

European strategy in ICT for Ageing Well

Peter Wintlev-Jensen

ICT for Inclusion
DG Information Society
and Media



Changing Global Demographics

Percentage of world population over 60 years of age



ICT and Demographic Ageing

Social necessity

- 80+ population doubles until 2050; 60+ from 20% (2000) to 29% (2025)
- 21% of 50+ population has severe vision/hearing/dexterity problems
- Today 4 working for 1 retired, in 2050 only 2 working for 1 retired
- Cost of pensions/health/long-term care go up by 4-8 % of GDP by 2025
- Shortfall of care staff

Economic opportunity

- Wealth and revenues in Europe of persons over 65 is over 3000 BC
- Smart homes market will triple between 2005 and 2020
- Early patient discharge by tele-health reducing cost by 1,5 B€ p.a. (D)
- Tele-care at home empowering elderly and efficiency gains of 25% (UK)

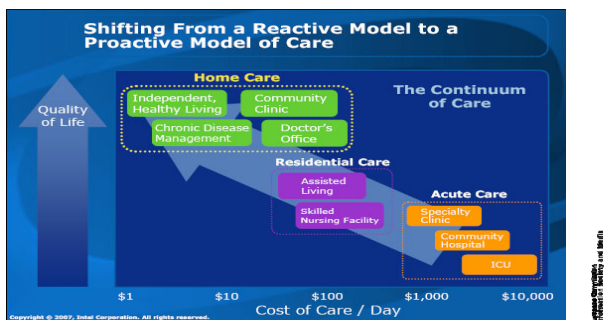


ICT in support of older people...

- At Work
 - Staying active and productive for longer
 - Better quality of work and work-life balance
- In the Community
 - Overcoming isolation & loneliness
 - Keeping up social networks
 - Accessing public services
- At Home
 - Better quality of life for longer
 - Independence, autonomy and dignity



Cost/Benefit Aspects of Ageing Well



Ageing well and ICT: barriers

- Older people don't use the Internet and find technology challenging
- Ageing needs not yet in mainstream products
- Legal and technological barriers
- Fragmented markets and Business Models



Policy Context



- eHealth Action Plan
- Action Plan on "Ageing Well in the Information Society" June 2007
- Support to Ambient Assisted Living Joint R&D Programme, June 2007
- European e-Inclusion Initiative "To be part of the information society", Nov 2007

... 7

Ageing Well in the Information Society: A triple win for Europe

- Improving the **quality of life** of elderly people, and of their relatives and carers
- Ensuring **sustainability of health and social services** in terms of financial and human resources
- Creating **new jobs and business opportunities** for European industries

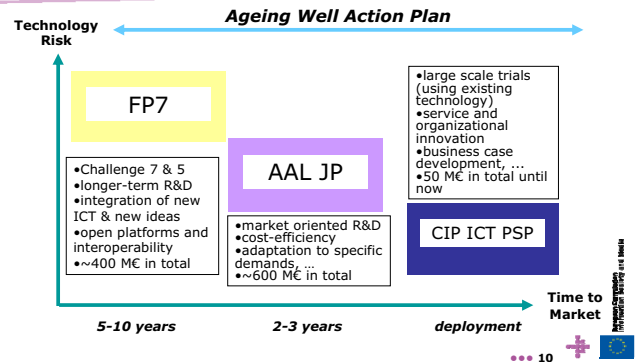
... 8

A 4-point action plan

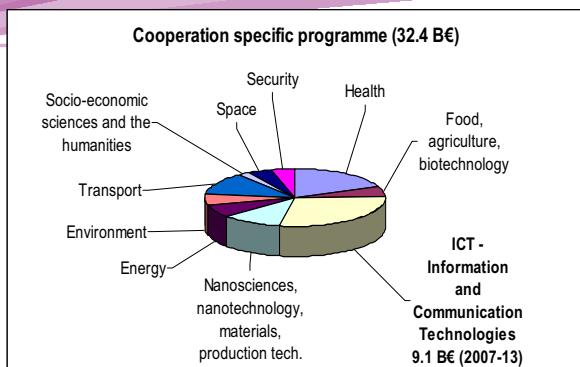
- Raise awareness, shared understanding and common approaches
 - Best practice exchange, awards
 - Ministerial conference, 30 Nov-3 Dec 2008 in Vienna
- Create the right conditions – remove barriers
 - Stakeholder groups, studies, benchmarking
- Accelerate investment in and take-up of proven solutions
 - ICT Policy Support Programme, Innovative public procurement, Regional Funds
- Prepare for the future through research and innovation => **FP7** and **AAL Joint Programme**

... 9

ICT for Ageing Well A Comprehensive EU Approach

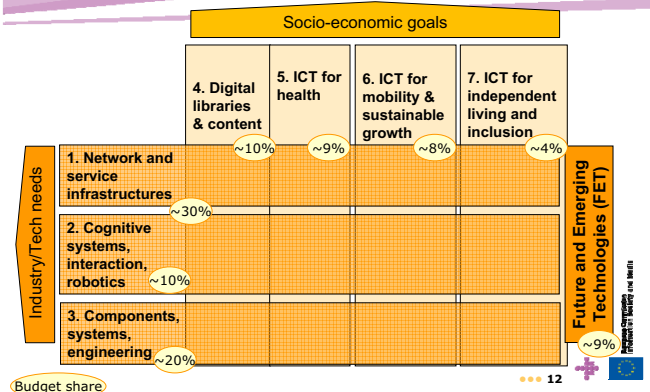


FP7 Co-operation Programme



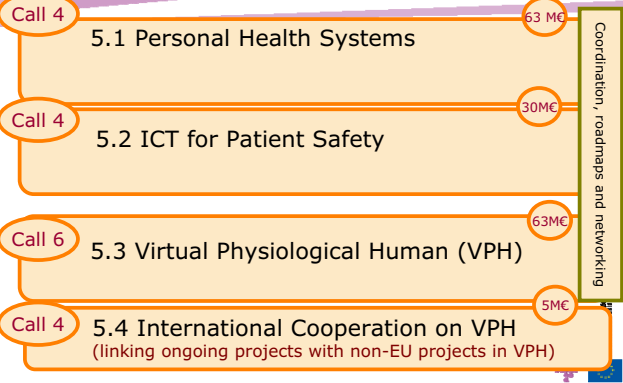
... 11

ICT in FP7: 7 Challenges + FET



161 MC (~9%)

Challenge 5



Challenge 5 Target outcomes

5.1 Personal Health Systems - Call 4 -
Minimally invasive systems and ICT-enabled artificial organs (≥2 IPs, STREP)
 - remote monitoring and care
 - integrate components into wearable, portable or implantable devices
Application domains: Cardiovascular diseases, Diabetes, Renal failure (artificial kidney), Liver failure (artificial liver support)
Mental Health (≥1 IP, STREP)
 - stress, depression or bipolar disorders
 - multi-parametric monitoring systems
+ Support Actions (CSA)
 - prevention of diseases
 - interoperability of PHS

5.2 ICT for Patient Safety - Call 4 -
ICT for safer surgery (≥1 IP, STREP)
 - predict clinico-functional outcome of surgical interventions
 - tools for training, pre-operative planning, and computer-aided interventions
ICT for integration of clinical research and clinical care (≥1 IP, STREP)
 - linking clinical care information (EHR) with clinical research information systems
ICT-enabled early detection of public health events (1 STREP)
 - event-based surveillance tools (incl. natural language processing, mining, interpretation...)
+ Support Actions (2 CSAs)
 - user-friendly interfaces for electronic health record systems
 - interoperability testing for exchange of healthcare information

5.3 VPH - Call 6 -
Patient-specific computer based models and simulation (≥1 IP, STREP)
 - multiscale models and simulation of organs/systems
 - prediction/early diagnosis
ICT tools, services and infrastructures for biomedical researchers (≥1 IP, STREP)
 - share data and knowledge
 - shared tools/infrastructure
 - market potential / penetration
+ Support action (1 CSA) on evaluation and assessment
 - create collaborative environments
Observatories on achievements and evolution of Biomedical Informatics (1 CSA)
5.4 International cooperation on VPH - Call 4 -

EU R&D Support

Framework Programme 7 ICT research

Challenge 7: ICT & Ageing

- Advanced Prototypes for independent living/active ageing (Ambient Intelligence, Robotics)
- Open Systems, Reference Architectures, Platforms
- Support: roadmaps, standards, S/E research, Int'l cooperation



Currently ~30 projects, 200 M€

Selected FP6/FP7 Ageing Projects

	Project	Topic
IP	PERSONA SOPRANO OASIS Companionable MON-AMI	Open Platforms and tools for Ageing applications/services; Advanced integrated care service platforms; Ontology based interoperability for ageing applications; Intelligent robotic companion for safety and social support; Ambient Intelligence for independent living;
STREP	HERMES VITAL MIND ELDER GAMES I2HOME EASY-LINE+ SMILING SHARE-IT CONFIDENCE MPOWER	Cognitive care and guidance for active ageing; Advanced interactive mental training for elderly people; Improving cognitive skills of elderly people through gaming; Innovative interaction with home appliances for all; Intelligent white goods for an ageing population; Support for mobility of an ageing population; Enhanced navigation with smart wheelchairs and walkers; Fall detection and protection for independent living; Service oriented architectures for independent living;
CSA-SA	AALLIANCE CAPSIL SENIOR	European R&D coordination platform for Ageing Well; International R&D cooperation with US and Japan; Support Action on ICT and Ethics in Ageing domain

Other FP7 e-Inclusion Projects

	Project	Topic
IP	AEGIS HaptiMap TOBI	Mainstream e-accessibility, open accessibility framework, Haptic, Audio and Visual Interfaces for Maps and Location-Based Services; Tools for Brain-Computer Interaction.
STREP	VAALID ACCESSIBLE BRAIN TREMOR HANDS UMSIC INCLUSO ComeIn REPLAY	Development of a 3D-Immersive Simulation Platform for CAD; Accessibility assessment simulation environment for new application design and development; BCIs with Rapid Automated Interfaces for Nonexperts; An ambulatory BCI tremor suppression system; Helping autism diagnosed young people navigate & develop socially; Usability of music for social inclusion of children; Social software for inclusion of marginalized young people; Online mobile communities to facilitate the social inclusion of marginalized young people. Gaming technology platform for social inclusion of MYP;
CSA-SA	MARE	Assistive technologies, market requirement, market barriers.

e-Inclusion FP7 Call 4 (2009-2010)

- Ageing (long term R&D): 24 M€
 - Service Robotics for independent living
 - Open Platforms for independent living, mobile/stationary, work/home, linking to health & energy
- Accessible & Inclusive ICT: 34 M€
 - Brain/neuro computer interaction/control
 - "Virtual user"/Main Stream Accessibility
- Call open until 1st April 2009, see <http://cordis.europa.eu/fp7/ict/> for more information

Service Robotics for Ageing Well

- Integration of **R&D advances in robotics** research and system design
 - Excluded: R&D of robotics components, no pets
- Operational Verification of integrated and adaptable modular robotic solutions at home
 - Support for daily living and care activities
 - Demonstration in realistic environments
 - Usability, ethics
- Ensuring safe operation in a home environment
 - With people present (context detection)
 - Integrated with other smart artefacts, intelligent home space.



Courtesy: LEGO Mindstorms®



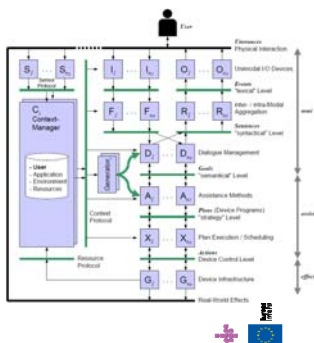
Service Robotics for Ageing Well

- Key Issues**
 - Seamless integration within smart environments
 - Autonomous operation
 - Adaptability to user requirements and behavior
 - Addressing user acceptance, safety and trust
 - Including all steps needed for operational verification of benefits in real user environments
- Essential Elements**
 - No basic robotics component development -> Challenge 2



Open Systems Reference Architectures, Standards and Platforms for Ageing Well

- Next generations of open platforms**
 - Building on - and consolidating- advances in middleware, communications standards, service-oriented architectures
 - Supporting cost-effective systems integration, personalization, deployment and maintenance for end-to-end care support



Open Systems Reference Architectures, Standards and Platforms for Ageing Well

- Key Issues**
 - Solutions across mobile and stationary environments
 - Adequate security, reliability, maintainability
 - Physical and semantic interoperability of sensors, devices, services and systems
 - Active contribution to international standards setting and wide dissemination of tools
 - Verification of platform by demonstration of services for elderly health and social care, (and possibly energy efficiency management)
- Essential Elements**
 - Credible industrial involvement



EU Innovation Support

ICT Policy Support Programme Large deployment pilots

- Independent and healthy living
- Chronic disease monitoring
- Daily living assistance ... integrated health/social care
- User acceptance, common specs, cost-effective, interoperability
- Building on Regional activities

- High visibility, market driven
- Overcoming fragmentation
- Enable scaling up, investment
- Value chain cooperation
- Regional/rural/urban renewal

(+ pre-commercial procurement, Structural Funds)



7 pilots,
15 M€ in 2007
10 M€ in 2008



CIP ICT PSP (Competitiveness & Innovation Programme - ICT Policy Support Programme)

- Deployment/validation of existing technology
 - Strong involvement of Regions (3-4 regional pilots in every project)
- 2007 Call 1: Pilots on Ageing/Health
 - Management of multiple chronic diseases and support to independent living
- 2008 Call 2: Pilots on Ageing
 - Ageing well with cognitive problems (early dementia)
- 2009 Call 3 Pilots on Ageing/Health (open until 2 June 2009)
 - Integrated health and social care solutions for ageing well, within care organisations and towards the elderly user
 - See http://ec.europa.eu/information_society/activities/ict_psp/index_en.htm



Current CIP Projects - 1

eHealth - Chronic Disease Management of Elderly

CLEAR: system for personalised healthcare and chronic disease management of elderly people

NEXIS: integrated care programs for chronic disorders and ageing

eHealth - Interoperability

epSOS: Large Scale Pilot for interoperable patients' summaries and ePrescriptions

CALLIOPE: CALL for InterOperability in Europe

HER-Q-TN*: Quality Labeling And Certification of EHR Systems

*In negotiation



Current CIP Projects - 2

Independent Living



T-Seniority: Expanding the benefits of information society to older people through digital TV channels

CommonWell: Personalised health/social care services

Dreaming: Elderly-friendly alarm handling and monitoring



Current CIP Projects - 3



Accessible Services

DTV4All: European broadcasting standards for accessible Digital TV services

REACH112*: Multi-Modal Accessible Emergency Services

Social Integration

Bridge-IT: Thematic Network ICT for social integration and cultural diversity

Cognitive Support

ISISEMD*: Intelligent System for independent living and self-care of seniors with cognitive problems or mild dementia

Sociable*: support for elderly networking, mental reinforcement and social interaction

Long Lasting Memories*: integrated ICT platform combining state-of-the-art mental exercises to combat cognitive deterioration

* In Negotiation



Regions involved in ICT PSP e-Accessibility and Ageing (Call 1 and 2)



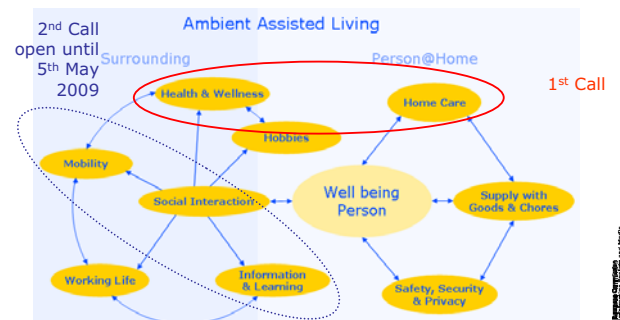
Stepping up research through the AAL Joint Programme

- New Joint Programme between Member States on market-oriented ICT research in Assisted Living technologies and services
 - Total investment >€600m
 - National contribution of at least €150m
 - EC contribution up to €150m
 - Cofunding by Industry and Research ~ 50%
- Complements longer term research in FP7 - €400m
- Linking National programmes to EU research

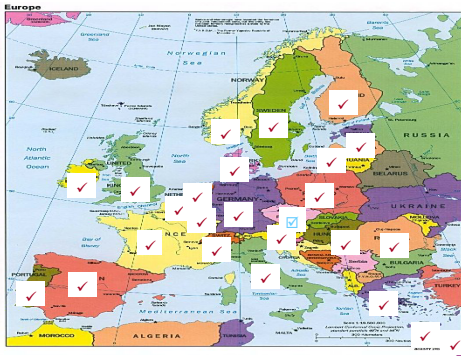
... 29



AAL JP Focus Areas



AAL Joint Programme – National participation so far



Interested
 Committed
 With more than 30 M€/Year



Opportunities for EU-US Collaboration

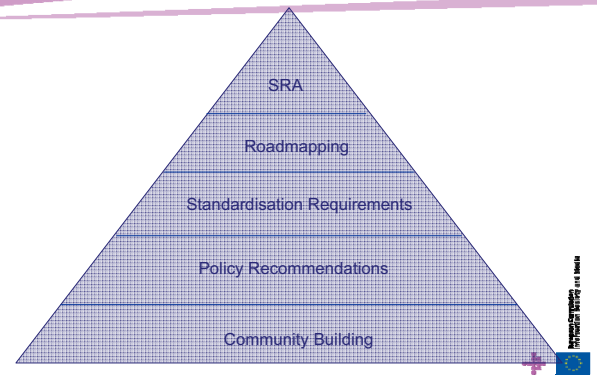
- Participation in FP7 projects with own funding
- Common workshops and systematic exchange of information between related projects
- Standardisation
- EU participation in US Projects?
-

CAPSIL Support Action

- EU support action funded to promote further collaboration EU-US-JP in ICT for Ageing Research (from 1/4/2008-1/4/2010)
- Goals:
 - to develop a CAPSIL Roadmap
 - To provide knowledge dissemination
 - To use the CAPSIL Roadmap to help policy makers in the EU, US and Japan coordinate research agendas and funding efforts
- www.capsil.org



AALIANCE Innovation Platform Main Objectives



AALIANCE Members



INNO-GRIPS workshop 18-19 December 2008 Brussel

AALIANCE Associated Partners



INNO-GRIPS workshop 18-19 December 2008 Brussels

Conclusions

- Ageing Well in the Information Society - **social necessity and economic opportunity**
- ICT has great potential for providing solutions, but **need for comprehensive policy support**
- **European Action plans launched** by the European Commission
 - Ageing well in the information society
 - eHealth Action Plan + eHealth interoperability
 - More than one Billion € in R&D between 2006-2013
- Great Opportunity for **further EU-US collaboration**

... 37



Further Information

- ICT on Cordis
<http://cordis.europa.eu/fp7/ict/>
- EU ICT and Ageing Well Initiatives
<http://ec.europa.eu/einclusion>
- eHealth Initiatives
http://ec.europa.eu/information_society/activities/health/index_en.htm
- Ambient Assisted Living Joint Programme
<http://www.aal-europe.eu/>
- Contacts:
ICT & Ageing: peter.wintlev-jensen (at) ec.europa.eu
eHealth: ilias.iakovidis (at) ec.europa.eu

... 38

