A. SIXSMITH (Convener). **Information and communication technologies for independent living: Lessons learned from recent European projects.** *Gerontechnology 2012;11(2):140;* doi:10.4017/gt.2012.11.02.225.00 **Participants**: *I. MEYER* (Germany), *H.H. NAP* (Netherlands), *R. WOOLRYCH* (Canada), *A. SIXSMITH* (Canada). **ISSUE** In 2006, 690 million people were aged sixty years or over, representing 11% of the world population. By 2050, this number will grow by around 300% to nearly two billion persons, or 22% of the total population and, for the first time in human history, older people will outnumber children within the population[1]. While these demographic changes should be seen as an achievement of modern societies, they also present a significant challenge requiring innovative approaches to meet the health and social needs of older people. In this context, information and communication technologies (ICTs) have been recognised as having considerable potential for supporting the 'aging-in-place' of individuals[2] and recent years have seen huge growth in research and development (R&D) in the area. However, this R&D-effort has so far only had a limited impact in terms of new products and services[3]. **CONTENT** The symposium particularly focuses on the lessons learned in large-scale European ICT-projects in respect to the success (and failure) factors for reaching the market. The first paper sets the scene by describing R&D-programmes at international, regional and national levels in Europe and worldwide and evaluates their objectives, scale of investment and effort, types of research and their potential for market realisation. Three further papers provide information on specific ICT-projects. The INDEPENDENT and the CommonWell projects are described through process models of different types of integrated services that were developed in an iterative consultation with stakeholders. Outcomes of an evaluation of the pilot phase of CommonWell are presented, focusing on a cost-benefit analysis that was used to develop viable business models for the services. CAALYX-MV is a pilot and validation of a telematics system in three countries to support daily home-activities, medication, comfort, security, energy efficiency and communications. Testing under real usability conditions will demonstrate the potential of the system as a commercially-viable solution. A discussion of the SOPRANO project highlights the importance of user-centred research in identifying the requirements of older people. The research indicates the need to align emerging assistive technologies with existing structures and mechanisms of care delivery if they are to become realisable within the homes of older people. **STRUCTURE** The Convenor will provide an introduction to the symposium and the speakers. The introduction will highlight the common problems being addressed and will briefly outline the approaches that have been adopted. The main content of the symposium will be presentations on various EU-funded ICT-projects and R&D-programmes. The symposium will conclude with a moderated discussion amongst the presenters and the audience. **CONCLUSION** The aim of the symposium is to draw on the expertise and experience of various ICT-projects and initiatives to develop a better understanding of how the outcomes of R&D can be translated into useful and commercially-viable products and services. The symposium will attempt to demonstrate the value of ICT-solutions within a shift towards integrated care delivery for older people[4].

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I. MEYER, S. MÜLLER, L. KUBITSCHKE. **Beyond Silos: Making integrated eCare a viable reality.** *Gerontechnology 2012; 11(2):141;* doi:10.4017/gt.2012.11.02.222.00 **Purpose** The concept of integrated care is increasingly important across Europe and elsewhere. A better alignment of formal and informal care services provided to older people across the boundaries of social care and health care, promises improved outcomes for patients, better quality of service, and increased efficiency of service delivery. Potentially, information and communication technology (ICT) can play a key role in supporting integrated services and realizing the expected benefits. In practice however, real-life examples of integrated (e-)care service are slow to emerge due to the fact that social and health care are very much entrenched in their own 'silos', this, in turn, is reflected in the design and functionality of telecare/telehealth solutions. One of the main reasons for this can be seen in the challenges arising from their implementation in creating workable service processes and viable business models. In order to reach the market and to make integrated eCare a widespread reality is an approach to service imple-

Figure 1. Deployment cycle for eCare services[1]

mentation is required that takes these challenges into account and addresses them to create positive outcomes for all stakeholders. We have presented such an approach in a previous publication[1], see figure below. On the basis of recent experiences in two EU-funded implementation projects, we will discuss some of our experiences in the application of this approach and present outcomes from the evaluation of recently concluded pilots in four countries. **Method** The presentation will be based on the experiences made in the INDEPENDENT[2] and the CommonWell[3] projects. We will focus on describing process models for different types of integrated services that were developed in both projects in an iterative consultation with stakeholders onsite. We will also present outcomes of the evaluation of the 12-months pilot phase of CommonWell, concentrating in particular on the outcomes of a cost-benefit analysis that was used to develop viable business models for the services. **Results & Discussion** The experiences in the INDEPENDENT project and the outcomes of CommonWell show that viable service models for integrated eCare services can be developed under different framework conditions. They also demonstrate the extent to which different methods for service design and (economic) evaluation can be used to support the development process.
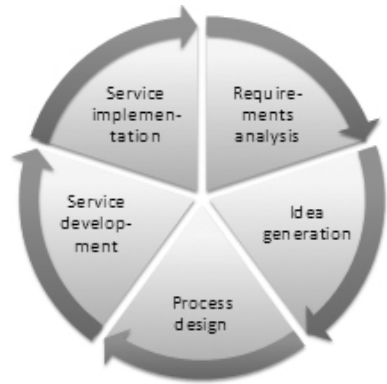
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R. WOOLRYCH, A. SIXSMITH. **Aligning a user-centred approach to the implementation of assistive technologies: Challenges from the SOPRANO Project.** *Gerontechnology 2012;11(2):141-142;* doi:10.4017/gt.2012.11.02.220.00 **Purpose** There is increased recognition of the role of information and communication technologies (ICTs) to support older people's quality of life and enable them to live at home independently. It is suggested that user-driven approaches to the development and application of ICTs can yield final products which better support the needs of older people,

thereby increasing the compliance and acceptability of technologies within the home environment[1]. However, user-centred research can be complex and difficult to incorporate within the research and development (R&D) cycle, while at the same time the adoption of a user-centred approach is problematic in terms of how these products and services can be effectively aligned to existing models of health and social care delivery. These challenges have been rarely explored within published research[2] and in particular, there is a paucity of research that has explored the tension between the needs and preferences of end-users while achieving successful deployment and market penetration. This paper reflects on the findings from the SOPRANO (Service-Oriented Programmable Smart Environments for Older Europeans) project which incorporated three strands of R&D, including stand-alone ICTs, smart home technology and telecare services. Through the application of sensors within the home, reminders and alerts and an intuitive user interface the system was designed to improve safety and security within the home, help support everyday tasks of living, facilitate social and community participation and improve information about and access to services. **Method** The SOPRANO project was underpinned by a user-centred research and development methodology termed Experience and Application Research (E&AR) which sought to involve older people, informal carers and other key stakeholders at all stages of the research, including requirements gathering, system specification, iterative prototype design and evaluation within the home environment[3]. This involved interviews, focus groups and drama workshops to establish the user requirements and system specification, system mock-ups to determine prototype design and field trials to evaluate the acceptability and usability of the technology within the homes of older people. **Results & Discussion** The findings highlight a number of conceptual, methodological and practical challenges of undertaking user-centred research in the development of ICT-based solutions for older people. Whilst SOPRANO was successful in facilitating end-user involvement, the project was less effective in terms of addressing market barriers and translating prototypes into viable products and services. As well as user-centred research, it is argued that business modelling must be included at all stages of the R&D cycle, if market penetration is to be achieved. However, it is noted that ICTs offer huge potential for innovation for new products and services to meet the wider needs of older people that may not be fully reflected in the agendas of health and social care providers.

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Market driven implementation of the eCAALYX solution. *Gerontechnology 2012;11(2):142-143;* doi:10.4017/gt.2012.11.02.228.00 **Purpose** The Ambient Assisted Living project named eCAALYX (enhanced Complete Ambient Assisted Living Experiment) project picked up on the success of CAALYX [1] and extended it into an efficient solution for monitoring the chronic conditions of elderly patients. Supported by this platform, the main objective of CAALYX-MV (Market Validation), of which the development started in 2007, is to widely validate the ICT-based solution from eCAALYX focused on improving seniors' quality of life by prolonging the time they can remain safe, autonomous and independent at home. This is achieved by monitor-

ing and controlling their social and health status and providing them with tools and telematic services to support their daily home-activities in terms of medication, comfort, security, energy efficiency and communications. The eCAALYX system consists of three different components: (i) the caretaker server, that holds all health-related information and provides an interface to both patients and caretakers; (ii) the home system, composed of static health sensors, a router for collecting and forwarding the information to the caretaker site and an easy-to-use interface for patients to check their status; (iii) the mobile system, consisting of a wearable lightweight device able to measure specific vital signs of the user, as well as to detect falls and to communicate autonomously in real time with the caregiver in case of an emergency, wherever they are. The emergency information will provide the geographic position and health indicators of the user and present it in a sensible way for the caretaker or emergency service. **Method** The most prominent chronic health disorders in older people were identified, specific physical patterns were established, and the most feasible physiological parameters that can be measured by current technology were determined[2]. For the field trials it will be necessary to provide a robust and auto-configurable home health care system that: (i) is efficiently manageable at scale and suitable for long-term monitoring; (ii) is easily expandable and thus adaptable to the changing condition(s); and (iii) integrates currently deployed equipment and standards. Thus an efficient and scalable system should give rise to a commercially viable solution. The system will be tested and validated under real usability sites arranged through three pilots in different EU countries (Spain, Italy and the Netherlands), and will obtain reliable assessment by gathering end user's feedback. **Results & Discussion** The market validation of the eCAALYX solution is being driven by decisions according to market. The target population is going to be chosen based upon market characteristics which are currently being analyzed. This way, an extensive validation trial will be performed and rich in-depth knowledge will be obtained on the integration developed between countries and the business feasibility of the system.

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Purpose The ageing of populations worldwide and the need to deliver cost-effective health and social services are driving research agendas to develop innovative information and communication technologies (ICTs) to support independent living and ageing-in-place. This paper provides an overview of research and development (R&D) initiatives worldwide, at the international, regional and national levels. While these initiatives represent a very considerable commitment of resources and expertise, R&D in the area has faced a number of challenges that have limited its impact in terms of real-world products and services[1]. **Method** The paper describes R&D programmes at different geographic levels: EU ambient assisted living joint programme (AAL-JP)[2]; national programmes in UK, Canada and US; cross-national programmes. The various programmes are evaluated in terms of: priorities and objectives; scale of investment/effort; types of research project; potential of market realisation. **Results & Discussion** ICTs for older people have emerged as a significant theme within R&D programmes throughout the developed world[3]. Some R&D programmes, notably the EU's AAL-JP, has invested strategically in this area as part of an e-Inclusion agenda to improve access and take-up of information technology services amongst disadvantaged groups and exploit opportunities this brings for European industry[4]. Other programmes of research are aligned with national-level priorities or specific conditions (e.g. demen-

tia), but are nonetheless important in their contribution to the global R&D landscape. However, the scale of R&D has not been commensurately reflected in actual product and service innovation. While technical challenges remain, the paper argues that future R&D must position itself to respond to primarily non-technical aspects of service and product innovation. Firstly, there is a need to move away from an 'agenda of dependency' and to develop theoretical and conceptual models of health that promote active aging and the creation of supportive environments to enable healthy aging. Secondly, user-driven and participatory approaches and methods are required to ensure that technological solutions are grounded in the everyday realities and needs of all stakeholders. Thirdly, ideas of knowledge translation must move beyond dissemination to an approach that includes the modelling of business processes as fundamental to the whole R&D cycle. Finally, R&D has to take seriously the many logistical, practical and epistemological challenges facing large-scale, multinational and multidisciplinary, team-based projects that are typical in this field. A key requirement is to develop new education and training initiatives to support a new generation of researchers and break down traditional disciplinary boundaries (e.g., technical versus domain knowledge) and promote 'transdisciplinary' team-working as the basis for effective R&D.

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