

## **Airport Systems Planning, Design and Management**

Richard de Neufville  
Professor of Engineering Systems and of  
Civil and Environmental Engineering  
Massachusetts Institute of Technology  
Cambridge, MA (U.S.A.)

Author: "Airport Systems Planning, Design and Management"  
(with Prof. Odoni), McGraw-Hill, September 2002

### **Abstract**

Airports need to be built and operated in an integrated, coherent process. Previous arrangements that separate the design, financial and operational aspects as technically and economically inefficient. The traditional practice -- in which technical experts lay out the airport, then government or bank officials provide money and, finally, airline and airport companies take over the responsibilities for making the situation work -- wastes money and effort. To be among the best airports, to be internationally competitive, the airport industry needs to integrate these processes.

The presentation uses examples drawn from practical experience worldwide to illustrate the waste that can occur when design, financial and management issues are not integrated. These demonstrate three main points:

1. Timely financial support for airport development is a key factor in creating an economically efficient service, because stretching out the construction time can have severe consequences;
2. Airport planning and design processes work closely with airlines and airport operators to reduce the life-time costs of operations, which often dominant the initial costs of construction and operation;
3. Initial plans and designs need to be allow for the major changes that always seems to occur in airline operations and traffic -- specifically, they need to create options that permit the airport operators to adjust easily to new circumstances.

### Prologue

- Standard design practices
- Alternative possibilities
- Changed environment that favor the new situation...

Ex 1: costs of delay in execution of project -- "the Osaka story" cf with US practice

Ex 2: costs of operations, delays in a/c movements -- " the BAA story" cf with finger pier design

Ex 3: flexibility examples "the Osaka transfer story" ; "the Newark Story" Insurance (inform of higher construction costs) vs. later costs....