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# The Case Study

of  
one of the biggest  
low-cost carriers in Europe

# Solution Sneak Peek

1.

## Awards

Passengers' Choice Awards for Best Low-Cost Carrier in Europe in 2019 and as the Best Low-Cost Long-Haul Airline by Skytrax World Airline Awards in 2018.

2.

## Number of Simultaneous Users

10,000

3.

## Flexible tool for Travelers

The system created by the Softwarium team enables smooth business operation in the core of its functions: search, price, schedule, and seat availability

4.

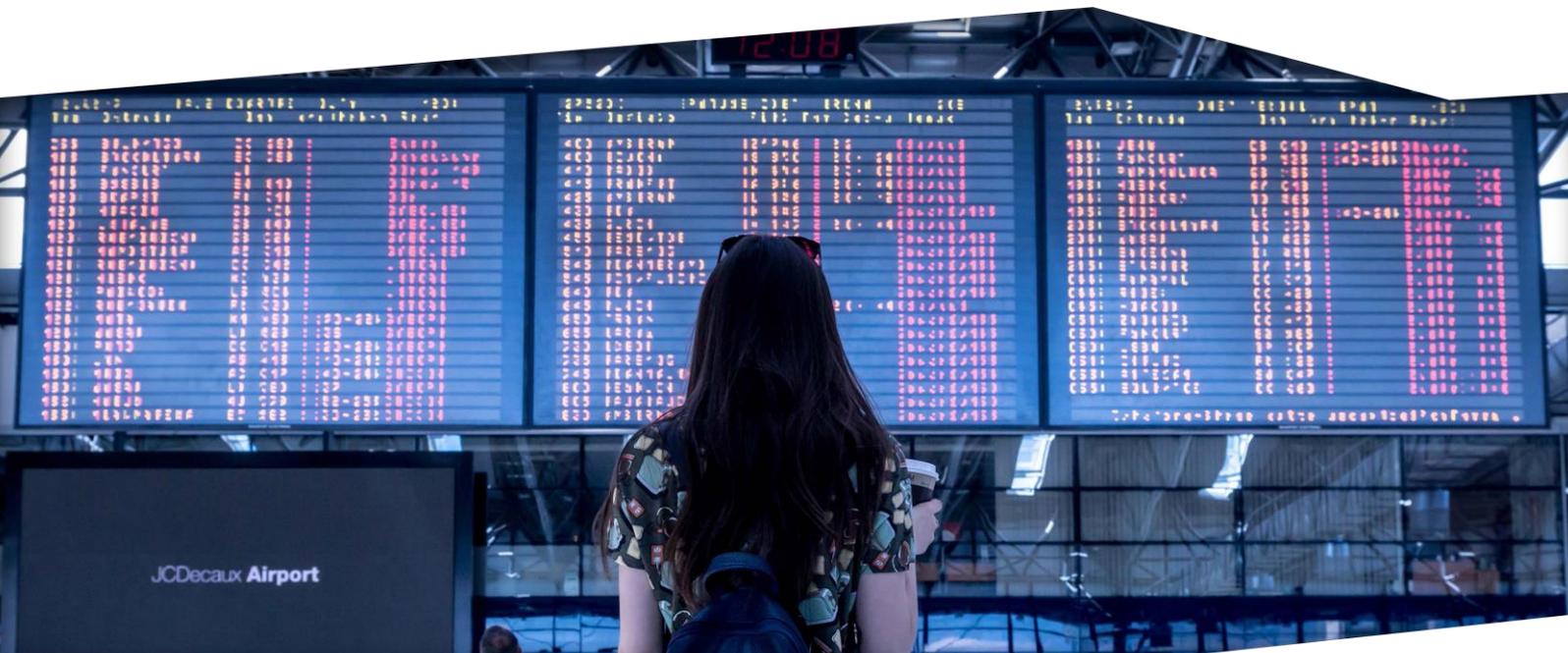
## Effective Tool for Sales and Marketing

The prices generated by the system were done in such a way to account for all factors that could potentially lower the prices yet bring maximum profit to the company.



Our client is one of the biggest low-cost carriers in Europe, with thousands of routes to more than 270 destinations. One of their mission statements from the very beginning was to make flying affordable to everyone. This is why they have been recognized for their achievements in this regard with prestigious awards such as the Passengers' Choice Awards for Best Low-Cost Carrier in Europe and as the Best Low-Cost Long-Haul Airline by Skytrax World Airline Awards.

In order to assist customers in purchasing airfare at the lowest possible price, the client has a convenient and user-friendly user portal which allows you to search for flights, view available seats on an aircraft, purchase tickets, find out how many reward points you have and apply them towards your flight. Therefore, the client's internet portal must be able to retrieve all kinds of information, while being able to service around thousands of users in any given moment.



## Service level which is needed to fly high

The client makes every attempt to go above and beyond for their customers. But like every good attempt, this one encountered obstacles. Due to legacy technology, the desired level of customer services became harder to achieve. This was especially evident in the flight search and pricing that was in place. The system had a high lag time, could hardly handle incoming traffic and, along with it, was limited in functionality and unscalable. All of these issues really limited the client in terms of the quality of service they could offer. In order to provide their customers with a superior user experience, the client turned to Softwarium for assistance. Considering that the level of customer satisfaction was affected by technical issues, the urgency was evident.



It is important to note that NAS did not have a direct contract with Softwarium. The original contract was with Scandinavian House and Softwarium was a subcontractor.



## Knowing pain is a good start, offering gains is a great goal!

Being one of the leading low-cost providers in Europe, they have millions of website visitors every day. Travelers are looking to book tickets, check out prices, inquire about discounts, find out how many reward points they have and any other information concerning their flights. The client needed to take all of the actions performed on their site by the user and turn it into business intelligence while providing the best possible user experience. Therefore the final product needed to be scalable and capable of sustaining a high load; generate prices and seating availability in a matter of seconds yet it had to be simple and convenient to use. Along with travelers, the client's marketing and sales teams were also Softwarium customers. The need for changes was even more urgent, than for the rest of the world. After all, things like pricing, bonuses, sales, and gift certificates, depend strongly on laws and regulations of those countries, where the client flies. But, what if, your service is so great, you fly EVERYWHERE? Not just between countries and continents, but also inside your own country. How do you deal with all of the price influencing nuances? How to monitor them? How to do it quickly and flawlessly? How to do it, using a slow technically outdated solution?

Let's take a look at how the Softwarium team approached this challenge.





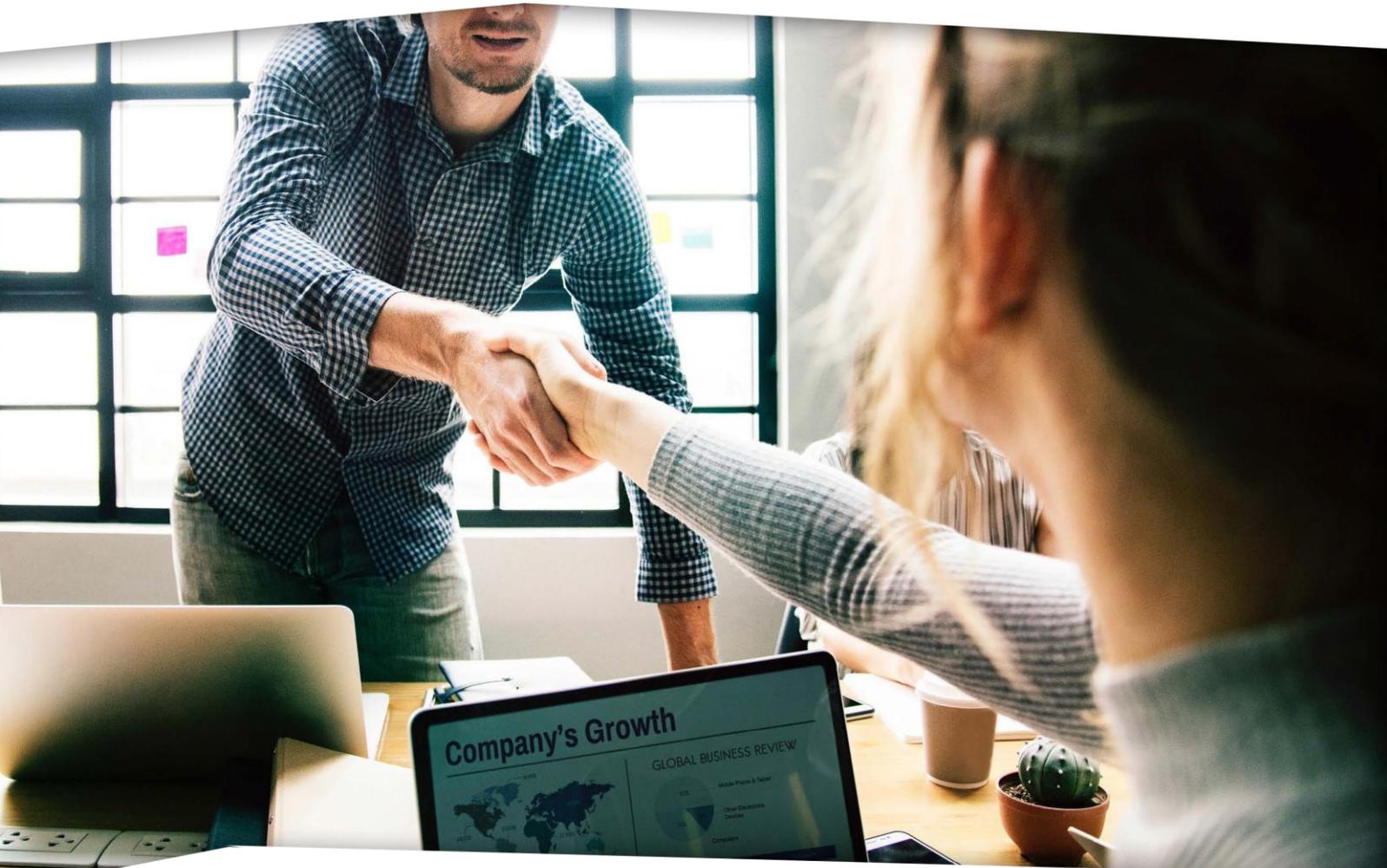
## Overcoming technical obstacles

As you know, every journey begins with a single step. Thus, the first step was to dismantle the client's existing system and to gather some of the core functions into a separate, highly manageable, fast and flexible module. This became the fundamental base for further change. The first module included a search function and let effectively find available seats and define an appropriate schedule. The whole idea was to develop a completely new architecture. However, we couldn't start completely from scratch, due to many systems, which we should respect and take into account. Thus we developed a new, highly scalable and much faster architecture, using some old, but vital for the big system elements, including but not limited to JBoss enterprise server and Java, Spring Framework, Hibernate, MS SQL. You can find the whole list in the "Tech Stack" section.



## Reshaping the past to develop the future

The second project was mainly concentrated on the price generation function inside the current system. As the architecture was already prepared to include fully functional price module, the Softwarium team concentrated on forming and extracting the entity responsible for the prices. Lately, it was transformed into a separate module and then integrated into the much larger search and price module. Considering the functions, which were already added to the module, thus were search, seat availability and schedule, adding price and price configuration was the only correct and effective way to make things faster.



## The Result

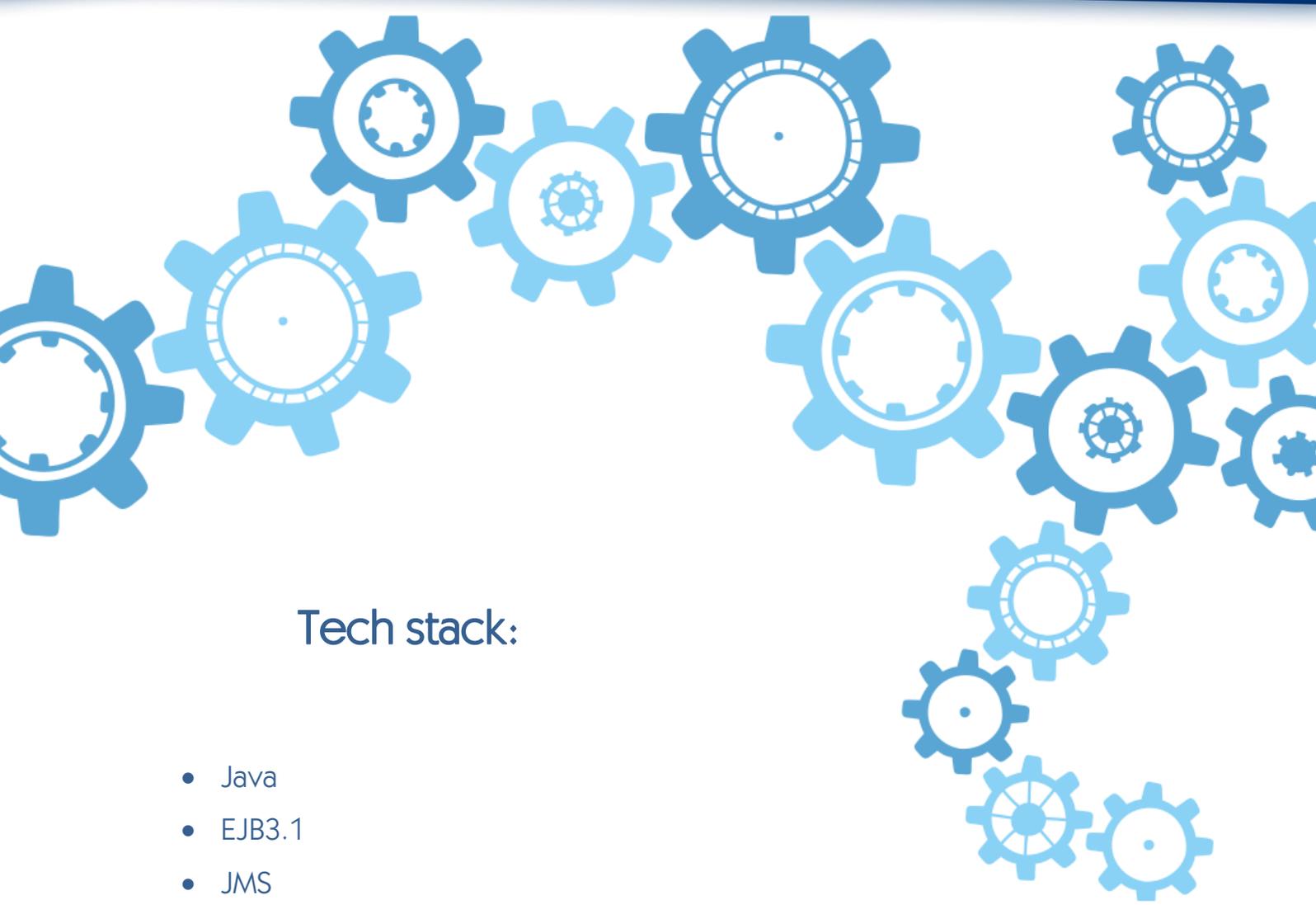
To be short - happy customers and happy employees. No more long waiting times, no more headache in price creation and no more long hours of all regulations checking. The module created by the Softwarium team enables smooth business operation in the core of its functions: search, price, schedule, and seat availability.

The new architecture was designed to be fast, flexible yet robust and ready to function with even more load and answer innovative challenges the world provides. The module is able to function correctly and dramatically reduce the search time for price generation while increasing the accuracy of the prices that were calculated. This allowed as many as 10,000 simultaneous users to browse the site without service interruption.

Also, a flexible reward and bonus discount program was introduced. For example, residents who live on islands off the coast of Spain could travel to continental Spain with discounted airfare subsidized by the Spanish government. Such a “Split Price” architecture is discounting by third party is generic, not coupled with domestic Spain discounts. It is also used for British tax (where British government exclude some taxes for youth) and a reward bag program where the recipient of the reward is a third party who pays for the 2nd bag and other uses.

With the new system in place, the discounts would be automatically applied to the airfare, thus eliminating the need for passengers to keep track of it themselves. The prices generated by the system were done in such a way to account for all factors that could potentially lower the prices but also was done in a way to bring maximum profit to the company.





## Tech stack:

- Java
- EJB3.1
- JMS
- Spring Framework
- Giuce
- Hibernate
- AOP
- MSSQL
- Concurrency
- JAX-WS
- Jboss AS7/Wildfly
- Infinispan
- Performance/HA Cluster
- JMX
- Struts2
- JavaScript
- CSS
- GIT
- Jenkins
- Linux

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# Softwarium

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## A tradition of quality software development for 2 decades

We specialize in enterprise, web, cloud, and mobile development projects (iOS, Android, Node.js, Java, Angular 7, .NET stack) with complex back-end DBMS. At Softwarium we work hard to meet your business goals and give your company a great competitive advantage, which is high-quality software.

## You know what will happen tomorrow with your product

With companies from startups to Fortune 500 companies in our portfolio, we build a culture of mutual trust with our clients that last for decades. We pay special attention to work with particular verticals and can present you with sizable portfolios in directions such as Aerospace, Healthcare and Clinical Research, Supply Chain and Logistics and Education.

## Enjoy predictably superior results

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