these governance mechanisms, their ongoing management, and in ensuring that their effectiveness is evaluated and a feedback loop applied to improve their effectiveness over time.

In particular, terms of reference or charters for such mechanisms should be developed to ensure clarity of expectations and accountability for outcomes. There is a range of literature available on the topic; for example, the Australian Public Service Commission identifies a number of best practice protocols for establishing and operating effective committees, which include the need to:

- establish clear terms of reference/charters including the purpose and role of the committee, the responsibilities of its members, and its accountability;
- select the right members for the task—whether representative or related to expertise;
- equip members with the skills and resources they need to play an active role in deliberations;
- provide appropriate and skilled secretariat support;
- ensure briefing papers are sent out in a timely manner so that all members have the opportunity to consider them thoroughly;
- develop sound recordkeeping and reporting protocols;
- review committee performance and appropriateness on a regular basis, particularly when the functions of the organization change, to ensure that the number of committees and the workload they create for staff remains reasonable and appropriate;

- ensure [governance forums] are and remain strategically focused, aligned and integrated—developing a work plan for the year ahead can assist with this;
- determine whether committees are ongoing or time/purpose limited.¹²¹

¹²¹ APSC (2007). *Building Better Governance*. [Online] Available at: <https://www.apsc.gov.au/building-better-governance> [Accessed 03/09/2020]

Description of Best Practice Governance Mechanisms

Governance Domain	Best Practice Airport Governance Mechanism	Description of Best Practice Governance Mechanism
Policy, Regulation and Government Affairs	Regulatory Working Group	<p>A working group or forum with representation from the regulator, airport owner/ operator, airlines and other key stakeholders including airport users, with terms of reference in line with the mandate of the regulator. Its purpose is to explore regulatory issues and disputes impacting all stakeholders, as well as solutions to be adopted and implemented. There should be an obligation for all relevant parties to provide a rich data set of information to provide cost-benefit analysis and other evidence associated with different topics, such as airport charges, service quality and infrastructure.</p>
	National Infrastructure Planning Committee	<p>A nationwide committee to assess a country's current and future infrastructure requirements. For airports this will be informed and supported by the national aviation planning committee, and would be a forum for all relevant stakeholders responsible for national infrastructure planning to support the long-term planning of infrastructure requirements. It will allow the aviation sector and airports to benefit from integration with other national infrastructure and transport planning.</p>
	National Aviation Planning Committee	<p>A committee with representation across government and industry focused on continuing to enhance and enable the aviation industry for the betterment of the country through relevant consultation and representation of senior aviation stakeholders influenced by nationally-strategic decisions impacting the sector. Its aim is to facilitate the coordination between aviation and airport stakeholders and national planning organizations and committees related to national aviation strategy. It will also allow airports to benefit from the industry insight airport operators, investors, airlines and their service providers can input to optimizing future plans.</p>
	Regional Planning Working Group	<p>A working group comprising national, regional and local planning representatives to provide feedback on town planning and related infrastructure development, such as road access and airspace.</p>
	Capital Investment Planning Regulatory Mechanism	<p>A mechanism to order the planning stages of a capital investment to enable impacted stakeholders the opportunity to be adequately informed regarding the capital expenditure and resulting impact on airport charges. This forum should also be able to call upon appropriately informed advisors to consider alternative options and the ability to undertake cost-benefit analysis of short listed options.</p>
	Multi-stakeholder Aviation Dispute Resolution Mechanism	<p>A mechanism to deal with complaints between the airport, airlines and customers if the case falls outside the scope of the regulator.</p>
Community and Environment	Community Consultation Framework	<p>A consultation group or committee used to exchange information and promote dialogue between an airport and interested stakeholders, including consultation and feedback on current operations and future developments. It should be independently chaired and comprise membership from stakeholders including local communities, business groups and airport users. The group should explore the social, economic and environmental impacts of the airport and create a forum to foster effective interaction with the local community and travelling public. Following best practices in the UK and Australia, such a framework should ideally be mandated by law.</p>
	Airport Environmental Working Group	<p>A working group that provides a platform for all relevant airport and environmental stakeholders such as the environment ministry to work through current and developing environmental issues and initiatives. There should be a statutory obligation to share relevant environmental data and monitor performance, such as local air quality. It is advocated for a continual improvement target to be set to reduce environmental impact across all agreed KPIs.</p>
	Passenger Advisory Group	<p>A group that aims to improve the quality of service for passenger through the airports current operations and future expansion plans. It comprises of organizations, representing a diverse range of passengers, who meet several times a year to monitor and assess facilities to make further recommendations.</p>

Governance Domain	Best Practice Airport Governance Mechanism	Description of Best Practice Governance Mechanism
Community and Environment (Cont'd.)	Noise Monitoring Consultative Group	An independent group comprising of airport operators and local community representatives set out to advise on and review the impact of aircraft noise exposure on the surrounding community and make recommendations to minimize the effect of aircraft noise. It meets on a quarterly basis with the aim of gathering inputs in the planning and communication of the modernisation of an airports airspace, and agreeing on relevant studies and analysis to be carried out to establish historic changes to flight paths.
Safety and Security	Airport Security Committee	A committee responsible of informing airport operators on national and international aviation security requirements within the airport ecosystem and updating operators on any changes to policy and regulation on a biannual basis. The committee includes all airport operational stakeholders and spans across all elements of security.
	Ramp Operation and Safety Committee	A committee that develops and promotes an airside safety culture to ensure a safe airside environment. Such committees typically meet on a quarterly basis and include representatives from air traffic service providers, airlines and/or aircraft operators, pilots, air traffic controllers associations and any other group with a direct involvement in runway operations.
	Local Runway Safety Team	<p>A team that advises on the appropriate management of potential runway safety risks and issues and recommends mitigation strategies. It comprises of stakeholder representatives from air traffic service providers, airlines and/or aircraft operators, pilots, air traffic controllers associations and any other group with a direct involvement in runway operations.</p> <p>Most safety teams are guided by the ICAO Runway Safety Team Handbook, a widely adopted guideline containing relevant terms of reference, roles and responsibilities and methodology to implementing runway safety for an aerodrome.</p>
	Aerodrome Emergency Committee ("AEC")	A committee aimed at coordinating the responses of different aerodrome and emergency agencies to manage any emergency in or around the aerodrome. It is chaired by a nominated Aerodrome Operator and includes primary emergency services, airlines and other support agencies. Representation is essential for all relevant stakeholders to ensure there is thorough an understanding and stakeholders are prepared for any potential incident.
	Airport Fire Safety Committee	A group of individuals tasked to ensure continued cooperation is maintained between the airport, national fire emergencies services and national or international fire and rescue services associations. It is responsible for advising on and actioning the fire safety strategy across the airport. The committee is to maintain airport accreditation, meet on a regular basis and ensure representation from all on-airport stakeholders and that their employees are appropriately trained.
	Border Control Agencies Group Forum	A forum where issues are identified and solutions are jointly developed in response to changing border control obligations and conditions impacting passenger experience.
Operations	Operational Data Governance Program	<p>A program that encompasses a multitude of stakeholders associated with governing data to monitor and improve the quality of data, leading to improved operational efficiency and capacity utilization of an airport. The program focus can be on:</p> <ul style="list-style-type: none"> • Privacy and protecting sensitive data through classification and the appropriate handling of sensitive data resources; • Improving data integration and analytical capabilities through management of big data and other data resources; and • Improving compliance and reporting capabilities to appease industry, governmental rules and regulatory bodies.

Governance Domain	Best Practice Airport Governance Mechanism	Description of Best Practice Governance Mechanism
Operations (Cont'd.)	Airport Collaborative Decision Making ("A-CDM")	A process aimed at drawing stakeholders together to achieve operational efficiencies and facilitate resilience of airport operations through optimization of resources and improving air traffic predictions. It enables stakeholders to provide transparency, promote collaboration and allow the exchange of relevant, accurate and timely information.
	Ground Handling Agents Working Group	A working group with representation from ground handlings, airlines, airport operators that allows to effectively communicate improvements and changes to operations, as well as resolve issues in a transparent manner.
	Air Cargo Working Group	A group capturing all ground handling agents that meets monthly to discuss improvements and changes to the day-to-day air cargo operations and improve service delivery. The proximity of operations, the high level of interdependence, and the level of international oversight to operations - dynamic in nature - requires close consultation between stakeholders in the air cargo sector and how they interface with other airport stakeholders.
	Aerodromes Operations and Planning Working Group	A working group with a clearly defined mandate that provides oversight of obligations of all operating procedures and planning processes on an aerodrome. It also suggests ways in which to improve airport operations.
	Aircraft Facilitation Program ("FAL")	A ICAO program set out to foster the implementation of Standards and Recommended Practices and the development of modern and innovative strategies for addressing any issues. It is tasked with maximizing the efficiency of border clearance formalities, maintaining high-quality security and effective law enforcement.
	Slot Performance Committee	A committee that meets on a regular basis to advise on enhancing airline OTP and support with the effective utilization of an airport's capacity in an independent manner. It aims to enhance carrier performance and aid effective utilization of airport infrastructure.
	Airline Operators Committee ("AOC")	An AOC is recommended as a separate mechanism to an ACC, which is typically more strategic and planning-focused and covered under the "Capital Projects" domain section above, although the AOC should nominate a representative to participate in the ACC. As an airport moves from development to become more operational the AOC assumes an increasingly active role, although both governance mechanisms are expected to run in parallel. IATA provide "Guidelines for the Establishment of Airline Operators Committee".
Capital Projects	Airport Planning, Design and Development Process	A structured approach to enable end-users to provide input to the planning of an airport development, comprising a process to develop, implement and oversee capital planning collaboratively amongst stakeholders. The stakeholders consist of external stakeholders as well as the airport's leadership teams, capital project team and the other internal stakeholders who meet on a regular basis and share information that allows for an institutionalized and sustainable process during planning. This forum would also enable airport owners and airlines to explore technology solutions and the cost benefit associated with these when compared to capital expansion. It would also provide a structure for incremental capital spend to be assessed and considered in consultation with all relevant airport stakeholders, such as airlines.
	Airport Master Planning Working Group	A working group represented by an airport owner and airport users to support long term future infrastructure planning with representation from the local and national government or environmental agency. This group would oversee the development of the airport master plan, addressing issues and working towards realizing the airport's ultimate vision. It is anticipated that the formal structure and ongoing obligation to have this group permanently established is likely to be influenced by national policy, such as the UK's obligation for airport's to review their airport masterplan on a regular basis.

Governance Domain	Best Practice Airport Governance Mechanism	Description of Best Practice Governance Mechanism
Capital Projects (Cont'd.)	Capital Project Delivery Working Group	<p>A working group established and operational throughout a major airport expansion program. Typically due to the ongoing nature of airport operations and the complexity of these in parallel with construction activities, there are benefits that can be realized by establishing a working group who are tasked with multi-stakeholder collaboration to minimize operational disruption and ensure availability of program data to accommodate operational flexibility. Representation from airport stakeholders and key contractors undertaking works with reliable program data is critical when seeking to minimize disruption.</p>
	ORAT Program	<p>A mechanism that enables coordination between stakeholders and assists in the implementation of a defined operational readiness program and testing for new infrastructure or services, covering operations and maintenance from the design phase through to operational implementation.</p> <p>The program provides clear guidelines to all stakeholders and their respective roles and responsibilities on the overall handover process. The availability of test data and respective operational protocol for data-sharing is critical to ensure plans appropriately reflect the requirements of all stakeholders.</p> <p>Since a major ORAT program is not a steady-state activity for an airport, typically the use of external consultants with experience delivering an ORAT program is recommended.</p>
	Airport Consultative Committee ("ACC")	<p>A committee to provide dialogue between airports and airlines for key decisions across the capital investment lifecycle, "typically concerned with airport infrastructure developments, strategic planning issues and the associated CAPEX program"¹²². IATA provide detailed guidelines for establishing ACCs, which should be focused around the business case and lifecycle for major capital projects, including options and costs, covering: Airport Master Plan; Aircraft Parking; Passenger Terminal; Airside and Landside Infrastructure and Surface Access Systems; Cargo Terminal Developments; Airport Support Facilities; and, Operational Readiness and Testing.</p>

¹²² IATA (2017). *Airport Consultative Committees: Operating Terms of Reference*. [online] Available at: https://www.icao.int/SAM/Documents/2018-ADPLAN/IATA_ACC%20TOR_2017APR.pdf [Accessed 02/02/2020]

Implementation Guidance for Better Airport Governance

Once the appropriate governance solutions have been identified for a given airport, their implementation is a critical concern. Many governance solutions are heavily dependent on the growing role of technology and data to enable effective governance. They are also required to cut across legacy and out-dated operating models, organizational structures and business systems to put governance solutions into place. In many cases, airport companies are simply not set up to achieve this, either within the organization or, as is more important for this Toolkit, with other stakeholders in the airport governance ecosystem.

This means that the effective implementation of governance solutions is in many ways as important as their design. The Toolkit therefore provides some practical considerations for airports and their stakeholders on implementing better airport governance solutions.

A three-stage approach is suggested to enhancing or establishing a new governance operating model, which defines how governance in the airport stakeholder ecosystem is configured and structured. There is no prescriptive guidance on who is responsible for executing these stages, but it is recommended that good practices for project management are adopted and a project governance structure and robust plan are established at the outset, inclusive of the key impacted stakeholders. Detailed stakeholder mapping and consultation throughout the stages are critical to successfully delivering improved and stakeholder-inclusive governance arrangements. The execution of this project could be delivered within existing organization(s), or leveraging external specialists.

Stage 1. Define Airport Governance Operating Model Requirements

The focus of this stage is on defining the requirements of the airport governance operating model. This should be agreed collaboratively with key airport ecosystem stakeholders, with activities including:

- Undertake stakeholder mapping, analysis and initial engagement to ensure full ecosystem of stakeholders are captured, and their interests with respect to the governance operating model well-understood;
- Define the current state of airport governance, including existing governance mechanisms, working groups, committees and their charters;
- Identify applicable regulatory and governance requirements, including:

- Requirements across each of the governance layers, including specific national or local requirements;
- Specific airport characteristics requiring attention and focus, such as a major capital expansion, safety incidents etc.;
- Summarize key governance gaps and challenges and assess maturity of governance model;
- Review best practice guidelines to identify and prioritize governance needs and activities, aligned to local and airport-specific requirements.

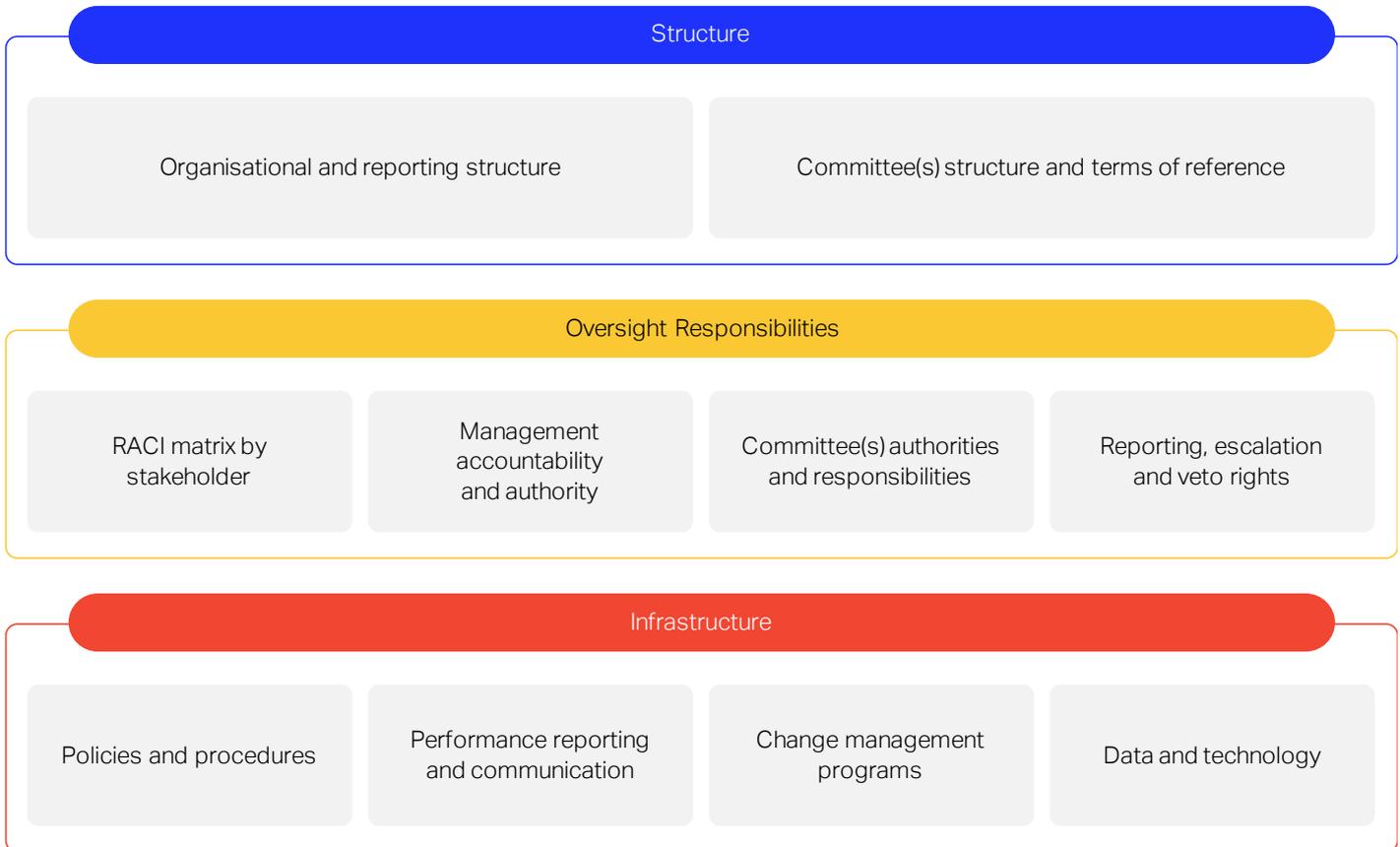
Stage 2. Design Governance Operating Model

The focus of this stage is on designing the future-state for airport governance including the roles and responsibilities, key governance processes and inter and intra-organization stakeholder interactions, with key activities including:

- Define the desired future state for airport governance;
- Detailed design of the governance operating model and its components;
 - Figure 13: Illustrative Governance Operating Model Components describes some of the components that would be expected to form part of this model;
- Develop governance manual reflecting governance operating manual and key governance processes, including:
 - Governance mechanisms, working groups and committees;
 - Terms of reference for working groups and committees, considering mandates, people/membership, process, frequency, representation, authority and independence;
 - Roles and responsibilities matrix of all stakeholders (defining “Responsible-Accountable-Consulted-Informed” parties);
 - Tools, data and information sharing.

It would align to good governance principles of transparency to make appropriate parts of this governance model publicly available, and to test and refine it with key stakeholders.

Figure 13: Illustrative Governance Operating Model Components



Stage 3. Implement Governance Operating Model

The focus of this stage is on creating an implementation plan that allows the governance operating model to be put into practice. Key activities include:

- Define implementation performance measures to track success;
- Define implementation activities and timelines.
- Allocate resources and owners to implementation activities;
- Define implementation governance, performance reporting and review (including stakeholder inputs);
- Implement the plan, tracking progress, risks, and issues, and managing change to the governance operating model design as appropriate.

Additional Implementation Considerations

It should be recognized that defining governance operating model requirements, designing the governance operating model, and planning and carrying out implementation are significant undertakings, particularly

given the required engagement between a variety of stakeholders to create an inter-organization rather than intra-organization governance model.

Further, it is likely to be a live and iterative process, with aspects of the model subject to change or adjustment during or after implementation, and in response to changing regulatory or other requirements. As in many of the guidance documents referenced in this Toolkit, airport requirements and governance best practices are subject to ongoing change. Lessons learned on what works, and what does not, will continue to be developed, and a stakeholder-inclusive process of continuous improvement on the effectiveness of the governance operating model is recommended. It is recommended that the governance operating model is reviewed at least annually.

Key Takeaways

There are a range of basic foundations that set minimum requirements for airport governance, drawing on minimum standards and obligations set out by ICAO based on the Convention on International Civil Aviation, and other requirements from regional and international organizations. In addition to these, national jurisdictions will have a range of public policies, laws and regulations that need to be adhered to, and these need to be considered on a case-by-case basis.

Beyond these foundations, there is a significant need for guidance on best practice solutions for airport governance. The Toolkit provides guidelines for better airport governance, identifying solutions based on each airport governance domain, and examples for specific situations.

Once appropriate governance solutions have been identified, their implementation is a critical concern. Tools are provided which define roles and responsibilities by key airport stakeholders, governance mechanisms which should be in place, and a self-assessment checklist to appraise the governance at any given airport. Implementation guidance is provided to support the definition, design and implementation of the airport governance model in practice.

Appendix 1. Glossary

Abbreviation	Meaning
AAA	Amsterdam Airport Area
AAI	Airports Authority of India
ACA	Airport City Association
ACC	Airport Consultative Committee
ACCC	Australian Competition and Consumer Commission
A-CDM	Airport-Collaborative Decision Making
ACI	Airports Council International
AcoRP	Association of Community Rail Partnerships
ADAC	Abu Dhabi Airport Company
ADePT	Analytical Design Planning Technique
ADR	Alternative Dispute Resolution
AEC	Aerodrome Emergency Committee
AEP	Aerodrome Emergency Planning
AIP	Airport Improvement Plan
AIP	Aeronautical Information Publication
ANPS	Airports National Policy Statement
AOCs	Airline Operators Committees
AP3	Additional Provision 3
APOC	Airport Operations Centers
ASC	Airport Security Committee
ATC	Air Traffic Control
ATM	Air Traffic Management
ATS	Air Traffic Services
BA	British Airways
BAU	Business as Usual
BER	Berlin Brandenburg Airport
BEUC	The European Consumer Organization
CAA	Civil Aviation Authority
CAAM	Civil Aviation Authority of Malaysia
CAGG	Community Aviation Consultation Groups
CAR	Commission for Aviation Regulation
CASSOA	Civil Aviation Safety and Security Agency
CBD	Central Business District
CDM	Collaborative Decision Making
CEO	Chief Executive Officer
CFMU	Central Flow Management Unit
CMA	Continuous Monitoring Approach
CPAE	Coalition to Prevent Westchester Airports Expansion
CSIA	Chhatrapati Shivaji International Airport
DAA	Dublin Airport Authority
DHS	Department of Homeland Security
DoT	Department of Transportation
DXB	Dubai International Airport

Abbreviation	Meaning
EASA	European Union Aviation Safety Agency
ECAC	European Civil Aviation Conference
ESG	Environmental, Social, and Governance
EU	European Union
FAA	Federal Aviation Administration
FAL	Aircraft Facilitation Program
GATCOM	Gatwick Airport Consultative Committee
GDPR	General Data Protection Regulation
GMIAA	Greater Moncton International Airport Authority
GTAA	Greater Toronto Airports Authority
HS2	High Speed 2
HSPI	Health and Safety Performance Index
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
ICC	International Chamber of Commerce
IRG	The Industry Resilience Group
IT	Information Technology
ITS	Innovative Travel Solutions
JFK	John F. Kennedy International Airport
JVC	Mumbai International Airport Private Limited
LACC	London Airport Consultative Committee
LAX	Los Angeles International Airport
LHR	London Heathrow Airport
MAVCOM	Malaysian Aviation Commission
MOT	Ministry of Transport
NAA	National Aviation Authority
NATMAG	Noise and Track Monitoring Advisory Group
NATS	National Air Transportation System
NGO	Non-Governmental Organization
NSA	National Security Agency
OECD	Organization for Economic Co-operation and Development
ORAT	Operational Readiness and Airport Transfer
OTP	Operational Efficiency and On-Time Performance
PAG	Passenger Advisory Group
PANs	Procedures for Air Navigation Services
PFC	Passenger Facility Charges
PP	Process Protocol
PSP	Private Sector Participation
RACI	Responsible-Accountable-Consulted-Informed
RBS	Risk-Based Security
RCAA	Rwanda Civil Aviation Authority
SADC	Schiphol Area Development Company
SAOC	Schiphol Airline Operators Committee
SARPs	Standards and Recommended Practices
SEP	Stakeholder Engagement Process
SES	Single European Sky
SFO	San Francisco International Airport
SMS	Safety Management System

Abbreviation	Meaning
SPC	Slot Performance Committee
TSA	Transportation Security Administration
TSOs	Transmission System Operators
U.S	United States
UK	United Kingdom
USAP	Universal Security Audit Program
USOAP	Universal Safety Oversight Audit Program
WG	Working Group



Appendix 2. Reference Library

Policy, Regulation and Government Affairs

- Airports Commission, *Airport Commission: Final Report* (London, 2015)
- Airports Council International (2019). Passenger Facility Charge (PFC) Program. [online] Available at: <https://www.faa.gov/airports/pfc/> [Accessed 30/01/2020]
- ATRF (2017). [online] Available at: <http://www.atrf.info> [Accessed 30/01/2020]
- CAA, *How the CAA protects consumers and promotes the legal rights of UK air passengers* (2017)
- Civil Aviation Authority (2015). Our statutory duties. [online] Available at: <https://www.caa.co.uk/Our-work/Corporate-reports/Strategic-Plan/Our-statutory-duties/> [Accessed 30/01/2020]
- David, G (2008). *Airport Governance and Regulation: the Evolution over Three Decades of Aviation System Reform*. [online] Available at: <https://www.researchgate.net> [Accessed 30/01/2020]
- District Municipality of Muskoka (2016) *Review of the Governance Structure and Issues at Muskoka Airport*. [online]. Available at: <https://muskoka.civicweb.net/document/28786> [Accessed 30/01/2020]
- Dubai Airports (2019). *Slot Performance Committee & Slot Adherence Policy for Airlines & Aircraft*. [online] Available at: <https://www.acl-uk.org/wp-content/uploads/pdf/DXB%20SPC%20Policy%2020APR15.pdf> [Accessed 02/02/2020]
- European Commission (2013). *NSA Coordination Platform, Terms of Reference* [online] Available at: https://ec.europa.eu/transport/sites/transport/files/modes/air/single_european_sky/doc/2012_08_13_tor_for_nsa_coordination_platform.pdf [Accessed 02/02/2020]
- European Consumer Organization BEUC (2019). *Flexible Electricity Contracts Report*. [online]. Available at: https://www.beuc.eu/publications/beuc-x-2019-016_flexible_electricity_contracts_report.pdf [Accessed: 30/01/2020]
- European Parliament (2016). *The International Civil Aviation Organization* [online] Available at: http://www.europarl.europa.eu/RegData/etudes/ATAG/2016/593483/EPRS_ATA%282016%29593483_EN.pdf [Accessed 30/01/2020]
- IATA and Deloitte (2018). *Airport Ownership and Regulation*. [online] Available at: <https://www.iata.org/contentassets/4eae6e82b7b948b58370eb6413bd8d88/airport-ownership-regulation-booklet.pdf> [Accessed 29/01/2020]
- IATA and Deloitte (2018). *Balanced Concessions for the Airport Industry*. [online] Available at: <http://www.iata.org/policy/infrastructure/Documents/Balanced-concession-for-the-airport-industry.pdf> [Accessed 29/01/2020]
- ICAO, *Airport Economics Manual* (Third Edition, 2013)
- ICAO (2015). *ICAO Core Principles on Consumer Protection*. [online] Available at: https://www.icao.int/sustainability/SiteAssets/pages/eap_ep_consumerinterests/ICAO_CorePrinciples.pdf [Accessed 30/01/2020]
- ICAO. *ICAO Standards and Recommended Practices*. [online] Available at: <https://www.aviation.govt.nz/about-us/who-we-work-with/international-civil-aviation-organization-icao/> [Access date: 30/01/2020]
- ICAO, *Policies on Charges for Airports and Air Navigation Services* (Doc. 9802, Ninth Edition, 2012)
- Malaysian Aviation Commission, *Position Paper: Malaysia's Airports Industry Structure* (2019)
- OECD, *Being an Independent Regulator, The Governance of Regulators* (Paris: OECD Publishing, 2016)

- OECD, *Creating a Culture of Independence, The Governance of Regulators* (Paris: OECD Publishing, 2014)
- OECD, *OECD Best Practice Principles for Regulatory Policy, The Governance of Regulators* (Paris: OECD Publishing, 2016)
- OECD, *The Role of Economic Regulators in the Governance of Infrastructure, The Governance of Regulators* (Paris: OECD Publishing, 2017)
- Ofwat, *Water market governance arrangements* (2013): https://www.ofwat.gov.uk/wp-content/uploads/2015/11/pap_tec201309marketgovernance.pdf
- Oliveira, G. P. *Abuse of dominance in the airport sector, Journal of Transport Literature* (2013), vol. 7, n. 1, pp. 8-51
- Qantas Airways (2019). *Australians Are Getting a Dud Deal*. [online] Available at: <https://centreforaviation.com/members/direct-news/australians-are-getting-a-dud-deal-496985> [Accessed 30/01/2020]
- UK Department for Transport (2018). *Airports National Policy Statement*. [online] Available at: <https://www.gov.uk/government/publications/airports-national-policy-statement> [Accessed 30/01/2020]
- UN Economic Commission for Europe, *Guidebook on Promoting Good Governance in Public-Private Partnerships* (2008)
- YQA (2013). *About Muskoka Airport*. [online] Available at: <https://www.muskokaairport.com/about/> [Accessed 30/01/2020]
- Yusof, A. (2019). *Reconsider MAVCOM-CAAM merger: IATA*. [online] Available at: <https://www.nst.com.my/business/2019/12/550179/reconsider-mavcom-caam-merger-iata> [Accessed 30/01/2020]

Community and Environment

- Airports Commission (2015), *Runway 3 final report*. Available at: <https://www.gov.uk/government/news/airports-commission-releases-final-report> [Accessed 02/02/2020]
- Australian Department of Infrastructure and Regional Development (2018). *Community Aviation Consultation Groups*. Available at: https://www.icao.int/SAM/Documents/2018-ADPLAN/Australia_CACG_Guidelines_2016.pdf [Accessed 02/02/2020]
- CPAE (2019). *Coalition to prevent Westchester airport expansion*. [online] Available at: <https://www.coalition-to-prevent-westchester-airport-expansion.org> [Accessed 02/02/2020]
- Crossrail (2016). *Crossrail 'Learning Legacy' Program*. [online] Available at: <http://www.crossrail.co.uk/news/articles/major-new-crossrail-initiative-to-share-lessons-learned-with-the-wider-industry> [Accessed 30/01/2020]
- Gatwick Airport Consultative Committee. [online] Available at: <http://www.gatcom.org.uk/> [Accessed 02/02/2020]
- Metro Airports, *Planning, Governance and Economic Development in Airport Areas* (2019)
- International Transport Forum (2017). *Airport Site Selection*. [online] Available at: <https://www.itf-oecd.org/airport-site-selection> [Accessed 02/02/2020]
- National Rail. *Station friends groups*. Available at: <https://www.networkrail.co.uk/communities/community-rail/station-friends-groups> [Accessed 30/01/2020]
- UK Department for Transport, *Guidelines for Airport Consultative Committees* (2014)

Safety and Security

- Abu Dhabi Airports Company (2011). *ADAC Airport Working Rules*. [online] Available at: <http://www.adac.ae> [Accessed 30/01/2020]

- ACI. *Safety Management Systems (SMS)*. [online] Available at: <https://aci.aero/about-aci/priorities/safety/sms/> [Accessed 30/01/2020]
- African Development Bank Group (2013). *Rwanda Transport Sector Review and Action Plan*. [online] Available at: <https://www.afdb.org> [Accessed 30/01/2020]
- Aviation Security Advisory Committee (2015). *Final Report of the Aviation Security Advisory Committee's Working Group on Airport Access Control*. [online] Available at: <https://www.hsd.org/?abstract&did=764926> [Accessed 30/01/2020]
- Davidson, J. (2019). *Your airport security line could get longer next year – and TSA officers are not a happy crew*. [online] Available at: https://www.washingtonpost.com/politics/your-airport-security-line-could-get-longer-next-year/2019/06/11/497dc292-8c8a-11e9-adf3-f70f78c156e8_story.html [Accessed 30/01/2020]
- European Organization for the Safety of Air Navigation (2013, Version 2). *Manual for National ATM Security Oversight*. Available at: https://www.eurocontrol.int/sites/default/files/2019-06/13_121_manual_for_national_atm_security_oversight_v2_0_signed.pdf [Accessed 02/02/2020]
- ICAO (2015). *Annual Report of the ICAO Council*. [online] Available at: <https://www.icao.int/annual-report-2015/Pages/all-strategic-objectives-nclb-initiatives.aspx> [Accessed 30/01/2020]
- ICAO, *Manual on Certification of Aerodromes*, (First Edition, 2001)
- ICAO, *Safety Oversight Manual, The Establishment and Management of a State's Safety Oversight System*, (Second Edition, 2006)
- IOSR-JHSS (2016). *Assessment Of The Security Preparedness And Adherence To International Civil Aviation Standards At Wilson Airport*. [online] Available at: www.iosrjournals.org [Accessed 30/01/2020]
- UK Department of Transport, *Aviation 2050 Strategy* (December 2018 Consultation)

Operations

- Federal Aviation Administration. *Improving Air Traffic Management Together*. [online] Available at: <https://cdm.fly.faa.gov/> [Accessed 30/01/2020]
- Florida Tech (2019). *Major Challenges in Airport Design*. [online] Available at: <https://www.floridatechonline.com> [Accessed 02/02/2020]
- Gatwick Airport (2019). *Gatwick Supply Chain*. [online] Available at: <https://www.gatwickairport.com> [Accessed 02/02/2020]
- IATA (2018). *Airport-Collaborative Decision Making: IATA Recommendations*. [online] Available at: <https://www.iata.org/contentassets/5c1a116a6120415f87f3dadfa38859d2/iata-acdm-recommendations-v1.pdf> [Accessed 30/01/2020]
- IATA (2018). *Airport Consultative Committees: Airport Planning Seminar for the SAM Region*. [online] Available at: https://www.icao.int/SAM/Documents/2018-ADPLAN/2.6%20Airport%20Consultative%20Committees_MarkRodrigues_v1.0.pdf [Accessed: 02/02/2020]
- IATA (2019). *Worldwide Airport Slots: Fact Sheets*. [online] Available at: <https://www.iata.org/en/iata-repository/pressroom/fact-sheets/fact-sheet--airport-slots/> [Accessed 30/01/2020]
- International Airport Review (2019), *British Airways Witnesses Yet Another IT System Failure*. [online] Available at: <https://www.internationalairportreview.com/>; <https://www.internationalairportreview.com/news/99786/british-airways-it-systems-failure/> [Accessed 30/01/2020]
- Mcgeenhan, P. (2018). *Report Offers 50 Ways to Avoid the Chaos That Crippled Kennedy Airport*. [online] Available at: <https://www.nytimes.com/2018/05/31/nyregion/kennedy-airport-snowstorm-report.html> [Accessed

02/02/2020]

- Mumbai International Airport Private Limited (2006). *Operation, Management and Development Agreement April* [online] Available at: http://www.civilaviation.gov.in/sites/default/files/moca_000979.pdf [Accessed 02/02/2020]
- Passur Aerospace (2018). *PASSUR Aerospace Contracts With Dallas/Fort Worth International Airport to be The Launch Customer For PASSUR's New Solution to Help Airlines Stay on Schedule During Major Weather Events.* [online] Available at: <https://www.passur.com/2018/04/passur-aerospace-contracts-with-dallas-fort-worth-international-airport-to-be-the-launch-customer-for-passurs-new-solution-to-help-airlines-stay-on-schedule-during-major-weather-events-regi/> [Accessed 30/01/2020]
- Perth Airport. *Operational Engagement.* [online] Available at: <https://www.perthairport.com.au/Home/corporate/work-with-us/operating-at-perth-airport/operational-engagement> [Accessed 02/02/2020]
- Sackel, A. (2018). *Improvements to be made at JFK.* [online] Available at: https://www.qchron.com/editions/queenswide/improvements-to-be-made-at-jfk/article_4b6bc77d-0db6-57d9-bb4a-2d20b8d4ef4e.html [Accessed 02/02/2020]
- Schiphol Airline Operators Committee. [online] Available at: <https://saoc.genkgoweb.com/> [Accessed 02/02/2020]
- Vanderhey Shaw, K. (2018) *Dallas Fort Worth International Improves Diversion Process with New Software.* [online] Available at: <https://airportimprovement.com/article/dallas-fort-worth-int-l-improves-diversion-process-new-software> [Accessed 30/01/2020]

Capital Projects

- ACI and IATA, *Airport Development Reference Manual* (Edition 11, 2019)
- Australian Department of Infrastructure and Regional Development (2016), *Community Aviation Consultation Groups (CAGG) Guidelines.* [online] Available at: https://www.icao.int/SAM/Documents/2018-ADPLAN/Australia_CACG_Guidelines_2016.pdf [Accessed 30/01/2020]
- British Airways (2008). *Move of operations into Heathrow Terminal 5.* [online] Available at: <http://callear.com/WTPF/?p=473> [Accessed 30/01/2020]
- CAPA (2016). *Airport Privatization in Canada: Transport Policy Review.* [online] Available at: <https://centreforaviation.com/analysis/reports/airport-privatization-in-canada-transport-policy-review-271346> [Accessed 30/01/2020]
- HS2. *HS2 Euston station design development.*[online] Available at: <https://hs2ineuston.commonplace.is/schemes/proposals/hs-2-euston-station-design-development/details> [Accessed 30/01/2020]
- IATA (2017). *Airport Consultative Committees (ACCs): Operating Terms of Reference.* [online] Available at: https://www.icao.int/SAM/Documents/2018-ADPLAN/IATA_ACC%20TOR_2017APR.pdf [Accessed 30/01/2020]
- IATA, *Airport Consultative Committees* (Presentation for the Airport Planning Seminar for the SAM Region, 2018)
- IATA. *Airport Development.* [online] Available at: <https://www.iata.org/en/programs/ops-infra/airport-infrastructure/airport-development/> [Accessed 30/01/2020]
- Long, J. (2017). *Importance of Airport Stakeholder Outreach.* [online]. Available at: <https://www.aviationpros.com/airports/blog/12388063/importance-of-airport-stakeholder-outreach> [Accessed 30/01/2020]
- OECD, *Getting Infrastructure Right: A Framework for Better Governance* (Paris: OECD Publishing, 2017)
- OECD, *Governance failures in the management of the Berlin-Brandenburg International Airport* (OECD Publishing Paris, 2016)

- Robert K. and Wrede, J.D. (2009). *Dispute Resolution Boards and the Hong Kong Airport*. [online] Available at: <https://www.mediate.com/> [Accessed 30/01/2020]
- OECD, *Towards a Framework for the Governance of Infrastructure* (Paris: OECD Publishing, 2017)
- Wahab, H. and Dulaimi, M. (2013). *Design Process and Stakeholders Management in Airport Construction*. [online] Available at: <https://www.irbnet.de> [Accessed 30/01/2020]
- Woodrow Wilson School of Public and International Affairs (2017). *Reforming the Port Authority of New York and New Jersey*, Graduate Policy Workshop Report. [online] Available at: <https://www.princeton.edu/sites/default/files/content/WWS%20591a%20Port%20Authority%202017.pdf> [Accessed 30/01/2020]
- World Bank, *Investment in Air Transport Infrastructure: Guidance for Developing Private Participation* (2010)

Additional IATA Guidance Material

- IATA. *Airport Capacity and Level of Service*. [online] Available at: <https://www.iata.org/contentassets/d1d4d535bf1c4ba695f43e9beff8294f/airport-capacity-and-level-of-service.pdf> [Accessed 02/02/2020]
- IATA. *Airside Infrastructure*. [online] Available at: <https://www.iata.org/contentassets/d1d4d535bf1c4ba695f43e9beff8294f/airside-infrastructure.pdf> [Accessed 02/02/2020]
- IATA. *Airport Infrastructure Investment – Best Practice Consultation*. [online] Available at: <https://www.icao.int/SAM/Documents/2018-ADPLAN/Final%20Draft%20-%20IATA%20Airport%20Infrastructure%20Investment%20BP%20consultation-CLEAN.pdf> [Accessed 02/02/2020]
- IATA. *Conceptual Planning Review Service*. [online] Available at: <https://www.iata.org/contentassets/d1d4d535bf1c4ba695f43e9beff8294f/conceptual-planning-reviews.pdf> [Accessed 02/02/2020]
- IATA. *Environmental Issues*. [online] Available at: <https://www.iata.org/contentassets/d1d4d535bf1c4ba695f43e9beff8294f/environmental-issues.pdf> [Accessed 02/02/2020]
- IATA. *IATA Level of Service Best Practice*. [online] Available at: <https://www.iata.org/contentassets/d1d4d535bf1c4ba695f43e9beff8294f/airport-development-level-service-best-practice.pdf> [Accessed 02/02/2020]
- IATA. *Master Planning*. [online] Available at: <https://www.iata.org/contentassets/d1d4d535bf1c4ba695f43e9beff8294f/master-planning.pdf> [Accessed 02/02/2020]
- IATA. *New Procedures for the Successful Opening of a New Airport*. [online] Available at: <https://www.iata.org/contentassets/d1d4d535bf1c4ba695f43e9beff8294f/new-airport-checklist-procedures.pdf> [Accessed 02/02/2020]
- IATA. *Passenger Terminal Design*. [online] Available at: <https://www.iata.org/contentassets/d1d4d535bf1c4ba695f43e9beff8294f/passenger-terminal-design.pdf> [Accessed 02/02/2020]
- IATA. *World Class Airports – Best Practice*. [online] Available at: <https://www.iata.org/contentassets/d1d4d535bf1c4ba695f43e9beff8294f/world20class20airports20best20practice.pdf> [Accessed 02/02/2020]

This document has been prepared by Deloitte Professional Services (DIFC) Limited for IATA, and includes certain statements which represent the views of IATA and not necessarily those of Deloitte Professional Services (DIFC) Limited.

This publication has been written in general terms and therefore cannot be relied on to cover specific situations; application of the principles set out will depend upon the particular circumstances involved and we recommend that you obtain professional advice before acting or refraining from acting on any of the contents of this publication.

Deloitte Professional Services (DIFC) Limited ("DPSL") would be pleased to advise readers on how to apply the principles set out in this publication to their specific circumstances. DPSL accepts no duty of care or liability for any loss occasioned to any person acting or refraining from action as a result of any material in this publication.

About Deloitte

Deloitte & Touche (M.E.) LLP ("DME") is the affiliate for the territories of the Middle East and Cyprus of Deloitte NSE LLP ("NSE"), a UK limited liability partnership and member firm of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee ("DTTL").

Deloitte refers to one or more of DTTL, its global network of member firms, and their related entities. DTTL (also referred to as "Deloitte Global") and each of its member firms are legally separate and independent entities. DTTL, NSE and DME do not provide services to clients. Please see www.deloitte.com/about to learn more.

Deloitte is a leading global provider of audit and assurance, consulting, financial advisory, risk advisory, tax and related services. Our network of member firms in more than 150 countries and territories, serves four out of five Fortune Global 500® companies. Learn how Deloitte's approximately 300,000 people make an impact that matters at www.deloitte.com.

DME is a leading professional services firm established in the Middle East region with uninterrupted presence since 1926. DME's presence in the Middle East region is established through its affiliated independent legal entities, which are licensed to operate and to provide services under the applicable laws and regulations of the relevant country. DME's affiliates and related entities cannot oblige each other and/or DME, and when providing services, each affiliate and related entity engages directly and independently with its own clients and shall only be liable for its own acts or omissions and not those of any other affiliate.

DME provides audit and assurance, consulting, financial advisory, risk advisory and tax services through 26 offices in 14 countries with more than 5000 partners, directors and staff.

About Deloitte in the Dubai International Financial Centre

Deloitte Professional Services (DIFC) Limited is incorporated in the Dubai International Financial Centre ("DIFC"), with commercial registration number CL0748 and is registered with the Dubai Financial Services Authority ("DFSA") as a Designated Non-Financial Business or Profession. DPSL is a sublicensed affiliated entity of DME. DPSL has a 100% wholly owned subsidiary in the DIFC namely Deloitte Corporate Finance Advisory Limited (DCFAL) which has commercial registration CL2220. DCFAL is regulated by the DFSA and licensed to provide regulated financial advisory services. DPSL & DCFAL co-inhabit with their principal place of business and registered offices at Al Fattan Currency House, Building 1, 5th Floor, Dubai International Financial Centre, Dubai, United Arab Emirates. Tel: +971 (0) 4 506 4700 Fax: +971 (0) 4 327 3637.