

This thesis was created thanks to a cooperation between the International Graduate School Dynamic Intelligent Systems at the University of Paderborn and the German airline Deutsche Lufthansa AG. It includes the consideration of problems occurring in applied revenue management under the aspect of academic research. The goal is to use methodological approaches to airline revenue management, demand forecast and simulation presented in the further text as well as expert knowledge and data available in the industry. The purpose of this text is the development of a new view of forecast performance, in order to avoid some of the complications connected to evaluation of demand forecasts for revenue management. To enable this, a theoretical concept of decomposing and evaluating forecasts under the laboratory conditions provided by a simulation and using information exclusive to simulation environments is developed. To demonstrate the potential of this concept, the implementation of a simulation environment including a choice-based demand model is documented. Finally, a number of statements about the implications of forecast quality and forecast evaluation is expressed formally and tested using simulation experiments to demonstrate the use of the proposed concept.