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Case study

Check-in and baggage outbound at Toronto Pearson

- An optimization study

Introduction

Greater Toronto Airport Authority (GTAA) engaged with Copenhagen Optimization to carry out a study of how to optimize the operation of the check-in and baggage outbound facilities in Terminal 3 at Toronto Pearson International Airport (YYZ).

The aim of the study was to assure efficient use of the current infrastructure before adding additional capacity.

The study concluded that significant reductions in demand for capacity at check-in and baggage could be realized by working smarter. The initiatives considered various options for optimization: improved planning, better use of infrastructure, new technology, and changes in the check-in and baggage outbound processes.

In total, the initiatives documented a potential reduction in demand for check-in counters of approx. 18% and a reduction in demand for baggage make-up positions of 14%.

Toronto Pearson
For You. The World.

Copenhagen Optimization successfully identified key initiatives that provided valuable capacity using real world experience. Their approach and knowledge was well received by all levels of our organization."

Darin Juby,
Associate Director
Aviation Business Research and Projects,
Greater Toronto Airports Authority

The project

- +15 initiatives identified for improving the operation
- Identification of relevant data sources and input parameter generation
- Workshops with relevant stakeholders to ascertain accuracy of analytical results
- Roadmap for implementation of initiatives created in cooperation

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Creating a baggage strategy aimed at improving the baggage operation

Results:

- Clear initiatives outlined
- Identification of a large set of KPIs
- Roadmap for improvement options
- Performance reporting for continuous improvement

Through a series of workshops, Copenhagen Optimization together with Toronto Pearson International Airport identified 6 strategic aims, which were broken into 21 strategic initiatives. The focus of the strategy is to improve the transfer baggage performance and increase efficiency of the operation by working smarter.

To support the quantification of the strategy, 53 KPIs were identified. Part of the KPIs are related directly to the completion of the various initiatives while another part of the KPIs are focused on performance of the baggage operation.

About 20 of the operational KPIs have been formed into a daily performance report delivered by Copenhagen Optimization to Toronto Pearson.

Daily performance reports for the baggage operation

Results:

- Accurate understanding of root causes driving poor performance
- Clear responsibilities for KPIs
- Fact-based dialogue with stakeholders
- Performance reporting for continuous improvement

The daily performance reports are split in two.

The first part focuses on the ability of Toronto to deliver bags to the lateral on time to allow bags to make the flight. The report focuses on drivers of late sortation of bags i.e. late incoming transfer bag, high in-system time, and share if bags going to HBS level 3 screening.

The second part of the reporting is focused on the system performance. This report includes - among others - KPIs on mistracked bags, re-circulations, and full make-up positions as well as outlining the root causes for the KPIs.

Delivering support on continuous improvement of the baggage operation through initiatives aimed at working smarter

Results:

- Fact based dialogue on improvement options for the baggage operation
- Postponement of baggage infrastructure investments of CAD 1 million for at least 3 years
- Introducing the ability to proactively handle operational changes before they occur

This work includes forecasting of baggage flows, allocation of baggage infrastructure, and evaluation of performance. The continuous improvement work focuses on analyses building on the data picked up in the baggage operation. Examples of analyses includes:

- documenting that queuing before a transfer bag offload was not driven by lack of capacity but by an unbalanced use of offloads

- showing that the make-up position allocation leads to a low make-up position intensity and outlining options for improving the make-up position intensity

- a root cause analysis of poor system performance showing that lost tracking of recirculating bags was the main driver for a gridlocked sortation area