Adaptive Airport Strategic Planning

J.H. Kwakkel
Delft University of Technology

W.E. Walker
Delft University of Technology

V.A.W.J. Marchau
Delft University of Technology

https://doi.org/10.18757/ejtir.2010.10.3.2891

ABSTRACT

Airport Strategic Planning (ASP) focuses on the development of plans for the long-term development of an airport. The dominant approach for ASP is Airport Master Planning (AMP). The goal of AMP is to provide a detailed blueprint for how the airport should look in the future, and how it can get there. Since a Master Plan is a static detailed blueprint based on specific assumptions about the future, the plan performs poorly if the real future turns out to be different from the one assumed. With the recent dramatic changes occurring in the context in which an airport operates (e.g., low cost carriers, new types of aircraft, the liberalization and privatization of airlines and airports, fuel price developments, the European Emission Trading Scheme), the uncertainties airports face are bound to increase. Hence, there is a great need for finding new ways to deal with uncertainty in ASP. An alternative direction is to develop an adaptive approach that is flexible and over time can adapt to the changing conditions under which an airport most operate. Three adaptive alternatives to AMP have been discussed in the literature. This paper explores these three alternative approaches. Based on this, it concludes that these approaches are complementary and that it might be worthwhile to combine the three into a new, adaptive approach to ASP. A design that integrates the key ideas from the three alternative approaches is presented and illustrated with a case based on Amsterdam Airport Schiphol.

HOW TO CITE

Airport Strategic Planning. Dr. Richard de Neufville. Professor of Systems Engineering and Civil and Environmental Engineering Massachusetts Institute of Technology. Airport Systems Planning & Design / RdN. Outline of Introduction. The Vision. The Context. The Problem. Fixed Master Plan Management Commitment to Plan Inflexibility; Losses. The Solution: Dynamic Strategic Planning. Recognition of Risk as Reality of Planning. Analysis of Situation. Flexible, Dynamic Planning. Miami Used as an Example. The Vision. A significantly improved app. In many ways, master plans are shaped by the strategic ambitions of the airport operator, the policy and planning framework that is set by national and regional governments. This is a course that provides delegates with the relevant knowledge and sets of skills in order to solve airport strategic planning problems as practitioners. Read more Read less. Most airports prepare master plans which outline short, medium and long-term development ambitions. In many ways, master plans are shaped by the strategic ambitions of the airport operator, the policy and planning framework that is set by national A plan that can adapt to changing conditions is well suited to situations involving deep uncertainty. This was a first step towards adaptive planning. In contrast to static robust plans, adaptive planning defines contingency plans and specified conditions, called signposts and triggers, under which the plan should be reconsidered and revised [22]. APM has been applied for strategic planning for airports [36], expansion of the port of Rotterdam [38], flood risk management in the Netherlands in light of climate change [39], policies with respect to the implementation of innovative urban transport infrastructures [40], congestion road pricing [41], intelligent speed adaptation [42], magnetically levitated (Maglev) rail transport [41], and energy transitions [43].