



Challenges of Ageing Workforce in Europe

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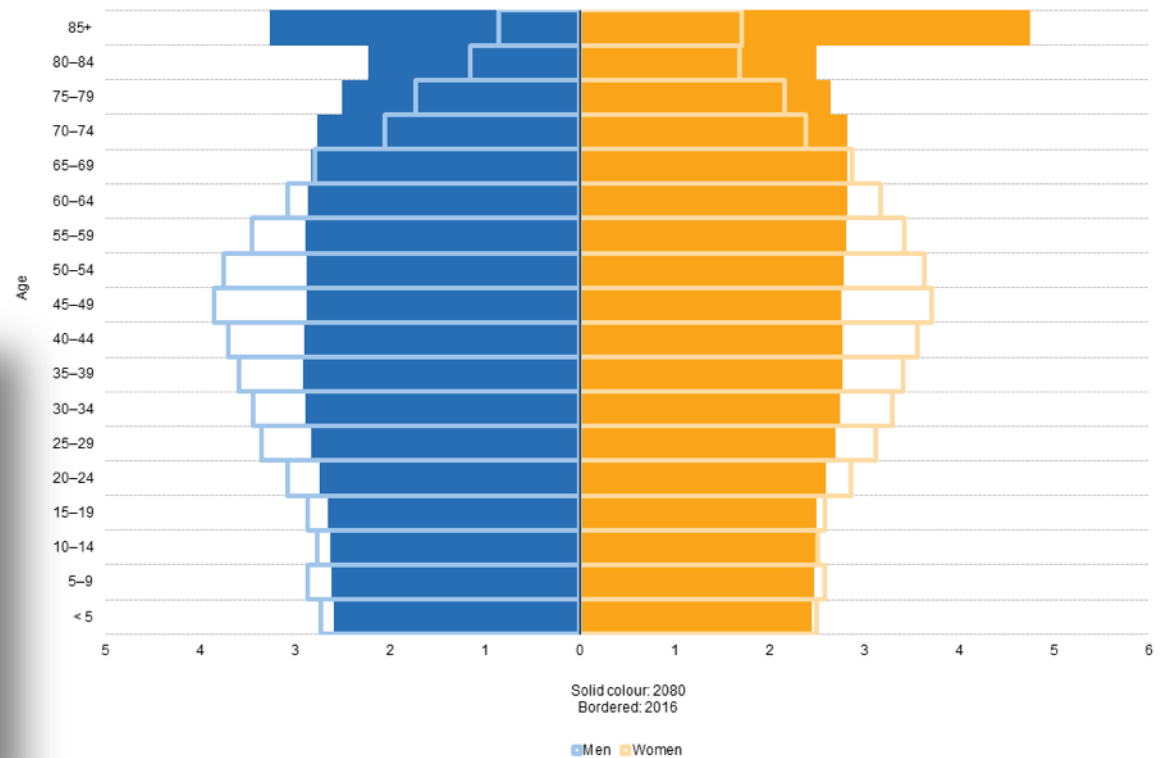
Director General

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1st cause: The serious demographic issue

- Smaller cohorts entering in the labour market

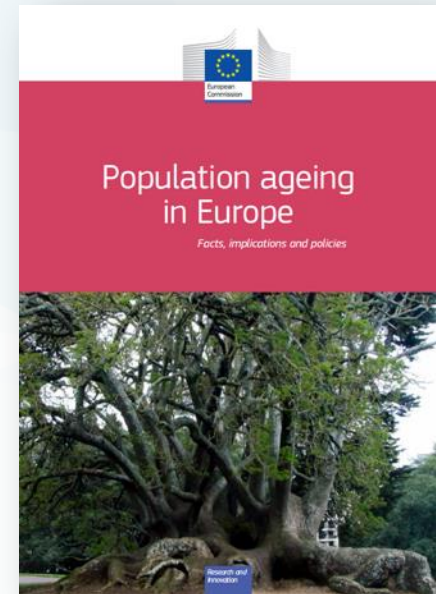
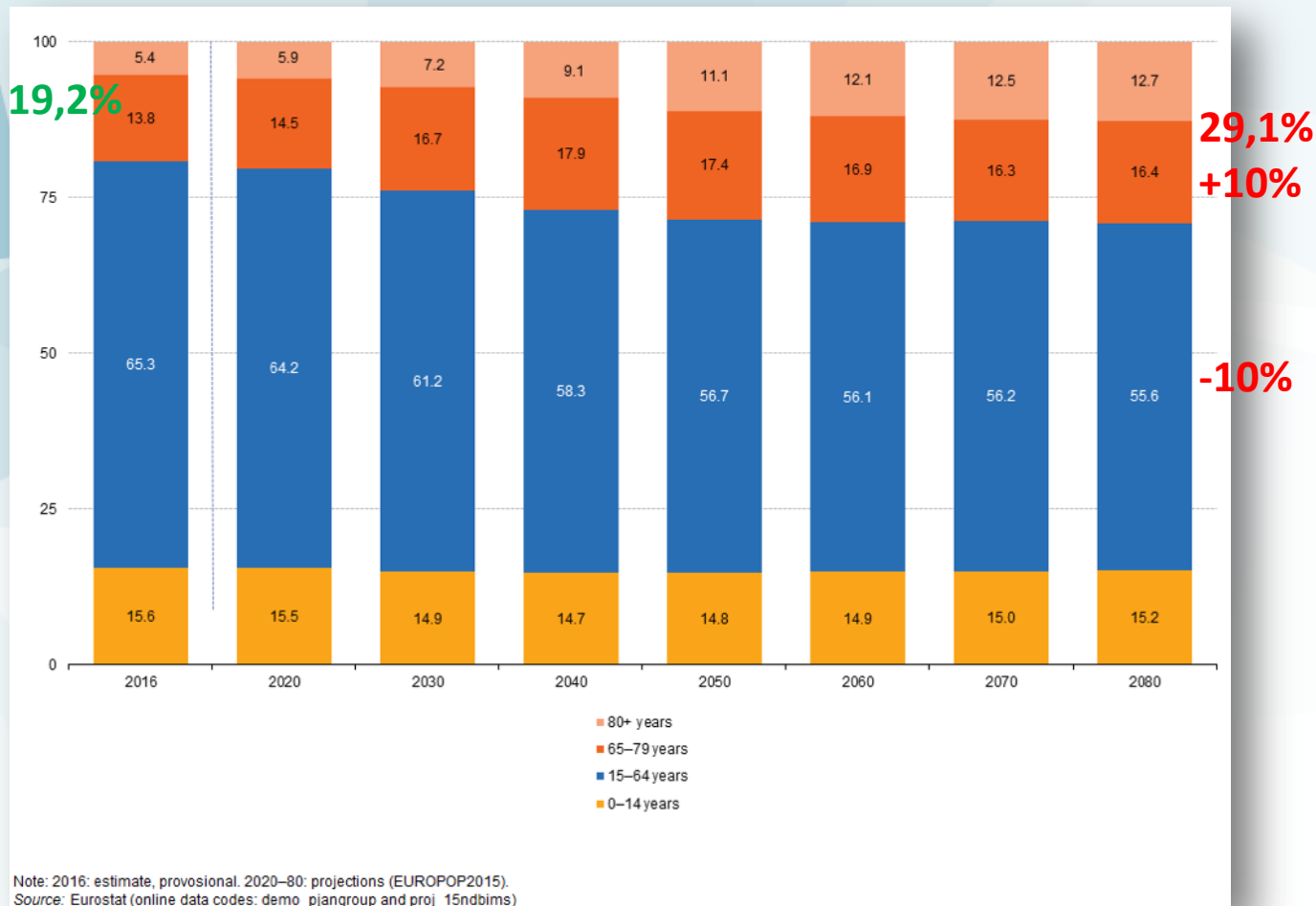
Predicted evolution of the demographic pyramid in Europe
2016 - 2080



Note: 2016: estimate, provisional. 2080: projections (EUROPOP2015).
Source: Eurostat (online data codes: demo_pjangroup and proj_15npsms)



1st cause: The serious demographic issue



- A huge priority for the developed countries
- Emigration is not the solution in most of the cases

2nd cause: Difficulties to attract young & skilled people - UEPG Vision 2020

- General ignorance of the reality of this industry
- Conflict between new generations expectations and primary sectors image:
 - Old fashion
 - No innovation
 - Low sustainability
 - Hard work conditions
 - Unsafe
 - Not adapted for women (only 8% of women in Spain)
- Different expectations:
 - **Younger people:** more social protection and higher incomes on the one hand, and more autonomy and opportunities for self-development on the other
 - **Older people:** reconciling work and family life and interest in lifelong learning measures. More recognition of experience and demand improvements in working conditions

Showcase the Industry
as an **attractive career**,
in particular for **young people**

AMBITION #9



Our objective

To encourage UEPG Members to raise awareness in public relations, job agencies and educational institutions about the career opportunities for both genders

The challenge

The positive aspects of the Aggregates Industry are often unappreciated and, hence, it has not been considered as offering good career opportunities and prospects. In particular, young people often did not consider the Aggregates Industry as an attractive employer. The Industry can offer career opportunities for all levels of qualification and both genders.

Our solution

UEPG and its Members organise Open-Air school rooms, Open-Days for schools and Universities and launched or maintained projects with Universities. UEPG Members organise or sponsor exhibitions and trade fairs and present the job opportunities for future generations. The development of new technology and new skills is highly important for an innovative and modern Industry.

Direct effects of the situation

- Employees aged over 55 account for more than a quarter of their workforce: from 21% in 2014 to **26%** in 2019.
- The employment target of the Europe 2020 strategy — to **increase the employment rate of the population aged 20 – 64 years to 75%** — means that **people in Europe will have to work for longer**.
- Many attributes, such as **wisdom, strategic thinking, holistic perception** and the **ability to deliberate**, either increase or first emerge with increasing age. **Work experience** and **expertise** also accumulate with age.
- In this new context, many abilities and skills associated with older people, such as **good interpersonal skills, customer service** and **quality awareness**, are increasingly valued.
- But **some functional capacities**, mainly physical and sensory, **decline** as a **result of the natural ageing process**. **Potential changes in functional capacities** have to be taken into account in **risk assessment**, and the **work environment** have to be **modified to address those changes**.
- Age-related decline **affects mainly physical and sensory capacities**, which are most relevant to heavy physical work.



Direct effects of the situation

Negative

- Ageing of work force
- Postponement of the retirement age
- Loose of skills & resistance to efficiency-enhancing organisational changes and new technologies
- Continuous training investments to adapt the workforce to latest working technologies
- Increase of the labour costs: to attract new workers & to retain the older ones + increasing use of sick leave
- Co-existence of very different age cohorts. Cultural/ generational conflicts
- Lost of productivity in the absence of proper measures. Productivity decline related to age is much smaller than the decline perceived by employers in many cases!

Positive

- Growing knowledge stemming from work experience
- Higher managerial abilities
- Higher social capital





Recommended actions for
the aggregates companies

Employability of the ageing workforce

- Job satisfaction plays an important role in maintaining older workers' work ability
- Increase of work quality. Critical issue
- Importance of cultivate values and attitudes in preserving work ability at later ages
 - The health status of people over 60 does not decline with age
 - Health does not play a predominant role in work ability
- Skills-upgrading programmes to maintain their productivity and cognitive abilities
- Safe & healthier working environment
- Fair recognition of the work done & achievements



Ageing

- Good safety and health practices are very important to help people work for longer.
- Good workplace design benefits all age groups, including older workers. As abilities change, work also has to be changed to compensate, for example with:
 - Job redesign or rotation
 - More frequent short breaks
 - Improved organisation of shift work, e.g. fast (2–3 days) forward-rotating shifts
 - Good lighting and noise control
 - Good ergonomic design of equipment



Actions towards ageing workers

Development

- Human capital and encouraging lifelong learning of workers, on-the-job training
- Younger mentoring by older workers



Maintenance

- Flexible working hours
- Ergonomic measures, such as adapting the workplace and work tools to the needs of ageing employees



Utilisation to reduce the demand for new employees

- To retain workers by encouraging them to work up to the statutory retirement age
- Investing in labour-saving new technologies

Accommodation

- Reduce working time
- Offer part-time retirement
- Promote internal job mobility

How to attract young skilled people?





Ageing@Work

*Smart, Personalized and Adaptive ICT Solutions for Active,
Healthy and Productive Ageing with enhanced Workability*

Ageing@Work Project Overview















This project has received funding from the European Union's Horizon 2020 Framework Programme under grant agreement No 101019719.

Ageing@Work at a glance

- **Ageing@Work:**
Smart, Personalized and Adaptive information and communication technologies ICT Solutions for Active, Healthy and Productive Ageing with enhanced Workability
- Research and Innovation Action (RIA)
- Horizon 2020 – SC1-DTH-03-2018
 - Start date: 1/1/2019
 - Duration: 3 years
 - Two pilot sites:
 - Spain-ANEFA: Quarry sites and treatment plants
 - Germany- Siemens: Factory - Machines operation
- Consortium: 13 partners from 8 countries

Ageing@Work Participants

	No	Participant organisation name	Short name	Country
<i>Research centre</i> <i>Coordinator</i>	1	Centre for Research and Technology Hellas 	CERTH	Greece
<i>University</i>	2	UNIVERSIDAD POLITÉCNICA DE MADRID 	UPM	Spain
<i>Industry</i>	3	Siemens AG 	SAG	Germany
<i>SME</i>	4	MYSPHERA SL 	MYSPHERA	Spain
<i>University</i>	5	University of Patras 	UPAT	Greece
<i>Industry</i>	6	SAMSUNG Electronics (UK) Ltd 	SAMSUNG	UK
<i>Research centre</i>	7	Centralny Instytut Ochrony Pracy – Państwowy Instytut Badawczy 	CIOP-PIB	Poland
<i>Research centre</i>	8	Institute for occupational medicine, safety and ergonomics 	ASER	Germany
<i>University</i>	9	KU Leuven 	KUL	Belgium
<i>SME</i>	10	Q-PLAN INTERNATIONAL ADVISORS PC 	Q-PLAN	Greece
<i>Industry</i>	11	Asociación Nacional de Empresarios Fabricantes de Áridos 	ANEFA	Spain
<i>SME</i>	12	MultiMed Engineers srls 	MME	Italy
<i>SME</i>	13	HIT HYPERTECH INNOVATIONS LTD 	HIT	Cyprus

Ageing@Work rationale: the problem and the need

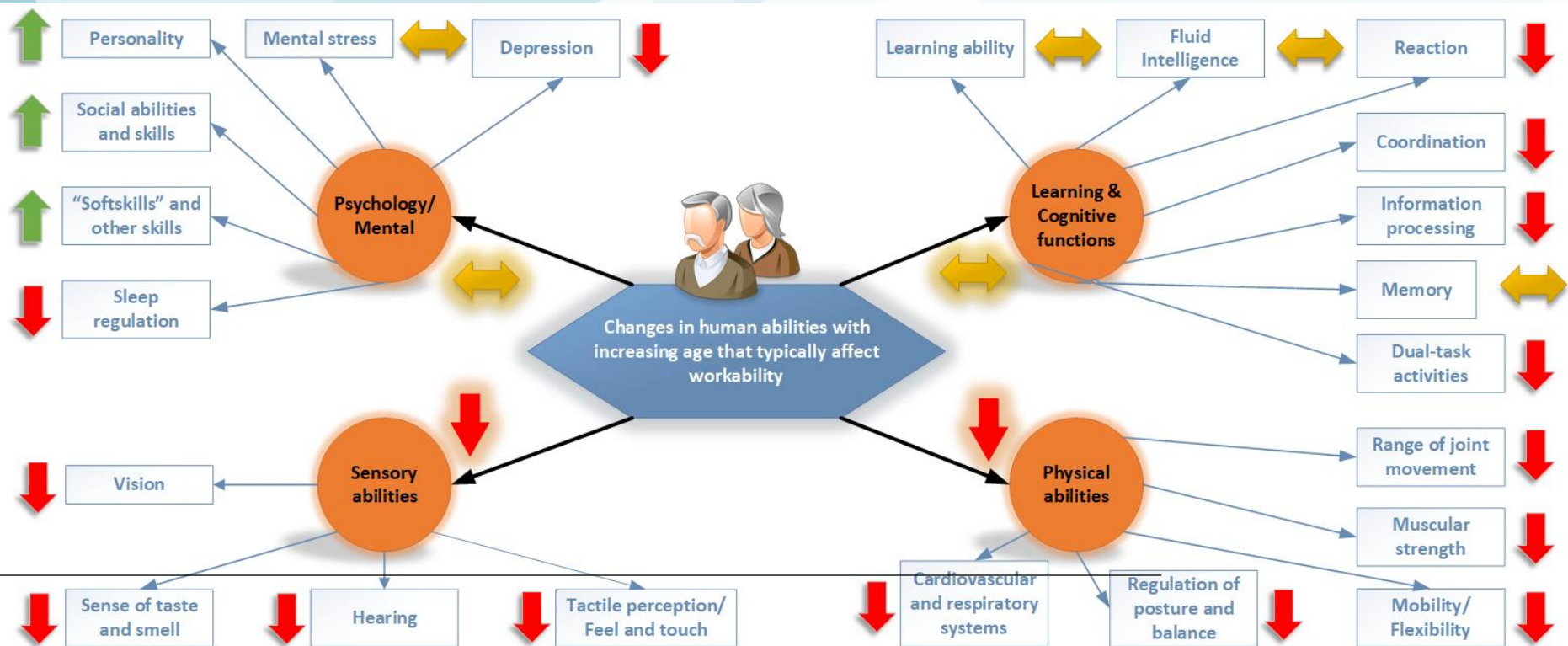
- The **workforce is ageing**¹
 - The ratio of people of working age (15-65) to people aged over 65 is decreasing and will decrease further in the coming years
 - By 2030 workers aged 55-64 are expected to make up 30% or more of the workforce
- The **workforce is shrinking**²
 - The EU working age population is expected to decline by 0.4% every year until 2040
- Human abilities change with ageing, affecting workability

ICT-mHealth solutions can support workability and quality of life of the ageing workforce

[1] EU-OSHA, Cedefop, Eurofound and EIGE (2017), Joint report on Towards age-friendly work in Europe: a life-course perspective on work and ageing from EU Agencies, Publications Office of the European Union, Luxembourg

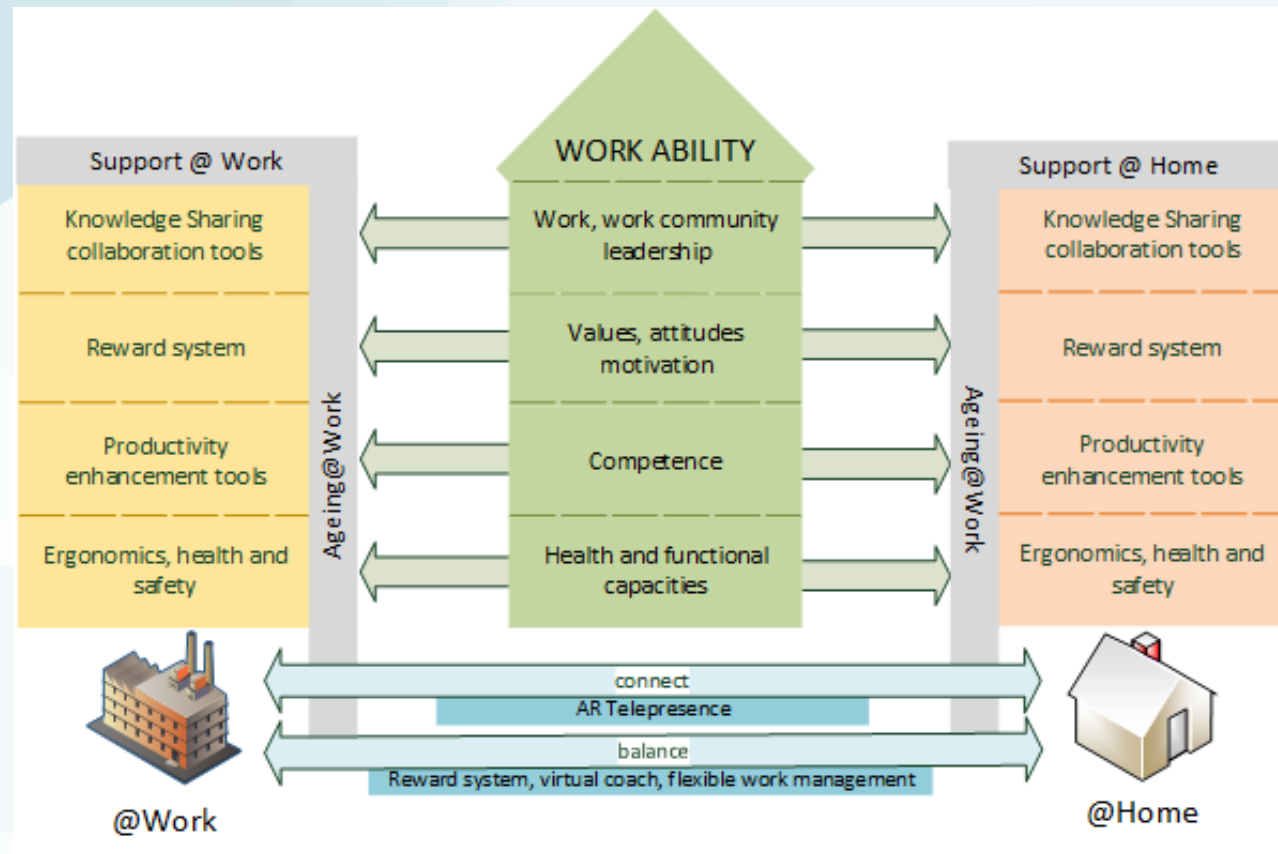
[2] C. Fotakis and J. Peschner, Demographic change, human resources constraints and economic growth, European Commission Working Paper 1/2015

Human abilities change with ageing, affecting workability



The Ageing@Work Vision

- Aim:** to support the ageing workers to remain **healthy, active and productive** for longer
 - Through the **fusion of smart working and living environments**
- Adaptive, personalized ICT tools**
 - Will help counteract for issues that hinder ageing workers' **workability and well-being**



Ageing@Work Innovation

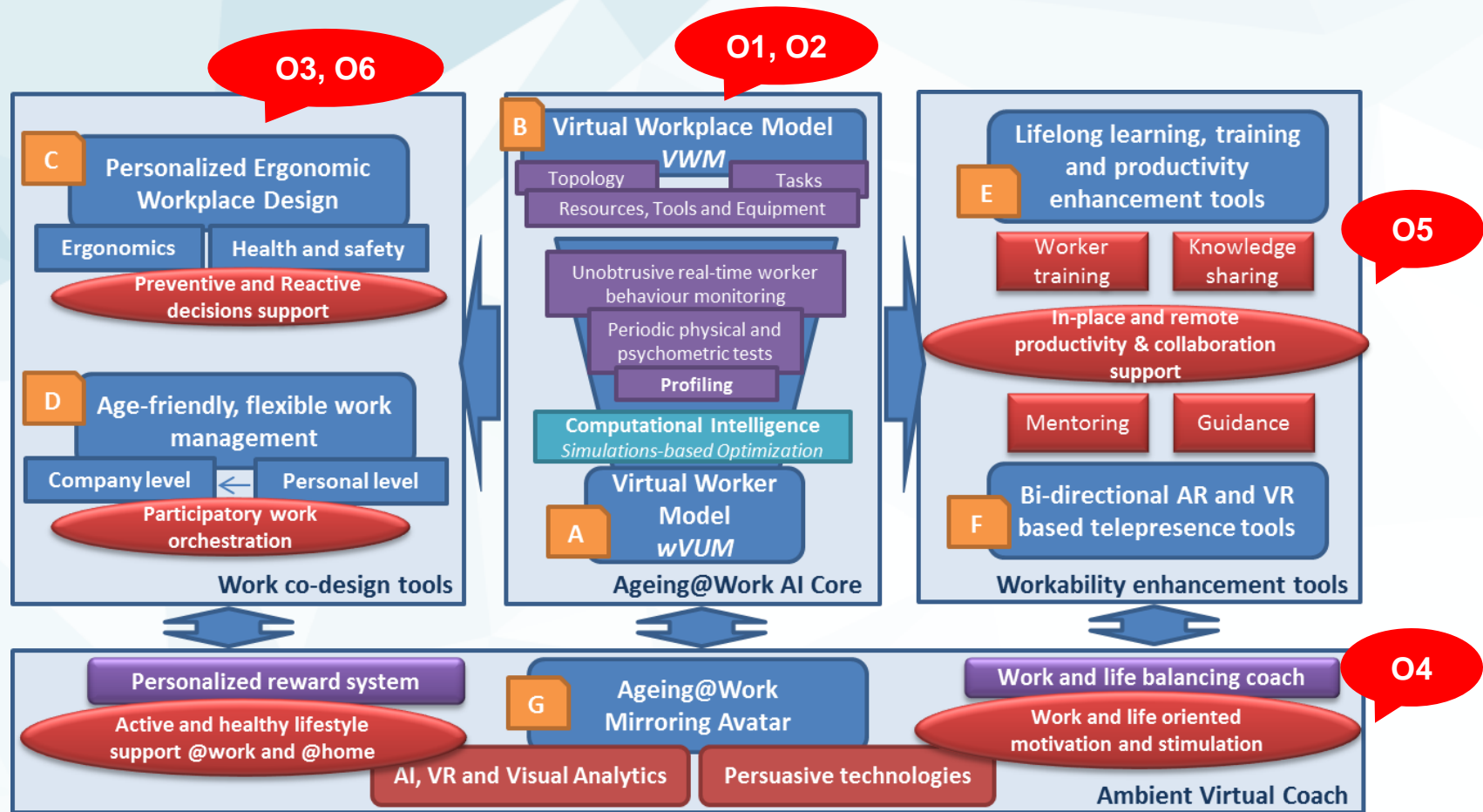
Ageing@Work will research and develop a novel integrated platform of advanced, personalized and adaptive **ICT tools**, which:

- Will help **tailoring the workplace** to the needs and specificities of ageing workers
 - in terms of **ergonomics** and of **work processes and task assignments**
- Will support the ageing worker's **active and healthy ageing at work and at home**, as well as **workability** by
 - **physical and mental health support ICT tools**
 - **telepresence and productivity enhancement tools**
 - based on advanced AI, AR, VR and virtual assistant technologies,
- With emphasis on **flexible management of work** and worker **QoL support**

Ageing@Work Objectives

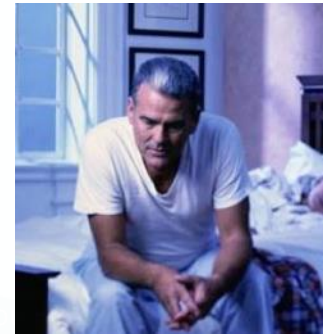
- **Objective 1.** Enable extensive **personalization capabilities** to the Ageing@Work supportive approach
- **Objective 2.** Design a novel unobtrusive **worker activity and behaviour monitoring** framework, coupling work, on the move and home -based tracking elements
- **Objective 3.** Provide workers with personalized **work ergonomics and process design services**
- **Objective 4.** To research and develop a novel, joint productivity and life support **virtual assistant**
- **Objective 5.** To research and develop advanced personalized ICT-based **workability and productivity enhancement tools** based on Virtual and Augmented Reality, AI and Visual Analytics
- **Objective 6.** Co-design tools for managers and OSH specialists for improved age-friendly **workforce management**
- **Objective 7.** To **demonstrate and evaluate** the proposed, Ageing@Work framework in realistic conditions with older workers in **two major pilot sites**, focusing on industrial and mining environments
- **Objective 8.** To define evidence-based business and financing models along with a business plan for the **post-project sustainable exploitation** of the Ageing@Work framework

Ageing@Work: Concept Overview



USE CASES

- **USE CASE 1: CHECK-LIST PLATFORM:** the machine operators will be able to check the safety elements related to the task of their shift.
- **USE CASE 2: PARTICIPATORY WORK ORCHESTRATION:** the workers will communicate requests for absences or vacations to the people in charge of personnel.
- **USE CASE 3. SUPPORT FOR MUSCULOSKELETAL PROBLEMS:** The system will suggest, through the Virtual Coach, physical exercises or stretches to the worker to do at home or at work, so as to help the user reduce or avoid musculoskeletal problems.
- **USE CASE 4: SUPPORTING HEALTH AND WELL-BEING – VIRTUAL COACH:** the Ageing@Work virtual coach will motivate users to behave in ways that can improve their health and well-being.



USE CASES

- **USE CASE 5: KNOWLEDGE EXCHANGE PLATFORM AND INTERGENERATIONAL COLLABORATION SUPPORT:** to support transferring the long-term experience of older workers to the younger ones.
- **USE CASE 6: PRODUCTIVITY ENHANCEMENT TOOLS:** The use of AR tools will be employed to help into early identification of some urgent issue in the production line, as well as smartwatch devices to help workers who observe multiple machines, to be better aware of their status and upcoming steps.
- **USE CASE 7: EMERGENCY/PANIC BUTTON:** In case of emergency, it will allow the worker in distress to notify the management/security side of the plant and be directly geolocated, as well contacted by the security personnel.



Expected Impacts

- **Senior workers**
 - Improved productivity and work flexibility
 - Increased motivation and work satisfaction
 - Age-friendly working and living conditions

- **Industrial companies**
 - Increased productivity
 - Retention of experienced workers
 - Better informed decision making, human Resources and Occupational Health and Safety management
 - Lower company costs for work-related health problems and work accidents
 - Corporate social responsibility

Project Timeline Overview

- Year 1
 - Use cases and system architecture definition
 - Start of technical developments / technical WPs
- Year 2
 - Technical WPs in progress
 - Initial versions of project tools
 - Integration and lab tests start, pilot trials definition
- Year 3/4
 - Concluding of Technical WPs
 - Ageing@Work system integration
 - Pilot trials and results consolidation



Thank you very much