

## **AIRPORT COMPLEX: Teaching note**

Peter Nordgaard and Carsten Rohde, Copenhagen Business School

Airport Complex is a general case providing material for a discussion of several aspects involved in the management control of a service company which is mainly characterized by mass services. The case formulates four specific requirements that can be used individually or collectively depending on the teaching setting. It opens up a discussion of concepts and methods within management control rather than training students in specific principles and methods. Some of the themes that the case deals with are discussed below.

### *Requirement 1:*

This subquestion aims to guide the students through the carrying out of a problem analysis of the current management control of the company.

The discussion may for instance spring from Exhibit 1 which provides a summary description of the development in the company's performance and key figures. The exhibit clearly illustrates that the company is very capacity-intensive, compare the connection between the profit margins, the return on investments (ROI) and consequently the asset turnover. Exhibit 2 focuses on the development in the company's earnings distributed among the different business areas. However, as mentioned in the case, the problem is that the management finds it difficult to get an overview of how the various business areas utilize the company's resources. At present, it is thus not possible to measure and assess the profitability of the different business areas of the company.

The financial management section in the company description indicates that the revenue and costs of the company are not, or are only to a limited extent, considered as a whole in connection with the company's budgeting. The revenue is estimated on the basis of a number of different methods per segment, which seems quite appropriate. The costs are controlled by the individual department, which thus acts as a responsibility centre. The lack of co-ordination between the departments as well as the missing relation between certain departments and the revenue segments seem inappropriate with respect to the management control of the company. This is also reflected in the methods chosen for the budgeting, see also requirement 4.

### *Requirement 2*

The question is formulated as a continuation of requirement 1 to open up for discussion the extent to which a connection can be established between the company's revenue and the costs for the different business areas. In the following, the discussion will be based on the individual business areas as described in the case.

As appears, the constituent parts of the traffic income are take-off and stopover duties, and passenger fees. The take-off duty for an aircraft is partly related to its use of the airport control, which is an independent enterprise, and partly to a network of Airport Complex's own capacities and functions. The passenger fees are the same for all passengers, and in a broad sense they cover the use of buildings and various forms of services. Finally, the stopover duty is calculated on the basis of how long the aircraft stays in the gate. A calculation of the costs connected with the use of the airport's resources in relation to the take-off duty and the passenger fees will require extensive measures of resource consumption for the capacities involved in the servicing. It is thus not likely that the contribution margin model or a simple full cost allocation model will prove satisfactory to solve this task. The company should, on the contrary, define relevant resource consumption measurements, which could for instance be done using Activity Based Costing. The model and its potential and limitations should be discussed in relation to the problem mentioned.

However, one of the essential questions is whether, and if so, how, the capital investments can be traced back to the individual business areas. Examples include costs in connection with terminal complexes, which in principle are related to the business areas

of traffic, renting and licensing. One possibility could be to try to assess the quantity of square metres per area. The actual delimitation of space between the business areas constitutes a practical problem, however. Are areas outside shops there to benefit the shops or the passengers on their way to the aircraft? In order to be able to measure the profitability in relation to space as a capacity, it should consequently be determined how much the different business areas control the costs outside the areas that relate directly to the business area. In this connection, the potential for solving this problem through either contribution margin, full cost or activity based costing can be discussed.

### *Requirement 3*

As previously described, Airport Complex is characterized by large capital investments for buildings, runways and technical equipment. At the same time, however, the staff capacity is also comprehensive because of the substantial number of tasks connected with servicing passengers and airlines and with maintaining buildings and technical equipment. Therefore, one possibility is to discuss the management of staff capacity.

The technical department, with the three sub-departments Electricity, HVAC, and Bus and Service, can be used as an example. It appears from the case that these sub-departments have relatively comprehensive staffing, and therefore in the initial situation a high degree of variability. An important issue is to decide on the number of staff required for the respective departments to be able to solve their tasks with a satisfactory level of quality and service. This partly depends on the number of tasks and projects per time period as well as the productivity expected from the respective employees per staff group. But at the same time, the quality level must be determined, as it is absolutely decisive for the resource requirements. Measures for and measuring of the service level may thus be discussed for selected areas and departments. The company must aim to uncover these connections, for instance on the basis of relevant measurements and registrations *ex post*.

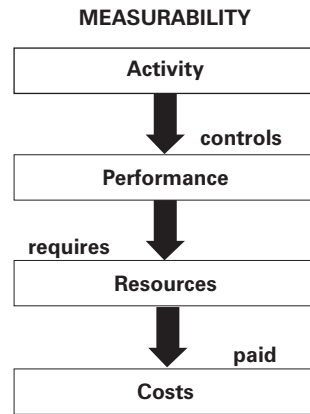
A model for discussing the possibilities of dimensioning the number of staff on the basis of activity is illustrated in Figure 1. In cases where the company wants to dimension its staff capacity on the basis of activities, the type and extent of these must be mapped out per department and per time period. The next step is to convert this into time consumption per activity. In principle, this can be calculated as the expected time consumption related to the activity (duration driver) or the number of activities performed per time unit (intensity driver). The use of the intensity driver implies that the activities are homogeneous from time to time, which means that they have approximately the same duration.

In order to convert this into a resource requirement, in this case for staff, the company must establish the effective working hours during which the employee can be expected to perform tasks. This depends for instance on rules on working hours, rate of work, absence due to sickness, level of service and quality, etc. Once the effective working hours per employee are known, the performance can be converted into number of 'whole' employees. By multiplying the number of employees with pay per employee, it is possible to calculate the expenses per period.

The relevance of using activities as a basis and dimensioning the organization accordingly, should of course be discussed. This can partly be done on the basis of the company's knowledge *ex ante* of the activities that need to be performed. Moreover, it should be based on the possibilities and limitations in terms of measuring which are connected with creating a relation between activity and costs in the figure. The alternative is to include the staff capacity of a department in a dimensioning independent of the activity. This can also be included in a discussion of the three lower boxes in Figure 1.

### *Requirement 4*

The section 'Financial management' gives a summary description of selected budgeting methods in the company. The methods applied for budgeting of the company's revenue seem relevant, though of course the reliability of the forecast varies with the methods. For instance the budgeting of rental income is based on the knowledge of the number of square metres and the price per square metre per type of building, which makes the



**Figure 2** Control of capacity costs based on activities requiring *resources*

method very precise. Budgets for traffic income require forecasts on the number of aircraft that take off from the airport, the average weight of the aircraft and the average number of passengers, which is necessarily connected with some uncertainty. This also applies to licensing income where it may be difficult to make an exact forecast of the turnover per type of shop. In this connection, the number of passengers, age distribution, the purpose of the trip, etc. will be factors influencing the turnover of the individual type of shop. Budgeting of services as a purchase total is indeed a summary method. Here, it could be an ambition for the company to get a clearer picture of the number of services per type as well as their prices.

Salaries, which account for a considerable expense item, are estimated as the number of employees  $\times$  salary per employee. The method seems relevant for part of the salary costs. At the same time, the number of employees as well as the average salary cost per employee may appear as a key figure. However, particularly in cases of large departments where many employees perform the same task, the possibility of deducing the staff requirement on the basis of the activity ought to be considered, as was also discussed under Requirement 3. This circumstance can be discussed for the individual departments in the company.

The remaining costs are provided for in the budget as a fixed amount. This is a method which is easy to apply, and which allows responsible staff a certain margin within the limits of the fixed amount. On the other hand, the extent of control and follow-up is limited, since control and follow-up only is made in amounts. For some costs this is sufficient, but for others it is too limited. The relevance of the method can thus be discussed on the basis of frequent types of cost in Airport Complex. It should be noted that a larger extent of control can be achieved through the fixed amount method, if it is combined with different forms of action plans.