# OUTSOURCING FOR AIRPORT TECHNICAL PROVISION

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The article is to highlight the process of thesis, which characterizes the current practice of airport security and technical proposals and recommendations to improve the process of airport security, including technology outsourcing solutions. Through analysis, airport security technology highlights the reasons, advantages and disadvantages of outsourcing, the analysis of some selected airports that use outsourcing services and analysis systems used by some airport.

**Key words:** Outsourcing, Airport, Expenses, Profit, Terminal

## 1 INTRODUCTION

Diploma thesis has the task to analyze of airport security technology, which should bring the answer why use services of outsourcing, how can outsourcing help reduce costs, and which services or processes may allow the airport with this trend.

The airport constitutes one of the critical parts of air transport, which must comply to ensure efficient and economically viable activity for operators and also provide for passengers, air carriers a interesting services. To improve efficiency and profitability can outsource logistics activities. Outsourcing is currently regarded as a tool to increase efficiency and thereby the competitiveness of companies in all economic sectors. Its importance has grown significantly in terms of opening our markets and accession to the European Union. Not only are foreign companies bearers of this trend, but increasingly outsourcing starts to apply also in the Slovak society. Outsourcing contributes to increased productivity and optimization of selected processes, especially it concerns the support processes.

## 2 THEORETICAL KNOWLEDGE ABOUT OUTSOURCING FOR AIRPORT TECHNICAL PROVISION

The airport is a vast complex of facilities, which begins and ends with the City Terminal and take-off runways, and is intended for the operation of aircraft, providing pre-flight and post-flight services to passengers, the handling of air cargo and the operation of ground service, handling and transportation equipment. Operation of airport operations including airport operator, but also other organizations involved in its operation as well as organizations that operate within a controlled area and especially in the private part of the airport.

The airport can be divided into two categories:

- **Landside –** area is designated for the movement of ground vehicles, passengers and cargo
- **Airside –** it is controlled or protected part of an airport designed for aircraft movements at the airport, its take-off or landing and space for maneuvering the aircraft before landing at or departing

### 2.1 Landside

Buildings and facilities in the landside serve to ensure the conditions for the preparation of passengers and cargo for carriage by air. To ensure these conditions serves terminal building, which is the main environment for creating linkages between public and private part of the airport. The terminal is a complex structure designed to implement a number of specific requirements for different types of users. In terms of the needs of passengers allows operation of the various activities associated with the preparation of passengers for a flight or a terminal. There is an clearance of passengers, security checks, customs inspections, to check in luggage or passengers to issue the final airport.

The primary evaluation factor is the level of airport provided air and non-aviation services. Revenue item airports are primarily revenues from aeronautical activities and services provided by air carriers. These include airport taxes, landing fees airport tax, fuel and other charges. Airports trying to use their space in the terminal, therefore the landside is used for commercial activities, of

which the airport operator passes a financial gain. Modern airports buildings and terminals in the world are increasingly starting to resemble the great business centers of cities. Non-Aviation Services at the airport are an important component of the income of each airport. Airports operate these services either individually or through their own operating costs through outsourcing or hiring of contractors.

For economic reasons, the increasing utilization of aircraft and airports had to shorten the length of stay of the aircraft on the ground. These facts necessitate the introduction of airport ground transportation for passengers to be on time and without too much effort to get to the aircraft. This also ensures that land transport of passengers by controlled movement of the apron, which is needed especially in terms of seamless service processes and training aircraft before take-off. Currently, the major airports ensure a good and reliable land transport of passengers is as important as the very air transport. Often, is airport ground transportation at the airport, a critical place that limits the volume of passengers and the general use of the airport.

Transport and handling of luggage of airline passengers is an integral part of airport check-in process with the main emphasis is on regularity, reliability, efficiency and safety of operation. For reasons of speed and efficient way airline baggage check-in at airports requires appropriate systems for monitoring baggage, a high degree of mechanization and automation. They are used for different means among which are:

- screening x-ray equipment
- complete hand search
- screening wands

### 2.2 Airside

Non-public part of the airport is designed, built and operated according to the number and types of aircraft that will use the airport. The non-public area of the airport is built Runways, Taxiways, apron and parking areas for aircraft, and there placed navigational aids, lighting systems, signs and markings. In addition, the desktop background and constructed to ensure air traffic safety, such as rescue and anti-fire equipment, equipment for removing snow and ice aircraft maintenance and airport resources to track the movement area. Non-public part of the airport is about 80 to 95% of the total area of the airport and together with its aereal solution, affects all operational activities of the airport and its future development.

In terms of operation is the most important part of the airport runway. It is defined and regulated area for takeoff and landing aircraft, equipped with a marking that enables the identification of signs, markings and side signals to track the movement controlled and safe exit from the runway after landing. Pathway may be reinforced concrete or asphalt, dirt or grassy area frequently. The construction, maintenance or repair of such roads to the airport through outsourcing can hire an outside supplier. In Slovakia, the largest manufacturer and supplier of building materials company Holcim Slovakia, which aims to set standards of customer satisfaction and sustainable development in the Slovak construction industry.

A defined path for taxiing aircraft at the airport, intended for terrestrial connection to the airport with one another. This system tracks must be designed to permit the safe and smooth scrolling aircraft. For each runway is necessary to create as many taxiways to ensure efficient aircraft taxiing for takeoff or after landing. Apron is used to position the aircraft or its clearance. Allows entry and exit of passengers, technical clearance of aircraft, aircraft parking and other activities. This area is the most loaded of all movement areas, as when an aircraft has the highest weight.

The process of clearing an aircraft is a highly specialized range of activities and decisions about their quality of professional staff who provide technical clearance and the aircraft they used tools and equipment. Ground handling services to airlines provide individually or use the services of the airport operator and handling agents operating at the airport. The means to provide ground handling of flights of stairs, auxiliary power, boarding bridges and others.

Take off and landing of the aircraft are the riskiest phases of flight, airport runways because equipment is essential for air safety. Runways using lights and radio navigation aids, that allow aircraft to fly at night or in poor visibility. These

include systems such as ILS, DME, VOR or visual locking devices SALS, PALS, RIL.

## 3 ANALYSIS OF AIRPORT TECHNOLOGIC SECURITY AND OUTSOURCING

### 3.1 Outsource, or not to outsource?

Outsourcing of technical airport security is one of the new trends, which begins at airports increasingly used. It is the use of aid from external suppliers in reducing its costs by airport or any other company. The operation of the airport is very difficult especially in terms of cost, and therefore sometimes turn to outside suppliers who can provide some services more cheaply and efficiently than when the airport should carried out it separately.

Use of outsourcing services from different suppliers is for several reasons. There are four major reasons for the introduction of outsourcing, which to some extent overlap. These reasons are competitive, material, financial and organizational reasons. For the airports are the most interesting financial and competitive reasons, they are particularly important in terms of cost savings and increase competitiveness of the airport. They also have an important role in providing investment and human resources for the airport. There are many reasons why airports require the provision of outsourcing services, but the most important reason is that outsourcing airport can often save money because it is cost effective. Outsourcing has its advantages and disadvantages.

**The benefits of outsourcing:**

- immediate resolution of temporary labor shortages,
- reducing the cost of maintaining, repairing, upgrading equipment,
- speed of execution of orders,
- safeguards and guarantees for services performed.

**Disadvantages of outsourcing:**

- Outsourcing failure
- Increased demands on management
- unforeseen costs

### 3.2 Analysis of the Slovak and foreign airports and the possibility of reducing cost by outsourcing

The airport is self-employed company, that finance its activities by avionics and non-avionics activity. The principal line of business is economically self-sufficient and does not require public funding. However, due to saving their own costs at some other activity you must ensure some services through outsourcing. If you are growing or declining demands for technical and personnel resources, the airport does not immediately seek additional funding, or solve the problem of overcapacity. All obligations and assets, with the associated economic risks, human resources and related agenda, is responsible for all outsourcing services provider.

Analysis of risks, threats and costs to the airport in case of outsourcing, a critical issue. This is particularly the comparison of cost reduction offered by providers with an increase in transaction costs that area. The problem of costs can be especially so. hidden costs, so additional costs are not completely ignoring some obvious aspects of the area.

**In terms of opportunity cost can be compared by two situations:**

- Internal operation which is usually known about the total cost,
- Displaced traffic, though the cost must be less to adequate risk propensity of the risk.

The selected functional areas is also necessary to consider whether to displace the entire area or only part of it and whether it will be beneficial to the selected service request from a provider of integrated or selectively from different providers.

### 3.3 Analysis of the current state of the airport M.R Štefánik and Düsseldorf and the possibility of using outsourcing

Airport M. R. Štefanik is one of the major Slovak international airports in Bratislava and is the largest international airport in Slovakia. Regular and irregular domestic and international air connections provide low cost and traditional

airlines. Runway system consists of two perpendicular runways with cement-concrete surface, which now permit the landing of all common types of aircraft.

Two runways, the airport has available to cross each other. It is a risky system tracks, creates breeding as possible collision space and maintenance at the intersection of paths means the exclusion of all operations. in order to maintain the operation and expansion of the airport will soon be investing in their repairs or up to their reconstruction. From the perspective of maintaining operational airport is an important task need to invest in runways, taxiways and aircraft stands. It is financially very demanding. One way the airport can save your financial resources is through outsourcing.

Services at the airport M. R. Stefanik are immediately divided for services related to the operation of air transport equipment and transport for passengers and additional activities conducted for the benefit of the traveling public and other users in their needs at the airport. Part of airport services provided by the company, other services are provided by subcontractors. The airport is outsourcing mainly focuses on outsourcing services related to non-avionics business.

Airport Düsseldorf GmbH is the third largest airport in Germany. It is the largest international airport of the Rhine and Ruhrland, one of the largest metropolitan area in Germany. The airport, which has two runways and is available of 107 parking spaces for aircrafts at once.

Today, increasing competition and declining revenues German airports, forcing the operators to cost-saving measures. Therefore, the airport of Düsseldorf decided to reduce their costs through outsourcing. Compared to the airport M.R. Stefanik, which is primarily focused on the outsourcing of services related to non-avionics business, management of the airport of Düsseldorf decided to use outsourcing services in information and communication technologies. Through outsourcing, the airport gained a lot of rich experience in terms of information technology and reduces own costs of operation. Now the airport belongs to the profitable independent company. In addition to cost savings of outsourcing provide airport access to a wider range of experiences in terms of information technology as well as know-how, enabling the airport to focus on its core business, namely for its customers and passengers.

### 3.4 Analysis of picking up supplier for the outsourcing

Currently, the world becomes increasingly competitive than ever before. In such a situation is the provision of assistance from external contractors in many ways very important. This process involves the transmission of different services or activities to external service providers. The use of modern technology at present, largely increase, with an increasing requirement to provide outsourcing services, which is currently highly desirable. The market operates many companies and businesses that are ready to provide such services. When selecting a supplier, there are many criteria by which the airport can decide what services outsourcing vendor chooses.

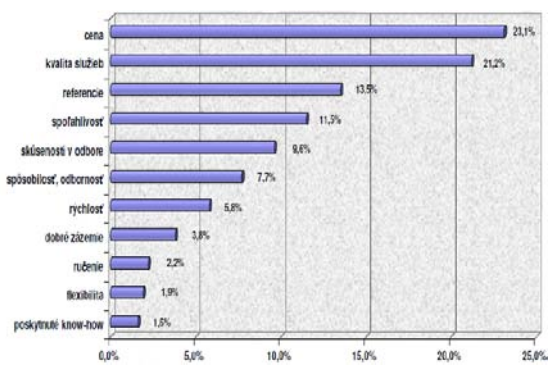


**Table 1 Criteria for selection of contractor**

### 3.5 Analysis of safety systems used for airport and ground handling

Financial claims on the pursuit of the activities of security, including screening and have an upward trend is expected that next year the trend will change. The main burden of costs to implement preventive security measures can not be transferred to airport operators and air carriers. It would also significantly adversely affect the business of airports and air carriers, their development and competitiveness. However, the appropriate form of cost reduction and outsourcing

can be as airports and air carriers would be able to reduce their own costs of operation. Mankind now has technology that can speed up processes at the airports to the strictest safety standards. This section analyzed some technical innovations that are already used to traveling by air. To ensure a safe airport process serving airport security systems. Among these systems, we include frame metal detectors, biometric systems, detection of trace elements, X-ray equipment, explosive detection systems and explosive detection system equipment, electronic security entry system and access to premises and facilities at the airport.

Biometric systems based on biometric features such as iris recognition, fingerprint recognition or 3D facial morphology.

The largest high-speed baggage sorting system in Europe, Madrid's Barajas airport. The system sorts per hour 16 500 bags. Any luggage can ever accurately locate. The terminal is connected to the main airport building about one mile tunnel. Suitcase travels at a rate of ten meters per second conveyor belts, whose length is nearly one hundred kilometers. The main safety feature in case the automatic x-ray sensors, which must pass through any luggage, until it reaches the aircraft.

. Plenty of parking spaces is therefore a prerequisite for the proper functioning of each airport. Wander in search of space tens of minutes in the maze of parking lots is literally a nightmare for any visitor airport. Ultimately, it may be too long time required for a person to get to the aircraft, the decisive motive for why they ultimately choose another mode of transport. The international airport in Munich uses automatic guidance system Sipark that directs drivers to free parking. Above each parking space is small ultrasonic sensor that monitors whether the position vacant or occupied.

Ground handling covers a wide range of services provided to airlines at airports to promote aviation. This includes not only highly technical services such as maintenance, fuel supply and oil and cargo, but also services essential for safety and comfort, as passenger check-in, catering, baggage handling and ground transportation to the airport.

## 4 RESULTS

### 4.1 Proposal to improve the ground handling at the airport

The first suggestion might be to provide more options to choose from ground-handling services for airlines at airports, which includes full market opening for self-handling airline, what would the airport could save some of their costs of providing ground handling services. Another way to improve ground handling can also be regular staff training or transfer of employees, including improving the efficiency and quality of the training process.

### 4.2 Proposal to improve screening control of the airport

To ensure air safety requires the development of new technologies in the field of technical support and increased demands for ensuring the security and safety in air traffic.

To prevent unauthorized access to restricted areas shall be used facial biometric identification, fingerprint or iris or retinal content especially at airports where it is used for mechanical and technical protection. To prevent unauthorized access to aircraft or airport operational areas should be increased control, and should use new technologies and additional screening instead of traditional screening.

## 5 CONCLUSIONS

The aim of this paper was to familiarize readers with the issue of airport security technology and outsourcing solutions to the two airports developed in our thesis. The result was to design procedures to improve the technical security of the airport ground handling operational areas and screened in the terminal building.

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