SAUDER
School of Business
UNIVERSITY OF BRITISH COLUMBIA

COE — CENTRE FOR OPERATIONS EXCELLENCE

Centre for Operations Excellence

Pre-Board Screening Analysis at a Canadian International Airport

Client Profile

www.catsa-acsta.gc.ca

The Canadian Air Transport Security Authority (CATSA) is an air security governing organization that takes responsibility for the security screening of passengers and their belongings at 89 designated airports across the country. The Authority's mandate is the delivery of consistent, effective and highly professional service that is set at or above the standards established by federal regulations.

Business Challenge

The Centre for Operations Excellence (COE) previously conducted an analytical study on the pre-board screening (PBS) operations for a Canadian international airport. Project results include a comprehensive review and documentation of pre-board screening operations, simulation models and detailed recommendations to improve the efficiency and effectiveness of the PBS system. Since then, there have been many changes in the PBS system including new equipment, regulations, work regulations and passenger characteristics. Realizing this, CATSA approached the COE to carry out a follow-up project to update and revalidate the results of the previous COE study.

Value Delivered

1. The COE provided CATSA with detailed process maps describing the pre-board screening process.
2. The COE provided CATSA with powerful simulation models used to analyze different scenarios of PBS operations.
3. The COE determined the optimal staff allocation and minimum required staffing levels to achieve the target service level for different passenger volumes.
4. The COE identified the bottlenecks of the PBS system and provided solutions.

The COE Approach
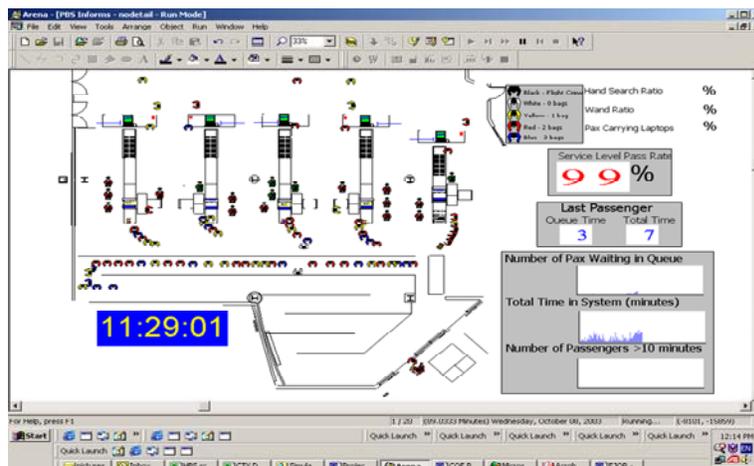
Step 1: *Process Mapping and Data Collection*.
The COE team conducted site visits and interviews to create process maps of the pre-board operations, and collected necessary data and information.
Step 2: *Simulation*.
The COE developed three versions of simulation models for demonstration and scenario analysis for each of the PBS locations. The models were validated against the collected data.
Step 3: *Scenario Analysis*.
Scenarios were tested to find the optimal staff allocation to generate maximum system throughput. A large number of scenarios was investigated to determine the minimum required staffing levels for different passenger volumes. Resource utilization was calculated to identify the system bottlenecks and solutions were provided.

Analytics and Operations Research