Tehnologia Informatiei si Comunicatiile in sprijinul traiului independent si al ingrijirii persoanelor in varsta si/sau cu dizabilitati.

1. **Tehnologia Informatiei si Comunicatiile: necesitati si cerinte pentru ingrijire/trai independent**.

1.1. Sanatatea si alte necesitati legate de ingrijire.
    Conditii medicale.
    Necesitatile privind ingrijirea.
    Ingrijire asigurata de familie sau de catre profesionisti.
    Restrictii de mobilitate.

1.2.   Utilizarea TIC ca suport pentru activitatile de ingrijire/sanatate a persoanelor in varsta.

   Folosirea internetului pentru informatia legata de sanatate.

   Utilizarea alarmelor sociale.

1.3. Perfectionarea produselor si a serviciilor

2. **Scheme de finantare pentru TIC utilizat in sprijinul traiului independent si al ingrijirii persoanelor in varsta si/sau cu dizabilitati**.

2.1. Dezvoltarea initiala a pietii.
   - injectia initiala a fondurilor pentru furnizorii de servicii (pump-prime funding);
   - pregatirea suportului pentru furnizorii de servicii;
   - asigurarea de fonduri pentru inovare catre TIC orientat pe domeniul traiului independent si al ingrijirii persoanelor in varsta si/sau cu dizabilitati;
   - colaborarea public-privata in asigurarea de fonduri de cercetare si dezvoltare;
   - achizitii publice.

2.2. Finantarea continua si alte mecanisme suport de piata.

   Demarcarea sectoriala.

   - teleingrijire (telecare),
   - telesanatate (telehealth),
   - eSanatate (eHealth),
   - tehnologie de asistare (assistive technology) si
   - case inteligente (smart homes).

   Modele de finantare.

   - fonduri publice, rezultate din colectarea de taxe;
   - asigurari sociale de stat;
   - asigurari sociale private.

   Directionarea fondurilor
   - beneficiarii serviciilor;
   - furnizorii de servicii.

Exemple de abordari si scheme de finantare.

3. **Dezvoltari Tehnologice**.

3.1. Trecerea in revista a domeniului.

3.2.   Tehnologii in uz sau gata de a fi utilizate.

Dispozitive personale.

Dispozitive pentru asistenta.

Servicii de alarmare sociala.

Sisteme de monitorizare a subiectilor la domiciliu.

Sisteme de monitorizare a subiectilor la domiciliu.

4.Situatia din Romania. (Sugestii pentru subiectele de investigat)

4.1 Identiuficarea structurilor care au responsabilitati privind persoanele varstnice bolnave si/sau a celor cu dizabilitati (Ministerul Sanatatii, Ministerul muncii si solidaritatii sociale),

4.2 Studierea legislatiei in vigoare privind finantarea activitatilor legate de persoanele varstnice bolnave si/sau a celor cu handicap,

4.3 Identificarea initiativelor/proiectelor privind asitarea persoanelor varstnice bolnave si/sau a celor cu handicap, cat si a rezultatelor obtinute; a se vedea ANEXELE (Cateva dintre initiativele romanesti identificate).

Tehnologia Informatiei si Comunicatiile in sprijinul traiului independent si al ingrijirii persoanelor in varsta si/sau cu dizabilitati.

1.Tehnologia Informatiei si Comunicatiile: necesitati si cerinte pentru ingrijire/trai independent.

1.2. Sanatatea si alte necesitati legate de ingrijire.

Conditii medicale.

Cele mai multe persoane varstnice sunt tratate de cel putin o boala cronica, pe termen lung:

- hipertensiune: prevalenta in 2007, in Europa, 41%, cu tendinte de crestere fata de 2001,
- bolile care privesc articulatiile, oasele si muschii: 26%,
- diabet: 11%,
- boli ale aparatului respirator: 9%,
- alte boli cronice insumate: 21%.

In general 67% din persoanele varstnice sunt tratate pentru cel putin o singura boala, iar dintre acestea 35% pentru cel putin doua boli cronice. Pe grupe de varste dintre cele din urma 22% au varste intre 50-59 de ani, iar peste 50% au varste de peste 70 de ani.

Exhibit . 1: Receiving treatment for (multiple) chronic conditions

	Germany	France	Italy	Poland	UK	Total EU5	EU15 2001
high blood pressure	44.8	30.5	42.8	47.1	40.0	41.1	33.7
heart disease of any kind	18.4	13.2	16.8	37.3	15.6	20.3	16.8
any chronic respiratory disease	5.4	5.6	8.6	13.9	9.4	8.6	8.5
diabetes	12.8	6.8	12.4	12.7	10.4	11.0	9.2
joint, bone or muscle diseases	25.7	19.6	27.0	38.4	23.8	26.9	25.6
any other long term condition	16.2	16.6	12.2	30.4	27.4	20.6	18.7
Summary: any long term condition	66.6	57.1	71.4	76.3	67.2	67.7	61.9
one	33.2	32.3	36.8	21.5	33.8	31.5	N/A
two	16.2	17.0	23.6	24.5	16.0	19.5	N/A
three or more	17.2	7.8	11.0	30.3	17.4	16.7	N/A

Source: Seniorwatch 2007 surveys – F91: Are you currently receiving treatment or medication for...?
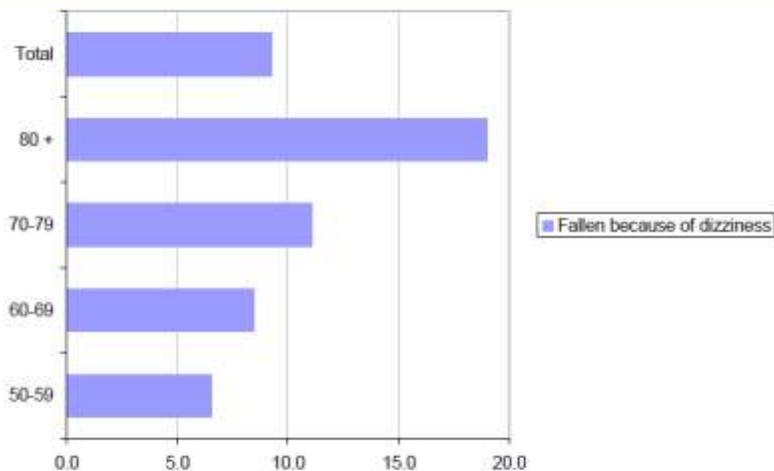Base: all

Exhibit 2: Receiving treatment for chronic condition – time comparison

	EU5, 2007				EU15, 2001			
	50-59	60-69	70-79	80 +	50-59	60-69	70-79	80 +
high blood pressure	26.9	40.9	58.3	53.8	23.1	34.8	44.9	41.7
heart disease of any kind	9.1	21.0	32.2	31.9	7.4	14.5	27.4	35.7
any chronic respiratory disease	6.0	8.8	10.9	11.8	5.4	8.8	11.5	11.4
diabetes	4.8	12.5	17.9	12.9	6.8	9.4	12.2	10.1
joint, bone or muscle diseases	18.3	24.7	38.2	40.2	18.9	27.0	30.3	35.2
any other long term condition	18.7	19.9	23.8	21.9	16.7	18.5	20.9	22.2
Summary: any long term condition	49.5	69.4	86.2	87.1	49.0	64.2	73.5	74.0
one	27.9	35.0	31.5	33.6	N/A	N/A	N/A	N/A
two	13.2	17.9	27.2	30.8	N/A	N/A	N/A	N/A
three or more	8.4	16.6	27.5	22.7	N/A	N/A	N/A	N/A

Source: Seniorwatch 2007 surveys –F91: Are you currently receiving treatment or medication for...?

Un alt pericol pentru traiul independent il reprezinta caderile datorita ametelii, cu consecinte dintre cele mai grave: fracturi de clavicula, membre superioare/inferioare, fractura de sold.

Exhibit 3: Fallen because of dizziness

Source: Seniorwatch 2007 surveys – F88: (C2/D1) Have you, in the last 12 months, fallen because of dizziness?
Base: all

Necesitatile privind ingrijirea.

O minoritate de 6,7 % primeste suport pentru activitatile de baza ale traiului zilnic: baie/dus si imbracat/dezbracat, in timp ce 12,2 % au dificultati cu aceste activitati constituindu-se in "grupul celor care trebuie asistati". Tabelul de mai jos este edificator si in ceea ce priveste gruparea pe varste.

Exhibit 4: Difficulty with daily activities

	50-59	60-69	70-79	80 +	Total EU5
a) with bath or showers?	6.4	7.3	16.6	25.7	10.7
b) with getting dressed or undressed?	6.4	5.4	9.7	14.8	7.6
c) with going shopping?	9.8	10.2	17.8	32.9	13.7
in need of help with dressing or bathing	8.7	9.0	20.2	29.2	13.3
For comparison: EU15, 2001: in need of help with dressing or bathing	6.9	12.0	17.8	28.0	12.9

Source: Seniorwatch 2007 surveys – F92_01-03: (D1) Do you currently have any difficulty with daily activities

Cat despre cei care beneficiaza de ingrijire, comparativ cu anul 2001, situatia s-a imbunatatit in anul 2007, dupa cum se poate constata din tabelele de mai jos:

Exhibit 5: Receiving care (by age)

	50-59	60-69	70-79	80 +	Total
Yes	4.2	4.7	11.1	21.9	7.5
No	4.7	4.5	10.2	9.1	6.2
No and not in need of help	91.1	90.8	78.7	69.0	86.3
For comparison: EU15, 2001: receiving care	2.8	4.9	7.0	14.5	5.4

Source: Seniorwatch 2007 surveys –F95: (D2) Does anyone regularly help you with these activities?
Base: all

Exhibit 6: Care: population with support need and population actually receiving care (2007 and 2001)
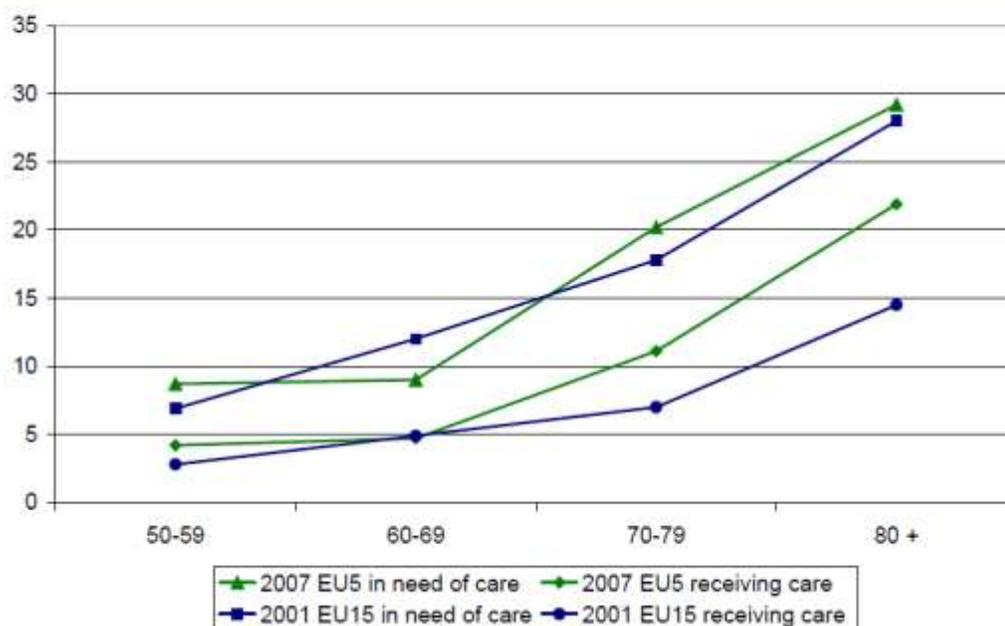
Ingrijire asigurata de familie sau de catre profesionisti.

Circa 20 % dintre cei care au nevoie de ingrijire pentru traiul zilnic, primesc acest serviciu de la profesionisti (companii specializate sau comunitati), cu exceptia Frantei la care procentul se ridica la 40%.

Exhibit 7: Percentage of people in need of by type of their carer (family/professional)

Receiving help by	Germany	France	Italy	Poland	UK	Total EU5	2001 EU15
A family member or other non-professional carer	85.7	59.3	93.8	87.5	90.7	85.2	81.5
A professional carer	14.3	40.7	19.4	16.7	22.2	21.8	22.2

Source: Seniorwatch 2007 surveys. F96 – 97: Who helps you, is it a family member or other non-professional carer professional carer?
Base: if receiving help.

In cazul ingrijirii asigurata de familie este interesant de vazut la ce distante traiesc parintii in raport cu copiii adulti:

Exhibit 8: Proximity to Nearest Living Child (percentages)

	Total	50-59	60-69	70-79	80+
Same household	31.5	53.9	23.1	14.6	14.6
Same building	9.0	4.2	9.7	13.3	14.2
Less than 1 km	14.8	7.7	16.5	20.8	21.4
1 – 25 km	29.6	21.2	34.0	35.0	34.9
25 – 100 km	7.2	5.6	8.1	8.5	7.2
> 100 km	7.9	7.4	8.7	7.8	7.8

Source SHARE (pp215ff). Totals for ten countries.

Restrictii de mobilitate.

Aceste restrictii reprezinta un pericol major pentru un trai independent. In tabelul urmator se prezinta o statistica a restrictiilor de mobilitate pe grupe de varste

Exhibit 12: Mobility difficulty

Percent finding ... very difficult or impossible		Germany	France	Italy	Poland	UK	Total EU5
walking a distance of 100m	very difficult	7.2	5.0	4.8	7.9	8.0	6.6
	impossible	2.0	0.4	3.4	1.4	3.0	2.0
standing for longer time	very difficult	7.4	8.2	4.6	12.1	9.8	8.4
	impossible	3.8	0.6	1.6	1.0	2.2	1.8
climbing stairs	very difficult	14.6	6.4	5.0	17.1	8.6	10.4
	impossible	1.0	1.0	2.2	1.8	2.8	1.8
Impaired mobility (either of three very difficult or impossible)		19.8	10.8	11.4	25.5	18.4	17.2
No mobility impairment at all (all three items "easy")		47.4	62.5	61.4	29.3	52.8	50.7

F82 F86 F87: Do you find ... easy, somewhat difficult, very difficult or impossible?
Base: all

Din esantionul de mai sus 1,4% folosesc scaunul cu rotile, iar 1,5 % utilizeaza cadrul. Primii sunt in principal interesati de accesul la automatele de livrat bani si, eventual, de telefonul public.

Exhibit 13: Wheelchair and walking frame users
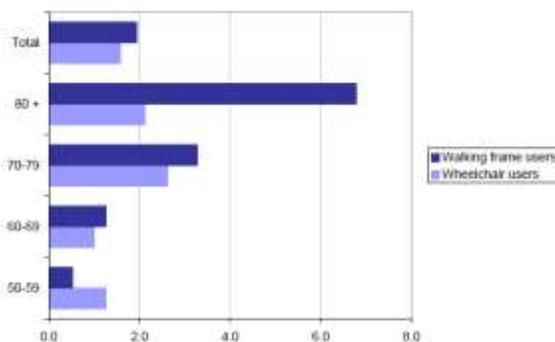
	Germany	France	Italy	Poland	UK	Total EU5
Wheelchair	2.4	.2	1.0	1.4	3.0	1.6
Walking frame	4.6	1.2	.6	.6	2.8	1.9

F83_01: (C2/D1) F83_02: (C2/D1) Do you, if temporarily, use a wheelchair / a walking frame?   Base: all

1.3. Utilizarea TIC ca suport pentru activitatile de ingrijire/sanatate a persoanelor in varsta.

Folosirea internetului pentru informatia legata de sanatate.

Utilizatorii de internet sunt foarte interesati de informatiile legate de sanatate. Aproximativ 75% se informeaza, intr-un mod sau altul, in legatura cu problemele legate de sanatate. Tabelul de mai jos este edificator in aceasta privinta:

Exhibit 14: Internet use in health matters by age

|		Age				
		50-59	60-69	70-79	80 +	Total
	Health information (any of a-e)	67.5	66.7	55.1	26.7	65.3
a	obtain information on a specific health matter, disease or medication	53.6	51.6	39.3	26.7	51.1
b	get information on healthy lifestyles, such as fitness, diet or similar	43.8	36.9	34.1	12.5	40.9
c	to follow up on a diagnosis or treatment recommendation by a doctor	30.1	34.8	24.7	13.3	30.7
d	to find information about health services, e.g. what services are available, your entitlements for treatment and so on	28.4	20.1	17.0	13.3	24.5
e	to prepare yourself before visiting a doctor	13.5	17.9	12.4	6.3	14.6
	e-mail or internet: to communicate about health matters with physician	4.3	2.9			3.4

Source: Seniorwatch 2007 surveys – F68-70
Base: Internet users in the last three months

Utilizarea alarmelor sociale.

La nivelul anului 2007, in locuintele respondentilor la ancheta facuta, existau in medie 5% alarme sociale. Ponderea alarmelor sociale la persoanele de varsta inaintata (80+) era de 14%.

Exhibit 15: Community alarm services in 2007 (EU5) and 2001 (EU15) by age
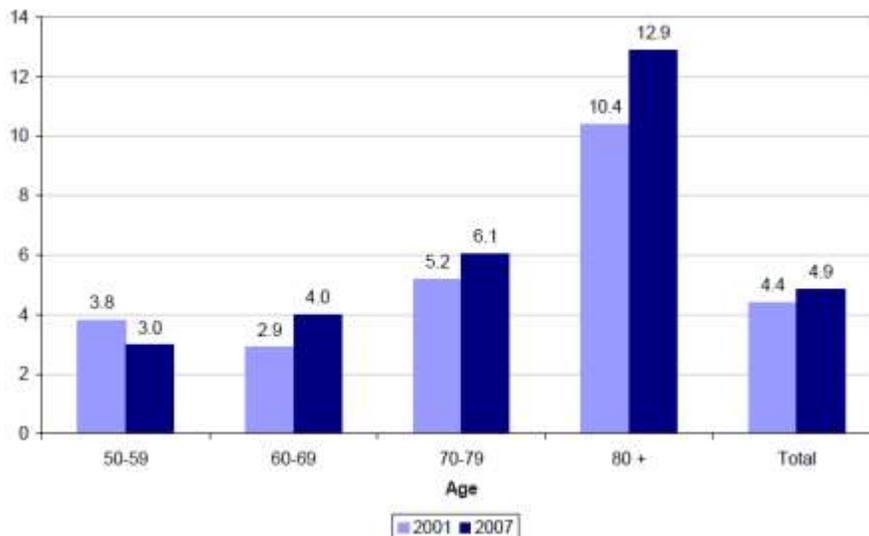
Alarmele sociale nu sunt legate numai de locuinta. Ele pot fi si la purtator, mobile.

Exhibit 16: Social alarm in household – mobile alarm vs. home only

	EU5
Only inside home	66.1
Also away from home	26.4
Don't know / refused	7.4

Source: Seniorwatch 2007 surveys. F104: Is it for use inside your home only, or also when you are away from home? Base: all with social alarm at home

1.4. Perfectionarea produselor si a serviciilor

    1.4.1. Beneficiarii alarmelor sociale au fost intrebati daca ar dori ca acestea sa fie perfectionate in directiile asigurarii de facilitati in domeniul securitatii (detectarea automata a scurgerilor de gaze) si in cel al sanatatii (detectarea automata a caderii unei persoane sau a aparitiei unei crize majore). Raspunsurile au fost afirmative intr-o majoritate covarsitoare.

Exhibit 19: Social alarm in household – assessment of benefits of additional security features

	Germany	France	Italy	Poland	UK	
Yes, would be beneficial	66.0	42.9	50.0	84.6	73,3	63.6
No, would not be beneficial	25.5	39.3	28.6	7.7	23.3	26.1
Don't know / Refused	8.5	17.9	21.4	7.7	3.3	10.2

Source: Seniorwatch 2007 surveys. F106_1: There are nowadays additional security features to some social alarm systems, for instance to automatically detect a fire or gas leak. Would you think that such features would be beneficial to you or the person using the social alarm?
Base: all with social alarm at home or who give care to someone with a social alarm

    1.4.2. Utilizarea e-mail-ului pentru interactiunea cu furnizorii de servicii de ocrotire sociala.
este foarte redusa, dupa cum rezulta din urmatorul tabel:

Exhibit 23: E-Mail usage to get in touch with care service providers

	Germany	France	Italy	Poland	UK	
yes, regularly	4.2		2.0		2.7	1.5
yes, occasionally	4.2	13.2	8.2	4.1	9.6	8.1
No	91.7	86.8	89.8	95.9	87.7	90.5

Source: Seniorwatch 2007 surveys. F109: (D4) Do you ever use e-mail or internet to get in contact with care organisations? Base: family carers and care recipients who are also computer users.

2.   Scheme de finantare pentru TIC utilizat in sprijinul traiului independent si al ingrijirii persoanelor in varsta si/sau cu dizabilitati.

2.1.Dezvoltarea initiala a pietii.

    Dezvoltarea unei pieti functionale a TIC ca suport al traiului independent si al ingrijirii a fost mai lenta decat s-ar fi asteptat. Tehnologiile si conceptele privind aplicatiile au fost disponibile cu mult inainte de a se contura materializarea lor prin sectoarele: publice, non-profit sau privat ori pentru profit.

Se pot identifica o serie de posibilitati pentru suportul dezvoltarii initiale a acestei pieti:
- injectia initiala a fondurilor pentru furnizorii de servicii (pump-prime funding);
- pregatirea suportului pentru furnizorii de servicii;
- asigurarea de fonduri pentru inovare catre TIC orientat pe domeniul traiului independent si al ingrijirii persoanelor in varsta si/sau cu dizabilitati;
- colaborarea public-privata in asigurarea de fonduri de cercetare si dezvoltare;
- achizitii publice.

> **Injectia initiala a fondurilor pentru furnizorii de servicii (pump-prime funding).**

Exemplu:

Exhibit 24: Case 1: Preventative Technology Grant (UK)

Description of the measure

The UK Government has made available £80 million (105 MEuro) for the Preventative Technology Grant over the period 2006-2008. This centrally-funded government scheme provides grants to local authorities in England to invest in care-related technology, especially telecare and also electronic assistive technologies. The funding goes to the local authorities but they are expected to work with partners in housing, health, voluntary and independent sectors, as well as service users and carers. The grant is intended to be used to implement telecare in order to increase the numbers of people who are supported to remain independent and it is expected that most of the beneficiaries will be older people. The initial target set was to help an additional 160,000 older people to live at home with safety and security and reduce the number of avoidable admissions to residential/nursing care.

The initiative is intended to pump prime change and the incorporation of telecare in the delivery of mainstream services. *A Telecare Implementation Guide* and accompanying support materials were developed to give detailed guidance on developing and implementing a telecare service. Active ongoing support is provided through the Telecare Learning & Improvement Network (LIN) of the Care Services Improvement Partnership (CSIP).

The grant is paid as a specific formula grant to each local authority with no conditions attached. The amount to be allocated for each local authority is calculated according to a common formula based on their relative share of older people's needs in the overall needs profile of the local authority based on population size, structure and so on (Relative Needs Formulae - RNF). Based on the overall allocation of 105 million euro and the targeted reach of 160,000 people, it can be roughly estimated that the grant amounts to about 650 euro per client served, although there is likely to be a lot of variation given that the grant may be spent on infrastructural development as well as on direct services for clients, so that more or less may be directly spent on client services depending on the existing level of development of relevant services.

Key features / learning points

• focused, centrally-driven effort to kick-start publicly-supported telecare services across the country

• central government funding allocated on pro rata basis to all local authorities

• extensive promotional efforts and support/guidance materials

• clear focus on mainstreaming and sustainability of telecare once pump-prime funding ceases

Sources:

Building Telecare in England (2005)

http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4115303

Local Authority Circular (LAC (2006)5), March 2006.

www.dh.gov.uk/assetRoot/04/13/21/69/04132169.pdf

Telecare LIN http://www.integratedcarenetwork.gov.uk/telecare/index.cfm?pid=162

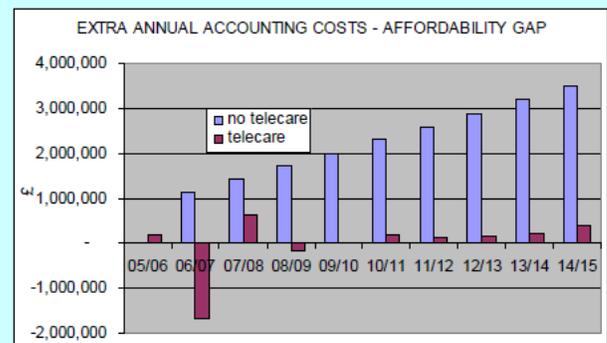> **Pregatirea suportului pentru furnizorii de servicii.**
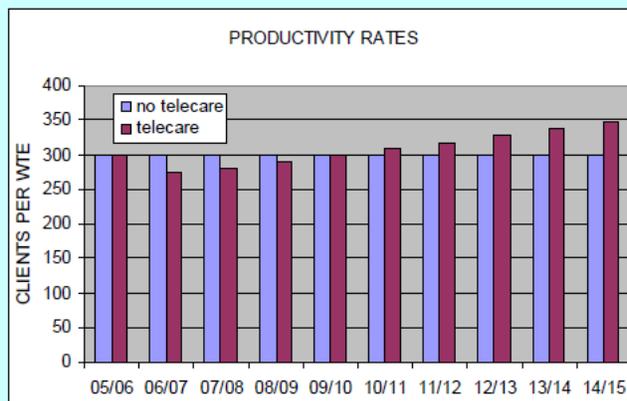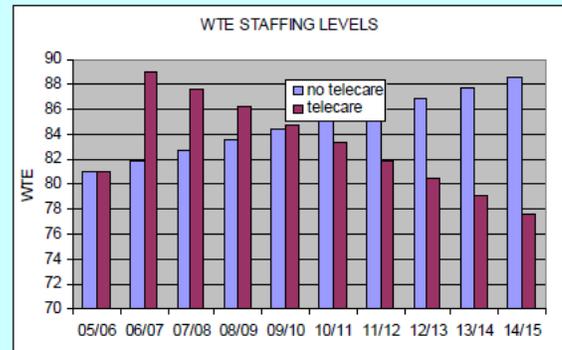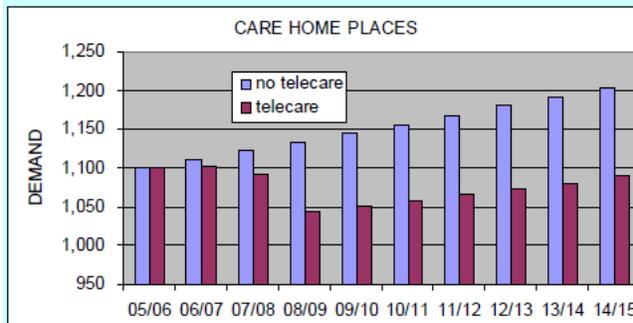
Exemple:

Exhibit 4-25: Case 2: Telecare business case modelling tool (UK)

Description of the measure

The Telecare Learning & Improvement Network in the UK has developed a business case modelling tool to support social service departments in the development of strategy and business cases for local telecare projects. The immediate aim was to support councils in making decisions about how to spend the Preventative Technology Grant.

Using spreadsheets, the tool provides a range of return-on-investment calculations and projections. Some illustrative examples of the type of output that could be produced are provided below:

CARE HOME PLACES / WTE STAFFING LEVELS / PRODUCTIVITY RATES / EXTRA ANNUAL ACCOUNTING COSTS - AFFORDABILITY GAP

Key features / learning points
• appears to be the first modelling tool specifically focusing in business case for telecare for public service providers
• useful analysis and metrics for identifying and quantifying inputs and outputs
Sources:
http://www.integratedcarenetwork.gov.uk/telecare/index.cfm?pid=361
http://www.integratedcarenetwork.gov.uk/_library/Resources/Telecare
/Telecare_advice/Strategic_Business_Case_Model_-_Balance_of_Care.xls

Exhibit 26: Case 3: Whole system long term conditions (LTC) demonstrators (UK)
This is a major and large-scale government funded programme commencing in mid 2007, with expected sharing of initial findings by early 2009. It will establish three demonstrators (in Kent, Newham and Cornwall) to test the benefits of and business case for integrated health and social care supported by advanced assistive technology and telecare. The main focus for all three sites is to provide the evidence for more widespread use of telecare and telehealth.
The demonstrators will target a total population of one million across 3 sites, involving around 7500 'users' - 3-4,000 Telehealth and 4,500 Telecare. There will be a dual focus:
• people of any age who are at risk of current or future hospital admission, due to at least one of the following conditions: chronic heart disease, COPD or diabetes;
• the frail elderly who are at risk of current or future hospital admission, who have complex health and social care needs; they may have one or more of the above conditions.
The aim of the demonstrators will be to show that people with more complex needs can be supported to maintain their independence, achieve significant gains in quality of life and reduce unnecessary acute hospital and care home use. Robust and rigorous programme management practices are being employed at each site and centrally, in order that documentation records all the planning and implementation steps of the programme and captures learning and best practice to inform wider roll out for the future.

An evaluation team will examine the effects of the technology on emergency admission rates, patient/carer experience, and quality of life, as well as looking at the impact on primary care. The demonstrators are expected to lead to a better understanding of the level of benefit associated with such developments. They will also help fast track future change by addressing key implementation barriers and providing solutions for the wider NHS and social care.

The technology to be employed by the pilots will include a mix of telecare, telehealth and information integration. Sites will procure their own telecare and telehealth devices from the NHS PASA framework (see Case 5).

In addition to the main programme, the demonstrator sites are running additional pilots tailored to their own needs. In Cornwall this will involve recruiting 7500 for 'light touch' telehealth delivered via telephone support to patients and in Newham, the project hopes to tackle high rates of diabetes by offering telehealth via mobile phones to around 1000 patients.

Key features / learning points
• this will be the largest single test-bed to date
• the approach to setting up, monitoring and evaluating the trials to provide learning points for others

Sources:
http://www.integratedcarenetwork.gov.uk/icn/index.cfm?pid=105&catalogueContentID=850
Cornwall trials: http://212.104.147.54/media/pdf/0/m/Newsletter3__Dec_07.pdf

Exhibit 27: Case 4: The Law for the promotion of independent living and help for dependent individuals (Spain)

Description of the measure

The Law for the promotion of independent living and help for dependent individuals (Ley de Promoción de la Autonomía Personal y Atención a las Personas en Situación de Dependencia) from November 2006 establishes a new approach in this field, including public-private partnership approaches. It includes within its scope, amongst other aspects, tele-assistance (art.22), like telecare service, homecare service and day and night care centre service.

With this law coming into force, the government will provide in this pre-funded tax-based system more than 12.638 million euros to guarantee benefits and services of the dependence system, until 2015. In total, 66% is public funding, 33% of general administration of the government and 33% of autonomous communities, and the other 34% comes from private funding.

The provision of these services, though as yet uncertain, depends on the degree of dependency and on assessment of care needs, and also on the economic capacity of the beneficiary, for which a structure of co-payments is defined according to income and financial assets. It is not yet possible to say how the tele-assistance system will be integrated in the whole program and what the user cost will be.

Key features / learning points
• The development of the National Long-Term Care System is one of the political reforms of major relevance to the health and social care field
• extent of forecasts evaluating its likely economic effects
• interesting co-ordination mechanisms between health and social care services and among ACs.

Sources:
http://www.imsersomayores.csic.es/productos/dependencia/documentacion.html
http://www.hpm.org/en/Surveys/CRES_Barcelona/10/Longterm_Care_System_Implementation_in_Spain.html

> **Asigurarea de fonduri pentru inovare catre TIC orientat pe domeniul traiului independent si al ingrijirii persoanelor in varsta si/sau cu dizabilitati.**

Exemplu:

Exhibit 4-28: Case 5: iWell and FinnWell (Finland)
Description of the measures
iWell was a technology programme operated by Tekes, the National Technology Agency of Finland, from 2000-2003. The objectives of the programme were to:
• develop services and products
• support and maintain citizens' health by voluntary follow-up of 'life functions'; this included lifestyles, fitness, corporate wellness and eHealth solutions
• support the independent living of all citizens, the elderly and disabled, as well as those suffering from a long-term disease
• encourage companies and service providers to direct their products and services to senior citizens and health markets
• stimulation of domestic markets, new modes of operation and corporate group activities
• active follow-up on international markets, joint activities.
The emphasis was on taking ICT technology and solutions that were originally developed for production, logistics and construction sectors and turn them into well-being applications. The aim was to provide Finnish companies with a competitive edge in the expanding global market for well-being technology. Research projects in the field were also funded as part of the programme, but the emphasis was on supporting activities that were close to the market. Projects were part-funded, with Tekes providing 110 FIM (20 MEuro) of a total programme size of about 250 million FIM (45 MEuro).
FinnWell is a five-year (2004-2009) technology programme of the National Technology Agency of Finland, Tekes. Its objective is to improve the quality and profitability of healthcare, and to promote business activities and export in the field. Three main themes will be addressed by the programme: development of technologies for diagnostics and care; development of IT products and systems that support care, follow-up or prevention of illnesses; development of the operational processes of healthcare. The estimated overall value of the programme is 150 million euro, of which Tekes will invest about half and the participants in the programme fund the other half. Independent living and home care services for older people are just one area being supported, amongst many others.
Key features / learning points
• the clear-linkage of industrial and welfare objectives, and the recognition of the synergies between these
Sources:
http://akseli.tekes.fi/opencms/opencms/OhjelmaPortaali/ohjelmat/iWell/en/etusivu.html
http://akseli.tekes.fi/opencms/opencms/OhjelmaPortaali/ohjelmat/FinnWell/en/etusivu.html

> **Colaborarea public-privata in asigurarea de fonduri de cercetare si dezvoltare.**

Exemplu:

Exhibit 429: Case 6: TRILCentre (IE)
Description of the measure
The Irish Industrial Development Authority (IDA) and Intel Corporation are jointly investing approximately 20 MEuro in a Technology Research for Independent Living (TRIL) Centre over a period of three years to collaborate with several leading Irish universities in creating one of the largest research efforts of this type in the world. TRIL is a virtual centre that brings together world-class industry and academic experts who are inventing and testing new technologies with older people, and their families, to support them in continuing to live independently. The Centre will focus on three key areas: improving social health and community engagement for older people, detecting and preventing falls in the home, and helping those with memory loss to maintain their independence.
TRIL operates as a coordinated collection of research projects addressing the physical, cognitive and social consequences of ageing, all informed by ethnographic research and supported by a shared pool

of knowledge and engineering resources. It is a collaborative effort combining Intel personnel and researchers from Irish universities and hospitals in multi-disciplinary teams. Its mission is to discover and deliver technology solutions which support independent ageing, ideally in a home environment. From the industrial development perspective TRIL is expected to have a high strategic value to Ireland in terms of collaborative work between leading academic institutions and Intel, enhancing skills development, knowledge acquisition and making Ireland highly competitive within Europe and the world in this field. Ireland has an active, high-quality research sector in the healthcare domain including bio-engineering and bio-informatics. The TRIL Centre is expected to build on this and position Ireland as a centre of excellence for this type of research in Europe.

For Intel, the TRIL Centre is part of a wider global approach by the company to build on its current U.S. ageing research and expand its understanding of the social and cultural differences of the ageing demographics of Europe – ensuring the development of the most appropriate technologies suitable for a wider multi-cultural audience. Intel recently formed the Health Research and Innovation Europe (HRIe) team, their first health research innovation resource outside the U.S., based at Intel's European manufacturing headquarters in Ireland.

Key features / learning points
• public-private partnership to promote research / RTD
Sources:
http://www.trilcentre.org/

➢ **Achizitii publice.**

Exemplu:

Exhibit 4-30: Case 7: National Framework Agreement for Telecare (UK)
Description of the measure
The National Framework Agreement for Telecare is perhaps the most developed approach in this field internationally. Apart from its role in facilitating market take-off and development it has also been judged to be of a high quality in its own right - the developer's, the National Health Service's Purchasing and Supply Agency (NHS PASA) telecare team, won the UK's Chartered Institute or Purchasing and Supply (CIPS) supply management award in 2007 for best public procurement project, acknowledging their work on telecare.

Procurement is referred to in 'Building Telecare in England' as a key element in the Department of Health's vision, with local authorities being encouraged to follow best procurement practice. To support this, NHS PASA established a specific project management group to deliver the procurement solution and sourcing activity required for telecare. A restricted procedure advertisement was placed in the OJEU on 22 November 2005. In addition to the standard procurement activities to set up the framework agreement, parallel activities included stakeholder engagement and consultation (through workshops and focus group with the intended users - local authority commissioners) to develop the evaluation and award criteria; data gathering exercise to develop understanding of marketplace and to benchmark existing practices; research exercise to understand both the supply/product and customer/demand bases.

The agreement covers the following modalities:
• Telecare / community alarms (Equipment to assist in reducing accidents and incidents in the home; Home activity, lifestyle and environmental monitors; Integrated systems for Telecare and healthcare; Community (social) alarms)
• Telehealth/medicine (Blood pressure monitoring; Blood glucose monitoring; Cardiac arrhythmia monitoring; Asthma monitors; Home personal medical assistant units; Integrated health monitors; Medication reminder systems).

In addition to telecare equipment, the national framework agreement also includes relevant installation and maintenance services for equipment, monitoring and response services. There are currently 14 suppliers covered in the agreement.

Entities that can access the agreement include: local authorities; social care; NHS trusts, strategic health authorities, collaborative procurement hubs and supply management confederations; housing organisations / associations; voluntary and/or charitable organisations; community equipment services; independent sector providers (third parties); non-departmental bodies charged with delivery of health and social care/services; these organisations and their equivalents in England, Scotland,

Wales and Northern Ireland.
Key features / learning points
Most comprehensive example of a framework agreement for public procurement in this area
Source:
National Framework Agreement for Telecare. NHS Purchasing and Supply Agency. Contract for June
2006 to May 2102. http://www.pasa.nhs.uk/PASAWeb/Productsandservices/Telecare/NFA.htm

2.2. Finantarea continua si alte mecanisme suport de piata.

Se au in vedere mecanismele posibile de finantare dupa ce piata a fost consolidata.

Demarcarea sectoriala.

In ceea ce priveste asistarea persoanelor in varsta (independent living /home care) cu ajutorul mijloacelor oferite de TIC este important a se stabili ce fel de servicii si produse trebuie asigurate. Se impune a se face distinctie intre serviciile care privesc aspectele medicale, aspectele sociale si necesitatile care se refera la locuinta. Liniile de demarcatie intre acestea sunt difuze.
O clasificare de baza poate face distinctie intre:
- **teleingrijire** (telecare),
- **telesanatate** (telehealth),
- **eSanatate** (eHealth),
- **tehnologie de asistare** (assistive technology) si
- **case inteligente** (smart homes).

Teleingrijirea poate fi definita drept monitorizarea continua, automata si la distanta a urgentelor si a schimbarilor modului de viata in timp, in vederea gestionarii riscurilor asociate cu vietuirea independenta.
Astfel, fondurile pentru teleingrijire se asteapta a fii asigurate de catre domeniul aigurarilor sociale (*social care domain*).

Telesanatatea inseamna furnizarea de "ingrijire a sanatati" la distanta, folosind mijloace de comunicatie electronice, de catre clinician catre utilizatorul de servicii. De exemplu, un serviciu care asigura masurarea parametrilor vitali ai subiectului aflat la domiciliu si transmiterea acestora via unei monitorizari de tip telesanatate catre clinician.
Este de presupus ca fondurile pentru telesanatate sa fie asigurate de catre domeniul sanatatii publice.

eSanatate poate fi definita ca " servicii de sanatate, informatie si educatie furnizata sau perfectionata cu ajutorul internetului sau al tehnologiilor inrudite cu acesta".
Din perspectiva finantarii trebuie facuta o distinctie intre activitatile desfasurate de catre utilizator, care il privesc personal, si interactiunile formale utilizator-clinician (ex. teleconsultatii si "vizite-web"). Primele pot fi finantate de catre sistemul public de sanatate, iar ultimele in cadrul unui sistem de rambursare, care se aplica in relatie cu consultatiile de sanatate.

Tehnologia de asistare poate fi considerata ca sistemul tehnologic independent de dispozitive care asista activitatile pentru traiul de zi cu zi.
Finantarea poate fi asigurata de catre sistemele care privesc persoanele cu dizabilitati si sau sistemul de asistenta sociala.

Casele inteligente se incadreaza in categoria de sisteme de retele si control bazate pe TIC, care opereaza la nivelul locuintelor, adesea fiind conectate cu servicii externe.
Finantarea se asteapta a fi facuta din domeniile: serviciilor pentru locuinte, serviciilor de asistare sociala sau ale serviciilor de asistare a persoanelor cu dizabilitati.

Modele de finantare.

Acestea sunt bazate pe:
- fonduri publice, rezultate din colectarea de taxe;
- asigurari sociale de stat;
- asigurari sociale private.

Fondurile pot fi directionate catre:
- beneficiarii serviciilor;
- furnizorii de servicii.

Exemple de abordari si scheme de finantare:

Marea Britanie ofera cele mai avansate modele in aceste privinte:

Exhibit 31: Case 8: Direct Provision of Telecare services - emerging framework (UK)
Description of the approach
Following a build-up period in 2006 and 2007, supported by the Preventative Technology grant, telecare and some telehealth services will begin to be mainstreamed by local authorities and their partners in the UK in 2008. Currently, charging systems in operation appear to be quite variable across the local authorities, reflecting both differences in the maturity and degree of mainstreaming of their telecare activities to date, as well as differences that pertain across the authorities in relation to charging for social care (and community alarms) more generally. Against this background, the Care Services Improvement Partnership (CSIP) has examined issues of commissioning and charging for telecare with a view to establishing an appropriate and consistent basis across the local authorities.
One important issue concerns who the telecare services should be offered to, with CSIP pointing to the need to get the balance right between various possible client groups, such as those who are eligible for home care services because of identified current needs, targeted efforts addressing particular groups (e.g. falls, dementia support), those who might be targeted for preventative inputs (including housing related) and those who may be users in a self-care or self-directed capacity.
At present, it seems that the majority of social care local authorities provide telecare for people with levels of assessed social care need in the 'critical/substantial' category (according to the social service eligibility assessment framework, Fair Access to Care Services - FACS). However, the new requirements for integrated needs assessment and commissioning approaches between the local authority social (and housing) services and the local health services (Primary Care Trusts) under the Local Government and Public Involvement in Health Act (2007) will mean that telecare should become more widely offered for preventative purposes as well.
According to *Building Telecare in England* the following charging principles should apply. Where, as a result of a community care assessment, telecare equipment is provided by a local authority as an aid for the purposes of assisting with nursing at home or aiding daily living, it should be provided free of charge. A charge may be made for the service elements (revenue) of telecare.

Charging should be in line with local Fairer Charging and Fairer Access to Care Services (FACS) policies. Where it is part of the local strategy to provide telecare packages to people who are not assessed as requiring them as an aid for the purposes of assisting with nursing at home or aiding daily living, for instance as a preventative service, a charge can be made for the equipment and the service (revenue) elements. In these instances the FACS means test can be used. Where telecare is part of a joint package of health and social care, providers will need to agree their respective responsibilities and charge accordingly.

Within this overall framework, charging is a local decision and local authorities have powers to charge for certain social care services such as telecare. There is considerable variability in the approaches adopted by local authorities who offer telecare as a mainstream service.

Key features / learning points

• co-payments at different levels may be required depending on assessed need and/or income
• different financing approaches / levels for equipment and service elements of telecare
• different financing for those with (substantial) already developed need as opposed to those where the objectives would be more preventative

Sources:

Building Telecare in England, DH, July 2005; CSIP Telecare eNewsletter, January 2008 (1)

Exhibit 32: Case(s) 9: Examples of local authority approaches to telecare provision (UK)

Description of the approaches

Lancashire

Lancashire Telecare is run by telecare service providers that administer and run the service independently of the local authority. The Telecare Service involves full installation of equipment, monitoring, maintenance and the emergency response service. In addition, local wardens visit the user every month to check the monitors are working and the person is comfortable using the equipment.

People can receive the service directly on a private self-funding basis or be referred by adult social care services, occupational therapists and community nurses, district councils and housing associations. Lancashire County Council commissions the service in cases where it is judged to improve the lives of its service users and may include the charges within existing packages of care (depending on clients' financial circumstances). The service is provided following an assessment. The Council has no involvement in the Telecare service for those who pay directly for Telecare and who have not qualified to receive Telecare as part of a Package of care.

The service will be available free of charge to many people who are currently eligible for social services as part of their social care package to supplement their existing care provision such as home help. This will depend, however, on the individual's financial circumstances. If, following a social care assessment, an individual does not meet the criteria, the Telecare equipment can still be installed and provided on lease from the local service provider.

For existing Lancashire County Council service users that have been assessed as also needing Telecare, the council may include the weekly cost of Telecare (currently £8.86, a little under 12 euro) within their existing package of care (depending on financial circumstances). For those who are not a Council social care service user and decide to get the Telecare service privately, there is a weekly charge payable directly to the local Telecare service provider.

Source: www.lancashire.gov.uk/telecare

Warwickshire

The cost of the telecare equipment, installation and maintenance is provided free of charge. This cost is met by Warwickshire County Council, Adult Health and Community Services. The equipment remains the property of Warwickshire County Council and should be returned to the telecare service provider when no longer needed.

There is no charge for the telecare service for the first six weeks. After this time: if the client's needs are eligible to be met by the Adult Health and Community Services, they will carry out a financial assessment of ability to pay for the telecare service. This takes account of other services that they may already receive such as Home Care. In such cases the telecare service will form part of the client's Assessed Package of Care. Those in this category receive an invoice from WCC for any charges that they have to pay. The financial assessment may determine that they do not have to

pay any charge for the telecare service, and therefore they will continue to receive the service free of charge after the initial six week charge free period has expired.

For those with less serious needs, the charge for the service will be £4.50 (about 7 euro) per week after the initial six week charge free period unless they are in receipt of Housing Benefit or Council Tax Benefit. Those in receipt of either of these benefits will receive the telecare service free of charge after the initial six week charge free period.

http://www.warwickshire.gov.uk/web/corporate/pages.nsf/Links/F62CE18D0D676FD4802573AA00 4B849B

Case(s) 9 (contd.): Examples of local authority approaches to telecare provision (UK)

Description of the approaches

Mole valley

There are two schemes running in the area and they are designed to complement each other. One is the PTG Telecare scheme, which offers, after assessment, suitable sensors to an individual to assist them to live more independently at home. The sensors when linked to a community alarm will provide daily 24 hour unobtrusive monitoring of the client's safety. This will act as a reassurance to them and their family, friends or carers.

The second is the CAT (Community Alarm Telecare) hospital discharge scheme, which offers a community alarm and pendant free for the first 12 weeks to those aged 65 and over (in Elmbridge, Mole Valley, Spelthorne and Woking there is no age restriction) who do not already have the service.

The basic alarm and pendant, which has been available for more than 20 years, will be charged at the current weekly fee by whichever Borough or District the client lives in. As a guide they should expect to pay in the region of £3.60 - £3.70 (5.40 - 5.60 euro) per week for this, apart from those eligible for the CAT scheme above, who as already stated receive the first 12 weeks free.

In the North West, North East & South East Surrey areas, due to the Government funding the PTG Telecare scheme, the additional sensors will be free to all clients for the first 12 weeks and after that will attract a fee of £1 per week, in addition to the basic alarm cost above, irrespective of the number of sensors installed. For smoke detectors some areas are charging less than £1 or providing them free.

Charging is not means tested and referral to the service can be via the health or social services, or by the individual themselves.

http://www.molevalley.gov.uk/index.cfm?articleid=266

Cumbria

There are two parts to the cost of Telecare:

• The cost of the Telecare equipment, its installation and maintenance - this is provided free of charge. This cost is met by Adult Social Care as the Telecare equipment is provided on a loan basis and remains the property of the council.

• The weekly service charge for the call handling centre and the mobile response service (if this is available in the area one lives). This charge varies but is around £9 (13.50 euro) per week. The client may be asked to contribute to this cost.

Clients having Telecare may well also be receiving other services such as home care. The weekly service charge for Telecare will be added to the cost of other services like home care to arrive at an overall care cost. A financial assessment (or means test) is then conducted to work out how much the client will be expected to pay towards the cost of their care. The amount they pay will include a contribution to the cost of the Telecare service charge.

Key features / learning points

• how telecare eligibility and charging is being positioned within the overall service provision framework

• different approaches to needs assessment, user charging and so on

• different charging principles for the equipment and service elements.

Exhibit 33: Case 10: Social alarm service (Germany)

Charities like Caritas, Diakonie or German Red Cross and Emergency Medical Services like Johanniter, Malteser, Arbeiter Samariter Bund, local authorities, hospitals and private providers offer social alarm services. They have together 350.000 users which means that at a minimum 2.9 % of people over 65 years in Germany use social alarm services.

Besides the traditional social alarm service, many social alarm service centres also use their technical and personal 24hour infrastructure to offer additional services, which are currently still not very much demanded.

The social alarm systems and services are not financed if specific reasons are not established. Social alarms are not listed in the aid catalogue of the health insurances, which is a legal basic of the funding. Based on SGB XI, §78 Abs. 1 also the care insurance reimburses social alarms only if a high-maintenance level was assessed by the medical service of the care insurance (MDK) and in addition if the person lives alone, life-threatening situations are to be expected and this person would be not able to initiate an emergency call using a standard telephone. Even if the MDK agrees, only the system costs and not the social alarm service costs will be paid.

Exhibit 34: Case 11: Andalusian Telecare Service (Spain)

The Andalusian Telecare Service is a service of the Andalusian Regional Government (Junta de Andalucía). Older people can use this service if they have the Andalucía Junta sesentaycinco Card, an electronic chip card. This is made available free of charge by the Regional Ministry for Equality and Social Welfare of the Andalusian Regional Government to people over 65 years of age, through the Andalusian Social Services Foundation. Users can get the Andalucía Junta sesentaycinco Gold Card if they are older than 65, live in Andalusia and get less than 75 per cent of the minimum wage.

The sesentaycinco Card gives a discount to the user of 40%, 80% and up to 100% to the telecare service. The telecare program includes immediate personalized care, mobilization of resources in the event of an emergency and regular contact and personal monitoring. The user can also use other home services like free pharmacy home delivery or telephone management of home procedures.

It is not clear what the exact user costs are to use the telecare services of Andalusia.

Exhibit 35: Case 12: ACTION (Sweden)

Assisting Carers using Telematics Interventions to meet Older people's Needs (ACTION) began in 1997 with a three-year EU funded project within the Fourth Framework, Telematics Integration for Disabled and Elderly sector. ACTION now exists in five municipalities in Sweden. It includes a information and educational program and a videophone system to maintain contact with health and social care staff and other families in a similar situation to their own.

The second program, built on the original ACTION service, is the ACTION Living with Dementia support programme which is designed especially for those older people with early stage dementia and their families. It includes also the information and educational programme (multimedia programme) which contains different computer exercises from the Lexia cognitive training programme. Moreover a twelve week support group for older people with early stage dementia and their family members is offered. Members meet up on a weekly basis for three hours.

The ACTION-service is offered to municipalities at a fixed price of SEK 2.990 (about 315 Euros) per month and user. Cost analyses reveal that there is an approximate saving for municipalities of 96 000 Swedish kronor per family per year.

Exhibit 4-36: Case 13: Smart home technology in service flats (Norway)

The National Insurance Administration administers the system of assistive technology or technical aids in Norway. Disabled persons may apply for such support, which they might receive, free of charge, if the criteria for support are fulfilled. So far, smart home technology is not defined as assistive technology by the National Insurance Administration, whereas several devices that can be integrated in the smart home are. Examples are environmental control systems and some alarms.

About 20 of the 434 municipalities have built flats with smart home technology.

Exhibit 37: Case 14: Smart home technology in service flats (Netherlands)

The Ministry of Health, Care and Welfare pays € 2500 – 3000 for smart home technology per apartment, in which an older person who needs home care will live independently. Only care organizations and/or housing associations who build serviced housing can ask for the allowance. Also housing associations invest, most of the time, in the flexible ICT infrastructure in houses they build for rent to their tenants.
The funding principle of the government is that only those apartments, in which older people will live, who need professional care, will be granted with full payment of the smart home technology.

Exhibit 38: Case 15: Assistive technology for home use (Denmark)

Within the scope of the Act on Social Services, municipalities are responsible for providing grants for assistive devices and consumer goods for people with long-term physical or mental disabilities when an assistive device could relieve the long-term effects of the disability to a great extent, could facilitate day-to-day home life to a great extent, or is necessary to allow the person in question to do a job.
County councils provide grants for a range of equipment including special IT-based assistive devices and assistive devices to support these. In Denmark, there is no complete list of the assistive devices that can be provided, or a list of products considered to be assistive devices. However, amendment of the law in June 1998 resulted in the division of assistive devices into three groups: general equipment, consumer goods of particular value to users with disabilities, and assistive devices.
General equipment includes products which anyone requiring them can acquire, such as ordinary beds, TVs, mattresses, chairs, telephones, etc. No grants are given for these. Consumer goods are products manufactured and sold widely in anticipation of ordinary use among the general populace, but which are of special value to people with disabilities (e.g. computers for people unable to talk). 50 per cent grants are awarded for these types of assistive devices, which then become the property of the user. Finally, we have the assistive devices category. These are regarded as products manufactured with a view to helping to alleviate the effects of physical or mental disability.
In general, assistive devices and other services provided to compensate for impairments are financed by the public sector through taxes. However, the exceptions described previously apply: for example, users themselves have to pay 50 per cent of the price of consumer goods. There is a general administration principle which states that the body granting the funding is also obliged to make the payment.
In the case of assistive devices and consumer goods for people aged under 67, municipalities and county councils pay 50 per cent of the cost each, while on the other hand municipalities pay the full amount for assistive devices allocated to people aged 67 or above. However, when the Services Act came into force in 1998, county councils – as mentioned previously – were given authorisation to allocate assistive devices and full financial responsibility for optical assistive devices, prosthetic arms and legs and hearing aids, as well as special ICT-based assistive devices.
Source: http://www.nsh.se/download/Provision_Assistive_Technology.pdf

3.   Dezvoltari Tehnologice.

3.3. Trecerea in revista a domeniului.

Acestea se refera la dezvoltarile pe termen scurt si mediu care vor influenta TIC in sprijinul traiului independent si al ingrijirii persoanelor in varsta si/sau cu dizabilitati. Se au in vedere tehnologiile care sunt deja in uz, cat si la cele care sunt in curs de dezvoltare. Datele sunt furnizate de catre un studiu efectuat de Institute for Prospective Technology Studies (IPTS)- 2005. Studiul evalueaza cerintele viitoare privind produsele si serviciile TIC ale societatii Europeene, caracterizata de un proces puternic de imbatranire. Se au in vedere aspectele tehnologice, politice, etice si sociale.

Exhibit 39: Constituents and shaping factors of independent living
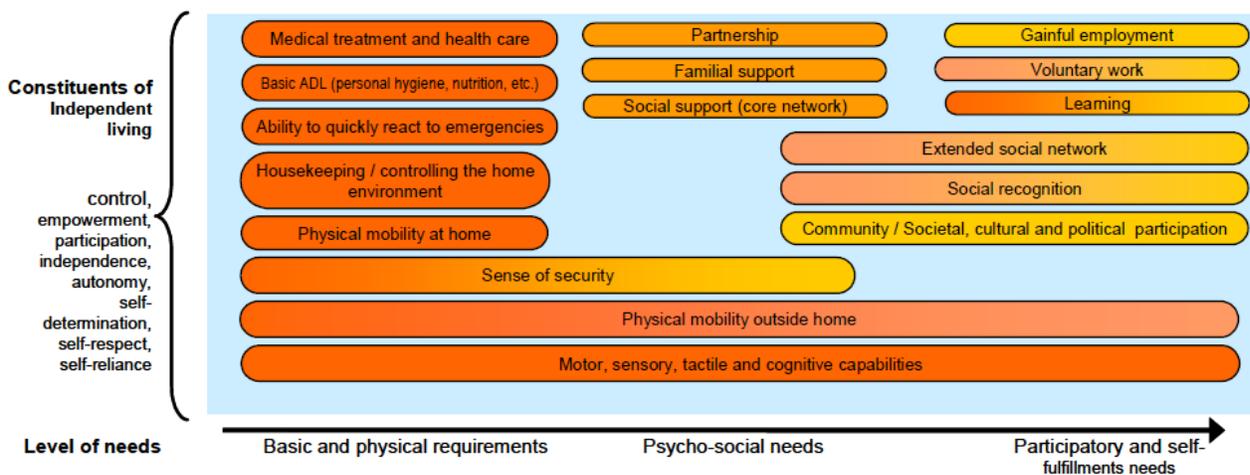
ILS – The Future of Independent Living Services in the EU Finalreport. Available at:
http://fiste.jrc.es/pages/documents/ILSfinaldraft.pdf

O perspectiva relevanta vine din partea unui studiu: "Small and smart technologies for ambient assisted living" (http://www.aal169.org/default.html), cat si dintr-o lista deschisa de teme (VDI/VDE/IT (2006):Ambient Assisted Living – European Overview Report. Available at: http://www.aal169.org/Published/Final%20Version.pdf):

-    noi materiale (polimeri);
-    micro si nanoelectronica (nanoacoperiri, organe de executie bazate pe polimeri);
-    sisteme incorporate (materiale textile inteligente);
-    tehnologie de microsisteme, inclusiv biomicrotehnologie (biocipuri, senzori pentru masurarea tensiunii sangvine, temperaturii, greutatii, respiratiei, urinei, paternului/amprentei de activitati, nutritiei, somnului, merului;
-    generarea energiei si tehnologiile de control (recoltarea/hervesting energiei);
-    interfata om-masina (tehnologii de afisare, comunicatia in limbaj natural);
-    comunicatia (ex.: body area network);
-    ...
Mai mult, o gama intreaga de aplicatii si produse a putut fi identificata:
-    ingrijirea sanatatii, dispozitive medicale;
-    geronto-tehnologii;

- stare de buna sanatate;
- servicii;
- locuinte inteligente;
- materiale textile inteligente;
- robotica;
- electronica de consum.

Bibliografie:
http://www.aal169.org/default.html

 VDI/VDE/IT (2006):Ambient Assisted Living – European Overview Report. Available at:
http://www.aal169.org/Published/Final%20Version.pdf

In acest context se poate face urmatoarea clasificare a aplicatiilor care apar datorita TIC:
- informare de tip sfat/consultatie;
- tehnologie electronica de asistenta (control inteligent al incalzirii, usi automatizate, aparate care avertizeaza in legatura cu momentele pentru administrarea unor medicamente);
- monitorizare pentru siguranta si securitate (senzori, receptor central wireless pentru avertizare inundatii in casa, scurgeri de gaze, usi neincuiate, incendii, prezenta CO etc)
- monitorizare personala (detector de cadere, semnalizare indepartare de casa, indicatori de activitati anormale);
- monitorizarea parametrilor vitali (tensiune, puls, temperatura etc).

3.2.Tehnologii in uz sau gata de a fi utilizate.

Dispozitive personale.

Senzori fizici sau biochimici:
- invazivi: stimulatoare implantate pentru creer (Parkinson, epilepsie, depresie), monitorizare batrani;
- non-invazivi: monitorizare glucoza, activitate cardiaca, respiratorie (optici, acustici, electrici), implantati in imbracaminte (pezoelectrici), senzori bazati pe frecvente radio (miscari ale bustului, masurari de impedante: nivel de glucoza), monitorizare multi-parametrica, fuziune de date, analiza complexa de date.
- miniaturizare: MEMS (Micro-Electro-Mechanical-Systems), WIMS (Wireless Integrated MicroSystems).

Dispozitive pentru asistenta.

- tehnologia vorbirii: recunosatere, sinteza, text to speech, speech to text, control dispozitive prin

  voce, avertizare vocala;

- recuperarea obiectelor pierdute/ratacite;.

Servicii de alarmare sociala.

- activarea "butonului de panica" de catre subiect;
- activarea automata a "butonului de panica", sisteme pasive.

Sisteme de monitorizare a subiectilor la domiciliu.

In mai multe tari din Europa au fost lansate proiecte pilot:

- UK (Liverpool City Council Telecare Pilot),

- Italia (Regiunea Veneto- sistemul Tesan),

- Suedia (Old@Home initiative- proiect complex),

- Danemarca (CareMobil68) etc

Sisteme de monitorizare a subiectilor la domiciliu.

Ideea consta in integrarea facilitatilor privind "casa inteligenta" cu cele de ingrijire a persoanelor varstnice sau cu dizabilitati.

4. Situatia din Romania. (Sugestii pentru subiectele de investigat**)**

4.4 Identiuficarea structurilor care au responsabilitati privind persoanele varstnice bolnave si/sau a celor cu dizabilitati (Ministerul Sanatatii, Ministerul muncii si solidaritatii sociale),

4.5 Studierea legislatiei in vigoare privind finantarea activitatilor legate de persoanele varstnice bolnave si/sau a celor cu handicap,

4.6 Identificarea initiativelor/proiectelor privind asitarea persoanelor varstnice bolnave si/sau a celor cu handicap, cat si a rezultatelor obtinute; a se vedea ANEXELE (Cateva dintre initiativele romanesti identificate).

ANEXE:

Anexa 1.

"**SISTEM COMPLEX, PE SUPORT NGN, PENTRU TELEASISTENTA, LA DOMICILIU, A PERSOANELOR IN VARSTĂ" - TELEASIS**

Proiectul TELEASIS propune realizarea unui sistem care să permită teleasistența persoanelor în vârstă, la domiciliul acestora, atât din punct de vedere medical cât şi din punct de vedere social.

Scopul realizării unui astfel de sistem este acela de a permite *implementarea* şi dezvoltarea şi în România, a *serviciilor de asistență medicală şi socială* a persoanelor în vârstă, la domiciliul acestora.

Dezvoltarea unei *componente de teleasistență*, în cadrul unui serviciu de asistență, conduce la *optimizarea funcționării* acestuia, în sensul de a oferii servicii personalizate funcție de anumite condiții şi cerințe concrete - oferite de latura de telemonitorizare, *optimizarea costurilor* aferente prin implicarea focalizată a personalului medical sau de asistență socială, prin *optimizarea tratamentului* unor boli cronice, precum şi la *creşterea operațiilor de îngrijire* la domiciliu. Pe de altă parte, se poate satisface cerința unor persoane în vârstă de a locui în propria locuință şi nu la un azil, contribuind la prelungirea perioadei active prin implicarea acestora în activități zilnice de autoîngrijire sub asistență distantă, precum şi la optimizarea managementului personalizat al modului de viață a persoanei teleasistate.

La proiectul TELEASIS putem distinge trei componente principale:

✓ *Componenta hardware*, ce constă din realizarea unui modul individualizat de teleasistență - MITAS, ca interfață pentru dispozitive medicale sau senzori de mediu utilizați pentru

✓ telemonitorizare, interfață cu suportul de comunicații, internet, rețele fixe sau mobile, interfață pentru livrarea informației către beneficiar pe suport PC sau PDA sau TV.

- ✓ *Componenta software*, ce constă din realizarea aplicațiilor software necesare pentru desfășurarea activității, la nivel de sistem, de către personalul de asistență și/sau medical, aplicațiile dedicate persoanei teleasistate, pentru îndrumare, informare, implicare într-o activitate specifică. Se va realiza și o bază de date cu informațiile necesare pentru desfășurarea activității de teleasistență.
- ✓ *Componenta de sistem*, ce constă în realizarea unui sistem compus din module MITAS, un centru dispecerat de teleasistență (call center), conectat la centre de asistență medicală sau socială. De asemenea, sistemul va permite persoanelor teleasistate să comunice, audio și/sau video cu alte persoane din rețea, pe suportul dedicat sistemului.

La realizarea sistemului se va lua în considerare utilizarea *suportului oferit de rețele NGN* (rețele de generația viitoare), care vor permit dezvoltarea unor astfel de aplicații. Proiectul se va finaliza cu un *model experimental*, pentru *unitatea MITAS* și *Centrul dispecerat de teleasistență*, un *sistem pilot* pentru a experimenta soluțiile propuse și un *ghid* cu informațiile necesare pentru a implementa și dezvolta un astfel de sistem. Pentru realizarea proiectului s-a format un consorțiu format din un institut de cercetare din domeniul comunicațiilor, patru universități pentru aplicații hardware și software, trei IMM-uri cu componenta de cercetare/dezvoltarea în activitatea lor, precum și personal medical și de asistență socială.

Beneficiarii principali sunt persoanele de peste 60 de ani care își doresc o viață decentă în ultima perioadă de viață, în mediul unde locuiesc, în condițiile în care li se poate oferi o asistență medicală și socială de specialitate care să contribuie la un anumit nivel de viață.

Anexa:2

Abstract

MULTIMEDIA PLATFORM FOR COMPLEX MEDICAL TELESERVICES IMPLEMENTATION
Sorin PUSCOCI – Project Manager
sorp2006@gmail.com
www.telmes.ro
The TELMES project is following to develop of a **secure multimedia system** dedicated to implement of the tele-services for the medical consultation.The project will be ended with a **pilot model for a regional telecenters network**, to which some local telecenters will be connected, and having as support a multimedia platform which should allow to implement some **complex medical tele-services**, in order to enhance the opportunities for medical care targetted to a large category of patients, especially for those that are in the responsibility of General Practitionners and for those in remote or rural areas. The trials on the pilot model will lead to get the necessary experience for

issuing a guide based on which the regional telecenters network and the tele-services will be extended.

The main result will be a scalable multimedia network, based on the new Information and Communication technologies that are available in Romania, and consisting from **two regional tele-centers networked, located at Pitesti (for the Arges county) and Iasi (for the Iasi county)**, enabling to implement some applications from the complex medical tele-services category. A regional telecenter will enable to connect, within that county, the regional Hospital, the Diagnostic and Treatement Center and, also, the local network (local tele-center) of GPs and patients. This tele-services network will be managed by a Management Center located in Bucharest. The developed system will include a capability for transmision and acquisition of medical records and for remotelly updating of the medical regional database that will be developped within the project.

Therefore, the regional telecenter will be a support for the **developping of a regional medical database**, that should serve for a complex range of teleservices such as **teleradiology, telepathology, teleconsulting, telediagnosis, telemonitoring** and it also should be a center for continuous training tasks, by **telelearning services** or **services for the patients' informing/educating**. In order to protect the **confidentiality of the patient information** and the security of the multimedia communications, the proposed system will include a **security architecture** based on **mechanisms for data encryption, authentication and the acces control**. To develop of the **TELMES** platform, it is recommended the using of a mixed infrastructure fixed-mobile-Internet, by applying the **modern broadband access technologies on fixed or mobile access.**

Anexa: 3

Abstract
TELEMONITORING SYSTEMS BASED ON MOBILE COMMUNICATION NETWORKS, WITH APPLICATIONS IN TELEMEDICINE
Sorin PUSCOCI – Project Manager
sorp2006@gmail.com
Telemedicine, broadly defined, represents the transmission of medical services at a distance, by means of communications technologies. **Telemonitoring,** meaning **tracking the evolution of some measures from a distance**, can find itself an important place in the telemedicine applications domain for the monitoring of some vital parameters of some patients. Telemonitoring has the role of optimizing the medical intervention. The patient could be monitored from a distance using multimedia technologies on mobile communications support.

This project presents the *concept, structure for telemonitoring systems, the architecture for medical telemonitoring networks, based on mobile communications*, and an Applications in cardiologic field, developed inside of an INFOSOC research contract with Research Ministry. The medical telemonitoring services are representing a very useful tool because they are precisely matching to the chronically or post-surgery cases, being an option to a very long hospitalization period, by enabling the home care possibility. Using of the medical telemonitoring enables the patients healthcare inside of a new general framework leading to the decrease of the hospitalization period by continuing of the treatment in a home environment in corresponding safety conditions.

The implementation for a telemonitoring system could be done by choosing of a suitable architecture, that should consider a lot of criteria such as:

- ✓ Defining of the purpose for which a telemonitoring system introduction is needed: post-surgery looking or the crhonical ills patients following during a limited time;
- ✓ Choosing of the configuration for the transport network, depending on the communications system features from the targeted region;
- ✓ The methodology for gathering and interpreting of the alerts issued from the telemonitorised patients;
- ✓ The method the telemonitorng date acquisition: sequential, a few times on a day according with the scheduling made by the doctor or continuous;
- ✓ The methodology for monitoring data reporting to the PTmC