






NetLine/HubDesigner

Generate most profitable schedule and network designs

NetLine/HubDesigner builds a profit optimized network considering market demand and competition schedules. It selects the right markets to be served and builds up the network optimizing direct and connecting itineraries. The optimizer calculates network profitability based on fixed and operating costs and yields. By taking operational and commercial restrictions into account, an operationally feasible schedule with maximum network profitability is generated.

Boosting profitability through dynamic network optimization

Passenger demand and the competitive landscape are dynamic and volatile. Airlines operating hub-and-spoke networks are adjusting and redesigning their networks more frequently and closer to departure. NetLine/HubDesigner supports airlines to create and maintain profitable bank structures by considering demand, competition and restrictions, enabling airlines to tap market opportunities that would not be obvious without the help of an optimizer.

<p>Direct Revenue</p> <p>+ 3.5 %</p> 	<p>Connect Revenue</p> <p>+ 12.7%</p> 	<p>Profit</p> <p>+ 18.1 %</p> 
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Proof of concept results from a large European airline group

Clean sheet network optimization to conquer market situation and competitor behavior

When market conditions change, airlines generate more profitable networks when designing the schedule from scratch. NetLine/HubDesigner generates the most profitable O&D network without needing an existing input schedule.

'In our practice, NetLine/HubDesigner increased our network profitability mainly by increasing valuable connectivity across our network despite heavy slot restrictions. NetLine/HubDesigner helps you see the opportunities you overlook or encourages you to implement the changes you thought of before.'

Senior Vice President
Sales & Network Planning, Pegasus Airlines

The solution for O&D network airlines

NetLine/HubDesigner generates profitable (multi-)hub networks, by creating the ideal bank structures at a single hub or in a multi-hub environment. The optimizer harmonizes supply and demand while taking into account operational and commercial restrictions.

NetLine/HubDesigner optimizes total network profitability. This means, for example, connections without direct competition might be put at the edge of the bank resulting in longer connection times. In opposite, to improve attractiveness of connections with attractive competitor itineraries connection time are reduced. The optimizer also provides direct traffic offers when needed and captures low demand by offering O&D connections through a hub.

Three optimizers in one solution

Previously, airlines would use multiple separate sequential optimization runs to try to achieve an optimal result. These sequential optimization runs take time and waste profit potential. NetLine/HubDesigner tackles these by combining three optimizers in one holistic solution.

1. Time optimization optimizes flight times and passenger connections

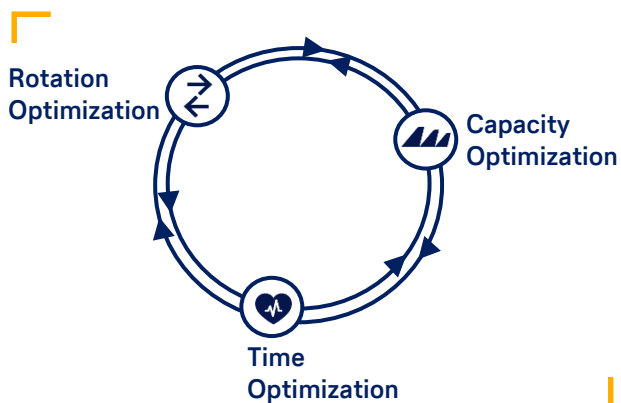
The optimizer designs the most efficient hub bank structure offering optimal flight timings and passenger connection times. It generates schedules based on slot capabilities, with the goal of balancing attractive flight times for direct passenger traffic and optimal passenger connection times.

2. Capacity optimization designs the optimal capacity & frequency mix

The optimizer assigns aircraft based on equipment capacity and availability. It finds the best combination of frequency and capacity.

3. Rotation optimization generates feasible aircraft rotations

The optimizer creates a rotated schedule that accounts for commercial and operational requirements including airport slots, maintenance requirements and aircraft restrictions.



Unmatched optimization speed

NetLine/HubDesigner uses the latest Operations Research methods to create the best (multi-) hub network at a speed that is unmatched in the market. Previously, such large optimizations could not be solved in real business applications.

Due to volatile market conditions, multiple market scenario analyses are required. They are based on a variety of demand variables and assumptions of competitor behavior. The results from the scenario calculations provide input for sensitivity analyses to make the best network decisions.

Demand forecasts and optimization as a service or self-service

Network optimization requires high-quality data, demand modeling and data science expertise. Lufthansa Systems offers two services for NetLine/HubDesigner:

a. Data preparation and demand modeling as a service

Market size data and parameters can be provided by Lufthansa Systems experts as a service.

b. Self-service data preparation and demand modeling

Market sizes and parameters from other demand models can be integrated into the optimization. This enables airlines to consistently plan and optimize within their existing network planning and scheduling processes.

Fast access and secure use of NetLine/HubDesigner in the cloud

NetLine/HubDesigner is offered as an end-to-end service in the cloud for simple, cost-effective and scalable use. The security measures are certified in accordance with multiple industry standards and are regularly reviewed in audits. Lufthansa Systems is the customer's single point of contact for the entire technology and service stack.

NetLine/HubDesigner at a glance

- Generates most profitable networks from scratch considering market demand, competition schedules, operational and commercial restrictions
- Designs the optimal market offer by compiling the markets to be served and deciding on the quality of offer, weather offered as direct or connecting itinerary
- Optimizes flight times, capacity allocation and rotation building in a single optimization
- Calculates profitability based on airline-specific cost and revenue
- Accounts for operational and commercial requirements
- Both optimization and demand modeling are offered as a service

Good to know:

With modern interface technologies, the solution can be reliably embedded in a customer's business processes by integrating it with NetLine/Plan, NetLine/Sched or other scheduling and network planning systems.



For more information:
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NetLine

→ **NetLine/Plan**
Network planning solution

→ **SchedConnect**
Codeshare management

→ **NetLine/Ops ++**
Operations control

→ **NetLine/Sched**
Schedule management

→ **NetLine/Crew**
Crew management

→ **NetLine/Load**
Weight & balance