

Overview

CA Advisors partnered with two management consulting firms to conduct this strategic project for a major international airline. The airline generated more than \$1 billion in annual revenues, operating a fleet of about sixty aircraft of various types. The national government owned the airline, but desired to privatize it. CA Advisors teamed up with its partner firms in a turnaround engagement in order to bring sustained profitability to the airline and prepare it for privatization.

Requirements

An analytical tool was needed for strategic decision-making regarding the restructuring of the airline. As major strategic decisions regarding the future of the airline were being considered, the impact of such decisions, individually and accumulatively, had to be evaluated from the financial and operational perspectives. In effect, as the airline changed over time, the structural changes to the basic financial statements and key operational statistics needed to be identified. Since such strategic decisions were being made over a planning horizon, the expected effects had to be evaluated periodically – for every quarter over five years. The development of this analytical tool supported responding to the fundamental strategic questions: where does the airline want to be in five years, and how does the airline plan to get there?

Approach

The team of consultants developed the concept of Airline Analysis Method (AAM) as the principle approach for accurately capturing the dynamics of the airline business by quantitatively modeling the market environment, the operation settings, and the financial and operational consequences of strategic decisions. Consequently, AAM could be used to simulate business and operations strategies under different market conditions.

Airline Analysis Method (AAM)

AAM abstracted the airline into two separate modules: Market Scanner and Airline Scanner. Market Scanner included the revenue-generating components of the airline, while Airline Scanner entailed the operational and cost elements. As major strategic decisions were being considered, changing the values of the appropriate items in these two modules allowed accurately evaluating such decisions. The Optimization Module then restructured the operations network by allocating available flight equipment and recapturing the impacts of that redistribution of resources. After that, the Evaluation Module took the results and prepared a set of standard financial statements and operational statistics to illustrate the impacts of decisions that were made and were incorporated in Market Scanner and Airline Scanner. As a result, AAM provided a means to identify the key areas for major restructuring and the extent of needed changes for a successful turnaround that would yield a sustained profitability. In effect, AAM contributed to the development of a new business model for the airline and the accompanying plan to integrate that model.

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Airline Analysis Method (AAM) Structured Approach

AAM modules...

Market Scanner This module of AAM contained information regarding the flight schedule, fares, in-flight service levels, aircraft availability, and the data about competitors. Market Scanner included a market model that computed potential passenger traffic by compounding market size and customer preferences for competing flights.

Airline Scanner Airline Scanner kept information about the fleet, operations, and expenses in an organized framework. The airline was divided into major operating units, and each unit was modeled individually. The operating costs were divided into airline-related expenses and those associated with operating flight equipment. Provisions for capital spending for all units of the airline were also added.

Optimization Module The Optimization Module assigned aircraft of various types to cover the schedule in a way that the airline profits were maximized. The module also included a spill model that considered the excess demand versus available capacity and distributed that excess demand to other flights. The origin-destination traffic was then appropriately spread throughout the network.

Evaluation Module After all elements of the operating network were identified, the Evaluation Module calculated the standard financial statements and operational statistics. The items that were included in *pro-forma* statements and statistics of AAM were those typically appearing in the publicly-disclosed periodic reports of airlines.

AAM decision-support system...

AAM was developed in the PC system environment with Microsoft Windows operating system. As a PC-based, decision-support tool, working with AAM became very easy which facilitated its introduction to users. Training time was significantly low, allowing AAM to contribute immediately to the restructuring of the airline. AAM used three different software platforms. Market Scanner and the Optimization Module applications were developed in Delphi Version 4.0, and were in the executable version. Airline Scanner and the Evaluation Module were developed in Microsoft Excel Visual Basic Application (VBA). The Optimization Module also used CPLEX Version 6.5, the deployment version, which was delivered as a software component of AAM with the appropriate usage license.

Benefiting from experience...

The contributions of CA Advisors to the AAM project combined extensive experience in strategic planning, airline strategies, and corporate development with knowledge of advanced quantitative planning and management science techniques. The president of CA Advisors, who also directs the practice of the firm in the airline industry, represented the firm and led the project.

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Jahan Alamzad is president of CA Advisors. He has served as advisor to Applied Decision Analysis (ADA), a unit of Standard & Poor's Corporate Value Consulting, where he was previously the director of airline practice. (ADA was a wholly owned subsidiary of PricewaterhouseCoopers LLC between 1998 and 2001.) Mr. Alamzad has been a management consultant in the airline and aerospace industries for the past seventeen years. Before his consulting career, he worked at American Airlines and United Airlines.

Mr. Alamzad holds a masters in operations research from Stanford University, as well as a masters in industrial and systems engineering from the University of Southern California, and bachelors degrees in civil engineering and electrical engineering from the University of Illinois. He has served on the faculty of the Department of Aviation at San Jose State University, lecturing in airline management. He also collaborated in writing a textbook entitled *Airline Management*, published by Prentice Hall. The inside cover of this book includes an elaborate flow-chart for analyzing an airline. That scheme was used to develop the concept of AAM in this project.

Mr. Alamzad specializes in the application of advanced analytical techniques to complex business problems. He has been engaged in a variety of assignments in operations, marketing, planning, and finance functional areas, ranging from strategic planning, decision analysis, business-process reengineering, and organizational restructuring to tactical operation analysis and resource planning. He has led restructuring and turnaround projects, as well as the design and development of decision-support and information-processing systems. His areas of expertise include quantitative modeling of business processes, integrated planning, and revenue management.

About CA Advisors...

CA Advisors is a management consulting firm dedicated to providing state-of-the-art analytical services. By applying powerful and practical tools, the firm helps its client understand their business positions and improve their strategic and operational decisions. To ensure the success of its work, the firm is committed to collaborating closely with its clients, communicating clearly about its approach, and delivering valuable results that are logically sound. For many years, the work of CA Advisors professionals has spanned a wide range of projects. The firm has a focused and dedicated practice in the airline industry, with a breath of expertise in aerospace and aviation. The experience of the firm's professionals extends from traditional applications in logistics and resource allocation to more innovative applications in strategic planning.

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