

JORDAN

Queen Alia International Airport Expansion



Image: "Aerial view of the terminal after completion" by KRISTIN HOOVER, courtesy of Foster and Partners- Photographer Nigel Young / CC BY-NC-ND 3.0

OVERVIEW

Location

Zizya (30 km south of Amman), Jordan

Sector

Transport – Airports

Procuring Authority

Ministry of Transport – Project Management Unit

Project Company

Airport International Group

Project Company Obligations

Built, Operate and Transfer

Financial Close

15 November 2007

Capital Value

JOR 695 million
(USD \$982 million – 2007 exchange rate)

Contract Duration

25 years

Key Events

Renegotiation, significant changes of scope

SUMMARY

The Queen Alia International Airport in Jordan was expanded and renovated as part of efforts of the Jordanian Government to improve tourism and promote Jordan as a travel hub. The project encountered a range of challenges relating to the initial design, as well as the challenges associated with the expansion of an operational airport. The scope changes in the project required a renegotiation of the PPP contract, resulting in a financial contribution from the Procuring Authority, which was complemented by higher than expected traffic volumes and associated project revenue.

The project also highlights how a dedicated project team helps protect the project from ongoing political changes, and how continuity of knowledge is secured through retention of key staff. The project is a good example to highlight the importance of involving end users at an early stage and the challenges in changing the workforce culture, from public to private service delivery.

SUMMARY LESSONS LEARNED

- Early involvement of stakeholders may avoid having to undergo significant changes in scope, resulting in delays and cost overruns.
- Setting up a dedicated project team may help to mitigate risks from political and institutional changes.

- Involving end users in the construction works can streamline the progress of construction and facilitate a fast transition from one stage to another.
- Flexibility and commitment of the Procuring Authority to deal with unforeseen circumstances can have a significant positive impact on the overall success of a project.
- Early and robust transition planning will make transition phases more efficient.

PROJECT INCEPTION

Goals and Objectives of the Partnership

Prior to this project, Queen Alia International Airport was handling 5.5 million passengers a year, despite having a design capacity of only 3.5 million. It was ranked as one of the worst airports to visit in the world, with outdated structures and poor customer experience. This situation led the government to decide to upgrade the airport and increase its capacity, with recognition from the outset that customer experience was an important factor in the success of the project.

The Economic and Political Environment during Inception

Two years before financial close and one year before the tender was announced, the Jordanian government adopted a comprehensive ten-year national agenda. It was an ambitious plan to build the country's economy through political and financial reforms, which included promoting partnerships between the public and private sectors and enabling the private sector to play a major role in the local economy. Development of physical infrastructure was a pillar of the agenda.

The aim to facilitate partnerships between public and private sectors combined with the physical infrastructure pillar facilitated the involvement of the private sector in driving the economy. The aviation sector was restructured by privatising the operation of airports and forming the Civil Aviation Regulatory Commission. As a result, the Queen Alia International Airport PPP was planned and announced for tendering.

MANAGEMENT OF THE PPP CONTRACT

Construction Phase

Construction was planned in two stages. Stage one included building the main terminal and its nine gates, followed by stage two, which was to complete the entire footprint of the building with additional gates. In total, the design of the airport included 25 gates. Only 17 gates would have a passenger access bridge installed, with the rest put on hold until demand required their installation.

There were many challenges faced during the construction phase. These were primarily due to the multiple scope

changes which were required starting two years after financial close, and have resulted in a delay of over a year and cost overruns of circa USD \$260 million. The reasons behind these changes could be summarised as: inadequate initial design, which was missing important elements, and various change requests initiated by the Procuring Authority. The resulting delays, coupled with the sooner than forecasted increase in passenger numbers, led to a decision to accelerate stage two. It was also decided to complete the expansion in one go, instead of gradually expanding it over the coming years. The overall cost overruns of circa USD\$260 million include the scope changes referred to under the heading "Renegotiation" below and other cost overruns which are not detailed in this case study due to sensitivities.

In total, close to 200 variations (i.e. smaller-scale changes) were implemented which were initiated by the Project Company, with the total cost borne by the Procuring Authority approaching USD \$10 million.

The site itself presented challenges, as the old terminal was small in size and had to be kept operational during construction, which eventually led to a change in the approach to construction. The original plan was to operate new gates, while construction of the terminal was still going, allowing passengers to use the new gates once they had been completed. Due to the updated design of the new terminals, this was not possible, and the entire structure needed to be completed in one go. This would have meant passengers would have had to move through a live construction site, which presented an unacceptable safety and security risk. It was therefore decided to implement a partial terminal opening, which added two years to the construction programme.

Once construction was complete, all parties were involved in the testing and commissioning of the assets with the independent certifier present. The hand-over process was described by the Project Company as conventional, and there were no unexpected issues.

Transition from Construction to Operations

Managing the transition from construction to operations was an excellent example of successful transition management. Commencement of the operations phase was originally to be initiated and completed overnight. However, in order to prepare for this transition, the Project Company formed the "Operational Readiness and Airport Transfer" (ORAT) team two years prior to the services commencement.

In these two years, meticulous planning was undertaken and comprehensive training was provided by the Project Company, while the Procuring Authority was closely involved in the planning of the process. Continuity and transfer of knowledge was a key objective of the ORAT team, and with the short transition window, there was pressure to ensure all parties were familiar with the new

asset on the first day of operations. The two years of planning and training paid off, and there were no issues faced during the transition.

Operations Phase

While the operations phase of the project has not faced any major difficulties so far, the biggest challenge for the Project Company was the transformation of the airport working culture from public sector to private sector service delivery. This required careful and soft introduction of changes, and in general, the Project Company has been successful in managing the transformation. It deals with a large range of stakeholders, including multiple government agencies as well as airlines, ground handlers and retailers. One way to consider the operation of an airport, to quote a Project Company's representative, is that the operator has to act like "a conductor of an orchestra". Overall, the operations phase is considered to be successful by both the Procuring Authority and the Project Company.

One notable incident occurred where an airline was late in its payments to the Project Company, which was then forced to notify the Procuring Authority that it would not be able to meet its investment payments on time. The Project Company felt this should have been taken into consideration when addressing the delay in payment of investment fees, as it was a delay by the user. The Procuring Authority acted positively in this regard to reach a conclusion in favour of the Project Company.

Performance Monitoring and KPIs

The Procuring Authority did not contribute to the cost of the construction. The Project Company assumed the risk for timely completion and was incentivised to complete construction on time, as any delays would trigger agreed damage payments. The Procuring Authority's Project Management Unit (PMU) was continuously involved in the construction phase, with engineers making daily site visits and inspections to monitor the progress on the ground. The Project Company was required to provide monthly reports showing the construction cash flow, progress, and any issues faced. There was also an independent monitor and certifier, paid for by both parties.

The operational KPIs for the project were agreed prior to financial close. The KPIs are mainly sourced from the International Air Transport Association codes and manuals, and additional payments to the Procuring Authority apply should the KPIs not be met. The Project Company submits a quarterly report to the Procuring Authority which covers customer satisfaction, financial performance, and operational performance.

The KPIs are primarily directed towards customer experience as a driver of improvements, however rankings from international agencies such as the Airport Service

Quality Awards are also understood to be indicators of performance. The KPI regime has clearly lined up the incentives of the two parties successfully, with the Project Company encouraged to provide a high level of service as a way of increasing its revenue.

Payment Mechanisms

The PPP contract between the Procuring Authority and the Project Company sets out the investment fees at 54% of the gross revenue earned, paid to the Procuring Authority on a quarterly basis. Additionally, the Procuring Authority transferred the collection of the "departure tax" to the Project Company, which is then to be counted as part of the gross revenue to be shared. There was no payment mechanism during the construction phase.

The revenue and financial performance is calculated through quarterly reports submitted by the Project Company. As of the time of the interview for this case study, the annual income for the Procuring Authority was USD \$120 million from direct tax and USD \$130 million in investment fees.

ROLE OF GOVERNMENT

Government Support and Procuring Authority

The government played an important role in the success of this project, and it was emphasised that the decisiveness and leadership of relevant government officials have contributed in effective management of the project challenges. The Project Company felt that it is enabled to enjoy the freedom to operate the airport in the way it considered most appropriate in order to manage its risk and to introduce its culture of efficiency and transparency to the airport, whilst the Procuring Authority's decision-making system was perceived as an enabler.

One example of support from the government was that the civil defence fire code was updated in order to accommodate the project's design. The designers introduced innovative fire suppression systems, which at the time were not covered by the fire code. When the adequacy of the system was proven, with reference to its use in other modern state-of-the-art airports, the code was updated to allow the use of such systems.

RELATIONSHIP BETWEEN THE PROCURING AUTHORITY AND PROJECT COMPANY

Team Set-Up and Staffing

The Procuring Authority has created a dedicated team for this project after financial close. The Project Management Unit (PMU) was formed to represent the Ministry of Transport (MOT) and manage concessions on its behalf. The team has 14 people working at any given time and is located in offices within the airport. The team has the relevant legal, financial and technical/engineering expertise.

The Project Company's staff count is significantly higher as they operate the airport themselves. However, there is a technical team of 20 under the Chief Technical Officer who reports to the CEO.

The Procuring Authority was mainly responsible for facilitating the relationship between the Jordanian government and the Project Company. Its main concern was to ensure the interests of all parties are protected fairly, and most importantly, the successful delivery of the project. This helped the Project Company to avoid managing a number of government stakeholders, as the PMU would, in case of any issues, voice its concerns to the regulatory and permitting agencies and facilitate their resolution.

Training and Development

There was no training programme set for the Procuring Authority. All training was provided when needed under the discretion of the head of the PMU. Additionally, the Project Company provided joint training for its staff and the PMU staff on the operation of the new facilities.

Communications

The Project Company has more than one point of contact with the government. In addition to communicating with the Procuring Authority, the Project Company also has to communicate with multiple ministries for permitting and compliance. This creates a complicated communication system, which has to be carefully managed.

A particular challenge faced by the Project Company is that since financial close, there have been 12 different Ministers of Transport. This has been somewhat mitigated by the fact that the head of the PMU remained the same until recently, which allowed for the development of a strong relationship between the Procuring Authority and the Project Company. While it was difficult to deal with frequent changes in ministers, the decision to form the PMU has paid off by isolating the project from many of the disruptive effects of the changes in the ministry.

KEY EVENTS

Scope Changes

There were multiple scope changes within the variations which have been submitted through the life of the project to date. The first scope change was initiated in 2009 and the latest was initiated in 2014. The reasons for the changes can be grouped into three categories.

Inadequacies in the project design agreed at financial close

When the project entered the construction phase, it was discovered that some sections in the airport had not been considered in the original design. This can be attributed to not involving end users (in this case end users may refer

to airlines, security, customs, etc.) in the design process. Different end users from airlines to local authorities had specific needs which were not met by the original design, making the scope correction unavoidable.

Constraints of working in an operational airport

The project was an expansion of an existing airport. The design overlapped with the existing operational assets, making it difficult to build while the airport was operational, and the old structure was limited in space. Construction works therefore needed to be adapted to mitigate safety and security risks. In most cases, the expansion was performed in stages, where a section would be completed and opened for use before moving to another one.

Changes in the traffic profile (passengers and aircraft)

The airport expansion was planned in two phases, with the first phase to expand the airport to a capacity of nine million passengers a year, and the second phase to expand to a capacity of 12 million passengers a year. However, the forecast traffic volume growth and type of traffic forecasted to use the airport proved to be too conservative. The airport was starting to be used as a hub, thus seeing larger wide-body aircrafts coming in which were not considered in the original design. These developments in the traffic profile required the addition of gates and improvements to make the gates suitable for heavy jets.

Renegotiation

The Project Company initiated a renegotiation of the PPP contract three years after financial close to address various scope changes and the acceleration of the stage two development. As part of the renegotiation settlement, the parties agreed that the Procuring Authority is to contribute USD \$50 million and the Project Company is to take USD \$150 million in additional debt. The contribution from the Procuring Authority was structured as 10 voluntary quarterly deductions from the annual investment fees. As for the loans, the lenders decided to refinance the original debt by both increasing the amount of loan and changing the interest rate. The original loan was already four years old and was priced on the basis of a different risk profile, thus a review of the rate and the loan tenor was done to reflect the changed risk profile. It was therefore possible for the Project Company to take on the additional debt and receive more attractive financing terms. This was also helped by the fact there was an increase in the expected revenue due to the early delivery of stage two.

The government contribution required the approval of the Council of Ministers, which is the Ultimate Administrative Body in the Jordanian government. The recommendation for the contribution was submitted by the PMU to a steering committee formed for the project, which elevated the request to the Council of Ministers.

LESSONS LEARNED

Early involvement of stakeholders may avoid having to undergo significant changes in scope, resulting in delays and cost overruns.

End users and other stakeholders should always be involved in projects of this scale. When a PPP project is planned, the Procuring Authority and the Project Company should identify the end users to understand their needs and activities. This is particularly important where there are a range of stakeholders, which, in the case of an airport, include airlines and retailers, as well as passengers. This will avoid having to undergo significant changes in scope, resulting in delays and cost overruns.

Setting up a dedicated project team may help to mitigate risks from political and institutional changes.

The Jordanian Ministry of Transport (MOT) decided to form a dedicated project team for the Queen Alia International Airport expansion. The benefits of this decision were most evident when the MOT was undergoing unusually frequent changes in ministers. With the PMU being separate from the MOT and concentrated on the airport, the disruptive effects of those frequent changes were avoided. The PMU staff remained the same, ensuring continuity of knowledge and contract management. Additionally, most of the decision-making was within its remit, other than high-level strategic decisions which required escalation to the MOT. This limited the potential decision-making delays caused by the changes in the MOT. This example shows how setting up a dedicated team to deliver and manage the project helps mitigate risks from political and institutional changes.

Involving end users in the construction works can streamline the progress of construction and facilitate a fast transition from one stage to another.

Expanding an operational airport presented a significant challenge in the construction phase. The process was carried out by delivering the expansion in small packages around the original structure, with operations shifting from one section to another by having contractors and end users alternate between each stage. Involving end users (represented through services such as customs, security, airlines, etc.) in the construction works helped them become ready when the time came to move their operation to a different section of the airport. This process streamlined the progress of construction and facilitated quick transition from one stage to another.

Flexibility and commitment of the Procuring Authority to deal with unforeseen circumstances can have a significant positive impact on the overall success of a project.

The Procuring Authority was able to proactively manage changes and variations initiated on the project. While some variations could have been avoided, the government has shown the willingness to act as an enabler. When the Procuring Authority requested variations to accommodate its needs, it was fully prepared to take up the costs associated with them and facilitated the approval from the government.

Another notable incident occurred when an airline was late in its payments to the Project Company, which was then forced to notify the Procuring Authority that it would not be able to meet its investment payments on time. The Procuring Authority acted flexibly in this regard to reach a workable conclusion with the Project Company.

Early and robust transition planning will make transition phases more efficient.

The parties understood the challenges of transition phases from an early stage, and careful planning started two years before the transition from construction to operations. The effective transition management, as well as early planning and training, ensured good transfer of knowledge from the construction team to the operations team and helped overall readiness for service commencement, which, in turn, enabled a timely and smooth commencement of the services operation.