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# JOURNEY MANAGEMENT

Delivering On The Promise Of Exceptional Customer Service

By Michael Clarke | Ascend Contributor

Irregular flight operations are unavoidable. The manner in which an airline responds to flight disruptions can be the difference of losing money and customers or recovering quickly and getting back on schedule. The latter is essential to the end-to-end customer experience and long-term retention.



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The global airline industry is driven in part by the economic and geopolitical conditions across world markets. From many perspectives, it is a highly cyclical industry varying from record periods of profitability to periods of very poor financial conditions. This is associated with wide variations in capital expenditure (such as aircraft acquisitions) and challenging labor relationships between management and union members.

During the last two decades, market liberalization has been the key focus of many governing bodies around the world with an emphasis on relaxing market access restrictions and control over what airlines can do on a daily basis. As passenger traffic has soured as a by-product of liberalization, the necessary infrastructure to support such growth in passenger levels has often been lacking. This has resulted in the deterioration of passenger services and the anticipated level of comfort in some markets.

## Flight Disruptions

Within the U.S. domestic market, on average 77 percent of scheduled flights arrive on time. The remaining 23 percent are subject to a wide variety of disruptions that lead to prolonged travel times for impacted passengers. In most cases, these disruptions are beyond the control of the airline and are a result of severe weather conditions and/or congestion in the national airspace.

Nonetheless, the manner in which airlines deal with these external factors often lead to secondary, and some may argue unnecessary, delays because of poor decision making around the original or primary disruptions. Some airlines operate with a “wait-and-see” attitude, which promotes a delayed decision-making procedure that often leads to bad decisions.

A flight delay occurs when it arrives 15 or more minutes than the schedule. Delayed minutes are calculated for delayed flights only. When multiple causes are assigned to one delayed flight, each cause is prorated based on delayed minutes for which it is responsible — the displayed numbers are rounded and may not add up to the total.

On the flip side, some airlines have become conservative in their decision-making procedures in light of recent government regulations on prolonged tarmac delays. Since April 2010, airlines are subject to fines of US\$27,500 per passenger for flights experiencing ground delays in excess of three hours from the gate.

In an effort to avoid these fines, airlines have opted to cancel flights at a higher rate than risk severe fines. In addition, when flights remain on the tarmac for a prolonged time (less than three hours), they are often returned to the gate before the three-hour limit to avoid the penalty. This has led to

additional disruptions and delays, as crew duty-limit rules, which don’t apply until the aircraft is at the gate, have led to more crewmembers timing out (becoming illegal to operate the flight) before the flight can be rereleased for departure.

Disrupted passengers are often subjected to prolonged wait times for alternate flights because airlines are operating at relatively higher load factors due to reduced flight schedules. When a major schedule disruption occurs at an airline, it is common for passengers to wait for several days to get to their destination. In the worst case, their trip is canceled altogether.

Passengers who opt to stick it out are subject to long customer-service lines and/or calls. Few airlines have the capability to offer effective passenger-rebooking alternatives in a timely fashion, and passengers are still required to interact with gate agents or contact the reservations center.

## Essential Coordination

In the event of a major disruption, the situation is often exacerbated by inadequate communications within the airline and among the airline and its competitors, airport authorities and regulatory bodies as well as the impacted passengers.

In some cases, aircraft divert to airports without the necessary facilities to handle the increased level of operations in a short time period. This may range from not having enough refueling trucks available to not having ample immigration and customs officers on duty to handle diverted international flights. Ultimately, this leads to even more prolonged flight delays and devastating passenger journey experiences.

## Effective Decision Making

Although disruption management has progressed, airlines have been slow to embrace optimization-based decision-support systems to assist with real-time planning. Such resistance stems from a variety of factors such as:

- The complexity of the underlying problem,
- The required approach to solve the disruption management problem,
- Associated passenger rebooking.

Airlines have traditionally been divided into functional groups based on prescribed resources —aircraft, crewmembers and passenger services. In the past, decision-support systems handled only one resource, often ignoring auxiliary factors during the decision-making process.

Unfortunately, this has created an environment of mistrust within airline operations control centers toward decision-support systems. The most effective way to handle disruption management is to employ an integrated approach that transcends the existing airline organizational structure.

An airline can be viewed as a collection of working networks — aircraft, crewmembers, passengers and freight cargo — all connected by scheduled flights. Events that occur in one network affect another network. As such, it is important to address each planning problem in light of its impact on other planning problems.

Passenger reaccommodation during schedule irregularities is an important issue for an individual airline as well as a global airline alliance. An alliance's system network consists of multiple hub airports that allow individual airlines to offer passengers alternative itineraries on their partner carriers.

"Journey management" includes concepts from passenger reaccommodation processes and procedures. The underlying premise is to assign alternative itineraries to disrupted passengers based on a prescribed priority list determined by the airline.

In practice, there may be a need to offer alternative passenger choices that deviate from what is most globally beneficial to the airline. A decision-support system used by agents at each airport or reservations center would streamline the lengthy reaccommodation process.

The system would actively monitor the status of each scheduled flight to ensure passengers were not reassigned to alternative flights that were already cancelled. The underlying concept of the solution is to foster centralized planning and decision making while leveraging the benefits of local (decentralized) executions.

In effect, the airline operations control center would drive the decisions made at the airport to solve the problem of passenger reaccommodation using a global approach.

### Impact Of Alliances/Partnerships

Since their inception, global airline alliances have focused primarily on the marketing aspect of each partner carrier within the grouping. In recent years, the focus has shifted to cost reduction and building synergies in their operations. These have included co-existence at key airport terminals, increased access to data through a common data repository and a gradual migration to common IT systems.

Yet, airline alliance benefits have been attained with only modest levels of operational coordination among alliance partners. Additional benefits come from greater coordination of airline planning, marketing and operations. At some point, alliances may become more influential than their individual airline members. In this environment, there are business processes that should be centralized.

However, significant changes in the near future are not anticipated because major alliances will remain confederations of independent entities, where no one is in charge of or responsible for the alliance interests.

The benefit of alliances in terms of market-share premium is based on the customer perception that the service on an alliance is of higher quality and reliability than interline travel. Delivering on this promise requires that alliance partners coordinate their business processes and operations prior to departure to provide high reliability in service throughout the entire passenger journey.

Prior to departure, PNR information must be coordinated and passenger journeys will require improved communications and greater sharing of data among carriers. From the passenger view, this means seamless handling among alliance partners and transparent reaccommodation during off-schedule operations. This will require a high level of data sharing or common data in terms of flight following, PNR and availability. It also requires an airline to communicate its recovery process with its partners.

The dependability of an alliance network and its underlying ability to recover from disruptions in a minimal amount of time to facilitate the flow of passenger and/or cargo should be a primary focus. As they have grown, alliances have faced new challenges in the recovery of irregular operations. The main

challenge comes from each partner having its own operations control center, with different strategies and methods of functioning. For this reason, it is imperative that perfect communication exists among the various operations control centers to find solutions beneficial to the entire system.

As the airlines expand their joint operations, the need will develop to pursue collaborated operational decisions, especially in the event of a schedule disruption. Day-of-operations decisions should encompass all aspects of the business affected by the irregular event, including:

- Passenger reaccommodation,
- Aircraft routing,
- Crew tracking and recovery,
- Ground resource management.

In the long term, benefits in the development of a centralized global operations control center may exist, which would be responsible for monitoring and coordinating all operational decisions within the alliance. Alternatively, each airline operations control center should be able to handle decisions both related to its own fleet and that of its partners. There may also be substantial benefits from collaboration during the strategic phase of operations,

including such issues as joint maintenance planning.

### Decision-Support Benefits

It is essential for airlines to effectively manage their operations and quickly recover from off-schedule operations and disruptions. It is important that any proposed business solution incorporate the core components of the carrier's operations including aircraft routing, crew assignments and customers' itineraries. In addition, it is necessary to account for maintenance planning, air traffic control, weather and other auxiliary information that will drive and influence its operations.

The successful implementation and deployment of an optimization-based decision-support system to assist with disruption management and passenger rebooking necessitates a functioning business environment that can support its use. It must possess the necessary processes and procedures to facilitate decision-making as well as the timely distribution of recovery solutions.

The introduction of any new technology into an existing environment will potentially necessitate changes in business processes and procedures. Nonetheless, the benefits of the proposed business solution will outweigh any foreseen process changes.

A primary benefit of an optimization-based disruption-management system is the ability to better preplan for potential disruptions (small/daily to large/severe). It must work in conjunction with all key departments within the operations control center to make comprehensive decisions that are in the best interest of the airline's operations. Another important benefit of an optimization-based decision-support tool within an operations control center is the ability to generate multiple recovery solutions based on varying input parameter sets, and make tradeoffs among conflicting business requirements.

In today's environment, an airline barely has enough time to develop and implement a feasible solution much less having the time to optimize a specific business objective. The reduction in solution time gained from the introduction of the decision-support tool opens up a new avenue in decision-making. It gives the airline the option to explore additional scenarios and incorporate additional input information that is currently prohibited due to the complexity and/or effort necessary to use this data. The airline will also benefit from reductions in analysis time as well as the overall decision horizon for resolving outstanding disruptions.

### Enabling Solutions

*Sabre Airline Solutions*® has developed industry-leading technology to help airlines better manage off-schedule operations and deliver effective disruption management.

*Sabre*® *Reaccommodation Manager* helps airlines rebook their impacted customers so

travelers can make it to their final destinations with as little disruption as possible. It meets customer needs and contractual obligations while minimizing the overall cost impact to operations.

*Reaccommodation Manager* receives schedule-change and disrupted-flight information and evaluates each passenger's itinerary according to airline-defined criteria. It prioritizes the passenger list based on calculated values such as frequent flyer status, fares paid and class of travel to create alternative itineraries. Passengers are rebooked and notified via an automated alerting process. In this manner, more valued customers are accommodated, customer loyalty increased and costs reduced.

*Reaccommodation Manager* enables airlines to take care of their most important customers; thereby, preserving customer loyalty and resulting in current and future revenue protections. By automating the reaccommodation process, an airline can provide a complete solution that explicitly considers costs, from the point of flight cancellation and rebooking through passenger notification and response.

In terms of recovery, *Sabre*® *AirCentre*™ *Recovery Manager*, an automated optimization-based flight operations decision-support system, quickly and proactively resolves schedule disruption problems while minimizing operational disruption. The decision-support software works in the operations timeframe, typically from day of departure to a week into the future. *Recovery Manager* consists of two capabilities — operations recovery (Ops) and crew recovery (Crew).

*Recovery Manager (Ops)* fully integrates with two movement control systems — *Sabre*® *AirCentre*™ *Movement Manager* or *Sabre*® *AirCentre*™ *Movement Control*. It extracts specific data, including the airline schedule as well as maintenance, passenger and crew details, in required formats and uses the same to generate a complete solution. The results from *Recovery Manager (Ops)* are saved as a what-if scenario that can be reviewed from the movement control system Gantt chart. In addition, the system generates a set of reports with comprehensive information on the solution.

*Recovery Manager (Ops)* takes the current (disrupted) flight schedule, operational constraints (airport curfews, airport gate limits, air traffic control flow management programs, equipment restrictions and weather restrictions) and data on all available aircraft and crew members, to generate a proposed recovery plan. The plan comprises a revised flight schedule, revised fleet and crew assignments. The revised flight schedule could consist of proposed delays, cancellations, overflies, diversions

and any necessary positioning ferry flights to get back on plan. *Recovery Manager (Ops)* ensures that the solution generated is as close as possible to the original flight schedule while accounting for scheduled crew assignments and passenger itineraries.

*Recovery Manager (Crew)* fully integrates with two crew management systems — *Sabre*® *AirCentre*™ *Crew Manager* and *Sabre*® *AirCentre*™ *Crew Control*. It is a comprehensive decision-support system that addresses crewmember reassignments based on a revised flight schedule generated by a schedule recovery decision-support tool or manually. It will solve disruptions at the crewmember level and provide solution alternatives with respect to crew availability, crew preference and cost considerations.

*Recovery Manager (Crew)* determines a minimum cost reassignment of disrupted crews to a revised flight schedule, taking into consideration monthly hours the crews have flown, current partially flown pairings and future assignments. The solution incorporates both business and regulatory crew rules and requirements into the rescheduling process. It generates revised crew assignments that are flyable by repairing disrupted duties through crew reassignment and the use of move-up crew, standby/reserve crew and deadheading.

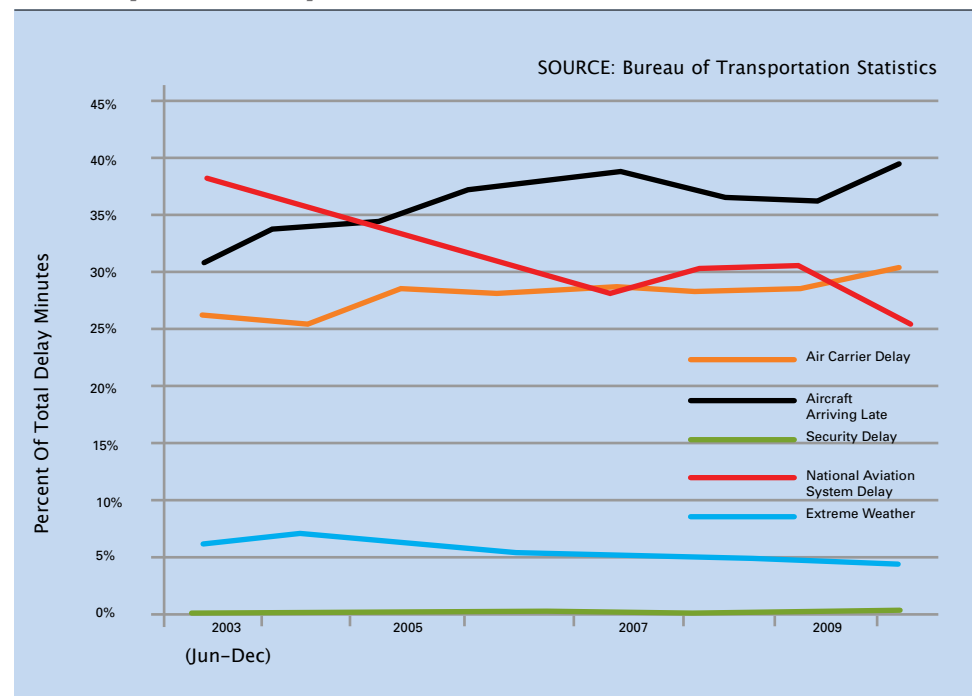
The system allows airline controllers to specify a wide variety of limitations, including which crews to consider based on:

- The base airport and crew grouping,
- The number of reserve and standby crews to utilize in the solution by crew base,
- The number of deadheads to allow within a crew group,
- The level of which the user wants to incorporate additional (non-disrupted, move-up) crewmembers in the solution process.

These decision-support systems sustain airline operations during the most critical times and under the most unique circumstances so customers have an extraordinary end-to-end journey. In addition, they help reduce the negative impact of flight disruptions to crewmembers and the overall airline operation. ■

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## Delay Cause By Year



**Flight Delay Ripple Effect** Over the last decade, there has been a substantial increase in percentage of knock-in delays due to late-arriving aircraft in the U.S. domestic market. This has resulted in more disrupted flights, leading to an increase in missed passenger connections at major hub airports. In many cases, flight delays at heavily constrained airports in the U.S. northeast/east corridor have a ripple effect across the entire U.S. domestic network.