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MAKING USE OF SOCIAL NETWORKING SERVICES IN THE HUNGARIAN SEISMOLOGICAL PRACTICE

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The MTA CSFK GGI Kövesligethy Radó Seismological Observatory (KRSZO) operates the Hungarian National Seismological Network which consists of 1 short period and 11 broadband seismological stations. The Observatory has been running a SeisComP3 based hypocentre location service whose results are automatically published on the web page of the KRSZO (http://www.seismology.hu). Simultaneously email alerts are sent not only to seismologists, but to the Hungarian National Directorate General for Disaster Management, as well.

On the homepage the parameters of earthquakes occurred in Hungary and the surrounding area are presented in tabular form and on a Google API based map. Furthermore, the page displays educational material about the key concepts of seismology and presents the description of the significant historical earthquakes occurred in the country.

In case of a felt earthquake, as soon as its parameters are determined, a short notification is published on the web page with the description of the event and with a request to the visitors to fill out our macroseismic questionnaire. The KRSZO has been collecting questionnaires in different ways. In the last few years, the online questionnaires on the Observatory's web page have become the main data source. However the number of the incoming completed questionnaires was consistently low, so we tried to find new ways to involve the public.

The Facebook page of the Observatory (http://facebook.com/krszo) was launched in early 2013. Its popularity grew slowly in the first months. On 22nd April 2013 an earthquake of magnitude 4.8 hit the country. The ground motion was felt in a large area, including the capital, Budapest. In the hours after the earthquake the increased traffic made the Observatory's web page difficult to access. However the Facebook page was able to function as a secondary home page which still allowed providing information for the interested people. During that time the number of likes rose sharply and through the media coverage the existence of the page has been widely known.

We use the Facebook page not only for information dissemination but as a tool for information capture, as well. In every Facebook post in which a new Hungarian felt earthquake is reported we insert a link to the questionnaire and ask the visitors to fill out the form in order to help the work of the seismologists. Usually we evaluate the incoming forms in real-time and continuously update the list of the affected settlements indicating if somewhere damages occurred.

According to our observations the visitors who were affected by the ground motion are willing to share their experiences. This provides an excellent opportunity to ask the commenters in a targeted manner to fill out the form if we see that they are local resident of settlements from where we haven't received any data.

Recently we have observed a significant increase in the number of incoming questionnaires, even in the case of small earthquakes. The analysis of the web server logs has shown that largest part of visitors who fill out our form come to the page of the questionnaire through the links appearing in

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the Facebook posts. However, further work seems to be necessary to make the questionnaire less complicated and discouraging as it was found that the number of clicks is significantly larger than the number of the eventually completed forms.

To make the access to our data even faster, a script has been developed using the Twitter API which automatically uploads the newly determined earthquake locations to the Twitter page of the observatory (http://twitter.com/szeizmologia). After posting the result of an automatic location, the event is updated with the result of manual determination once completed. Following our Twitter page allows the user to get information about the recent earthquakes as soon as the Observatory provides the parameters without the need to visit the home page.

In order to facilitate the communication with the public, a seismological application has been developed for the Android platform. Using the same data source as the web and Twitter pages it lists and displays the earthquakes in Hungary and the neighbouring countries and enables the user to fill out the questionnaire, as well.

Beyond the increased number of incoming questionnaires, we have observed an additional contribution from the web and social networking synergy. In the past it was a usual experience in the case of perceptible Hungarian earthquakes that from the affected area we received a lot of incoming calls in which the callers inquired whether they really felt an earthquake and if so what was its magnitude. In many cases these calls seriously hampered the work of persons on duty. Recently the number of incoming calls has drastically decreased. We interpret this phenomenon as the combined effect of the fast and reliable information which we provide on the web and the social media.