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## Something Old is new Again: Airline-Airport Consortia and Key Stakeholder Benefits

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## Something old is new again: airline-airport consortia and key stakeholder benefits

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**Abstract:** Although consortia in the aviation sector predate deregulation by decades, this type of cooperative agreement, particularly in the airline industry, is experiencing a resurgence of interest from industry participants and academia. Airlines are searching for new innovative ways to reduce costs while airports are searching for private partners to improve terminal facilities and equipment and update services. Passengers, on the other hand, continue to balance price versus performance in their travel experience. This empirical research study finds evidence of positive influences of airline consortia to all key stakeholders; however the majority of benefit appears to be felt by the airlines and the associated airport. It is still unclear how much benefit is passed on to the passenger. Regardless, research results clear a path for a better understanding of the positive results of consortia in this turbulent industry.

**Keywords:** aviation; consortia; airline-airport consortiums; airlines; airports; inter-organisational cooperation; partnerships; stakeholder benefits; strategic alliances; co-opetition.

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## 1 Introduction

Consortia have existed for many years, particularly in industries where advances in research and technology are critical for firm survival and industry profitability. While not new to the aviation sector, consortia, specifically those involving airlines and airports, have remained relatively unnoticed as a viable business solution for this challenging industry. These types of airline and airport consortia were in existent prior to industry deregulation, but were few and far between. However, there is growing evidence that the industry is turning its attention more and more to this form of inter-organisational relationship to combat costs and increase efficiencies.

Airline-airport consortia, formed in cooperation with the airports are “a group of airlines that join together to hold responsibility in common for operation and maintenance of facilities, equipment, and/or services at an individual airport, as delegated by agreement with airport management” [Transportation Research Board, (2011), p.1]. These consortia have shown to be very flexible and adaptive, depending on the changing needs of participating airlines and the capabilities of the airport.

Due to the success of this type of inter-organisational relationship, the number of these arrangements appears to be growing (Transportation Research Board, 2011). Yet despite the apparent success and increasing popularity, there is little empirical research that examines the attained benefits of airline consortia, particularly from multiple perspectives of the key stakeholders. We define these key stakeholders in our research as the airlines, the airports and the passengers. Previous work compiled in ACRP Synthesis 31 by the Transportation Research Board assessed the governance structure of airline-airport consortia in the USA, the roles and responsibilities of selected consortiums and the benefits for the organisations involved. This research will build on those efforts and will also explore both financial and non-financial passenger benefits.

While there is extensive research in the areas of the formation and definitions of strategic alliances (c.f., Schermerhorn, 1975; Nielsen, 1988) and also a significant amount of research applying those theories to code-sharing alliances in aviation (Brueckner, 2001; Rajasekar and Fouts, 2009), there is limited research focusing on consortia in general (Evan and Olk, 1990; Grotnes, 2008) and much less within the airline industry. Furthermore, most of the research that has been done on inter-firm cooperation and strategic alliances centres on the pre-existing inter-firm environment and a sparse few have attempted to focus on the direct costs (Wang, 2010) and benefits (Gudmundsson, 1999) to the consumer beyond the basics of economic competition.

As such, the inherent goal of this study is to fill this void and evaluate the cost-effectiveness and non-cost benefits. It is important for the industry, academia and the

government to understand and address the true impact of these arrangements on the key stakeholders involved: airports, passengers and the airlines themselves. The questions to be asked include: What are the cost savings associated with the airline consortia? What other benefits may be realised by consortium members? What are the advantages for the airports and what cost benefits do they realise? Finally, do cost savings and increased efficiencies for the airlines and airports ultimately transfer to the passenger? How do these consortia impact the passenger, if at all? This empirical study examines existing airline consortia, primarily in the USA and their benefits via a survey-based data collection effort.

With this backdrop, this research paper first presents a review of cooperative inter-organisational relationships and their benefits, particularly with relevance to the airline industry and consortia. Second, we discuss our survey research method and initial findings. Finally, we discuss implications for the key stakeholders and future research.

## **2 Literature review**

### *2.1 Inter-organisational cooperative agreements*

Across all industries, inter-organisational cooperation between firms can take many forms. Inter-organisational cooperation may be defined as the presence of deliberate relations between otherwise autonomous organisations for the joint accomplishment of individual operating goals (Schermerhorn, 1975). For our purposes the most important part of this definition is the ‘deliberate relations’ between organisations. This understanding is necessary to discern passive, tacit collusion from more active and formal organisational structures. Tacit collusion, as a part of game theory, does play a major role within inter-firm cooperation (Parkhe, 1991); however, the more formal and active forms of inter-organisational cooperation are the primary concern of this paper. The qualities of these types of cooperative structures have been addressed by Schermerhorn (1975), Nielsen (1988), as well as Koh and Venkatraman (1991). Each author further places the qualities of these structures into different categories to serve the objectives of their specific goals. In this research we discuss strategic alliances, joint ventures and consortia with emphasis placed on the latter.

Strategic alliances are the “relatively enduring inter-firm cooperative arrangements, involving flows and linkages that utilize resources and/or governance structures from autonomous organizations, for the joint accomplishment of individual goals linked to the corporate mission of each sponsoring firm” [Parkhe, (1991), p.581]. Moreover, firms pursue cooperative agreements in order to “gain fast access to new technologies or new markets, to benefit from economies of scale in joint research and/or production, to tap into sources of know-how, and to share risks for activities that are beyond the scope of a single organization” [Powell, (1990), p.315]. Axelrod (1984) offers that pooling resources and responding to threats are two conventional reasons for establishing cooperative efforts.

Furthermore, alliances fundamentally possess the shared feature of ongoing mutual interdependence, the situation that arises when one party is vulnerable to another whose behaviour is not controlled by the first (Parkhe, 1993). For our purposes, a strategic alliance is any arrangement between two companies that have decided to share resources to undertake a specific, mutually beneficial project. In a strategic alliance, companies

must have compatible goals, clearly defined strategies, sound relationships and willingness to blend cultures (Walters et al., 1994). As an 'umbrella term' it contains the subcategories of all other formal structures of inter-firm cooperation such as license agreements, joint ventures and consortia. However, a joint venture is unique in that it involves a legal entity, created by two or more companies (Anonymous, 1998). The sharing of costs and risks associated with joint venture formation allows firms to gain access to new markets and encourage innovation.

van de Ven (1976) examined the relationships among organisations linked together as an action system to solve problems and attain joint goals and suggested an optimal level of interdependence for cooperation depending on commonalities and incentives. Yet, this analysis was done over a broad theoretical lens of resource dependency theory that focused on public-sector organisations and local human service organisations and not among competing enterprises (van de Ven, 1976). Dai (2010) adds that the challenges confronted by organisations suggest a growing need to sustain profitability through cooperation and examined the governance structures that facilitate cooperation. It has also been suggested that competitive advantages erode rapidly in many industries and deregulation along with new technology is dramatically reducing the barriers to entry (Hammel and Breen, 2007). This is especially true for the airline industry, emphasising the effects of deregulation in 1978 as well as the tremendous effect that e-commerce has had on changing the way airlines and consumers interact.

This leads us to the introduction of the consortium model which forms the conceptual foundation of airline-airport consortia agreements. What is a consortium and how does it differ from the strategic alliances and joint ventures discussed above? "Consortia typically involve two or more competing companies pooling their resources to create a new legal entity to conduct operations. They include substantial member-company contributions of capital, technology, and other assets; they do not include the merging of the members" [Evan and Olk, (1990), p.37]. This definition was written in reference to research and development consortia as a new organisational form following the 1984 revision of the Sherman Antitrust Act of 1890. An alternative definition is as follows: "A consortium is an informal alliance of firms and organizations that is financed by membership fees for the purpose of coordinating technological and development activities" [Hawkins, (1999), p.161]. This definition was written in regards to standardisation consortia within the IT industry. As noted, the major difference between these definitions is the role of legal formality and the payment of fees to acquire membership. Within the subject context, airline consortia, formed in cooperation with the airports are "a group of airlines that join together to hold responsibility in common for operation and maintenance of facilities, equipment, and/or services at an individual airport, as delegated by agreement with airport management" [Transportation Research Board, (2011), p.1].

## *2.2 Cooperation and stakeholder benefits*

As mentioned above, we define the key stakeholders in our research on airline-airport consortiums as the airlines, the airport and the passengers. Most of the literature written on the benefits to stakeholders involved with regarding competing firms within the relationship, often pursuing primary reasons for cooperative behaviour.

It is important to note that most of the studies mentioned above focus on general inter-organisational behaviour and not the special case of co-opetition that is present in

most aviation related endeavours. In a study by Kotzab and Teller (2003), the authors investigate and analyse how competing grocery producers in Europe adopted collaborative techniques in order to adapt to a dynamic and competitive market. These collaborative methods manifested in two categories: simple dyadic value-added partnerships and more “sophisticated forms of co-opetition<sup>1</sup> where supply chain members have both relationship types – competition and cooperation – at the same time” [Kotzab and Teller, (2003), p.268]. Furthermore, these cooperative models were evaluated in the context of the European efficient consumer response (ECR) initiative, a customer-oriented supply-chain management strategy. The authors emphasise that ECR allows certain synergies and harmonisation that can help avoid duplication costs and improve service and efficiency. “This results in win-win-win situations, where all partners within the supply chain (producers, retailers, and end users) can profitability by doing more with less” [Kotzab and Teller, (2003), p.271].

Another good example of cooperation among competitors utilising this model is the foundation of the SEMATECH consortium between fourteen competitors within the US semiconductor industry in 1987. The example of the SEMATECH consortium is greatly relevant to the US airline industry because “it offers insight into how cooperation can arise and persist in a highly competitive industry” [Browning et al., (1995), p.114]. It was also added that by pooling together resources, US semiconductor firms were able to re-establish their supply and materials infrastructure that had suffered due to loss of market share to Japanese manufacturers; this is something that no US firm could have achieved independently (Browning et al., 1995). Interestingly, Browning et al. (1995) make no reference to the effects of the SEMATECH cooperation on consumers, instead focusing strictly on the formation of the consortium.

Ketchen et al. (2004) offer that firms seek efficiencies through economies of scale and scope while simultaneously pursuing differentiation to remain competitive and gain market share; thus cooperating on the supply-side of business which is less visible to consumers. Also, although tensions may exist in ‘cooperative’ efforts, managers “should understand that cooperation and competition can exist simultaneously and both can contribute to achieving organizational goals” [Ketchen et al., (2004), p.787].

Looking across the industries and types of agreements mentioned above, there are tangible benefits to those firms cooperating with one another (gaining economies of scale; sharing of resources, risk and knowledge; entering new markets) while benefits to the end user or consumer are less apparent and, but we believe do exist. We now turn our attention to alliances, joint ventures and consortia in aviation and their potential benefits to our subject stakeholders.

### *2.3 Cooperation in aviation*

In the aviation industry, co-opetition exists largely in the form of strategic alliances and joint ventures. With respect to global airline alliances, SkyTeam, Oneworld and Star Alliance are all examples of strategic alliances that operate under license agreements. However, the size and expansion of these once-simple code sharing agreements have led to the hybrid development of new organisations to manage operations. Thus, these alliances lend themselves closer to joint ventures which result in the creation of a new organisation that is formally independent of the parents (Borys, 1989).

Beyond simple code shares and more complex alliances, several airlines have created joint ventures to form new airlines. For example, recently Qantas and China Eastern

Airlines have agreed to set up Jetstar Hong Kong, a new low-cost carrier in Hong Kong that will be launched in 2013 (Toh, 2012). Another prime example of airline co-opetition is Spairliners, a joint venture between Air France/KLM E&M and Lufthansa Technik which specialises in component availability for the Airbus A380 and Embraer regional jets.

Joint ventures are especially popular amongst engine manufacturers. For example, CFM International (CFMI) is a joint venture between General Electric and Snecma. International Aero Engines (IAE) is a joint venture involving Pratt & Whitney, Rolls-Royce, Daimler-Benz, Fiat and Japan Aero Engines. In addition, the Engine Alliance (EA) is a 50/50 joint venture between GE Aircraft Engines and Pratt & Whitney to develop, manufacture, sell and support a new modern technology engines for the next generation of high capacity, long range aircraft (Engine Alliance, 2013). These joint ventures not only pool technological knowledge, reduce risk and lower production and development costs for individual manufacturers but also create an interesting situation where manufacturers can be both partners and competitors concurrently.

The formation and growth of the airline-airport consortium model mirrors this growing trend of cooperation within the aviation industry as a whole. While consortia have existed in various forms for many years in other industries, airline and airline-airport consortia are relatively new forms of inter-organisational cooperation in the aviation industry, featuring distinguishing characteristics from other forms of cooperation that have existed in this industry in past years. In this form, airline and airline-airport consortia cooperate on the 'invisible' logistics side of operation while still competing in the 'visible' marketing and revenue-gaining arenas [Kotzab and Teller, (2003), p.271]. It is a type of value-added partnership where all partners can achieve value creation by outsourcing for competitive advantage. These consortia offer promising benefits to airlines, airports and other stakeholders and also offer strong insight into the nature of strategic alliances and inter-firm cooperation.

The roots of the consortium model in the airline industry can be traced to the 1960s in the US and Europe. However, it was not until the 1980s when this model became a popular arrangement as both airlines and airports look for innovative solutions to combat rising costs and the need for efficiencies. The following paragraphs highlight a selection of consortia, illustrating their history, diversity and staying power.

In the 1960s, two consortia were established by European airlines to share and coordinate expensive manufacturing and maintenance facilities. KSSU (an acronym of its founders KLM, SAS, Swissair and UTA) was created by its founders to provide cooperative maintenance for common aircraft types by sharing heavy maintenance responsibilities. "There was no duplication of buildings or equipment and substantial savings were made" [Iatrou and Oretti, (2007), p.69]. Similarly, Atlas was founded in 1968 by Air France, Alitalia, Lufthansa and Sabena. A tangible result of these two consortiums was the development of two main aviation kitchens, or galleys, that have been adopted by airlines around the world.

In 1969, 12 airlines that operated within Hawaii formed the Airlines Committee of Hawaii (ACH), a separate legal entity that took responsibility for building an off-site fuelling facility as well as the contracting of construction and fuelling services (Weaver et al., 2009). The ACH is an example of fuel consortium where competing airlines cooperate by pooling together resources to benefit from the cost savings of having a fuelling facility close to airport operations.

There is no evidence of the fuel consortium model being implemented anywhere in the world immediately following the development of the ACH. However, as de-regulation was being planned and enacted in the USA, airlines were already looking for cost reduction strategies in the new era of commercial air transport. In the early-mid 1980s, United Airlines, led by Robert Sturtz, began implementing fuel consortiums at several key airport locations; the first of which were Chicago, Honolulu and Anchorage, followed by Phoenix, Seattle, Las Vegas and Los Angeles (Sturtz and Smith, 2010).

Airline-airport consortia that manage terminal facilities and equipment (TF/E) share a similar timeline to their fuel consortium counterparts. Atlanta Airlines Terminal Corporation was founded in 1979, followed by CICA Terminal Equipment Consortium in Chicago in 1990, Terminal One Group Association of JFK in 1994, Detroit North Terminal Consortium in 2008 (Transportation Research Board, 2011) and most recently, the Portland Airlines Consortium in 2010 (PAC, 2011). The continued formation of these cooperative organisations should continue well into the future as airlines become more familiar with each other's operations and maintain an open communications network.

The technical and legal characteristics of each consortium noted above are unique and context-specific but the reasons for their creation and endurance are universal: the benefits outweigh the costs and risks associated with consortium membership. Slowly growing in popularity, the consortium model allows airlines to seek shelter and find protection from the increasingly volatile industry by pooling together with airports to achieve common goals. Over time, the unique challenges faced by airlines in different markets have given way to the formation of consortiums, both domestic and international, that are unique to that specific cause or geographic location.

Past research indicates that consortiums have been formed for a myriad of reasons, ranging from fuel farm scheduling, storage, distribution and inventory to terminal facilities (construct, clean, maintain) and baggage handling and inspection. Airport utilities, de-icing/anti-icing, snow removal services, retail/food/beverage concessions, gate scheduling, ramp control and operations and airline passenger services are common airline consortium responsibilities but these can vary substantially between different airport locations (Transportation Research Board, 2011). Regardless of whether the consortium is created for fuel management or associated with an airport's terminal facilities, our research indicates that the benefits for the airlines and the airports centre on efficiencies gained and cost reductions, as well as improvements in safety. As demonstrated by Martin and Voltes-Dorta (2008), the large number of airport stakeholders (airlines, passengers, policymakers, regional planners, etc.) makes it crucial to understand their costs and potential cost savings through economies of scale. As for passengers, we suggest that airline and airport costs savings impact the passenger in terms of reduced facility charges, airline tickets and baggage fees. Improved operational efficiencies should also result in increased passenger safety, improvement in baggage handling and reductions in lost or mishandled luggage. Moreover, a significant potential benefit of airline-airport consortia is an improvement of on-time flights through the reduction of turn-around and taxi-out times. As stressed by Truong (2011) and Atkin et al. (2010) flight delays are a critical problem for the air transport industry with early delays having a cascading effect on total airport operations.

### 3 Methodology

Significant effort was spent in searching available secondary data to understand the benefits of current and past airline-airport consortia. However, a severe absence of complete and pertinent information limited the potential for secondary analysis. This obstruction was manifest twofold: from a lack of strategy disclosure on behalf of cooperating airlines and also from a lack of relevant information from all airport locations where a consortium is presently operating. For example, lost baggage information is not reported on an airport basis but rather by each individual airline, making it nearly impossible to compare airports with relevant consortia solely on lost baggage rates. In regards to these consortia as a part of airlines' long-term strategic planning, the overwhelming majority of airlines involved in a consortium make no mention of such membership in their respective annual reports. Furthermore, no data were available on relevant consortia agreements that had expired or were terminated.

Due to this lack of secondary data in published research, cross-sectional research via a self-administered questionnaire was chosen as the most appropriate avenue for this study. This type of survey research attempts to provide an accurate representation of reality through the single administration of a research instrument (Churchill, 1999). The questionnaire was created based on several key sources, including ACRP Synthesis 31, available literature on airline consortia, a review of inter-organisational cooperative agreement benefits and a review of relevant aviation research regarding passenger service, airport services and airline performance indicators. As such, questions were developed investigating the primary reason(s) for consortium formation, the duties and responsibilities of the consortium and the possible benefits of the consortium in terms of airline operations (efficiency, safety, costs); airport operations (efficiency, safety, costs); and passengers services (passenger facility charges, prices, baggage, on-time departures, safety, passenger experience). Additionally, questions on consortia expansion expectations, annual budgets, membership fees and applicability of the business model to other situations were also asked.

Although ACRP Synthesis 31 was conducted on the basis of three types of airline-airport consortia (fuel, terminal and equipment), for this study it was determined that the terminal and equipment consortia were similar in nature and did not warrant exclusive categories. Narrowed down to two types of consortia (fuel and terminal facilities/equipment), each survey contained two possible sets of questions (that is, in effect, two surveys in one mailing): one set of questions for fuel consortia and one set of questions for TF/E. A draft questionnaire was reviewed by three aviation research academics for clarity and accuracy and revised accordingly. Elements from Bagozzi (1996), Dillman et al. (2009) and Cycyota and Harrison (2006) were employed for questionnaire construction and implementation.

To maximise the number of potential responses, an exhaustive search was conducted to identify all airline-airport consortiums operating in the US and Canada, resulting in the identification of 75 consortiums from 63 different airport locations. From this population, 18 consortiums were excluded from the survey as there was no contact information or address available. Based on those 57 consortiums, an additional search was made to identify individuals employed by an airline, airport, airport services operator or consortium operator that could be directly connected with those specific consortiums. This search produced 106 individuals that were subsequently contacted and sent the

questionnaire. The employment positions of survey participants included ground service station managers, airport directors and deputy directors, consortium directors and airline managers and senior managers.

Survey participants were contacted via a three-wailing mailing either through the US Postal Service (USPS) or by e-mail as suggested by Dillman et al. (2009). For all respondents where USPS addresses were known, a letter was sent explaining a forthcoming survey. Next, a letter with the survey was sent, followed by a postcard reminder a week later. Similarly, for all respondents where only e-mail addresses were known, individuals were contacted three times with an invitation to take the survey. In both cases, for response rate improvement we offered to send them a copy of the results of the research, if requested and to donate to the National Business Aviation Association (NBAA) Corporate Angel Network if they completed and returned the survey. Using this procedure, five surveys were returned as undeliverable; three of these five respondents were then contacted by e-mail for an effective sample size of 104. Twenty-eight surveys were completed of which one survey was removed due to excessive absence of data. As such, the response rate was 25.9%. It is highlighted that five of the 27 remaining surveys responded to questions for both fuel consortia and to TF/E consortia.

#### **4 Results and analysis**

The responses received from the survey have both confirmed the overall positive perspective on these organisations, in addition to providing specific insights about how a consortium and its members achieve benefits. From the 27 responses that were received, 12 were from airport staff, ten from consortia staff, six from airport service operators and one from an airline representative (two respondents selected multiple affiliations). Additionally, of the responses received, 21 pertained to fuel consortia while 12 pertained to TF/E consortia (five recipients filled out both sections). The respondents were also asked to express their familiarity with the consortium(s) at their airport location; 14 expressed that they were ‘very familiar’, eight said they were ‘familiar’ and five admitted to being ‘somewhat familiar’ to the consortium at their airport.

To confirm the results found in ACRP Synthesis 31, respondents were then asked to rank the primary reason for consortia formation from a pre-determined list. The following overall rankings were calculated using a weighted-average of the indicated rankings. Despite some small differences between the two types of consortia, the overall pattern is more or less the same as shown in Table 1.

**Table 1** Primary reason for consortium formation

<i>Reason for formation</i>	<i>Fuel consortia</i>	<i>TF/E consortia</i>
Manage, maintain, operate common facilities	1	2
Reduce costs	2	1
Improve efficiency	3	3
Develop, finance, construct facilities	4	5
Increase vendor competition	6	6
Improved airline representation	5	4

Using a five-point Likert scale where a score of one represents 'strongly disagree' and a score of five represents 'strongly agree', the corresponding averages and associated standard deviations were calculated for the topics included in Tables 2 and 3 for both fuel and TF/E consortiums. For both consortia types, the respondents have confirmed the presumptions of the benefits to airlines and airports, with the most positive consideration given to airlines. In addition, respondents indicated specific reasons how stakeholders particularly benefit from these consortia.

**Table 2** Survey response scores on fuel consortium effects

	<i>Average rating (out of five)</i>	<i>Standard deviation</i>	<i>Percent agree or strongly agree</i>
Airline operations			
Increase efficiency	4.23	0.65	88%
Reduce safety	3.92	0.84	69%
Reduce costs	4.15	0.67	85%
Airport operations			
Increase efficiency	4.19	0.67	85%
Reduce safety	4.04	0.77	81%
Reduce costs	4.08	0.80	73%
Passenger services			
Decrease passenger facility charges	2.96	1.04	27%
Decrease ticket prices	3.04	0.96	38%
Increase aircraft turn-around-times	3.50	0.65	50%
Increase passenger safety	3.12	0.77	27%
Increase passenger experience	3.08	0.63	15%

**Table 3** Survey response scores on terminal facility and equipment consortium effects

	<i>Average rating (out of five)</i>	<i>Standard deviation</i>	<i>Percent agree or strongly agree</i>
Airline operations			
Increase efficiency	4.22	0.94	78%
Increase safety	3.72	1.07	50%
Reduce costs	4.28	0.83	78%
Airport operations			
Increase efficiency	4.39	0.78	83%
Increase safety	3.72	1.13	44%
Reduce costs	4.06	1.00	67%
Passenger services			
Decrease passenger facility charges	3.39	1.09	44%
Decrease ticket prices	3.22	0.88	44%
Reduce lost baggage	3.56	1.04	50%
Increase aircraft turn-around-times	3.56	0.98	44%
Increase passenger safety	3.39	0.92	33%
Increase passenger experience	3.78	1.11	61%

- *Benefits to airlines*

- 1 Due to the high fuel volume of fuel usage, consortium members pay a very low per gallon operation and maintenance fee.
- 2 There is only one commingled facility instead of multiple tank farms and associated equipment.
- 3 The consortium has better credit ratings than the airline which lowers the cost of capital.
- 4 Fuel consortia can provide bond financing at a fraction of the cost of the individual member airlines. This can be considered as off-balance sheet financing.
- 5 The attractive financing options of the consortium provide sufficient capital to invest in more modern equipment.
- 6 Swapping some of the operations and management contracts of the baggage handling system, passenger boarding bridges and ground service equipment (GSE's) saved an estimated \$5,000,000. The consortium also provided a simplified procurement of equipment and contracts.
- 7 Common facilities result in less equipment needed.
- 8 Consortia provide increased preventative maintenance which results in less down time.
- 9 Response times are drastically improved during outages or irregular operations.
- 10 The ability to choose vendors without regard to union affiliation.

Beyond the unique characteristics highlighted above, the most significant benefit of consortia in regards to airline operations arises from the cost efficiencies gained from economies of scale. Moreover, these benefits are not just one-time productivity boosts, but gains that should be experienced throughout this generation of air transport. As ACRP Synthesis 31 displayed, most of the contracts between airline consortiums and their respective airports are made in perpetuity and other locales have opted to re-new their contracts.

- *Benefits to airports*

- 1 Fuel consortiums provide safeguards against inexperienced into-plane fuellers which reduces the possibility of spills and environmental liability.
- 2 Having one facility to manage and maintain reduces the environmental risk on airport
  - a prevents multiple fuel locations and potential for risks (environmental and operational)
  - b allows the airport authority to more effectively manage and oversee environmental risk.
- 3 Management and maintenance of the system, one point of contact regarding fuelling, reduction of vehicle activity on ramps.
- 4 Fuel is a core business of airlines, not airports. Delegating this responsibility to consortiums allows airport authorities to focus on passengers and security.

- 5 Contracts swapped from the airport to the consortium create cheaper, faster and better services. Allows airport to concentrate on remaining services.
  - 6 Fewer operations, better equipment and usually a more responsive party managing them.
  - 7 The airport authority can invoice the consortium once instead of each airline separately which saves time and money.
  - 8 Shared liability for expenses allows the consortium to secure financing for common use capital projects that would otherwise have to be funded solely by the airport.
- *Benefits to passengers*
    - 1 The fuel consortium can potentially benefit passengers if the airlines provide price relief to those passengers due to lower costs from airport operations.
    - 2 Decreased delays because of fuel system outages.
    - 3 Lower costs = lower ticket prices. More modern fuel facilities result in better turn times
    - 4 Passenger boarding bridges are rarely out of service and always returned to service in a short period of time.
    - 5 Gate, equipment and ticket counter assignments by the consortium result in an overall better passenger experience because of a greater familiarity and understanding regarding operations and passenger expectations.
    - 6 The consortium financed and developed a common use VIP lounge for its members that allowed premium passengers of the member airlines a quiet, comfortable place to wait for their flights.

Contrarily, there is not much support behind the potential for these organisations to reduce airline ticket prices or bag fees. As this response was expected, this result is not at all discouraging. Prices and fees are part of the more complicated revenue management schemes and overall strategic directives. One should expect that competitive market forces will be solely responsible for any decrease in these measures.

**Table 4** Overall responses

<i>Overall benefit</i>	<i>Average rating (out of five)</i>	<i>Standard deviation</i>	<i>Percent beneficial or very beneficial</i>
<i>Results for fuel consortia</i>			
Airlines	4.54	0.51	100%
Airports	4.31	0.68	88%
Passengers	3.42	0.64	42%
<i>Results for terminal facility and equipment (TF/E) consortia</i>			
Airlines	4.44	0.62	94%
Airports	4.18	0.81	88%
Passengers	4.00	0.77	72%

Additionally, recipients were also asked to express their opinion about the overall benefits of the consortium on airlines, airports, passengers and again to all stakeholders. These questions employed a similar five-point scale ranging from very harmful (1) to very beneficial (5). As demonstrated by Table 4, respondents looked very favourable on these organisations in regards to all stakeholders, although airline entities appear to receive the greatest benefit.

Lastly, respondents were asked if there were currently plans to expand the responsibilities of the consortium at their airport location. For fuel consortia, six replied yes, 15 replied no. For TF/E consortia, seven replied yes, five replied no. Along the same lines, respondents were then asked to indicate their opinion on the potential to expand the consortium's responsibilities at their airport location; 52% of respondents either agreed or strongly agreed that the fuel consortium's responsibilities could be increased whereas 64% said the same about TF/E consortia.

## **5 Implications**

While the uniqueness of each consortium posed difficulties for conducting an overall analysis, it further emphasises the versatility and adaptability of this version of inter-organisation cooperation. Airline-airport consortia can be engineered to meet virtually any specification within the airline-airport relationship spectrum whether it is operating a fuel tank farm, a baggage handling facility, or an entire terminal at some of the busiest airports in the world.

And although the overwhelming majority of respondents cast a positive light on these organisations and their positive effect on stakeholders, it must be pointed out that roughly half of the respondents thought the consortium model would *not* be viable at all locations (50% fuel, 45% TF/E). This should not be entirely surprising, as the single greatest overall benefit of airline-airport consortia can be summarised as cost efficiency gains through economies of scale. As such, the viability of the consortium model is in great deal dependent on the size of the cooperative endeavour which could be expressed in terms of enplaned passengers, number of flights, or more importantly, the number of airlines operating out of the airport. This concept has been echoed by a few comments added by survey respondents:

- While implementing this model is possible at most airports, the greatest benefits derives from consolidating costs and operations at large hub airports with international flights.
- Consortia will work at airports that have commercial presence and a long term, vested interest. This will most likely not work at small facilities.
- Competition among airlines may be severe enough to prohibit explicit cooperation.

In summation, the results of the survey have revealed strong, direct benefits to airlines and airports and a more modest, indirect benefit to passengers. Airline managers should expect the benefits achieved from economies of scale as well as reduced costs from the elimination of duplicate operations. Consortia are especially beneficial when there are a large number of airlines operating a small amount of international flights as evidenced by LAXFuel, BOSFuel and JFK Terminal One. Additionally, by partnering with each other and airport authorities, airline consortium members are able to finance development

projects at a lower cost of capital due to the investment grade credit ratings of the airport authority.

Airport managers should be seek the benefits of a single point of contact for many airline issues, the transference of some operational and environmental risk, as well as the potential benefits of focusing on more passenger related issues. Airports should also be aware of a potential decrease in employee headcount as duties are transferred to the consortium operator and contracted parties. Furthermore, because airports are directly tied into state, city and municipal governments, any potential decrease of state employees or responsibility will be sure to have political ramifications.

If member airlines and the airport authority can come to amicable terms on a contract outlining the responsibilities of each party, then all stakeholders should be able to reap the benefits, some more quickly than others. Passengers and potentially taxpayers, may eventually receive indirect benefits from this transfer of operations, but more research will be needed to truly evaluate this potential effect.

## **6 Limitations and future research**

The greatest limitation encountered during this research effort was the lack of secondary data and that of a small population and subsequently, a small sample size from which to survey. Similarly, another limitation came as a result of a majority of responses coming from consortium and airport operators, although significant attempts were made to contact airlines as well. This resulted in a more biased and limited response in many areas. As mentioned above, because of the uniqueness of these organisations, it is quite difficult to classify consortium types to fit into mutually exclusive categories; this added a challenge to the questionnaire composition and the subsequent analysis.

There are a few areas of further research which can be continued on this subject. Research into consortia that had been terminated was not possible. While our research efforts concentrated on the benefits of consortia to multiple stakeholders, disadvantages of consortia need further study. Airport operation efficiency should be more closely and quantitatively analysed to measure the true gains of the consortium model. A thorough analysis on improved turn-around times where consortia are present should be conducted to verify the responses in this survey. This study has mentioned several times that these consortiums possess a strong potential to indirectly increase turn-around times and on-time percentages but the exact or even approximate value of this metric remains elusive. The same holds true with respect to passenger experience and lost baggage.

It would certainly interesting to ascertain a minimum airport size wherein competing airlines and the respective airport would start to experience the benefits of economies of scale. This is not to say the consortium model would not be successful at small airports, but as alluded to by survey respondents, the largest commercial airports have experienced the greatest benefits.

## **7 Conclusions**

Expanding the body of knowledge about consortia can only benefit communal understanding of these types of cooperative relationships in the aviation industry. With multiple perspectives and influences taken into consideration, we hope that this study

provides some guidance on how the industry can use these viable business alternatives for future airline-airport relationships and, perhaps, succeed on passing some of these benefits to the passenger.

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## **Notes**

- 1 According to Gee (2000), the term 'co-opetition' was coined by Raymond Noorda, Novell's founder and former CEO, to describe simultaneous competition and cooperation between firms.