

Medical

Drugs, therapy, design and testing

<p>Medicine is fundamentally wasteful. Huge market is mostly useless.</p> <p>Harmful "Drugs" that are sought and bought by the people/patients.</p> <p>Should be regulated as other drugs.</p>	<p>Medications tested on old animals</p> <p>Create this request to pharmaceutical industry for lifespan tests.</p>
<p>Create a European testing center on medicals and products in aged individuals incl. animals</p>	<p>Old aged animals in research</p> <p>Finance some projects with old animals/ lifespans</p>
<p>Fast track for clinical trials in active-adult communication</p> <p>e.g. treatments paid by volunteers</p>	<p>Fast track process from animal results to humans</p> <p>Certified validators of results in one/ a few persons → committees to choose next trials</p>
<p>Derug development and testing for the elderly</p>	<p>Impose evidence base (the road to hell is paved with good intentions)</p> <p>Large multi-centre studies to create evidence</p>

Prevention



<p>ADAPTATION</p> <p>May be more rewarding than prevention or control</p>	<p>Focus on quality of life</p>
<p>Create guidelines and a protocol for prevention & procrastination of major disease burdens</p>	<p>Try to prevent dementia</p>
<p>Recovery and rehabilitation are likely more rewarding than prevention</p>	<p>Vaccine against dementia</p>
<p>From reactive healthcare → to proactive healthcare (70% of chronic diseases are preventable and 70% of expended costs go to chronic diseases)</p>	

Regenerative medicine

Treatments for age-related damages

Technology

Users, product and service design

More development of products + services suitable for the elderly (travel, entertainment, insurances etc.)

Convenience food
- Food industry
- Catreing
- Big kitchens

Create suitable service flats which give some support to elderly, by at the same time allowing them to live alone

Mature end/to/end technology support and services needed

Involve caregivers in technology development

Improve the way/speed technical standardisation is developed – for interoperability

Standardized interfaces

Improved involvement of elderly in product development) drugs, medical devices'

Robust, easy-to-use and affordable products

Work on innovative packaging and systems (e.g. airborn spoilage, easy to open etc.)

Incentives for industries to produce healthier products

Simple technologies, Focus on feasibility + usability (e.g. safety system for cooker)

Regulate the provision of healthier food + drink products → healthy nutrition

Beyond technologies to support patients

Provide innovative technologies to support the (informal) carers (a.g. Alzheimers)

Improved building and housing for elders

Simple technology to keep a (million) (cognitively) impaired elderly active and at home

New technology and product innovation

Nano-Lab
Diagnosis and monitoring inside the body in real time

ICT-based nutritional support

Cognitive support technologies

Use new technologies (could be nano) or existing food processing technologies to create targeted food delivery (e.g. vitamins, minerals)

Wellness technologies

Promote exercise programmes which are suitable for elderly → exercise can also be brain exercise

Support for physical & mental exercise

Physical support systems

Research: How do technological responses to promote "active and healthy ageing" [relate] to "grand challenges" of shortages in energy and material resources?

The Virtual Individual as basis for the citizen as co-producer of health

Age control breakthroughs

Focus not only on basic + clinical science but also on health services and outcomes research

Scientific Understanding

Behavioural



Occupational research: under which conditions could elderly work longer?	Explore personalised nutrition How to do that? Now already possible? In the future? What is necessary?
Psychosocial Interventions -same effects like drugs, e.g. -in Alzheimer's disease	Behavioural change Compliance and adherence
Personalised healthcare	

Research on age-related diseases

Krepte an EU-supported project for early cancer detection via blood FSH measurement	Avoid cancer-causing products
Experts (INSERN France) Insurance Hospital Pilots	Genetic research
Explore the science disciplines which can best contribute to prevent cognitive decline → explain progress in science in a way that regulators, academics and stakeholders can understand.	
Test impact of metformin on health and death for non-diabetic sub-populations E.g. 5-years study in "active adult" residencies (age - >55 yrs.)	

Research on Ageing as such



Only funding peer-reviewed Research	Have a ministry of "Ageing & Health Breakthroughs"		
Technology very much ahead of clinical science	Have a person from the European Commission travel to different ageing-science labs and propose key initiatives	Better understanding of drivers of cognitive decline (impact of retirement)	R&D on age-related diseases and on preventing/curing them
Research on centenarians	Old animals for research	Prolonged protection of intellectual property (50 years) (to give incentive to long-term R&D)	Research: -Too much "Chatter" - "Pilotitis" - Need for large coordinated research lead by clinical researchers with "MARS" outcomes
Research: impact on various labour carriers on age-related diseases (Occupational Health)	Favour the development of aged mice & mouse providers		Deciphering ageing
Ageing defined as disease?	Tanatology		
Ageing = increasing experience ravaged by the body's inability to dispose of waste products & to repair DNA damage. Other diseases are superimposed on this background			

Socio Economic

Users, product and service design ★★★★★

Mature end-to-end technology support and services needed	Improved building and housing for elders
Improved involvement of elderly in product development) drugs, medical devices'	Robust, easy-to-use and affordable products
Involve caregivers in technology development	Simple technologies, Focus on feasibility + usability (e.g. safety system for cooker)
Beyond technologies to support patients, provide innovative technologies to support the (informal) careers (a.g. Alzheimer's)	Simple technology to keep a (million) (cognitively) impaired elderly active and at home
	Incentives for industries to produce healthier products

Education and Awareness

Create incentives for healthy life-styles	Advertising for elderly teaching children (in schools and pharmacies)
Determinants of good health are: 1) Education 2) Good job/income 3) Housing/possessions	More education and promotion of healthy life styles
Responsibility for ones own life starts at early age → education!	Good health at old age starts at young age → Education!

Health Service Delivery

Cost-benefit analysis of end-of-life costs	Improve evidence-base on cost-effectiveness & innovative interventions/ technologies
Insurance schemes for elderly workers	Develop indicators of improved quality of life

Changes in social security schemes and pensions	Improvement of autonomy, NOT Babylistation
Have minister of ageing and health breakthroughs	Decisions at the end of (cognitive) life
Autonomy for establishing right for retirement	Medicine will prolong life but will also prolong dying. Social acceptance of death + freedom to choose are essential rationalisations
Ethical issues: Increasing health-span or healthy life-span discussion	Right to decide and choose
People should be encouraged to decide prospectively under what circumstances to have euthanasia (bit like organ-donor cards) Most people choose death rather than dementia	Healthy ageing at any age

Socio Economic

Work



Work with old age with decreasing wage, w/o wage	Create expectations of employment + work until aged 85 years?!	Start early with work-life balance to keep on working and living until old age
Keeping retirement policies	Occupational research: under which conditions could elderly work longer?	Social integration of elderly/older workers
Change expectations Retirement = end of life for many (high rate of deaths in months after retirement)	Strategic thinking + foresight (incl. ethical discussion about ageing)	Seek business involvement (employer-employee)
Work until you die	Voluntary work	Trans-generational living (youth-elderly)
Link pensions to health engagement? Society has right to expect people to contribute	We should expect more from the elderly (that is true respect)	Industry and business taking more responsibility of healthy employees
Involving elderly in production process = slowing that process (willingly) → to increase job satisfaction		Not first focus on old people Active and healthy ageing means active and healthy behaviour along the whole life span
Overcome income differences among the elderly		Create work for elderly to keep them as partner in the healthy ageing debate → keep elderly involved
Promotion of home-based jobs		Promoting international collaboration, knowledge transfer

Other

Technology Transfer

Funding for:
- RTD
- Death Valley
-Market/Commerce

Effectiveness of
New technologies
e.g. AAL

Dissemination and
implementation
(macro, meso, micro-
level)

Technology with good research
will thrive with

- good integration
- funding
- contained costs
- adequate scale

Do not forget Japan,
USA, Canada...

Governance of the Healthy Ageing Sector

Other:

How to make sure that a common vision on active
and healthy ageing is really a common vision?

→who to involve in the process of constructing the
vision?

→how to operationalise the process

→how to guarantee a public perspective and not a

Scaling-up across member
states for critical mass
economies of scale

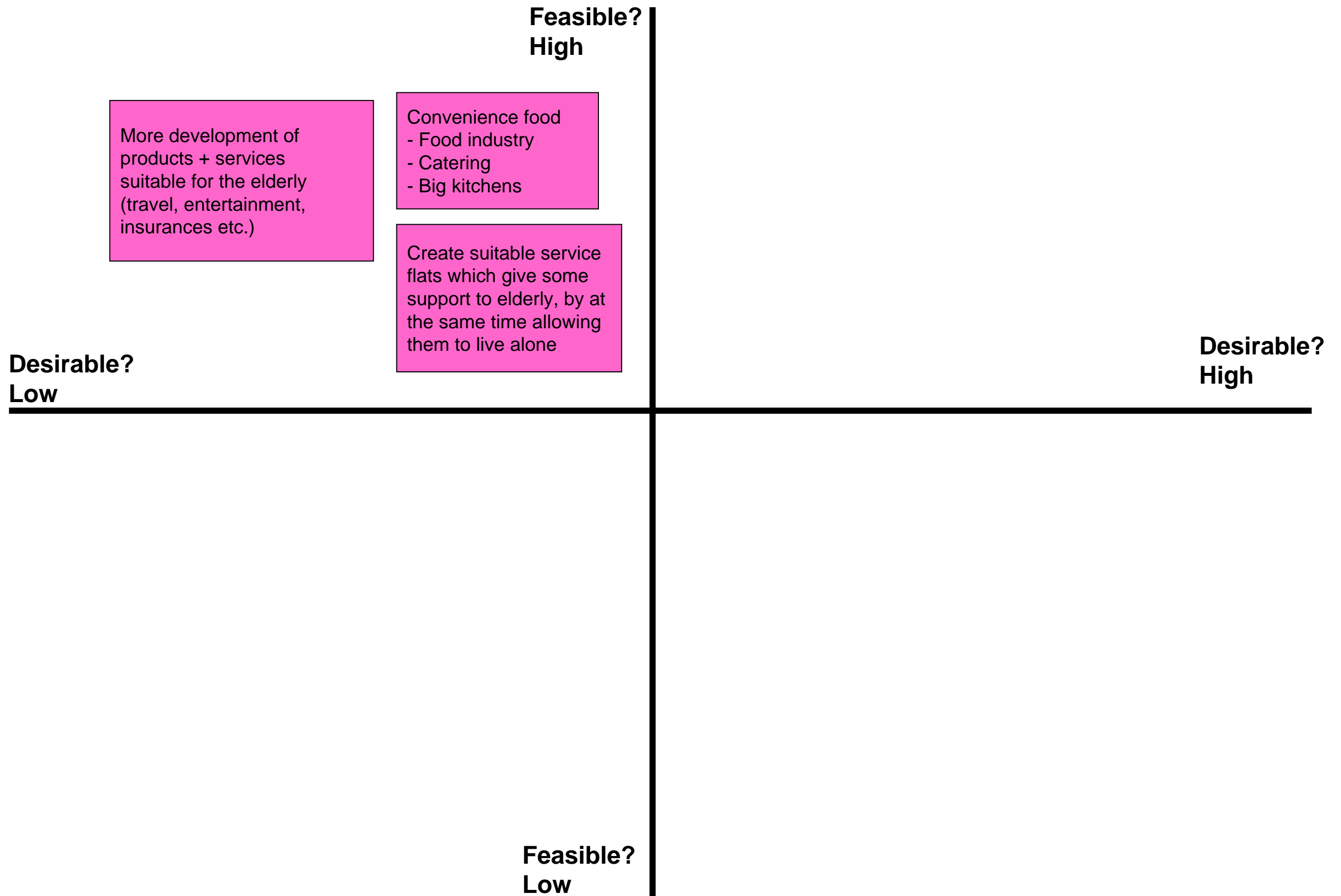
Concerted efforts by
various sectors + players
with the financing of care

Take profit of European diversity

Regulatory → participatory
Free Enterprise → Regulated incentives

Study needed about the different legal frameworks in
EU countries for innovations to reach market to get the
base for improvement

Cluster 1: Users, product and service design



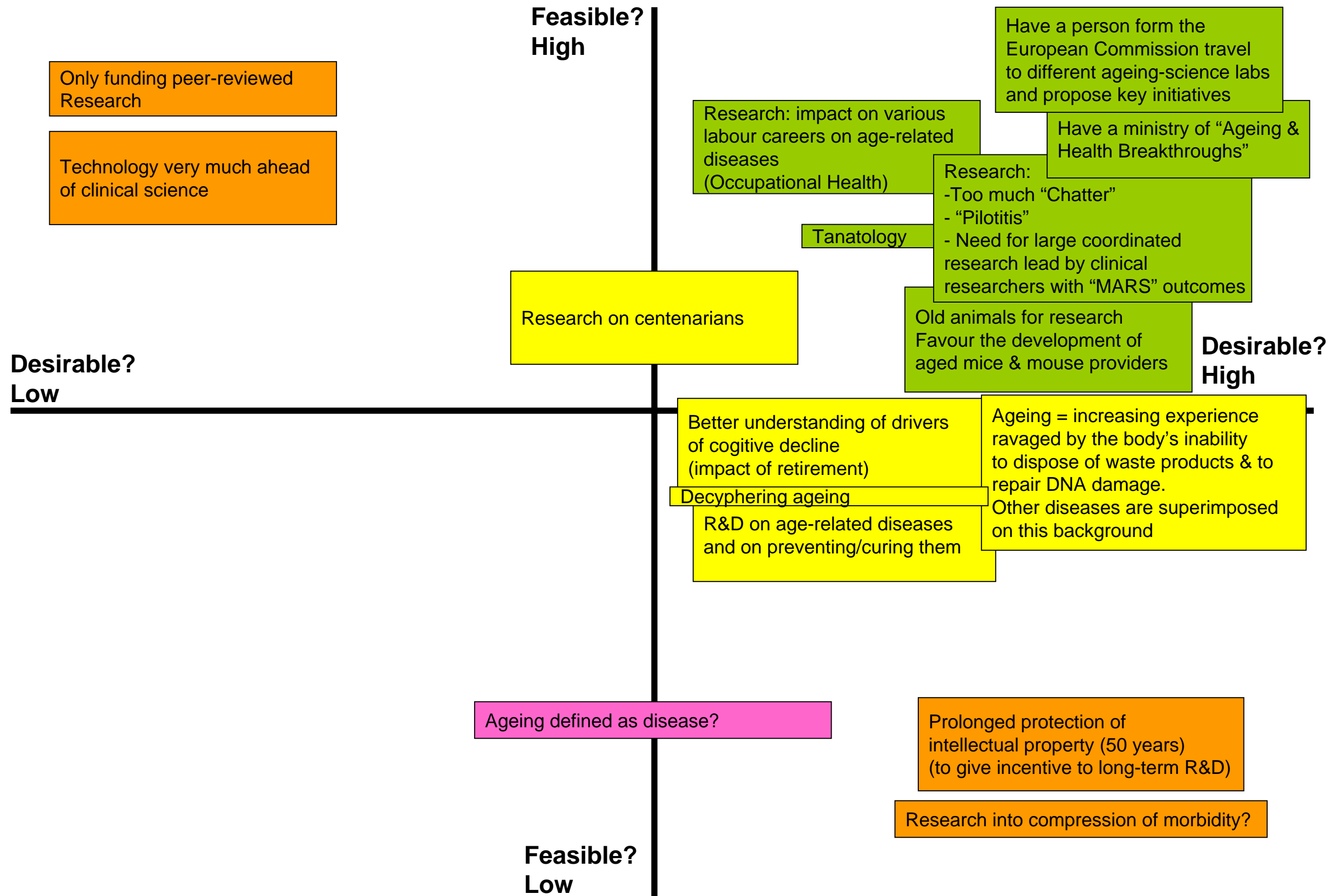
Cluster 1: Users, product and service design

Actions (Policy Proposals)	Enabling	Hindering	Challenges
Mature end-to-end technology support and services needed	Systemic perspective <i>Involve clients</i> in technology development	Demand/Supply Gap for healthcare	<div style="background-color: yellow; border: 1px solid black; padding: 5px; display: inline-block;">Deployment</div>
Improved involvement of elderly in product development) drugs, medical devices'	<div style="background-color: #FFC0CB; border: 1px solid black; padding: 5px; display: inline-block;">Standardized interfaces</div>	Not enough funding for innovation + technology development	<div style="background-color: #FFC0CB; border: 1px solid black; padding: 5px; display: inline-block;">Improve the way/speed technical standardisation is developed – for interoperability</div>
Involve caregivers in technology development			= obligation
Beyond technologies to support patients, provide innovative technologies to support the (informal) caregivers (e.g. Alzheimer's)	Market deregulation	Not offered yet	
Improved building and housing for elders	Personalised services + Technology		Social responsibility to take care of elderly
Robust, easy-to-use and affordable products	Exchange of good practice		SOCIAL INNOVATION
Simple technologies, Focus on feasibility + usability (e.g. safety system for cooker)	<div style="background-color: #FFC0CB; border: 1px solid black; padding: 5px; display: inline-block;">Work on innovative packaging and systems (e.g. airborne spoilage, easy to open etc.)</div>		
Simple technology to keep a (million) (cognitively) impaired elderly active and at home			EDUCATION "less salt, sugar fat in baby food"
Incentives for industries to produce healthier products	Tax incentives	Advertising, Culture, image building	Information, Obligation, Product declaration
			<div style="background-color: #FFC0CB; border: 1px solid black; padding: 5px; display: inline-block;">Regulate the provision of healthier food + drink products → healthy nutrition</div>

Cluster 1: Users, product and service design

Actions (Policy Proposals)	Policy Requirements	Time Line	Level	Reflection
<p>Encourage participation in product and service development + implementation + advertising + use of</p> <ul style="list-style-type: none"> • Individuals (young & old) • Industry • Healthcare providers • Insurance companies • Regulators 	<p>Regulatory framework</p> <p>Funding for European Tech. Base</p> <p>Pilot Project</p> <p>Change Choice Architecture</p>	<p>Short term</p> <p>Short term</p> <p>Short term</p> <p>Short-mid term</p>	<p>European</p>	<p>→Information Society in healthcare to overcome supply-demand gap</p>
<p>Adapt curricula towards more healthy and active living</p> <ul style="list-style-type: none"> • Social responsibility to take care of elderly age-related solidarity 	<p>Educational authorities</p>	<p>Mid term</p>	<p>National</p>	<p>→Responsible Society</p>
<p>Encourage open innovation to develop + offer integrated products and services</p>	<p>Procurement rules</p> <p>Certification</p> <p>Quality control</p>	<p>Mid term</p>	<p>EU</p>	

Cluster 2: Research on Ageing as such



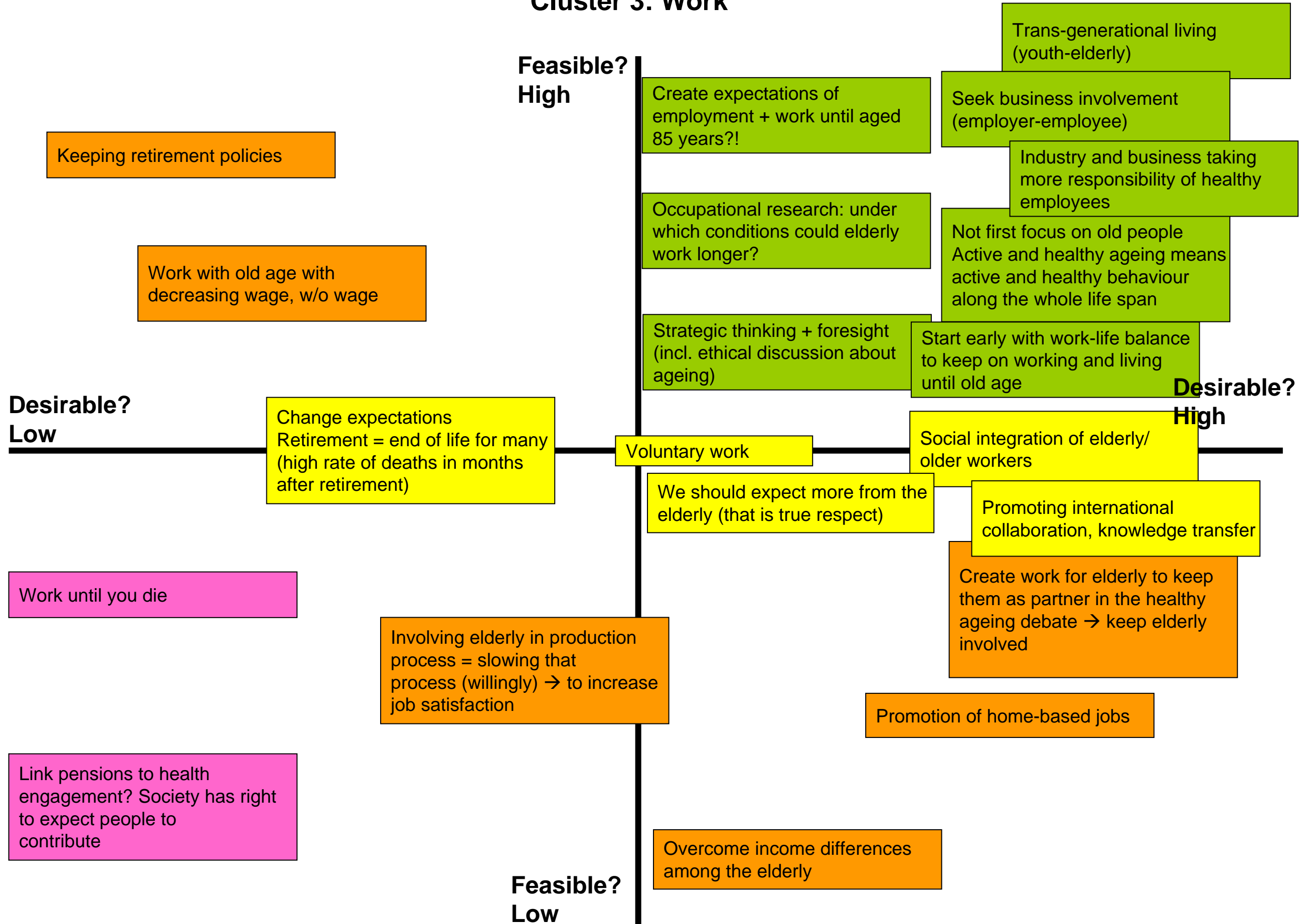
Cluster 2: Research on Ageing as such

Actions (Policy Proposals)	Enabling	Hindering	Challenges
<div style="background-color: #FF69B4; padding: 5px; border: 1px solid black;"> Prolonged protection of intellectual property to 50 years (in line with artists) </div>	Patent-Life extension (50 yrs.) 1) Governmental debate 2) Legislation 3) Industry 4) Scientific necessity	Social perception of patents Reliance on surrogate outcomes	Challenge: Prolonging life with morbidity will be a by-product of prolonging healthy life
Foster research on ageing	Ageing research (understanding) - applied dialogue	Ageing research understanding: <ul style="list-style-type: none"> • too much associated with “ageing as a disease” • Age and disease are inextricable in practice 	
	Ageing research (applied) - understanding dialogue Ageing research: novel, but accepted in scientific community	Less acceptance, more skepticism (applied ageing research)	
Innovation in research practice and procedures	New approaches to research funding (consensual dialogue & peer review) Better evaluation of research on ageing & coordination	Restrictions imposed by peer review process, too many small, repetitive projects <ul style="list-style-type: none"> - peer review research only... - too much distance - between technology and - clinical trials 	

Cluster 2: Research on Ageing as such

Actions (Policy Proposals)	Policy Requirements	Time Line	Level	Reflection
Have a ministry of "Ageing & Health Breakthroughs"	Government approval	2012	EU	++++
Prolonged protection of intellectual property to 50 years (in line with artists)	EU and international law	2020	International	+
Specific funding for clinical trials on ageing in animals and humans	e.g. FET Flagship initiation on ageing-related topics	2011	EU & National	+
Long-term cohort studies in animals and humans	Large-scale clinical trials	2011	EU & National	+
Consensual (in addition to competitive) peer-reviewed grant funding for centrally directed research	Hire people who convert ideas into projects Less bureaucracy	2012	EU & National	++
Public understanding of research into ageing	Media & education	2013	EU & National	+
Innovative strategies for engaging the population in applied research	e.g. FET Flagships	2013	EU & National	++

Cluster 3: Work



Cluster 3: Work

Actions (Policy Proposals)	Enabling	Hindering	Challenges
Seek business investment (employer-employee relation) health conditions of employees	Tax reductions incentives		Discussions with trade unions
Start early with work-life balance policies	Examples of good practice Social welfare system	Traditional career system Shortage of labour and work demans	Rigidity of deliverables/based systems ↑ Cost of life
“Voluntary work” after retirement	Integrating retired people at “all” levels Recognition of elderly people’s experience and knowledge	Negative impact on employment of youth	Public acceptance
Promote strategic thinking & foresight (work for older people) + creation of jobs	Teleworking	Growing unemployment in some European countries	Who should participate in the discussions
Promoting home-based jobs		Need for social interactions (fear’ of isolation)	Accounting issues / monitoring

Cluster 3: Work

Actions (Policy Proposals)	Policy Requirements	Time Line	Level	Reflection
Seek business involvement	Tax reductions incentives (regulation) also on income revenue for employees	2015 - 2020	National	Relieve Health + Pension Insurance System
	Competition among socially responsible firms Eligibility criterion for EU funding	2015 - 2020	EU	EMAS
	Promotion of professional health + safety + environment inspection	2015 - 2020	EU	
Start early with work-life balance	Working-time regulations (daily, annual)		EU	
	Social reward beyond the professional activity (→ Elderly)		Funding for social work infrastructure	

Cluster 4: Health Care Delivery

Migration for foreign nursing personnel

Feasible?
High

Support evidence-based technology for care-workers

Educate health-care professionals to better work with those who are already elderly → keep them active

New technologies will make care more efficient but also more expensive

Work with communities to keep elderly active and involved → teach them new technologies such as internet, this keeps them active

Collaborative care models

Major challenge: Fragmented care service

“QUARTER” = social framework in small areas (e.g. of cities or towns)

Breaking boundaries between hospital and home (also money-flow)

Active-adult communities (>55)

Training and facilitating family-members as care-takers

Care communities

Competent caring starts at the bottom = nursing aides

Improvement of nursing facilities

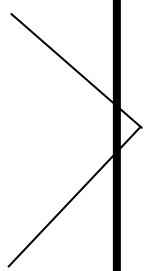
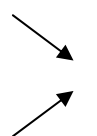
Desirable?
High

Desirable?
Low

Give more incentives to families to live together with ageing members of the families

Feasible?
Low

Cluster 4: Health Care Delivery

Actions (Policy Proposals)	Policy Requirements	Time Line	Level	Reflection
<ul style="list-style-type: none"> • More funding for operations / outcomes Health services research targeted at elderly perspective • Technology assessment Social Innovation Research Not only funding, but also methodological issues <p>Pilots:</p> <ul style="list-style-type: none"> • Create room for experimentation in real life situations with business models + practices to create evidence-base • Financial incentives with underlying quality incentives → <u>quality indicators</u> EU wide • Social-care broker / retirees as volunteers/working patient community → training of professionals training of non-professionals, create new skills requirements, reskilling, new skills sets <p>→Broadband connection / access, affordable ICT applications (relevant, innovative, usable)</p>	<div style="text-align: center;">  </div> <p>Strategic research agenda for ageing</p> <p>+deployment agenda</p> <p>+ reimbursement business models</p> <p>Learning, benchmarking, harmonisation? Long-term?</p> <p>Short-term?</p>	<p>EU (triggering, benchmarking)</p> <p style="text-align: center;">  </p> <p>National/local</p> <p>→National/EU → benchmarking inspiring</p> <p>Individual EU actors</p> <p>EU mandate Universal service</p>	<p>Patient orientation</p> <p>Personal</p> <p style="text-align: center;">↓</p> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;"> <p>Individual should be in the centre</p> </div>	