



one2many helps the Dutch Ministry of Interior to innovate in public warning

Cell Broadcast Emergency Alerts

With public safety at the top of any government's agenda, the Dutch Ministry of Interior realized that a modern public warning system was essential for the safety of its citizens. With one2many's Cell Broadcast System, it found a solution that met all of its requirements.

Founded in 1798, The Ministry of Interior and Kingdom Relations is one of the 13 ministries that make up the Dutch Central Government and is comprised of over 3,000 civil servants in addition to the Minister and State Secretary. Its activities include upholding the constitution, guaranteeing the rule of law and ensuring public order and safety. The public safety function of the Ministry is carried out by the Directorate of Safety and Security and the Department of National Security, including the National Crisis Centre (NCC). Located in The Hague the NCC has been designed to serve as a national hub for crisis management, ensuring that the country has the capability to react quickly and decisively in the event of large-scale public safety events.



Ensuring public safety

A core function of the NCC is to warn the public in the event of disasters and threats to public safety. Prior to 2004 the NCC relied on siren systems, TV and radio broadcasts as channels for public warnings and alerts. Willy Steenbakkers, Senior Crisis Coordinator at the NCC describes the situation, “The nature of the threats that impact on the safety of the public have changed rapidly in the 21st century. The Netherlands, along with many countries in the West, must face up to threats of terrorism, natural disaster and industrial accidents on a scale never seen before, yet our systems for public warning have remained rooted in mid-20th century technologies”. The NCC realised that the time had come for an updated approach to public warning.

Steenbakkers continued, “We wanted to approach this project from a people-centric standpoint. We wanted the solution to fit actual needs rather than to choose technology for its own sake. For that reason we conducted an in-depth audit of exactly what our requirements were.” The NCC recognized that for a public warning system to be successful a number of key factors had to be considered.

The solution would need to have the ability to provide information on the subject of the alert, rather than just alerting people to an unspecified threat. Sirens work well in alerting a large number of people to the fact that something is happening, but they do not provide information on the nature of the incident or what the appropriate response should be. Unless a person is near a TV or radio broadcasting this information at that precise time, their response to a siren may actually put them in danger.

An example of this would be in the event of flash flooding where a siren may make people move inside to watch a TV broadcast – the exact opposite of what they should be doing (evacuating the area).

Other requirements for the new public warning system were that it should be real-time, to ensure that the public can be alerted to a disaster as it happens, and robust, so that the system does not fail in the event of large-scale disruption to the national infrastructure. The overriding requirement however, was that the solution should be able to reach the vast majority of Dutch citizens no matter where they are in the country.

Mobilizing public warning

Once the NCC knew what the public warning system should look like, it started to investigate the best approach to take. As mobile phones are now ubiquitous in the Netherlands, it was decided early on that the public warning system should use this as the main communications channel.

Steenbakkers commented, “the mobile phone is a truly universal device in the Netherlands. There are nearly 125 phones for every 100 people, according to the ITU. There is no other communications channel that can directly reach so many people and carry the right amount of information we needed from our public warning system.”

SMS however, was ruled out. SMS is a point-to-point technology, meaning that an individual message needs to be sent to each device. This would have slowed down the process of sending messages to a large audience.

SMS is also limited as a solution in public warning as it relies on users registering their phone numbers with the authorities. Steenbakkers explained, “aside from the obvious privacy concerns with registering a number with the Government, the system would not have been location-aware. If you registered your phone to your home address and then went on holiday, you would still get the alerts sent to your home area. Alternatively, if you were outside your home region and there was a public safety event, you would be totally unaware of it as the relevant alert would only have been sent to users registered in that region. We could have linked the SMS service to a location-based tracker, but we were aware that many members of the public would not want the Government to be able to track their movements in this manner.”

Having abandoned SMS as a solution, the NCC asked the Netherlands’ mobile operators for advice on a text-based solution that could alert members of the public within any given geography, without them needing to opt-in to the service. The response was clear – the NCC should choose a solution that used the Cell Broadcast System offered by one2many.

one2many’s Cell Broadcast System offers a real-time service of distributing text messages to mobile handsets, specific to their location. Where SMS is a service of individual messages to individual recipients, Cell Broadcast is capable of broadcasting one single message to reach all mobile handsets in an area as small as one radio cell and as big as an entire country. It is fast and operates in real-time: sending a message to millions of handsets takes a few seconds.

This provided the NCC with the precise solution they required.



“one2many’s system ticked all the boxes. Mobile phones come with Cell Broadcast capability and it is up to the owners to turn it on or off. This alleviates all privacy concerns. Moreover, by broadcasting messages to selected cells, we could achieve a level of flexibility not possible with any of the alternatives.”

Steenbakkers

The implementation of Cell broadcast

In 2007 the NCC launched a large-scale trial of one2Many's Cell Broadcast System in Zeeland. This is an area that has historically been susceptible to large-scale flooding and would benefit greatly from an improved public warning service. The trial saw 600 mobile handsets, with the Cell Broadcast channel enabled, handed out to members of the public and businesses in the region. Message alerts were sent out at unexpected times in order to simulate an actual event. The results of the trial were impressive showing that the messages got through to 72-88 percent of users across the course of the assessment. 80-94 percent of the members of public used for the trials appreciated that Cell Broadcast was a useful addition to the use of sirens for public warning (the remaining users had their phones switched off when the messages

came through). Based on the success of the trial and the exceptionally high user-acceptance level, the NCC decided to move ahead with a full implementation of Cell Broadcast in the Netherlands. The new public warning system is expected to be fully deployed by the close of 2010

As Steenbakkers pointed out, "The trials of one2many's service exceeded our expectations and we have found a public warning system that will be of immense benefit to the public. We are currently working with the three major operators in the Netherlands to integrate the platform into their networks and they are as positive about the project as we are. Everyone involved in the deployment of Cell Broadcast in Holland can see the social benefits of the programme and is fully committed to making it a success."

A test bed for Europe

The Netherlands is leading the way in Europe in its approach to publicwarning. The Cell Broadcast System being implemented is being watched closely by a number of countries including Belgium, Sweden, France, the UK, Germany and Poland. The UK is starting to take a stronger role in this area, bolstering the standardization efforts across Europe. The NCC's vision is to see Cell Broadcast deployed across the EU in order to enable public

warning messages in the entire region. This would mean that Dutch citizens will be alerted to events in any country they happen to visit in the EU.

As Steenbakkers puts it, "The implementation of Cell Broadcast across Europe will be a massive step forward for the safety of all Europeans, no matter where they are on the continent."