FleetRisk Advisors drives business growth with rapid, scalable analytics

Bringing advanced analytics of driver safety and employee retention to a wider market

Smart is...

Using predictive analytics of vehicle and driver data to help reduce fleet-related accidents and staff turnover.

Anticipating huge growth in its customer-base, FleetRisk Advisors – a business unit of Omnitracs Inc. – needed a way to onboard new clients faster and with less effort, and deliver its driver safety analyses in perfect sync with clients' business needs. A new, scalable analytics architecture is helping FleetRisk Advisors transform its business: technology is no longer a limiting factor for its software-as-a-service (SaaS) analytics solution, but an enabler for innovation and more effective customer service.

So you've built a successful business on innovative analytics – but how do you take it to the next level? How can you ensure that the systems and processes that you've built for your existing customer-base will scale when the business doubles or triples in size?

When FleetRisk Advisors joined Omnitracs, Inc. in 2011, it faced exactly this challenge. Backed by Omnitracs's powerful sales and marketing function, FleetRisk Advisors knew it had a huge opportunity to raise its profile and win new clients throughout the US. The only question was whether its analytics platform could keep pace with business growth.

FleetRisk Advisors was already committed to expanding its IBM predictive analytics footprint. But to scale properly and meet the demands of larger clients, it needed a more enterprise-grade data infrastructure. The company turned to the IBM PureData™ System for Analytics, powered by Netezza® technology – a specialized platform for accelerated analytical processing. This enabled FleetRisk Advisors to transform its business and build a cloud-based, software-as-a-service (SaaS) platform capable of supporting three times as many clients as ever before.

Setting the scene

FleetRisk Advisors has carved out a niche of its own as a specialized provider of advanced analytics solutions for the fleet management and logistics industries. It currently offers a range of services that help clients identify, predict and address issues before they affect the business – focusing specifically on the areas of driver safety and fatigue, retention and recruiting, and workers' compensation.

Business benefits

- FleetRisk Advisors' SaaS solutions help reduce fleet-related accidents by 20 percent and cut staff turnover by 30 percent.

- The new analytics architecture supports 200 percent growth in client numbers, and enables new clients to be brought on board twice as quickly.

- The solution delivers the results of clients' analyses five times faster than before.

Patrick Ritto, CTO at FleetRisk Advisors, comments: "We gather data from our clients' systems – including telematics data from the trucks themselves – and feed it into our custom-built predictive models. The models enable us to predict, for example, whether an individual driver is likely to become fatigued or drive unsafely, and make recommendations so that our clients can take appropriate action.

"On average, the services provided via our cloud-based portal called 'The Driving Center' help clients reduce the incidence of minor accidents by 20 percent, and serious accidents by as much as 80 percent. They also see improvements in driver retention of around 30 percent – which is particularly significant in this industry, where employee turnover often runs at more than 100 percent per year. If you can notice the warning signs and intervene to make sure your drivers aren't getting too tired or too stressed, you'll see productivity benefits in almost every area of the business."

Productizing the process

However, although FleetRisk Advisors' predictive modeling services themselves were highly efficient, the process for bringing new clients on board was still mostly a manual process.

"When we started out, we built everything in a completely customized way for each client," explains Patrick Ritto. "It could take 500 man-hours to build a modeling environment for a new client – which was too slow and too expensive if the business was going to be able to expand its customer-base. We needed a more standardized, 'productized' approach.

Smarter Transportation: enhancing driver safety and satisfaction

	Instrumented	Telematics data from each driver's electronic log book is gathered into a central data warehouse and combined with employee information from other systems.
	Interconnected	Sophisticated data models analyze the data and assess each driver for key risk factors such as miles driven, sleep opportunities and pay levels, compared to company averages.
	Intelligent	Enables predictive assessment of drivers' fatigue and job satisfaction levels, and prompts employers to intervene – helping to reduce employee turnover and prevent accidents before they occur.

Solution components

Software
- IBM® SPSS® Modeler
- IBM SPSS Collaboration and Deployment Services

Hardware
- IBM PureData™ System for Analytics, powered by Netezza® technology

"We can now run all of our production runs concurrently over the weekend, so that everyone's results are available at the start of the week. We're able to fit into the cycle of our clients' businesses, because we can deliver the data they need whenever they need it."

— Patrick Ritto, CTO, FleetRisk Advisors

As well as accelerating the onboarding process, FleetRisk Advisors also wanted to improve the performance and reliability of its analytical processing runs.

"With our existing platform, the production run for our largest client could take up to 23 hours," says Patrick Ritto. "So if there was a problem with the run, it would take a whole day to resolve and re-run. If we wanted to deliver results on time while supporting more and larger clients, something had to change."

New landscape for Big Data

To deal with the challenges of potential growth in its client-list, FleetRisk Advisors needed to integrate with a wider variety of data sources, gather larger volumes of data, and process them at a greater velocity than ever before. In short, it needed to adopt a Big Data strategy to redesign its analytics platform.

"We gather data from onboard telematics systems, driver logs, dispatch systems, maintenance and fuel systems, HR records and ERP data, and analyze an average of 4,500 specific data elements in each client's custom predictive model," says Patrick Ritto. "The complexity of the initial data set, the sophisticated aggregation and derivation methods we use to prepare it for modeling and the post-processing we do before we produce the final report were already putting a significant strain on our IT infrastructure.

"We knew that our IBM® SPSS® Modeler software could scale to meet our needs; the limitation was on the hardware and data warehousing side. Instead of having separate databases and servers for each client, we wanted to build a single, multi-tenant platform that could support a cloud-based service for the entire business. In the IBM PureData System for Analytics, we found the answer."

Integration by design

By integrating its IBM SPSS Predictive Analytics software with IBM PureData, FleetRisk Advisors has gained a single, optimized platform for high-speed analytics. The expert integration of database services, computational resources, storage and networking within the PureData appliance provides a plug-and-play infrastructure for analytics.

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Faster, more efficient onboarding

Designed for analytical processing of Big Data workloads, PureData is able to accelerate FleetRisk Advisors' processing runs significantly, while also simplifying the data model to the point where onboarding new clients becomes a much faster process.

"We can bring new clients on board in half the time – saving nearly 250 man-hours of work," says Patrick Ritto. "This means it's economically viable for us to rapidly deploy proof-of-concept environments for new customers to show them how our services work and give them immediate experience of the benefits. This has now become a standard part of our sales cycle – and it's proving extremely effective in convincing new clients to partner with us."

Aligning performance with clients' business cycles

FleetRisk Advisors is also seeing five- or six-fold improvements in production-run performance: for example, the model that used to take 23 hours to process now completes its production run in about three hours – about eight times faster. Since the majority of FleetRisk Advisors' clients want to be able to log in and review their model results first thing on Monday mornings, this performance increase is vital for maintaining high-speed access and high levels of customer satisfaction.

"We can now run all of our production runs concurrently over the weekend, so that everyone's results are available at the start of the week," says Patrick Ritto. "We're able to fit into the cycle of our clients' businesses, because we can deliver the data they need whenever they need it."

He adds: "We're dealing with issues such as driver safety, where the window for preventing accidents can be quite narrow. If a client doesn't receive our predictions in time to plan an intervention with one of their drivers, the results can be very serious in human terms, as well as financial and reputational terms. So it's not an overstatement to say that the accelerated performance of our new IBM architecture can have an impact on safety and on saving money."

In addition, with the new platform there is no need to archive old data: everything can be held online and ready for analysis, with no need to move it into separate systems for processing. The ability to analyze current data against historical data quickly and easily is a major improvement for speed and depth of analysis.

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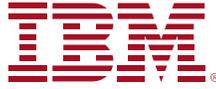— Patrick Ritto, CTO, FleetRisk Advisors

Looking to the future

With its new analytics architecture in place, FleetRisk Advisors has the capacity to support a 300 percent increase in its client base.

"Now that we have a scalable and sustainable platform, the possibilities really start to open up," concludes Patrick Ritto. "There is so much potential to develop new services that could really help our clients take the next step. For example, we'd like to introduce more real-time analysis and integrate external data sources such as weather, speed, traffic and road conditions. Now that technology is an enabler, rather than a limiting factor, it's really an exciting time to be working at FleetRisk Advisors."

About IBM Business Analytics

IBM Business Analytics software delivers data-driven insights that help organizations 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 visualize 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, organizations can align tactical and strategic decision-making to achieve business goals.

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