

**In a bid** to provide resorts with a way to manage skier flows on their slopes, Lumiplan, the company behind the Dynamic Piste Map and an expert in real-time communication, has developed a combination of interconnected solutions.

Consumers empowered with social media can make or break a destination's image and reputation, therefore it is of major strategic importance for the resort to provide information to its customers as part of their experience.

Customers want to make the most of their day's skiing. They hate waiting and don't like encountering incidents or hazards without being warned.

In addition, the 'herd' instinct means that 80% of skiers use only 20-30% of the ski area. This results in piste saturation and increased ski lift waiting times, which has a negative effect on customer experience, and for operators, leads to problems when it comes to managing snow cover. These issues can be improved by better management of skier flows.

Founded in 1972, Lumiplan has developed its expertise in dynamic signage solutions to help improve the journey and experience of its clients' customers (B to B to C) in three key areas: towns/cities (citizen communication); public transportation (passenger information on the ground and on board); and mountains (skier journey and experience).

These three ecosystems share the same important information needs associated with the movements or living accommodation of residents in changing environments.

The aim of Lumiplan's solutions is to enhance comfort, enjoyment and safety



## Flow riders

Managing skier flow improves customer satisfaction and use of ski areas



**Piste information is displayed in real time to help mountain users avoid congested runs and lengthy lift queues**

for users and customers, while providing them a better overall experience.

Mountain resorts are faced with major innovation challenges and this has resulted in the construction of the 'smart' and interconnected Leanski system, which is the only one of its kind in the world.

With Leanski, skier flow measurement and management, combined with real-time dynamic displays, make it easier to guide and distribute customer flows dynamically and according to the context, regardless of the size of the ski area.

### Tools of the trade

The Leanski system is organized around Lumiplan's Infoneige software, which aggregates and analyzes data from various sensors (waiting time measurement, movements at access control gates, on-piste sensors), in order to broadcast contextual messages on customer information media, such as LED screens, guiding arrows, or the resort's smartphone application.

"We can use movements at ski lift access control gates (via Skidata and Team Axess) to calculate ski lift fill rates," explains Lumiplan Montagne chief executive officer Patrick Grand'Eury. "Various algorithms then allow us to provide an estimated waiting time on the ski area's devices.

"We use an image processing solution with a specific algorithm to measure waiting times for queues."

The Ski Flux system, which is the latest addition to the Leanski range, continuously measures movements on the pistes. This unique system is able to measure skier traffic on the pistes with 95% accuracy, up to widths of 125m (410ft). The technology used ensures reliable measurement, regardless of weather conditions.

All of the information collected by the sensors is aggregated, stored and analyzed in Lumiplan's Infoneige software. This combined and reprocessed data is used to automatically create contextual messages for skiers, as well as live monitoring of the ski area and statistics that help the operator make decisions.

In order to predict flow behavior on the network, Lumiplan aggregates the data measured by the sensors and compares it against historical data. This patented system enables Lumiplan to predict any congestion in advance and anticipate any



Providing safety information via digital signage or a smartphone app is a vital customer communication tool

steps that may be required, in order to improve customer service.

### Broadcasting information

Information on waiting times at the different ski lifts is broadcast on giant LED screens, scrolling message boards, dynamic directional arrows, and even the resort's smartphone application.

At the bottom of the ski lifts, Lumiplan uses traffic data to indicate skier numbers in the different areas within the resort.

Data about skier numbers on the pistes is broadcast at the top of the ski lifts, to encourage skiers to use less busy runs.

Lumiplan uses these systems to help 34% of skiers choose their route. When customers were asked about their thoughts on the information being displayed at the bottom of ski lifts, research has shown a 20% increase in customer satisfaction after the system was installed.

### Smart statuses

Depending on skiing conditions, Lumiplan's smart status system automatically triggers relevant and contextual messages intended for skiers.

This redirects skiers, for example, in the event of a temporary ski lift closure or breakdown, or alerts them to changes in weather conditions.

Lumiplan has also developed a unique technology that uses directional arrows at piste crossings and summits to display real-time opening information, skier numbers or waiting times. Equipped with a sophisticated solar panel (specially designed for snow) and a radio link using the latest technology, this 100% standalone device can easily be installed in the most isolated locations, without any need for additional civil engineering works – a solution that is environmentally friendly, non-invasive and economical.

Lumiplan is the designer and publisher of the official mobile apps of more than 40 ski resorts (winter + summer) and 120 French towns/cities. Waiting times can be sent automatically to a resort's smartphone application and displayed on interactive online maps. In addition, app SDKs can be provided for other applications.

In order to guide skiers to open runs that are better suited to their level of ability and potentially avoid them getting into

difficulties, Lumiplan has developed live route suggestion technology. It adapts to current conditions, which determine whether ski lifts are open or closed, the type of package purchased, and the available skiing time, providing each person with the optimum, specially tailored itinerary.

Managing flows sometimes means attracting people to new, fun or sensory experiences. In ski areas, Lumiplan can set up photo and video zones, which can be enhanced to a greater or lesser degree, with the help of recreational space designers. As well as retaining customers and helping them to have fun, this boosts sharing on social media, increases use of the mobile application, and captures valuable, qualified data for the operator's CRM.

### Working together

By looking at this issue in terms of usage, long-term observation of customer behavior, and by understanding operator needs rather than just technology, Lumiplan has been able to create an effective, logical system with one clear aim – to distribute skiers more effectively using smart information.

But the smart resort is not just about technology. It also involves plenty of common sense and simple responses adapted to existing organizations. The development of Leanski has been made possible by very close collaboration with resorts and their technical management staff, as well as their marketing teams. This partnership is the reason why innovations can continue to see the light of day. <<

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## DIGITAL SIGNAGE REAL-TIME COMMUNICATION SYSTEMS SKIER FLOW MANAGEMENT **NEW**

As the industry leader in real-time communication solutions for mountain resorts, Lumiplan is constantly innovating to improve the guests' journey, enhance their experience, and reinforce safety throughout the resort. We offer the latest and most accurate technology products and services to facilitate resort operations and assist sales/marketing teams in their day-to-day work and productivity.

