

T2RL'S First View is our rapid analysis of breaking news. It helps provide perspective, putting the facts in the context of our wider and deeper knowledge of the market.

## Lufthansa Systems Validates the AIS Enterprise Optimisation Model

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### The Facts

Lufthansa Systems has announced the launch of an Integrated Commercial Platform that will connect several commercial functions to optimise an airline's business in multiple dimensions.

### The Analysis

Airlines have been using sophisticated computer systems to optimise aspects of their business for many years. The most familiar are the revenue management applications that have gone from cutting edge innovation when they were introduced in the early 1980s to standard operating practice today. Optimisation algorithms are also an essential part of network planning and scheduling systems. Only the very smallest airlines are able to manage manually the complex processes of assigning crews and aircraft to flights while complying with regulations as well as producing a commercially effective roster.

While many of these optimisations have been refined to a fantastic degree over the past twenty years it remains as true today as it was in 2004 that most of the processes take place in discrete silos with little interaction between them. That was the state of affairs that prompted the then CIO of United Airlines, Nirup Krishnamuthy, to announce

"A new organization - Enterprise Optimization - will be formed" .... "This organization will consist of Operations Research, Statistics and Decision Sciences professionals" ... "They will focus on complex problems that include optimizing revenue and cost. This Enterprise Optimization group will work closely with the Application Development organization to ensure that these optimization models are converted into robust systems for our users."

While United was not the only airline to think along these lines the results have been slow in coming, at least if they are measured by the availability of commercial software applications. The reasons are twofold.

- The computing power needed to extend optimisations across multiple functions in an airline's activities in a useful time has not been readily available
- Most airlines do not have the flexibility in their human organisations to break down the walls between the silos.

The first barrier has been addressed by companies like Airline Intelligence Systems (AIS) of Seattle, which has developed novel computer science and mathematics-driven approaches to the complexity of enterprise optimisation. It claims that its software is able to completely model the commercial operation of even the largest airlines in only minutes of run-time, thus enabling repeated trials of proposed schedules and routes. Outcomes that currently may only be evaluated by running the schedule with real metal for several months could be derived in the software in minutes. Decisions could be backed by rigorous analysis rather than hunches. The system has been demonstrated to a number of airlines including several very large ones. Interest has been intense although there has yet to be a successful commercial implementation.

Rather than designing a radical new system from the ground up the Lufthansa Systems approach seems to be a judicious combination of existing products from its NetLine and ProfitLine suites. This is a classic piece of incremental product extension. Where the German company may have the advantage is its deep experience of working with real-world airlines and their management structures. It knows the pitfalls of cross-departmental challenges and has the resources to help airlines address them. In that respect at least its product may bring faster measurable benefits than the radical approach of AIS.

## The Speculation

Almost a decade after the idea of enterprise optimisation first began to be discussed it appears that there may be some real commercial applications. There is little doubt that AIS has developed a truly revolutionary product suite but it is not yet clear that it will be able to bring it to market, especially if it persists with the ambition to create a per passenger pricing model. Lufthansa Systems has taken a more evolutionary path but its deep engagement with and understanding of the airline industry should enable it to roll its system out - to existing NetLine and ProfitLine customers if nowhere else. The obvious thought that occurs is that maybe these two companies should be talking to each other.