

## nVISO

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### Overview

#### The need

To help its clients gain more commercial value from its innovative facial imaging solution, nVISO wanted to give them new ways to analyze real-time sentiment data extracted from videos of their customers.

#### The solution

nVISO uses IBM® Watson™ Foundations solutions, running in the cloud on IBM SoftLayer®, to put sophisticated, intuitive analytics tools at its clients' fingertips.

#### The benefit

Enables nVISO's clients to gain actionable insight into real-world customer responses to their products, services and marketing communications – providing a unique perspective that puts them one step ahead of their competitors.

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## nVISO

*Using real-time facial imaging to deliver deep insights into customer sentiment*

Focus groups have long been the preferred method to discover customer sentiment around products, services and advertisements – but the process is complex, time-consuming and heavily reliant on subjective analysis. What if businesses could connect directly with their customers to get truly objective sentiment data?

nVISO has developed a revolutionary facial imaging solution that captures and processes customer emotions in real time, using data streams from webcams, mobile devices and in-store cameras. Running on the IBM SoftLayer cloud platform, and with analytics powered by IBM Watson Foundations software, the solution delivers hard, objective data on how customers' physical reactions can provide new insight into their purchasing behavior.

### What drives in-store purchasing decisions?

Founded in 2009 and headquartered at the Federal Institute of Technology in Lausanne, Switzerland, nVISO is a privately held start-up company developing technologies to decipher human emotions. Today, the company offers facial imaging solutions for use in the consulting, market research and product development sectors, in addition to applications in the healthcare industry.

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*When customers visit stores, what drives their decisions to make purchases? "With IBM solutions, we can capture real-time facial expression data from in-store video streams, helping our clients detect the emotional factors that influence purchasing decisions," says Tim Llewellynn, CEO and co-founder of nVISO.*

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## Solution components

### Software

- IBM® SoftLayer®
  - IBM SPSS® Analytic Server
  - IBM SPSS Analytic Catalyst
  - IBM DB2®
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Tim Llewellynn, CEO and co-founder at nViso, comments: “Facial imaging analytics is a young science, but the potential range of applications is vast. For instance, we have been working on detecting levels of pain in Alzheimer’s patients, who have difficulty in remembering how they feel. By using predictive analytics we can actually understand their level of discomfort and help provide them with a better level of care.

“Research projects like this one are vital, but our technologies are also being used by commercial organizations to deliver real-world business benefits – and retail is a good example.”

For retailers, drawing customers into the bricks-and-mortar store is only half the challenge. Llewellynn explains: “Once potential customers are inside the store, retailers want to understand what influences their purchasing decisions; what it is that converts people browsing the store into paying customers and to keep loyal customers coming back.”

“Traditionally, retailers have addressed this challenge by running focus groups, in which customers are asked about their attitudes towards a particular product, service or marketing communication, and have their responses evaluated by a moderator. In addition to being a qualitative, subjective methodology, focus groups are complex, costly and time-consuming, which limits the accuracy, frequency and depth of their results.”

## Learning how to read facial expressions

nViso recognized an opportunity to revolutionize customer sentiment analysis in the retail sector, and began to develop its facial imaging technology for use by retail clients.

“Today, changes in the retail sector are happening more rapidly than ever, and there’s an increasing need to make better decisions, faster,” says Llewellynn. “We realized that by automating the analysis of unstructured information from facial expressions and converting it

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*“Using IBM technology, we have created a solution that delivers the real-world sentiment data businesses need to understand the factors that turn browsing shoppers into paying customers.”*

— Tim Llewellynn, CEO and co-founder, nViso

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into structured data, we could create a sentiment analysis solution that was faster, more cost-efficient and more scalable than traditional focus groups.”

To achieve its goal, nViso wanted the ability to mine hundreds of real-time video data streams simultaneously, capture structured data on facial expressions and enable its clients to drill down into the analytics data and discover actionable business insights.

### **High-performance analytics in the cloud**

After reviewing multiple vendors, nViso selected IBM technology as the platform for its innovative sentiment analysis solution.

“IBM’s roadmap for cloud and analytics was one of the deciding factors when it came to selecting our business partner,” says Llewellynn.

“In addition to a mature predictive analytics software offering designed to meet the demands of stream computing, IBM continues to demonstrate its commitment to the cloud computing model with its resilient, high-performance SoftLayer infrastructure.”

nViso implemented its ground-breaking facial imaging solution on the IBM SoftLayer platform supported by IBM DB2® database software – delivering the compute performance to process data feeds from hundreds of webcams, mobile devices and in-store cameras. To help its clients extract maximum business value from the resulting structured data, the company deployed IBM SPSS Analytic Server and IBM SPSS Analytic Catalyst predictive analytics software, part of the IBM Watson Foundations portfolio.

“We chose SPSS because it is one of the leading statistics packages for the market research industry, and because IBM’s strategic direction for analytics is closely aligned with our own value proposition,” says Llewellynn. “Using IBM software, we can empower our clients to use an entirely new source of customer data in better, smarter ways.”

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*“In the past, businesses would have no choice but to take survey responses at face value. With the nViso solution, our client can drill down to identify discontinuities between the answers on the survey and the emotional reactions detected by the software.”*

— Tim Llewellynn, CEO and co-founder, nViso

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### **Assured governance and security**

Llewellynn adds: “The IBM solutions also meet our requirements for data governance and security, which is especially important for our retail-sector clients. We have the flexibility to run our solutions in the cloud, on-premise or as a hybrid, enabling us to work with our clients’ customer data wherever it is stored. As we see it, no other vendor has IBM’s expertise in integrating the latest cloud-based solutions with the enterprise-class ERP systems that most retailers rely on.”

Today, nViso processes its clients’ data streams in the cloud using a pay-as-you-go model. When a client’s sentiment analysis is complete, the nViso team either imports the results directly into the client’s own on-site SPSS solution, or delivers the results via cloud-based IBM SPSS Analytic Catalyst software.

“Because the nViso solution is fully automated, it delivers the results of the analysis both more cost-effectively and orders of magnitude faster than traditional focus groups,” says Llewellynn.

### **Revolutionary insights**

With its facial imaging solution in production, nViso is already working on some compelling use-cases in the retail environment.

“One of our clients is using the solution to perform exit surveys outside of their stores,” says Llewellynn. “During these surveys, customers enter their answers using an iPad, which uses its onboard video camera to map their actual emotional reactions against their typed responses – capturing a rich layer of sentiment data that would otherwise be lost.

“In the past, businesses would have no choice but to take survey responses like this one at face value. With the nViso solution, our client can drill down to identify discontinuities between the answers on the survey and the emotional reactions detected by the software – uncovering previously hidden insights into what customers actually think.”

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### **Ready for the future**

Llewellynn says: “We also see great potential in our solution for real-time decision support. If, for instance, a car dealership were to capture emotional responses during test drives and correlate that data with customers who eventually go on to make a purchase, they could identify the strongest predictive indicators of a successful sale. By building this data into a central reporting system for the entire dealership network, the retailer could automatically flag potential customers, and refine its sales strategy in real time to drive sales.”

Llewellynn concludes: “Using IBM technology, we have created a solution that enables businesses to go beyond the limitations of focus groups – delivering the real-world sentiment data they need to understand the factors that turn browsing shoppers into paying customers.”

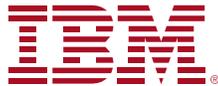
### **About IBM Business Analytics**

IBM Business Analytics software delivers data-driven insights that help organisations work smarter and outperform their peers. This comprehensive portfolio includes solutions for business intelligence, predictive analytics and decision management, performance management, and risk management.

Business Analytics solutions enable companies to identify and visualise trends and patterns in areas, such as customer analytics, that can have a profound effect on business performance. They can compare scenarios, anticipate potential threats and opportunities, better plan, budget and forecast resources, balance risks against expected returns and work to meet regulatory requirements. By making analytics widely available, organisations can align tactical and strategic decision-making to achieve business goals.

### **For more information**

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