



GraphAware®

@Leisure

GraphAware: @Leisure Group case study

Two weeks to add real-time recommendations to the Belvilla holiday rentals site.

Company

@Leisure Group

Business

Leading player in the European online vacation rental market.

Offers 460,000 holiday homes, holiday parks and hotels across 36 countries.

Brands include, amongst others, Belvilla, Casamundo, Traum-Ferienwohnungen, DanCenter and Danland.

Challenge

Enhance the experience of customers by helping them find a holiday home they'll love, faster.

Solution

Neo4j-based recommendation engine using the GraphAware Framework and Enterprise Recommendation plugin.

Results

Real-time recommendation engine, ready to launch on the Belvilla site within two weeks.

Every year over 1.3 million holiday makers book their holiday homes through an @Leisure Group company. At the heart of what the company is about is helping to create happiness and unforgettable memories for its guests, home owners and partners.

A key ingredient to @Leisure's success is that it doesn't stand still: it's constantly seeking new ways to enhance the experience of its customers. And part of this is that it's always on the lookout for innovative ways to use technology. Recently, the company has been looking to make greater use of analytics in order to give its customers better and more highly personalised recommendations when searching for their holiday homes.

'Over the past year, we've been building up a strong analytics capability,' notes David Stephenson, Managing Director at DSI Analytics and interim Head of Analytics at @Leisure brand, Belvilla. 'Implementing a recommendation engine was a high priority as I knew that this would provide some of the highest returns on our efforts as we looked to improve the experience of our customers.'



'GraphAware successfully implemented a real-time recommendation engine on our site in just two weeks. That is an astonishingly short time to production.'

David Stephenson, Managing Director, DSI Analytics and interim Head of Analytics, Belvilla

The Challenge

Belvilla is the market leader for the online rental of holiday homes in the Benelux region. It offers 27,000 holiday homes across some 24 countries, predominantly in Europe – offering something for everyone. All its holiday homes are under direct contract with @Leisure, guaranteeing their quality.

'With such a large portfolio, we have to ensure our guests can find their ideal holiday home as quickly as possible,' says David. 'We wanted to be able to use all the data we had about our site visitors in order to

make our recommendations personalised to them, so that by the third or fourth listing we displayed, they'd have seen a property they wanted to rent.'

But the company didn't want to embark on a lengthy development project before seeing any results. It wanted to get a recommendation engine up and running quickly. 'We needed people who could bring a depth and breadth of expertise that meant they could come in and deliver high-value results for us in a very short space of time.'

The Solution

David knew that a graph database would be the most efficient way to build a recommendation engine and he quickly identified Neo Technology's Neo4j as being ideally suited to the company's requirements.

After speaking with the team at GraphAware, he concluded that their expertise in implementing Neo4j-based recommendation engines using the company's GraphAware Framework, and their deep knowledge of machine learning and big data man-

agement techniques, offered exactly the combination of skills and experience needed for the job.

'GraphAware are simply world-class experts,' says David. 'We looked at a number of other companies but none could bring its mix of skills, track record of successfully delivering this kind of project and ability to deliver in the short timescales we required.'



The Results



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A tailored implementation

GraphAware built a recommendation engine for the Belvilla site that was carefully matched to the company's needs. In collaboration with David's team, GraphAware first helped design a domain-specific logical structure within Neo4j. They then deployed its GraphAware Framework and Enterprise Recommendation plugin which provided an advanced set of machine-learning and graph analysis algorithms to generate high-quality recommendations.

In addition, as well as incorporating user data from previous visits where available, the team also integrated session-level data so as to enhance the recommendations provided even to anonymous users.

'The implementation went much better than we could possibly have hoped for,' says David. 'The GraphAware team had clearly done significant prep work to understand our web platform. They were also very flexible in how they worked with us and excelled at getting on with the job without me needing to commit tons of resources to support them. And, as desired, the project brought together people from several different teams across the company.'

Real-time recommendations

David had tasked GraphAware with initially implementing batched recommendations with the expectation that in a later phase they would move over to real-time. In the event, however, the GraphAware team were able to implement real-time streaming of session-level data straight into the queuing system within the initial two-week engagement. This provided real-time recommendations, which were also integrated into the search results on the Belvilla site, right from the outset. It put David significantly ahead of where he'd planned to be.

'GraphAware delivered far more than I'd expected they could in the time they had,' says David. 'It means we're going to be in a position to start evaluating our results much sooner.'

Rapid time to production

Having successfully implemented the first phase of the project, including linking the recommendation engine into the search results, David's team has now turned to the process of refining, tuning and evaluating the impact of the recommendation engine on visitor bookings. The company hopes to see, amongst other things, a drop in the number of properties visitors view before finding and booking their ideal holiday home.

'What's most amazing about this project is the timeline,' says David. 'GraphAware successfully implemented a real-time recommendation engine on our site in just two weeks. That is an astonishingly short time to production.'

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