

Supply Planning at Violet Airlines

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Abstract. This case presents a strategic supply-mix decision facing Violet Airlines as it prepares to operate new international routes. The CEO must determine the optimal configuration of business and economy class seats for a new aircraft, balancing premium revenue opportunities with the need to maintain high load factors. Students use Monte Carlo simulation in Excel to evaluate alternative seating mixes under uncertain demand, applying tools such as Data Tables and Scenario Manager to estimate net revenue across multiple scenarios. The case enables learners to experience how small configuration decisions can significantly affect profitability, operational efficiency, and market positioning. Designed for courses in operations management, management science, and revenue management, the case emphasizes hands-on modelling, data-driven decision-making, and experiential learning. The case also illustrates how similar supply-mix challenges arise across service industries such as hotels, restaurants, hospitals, and transportation. This is a fictional teaching case developed solely for academic purposes, and any resemblance to real organizations or individuals is coincidental.

Keywords: revenue management, simulation modeling, seat mix configuration, capacity optimization and service operations.

1. Introduction

Active and experiential learning have increasingly become central to management education, emphasizing engagement, participation, and reflection rather than passive reception of knowledge. Research shows that when students learn by “doing” — through simulations, role plays, and applied problem solving — they demonstrate stronger conceptual understanding and improved decision-making abilities (Kolb, 1984; Prince, 2004; Bonwell & Eison, 1991). Experiential learning bridges the gap between theory and practice by allowing learners to directly experience managerial challenges, analyze their decisions, and reflect on the outcomes. This hands-on approach is particularly effective in operations and service management, where uncertainty, trade-offs, and optimization are central to managerial decisions.

The “Supply Planning at Violet Airlines” case fits naturally within this experiential framework. It requires students to play the role of Ajay Verma, CEO of Violet Airlines, who must decide the optimal mix of business and economy class seats for new international aircraft. Rather than merely discussing theoretical principles of revenue management or capacity

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optimization, learners are expected to build and test simulation models in Excel (and optionally Python), explore different scenarios, and experience firsthand how small decisions in capacity configuration can affect profitability and brand positioning. In doing so, students progress through Kolb's experiential learning cycle — concrete experience (model building), reflective observation (analyzing outcomes), abstract conceptualization (understanding trade-offs), and active experimentation (testing new configurations).

Thus, the Violet Airlines case serves as a pedagogical tool for applied, data-driven learning, helping students internalize key operations management concepts through experimentation and reflection. The following sections describe the case background, decision context, and teaching plan designed to engage learners in an interactive, hands-on experience.

2. The Case

Ajay Verma, the CEO of Violet Airlines, has been steering the airline's operations in India for the past six years. Recently, Violet Airlines received permission to operate on international routes, marking a significant milestone in the company's growth. Headquartered in Kolkata, the airline is anticipating the scheduled delivery of new aircraft in the upcoming quarter. These new aircraft are intended to be deployed on international routes, a strategic move aimed at expanding the airline's footprint globally. With this expansion, Ajay Verma faces a crucial decision regarding the configuration of the new aircraft. Specifically, he must determine the optimal distribution of business class and economy class seats to maximize revenue. This decision is pivotal as it will impact the airline's profitability and market competitiveness on international routes.

Violet Airlines currently operates a fleet of 100 aircraft serving the domestic Indian market. To date, the airline has exclusively offered economy class seating, even though other airlines in the domestic market provide both business and economy class options. This strategic focus on economy class has proven successful, evidenced by Violet Airlines' impressive average load factor of 92% over the past six years. The high demand for economy class travel has been further fueled by the inauguration of new airports across the country, which has facilitated increased passenger traffic. As Violet Airlines prepares for international expansion, the introduction of business class seating represents a significant shift in its service offerings. This transition necessitates careful consideration of market demand, competitive dynamics, and revenue optimization strategies. Ajay Verma's decision will not only influence the airline's immediate revenue but also shape its long-term positioning in the international aviation market.