Adapting technology to elderly people

With the numbers of people aged 65 and over growing, the costs to the state to care for or assist them are set to continue rising across the European Union. With this backdrop, two companies have combined their differing expertise, with the help of Eureka funding, to create a monitoring system with wireless touch screen devices that enables senior citizens to receive help and guidance at home and call for emergency assistance if required.

Massive Art Multimedia in Austria and CoSi Elektronik in Germany have a history of collaboration on successful technical projects. A brainstorming session between their developers produced the idea of bringing together many aspects of the modern computing world and applying them specifically to the one group in society that is least likely to already feel those benefits - senior citizens. As with so many projects of this nature, the funding for development was out of reach of two SMEs. By facilitating the funding process EUREKA permitted the development of the project now known as myVitali.

It is widely acknowledged that by assisting senior citizens to look after their health at home, their independence can be maintained for longer, providing a higher quality of life for the retiree and lower care costs for the state and family. Therefore, myVitali enables healthcare professionals to monitor and communicate with larger numbers of people and to offer a greater level of assistance to each one.

Massive Art Multimedia's Tom

Ulmer explains, "The introduction of computing power into the lives of the elderly can offer reminders to take medicines, dietary advice, immediate access to medical professionals and much more. It also reduces the need for visits to a local doctor. Users can take important measurements such as their blood pressure, weight and body fat and have that information directly uploaded to the system. Any

that the system could be set up by anyone whether they are able to use a computer or not. Considering that the system uses wireless technology, webcams and touch pads, there was a great deal to be done.

Once in use, the system had to take into account such things as possible sight and hearing problems. As CoSi Elektronik's Dieter Martin points out,

> "The intelligent combination of several innovative technologies into one project has enabled us to bring the useful benefits of computing into the lives of senior citizens.
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> **Tom Ulmer -** Massive Art Multimedia, Austria

healthcare professional they deal with can therefore have immediate access to their recent health records."

How 'easy' is easy to use?

Since the system is designed for the elderly, there was very little knowledge or skill with computers that could be taken for granted. This proved to be a problem that had to be overcome during development. Tools had to be developed to ensure

"Making the user interface friendly enough for elderly people was the real challenge". By focusing on wireless devices, users can be connected anywhere in their home but this creates a requirement for multiple connecting devices, each one adapted for use by seniors.

Every cloud has a silver lining

There were other problems to be overcome during development. The

current generation of emergency devices use existing analogue telephone lines. If the user presses a button, a message is sent to a central monitoring location. By using the internet, many more functions can be added to help users, but what happens if a server is down when an emergency button is pressed? Any system had to be completely stable and available one hundred percent of the time.

This stability is created by using a fall back system of servers using cloud computing technology. The servers running the system are in Germany, Austria, Switzerland, Serbia and Brazil. Such a range of locations prevents any downtime and enables any problems to be fixed without a loss of service. In fact, different types

others. The monitoring and measuring aspects can be used to keep a watch on indoor conditions and then make suggestions for improvements. By monitoring the air quality, light quality, temperature and humidity, the system can help tailor the indoor environment to an individual's preferences.

All this information gathering provides data protection and security issues. Mr Ulmer stresses the importance of protecting users as "vital", adding that "all personal information belongs to the user, and while it may need to be seen by others, medical staff for example, the user is able to limit access at any time".

To safeguard data from the wider

out to develop one. It took us over two years to complete, but in 2010 we still could not find something similar. As you can imagine, we have high hopes for this system in 2011 and beyond". With over 1,200 accounts already established, myVitali looks set to be the commercial success that everyone hoped for.

> We are a small company and our development team for this project was just 10 people. But the partnership with Massive Art Multimedia has enabled us to create a product that can compete with the giants in this industry.
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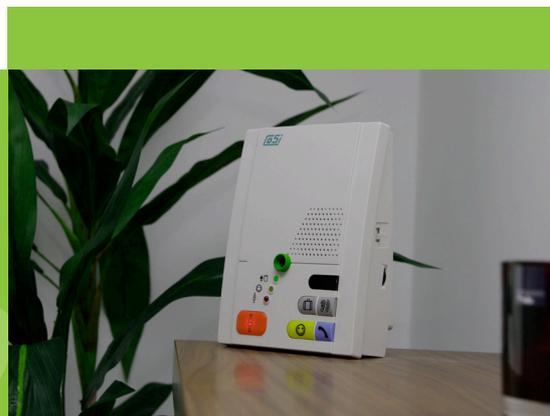> **Dieter Martin -** CoSi Elektronik, Germany

of messages are sent through the system every minute and the main connection between a user's home and central monitoring is tested every thirty seconds.

A unique system

Whilst the project was originally developed with the elderly in mind, it can have applications for many

world, the system uses the same technology that banks are now using for mobile devices. By storing personal data and generic data on different secure servers, an extra layer of security is added.

Mr Martin continues, "In 2007 and 2008 we could not see any device of this kind on the market, and so we set