



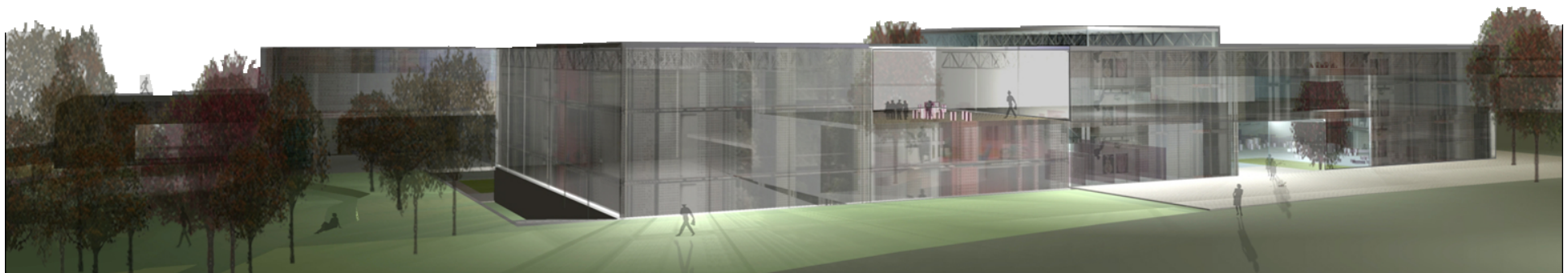
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TRACK A. Market and Economy  
15 September 2010. Odense

## Ambient Assisted Living as an emerging and tractor sector in Andalucía

Innovate the daily life,  
make innovation daily





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## A prospective impact study of the deployment of AAL based solutions in the regional industry and economic sectors

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Institute of Innovation for Human Wellbeing



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## i2BC Presentation

### Overview

We live in the Innovation Age, a time that can be considered as a new Renaissance. Thanks to the phenomenal technological advances of the last decades, in the field of information and communication technologies as in many others, we have the potential to significantly improve human wellbeing.

The objective of the **Institute of Innovation for Human Wellbeing (i2BC)** from its name in Spanish: *Instituto de Innovación para el Bienestar Ciudadano*) is to turn this potential into reality by developing solutions to daily problems and improve overall quality of life.

Our motto, **Innovate daily life, innovate life daily**, emphasizes our approach: starting from the real problems of ordinary people to develop effective, sustainable solutions that qualitatively transform people's lives, improve their wellbeing, enhance the environment they live in, and support them in their personal and professional development.

I2BC acts as a catalyst for innovation by promoting and facilitating collaborations among different actors (individuals as well as public and private organizations) and contributing to enhancing the efficiency and effectiveness of research enterprises.

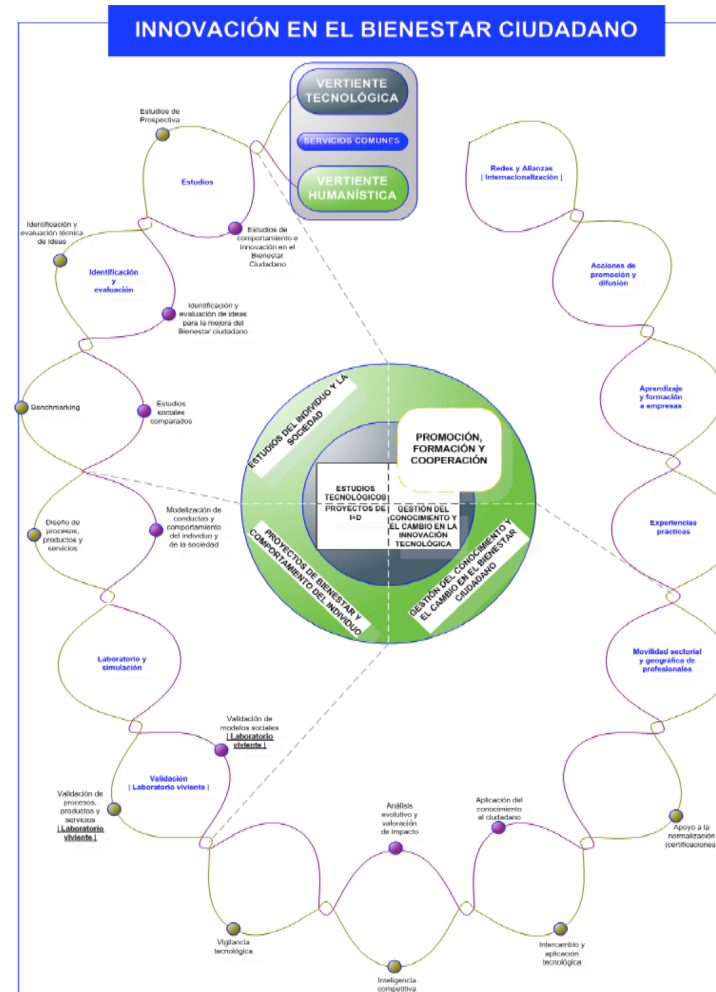
I2BC is a non-profit organization that was jointly developed by the Ministry of Economy, Innovation and Science of the Andalusia Government, the Andalusia International University and the Vodafone Foundation of Spain.



# i2BC Presentation

## Overview

The aim of the Foundation is to promoting the analysis, obtaining and application the knowledge in the conceptual areas of human welfare in Andalucía and the rest of the World, through the innovative use of information and communication technologies, generating R&D&I of new models, methods and procedures of personal development and social interaction, without forgetting the valuation, prevention and counter-measuring of the possible negative consequences of the increasing man-machine interaction



# i2BC Presentation

## In the World

I2BC's mission is to contribute to people's wellbeing globally. We believe innovation is a powerful engine behind both individual and collective human development. We believe in creating economies of scale and eliminating duplications. For this reason, we cooperate with institutions worldwide to generate ideas, proposals and projects.

● **Countries involved in ongoing projects participated by i2BC**

- |   |  |
|---|--|
|  España      |  Irlanda    |
|  Portugal    |  Italia     |
|  Holanda     |  Rep. Checa |
|  Reino Unido |  Suecia     |
|  Escocia     |  Noruega    |
|  Grecia      |  Hungría    |

● **Countries involved in new proposals**

- |   |  |
|---|--|
|  Francia     |  Canadá   |
|  Bélgica     |  Colombia |
|  España      |  Bolivia  |
|  Portugal    |  |
|  Holanda     |  |
|  Reino Unido |  |
|  Irlanda     |  |
|  Italia      |  |
|  Rep. Checa  |  |
|  Suecia      |  |
|  Eslovenia   |  |
|  Grecia      |  |
|  Chipre      |  |





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# Introduction to the study



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## A Common Place

### A mandatory template for slide 1

- **Population is ageing:**
  - Worldwide, Europe, Spain
  - Technological maturity in the current society
  - Social sensibility to promote eInclusion
  - The Silver Market is plenty of new opportunities
- **International Crisis**
  - Economy
  - Work/Unemployment
  - Social Support
  - Health Care



- **Innovation Age!!!**



## Málaga, Andalucía

### More specific questions



- How big will be the demographic impact in Andalucía?.
- How can really help the AAL solutions to aged people to remain independent and active?
- Are their daily needs solved in the real life?
- Might AAL solutions play a role for closing the gap offer/demand?
- Where are the market opportunities? Are those only for the big companies and High Tech?
- Will also contribute these technologies to the sustainability of providers of the health and social system?





## Objectives of the study

### Main Objectives

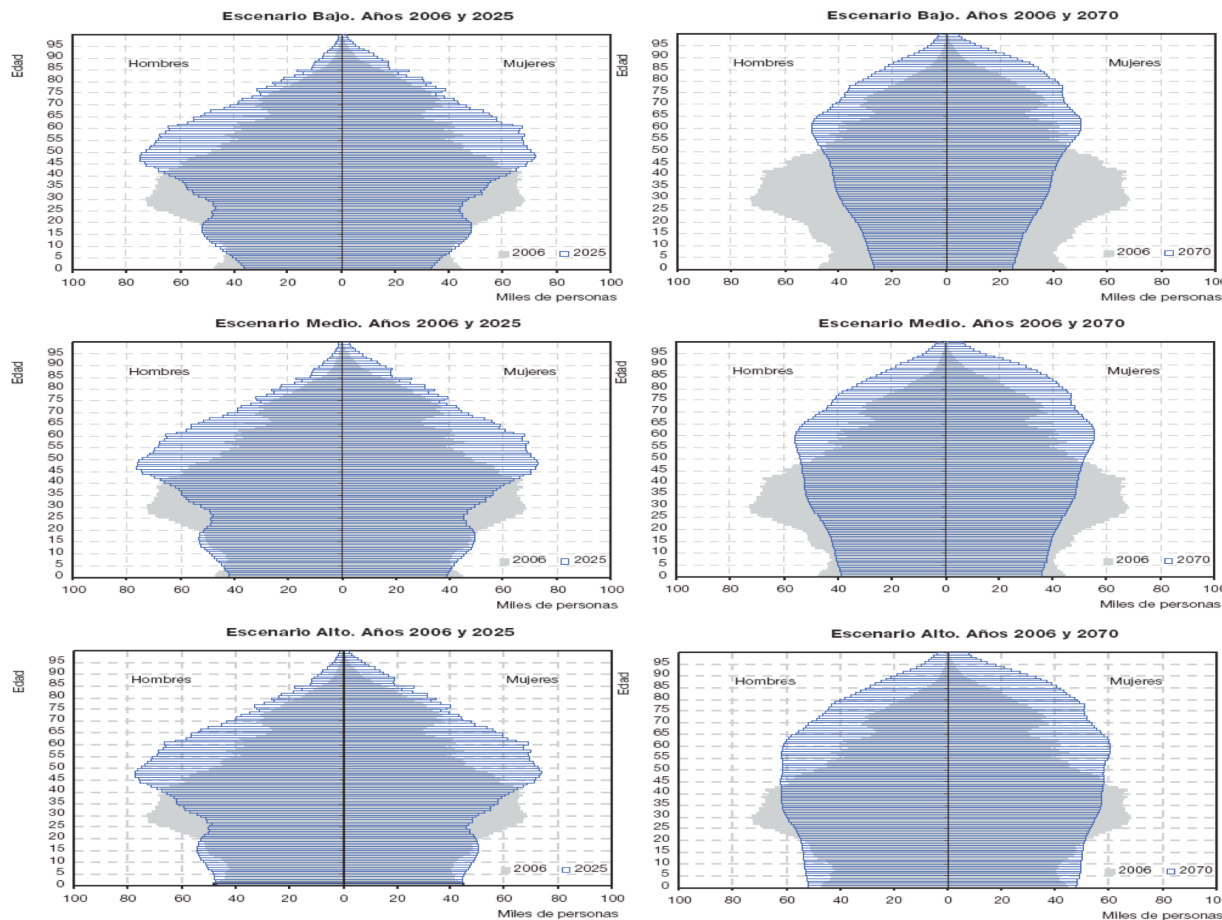
- Generate evidence about competitive positioning of Andalucía in an emerging sector
- Raise the awareness of the different stakeholders to take advantage of the new opportunities
- Widespread regional knowledge on Ambient Assisted Living Joint Program to increase dynamism in market agents

### Structure

- Future trends of demography in Andalucía
- Socioeconomic analysis and SWOT
- General needs of an ageing population
- Industry sectors impacted by ageing and AAL opportunities
- Remarks and Conclusions

# Future Trends of demography in Andalucía

## Pyramids of Population 2006-2025 and 2006-2070



- Growing rate 65+:
  - 46%
  - 126%
- Growing rate: 16-65
  - -5%
  - -9%

Source: Institute of Statistics Andalucía. Population projections 2006-2070

## Future Trends of demography in Andalucía

### Age dependency rate

	Dependencia de jóvenes: Pob 16-64 / Pob <16			Dependencia de mayores: Pob 16-64 / Pob >=65			Dependencia general: Pob 16-64 / Pob <16 ó >=65		
	Escenario Bajo	Escenario Medio	Escenario Alto	Escenario Bajo	Escenario Medio	Escenario Alto	Escenario Bajo	Escenario Medio	Escenario Alto
2006	3,8	3,8	3,8	4,6	4,6	4,6	2,1	2,1	2,1
2010	3,9	3,9	3,9	4,5	4,5	4,5	2,1	2,1	2,1
2015	3,9	3,8	3,8	4,2	4,2	4,2	2,0	2,0	2,0
2020	4,0	3,9	3,8	3,9	3,9	3,9	2,0	1,9	1,9
2025	4,3	4,0	3,9	3,5	3,5	3,4	1,9	1,9	1,8
2030	4,6	4,2	3,9	3,0	3,0	3,0	1,8	1,8	1,7
2035	4,7	4,2	3,8	2,6	2,6	2,6	1,7	1,6	1,5
2040	4,6	4,1	3,7	2,2	2,3	2,3	1,5	1,5	1,4
2045	4,4	3,9	3,5	2,0	2,0	2,1	1,4	1,3	1,3
2050	4,3	3,8	3,5	1,8	1,9	2,0	1,3	1,3	1,3
2055	4,3	3,8	3,5	1,8	1,9	2,0	1,3	1,3	1,3
2060	4,5	3,9	3,5	1,9	2,0	2,1	1,3	1,3	1,3
2065	4,6	3,9	3,5	1,9	2,1	2,2	1,4	1,4	1,3
2070	4,5	3,9	3,5	2,0	2,1	2,2	1,4	1,4	1,4

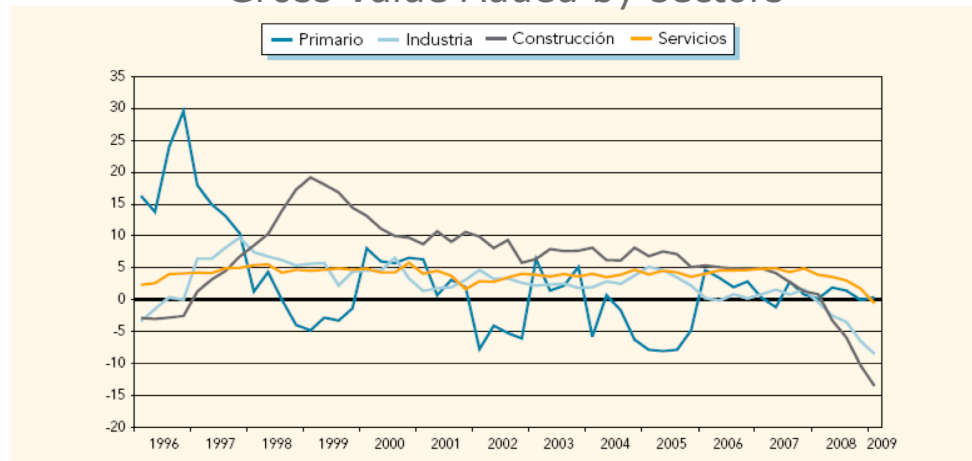
Source: Institute of Statistics Andalucía. Population projections 2006-2070

- Dependency rate of 65+ from 4,6% in 2006 to 1,9% in 2050
- (From 4 active persons per dependant in 2006 to 2 active per dependent in 2050)

# Socioeconomic environment

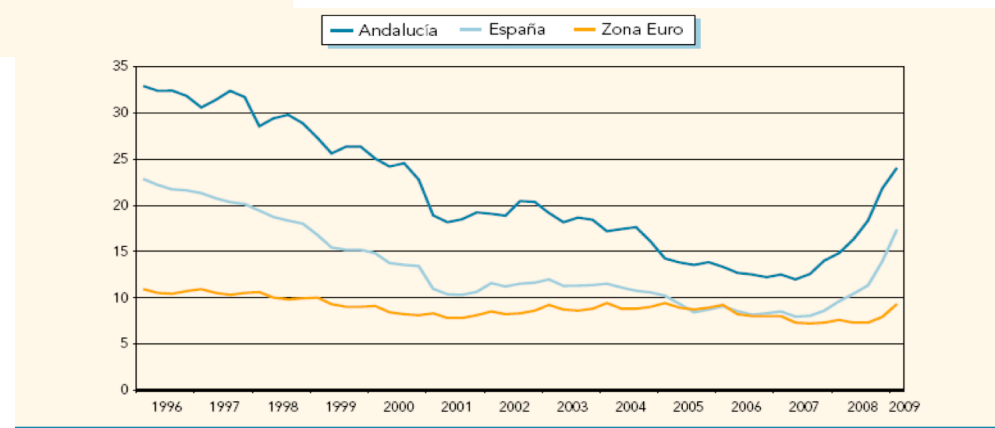
## Unemployment

- Gross Value Added by sectors



NOTA: Tasas de variación interanual de las series corregidas de estacionalidad y efecto calendario.  
Índices de volumen encadenados referencia 2000.  
FUENTE: IEA.  
ELABORACIÓN: Secretaría General de Economía. Junta de Andalucía.

- Unemployment Rate



FUENTE: INE; Eurostat.  
ELABORACIÓN: Secretaría General de Economía. Junta de Andalucía.

## Socioeconomic environment

### SW Analysis

Weakness	Strengths
<b>HUMAN AND TECHNOLOGICAL CAPITAL</b>	
High rate of unemployment	Population still young
Labour force segmented by gender and age	Increase of education levels
Not enough education of business man and directors	New business and technological culture
Not enough technology innovation capability	Cumulated capabilities and knowledge
ST system with weak links to the productive system	Increase in number of technology and innovation firms
Not enough growth in employment creation	Increasing elasticity growth/employment
	Increasing the activity of women

# Socioeconomic environment

## SW Analysis

Weakness	Strengths
<b>ORGANIZATIONAL CAPITAL</b>	
Weak productive framework	Potential for growth in GDP
Industrial concentration in sectors with low/medium technology capabilities	Tourism as a highly competitive sector
Deficit of modernization of some agricultural sectors	High rate of competitive agriculture production
Inefficiencies induced by low size of companies and scarce cooperation formulas'	Focus in emerging sectors of industry with international relevance
Orientation to regional markets	Increase of investments abroad
Crisis in traditional sectors	Increase of exports of non-traditional goods and services
<b>TERRITORIAL CAPITAL</b>	
Insufficient connexion to high capacity transeuropean networks	Significant improvements in infrastructures and equipments
Territorial unbalance in basic infrastructures	Strategy positioning
High environmental risk	Rich nature and culture resources
Weak integration in the city economy systems	Increasing contribution of urban economies
	Diversity of settlements: balanced and polinuclear city system
	Municipalities Cooperation: Mancomunidad



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## Figures and Facts



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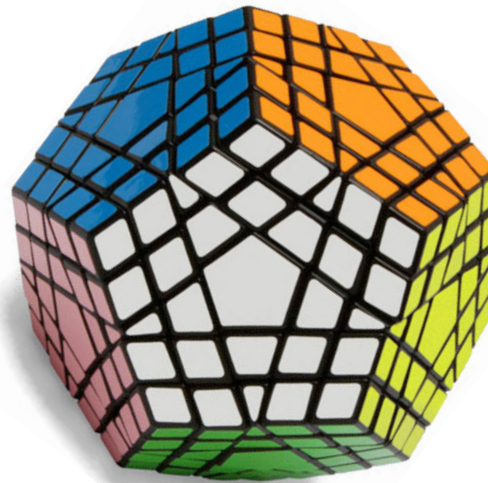


# Impact Analysis of AAL solutions

## From the demand side: new challenges

### **BASIC AND GENERIC NEEDS**

- HEALTH
- SAFETY
- INDEPENDENCY
- MOBILITY
- PARTICIPATION



### **TECHNOLOGY**

### **APPLICATIONS**

- COMPENSATORY
- PREVENTIVE
- COMPETENTIAL



## Impact Analysis of AAL solutions

From the offer side: new opportunities

HIGH	MEDIUM	LOW
Social and Health care	Construction	Aeronautics
ICT	Cultural Industry	Metal-Mechanics
Commerce	Transportation	Agro-Industry
Tourism	Social Economy	Agriculture and
Social Economy		Justice
Biotechnology		Energy and Environment
Education and Training		

# Impact Analysis of AAL solutions

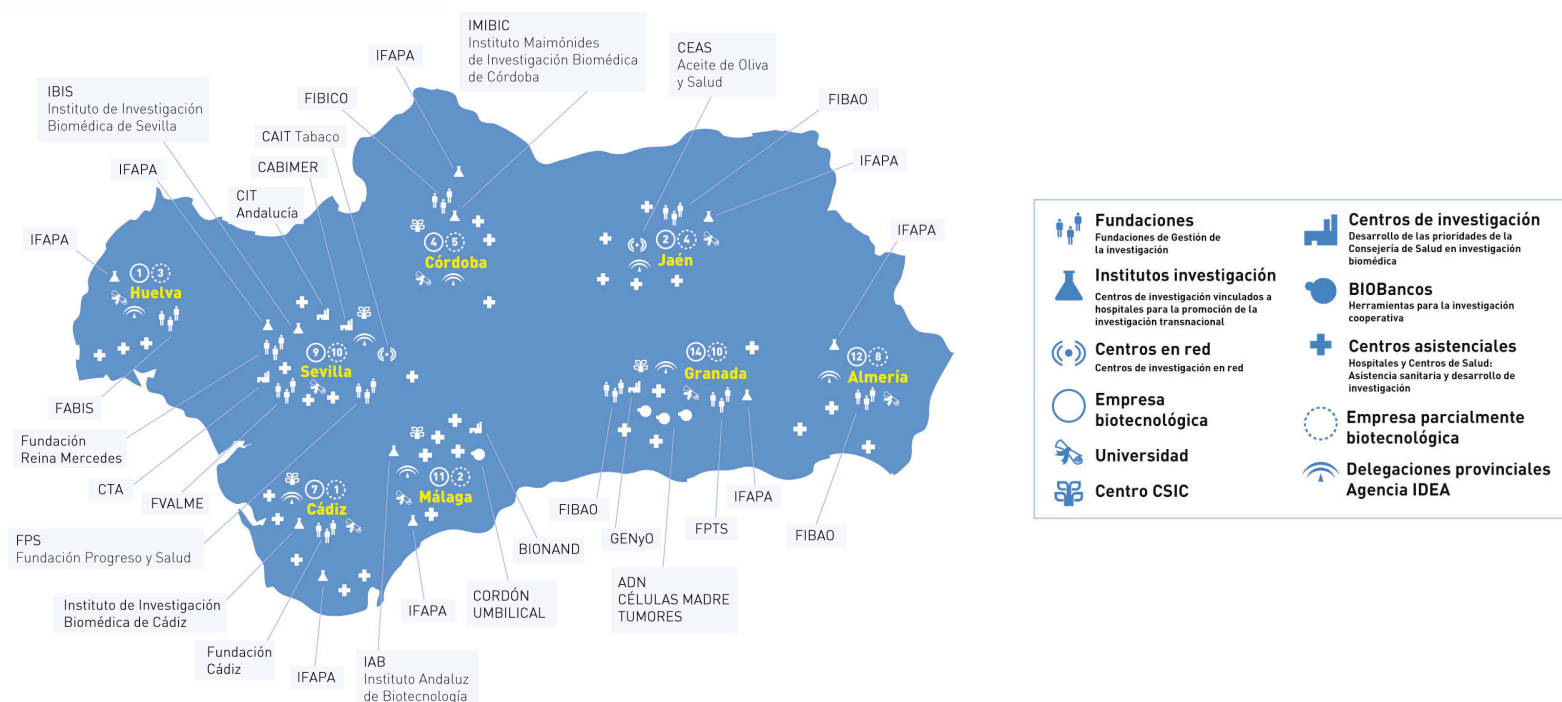
## Social and Health Care

Indicator	2008-2015	2015-2020	2008-2020
Health expenditure (public)	26,4%	12,8%	42,7%
Health expenditure (private)	26,1%	21,5%	53,3%
Pharmacy expenditure for retired persons	21,1%	14,6%	38,9%
Number of beneficiaries of pensions	19,5%	11,6%	33,3%
Number of users of public services for at home support	48,1%	23,2%	82,4%
Rate of coverage of public services for at home support	1,24	0,89	2,13
Number of elder users of teleassistance services	57,5%	26,1%	98,6%
Vacancies in Day Centres for dependent people	99,4%	35,6%	170,4%
Vacancies in Residential Centres	-1,0%	0,2%	-0,7%
Vacancies in Assisted Residential Centres	73,6%	30,2%	126,0%

# Impact Analysis of AAL solutions

## Biotechnology

Indicador	2008-2015	2015-2020	2008-2020
Number of biotech companies	107,18%	117,57%	374,77%
Workforce in biotech companies	77,24%	53,67%	180,26%
R&D Expenditure in biotech companies	72,45%	45,23%	156,69%
Number of patents of biotech companies	75,88%	40,96%	153,85%



# Impact Analysis of AAL solutions

## Tourism

Indicator	2008-2015	2015-2020	2008-2020
Total number of 65+ tourists	47,4%	23,4%	81,8%
Tourists 65+ over total	3,1%	4,9%	8,0%
Daily expenditure of 65+ tourists	17,8%	12,5%	32,5%
Touristic offer focused on 65+ tourism	37,7%	36,2%	87,5%
Expected growth in rural tourism	11,3%	6,1%	17,4%
Expected growth in cultural tourism	13,4%	7,5%	20,9%
Expected growth in employees for 65+ related tourism	34,6%	28,8%	73,4%

# Impact Analysis of AAL solutions

## Commerce

Indicator	2008-2015	2015-2020	2008-2020
Rate of annual expenditure by 65+ on food	0,04	0,03	0,07
Rate of annual expenditure by 65+ on health	0,01	0,02	0,03
Global turnover in commerce	15,9%	8,0%	23,9%
Global turnover retailers	16,8%	8,9%	25,7%
New licenses for retailers	12,1%	7,7%	19,8%
Global turnover wholesalers	12,5%	8,1%	20,6%
New licenses for wholesalers	7,9%	5,2%	13,1%
Purchase sin supermarkets and self services stores	11,0%	7,2%	18,2%
Purchases in discount stores	4,0%	3,7%	7,7%
Employees in commerce	7,4%	10,0%	17,4%

# Impact Analysis of AAL solutions

## ICT

Indicator	2008-2015	2015-2020	2008-2020
Persons 65+ using the mobile phone	0,24	0,24	0,48
Persons 65+ that have used sometime a computer	0,31	0,21	0,52
Persons 65+ that have used sometime Internet	0,24	0,16	0,39
Persons 65+ that have bought sometime in Internet	0,08	0,04	0,11
Number of Andalusia companies using computers	0,01	0,01	0,02
Number of Andalusia companies using Internet	0,05	0,00	0,06
Number of Andalusia companies with wireless LAN	0,45	0,19	0,65
Number of Andalusia companies with broadband	0,08	0,00	0,08
Number of Andalusia companies using email	0,07	0,01	0,09
Number of Andalusia companies with Internet and Website	0,16	0,11	0,27
Employees receiving ICT training in their companies	0,26	0,14	0,40

# Impact Analysis of AAL solutions

## Education and Training

Indicator	2008-2015	2015-2020	2008-2020
Persons 65+ on basic education	-45,5%	-56,7%	-76,4%
Persons 65+ on secondary education	-17,7%	-31,3%	-43,4%
Persons 65+ with university education	0,01	0,02	0,03
Occupational demand for “caring of elderly or dependants”	189,0%	189,0%	378,0%
Occupational demand for “at home assistants”	84,0%	68,0%	152,0%
Occupational demand for “nurses”	65,0%	50,0%	115,0%
Occupational demand for “sociocultural dynamizers”	45,0%	40,0%	85,0%
Occupational demand for “physiotherapists”	110,0%	89,0%	199,0%
Occupational demand for “home and telephone sales”	28,0%	25,0%	53,0%
Occupational demand for “touristic activities technicians”	25,0”	45,0%	70,0%
Occupational demand for “safety and security services workers”	250,0%	230,0%	480,p%
Occupational demand for “social education bachelors and PhD”	189,0%	221,0%	41.0%

# Impact Analysis of AAL solutions

## Social Economy

Indicator	2008-2015	2015-2020	2008-2020
Number of companies of Social Economy	13,8%	11,7%	27,1%
Number of "Cooperatives"	9,2%	10,5%	20,7%
Number of "Sociedades Laborales"	18,6%	12,7%	33,7%
Employees 55+ in the Social Economy	0,03	0,05	0,08
Women employed in the Social Economy	0,08	0,10	0,18
Employees in agriculture	-30,4%	-28,5%	-59,0%
Employees in industry	18,7%	23,0%	41,8%
Employees in services	30,9%	33,3%	64,2%





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# Final Remarks and Conclusions



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## Conclusions and final remarks

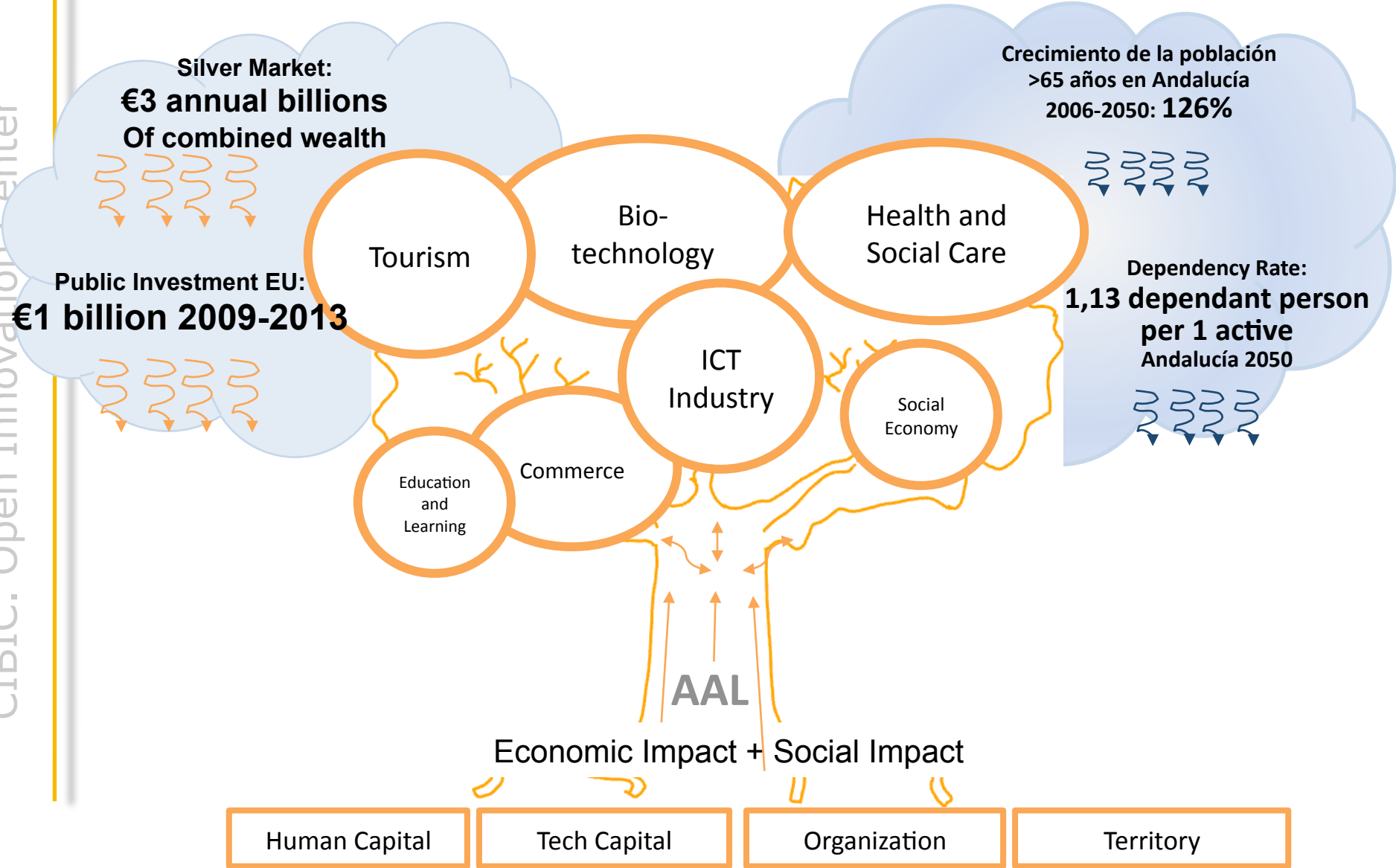
### General conclusions

- Ageing of the world population is defining the so called “Silver Market” where the needs of the elderly will be met by the offer of technology enabled solutions provided both by public and private agents
- Within this emerging market, practical applications of ICT become key tools for the different stakeholders and in other economic sectors beyond ICT and healthcare.
- AAL solutions will contribute to enhance the day to day living of the elderly, but must also drive a major social and economical change in the territories
- AAL solutions are proving also their utility for the e-Inclusion (for example rural areas, work and life balance...), introducing new dimension in ethics , corporate responsibility or business sustainability
- In Andalucía, this AAL solutions may function as a driving force for potentiating other productive sectors in a new approach for powering the regional economy

# Conclusions and final remarks

## Overall Picture

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