

## CUSTOMER NEEDS AND STRATEGIES

### A Pool of Small Firms Pioneers the Use of RFID Technologies — Dolomiti Superski Case Study

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#### IDC OPINION

Of all the specific areas and uses of RFID technologies, ticketing and access control applications are probably among the most well known. An interesting case is that of ski lift access control applications, where the key success factor is related to the convenience and speed of ski pass reading.

This IDC study examines how a pool of small Italian firms in the tourism industry led the way in the implementation of RFID technologies. Dolomiti Superski is the largest world ski resort, formed by 138 small ski lift operators.

IDC draws several conclusions from this case study:

- ☑ Thanks to the advanced ticketing system, skiers can access ski lifts hands-free, and without queuing. RFID-enabled smart cards allow skiers to keep tickets in their jackets when passing through the access readers. Readers then capture data as each RFID ski pass goes by and send it directly to the datacenter, where all the information generated on the slopes is stored.
- ☑ RFID technology has enabled Dolomiti Superski to better track skiers' most recent locations, improving the chances of finding them if they get lost or if their lives are at risk. In addition, ski passes that are lost, stolen, or fraudulent can be easily disabled.
- ☑ The integration of a complex system that combines a variety of different technologies, such as RFID, GSM, GPRS, ADSL, and analog/ISDN lines was one of the biggest challenges and required the implementation of a stable but also very innovative infrastructure.
- ☑ The new infrastructure brings key improvements since all data transmitted from the local systems (e.g., ski areas, ski lifts, and points of sale) are automatically stored in a unique central data repository. Having all the information in one place allowed Dolomiti Superski to quickly access the data and quickly respond to the needs of the business.
- ☑ In addition, the deployment of business intelligence and reporting tools enabled the consortium to obtain daily statistics on ski pass sales, number of skiers visiting the facilities, tracking of their favorite slopes, and many other user behavior features.



## **IN THIS STUDY**

This study examines how Dolomiti Superski, a consortium of small ski lift operators, implemented a new platform that provided a better way to manage, analyze, and access the large amounts of data collected by the local systems.

The decision to deploy a new ticketing and access control system is analyzed, along with concrete results and experiences at Dolomiti Superski. The analysis includes advantages and disadvantages to be considered for the implementation of RFID technologies.

## **SITUATION OVERVIEW**

Dolomiti Superski is a consortium bringing together 12 ski areas and 45 resorts in a district including the southern Tyrol, Trentino, and Veneto. The consortium is formed of many small firms, and the benefits of working together are many: 138 small firms are involved in an activity that goes beyond the capabilities of each individual operator. The implementation of state-of-the-art technologies such as RFID, covering the 12 ski areas, is just an example.

Last ski season, the consortium had more than 4 million visitors for a total of 150 million accesses across the entire circuit. It has 450 ski lifts and 1,500 access points equipped with readers and turnstiles that cover 1,220 kilometers of ski runs.

With millions of skiers using the facilities daily, the business was becoming difficult to manage. Dolomiti Superski, however, always pioneered the deployment of new technologies. In 1974, it introduced the barcode system to control access points to the slopes. The system, one of the most advanced technologies of that time, was replaced in 1992 by a technology based on magnetic card/key card at 125kHz. Even though this deployment represented one of the first contactless experiences in Italy, as time passed, the technology proved inadequate to meet Dolomiti Superski's business needs.

For this reason, at the beginning of 2001, a feasibility study was carried out to investigate the potential of new advanced technologies. Dolomiti Superski introduced the new contactless ticketing system during the 2004/2005 ski season, in collaboration with Oracle Italy (the software house), CAP Spa (the systems integrator), and AXESS AG (the ticketing and access control system provider).

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## **Challenges of Dolomiti Superski**

### ***Migrating to Open Standards***

As demand grew, the weakness points of the system implemented in 1992 became more evident. Dolomiti Superski needed a better way to manage, analyze, and access the large amounts of data collected by the system. The old platform relied on a proprietary system, allowed little analysis of ski pass uses and user behavior, and implied manual transfer of the RAM containing the data captured at local systems (ski lifts, points of sales) to the central office.

The new platform should be based on open standards, be scalable, modular, and open to integrating future technologies. Accordingly, the main challenges of the new system are:

- ☒ To create an integrated and interactive network in the sense that data transmitted from all local systems (e.g., ski areas, ski lifts, and points of sale) would be automatically stored in a unique central data repository.
- ☒ To ensure that the network could process information sent in a wide variety of data-processing modes, such as GSM, GPRS, ISDN, and ADSL line.
- ☒ To handle huge amounts of data, always observing high security standards.
- ☒ The rapid implementation of business intelligence functionalities to enable the profiling of clients and user behavior.
- ☒ To allow the purchase of e-ski passes online.

Integrating such a complex system that combines so many different technologies requires the implementation of a stable but also innovative infrastructure. CAP Spa and Dolomiti Superski chose Oracle Database Enterprise Edition and Oracle Application Server to support the new architecture. Business intelligence tools supplied by Oracle also enabled querying of the data collected by the system.

### ***The Ticketing and Access Control System – RFID and Contactless Smart Card Technologies***

The new contactless ticketing system implemented by Dolomiti Superski in collaboration with AXESS, an Austrian firm specialized in the design and integration of automatic ticketing and access control systems using RFID-enabled smart cards, brings huge advantages to skiers.

Contactless smart cards include an electronic chip embedded for the saving of ticket type information. Chips work passively in the sense that the reading and writing of data occurs when an RFID antenna is approached. In the past, skiers had to remove ski passes and put them through the access readers every time they approached a turnstile. With the new system in place, RFID-enabled cards allow skiers to keep tickets in their jackets when passing through the readers.

Readers then capture data as each RFID ski pass goes by and send it directly to the Oracle datacenter, where all the information generated on the slopes is stored. Thanks to this advanced ticketing system, skiers can access the lifts hands-free, and without queuing.

The advantages are not limited to those mentioned above: RFID technology enables better tracking of skiers' most recent locations, with improved chances of finding them if they get lost or if their lives are at risk. In addition, ski passes that are lost, stolen, or fraudulent can be easily disabled.

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## **The New Architecture**

### ***Dealing With a Wide Variety of Technologies***

The whole project took almost 20 months once the IT suppliers had been chosen (December 2002). The release of the system took place in November 2004, after the development, integration, and testing phases were all successfully completed.

Deadlines for the deployment were very strict, since the ski season begins each year during the last week of November. Therefore, the implementation phase and the migration process had to be completed with no delays. CAP Spa, an Oracle partner, was selected to integrate the platform and worked together with AXESS for the integration of the ticketing and access control systems.

All ski areas run on a unique UNIX platform and rely on Oracle's database to generate the reporting statistics that are later used for earnings distribution, based on the data transmitted from all the local systems.

Oracle's datacenter provides a centralized repository for Dolomiti Superski's storage, management, and dissemination of data captured by the local systems. Authorized personnel can access the following functions:

- Determine price list.
- Data access and elaboration — the datacenter functions as a database in the sense that it collects all data transmitted from the sales offices, ski areas, and ski lifts, elaborates it, and sends it back to the sales offices.
- Earnings distribution to all ski areas.
- Reporting statistics on user profiles, number of accesses, etc.
- Launch of marketing campaigns.

After each ski day is over, the datacenter is connected to all sales offices and access readers, so the morning after, all the sales offices have updated information before the new ski day begins. Connection of the access reader with the back office utilized standard communication links such as GSM, GPRS, UMTS, ADSL, or analog/ISDN lines. Having all the information in the datacenter allows quick access to data and rapid response to the needs of the business.

The new architecture uses four servers: one database server, one backup server, and two application servers. One is used for data access and elaboration by Dolomiti Superski's authorized staff. They can access the system through a Web interface based on Oracle's Application Server and receive daily information on ski pass sales, skiers' profiles, slopes visited, etc. The deployment of Oracle's middleware also permitted the easy introduction of business intelligence functionalities. Oracle's Business Intelligence Discoverer tool allows data querying to obtain daily figures on the business situation.

The second application server is used for network connection and final-user interface, in particular for clients' purchases of e-ski passes. From the beginning of the ski season 2005/2006, ski passes can be purchased online. Users holding a personal ski card can acquire the ski pass online, which will then be charged automatically at the first contact with the ski pass reading device at the lift facility.

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## **Key Results**

### ***Benefits***

The new system deployment brings key benefits, not only for the facilities operators but also for the final users.

Skiers will benefit from better customer service, since they will be able to reach the slopes easily and in a shorter period of time. In addition, RFID-enabled cards are provided at no extra cost.

For the facilities operators, the advantages are numerous:

- The new business intelligence tools allow better control of the business situation, for instance, by tracking users' behavior.
- The new reporting tools permit immediate access to accurate figures on daily sales, number of skiers visiting the facilities, etc.
- The system also offers the possibility of immediately deactivating a ski pass that has been lost, stolen, or fraudulently used.
- The benefits are not limited to those mentioned above, as the analysis of user behavior will enable the future implementation of advanced new services.

### ***Concerns***

On top of the basic ticketing and access control functionalities, some applications typically evolve towards CRM functionalities. The identification of the user and the tracking of their behavior usually helps to provide a better customer service, enabling the provision of personalized services.

In the case of Dolomiti Superski, the expected success in the deployment of CRM functionalities is linked to the fact that, in the tourism/entertainment industries, users are enthusiastic about the use of innovative technologies such as RFID in order to receive better customer service. Therefore, these users will easily consent to the reading and use of personal data; while in other situations (e.g., RFID tags on garments), users might be more concerned about privacy issues and will not easily consent its use.

## **FUTURE OUTLOOK**

The new system was built as a modular and scalable architecture. The deployment of business intelligence and reporting tools allow Dolomiti Superski to obtain daily statistics on ski pass sales, the number of skiers that visit the facilities, the tracking of their favorite slopes, and many other user behavior features.

They also create the foundation for a future CRM system and for developing new advanced services such as promotions, marketing campaigns, or personalized services to target different skier segments. The next step in Dolomiti Superski's agenda is the addition of CRM functionalities on top of the platform.

## **ESSENTIAL GUIDANCE**

SMBs typically can't afford the integration of the most innovative and advanced technologies, such as RFID, unless they are close trading partners of large organizations. The retail industry provides good examples of small businesses deploying RFID technologies to comply with their large partners' requirements.

SMBs are usually focused on their business problems, so most of the time they look for cost-effective solutions that will do the job reliably and are not very concerned about deploying the most advanced technologies. With the emergence of the Internet as the main computing platform, SMBs can now be easily linked to clients, suppliers, and geographically dispersed offices. The same concept applies to consortium partners.

We believe that SMBs become stronger when joining forces, and that "the whole is greater than the sum of its parts." A consortium of small and midsize firms that work together to obtain a common objective can bring extraordinary advantages to each of its members. The deployment of state-of-the-art technologies is just one example.

Dolomiti Superski is a consortium of 138 small operators that cover 12 ski areas. Since its creation in 1974, the consortium pioneered the deployment of advanced technologies. Recently, it implemented a new contactless ticketing system that takes advantage of RFID tags to access ski lifts.

The new system deployment brings key benefits, not only for the ski lifts operators but also for the users. Ski lift operators now have a scalable platform that deals with the huge amount of data captured every day, and new business intelligence tools that allow better control of the business situation. Thanks to RFID-enabled cards, users can take advantage of enhanced customer service and time savings at no extra cost.

The use of RFID tags in ticketing and access control applications is growing across Western Europe. We expect higher growth in the adoption of ticketing applications in the next couple of years, particularly in the industries where these applications were already successfully implemented (e.g., tourism and entertainment). In the medium to long term, we can expect ticketing and access control applications to be extended to other sectors, to take full advantage of the capabilities they offer. The use of contactless smart cards in public transport ticketing systems, currently in the experimental phase, is a good example.

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## **Interviewees**

For their contribution to this case study, IDC would like to give special thanks to:

- ☒ Gianni Rasom, CIO, Dolomiti Superski
- ☒ Oscar Gridavilla, Director, Business Development Pervasive Computing, Oracle Italy

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## **LEARN MORE**

### **Related Research**

To learn more about IT developments in the Western European SMB market, please refer to the following IDC documents:

- ☒ *European SMB Market Watch: July–September 2005* (IDC #MM57M, October 2005)
- ☒ *European SMB Confidence Outlook: July–September 2005* (IDC #MM56M, October 2005)
- ☒ *2005 Clustering of Western European SMBs: Where are Real IT Opportunities?* (IDC #MM10M, October 2005)
- ☒ *Outsourcing Strategies Among Western European SMBs* (IDC #MM09M, September 2005)
- ☒ *IT Investments: Decision Process and IT Strategy in Western European SMBs, 2005* (IDC #MM08M, August 2005)
- ☒ *Security Technologies Adoption in Western European SMBs* (IDC #MM07M, August 2005)
- ☒ *New Technologies Adoption Patterns in Western European SMBs* (IDC #MM06M, July 2005)
- ☒ *The IDC Business Size Segmentation Taxonomy* (IDC #MM05M, July 2005)
- ☒ *Mobilizing the Western European SMB Workforce* (IDC #MM04M, July 2005)
- ☒ *Western European SMBs IS Operating Budget Dynamics, Channel Selection, and Customer Satisfaction, 2005* (IDC #MM03M, July 2005)
- ☒ *European SMB Market Watch: April–June 2005* (IDC #MM55M, July 2005)

- ☒ *European SMB Confidence Outlook: April–June 2005* (IDC #MM54M, July 2005)
- ☒ *Mapping Solution Priorities in Western European SMBs* (IDC #MM02M, July 2005)
- ☒ *Western European SMB IT Spending Forecast, 2004–2009* (IDC #MM01M, May 2005)
- ☒ *European SMB Market Watch: January–March 2005* (IDC #MM53M, May 2005)
- ☒ *European SMB Confidence Outlook: January–March 2005* (IDC #MM52M, May 2005)
- ☒ *The Impact of Regulatory Compliance on Western European SMBs* (IDC #MM51M, April 2005)
- ☒ *Western European SMB Market: Structure and Performance Indicators* (IDC #MM12L, March 2005)
- ☒ *Avaya in IP Telephony — Nemesis Case Study* (IDC #MM11L, February 2005)
- ☒ *Large IT Vendors Target the Western European SMBs Market: An IDC Assessment* (IDC #MM10L, February 2005)
- ☒ *European SMB Market Update: October–December 2004* (IDC #MM55L, January 2005)

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