

Use case: Contributions of the biometric approach to the evaluation of participant's experience

by: RE-AK Technologies and the Société du Palais des congrès de Montréal



Considering the attendee experience is of prime importance when planning an event. In the era of hybrid conferences, attendees need to be given strong reasons to value in-person presence. We present here the results of a pilot study carried out at the Palais des congrès de Montréal, by RE-AK Technologies. This study aims at assessing the potential of the biometric approach for event quality assessment. This approach makes it possible to measure the state of mind of participant-witnesses with great precision, at any point of the exhibition. This technology has gained widespread adoption in cinema, video games and neuromarketing, and is now making its way into the event industry. Our results point to the metrics that have the greatest potential and present a first large-scale use case. This study is a first step, but we are looking forward to see how far this approach can take us, in providing exceptional experiences for our guests.

Introduction

Evaluating the experience of attendees at an event is a key part of the improvement process. In the era of hybrid conferences, it is even more important to understand what our traveling guests are looking for, how their interests evolve and to identify where there is a strong potential to impact the quality of the proposed experience.

The declarative method (survey) and observation in the field are the most widespread techniques, but is it possible to do better? Often imprecise, polls suffer from a number of biases and are sometimes difficult to transform into actionables. Observation in the field requires experts on the terrain and it is impossible for them to track all the details of the experience of the participants. In order to analyze experiences more effectively, and derive more accurate evaluations, we propose to think differently.

It is in collaboration with the Palais des congrès de Montréal and with the support of the MT Lab incubator and the Ministry of Economy and Innovation of Quebec that RE-AK Technologies has set up a pilot study to explore a new avenue.

The Biometric Approach

RE-AK Technologies has been successfully applying its approach in the film and video game industries. We are now applying the techniques and knowledge acquired to the world of exhibits and large-scale events.

The pilot study carried out uses the biometric approach to assess the emotional and cognitive aspects of participants in an event. This approach consists of using equipment that measures biosignals such as: brain waves, electrodermal response, facial muscle expressions and heart rate to infer the state of mind of the participants. Although these signals have been studied for decades in academia and in neuromarketing, RE-AK Technologies has

innovated by developing its own measurement system, the Nucleus-Hermès (Figure 1), which finally makes it possible to capture these signals as participants behave freely. Combined with a geolocation system, it becomes possible to follow the participants wearing the equipment, to capture their state of mind in real time and to triangulate their feelings within the exhibition.

For this study, the Nucleus-Hermès system was deployed at two public events. After being equipped with the measuring instruments, the twenty participants-witnesses, according to the terminology of RE-AK Technologies, then visited the exhibits without constraint, as they would have done normally.

Eventually, the goal is to sample more participants, for sake of statistical validity, but this exercise allows us to anticipate the type of results that this method can produce.

Results

Since this is a pilot project and the technology is still under development, we cannot make claims about the generality of our observations. We therefore invite you to consider them as hypotheses to be validated, as we refine the technique.



Figure 1: Frédéric Simard, President of Technologies RE-AK wearing the Nucleus-Hermès. The headset measures brain waves and facial muscle activity, while the bracelet measures electrodermal activity and heart dynamics.

The results obtained suggest that:

- **Motivation**, a brainwave-based cognitive measure that indicates people's readiness to participate in an activity, was highest at the reception of the event. We believe that this measurement could allow us to measure the enthusiasm of participants who are about to enter an exhibit.
- **Cognitive engagement** was particularly stimulated by the stage featuring musical performances and guest speakers. Engagement is an element stimulated by learning, spectacle and active observation. Providing for different points of engagement contributes to the diversity of the experiential landscape for participants. RE-AK Technologies has also associated engagement with satisfaction in other digital entertainment experiences.
- Several kiosks managed to stand out in terms of **happiness**. An emotion frequently, but not exclusively, associated with positive social interaction. Another facet of the experiential landscape.

In addition, the results suggest that we have a tool in hand that allows us to identify negative points, such as frustration points and mental fatigue that develops along the way.

Discussion

The promise for this approach is to bring event planning into the era of design thinking. From one event to another, it becomes possible to experiment, to sculpt the experience of the participants and to precisely measure the effect of the changes made. This feedback is then used to guide our choices, with one objective in mind: to identify and maximize the factors that promote participant satisfaction.

Thanks to the geolocation and the precision of the data collected, we are able to associate the feelings of the participants with the kiosks where the emotion was felt. With this assessment, we can include exhibitors in the experiential strategy and optimize the attractiveness of an event, by bringing everyone around the table.

One of the biggest innovations of this pilot study is the scale to which the system was deployed. In two days, we covered over 100,000 sq. ft. and three experiential areas (Figure 2). We are actively working to make this technology more accessible, which will allow even greater and more efficient coverage. We have yet to find out how far this approach can be taken.

The experience that has taken place is unique in

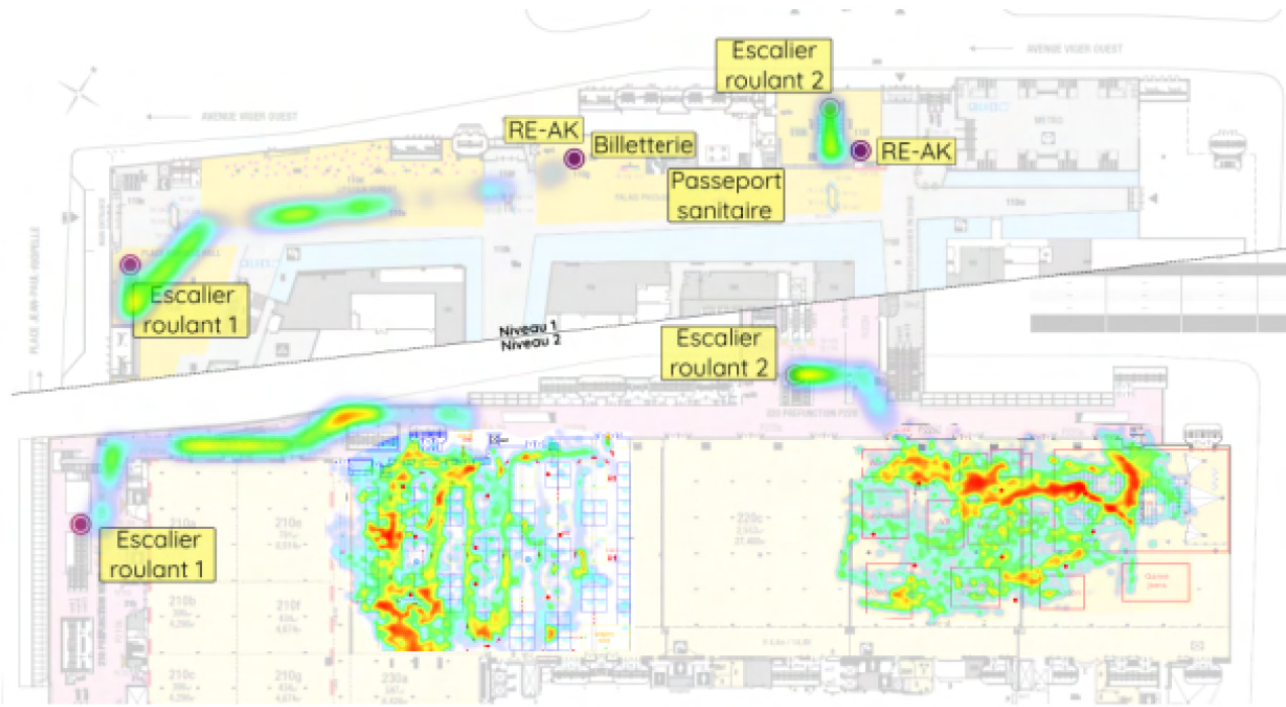


Figure 2: Sample of results that demonstrate biometric capture at scale. This composite image combines the results obtained during the evaluation of the customer journey from ticketing to events and two public events. This result demonstrates both the accuracy of the results obtained and the ability to assess emotional and cognitive aspects on a large scale.

its essence and it is only the beginning. If you would like to learn more, do not hesitate to contact us. It will be our great pleasure to provide you with the details of the study.

About the Event Lab at the Palais des congrès de Montréal

Through its Event Lab, the Palais des congrès de Montréal supports its clients in discovering and experimenting with innovative solutions to transform their events and create maximum impact. In addition to the event transformation program offered in collaboration with Yulism and the dozen or so Quebec companies that enhance the product and service offered to organizers, the Palais has become a fantastic testing ground where transformative innovation, like the one just presented to you in this article, can now come to life!

Contact Us

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Consent

Participants in this study were compensated in exchange for their participation to the experiment. They have also provided appropriate consent to the collection of data and the use of their image.