

Taking things further

By Teun Putter

A very effective way to continue the development of an application that has been researched and undergone successful testing is to launch it commercially through a spinoff company. One such application, with significant potential benefits for the medical sector, is currently being developed by a spinoff called MobiHealth BV.



After more than four years it's time to take stock of the various projects in the Freeband research programme. In one of these, the Awareness project, participants are developing an infrastructure in which context-aware and proactive applications can be realised quickly and easily. Researchers have been particularly successful in establishing business cases when it comes to the application of "telemedicine" concepts. In the summer of 2007, one of these led to a spinoff company called MobiHealth BV, which develops solutions for monitoring mobile patients remotely.

Monitoring applications

Miriam Vollenbroek is Cluster Manager Technology Assisted Pain Rehabilitation at Roessingh Research and Development (RRD). She's been involved in the Awareness project from the start to the realisation of three healthcare applications for the remote monitoring of epilepsy patients and people with chronic back or shoulder pain and for measuring spasticity.

Market potential

In all three cases patients are monitored in their environment as they go about their daily activities. An application called Body Area Network, which is actually carried by the patient, collects data such as activity, muscle loads and/or pulse rates. The data is then sent to the appropriate healthcare professional, who, depending on the nature of the situation, can give the relevant instructions. According to Vollenbroek, the development and fine tuning of telemedicine is most suitable for patients with chronic pain. "Because this application can be applied to many care disciplines, it has huge market potential."

Remote care

Richard Bults explains that the University of Twente (UT) explored the potential of remote care at an early stage. The university's involvement in European research projects such as MobiHealth, HealthServices 24, and Awareness has led to the development of a mobile service platform, which can be used in a care environment and makes remote care possible. It facilitates the mobility of the patient on the one hand, while on the other takes into account the patient's situation (context). "MobiHealth BV was started up in 2007 to translate the results of the research projects into specific remote care solutions and bring them to market," says Bults. The UT decided to allocate the rights of ownership of the developed software to MobiHealth BV, where Bults is now technical director.

Commercial follow-up

Miriam Vollenbroek is convinced of the importance of continuing a project like Awareness through a spinoff company such as MobiHealth. There has to be a spinoff if research results are to be developed to maturity, she insists. "Without a commercial follow-up, budgets will dry up and tested applications will not make the transition to the real world – in this case the healthcare sector. It would really be a pity if remote care applications

didn't get past the research phase." As an afterthought she explains that the success of such a spinoff is not necessarily guaranteed. In healthcare, a sector which invests relatively little in ICT innovation, decision makers are reluctant to introduce new technologies.

Recognise the benefits

To illustrate her point Vollenbroek offers the remote monitoring of patients with chronic back pain by a physiotherapy practice as an example. Physiotherapists would immediately recognise the benefits of monitoring patients in their own environment, but would probably shy away from the maintenance of the necessary infrastructure. Financial issues have to be thrashed out with health insurers too. "There is still a need for a party that can take concerns like these off the hands of healthcare providers. We're currently exploring whether we can assume this role at Roessingh," adds Vollenbroek.

Diminishing services

Richard Bults agrees that it will not be easy to persuade healthcare providers to invest in remote care solutions. "Don't forget, the healthcare sector is also feeling the pinch; demand for healthcare is increasing while the services on offer are stagnating, or even diminishing. I'm convinced that healthcare providers will recognise the value of telemedicine solutions in the very near future."

Turnkey solutions

Bults also thinks that turnkey solutions will prove invaluable in future. "It wouldn't surprise me if MobiHealth started providing complete packages, although for the moment we will stick to developing and delivering complete systems for measuring patient data remotely. It's more likely that we will co-operate with other healthcare parties to provide turnkey solutions. In fact, we're already working together or forming joint ventures with other parties. An excellent example of this is our joint venture, Mobile Drug Research, a company through which we deploy solutions that help monitor patients remotely for medical research."

More objectivity

According to Bults, remote patient monitoring has even more potential applications and MobiHealth is constantly looking for new possibilities. Research into new medicines, for example, is often restricted to a laboratory, a clinical environment that can often adversely affect the workings of medication. "It's easier to be objective if you monitor patients in their natural environment," he says. On a confidentiality note, he explains that MobiHealth's solutions immediately store data in a secure location. This minimises the likelihood of errors creeping in during data transfer because manual transfer and error-sensitive data entry processes are eliminated. "Above all, we store the data in a digital safe, which can only be accessed by authorised persons."

Maximise added value

If the promising pilot schemes in hospitals and research centres, and the investors in Mobile Drug Research won over at the end of 2008, are anything to go by it would seem that MobiHealth's approach is the right one. It now has the space to expand its research and development activities, convince the sector of the benefits and integrate even more contextual elements in its bid to maximise the added value.

Patient context

A patient is continuously monitored by the Body Area Network (BAN). Physiological data is gathered and then relayed to, say, a medical centre by wireless communication technology such as WLAN, GPRS or UMTS. The setup of the BAN is such that the context/environment of the patient is taken into account to establish the best possible wireless connection. Should the connection be inadequate for efficient data transfer the system will delay sending the data until the connection is good enough, or only the data with the highest priority will be sent. In this respect BAN is an excellent example of context awareness.

Links

- ▶ www.rrd.nl
- ▶ www.mobihealth.com
- ▶ www.mobihealth.org
- ▶ www.healthservice24.com