# Success Factors of Airport Management Groups

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**Abstract**

In an era of hyper-competition, airports serve various demands and play a critical role in enhancing regional and global economic growth. But hastening economic development is the final result of the way airport management consortiums have evolved over the last quarter of a century, increasing traffic, developing market-oriented solutions and outlining responsible business commitment. Airport groups have evolved in parallel with airline multi-brand groups, allowing together the development of new destinations, impacting capacity and optimizing traffic layout. The accelerated manner in which global airport groups have progressed since the beginnings of airport privatization is analyzed by the authors and performance metrics showing business development, improved services and enhancement in international competitiveness are researched. Also, the quality of airport administration is reviewed through the strategies, objectives, activities and results. Commencing by analyzing airport companies' proficiency, financial and non-financial indicators, the authors determine if there is a connection between market experience and performance and show how the global groups have established their positions as leading consortiums, adapting to the business environment.

After studying the visions of airport investors/operators that are setting standards worldwide, concentrating their efforts on economic, social and environmental priorities, the paper addresses the strategies and programs that influence airport development and boost regional economic activity. The authors' exploratory analysis ultimately materializes in a risk assessment associated to current influences of airport groups and indicates that further challenges for global airport groups mean focusing their efforts in electing the best strategies and policies for improving efficiency through responsible business.

**Keywords**

Airport management groups, globalization, investments, ownership, organization.

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## Introduction

Globalization, as well as the liberalization of air transport have had profound implications for the aviation industry, not only on the demand facet, with results in important shifts, but also on the supply side, where international policy coordination by governments and the private sector has affected the industry (Button, 2008). Aviation contributes with a considerable 4.1% (i.e. \$3.5 trillion) to the global economy and is expected to provide more than 143M jobs and generate \$6.3 trillion in revenue by 2038 (ATAG, 2021). This important development has impacted the organization and business model of air transport providers, including all actors: airlines, airports, ANSP, handling agents, etc.

The creation of airport groups is for the most of them also linked to deregulation and ease of access to the air transport market. Elimination of government-imposed requirements and price restrictions on airlines applies since 1978 in America, but in the field of European international air transport it was a process that took place starting from the late 1980s. From that point, providing airports organizational models that would allow improved operations than those offered by the public service became imperative. Another determinant factor for the modification of the airport network is privatization. Airport privatization seems to be a measure of success (Graham, 2020); after 34 years since it began, a great number of European airports have turned to private shareholders: 41% in 2016 and more than 50% in 2018 (Sadler, 2016), (ACI, 2019). Airport transfer in private property is achieved by different methods: shareholding, strategic partnerships or through private management contracts. The extent of private sector participation differs in various markets globally. Although there is still a debate whether privatization has a positive impact on airport performance and efficiency, some researchers believe that it produces important benefits. (Aguirre, Mateu and Pantoja, 2019) and (Rolim, Bettini and Oliveira, 2016) consider that passenger traffic growth is the aftermath of privatization. Privatization has impacted the market structure and airport operational models, transforming the business into a proactive, adaptable and marketing-driven one (Jarach, 2001), interested in prioritizing capacity, boosting profit and helping low-cost carrier expansion (Pitt, van Werven and Price, 2011), regional economic and social development.

Differences between airport managing groups and individual operators have been noted, mirrored by the resources used, services and management expertise provided. There is a strong tendency to form airport groups with important capital, which act either nationally or globally. An unprecedented globalization of the airport industry has as consequence the raising of state-to-state connections, passenger mobility and the new relationship between the globalized airport industry and economic and labor market development, including international tourism sector.

The airport group, which consists of more than two airports under a sole ownership structure operated at least at a multinational level (ICAO, 2013), has become a popular business model, widely seen as a success story. Globalization shows a significant effect on operational performance (Kuz and Miskinia, 2021), impacting the integration of local and national economies into a worldwide market (Lioutov, 2019). On the other hand, with a profit motive, privatization brought with it the adoption of a business management philosophy, with important measurable strategic objectives. So, the paper analysis if along with globalization, airport privatization is delivering performance and efficiency in airport operations.

## 1. Research methodology

The research methodology outlines a qualitative approach based on the examination of data concerning the situational analysis of global airport management groups' business dynamics and was completed by the authors' discussions with stakeholders: airport management and airlines representatives, airport service providers, academics, international regulation institutions and R&D institutes during a Focus Group carried out by the UNESCO Chair of University Politehnica of Bucharest through the Erasmus+ Project: Knowledge Alliance in Air Transport (KAAT). The objectives of the Focus Group were directed towards identifying main sources and drivers of change in air transport, but also aviation professional dynamics. This way, the authors were able to clarify how changes in airport management and business models have reflected in the aviation industry.

The paper debuts with a hermeneutic approach, capitalizing on a critical interpretation of the theoretical positions presented by selected authors regarding airport privatization, the development of airport groups in the context of globalization and their impact on airport efficiency and performance. The research methodology includes an extensive documentation component, the authors consulting annual reports, existing statistics, questionnaires and case studies, which offered the perspective of an exploratory, comparative and interpretative approach. Thus, the study is supported by conceptual reconstruction and analytical observation for generating different hypotheses. After the review of secondary data (scientific research and aviation associations and regulators); the importance of airport groups, key results, prospects and potential were outlined. The top airport management consortiums goals, financial and managerial results and further expected performance have been analyzed in order to evaluate the *must-have* and *nice-to-have* factors of success, the risks and mitigation actions associated to airport groups operation and their impact on increasing airport capacity, connectivity and regional development.

## 2. The importance of creating airport groups

A great number of commercial airports around the world now have some type of private administration or ownership engagement, indicating that ownership and management of airports has shifted away from the state/public sector. This is not a new idea, "airport commercialization" with its debut in the 70's, was followed by the wave of airport privatizations in the 1990's, which involved a major change in optics regarding quality, competitiveness and performance. The concession model, particularly the build-operate-transfer (BOT) form and variations thereof, became the defining model of international private sector participation in the airport business, allowing foreign businesses to finance, design, construct, own and operate airport infrastructure. Augustyniak (2009) defines five types of privatization, showing that the preferred model in Europe is the sale of equity. Taking a closer look on airport privatization; purchasing, owning or investing in airports outside one's nation is a natural evolution of one's own country's growth and development (Budd and Ison, 2021; Tang, 2021). The greater role of the private sector is that it can provide the appropriate level of business portfolio diversification while aligning their actions with current international trends for business success.

The internationalization process resulted in a successful transfer of operation and management expertise for airport groups through various types of involvement, ranging from minor advisory projects and short-term management contracts to full divestiture via asset sale (Graham, 2014). The ability to provide organizational model that would allow faster and more flexible (optimized) operations and facilitate substantial investments (for example in infrastructure) are key involvement of the private sector. Airport groups take advantage of the synergies created by their combined roles as operators and managers to predict and optimize investments. The airport groups can create open-ended investment scenarios using advanced planning tools (Master Plans) and systems for managing the infrastructure life cycle, such as BIM (Building Information Modeling), which cater to the demands of all stakeholders, allow for the prioritization of projects and the definition of airport size and capacity (EUROCONTROL, 2016; Koseoglu, Sakin and Arayici, 2018).

Airport investors might be airport operators, financial funds or infrastructure professionals (eg. Aéroport de Paris Management, AviAlliance, Ferrovial Aeropuertos, Fraport, or VINCI Airports – which are worldwide airport investors based in Europe) (ACI, 2019). The growth of airport groups occurs alongside with the growth of airline management groups, developing a relationship meant to drive business growth (Zaharia, et al., 2020), increase the number of destinations, traffic and airport capacity (Figure no. 1).

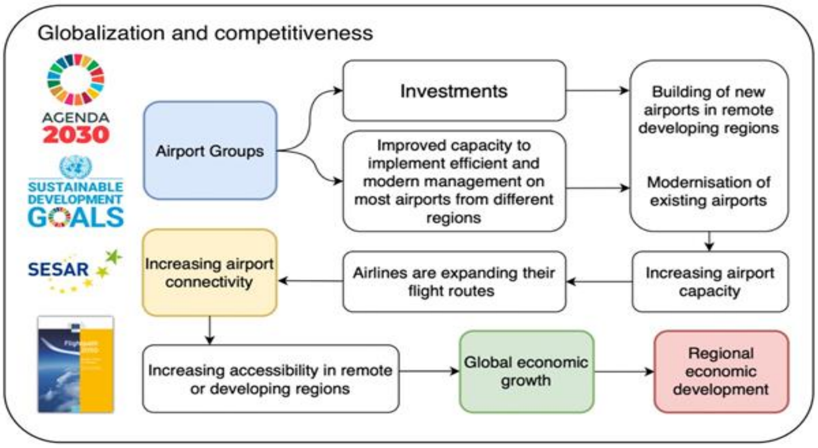


**Figure no. 1. The impact of airport groups on airport capacity and regional economic development**

Specialists consider that by involving airlines in the ownership structure (as did Fraport), the airport group gains more from developing new flight routes. AENA signed a contract with Air Europa and Skyteam Alliance in 2013 for the development of a hub at the 3 terminals in Madrid-Barajas airport (AENA, 2021). The largest Spanish airline, Vueling, has a total of 11 hubs, 8 of which are in Spain, owned by AENA. Iberia Lineas Aereas de Espana has 7 hubs, 6 of which are owned by AENA, and Air Europa has 2 hubs, both owned by AENA. Iberia is part of the One World alliance, and Air Europa is part of the Sky Team (AENA, 2021). The two alliances, along with Star alliance operate numerous routes to airports in the AENA network (Table no. 1):

**Table no. 1. Destination and route development of airline alliances in parallel with airport groups**

| Destination | Spain | Mexico | Brazil | Colombia | Jamaica |
|---|---|---|---|---|---|
| Alliance | Number of destinations | | | | |
| One World | 30 | 7 | 4 | 2 | 2 |
| Sky Team | 23 | 10 | 6 | 6 | 2 |
| Star Alliance | 17 | 7 | 2 | 2 | 2 |

*Source: AENA, 2021*

Investments play an important role in the development of the group, but also have an impact on airport capacity. As a result, the airport group develops modern airport infrastructure, with sufficient capacity to meet the expected demand in the medium term with high quality standards. For example, AENA's investments associated with basic airport services for 2017-2021 amounts to €2,185.4 mil. This way, the group focuses on supporting the development of regions with prospects for sustainable development and corporate social responsibility. More so, the group makes an important contribution to the economy of each state in which it has airports under its administration. The footprint on the economy of these states can be quantified according to its contribution to the GDP and employment rate.

The groups facilitate and stimulate tourism and also have a catalytic impact which captures the vast benefits created by developing connectivity. These companies encourage foreign investment, trade, increasing the productivity and prosperity of the states and regions in which they operate. As it was showed in figure 1, the emergence of airport groups in a global environment has a significant impact on increasing investment capacity, which has a positive influence on overall airport capacity, allowing for the rise of new destinations and, as a result, an expansion in airport connectivity as well as regional and global economic growth. Most airports being part of an airport group have developed and continue to do so by applying strategies to overcome past figures. It has also been showed that managing groups strengthened the position of airports in terms of route development and connectivity. For example, AENA introduced the following new destinations in 2018: (Short distance (domestic): 38, Medium distance: 285, Long distance: 20) and 2019: (Short distance (domestic): 69, Medium distance: 242, Long distance: 19).

AENA operates 46 of the 59 airports in Spain, including Madrid Barajas Airport which ranks 28th in the world with a score of 154 and Barcelona El-Prat which ranks 45th in the world with a score of 102 (Măzăreanu, 2021). Thus, we can say that the score obtained by Spain is mainly due to the development and investments of AENA in their airport network. One of the core elements used by the groups to increase growth and create value for their clients and regions is to invest in the airports entrusted to them for the long term. Their mission is usually to: *"…ensure that the services provided add value to customers, shareholders and society…"* (AENA), or *"Create value for the company and for customers, investors and employees"* (Ferrovial Airports).

In the administration of airport platforms, steering investment is a critical factor. However, the airport groups are not simple investors, are involved in operations, consulting, services and sometimes design & engineering or constructions. During the Focus Group carried by the authors for the KAAT project, by bringing different perspectives and expertise to the same table, the authors concluded that beside the usual aeronautical and non-aeronautical key success factors and characteristics of airport consortiums, some interesting new features can be attributed to these groups, like their will to: Cultivate innovative market-oriented solutions, Increase competitive international context, Show interest in Research, Development and Innovation, Ensure knowledge/technology transfer, Develop a network of knowledge.

For these private investors, knowledge management is involved in safety, security, environment and optimization of operations. Another outcome of the Focus Group is represented by the identification of hard constrains *(Must-have factors of success)* and soft constraints *(Nice-to-have factors of success)* considered for optimizing the airport group success (Table no. 2).

**Table no. 2. Factors of success of airport management groups**

| | **Description** |
|---|---|
| **Must-have factors of success** | Ensure the quality of services, polices, infrastructure and facilities |
| | Commit to social, economic and environmental priorities |
| | Focus on the experience it provides to the passenger |
| | Prove good understanding of operating restrictions |
| | Develop retail, infrastructure and expansion projects |
| | Develop good relationship with airlines |
| | Demonstrate forecasting capabilities |
| **Nice-to-have factors of success** | Have a practical vision |
| | Balance expertise and evaluation/guidance and coordination |
| | Build an open-ended strategy |
| | Increase public interest and stakeholder communication |
| | Multi-modal link development |
| | Show openness to interdisciplinarity (interdisciplinary jobs) |
| | Develop precision planning tools. Prepare for the future |

Other driving forces behind changes: airport groups use management knowledge from international airport operators in local markets. Investments and know-how have enabled to improve productivity, in particular key issues such as safety and security, environmental protection, savings and energy efficiency, planning and optimization of management processes. Airport groups like AENA, encourage collaboration as a success formula for its projects and exchange of know-how. AENA's activities are carried out in collaboration with organizations at national and international level, such as the Spanish Agency for International Development Cooperation, ICAO's Technical Cooperation Office, School of Aeronautics and Space Engineering at the Polytechnic University of Madrid and others. Furthermore, aware of their role as a driver of change in the environment in which they operate, the groups refer to the Sustainable

Development Goals (SDG's) and the Principles of the UN Global Compact, which, together with the Corporate Responsibility Policy, are the framework for the company to carry out governance initiatives.

## 3. Airport groups characteristics. Strategies, key indicators and results

Although the formation of airport management organizations has a long history, many of them can be classified as financial investors. A worldwide airport consortium's success, on the other hand, appears to be defined by a comprehensive approach, which entails not only financial engagement, but also the development of a management system that ensures the optimization of responsible business processes. Diversification might be the core element characterizing airport groups' initiatives, but not the trigger. Economic crises may set the need for airport privatization. This is the case of 14 Greek regional airports, most of them being considered efficient (Fragoudaki and Giokas, 2020).

In this paper, in order to evaluate the features (strategies and results) of the top 9 European airport investors (Table no. 3), different criteria have been used. Analyzing the evolution of the groups, although AENA has 69 airports in its portfolio and VINCI only 45, the most important increase in term of revenues is recorded by VINCI group, by 2.5 fold in the 2015-2019 period and in term of passenger traffic by 80% in the same period. This could be explained by the geographical extent of VINCI group which is double compared to AENA and the diversity of their business activity. This upward trend is also observed in other groups, which implicitly leads to the development of new routes and market share, ultimately leading to regional economic development. The highest number of passengers was recorded by Fraport AG in 2019 and in terms of revenue, by Group ADP which recorded €4,700 mil. AENA is the leading consortium considering the number of airports served (Table no. 3), Group ADP follows the lead with the highest number of countries (Zaharia, et al., 2021). Regarding airport companies' history and proficiency, the authors conclude there is no stable connection between market experience and one their performance. This is indicated by AENA or VINCI, who established their positions as leading consortiums, adapting to the business environment and excelling in marketing strategy although have less experience. The performance could be in link with the size and geographical position (Table no. 3).

**Table no. 3. Countries served by the top European airport management groups**

| Airport group/ Countries served | Characteristics |
|---|---|
| **AENA /** 1+5 | In Spain: 46 airports. AENA Internacional serves other 23 airports in 5 other countries: UK, Colombia, Mexico, Brazil, Jamaica. |
| **Vinci Airports** / 1+11 | In France: 11 airports. Other management contracts and strategic partnerships in: Portugal, Cambodgia, Chile, Japan, Dominican Republic, Brasil, Costa Rica, Sweden, US, UK and Serbia. |
| **Fraport AG** / 1+10 | In Germany: 2 airports. Fraport AG has management contracts and strategic partnerships in: Greece, India, Turkey, Bulgaria, Peru, Slovenia, Russia, US, China, Brazil. |
| **Group ADP** / 1+9 | In France: 14 airports. Groupe ADP operates airports abroad through its subsidiary ADP International in: Chile, Turkey, Belgium, Guinea, Saudi Arabia, Jordan, Mauritius, Croatia, Madagascar. |
| **Egis Airports /** 1+6 | In France: 3 airports. Egis Group has a global expansion, being also present in the following countries: Belgium, Cyprus, French Polynesia, Democratic Republic of the Congo, Ivory Coast and Brazil. |
| **AviAlliance /** 1+3 | In Germany: 2 airports. AviAlliance is also present in the following countries: Greece, Hungary and US (Puerto Rico territory). |
| **Ferrovial Airports** / 1 | In UK: 4 airports. Although it's a Spanish group, Ferrovial Airports operates only UK airports. But, Ferrovial Group serves several areas in different parts of the world: Portugal, United Kingdom, Ireland, Poland, United States, Canada, Chile, Australia. |
| **Royal Shipol Group** / 1+5 | In Netherlands: 100% owns Amsterdam Schiphol Airport. Other management contracts and strategic partnerships in: U.S, Australia, France, China, South Korea. |
| **Aeroporti di Roma /** 1 | In Italy: 2 airports. Aeroporti di Roma owns only airports in Rome, Italy. |

*Source: Airport groups reports, 2021*

Integrated and centralized management implies responsibility for operations of all airports in a particular country (Park and Kim, 2021), (case of AENA who manages 46 airports in Spain). This way, the airport group has a close understanding of operating restrictions, allowing building an open-ended strategy as a function of traffic, thus effectively managing infrastructure. The group can then predict, factor in and address future difficulties due to forecasting capabilities and precision planning, resulting in projects that meet high standards, while improving services and revenues (Courtney, Kirkland and Viguerie, 2000).

All airport investors were threatened by pandemics, resulting in cut-off jobs (1350 for Fraport AG), income drops (50% for Fraport AG), traffic reduction (71% for AENA) (AENA, 2021; Fraport, 2021). All financial/non-financial indicators suffered alterations during the pandemic for all groups (Table no.4).

**Table no. 4. Airport groups passenger traffic and revenues (2015-2020)**

| Airport Group | Passenger traffic (mil.) | | | | | |
|---|---|---|---|---|---|---|
| | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** |
| **AENA** | 207 | 230 | 265 | 280.3 | 293.2 | 82.1 |
| **Vinci Airports** | 52.1 | 132.3 | 156.6 | 240 | 255 | 76.7 |
| **Fraport AG** | 162 | 160 | 223 | 238 | 323 | 110 |
| **Group ADP** | 252 | 240 | 228.2 | 228.2 | 234.5 | 96.3 |
| **Airport Group** | **Revenues (mil. €)** | | | | | |
| | **2015** | **2016** | **2017** | **2018** | **2019** | **2020** |
| **AENA** | 3,518 | 3,772 | 3,960 | 4,201 | 4,503 | 2,200 |
| **Vinci Airports** | 820 | 1,055 | 1,409 | 1,607 | 2,631 | 990 |
| **Fraport AG** | 2,598 | 2,586 | 2,934 | 3,478 | 3,705 | 1,677 |
| **Group ADP** | 2,916 | 2,947 | 3,617 | 4,478 | 4,700 | 2,137 |

*Source: Airport groups reports, 2021.*

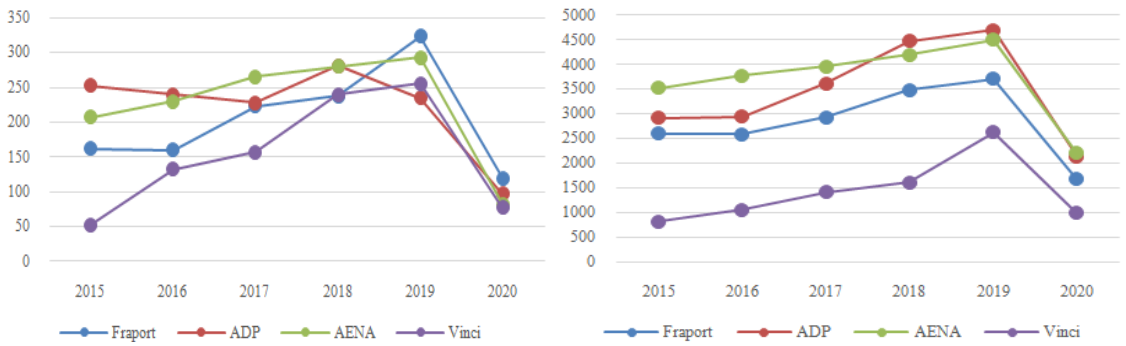


**Figure no. 2. Airport groups passenger traffic (in mil. pax) and revenue (in mil. €) (2015-2020)**

Table no. 4 and figure no. 2 show that the groups' revenues increased constantly by 2019. AENA's total consolidated revenue increased to €4,503.3 mil during 2019, by 4.2% more than the previous year. Of this total, 64.4% (€4,503 mil) correspond to the aeronautical activity. In 2021, consolidated operating income decreased by €255.4 mil (i.e. -23.5%) compared to the same period in 2020. The growth in air traffic and efforts to increase non-aviation revenues are critical drivers of success in this pandemic period. They have to focus on maintaining liquidity and continue to explore opportunities and partnerships globally. Another critical growth aspect is the ability to forecast and control required investment. The groups also develop new services to improve passenger experience. By maximizing airport activities on a daily basis, they contribute to the local-level development of the regions in which they operate, while paying particular attention to customizing their investments to local economic, cultural, and social context throughout time. For example, Groupe ADP is expanding its innovation capacity with the launch of the "Innovation Hub Program", aiming to design the image of an airport of the future. Aeroporti di Roma through its project *"L'innovazione, nel cuore di ADR*" aims to improve digital experience. The groups are continually investing in digital and physical infrastructure, preparing for new expanding and changing markets.

Business models aim to use their cutting-edge skills to maximize the value of the assets. Their knowledge in this area is based on operating experience, providing a unique perspective. VINCI group shows that experience and the access to a huge volume of data, allows them to accurately predict airport and market needs. Diversification provides an optimal confluence of risk and return because economic conditions can fluctuate in different parts of the world depending on cultural and institutional influence at different times. (Craig, 1999) identified 8 major categories of risks associated with airport privatization, which included concessionaire composition & culture. In the current state, the authors propose an assessment of 6 major risks; an analysis that is suitable under existing conditions and current influences (Table no. 5).

As long-term investors, the management groups want to expand airports in a sustainable manner, which can only be accomplished by pursuing growth prospects that are customized to the economic, social, and cultural characteristics of each region. Thus, considering mitigation actions for the identified risks is mandatory, because airports play a critical role in their communities for local and regional development.

**Table no. 5. Risk assessment and mitigation actions for airport groups**

| Risk | Risk 1. Competition | Risk 2. Legislative changes |
|---|---|---|
| Threat | Other airport group(s) competition | International/European/national legislative changes |
| Consequences | Decrease in KPI's | Organizational/future prospects changes |
| Probability/Impact | Medium/High | Medium/Medium |
| Risk assessment | At the edge of intolerable | Tolerable |
| Mitigation strategy | Monitor | Monitor |
| Mitigation actions | Concession renewal. Increase group visibility, experience & management know-how | Revise the asset portfolio, in particular construction assets |
| **Risk** | **Risk 3. Political environment** | **Risk 4. Airlines specific** |
| Threat | Volatile political climate | Changes in airlines arrangements (Airline contracts) |
| Consequences | Uncertainty. Reduction in future prospects awareness/management | Service related: Contracts suspended. Low traffic/revenues. Route development/connectivity issue |
| Probability/Impact | Medium/Medium | Medium/High |
| Risk assessment | Tolerable (with existing control) | Tolerable (with existing mitigation). *A cost benefit analysis is required* |
| Mitigation strategy | Monitor | Eliminate/Treat |
| Mitigation actions | Integrate political environment dynamics and regulatory requirements into analysis | Maintain an active dialogue with airlines. Maximize customer satisfaction. Revise portfolio |
| **Risk** | **Risk 5. Pandemics** | **Risk 6. Economic recession** |
| Threat | Covid-19 or other pandemics | Economic recession |
| Consequences | Confusion/uncertainty. Reduction in: traffic, investment projects. Construction related consequences: Projects temporary suspended | The group cannot fulfill its mission in a timely manner (eg. delays in airport expansion projects). Depreciation of fixed assets |
| Probability/Impact | Medium/Medium (under existing conditions) | Medium/High |
| Risk assessment | Tolerable (with mitigation actions) | Tolerable (with existing control) |
| Mitigation strategy | Treat and eliminate | Monitor |
| Mitigation actions | Detailed rehabilitation of organizational structure: simplify operations/reduce costs | Turn to state aid/support for overcoming the crisis. Find new ways to stimulate demand. |

## Conclusions

The development of multinational airport management groups has led through the transfer of knowledge to a better management of large airports, but also to the improvement of the management of smaller international or regional airports in less developed geographical areas with a reduced investment capacity. The emergence of airport groups has had an impact on increasing investment capacity, with favorable impact on the increase of the airport capacity. Furthermore, this increase of airport capacity allowed the appearance of new destinations for the airlines, in other words an increase of the airport connectivity which contributes essentially to the regional and global economic growth. Some business models of airport groups are completely dedicated to airport management and investments, while others have a larger scope with subgroups dedicated to air transport. The success of an airport managing group is defined by a combination of financial investment, know-how, and innovation leadership, all of which are supported by the consortium's principles. The investments in operation lead to a higher demand for aircraft, which means a positive impact on aircraft manufacturers. The progress of these groups contributes to the growth of the aviation industry, resulting in more jobs and, as a result, a higher contribution of aviation to global GDP. The development of airport and airline groups has made it easier for airports and airlines to survive the pandemic and for aviation industry to recover more quickly afterward. Future requirements for the development of global airport groups include innovative solutions for long-term business commitment, increased competitiveness and integrated business strategy.

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