

Green Airports

Creating sustainable airports

Sustainability is becoming increasingly important. Not as part of the hype, but as a must-have. Sustainability will become just as important as any other field of business. As a result, airports can no longer keep sustainability off their main agenda and need to take action.



People matter, results count.

Attempts to reduce aviation carbon emissions have focused on airlines and aircrafts. However, non-aviation emissions, such as those generated by ground operations, can make up a relatively large part of total aviation-related emissions. In addition, inefficiencies in airport design can keep airplanes circling in the skies overhead or idling on the ground. Many of the Western world's main airports were built almost 70 years ago when sustainability was not generally considered as part of the design concept. Consequently those airports are amongst the worst environmental offenders.

Through the Green Airports initiative, Capgemini can assist airports in embracing opportunities and managing risks derived from economic, environmental and social developments.

It can be expected that the demand for air transport will increase. To accommodate this demand airports need to grow, otherwise they are exposed to the risk of airlines moving their operations to other airports. However, the growth of an airport is limited by many factors, including physical space, noise pollution, quality of life in the surrounding areas, and environmental allowances. In addition, many airports face serious image problems in the community, which constitutes another limiting factor.

Putting sustainability high on the corporate agenda, and taking the necessary steps, may provide the airport the necessary license to operate and possibly a license to grow.

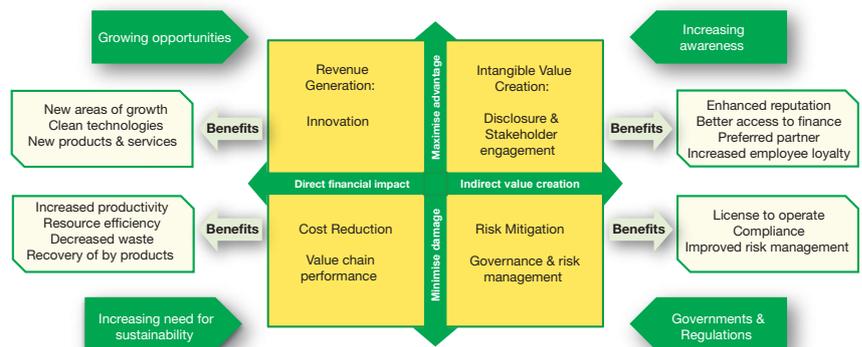
Taking advantage of the disadvantage

Often, sustainable investments are seen as goodwill investments or mandatory investments that are of little business value. At Capgemini we believe that all sustainability investments should lead to value creation for the airport. An effectively run airport, in addition to improving its environmental impact, is likely to prove more attractive for passengers and airlines. Traditional thinking sees airports as little more than a stepping stone for travelling to and from a destination. However, today, due to increased competition and emphasis on an airport's facilities and image, airports are beginning to be considered as a destination on their own. By visibly embracing

sustainability in all areas of the business and communicating them clearly, we believe that airports can capitalise on this emerging trend and ensure that they are the preferred choice for both passengers and airlines.

Capgemini's Green Airports initiative not only aims to create a sustainable airport on environmental aspects, but also on economical aspects. All investments should have a positive business case, and it should be possible to place them in one of the quadrants shown in Figure 1. If this is not possible, different options need to be pursued. Sustainability must not be seen as a disadvantage that only costs resources, but as an opportunity to realize unknown benefits.

Figure 1: Creating value through sustainability



Adapted by Capgemini from D.S. Esty, A.S. Winston (2006), Green to Gold

Sustainability Circle

To develop a sustainable operation that combines business and social responsibility objectives, the airport community needs to determine key areas for emission reduction as well as monitoring closely and reporting on CO₂ emissions. Airports should also encourage passengers to contribute by setting objectives and informing them on how to be sustainable and bring their individual CO₂ footprints down.

At Capgemini we believe that all airports can deploy a six-step approach to developing a sustainable operation. Figure 2 depicts this six-step approach as the Sustainability Circle. Although the Circle suggests that all activities should be done in a sequential manner, some overlap and annual repetition of the various steps will take place. Below, the steps are briefly discussed.



1 Vision on sustainability

The first step is to create a corporate vision on sustainability, which helps to focus activities and report progress of activities to the outside world. A multidisciplinary team should be created to ensure that the initiative is implemented smoothly and with input from all divisions.

2 KPIs and boundaries

Key Performance Indicators (KPIs) make it possible to measure the vision. Setting boundaries that determine where the airport's responsibility starts and ends contributes to the ability to measure values.

3 Sustainability footprint

Developing a sustainability footprint provides the starting point for identifying areas in which benefits can be realized. The initial year's footprint should be used as a basis for comparison for the following years.

4 Strategy

Investigate possible improvement opportunities by presenting a business case to determine whether value is created by implementing that particular solution. Based on these business cases a sustainability strategy can be created and the appropriate solutions can be selected by industry experts.

5 Implementation

The selected solutions need to be implemented in the most efficient manner, possibly with a project manager overseeing the implementation. This may take months or even years, depending on the time needed to implement all solutions.

6 Monitor & Reporting

Once an airport commits itself to becoming a 'green airport', it should be open about its activities and progress. An airport needs to allow the outside world to see how it is improving itself, which will create additional momentum for further achievements. Consistent and regular monitoring and reporting should be done to ensure that the airport remains on top of sustainability issues.

Figure 2 The Sustainability Circle



Examples of solutions

Solutions to reduce emissions can be found in all areas. An example is a flight track monitoring system to classify noise burden caused by both aircrafts and aircraft handling. Another example is the usage of LED lighting, which has replaced traditional lighting to reduce light pollution as well as reduce CO₂ emissions and energy costs. Also heat recycling systems, heat exchangers and heat pumps are known examples of implemented solutions.

At Capgemini, we believe that Collaborative Decision Making (CDM) can also contribute to reducing emissions by tackling the current fragmented and uncoordinated operations common at many airports. The process of CDM involves streamlining IT systems, improving efficiency of the sequencing process through evaluating software solutions, improving take off predictability and establishing disaster recovery and business contingency plans for all IT and information sharing platforms at an airport. Through CDM implementation airports are able to

improve the performance of their processes as well as their reaction times, leading to increased air traffic without a compromise on air quality. Additionally, this can reduce delays and optimize the distribution of resources.

Act proactively

By acting now, before legislation forces mandatory changes and because solutions may be time-consuming, proactive airports can demonstrate their dedication to the environment and their surroundings. This will inevitably lead to stronger support from the community and stakeholders, which is necessary if an airport is to compete, operate and grow in today's volatile marketplace.

More information:

Hikmat Mahawat Khan MSc MBA
Principal Consultant
Hikmat.mahawatkhana@capgemini.com
+31.(0)6.15.03.09.46

Xander de Jong MSc
Senior Consultant
Xander.de.jong@capgemini.com
+31.(0)6.45.898.158



About Capgemini and the Collaborative Business Experience™

With around more than 115,000 people in 40 countries, Capgemini is one of the world's foremost providers of consulting, technology and outsourcing services. The Group reported 2010 global revenues of EUR 8.7 billion. Together with its clients, Capgemini creates and delivers business and technology

solutions that fit their needs and drive the results they want. A deeply multicultural organization, Capgemini has developed its own way of working, the Collaborative Business Experience™, and draws on Rightshore®, its worldwide delivery model.

Learn more about us at
www.capgemini.com