Telia Crowd Insights

BEYOND THE EVENT

How the Holmenkollen Skifestival and the City of Oslo gained valuable crowd insights from an event without a crowd

In any city, events are appreciated by residents and bring new visitors and revenue to town. **The City of Oslo** actively supports events ranging from outdoor concerts to the World Cup competitions at Holmenkollen.

When COVID-19 forced the closure of the spectator arena, the organizer **Holmenkollen Skifestival AS** used Telia Crowd Insights to understand what went on outside the event – and what it meant for their city.

World Cup Nordic, also known as Skifest & Raw Air, is organized by **Holmenkollen Skifestival AS** and takes place outside of Oslo at iconic Holmenkollen. It's one of the biggest recurring events in Norway gathering more than 80 000 people in March both inside the spectator arena and in the forest areas surrounding the arena.

In March 2020, the day before the start of the event, Oslo municipality was forced to put a ban on large crowd gatherings to limit the spread of COVID-19. It was decided that the competition could proceed – but no audience would be allowed into the stadium.

At first it seemed that this might also curtail an innovative multidisciplinary project which **Arena Oslo** was undertaking. The project set out to use crowd movement data to improve safety and security for attendees by getting real data on estimated numbers. But they soon discovered that there was a lot they could learn even without a single spectator in the stands.

"There are a number of different stakeholders in The City of Oslo who need these kinds of insights. If they can share this data and analyses, they can work together to improve the experience and safety for the visitors"

Stine Ore
Agency for Cultural Affairs, City of Oslo

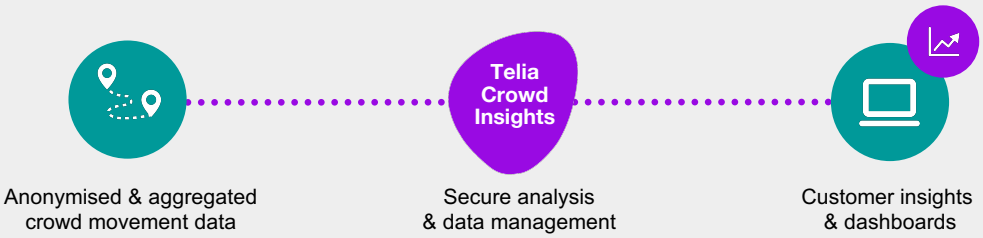
Arena Oslo is a network of 45 public, private and academic organisations striving to increase knowledge sharing, innovation and sustainability between industries in order to develop Oslo as a smart event destination.

This specific project brought together the City of Oslo, Holmenkollen Ski Festival AS, IKT Norway and the Mobile Technology Lab at Høyskolen Kristiania to work together with Telia to gain a better understanding and more detailed data on people flows to, in, and around popular events in the Oslo area.

"It's been great to work together to get better insights on how to plan for transporting large numbers of people to a mega event like World Cup Nordic, but also to learn how to use new solutions to increase safety and emergency readiness"

Fredrik Syversen
Acting CEO
IKT-Norge

CROWD MOVEMENT DATA



DETAILED INSIGHTS FROM ANONYMOUS DATA

The objective of the project was to understand how crowds travelled to and from events – and how they moved during the events. This would enable organizers to provide safer and more sustainable transportation and better position support facilities such as toilets and security. But they also needed to ensure the privacy of people's data. To fulfil these requirements, Telia was tasked with providing Crowd Insights from two data sources:

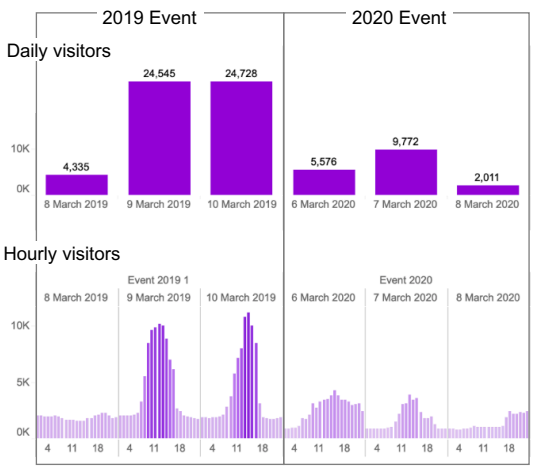
Using **Aggregated Mobile Network Data**; movement insights were gathered from the Holmenkollen stadium, the forest area to the north of the Arena (Marka) and from the wider municipality.

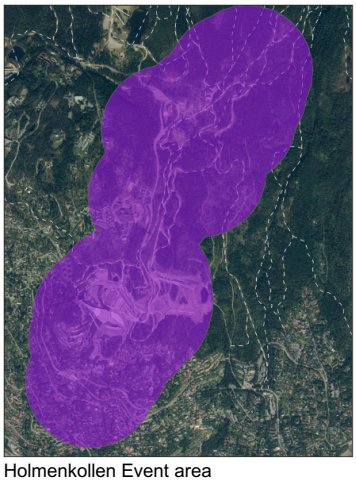
These data sets are based on Telia subscribers, but extrapolated to cover the full population based on Telia's market share in Norway. They can show where people came from, the number of unique visitors per day and per hour, and where crowds that visited Holmenkollen went afterwards.

More detailed movement insights within the arena and surrounding areas were collected from **WiFi probe data**. This data was collected from 30 WiFi probes in wooden boxes placed across the Holmenkollen area.

These probes count all visitors with WiFi-enabled devices that pass by and can provide insights on visitor paths, what specific zones within the area draw most people and which entrances and exits are used most.

IMPACT OF CLOSING THE EVENT TO THE PUBLIC




Holmenkollen Event area

Because crowd movement patterns can be drawn from historical data in Telia's network, the overall effect of closing the event to the public could be clearly seen. There was a 47% drop in visitor numbers between 2019 and 2020. However the data still showed that there was a high number of people who came for the unofficial celebrations outside the event itself. It was the movement of these visitors that the Arena Oslo project wanted to better understand.

A joint project between Arena Oslo, the City of Oslo, Holmenkollen Ski Festival AS, IKT Norway the Mobile Technology Lab at Høyskolen Kristiania and Telia

Photo: Magnus Nyløkken

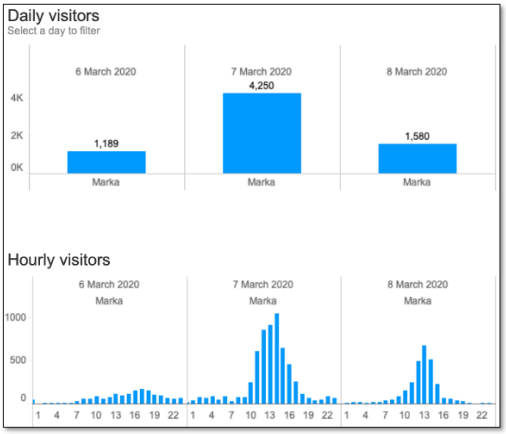
THE EVENT BEYOND THE EVENT

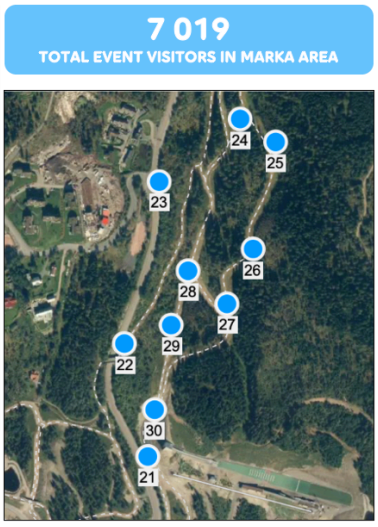
The unofficial celebrations that accompany the Holmenkollen event are a tradition with a long history. Visitors converge on the area north of the arena to cheer on participants in cross-country events. Many stay on to party and camp overnight. Although the official event was closed to spectators, the unofficial event went ahead – and the tradition lived on.

"One of our biggest challenge in Holmenkollen is to get an understanding of the audience who stay in the Marka area, just outside the ticketed area. We don't have data on this audience, since they do not buy tickets, and we do not know how many will come. It is therefore very difficult to plan. With data like this, we get absolutely invaluable information that makes us better equipped to optimize preparedness in the area."

Stine Stenseth
Project manager Arena & Festival
Holmenkollen Skifestival AS

ARRIVAL POINTS TO THE 'UNOFFICIAL' EVENT





OVERNIGHT VISITORS

MARCH 6-7	MARCH 7-8
28% (332)	4% (170)

For an event organizer like Holmenkollen Skifestival AS, the insights from this kind of data is invaluable when planning for both staff and security.

By understanding how many people are in different areas at different times, how they move, and which entrances and exits they use; they are able to better plan for visitors' needs. This includes where to position public toilets or food stands as well as where to position security personnel and crowd marshals.

Also, by understanding where queues form and when peak hours occur, they are able to work together with transport providers to provide a smoother experience.

"This gives us better preparedness and a way to better optimize resources as we can for example adapt to minimize queues and optimize the experience. It's also real data we can present to partners and other stakeholders after the event. With these insights we have quantified facts on how the audience moves, where they stay, where they come from, etc. This means that the partner can reach the specific audience they want to talk to, and they get the optimal benefit from the collaboration with us"

Stine Stenseth
Project manager Arena & Festival
Holmenkollen Skifestival AS

A joint project between Arena Oslo, the City of Oslo, Holmenkollen Skifestival AS, IKT Norway the Mobile Technology Lab at Høyskolen Kristiania and Telia

Telia

UNDERSTANDING THE IMPACT BEYOND THE EVENT

MEASURING THE 'HOLMENKOLLEN EFFECT'

The Holmenkollen Ski Festival events, and the out-of-town visitors they bring, make a significant contribution to the overall economy of Oslo.

When people visit a city for a specific event, they will generally spend time and money on other activities within the city. Understanding the details of where they spend their time in money, and the impact, this has on different parts of the city can be difficult to measure. This is an additional area where crowd movement data can provide valuable insights.

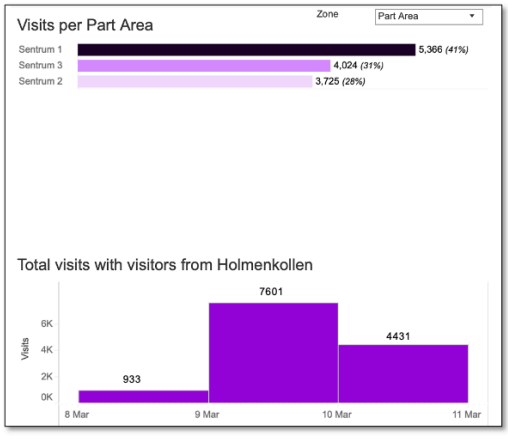
"With the data from Telia Crowd Insights, it's possible to see where the audience goes after the event. Do they go to the city? How do they get there? Do they stay overnight in the area or do they go straight home? Compared with the previous year, a decrease of -80% of visitors "spilling over" to The City of Oslo could be seen. We're hoping things will be a bit more normal next year"

Stine Ore
Agency for Cultural Affairs,
City of Oslo

VISITORS WHO ALSO GO TOWN

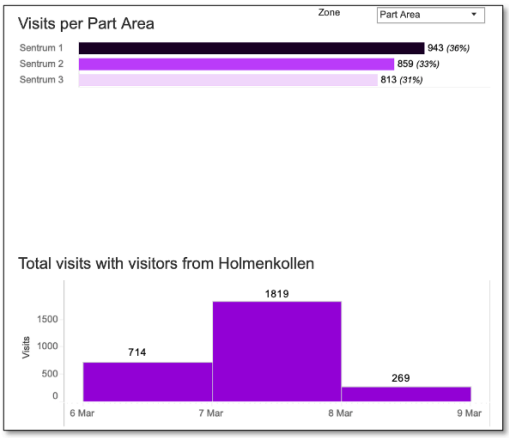
2019:

13,115 people visited Holmenkollen then Oslo City Center



2020:

2,615 people visited Holmenkollen then Oslo City Center



Net effect: 80% drop in visitors between 2019 and 2020

Want learn more about Telia Crowd Insights?
Visit www.business.teliacompany.com/crowd-insights
Email: crowdinsights-sales@teliacompany.com

Telia