

Big business

Big data analysis has become a common theme. In an exclusive interview with PROS, **Keith Mwanalushi** discovers how the company is using big data to better align pricing and revenue management for low-cost airlines

Using the platform of the World Low Cost Airlines Congress in September, Houston-based company PROS Holdings unveiled a new revenue management solution for low-cost carriers (LCCs). The new solution – PROS' first product for low-cost airlines – has been designed in response to a growing request for greater alignment between revenue management and pricing, which in turn will enable carriers to achieve revenue and load-factor goals.

In order to fully get to grips with the philosophy behind this type of software solution, Surian Adyanthaya, vice president for product management at PROS, believes it is necessary to understand the origins of the concept. "PROS is a company that specialises in pricing and revenue management technology. Essentially, the company

provides software that many airlines around the world use to determine how to price their products and how to change these prices," says Adyanthaya.

He recalls that back in 1986, Southwest Airlines became the first customer for the company. "Actually, it was an overbooking system that we did for them. They had this problem of cancellations and wanted a science-driven methodology to decide how to overbook, so PROS built an overbooking software solution. From there came the revenue management solution that many airlines around the world now use."

In fact, the list of PROS software users includes a number of high-profile names such as Cathay Pacific, Lufthansa, Singapore Airlines and Emirates. As the number of airline clients has increased over time, Adyanthaya also notes how the course of the airline industry has changed:

"The latest revolution has been the LCCs and how they have transformed the airline industry; they have changed the rules of the game."

He cites that LCCs have challenged a lot of the traditional principles of aviation, causing a change in the way the underlying science has to work. PROS has been evolving with these changes in order to develop a solution, and ultimately, he says, it has a lot to do with data management.

"It's very much data driven. Today one of the common technology themes is big data and cloud computing," Adyanthaya says. Airlines, particularly in revenue management pricing, have in some ways pioneered a lot of big data analysis, because all of the historical buying patterns of the airline's customer are utilised and run through various statistical algorithms to predict future willingness to pay.

Southwest was the first airline to utilise software by PROS back in 1986 *[photo: Southwest Airlines]*



"That's the essence of pricing and revenue management – taking lots of data and running it through mathematical models to predict future willingness to pay," Adyanthaya points out. That considered, how important is it for an airline to get its pricing right? "It's incredibly important to continuously change and update the price to meet the changes in market demand. Essentially, market dynamics change very quickly, much quicker than five or even 10 years ago. The airlines need to have the ability to identify these changes in market dynamics and then react quickly with price changes."

The use of outdated pricing methods within a changing environment will supposedly lead to an airline being priced out of business, and Adyanthaya agrees that if an airline is not on top of these market changes it might find itself losing the opportunity to capture passengers at the highest possible value.

Adyanthaya stresses that real-time dynamic pricing is extremely important. For instance, a mid-sized airline might have a thousand availability requests coming from different booking channels at one time, from reservation call centres or from the website. "A thousand transactions per second are not unusual, if you think about it. Twitter recently published that in one month this year its average global transaction, that is the number of tweets, was over 2,000 per second. So you are talking about one of the highest volume real-time transactional decision making systems in the world."

Coming back to the application recently launched by PROS for LCCs, the key element of the product is that of cloud computing. "This is really the trend where technology is going today," says Adyanthaya. He explains that with cloud computing the software runs on a remote server, which is managed by someone else. "This is very appealing to businesses, because they don't need the IT infrastructure to run the software applications, they don't need the IT specialists and servers. Essentially, they can sign up for a product and be online and using it very quickly, taking away a large amount of work for the customer."

A quick glance at how cloud computing works uncovers the apparent differences from conventional managed services,

which a user operates through a hosted application. With cloud computing there are what Adyanthaya refers to as "elastic demand capabilities". He continues, "Say you are running a promotion starting a month from now and suddenly you have a huge increase in demand for a number of transactions for availability – traditionally you would not have the technological bandwidth to handle this, but with cloud computing you could very easily add processors and expand your capability to manage this sort of thing."

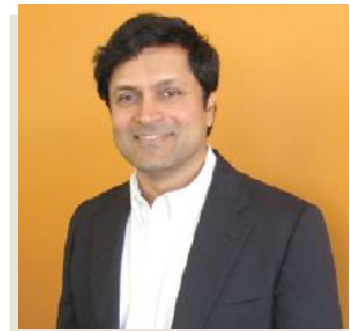
So when asked how specific cloud computing is to the new LCC software, Adyanthaya observes the needs of the LCCs and where the technology has come as a perfect fit. "LCCs don't really want the overhead IT infrastructure; they want to concentrate on their core business. So cloud computing allows us to take that concern away from the LCC."

He adds that cloud computing is well-designed for what they call 'big data applications', and this is an entirely new generation of technology – "[cloud computing] is a perfect fit for what our technology does and what the LCCs need, taking unstructured data and doing a lot of real-time analysis to draw insights."

Then there is the issue of how to better align pricing and revenue management. Historically, in legacy airlines pricing and revenue management have been done separately. One department will usually set the price points and then the revenue department will decide how much inventory to allocate to the various price points.

"While that is correct, many LCCs think differently," he argues. "They integrate the pricing and revenue management decision and our new LCC product has integrated pricing and revenue management capability. So it helps the airlines decide not only what the price is but how to set the inventory levels for these prices simultaneously, which we think is a big step forward."

Considering that most full-service carriers have had to adapt to changes brought about by the rise of the LCC, there is clearly a need to have the full-service version of the software incorporated with LCC trends. "For the current product we have quite a large customer base and because of the low-cost competition they have had to evolve their business and take on



Surain Adyanthaya, senior vice president for product management [photo: PROS]

some of the characteristics of the LCCs to compete effectively," Adyanthaya explains.

He adds that capabilities have been introduced in the existing product that help the full-service carriers address some of the challenges of low-cost markets, but he stresses that LCCs still have a specific and unique way of looking at the world. "They want to simplify things and act more quickly on the information they have, so we decided to address this need, which is why we came up with a completely new product."

Despite a similarity in operational philosophy, LCCs around the world may face different issues, such as the legal framework in which they operate. When PROS conceived what this new tool would be, the company first went onsite and visited a number of LCCs around the world, from emerging markets to developed markets, in order to assess their needs and to see whether the ideas for the new solution would be effective for them.

"It was really enlightening to see that many of the needs of the LCCs in emerging markets are actually very aligned and similar to the needs of their counterparts in North America and Europe. We took all this feedback and put it into the product."

He also observes that LCCs today primarily deal with pricing and revenue management via spreadsheets and manual processors, and he notes that by using technology such as this it provides the LCCs with benefits by increasing revenues and offering better management of their markets. "The margins are very small in the airline business, that's why it's central to make the right pricing decisions; these decisions can determine success or failure in some of those markets." ■