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## *JET STREAM*

A conversation with Wolfgang Prock-Schauer, the chief executive officer of Jet Airways.



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# Off The Mainframe

*North American carriers, looking for cost-effective ways to manage key areas such as crew, maintenance, and planning and scheduling, are more and more relying on benefits of solutions built on open-systems technology.*

■ By Phil Johnson | *Ascend* Staff

Among the most critical of functional areas in transportation — indeed, in business itself — is information technology.

Although airlines have traditionally resisted substantive change in fundamental processes such as IT infrastructure, trends in the general areas of system agility, flexibility and scalability are now leading the industry on a path away from legacy mainframe systems toward open-architecture, PC-based systems.

And the financial benefits to the airline industry as a whole could be huge.

For most major integrated carriers, information technology has been developed during the past several decades on legacy mainframes. Massive airline/IT efforts were largely driven 30 to 40 years ago by trailblazing efforts to create reservations systems that would prove to be the foundations upon which several airlines built international renown.

Other functions followed — with operations including crew and maintenance as well as flight planning and scheduling being programmed through the expertise of airlines' IT staffs onto the same legacy mainframe systems on which the massive global reservations capabilities had been established.

Meanwhile, smaller airlines — some of which operate just a handful of aircraft — often address operations and crew issues manually. This can sometimes mean computer-spreadsheet records that are relatively simple to maintain, but it also includes trying to keep up with everyday operations and critical functions such as fuel and maintenance using pencil and paper.

All of these airlines — small, medium and large, regardless of complexity — can benefit from the open-architecture systems now being developed and offered by several vendors, including the *Sabre Airline Solutions*® business.

But at least partly due to substantial investments that have been made in legacy systems by larger airlines over the years — and the fact that those legacy systems are still providing adequate service — many carriers have resisted migration to open architecture.

This is particularly true in the areas of day-to-day airline operations and crew schedules, which involve constant, real-time tracking 24 hours a day, seven days a week. The general consensus of airline opinion has held that switching from legacy mainframes in these critical operational areas — expensive though the mainframe systems are to maintain — would entail too great a risk.

When considering the enormous cost that would result from any major carrier's potential operational shutdown — even for an hour or two — it's understandable that there would be considerable reluctance to switch from a legacy IT infrastructure that is, after all, reliably and adequately serving its original intended purpose day in and day out.

But the potential of the newest technology is impossible to ignore, centering on efficiencies that would result from migrating to open-architecture systems, which in turn could generate substantial cost savings.

Already, for example, a number of larger airlines — even some of those still dedicated to legacy mainframes in certain critical day-to-day functions — are augmenting their efficiency and capacity by implementing open-architecture systems in areas such as flight and crew planning.

Open-architecture systems today offer decision-analysis capabilities in flight and crew areas that remain virtually unheard of in the world of legacy mainframes.

In crew management, for example, the number of possibilities among trips and pairings requiring analysis can run into the billions, depending on a particular airline's size,

number of aircraft and total number of crew members.

Obviously, this is a function that, to be analyzed thoroughly, requires computational automation that can only be designed into the most sophisticated programming. And it's a feature that open-architecture software developers have made a special priority.

Greatly enhanced flexibility, then, is a key benefit of open architecture compared to legacy mainframes. A glance at a typical mainframe's green screen contrasts sharply to the colorful and easy-to-read graphical user interface of an open-architecture system.

As a result, with open architecture, training is much easier and less costly, and the time required to accomplish just about any task is almost always shorter — sometimes much shorter.

Savings in both personnel and other overall costs when using open architecture are significant to the point that small to midsize airlines that adopt open-architecture systems gain the option to add aircraft and flights to operational schedules without having to hire proportionally higher numbers of employees.

For some small airlines, simply operating within the legal parameters with regard to crew hours is an extremely important consideration — and open-architecture systems can cost effectively help them achieve that vital necessity.

Those same airlines, by moving from manual to automated systems, experience significantly upgraded precision with regard to load and safety factors, again, generating potentially considerable cost savings.

All of these advantages underline the powerful nature of open systems as compared to any other infrastructure. Open-system architecture is acutely focused on return-on-investment, growth and profitability factors, enabling airlines to proactively look to the future and



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Airlines of every size and business model are recognizing the importance of advanced decision-support tools across their operations all the way from the earliest planning stage to the day and hour of operations, through flight arrival at the specified destination.

optimize almost everything regarding airline operation, service and maintenance.

And at the bottom line, it's these optimization-based features that really represent the potential for genuinely eye-opening monetary results to airlines struggling for profitability in today's highly cost-conscious economic environment.

Additionally, because of the scalability of open systems — defined as “open” because they can be easily expanded with modified and value-added processes over time — this architecture offers true end-to-end integrated operational capability and seamless implementation of system changes.

Time to market for requested as well as scheduled upgrades tends to be relatively short with open systems as compared to legacy mainframes — again, largely due to the “open” nature of the infrastructure. This is where agility and flexibility come into play, and both are extremely important in a highly competitive marketplace.

In fact, competitive factors are the ultimate driving forces that are now pointing even the most solidly entrenched mainframe advocates toward open-architecture systems.

Decision-support tools that are commonly included among open-architecture software suites are absolutely invaluable in today's airline environment. And airlines of every size and shape are realizing they can't afford not to have that powerful decision support all the way from the earliest planning stage — months or years in advance — literally to the day and hour of operations, through flight arrival at the designated destination.

It's also been a trend in many recent airline-personnel labor agreements to call for highly flexible, changeable crew-assignment capabilities that can now be cost-effectively provided through the agile functionality of open-architecture systems.

The optimization tools commonly available in open-architecture IT operations provide cost-efficient solutions — with scalability to support airlines of every size and every description: retail passenger, charter and cargo alike.

There are even optimization tools in development to help airlines recover much more quickly from weather-related or other unanticipated events — designed to address every conceivable contingent in trying to get flights back on schedule as soon as possible and swiftly revising inconvenienced passengers' itineraries, from flights and hotels to meals and rental cars.

All of these functions that are being programmed into open-architecture IT systems represent the future of the airline industry — a future both the traveling public and airlines themselves are likely to appreciate. ■



A key benefit of open-systems architecture is a return on investment as well as growth and profitability, enabling airlines to look ahead and optimize most areas of their business, including operations, service and maintenance.

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