Book review

The Agency for International Business and Cooperation (EVD) is part of the Dutch Ministry of Economic Affairs. Its mission is to promote and encourage international business and international cooperation. As a State agency and a partner to businesses and public-sector organizations, the EVD aims to help Dutch entrepreneurs to achieve success in their international operations.

The market survey was carried out by CMT research, by order of EVD and in cooperation with the Dutch embassy in Washington DC and the consulate general in New York. The market survey gives a global overview about the gerontechnology market in the US. The benefits of gerontechnology are described as to improve both physical and psychosocial conditions for older adults. In the report the word elders or elderly is used, which is not recommended by consumer organizations for older citizens. In addition, the benefits of gerontechnology are not only related to the improvement of the conditions of the older persons, but they are also related to a reduced financial pressure on healthcare insurance systems. Gerontechnology in this report is referred to as assistive domotics for ageing in place, producing better medical care setting for ageing people, providing technical support for caregivers that assist the older adults and including services and applications that can be used to prevent age-related diseases.

The assistive domotics is broken down into three parts namely supportive technology, telehealth technologies and operational technologies, providing the infrastructure platform for assistive domotics. However, the authors also state that gerontechnology spreads from housing and daily living to mobility, health, communication, work and leisure, and that there are several goals such as prevention, assistance care support enhancement and satisfaction. In this one can identify the gerontechnology impact matrix[1], but that way of structuring and analyzing the US market in IT gerontechnology is not used in this report. Further sections of the report are described from the framework of the given three parts: supportive technology, telehealth- and operational technology.

Interesting to read is that one of the key factors for gerontechnology is that technology should be simple and specifically designed for older adults. Use of universal design principles is promoted. Also the use of standards in gerontechnology systems is highlighted as key aspects to assure the compatibility of devices from different vendors. The lack of standards in home medical devices is given as the major reason for difficulties and delay of a gerontechnology market explosion. The Certification Commission for Healthcare Information Technology (CCHIT) is a voluntary, private-sector organization to certify health IT products such as Electronic Health Records. CCHIT has developed ambulatory and inpatient certification criteria and certified a substantial portion of the ambulatory care EHR market.

The EVD stimulates and supports international business and cooperation. The given PEST (Political Economics, Social and Technological factors) analysis gives a good insight in hindrance and stimulating factors for gerontechnology business in the US. Several financial and legal aspect are described which one should take into account for entering the gerontechnology market there. The regulations and documents needed are described as well the litigious nature of the US legal system. Gerontechnology in its telehealth applications is regulated by strict laws meant to respect privacy and anonymity and the effective protection of personal data. One such law is HIPAA (Health Insurance Portability and Accountability Act). Title II of this law, known as the Administrative Simplification (AS) provisions, requires the establishment of national standards for electronic health care transactions and national identification for providers, health insurance plans and employers. Economical factors influencing the gerontechnology market are declining donations, reduced consumer demand and diminished credit for companies and hospitals due to the financial crisis.

In the section of the social factors the authors acknowledge the differences between gerontechnology users to split them in homogenous groups. A helpful instrument would probably have been the target groups as used within the framework of gerontechnology matrices[1]. The authors, however, distinguish caregivers, those caring for others who use assistive technology to decrease the burden of care; elderly consumers who use devices to promote safety or reduce the risk of injury; those with ageing related changes or functional decline who use devices to promote in-

dependence and minimize disability; people with multiple chronic conditions and people with ageing disability who use devices for long-time support of daily activities. The two 'geriatric giants', according to the authors, are falls and dementia. This kind of arranging the target groups within gerontechnology and identifying geriatric giants gives only a health cq medical (care)orientated perspective of the IT applications of gerontechnology in the US. The aspects of serious gaming, fun technology or leisure activities for engaging older people are not addressed in this survey. In the PEST analysis also technological factors are included. Most of the home automation technologies as X10, Insteon, Zigbee, Z-Wave, CEbus are described in their area of applications.

The survey continues with giving an overview of the key players in the IT gerontechnology market in the US. The key players are arranged in large international players, niche companies, major technical universities, government bodies and institutions, and nonprofit organizations. An extended description of these organizations, their partners and their activities on the gerontechnology market is given. The organizations and the partners they work with are also geographically concentrated and discussed as such. Five gerontechnology hot spot regions are distinguished; these are Massachusetts, Washington state, California, Florida and Minnesota. At the end of the survey contact addresses are given.

Even when restricted to assistive domotics, gerontechnology forms a huge market estimated between 30 US$ billion (21 € billion) and 35 US$ billion (24 € billion) in 2008. Of the three areas supportive technology holds 20–25% of this market, whereas telehealth has a value of 60% of total market of assistive technology in gerontechnology. The remaining percentage belongs to operational technologies. The relevant projects in supportive technologies, telehealth technologies and operational technologies are described at the end of the survey. For the three areas the market size and expected evolution 2008 – 2013 is estimated. Supportive technology market is expected to be delayed till 2010 due to the combination of a strong demand for services and a lower personal financial availability not completely supported by public government programs. The telehealth technologies segment in the gerontechnology market is expected to grow as demand will continue to be driven by demographics. The operational technologies segment in the gerontechnology market is expected to increase about 1-2% in the next years from now being estimated as 15-20% of the total gerontechnology market. This survey also gives an overall market evolution of the gerontechnology market. A decrease between 1 and 2 % is expected from 2008 to 2010. A strong growth, between 7% and 8% per year, is forecasted up to a value of 35 US$ billion (24 € billion) – 40 US$ billion (28 € billion) in 2013. This is promising for gerontechnology research and the developing services and products. It is unclear how these estimations were computed by the authors.

The authors conclude that there is a tremendous opportunity even in this financial crisis for enterprises, universities and research institutes looking to invest in the US or start R&D collaboration with US universities, research institutes and industry. They also give an overview of several (governmental) programs and funds which may facilitate and support collaboration with US organizations. For ISG this gives a good prospect for further exploring gerontechnology research with appropriate design of technologies aimed at a transparent gerontechnology user-group target. To do so not only contact addresses and descriptions of products and services are needed but also an exchange of knowledge and people will stimulate gerontechnology research. Membership of ISG will support this process as ISG gives access to several researchers and their organizations in the US and abroad.

Reference
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ISG BUSINESS
We thank associate editor Lauren E. Storck PhD

Lauren E. Storck PhD, who acted as editor for the field of 'Psychology and e-communication' has left the community of associate editors of our journal. We are grateful for her contribution to the scientific quality of Gerontechnology.

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James L. Fozard: First Grandmaster of Gerontechnology

The contribution of Professor dr. James L. Fozard was discussed extensively in issue 9(3). That issue was fully devoted to him. The records of Professor dr. James L. Fozard on both education and scientific publications about gerontechnology are impressive for everyone. Professor James L. Fozard as a person is just as impressive as his records. He was a Master in almost all ISG Master Classes in Taiwan, The Netherlands, and Canada. Ask any of the students, all of them will express warm feelings to our Jim. Therefore the ISG Board was unanimously to propose the General Assembly to award Professor dr. James L. Fozard the first Grandmaster title of the International Society for Gerontechnology. The General Assembly approved this proposal by a standing ovation on May 28, 2010 in Vancouver (Canada). The ISG is proud to have Professor dr. James L. Fozard as its first Grandmaster.

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Frans J.M. van Gassel MSc, conference secretary

The general assembly of the International Association of Gerontechnology (Vancouver, May 2010) appointed Eindhoven, the Netherlands, as the venue for the next conference with Frans J.M. van Gassel as the conference secretary. Frans obtained his MSc in Mechanical Engineering (Design & Production Systems) at Eindhoven University of Technology in 1976. Subsequently he stepped into industry as production manager for steel constructions (1977-1979), and later as head product development for modular systems in construction (1979-1990). He then returned to his Alma Mater as an assistant professor lecturing in subjects such as mechanization on the construction site, collaborative design, creativity and innovation in design teams, robotics and home automation, and industrialized construction. His research interests focus on the design team and the design environment in relation to design performance. He received the 2010 Tucker-Hasegawa award of the IAARC (International Association of Automation and Robotics in Construction), was runner-up in the 2006 Teaching Method competition for elementary schools in the Netherlands, became a Member of the Royal Order of Orange-Nassau in 2002 for his societal activities as founder and board member of a youth center, chairperson of the community council for welfare works, and founder, manager and board member of a local recycling center. Previously (1992) the Environmental award of the Community Council of Beesel was bestowed upon him, while in 1989 he got the ION award in industrial design for the Max-60 construction system. In 2003 he served as conference secretary for the ISARC, the International Symposium on Automation and Robotics in Constructions.
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Diane F. Mahoney PhD RN, joined the associate editors

Diane Feeney Mahoney, PhD, RN, FGSA, FAAN is the Massachusetts General Hospital Institute of Health Profession's School of Nursing's inaugural Jacques Mohr Research Professor in Geriatric Nursing and Director of Gerontechnology. Dr. Mahoney has developed and tested a computer mediated caregiver counseling system using Interactive Voice Response (IVR) technology and nurse mediated on-line support for the REACH project, the National Institute on Aging's largest multisite intervention study for Alzheimer's family caregivers. She also completed several studies that used X10 then Zigbee based wireless motion sensors to remotely monitor via the Internet residents' well-being in a variety of home settings. Currently she is expanding her prior work to include robotics. She has over 80 original research publications and twenty refereed manuscripts reporting the theoretical, practical, and ethical aspects of geriatric resident monitoring, technology's potential for baby boomers, and the role for nursing. Dr. Mahoney holds a PhD from the Heller Graduate School at Brandeis University, an MS in Gerontological Nursing from the University of Massachusetts / Lowell and a BS in Nursing from Boston College. She is a fellow in both the Gerontological Society of America and the American Academy of Nursing.
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GeronTechnoPlatform

Late addition to the GeronTechnoPlatform of Vancouver, Canada, May 2010

P. GUILLAUME. MEM-X: a vocal memory aid for elderly people. Gerontechnology 2010; 9(4):490; doi:10.4017/gt.2010.09.04.002.00. **Purpose** MEM-X(R) is a patented[1] vocal re-minder that helps elderly people to remember important tasks by pre-recorded vocal messages. By construction, MEM-X enables a person having memory problems and a helper to use it via differentiated accesses. Main intended users are people suffering from MCI or early Alzheimer's disease (score above MMSE 19). The device is programmed locally by a helper with a voice known to the person being helped. Second type of users are elderly people taking medication several times per day (e.g. for Parkinson, diabetes), but involved in social activities that might distract them from taking their medication. **Method** MEX-X dimensions: 115x38 x17mm; weight 60g. The back face of MEM-X is meant for the helper to record vocal messages, and to program date/time for their delivery via a keyboard and an LCD display protected by a flap. An SOS key releases specific messages for the helper (who to call, what to do in a crisis situation). The front face is meant for the person having memory problems. It comprises a loudspeaker and a central blue 17x12mm button that stops the ring and releases the message, and is worn around the neck with a supplied lanyard. A standard 1.5V AAA battery is supplied that lasts on the average 1.5 months. A side standard headphone connector enables connection of an amplifier for people with hearing problems (*Figure 1*). Volume is adjustable for ring and voice separately. When the person has an action to perform, the ring goes on until the user presses the blue button. The vocal message is then delivered via the loudspeaker. Messages can be replayed by pressing the button again until the next message replaces it. Three different types of messages can be recorded: (i) For a specific date and time (appointment, anniversary,...), (ii) Daily messages for a specific time (medication, 'drink water' reminders,...), and (iii) Weekly messages for a specific day and time (wake-up message, weekly appointments). MEM-X can store up to 15 minutes speech (90 messages of 10 seconds), with no limitation in message length . It can be programmed until the year 2099. The product was evaluated in a 2008 study conducted jointly by the AGEIS laboratory, and the Geriatrics department of Charles Foix Hospital; 5 pairs of helper/helped tested MEM-X over a 1 month period. Helped: mean age 80, 2 men 3 women,1 MMSE =19, 4 MMS >= 20, 4 early Alzheimer, 1 Parkinson with associated memory problems. Helpers: aged 52-60 years, 1 man 4 women, not retired. In order of frequency messages recorded concerned: appointments, social events, medications, housekeeping tasks. **Results & Discussion** 1 pair gave up the trial because of too high complexity. Among the other 4 pairs, the product was reported as useful, intuitive and valuable for people with MMSE 19 or over, helped by a person having no mental nor physical disability[2]. MEM-X gives them confidence, reminds them to drink, to eat, and to take their medication on time, reducing their stress and improving their self image. Most of the technical issues discovered during testing have been solved in the current product. 2000 MEM-X have been sold since then, and a satisfaction survey is currently ongoing.

References
1. European patent nb EP1497736, US patent nb 10/506.672
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Figure 1. MEM-X; left: front face; right: back face with flap opened