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ICEKING: A PLATFORM COMBINING SUSTAINABLE TOURISM AND CITIZEN SCIENCE ON GLACIERS

Abstract

IceKing is an app for sustainable tourism on glaciers that is also used to crowd-source photographs from tourists for glacier research. Our Vision is to unite the power of the community and space technology, producing valuable data on resource utilization and distribution, to protect planet Earth. We will achieve this by creating a virtuous cycle between sustainable tourism on glaciers and scientific research. Glaciers are among the most reliable indicators of climate change. They are also important ecosystems, providing fresh water and hydroelectric power. Therefore, our model aims to tackle climate change, as well as providing information for water and energy management.

Our app offers an all-round experience, starting with useful information to organize the trip, from the choice of where to stay to local glacier guides. During the trip, tourists can join a global expedition to study glaciers, by uploading their geo-referenced photos of different glacier spots. These photos are useful to space agencies and researchers to validate the accuracy of satellite-based data models. Moreover, combined with SAR and Optical imagery from the Copernicus Sentinels, they can improve current water runoff models.

After the trip, users will receive additional services such as an online diary thanks to the available GNSS data and the photographs taken on the glacier. Their participation to the glacier campaign will increase their curiosity and engagement towards the scientific community. Moreover, they will receive easy to read infographics translating the scientific data into meaningful information on the evolution of glaciers in response to climate change.

The app is being developed through funding from the ESA Technology Transfer program, in cooperation with the Institute for Interdisciplinary Mountain Studies in Innsbruck and in accordance with the glacier classification system of the World Glacier Monitoring Service.

We have three main business models that will generate revenues, including facilitating bookings of glacier guides, revenue sharing with our partners for sustainable tourism services, and the "adopt a glacier" campaign that will enable companies to support the crowd-sourced image acquisition, processing and distribution, in exchange for visibility as part of their CSR schemes. Once a critical mass of data will be reached, we will envisage further business models around the collected data itself.