Why do pro-active Hub Management?

Lufthansa Systems White Paper
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Many network carriers are no longer competing on individual direct flights but on entire itineraries. These generally involve connections and very short turnarounds at their respective hubs. Punctual hubs with high successful transfer rates have become a critical factor for success.

On the other hand, it is very obvious that actively controlling hub ground processes is still relatively uncharted territory for many airlines. As a consequence, the period of time between on-blocks and off-blocks very often remains a “black box” for network carriers – though there’s great potential to save money, improve on-time performance and increase customer satisfaction here. In practice, this “black box” often leads to the re-accommodation of passengers, the steering of critical passenger connections (e.g., direct ramp transfers) and the delaying of flights based more on a certain “gut feeling” than for economic reasons.

The goal of this White Paper for Hub Management is to suggest an initial approach to what Hub Management is about, what it can do and why it is especially necessary for network carriers nowadays.

The hub is a central traffic junction
Hubs are central traffic junctions with a high volume of flights in the route systems of network-oriented scheduled carriers. At hubs, arriving passengers are channeled to an airline’s own departing flights or those of its partner airlines, usually within a relatively short time frame. Smooth passenger and ground handling processes are therefore critically important here.

Hub Management manages multiple cross-functional interdependencies
The day of operations involves a hub with multiple cross-functional interdependencies in an extremely dynamic operational environment. A single flight departure is dependent upon multiple processes, and there are many stakeholders involved. Multiple arriving flights further increase the operational complexity.

Therefore, operational hub or station management is a complex and frequently fast-paced business involving a broad spectrum of information and stakeholders. Hub/station controllers have to evaluate the current traffic situation at their hub(s)/station(s) and keep track of critical events such as delays, cancellations or diversions. Their most important task is to organize connections for transfer passengers and their baggage in order to avoid misconnection costs and
image damage. Another very important task is the reduction of delays by proactively managing ground or provider processes.

Because of above mentioned cross-functional interdependencies and the operational dynamic environment, Hub Management needs IT support. Unlike other important operational processes, for instance Operations Control or Crew Management, Hub Management nowadays unfortunately still is done within multiple applications and more by intuition.

**Hub Management and Operations Control focus on different aspects**
Both areas monitor and control an airline’s operations on the day of ops, but they focus on different aspects. Operations Control monitors and controls all aircraft movements at stations around the world, while Hub Management focuses on monitoring and controlling passenger connections and ground processes at a particular traffic node. It currently seems that, at pioneering airlines, these two areas are moving closer and closer together within Integrated Operations Control Centers.

![Diagram of Hub Management versus Operations Control](image)

Figure 1: Hub Management versus Operations Control: What happens on the ground?

**Hub Management prevents misconnections and reduces ground-ops-related delays**
On-time departure, the optimum connection of passenger streams and a seamless interplay within the turnaround are crucial for successful hubs. These goals depend to a great extent on well-functioning ground operations. Hub management allows airlines to proactively save critical passenger connections and improve turnaround performance at their hub(s).
The business objective of any network-oriented airline is, therefore, to improve on-time performance and optimize ground processes while achieving high passenger connectivity and minimizing operational costs for irregularities. Fast and cost-efficient decisions are required to keep the schedule deviation impact as low as possible, enabling passengers to continue their itinerary as booked and generating significant savings.

**Hub Management consists of Passenger Connection and Turnaround Management**

Ideally, Hub Management will cover two main ground processes at a hub to a very fine level of detail. The first process involves monitoring and actively controlling transfer connections. The goal is to save passenger connections which have been threatened by disruptions using real-time economic control measures. This can prevent the need for rebooking, which is expensive and unpopular with passengers. Ground personnel can also use a mobile solution to access all passenger- and flight-related information in real time right at the gate or apron for customer-focused passenger communication.

The second main aspect involves controlling the turnaround processes on the ground. A turnaround is like a pit stop which demands seamless coordination between the airline (boarding, etc.), the airport (jetway drivers, buses, etc.) and service providers (catering, cleaning, etc.). For this to run smoothly, everyone involved has to know what they need to do when. Proactive turnaround management supports these coordinated activities right from the start. It improves punctuality, minimizes disruptions resulting from ground handling issues and ensures better turnaround efficiency overall. Low-cost carriers which are not network-oriented also benefit from these optimized turnarounds.

The successful management of a hub may be rounded off by a flexible hub reporting tool for systematically identifying optimization potential, as well as consulting services for establishing a professional hub management system.

Figure 2: Process view Hub Management
IT provides real-time transparency and decision support

As already outlined, it appears that decisions about the re-accommodation of passengers and delaying of flights due to late connections are still largely being made on the basis of intuition. But these decisions might not always result in the best solutions for the airline itself. For instance, will the costs of re-booking passengers on the next flight be a better trade-off than delaying the flight for 15 minutes?

This is where IT-supported hub management comes in: It provides a completely transparent overview of the current operational situation at a hub in real time. It also offers the ability to identify critical passenger connections and aircraft turnarounds beforehand to allow actions for correction.

With regard to critical passenger connections, IT shall give in advance cost-based decision support for the value of the affected transfer passengers and provide a possible solution of how to save this critical connection. In case the connection is not feasible, the Hub Manager shall be able to easily rebook these transfer passengers – all done within one system, without needing to switch into the Check-In system. Additionally, it provides the means to efficiently communicate the current situation and decisions to everyone involved.

Last but not least the utilized IT with all above mentioned functions shall be available within one single system, so the Hub Manager doesn’t have to switch laborious between different systems when dealing time-pressurized with schedule deviations.

- **Passenger Connection Management:** Is it more economical to let the connecting flight depart on-time or to re-book my delayed inbound group?

- **Turnaround Management:** Which process / ground provider is responsible for the delayed turnaround?

- **Quality and Performance Management:** Show me my “top” delay reasons and my “worst performing” suppliers and help me to find the reason, why my fueling for the A320 fleet has such bad performance.

- **SLA Management:** My provider calls me to explain why I charged him 13,000 EUR malus last month!

Figure 3: Questions that pro-active Hub Management can answer
Hub Management offers a competitive advantage to network-oriented airlines

The three main reasons to proactively increase hub performance are:

- First: The minimization of mis-connex costs, because additional hotel, rebooking and delay costs can me reduced.

- Second: Flight delays are the most expensive problem for airlines. In order to handle flight disruptions efficiently and economically, the airline has to consider that in addition to aircraft and crew monitoring processes, ground processes have to be transparent and comprehensible as well.

- Third: “The customer is king.” The flying experience starts and ends on the ground, and in the case of connecting flights, the ground is also “in between.” The passengers’ overall subjective travel experience will determine which airline they choose in the future. Particularly by saving critical passenger connections – instead of only rebooking/re-accommodating passengers on delayed flights – airlines can significantly improve their passenger satisfaction, brand identity and quality of service. Therefore, it’s very important for any airline’s flight operations to stay focused on the passenger – by avoiding disruptions in the air and on the ground.

In summary, proactive Hub Management helps airlines to stay tuned to their passengers. As a consequence, passengers can continue their itinerary as booked, turnaround performance is improved and handling delays are minimized. Proactive Hub Management therefore delivers enormous benefits to ensure passenger satisfaction, strengthen an airline’s brand and save a significant amount of money.

About the author
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