

## CASE STUDY



## Wobi

## Price Comparison Site Wobi Builds 'Whole Customer Understanding' with Neo4j

**INDUSTRY**

Finance

**USE CASE**Graph-Based Search/  
Recommendations**GOAL**

Make customers 'value offers' based on in-depth understanding of their current financial situation and needs

**CHALLENGE**

Rapidly analyse large volumes of 'whole customer' information

**SOLUTION**

Store all customer data into Neo4j database

**RESULTS**

- Data on half-a-million customers is accessed exponentially faster
- All data consolidated in Neo4j for 'whole customer understanding'

The success of price comparison websites rests on their ability to make customers compelling 'value offers' – and to do that they need to capture, organise and instantly analyse masses of customer data. Israel-based Wobi has achieved that aim of 'whole customer understanding' using Neo4j.

**The Company**

Founded five years ago, price comparison website Wobi is already one of Israel's best-known companies. Owned by the White Mountain investment group, Wobi has over 500,000 customers and millions of site visitors every month, who use Wobi to compare and choose their pensions and car, home, mortgage and travel insurance. Wobi has around 100 staff and, bolstered by a high-profile TV advertising campaign, will expand further this year by launching a banking and finance comparison service.

**The Challenge**

Wobi aims to give its customers best 'value offers', and to do that it needed to build a detailed picture of each customer and their full financial situation – savings, pensions, insurance policies, accounts and family background.

As Chief Technology Officer, Shai Bentin, explained: "We look to give our customers great value offers and so, as our CEO says, we want to look at the customer's account in such depth that we can tell them they have a leak in their house because they have been paying more for their water every month! That's the idea...we can offer to move a customer from, say, one phone company to another that better suits their needs – and we can read that information off their account, their credit account and the way the customer behaves."

To achieve that level of understanding, Wobi needed a single customer database where it could rapidly drill-down into each individual's history and add new information on the fly.

It faced two key issues. "One is that we need to extract a lot of customer information very, very fast from the database," Shai said, "and the second is the way we get the information. It's a tree-like structure – under each customer will hang a lot of information, and for performance we needed to pull up all that information at once."

When Wobi began searching for the ideal database, it realised "that structure really suited working with Neo4j", Shai said, because Neo4j organises data into 'nodes' and 'relationships'. This enabled Wobi to define its customers as 'nodes', and to hang off them every piece of information relating to that customer as 'relationships'.

Shai explained: "Instead of having to break up our data into tables like with an SQL database and make thousands of joins, with Neo4j we could just 'save the tree' and do a single look-up to the person, to grab everything at once."

**The Strategy**

Neo4j is now Wobi's core customer database, sitting at the heart of a network of around 20 servers, with a team of five people doing Neo4j development and testing work.

Wobi started using Neo4j after coming across the product by chance. Shai explained: "I felt that working with a normal SQL database would be too much work for us, and I actually started out looking for object databases, because our programming language is Java which is very object oriented. Then I stumbled on Neo4j – we tried it out and it worked for us."

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– *Shai Bentin,*  
*Chief Technology Officer, Wobi*

Neo4j is helping Wobi deliver its strategy of building its brand and customer base. "We want to make Wobi a name that everybody in Israel knows – and we are very successful in doing that," Shai said. "We are now one of the largest financials sites in Israel in terms of traffic, with millions of site users every month. We launched our pension product in March 2015 and by October 2015 we had over 200,000 users for that product alone. We have a very high profile. We 'do good' for people, so they come."

### The Solution

Shai said that Neo4j has enabled Wobi to solve its key business challenge of providing customers with compelling 'value offers'.

"We are all about understanding the customer, what they're about, what they need. To analyse my customers, I need an easy way to describe them, the things that happen, to build connections between customers and their information. In object databases I don't actually have 'description'. But suddenly with Neo4j I had the power to describe my data, with more relationships."

"Describing a relationship is important," Shai said. "For example, we get new information about pensions monthly, and I need to be aware of what's the latest and what's history. To model this in a regular object oriented way would be lengthy – whereas with Neo4j I have a relationship called 'latest' and a relationship called 'previous', and I can just do a 'select' and get whatever I need in order."

"Having Neo doing about a million relationships a second that's really really clear. You get everything ordered and I don't have to write code to do it. It would be a whole different thing if I had to use a SQL database; it's more hassle, it really is."

In 2015 Wobi scaled up to the latest enterprise edition of Neo4j to exploit new features like clustering and labels "which is one great feature that we didn't have before", Shai said. "We want to use those new features and we have more flexibility that we didn't have before."

### The Results

Shai summed up the benefit of Neo4j in one word: "Performance." He said: "I took similar business models and tested them on Neo4j and MySQL. Doing a 'select' on a single person, MySQL was a bit faster. But if I want a person and their policies (which are 'first distance relationships') then Neo4j was about five times faster than MySQL. With two relationships, it exponentially grows – and since I have a lot of relationships, with Neo4j my performance is much better."

Neo4j is currently handling half-a-million customers with an average of eight pensions and insurance policies/products each – a total of 4 million nodes and about 30 million relationships. And it has the capacity to expand much further, as Shai said: "Actually it's not a large database yet – but it's going to be."

As a result, Shai said: "I would recommend Neo4j for anyone invested in object oriented technology and anyone who needs high-rate transactions and performance. We made a decision to invest in Neo for our technology. Even our earliest products, which were done with MySQL, are now moving into Neo4j. With Neo4j, we are going to have the whole customer picture in one place, in order to have whole customer understanding." He concluded: "I just feel safe with Neo4j."

#### About Neo Technology

Neo Technology is the creator of Neo4j, the world's leading graph database, which brings relationships between data to the fore. From personalised product and service recommendations to websites offering social network features, network diagnostics for telecoms operators, and companies that have reinvented the management of reference data, user identities and access rights: the Neo Technology researchers, pioneers of graphic databases, have played a key role in making the power of graphs available to many international organisations. Large companies, including Airbus, SFR, Meetic, Glowbl, Trace One, Walmart, eBay, UBS, Nomura, Cisco, CenturyLink, HP, Telenor, TomTom, Lufthansa and the National Geographic Society, as well as start-ups such as Medium, Polyvore, Zephyr Health and Elementum use Neo4j to unlock the commercial value of data relationships. Neo Technology is a privately owned company, financed by Fidelity Growth Partners Europe, Sunstone Capital, Conor Venture Partners, Creandum and Dawn Capital, headquartered in San Mateo (California). It has offices in Sweden, the UK, Germany, France and Malaysia. For more information: [Neo4j.com](http://Neo4j.com).

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