



Vail Resorts

Case Study: Social Media & RFID

Vail Resorts (NYSE:MTN), a \$1 billion publicly traded company based in Colorado and the premier mountain resort company in the world, tried an initial pilot with RFID in 2008. They had the vision to imagine RFID changing the entire industry. In 2010 they wanted to push the technology further to deliver a new and innovative customer experience based on social networking and the initial vision. But they needed 99%+ read accuracy and a scalable architecture.

Business Goal: Competitive Differentiation

Ski areas are location-bound and have to compete on the user experience. Often large capital investments such as faster chair lifts are the primary choice for investment. Vail's team realized that any mountain could install a new chair lift. The Vail executive team saw no differentiation in a new lift, they already have great infrastructure. Led by an innovative IT group, the company took a different approach, they focused on the guest experience. Vail could be the first to connect users to the mountain and their skiing friends through social media and location-based technology and in one season change the entire ski industry.



Challenges: RFID Accuracy, High Availability, System Scalability

Vail knew from their early forays into RFID that the challenges they would face were attaining 99%+ read accuracy. The first pilot Vail tried with a hardware vendor led to 80% read rates. If they were going to do a program that tracked skiers progress, no participant would be happy if the system missed a run or two (especially if they were competing against other skiers) so accuracy was of paramount importance. The system would be deployed over five resorts across the USA, in areas that are sometimes only accessible by helicopter or horseback so it had to be scalable and remotely sustainable.

Track Accomplishments, Win Pins, Engage...Automatically

To drive an innovative social networking experience enabling guests to track their own progress, achievements and competitions in real time alongside their friends and family, Vail needed high performance UHF RFID readers and antennas. The goal was to reliably scan guest passes at every ski lift across all five mountains, without employee interaction and with 99%+ accuracy. They also wanted the system to be unobtrusive, with skiers not noticing anything unusual—unlike barcodes or older varieties of RFID that require very close proximity and odd contortions to read the tags. Vail wanted to follow established ISO standards (ISO 18000-6c) to make sure they were not dependent on one hardware provider. They also required one operating system that would work on any ISO reader and seamlessly feed data upstream.

Skiers and snowboarders are scanned by staff using handheld RFID interrogators at the base of each ski lift while fixed RFID readers and antennas positioned further up the mountain scan multiple guest passes simultaneously without employee interaction. While the fixed readers deployed in the pilot only delivered 80% accuracy, designing a new UHF RFID solution that delivered 99%+ accuracy was critical to success. This meant extensive physics testing and an understanding of the science around RFID.

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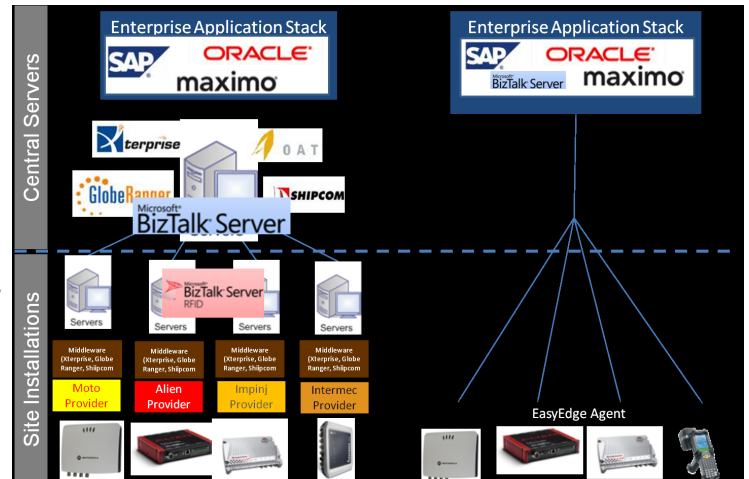


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Connecting RFID to Customer Experience: Software Approach

The initial pilot system relied on a multi-layer Microsoft BizTalk RFID offering. For the full five mountain roll-out Vail understood the underlying software platform had to scale and be capable of applying complex business logic to RFID data in real time across hundreds of readers.

However the company didn't want the added burden of a complex BizTalk RFID middleware and its associated hardware infrastructure or network overhead. The Vail development team also required a robust and proven RFID software platform they could leverage to develop the customer facing solution without having to deal with any given manufacturer's firmware. The Vail software team knew the database system they wanted to use, they were designing a cutting edge front end with their partner Crispin Porter + Bogusky and wanted the RFID component to be as light weight and rock solid as possible. That required an RFID Operating System embedded on the readers. The solution was Quake Global's EasyEdge™ RFID's only true operating system.



Process:

Testing & Design

Vail and Quake Global could not leave anything to chance so it was imperative that snow be on the ground while the Quake Global team analyzed whether UHF RFID could deliver the 99%+ accuracy required for this application in real-world conditions. In response Quake Global scrambled an advance survey team to visit Colorado in March 2010, returning just two weeks later with an entire RFID test infrastructure designed and ready to deploy. This coordinated execution allowed real world testing to be completed before the ski season ended.

Approach

Vail wanted one partner to handle the entire system. Quake Global's physics experts provided input into the best reader / antenna selection and configuration. Quake Global also determined the optimal deployment and maintenance strategy; a vital component to scaling a mission critical RFID system. Following intensive design and analytics sessions the significant physics challenges of the use case and environment were overcome. The readers were deployed in custom enclosures designed to withstand the harsh environmental conditions at more than 100 lifts across five mountains.

Technology

Quake Global's EasyEdge™ RFID operating system delivered a robust, scalable software platform managing RFID data in real time while enabling Vail's development team and partners to rapidly write software independent of any single reader manufacturer or model. The system is maintained and monitored through Quake Global's Easy-Monitor™ which allows remote monitoring, firmware updates, automated alerting and remote diagnostic to keep the entire RFID network up and running from one central location. The system is scalable, flexible and built on ISO 18000-6C standards.

EasyEdge RFID's Operating System

- Embedded on the Readers
- Eliminates extra middleware servers
- Reduces network traffic
- Increases read performance
- Stores tag reads during network outages
- Works with any high-performing UHF ISO 18000-6c reader
- Reduces software cost by up to 80%

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The Result: A New Skier Experience

Vail Resorts opened with the new EpicMix program on November 5, 2010 going live first at Keystone. The system is changing the way the ski industry thinks and markets the guest experience.



"Vail resorts blew the doors of the ski industry with its release of EpicMix... when Vail hires CP&B and Quake Global ...you know they mean business. The question skiing executives around the world must be asking them-selves is 'Why didn't we think of that?'"

Aspen Skollie Magazine

"... a cross between Nike+ and Gowalla... Vail's EpicMix is an innovative use of social media, showing that it's not just a tool confined to big cities or national companies, but has a more inti-mate application too on a hyper-local level."

Fast Company Magazine

Skiers are now participating in a combination of the virtual and physical worlds. The RFID system is operating with 99%+ accuracy across hundreds of read points on the five mountain resorts. Remote management and monitoring is done from Quake Global's secure network operation center with remote diagnostic and remediation keeping costs down and reliability up for Vail.

In a September earnings call with Wall Street Analysts Vail's executive team pointed to increased season pass sales. Increasingly competitive pressures in the ski industry have forced forward-looking executives to think out of the box. Vail Resorts is leading the industry in not just innovation and technology, but more importantly a loyalty-building client experience that is not available anywhere in the world. Vail is the first in what will be many experiential systems which leverage RFID to combine the physical world with the virtual world. In the word of Vail's CIO Robert Urwiler, "We needed a partner who cared us much about their clients as we care about ours, and share our passion for excellence. We found that in the Quake Global team."

Quake Global is the leading RFID firm in the world with more than 350 successful projects completed through. Easy-Edge™ is the industry's only true RFID Operating System (OS) and can lower total cost of ownership (TCO) by almost 80%. If you are interested in high reliability, six sigma accuracy, and getting the system done right the first time; give Quake Global a call at +1 858.277.7290 or drop an email to sales@quakeglobal.com.

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