



Outcome and Impact Measurement
for (Social) Services and Interventions
PAIR and PHARAON experiences

16th December 2021

MEDEA IN A NUTSHELL

**INNOVATION
MANAGEMENT &
IMPACT ASSESSMENT**



MEDEA is an Italian SME, spin-off of the Scuola Superiore Sant'Anna di Pisa.

Has been working for **more than 20 years** in the active and healthy ageing - AHA domain to:

- promote **QoL** through adoption of Innovative socio-healthcare service in daily practice
- provide **Impact Assessment** to generate evidence of the added value of innovative services.
- support **Innovation Management** for AHA service adoption and scaling up.

Network and collaborations



Charing of the WG on health

Alliance for Internet of Things Innovation



COVID-19 Italy Vulnerabilities (CIV-N) Network

Member of the WHO CIV-N network

Mapping of the COVID-19 pandemic impact on vulnerable population in Italy



Founder member of the MedICT Joint Lab

(ICT for medical and health science)

Medea's role as expert in the definition of impact assessment methodology for ICT in medical and health domain.

MEDEA Impact assessment reference experiences

ACTIVAGE
PROJECT

ACTIVAGE: 7.500 users involved
<https://www.activageproject.eu/>

AHA Domain

pharaon

PHARAON: 5.000 users involved
<https://www.pharaon.eu/>

AHA Domain

MEFISTO

MEFISTO: only in vitro
<https://www.mefisto-project.eu/>

Meniscus
treatment

PAIR
Physical Activity and Rehabilitation

PAIR: 80 users
<https://site.unibo.it/pair/en>

PA after TKR
and THR



Outcome and Impact Measurement for (Social) Services and Interventions

The PAIR project use case



Co-funded by the
Erasmus+ Programme
of the European Union



This project has received funding from
the European Union's Erasmus Plus
Sport program under grant agreement
N. 613008-EPP-1-2019-1-IT-SPO-SCP

The PAIR project in a nutshell

PAIR European Project will develop and promote a physical activity (The PAIR exercise Program, PA) program for subjects operated of total hip or total knee replacement (THR/TKR), to be administered after completing the rehabilitation treatment.

University of Bologna – Department of Quality of Life - Italy

Rizzoli Orthopaedic Institute - Italy

“Carol Davila” University of Medicine and Pharmacy - Romania

University of Groningen – Department of Orthopaedics - Netherlands

Norwegian University of Science and Technology - Dept. of Neuromedicine and Movement Science - Norway

Medea – SME - Italy

Know and Can Association – NGO - Bulgaria

Start: 1st January 2020

End: 31st December 2022

Principal Investigator: **Laura Bragonzoni** – Department of Quality of Life Science – University of Bologna



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Back ground and unmet needs

State of the Art

Large consensus on the importance of PA promotion to:

- Prevent or mitigate disability
 - Improve quality of life in the long term
-
- There is **no best practice** in exercise and physical activity specifically designed for people who underwent THR and TKR.
 - **Little evidence** on the strategies to improve and maintain physical function after rehabilitation in the long term



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PAIR Research topic

There is little scientific research about physical activity after rehabilitation and how to make people adopting a new and more active lifestyle: PAIR project aims to fill this void

Subjects will be investigated to **analyze the efficacy and the adherence to a proposed PAIR exercise protocol**.

In particular, PAIR Project will investigate changes in lifestyle in the first year after surgery, relatively to physical activity before and after the surgery by means of an “ad hoc” questionnaire administered during a randomized multicenter study. The study will also focus on all kind of behavioral determinants that play an important role in the uptake and adherence of physical activity programs.



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PAIR study protocol

Int J Environ Res Public Health. 2021 Jun 23;18(13):6732. doi: 10.3390/ijerph18136732.

Evaluation of the Efficacy and Safety of an Exercise Program for Persons with Total Hip or Total Knee Replacement: Study Protocol for a Randomized Controlled Trial

Giuseppe Barone¹, Raffaele Zinno¹, Erika Pinelli¹, Pair Study Group¹; Francesco Benvenuti¹, Laura Bragonzoni¹

Collaborators, Affiliations + expand

PMID: 34201439 PMCID: PMC8268118 DOI: 10.3390/ijerph18136732

[Free PMC article](#)

FULL TEXT LINKS



ACTIONS

“ Cite

☆ Favorites

SHARE



20 participants for TKR + 20 CG

6 months

20 participants for THR + 20 CG

<https://pubmed.ncbi.nlm.nih.gov/34201439/>



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Medea's role on socio-economic impact assessment

Impact assessment framework

The objective of this activity is to define a list of relevant KPIs for the evaluation of the PAIR project expected outcomes and impact towards the European grand challenge of **demographic change and ageing population** → the first challenge that Europe is facing according to Economic Co-operation and Development (OECD)*

*OECD/EU (2018), Health at a Glance: Europe 2018: State of Health in the EU Cycle, OECD Publishing, Paris.
https://doi.org/10.1787/health_glance_eur-2018-en



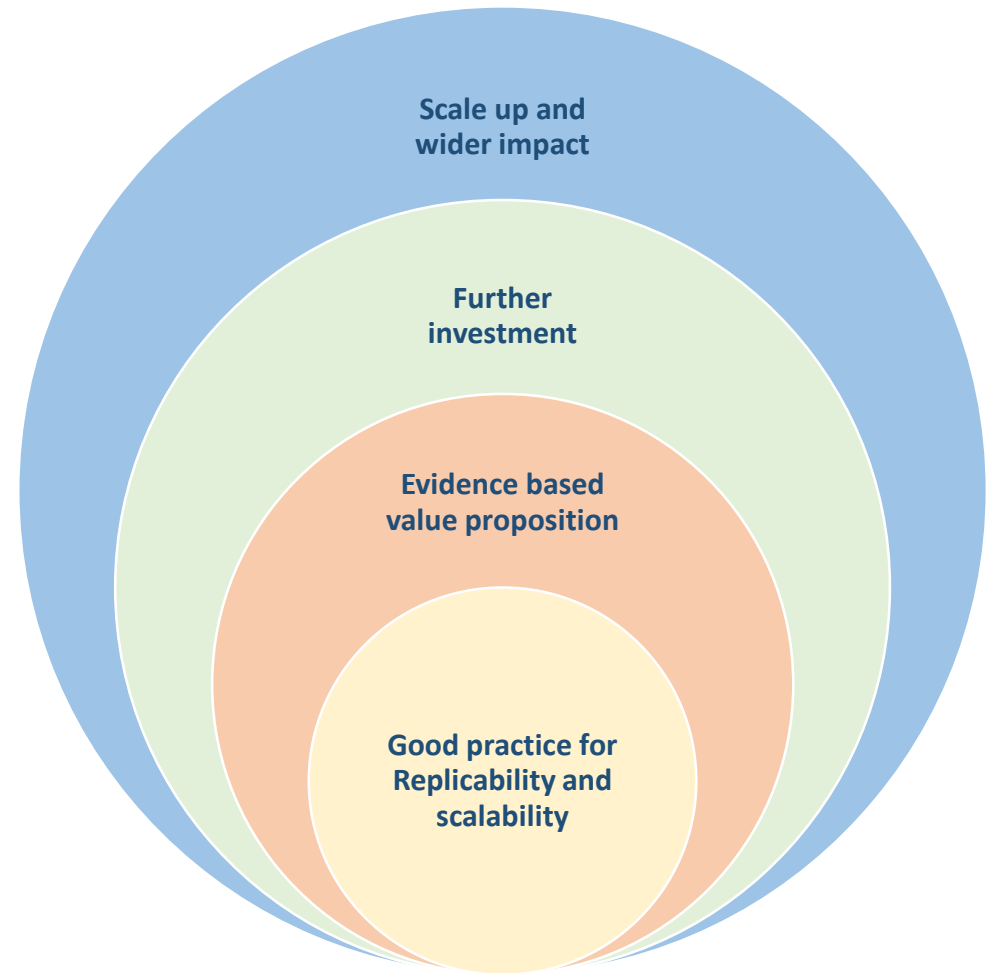
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Rational for PAIR impact assessment

- To demonstrate good practice for replicability and scalability for wider impact
- To define an evidence based value proposition for the PAIR protocol
- To drive further investment on evidence-based good practice for the promotion of physical activity
- Achieve wider impact



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Four steps process for the definition of an impact assessment framework

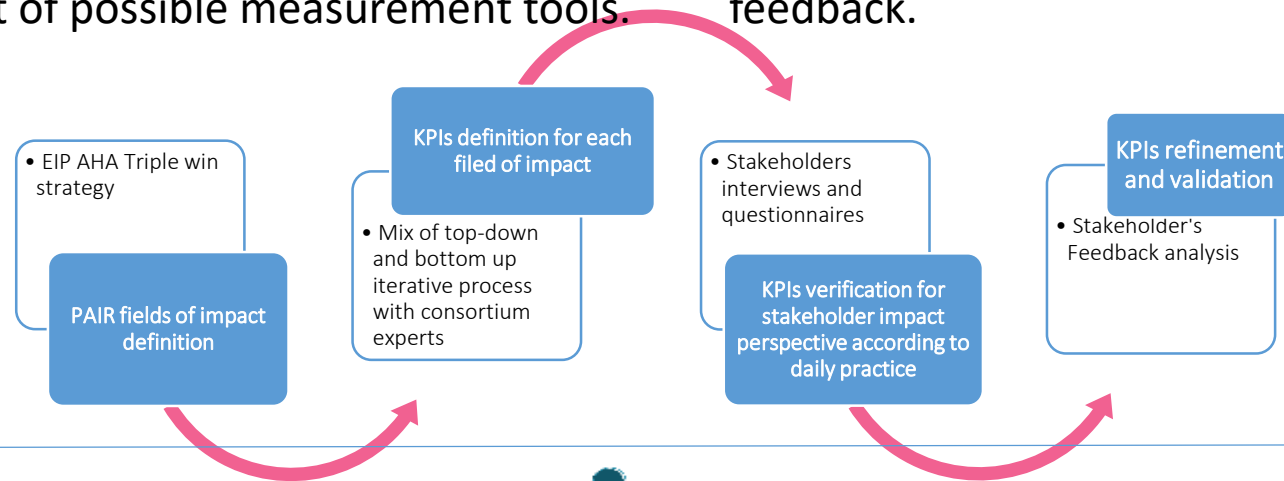
Methodology developed in previous projects in the field of ageing and Innovative meniscus treatment

Step 1: Preliminary analysis and assessment framework definition based on the project expected outcomes and impact referring to the EU grand challenges and priorities and reference impact framework definition.

Step 2: Identification of the most relevant KPIs, including methodology and a first set of possible measurement tools.

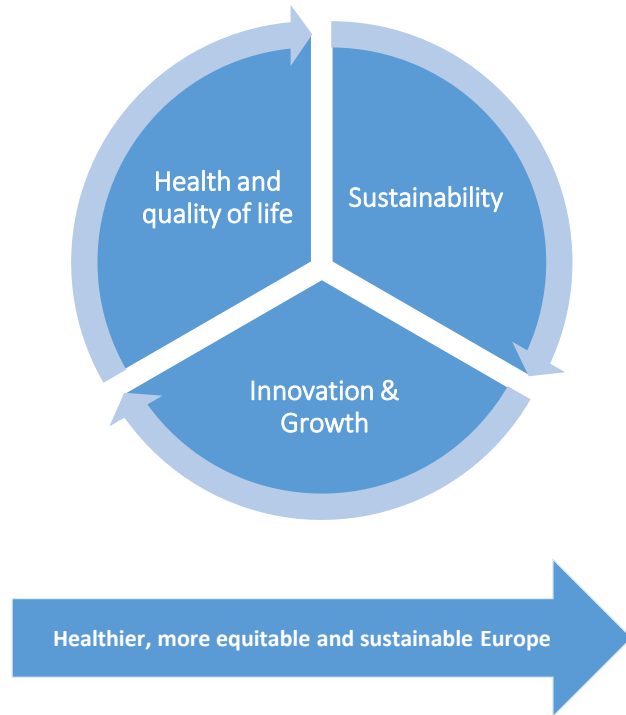
Step 3: Revision by stakeholders and experts inside and outside the consortium according to daily practice, needs and expectations.

Step 4: Review and fine tuning of the indicators on the basis of interaction with relevant stakeholder's and feedback.



Reference framework identification

Impact framework defined referring to the EIP-AHA triple win strategy for a healthier, more equitable and sustainable Europe



European Innovation Partnership for Active and Healthy Ageing EIP-AHA Triple win strategy:

- Improving the health and quality of life of Europeans with a focus on older people;
- Supporting the long-term sustainability and efficiency of health and social care systems;
- Enhancing European competitiveness in the innovation field

https://ec.europa.eu/eip/ageing/about-the-partnership_en.html



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Which KPIs can drive future scaling-up for wider impact towards a healthier and more equitable Europe?

Performance indicators

Sustainability indicators

Indicators supporting transferability and scaling up



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PAIR study will assess (during the project lifespan) patient primary and secondary outcomes as defined in the study protocol:

Expected Outcome	Patient outcomes (study protocol)	Measurement
Primary end point	Quality of Life	SF-36 Questionnaire
Secondary endpoints related to QoL	Functional status	Hand-held dynamometer Hand Grip Time Up and Go Single Stance test 30 s Chair-Stand Test KOOS Questionnaire
Secondary endpoints related to QoL	Pain level (knee or hip)	visual analogue scale (VAS)
Secondary endpoints related to QoL	Life style/physical activity level and attitude	The Recent Physical Activity Questionnaire (RPAQ)
Secondary endpoints related to QoL	Adherence	per cent of exercise sessions actually performed/total number of scheduled exercise sessions
Secondary endpoints related to QoL	Satisfaction	questionnaire with structured responses based on a 7-point Likert scale
Secondary endpoints related to QoL	Safety	AE staff registration



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Pharaon Impact Assessment: A methodology for addressing **primary, secondary** and **tertiary** end-users' needs in the Active and Healthy Ageing (AHA) domain

Outcome and Impact Measurement for (Social) Services and Interventions

EPR Online Seminar

16 December 2021

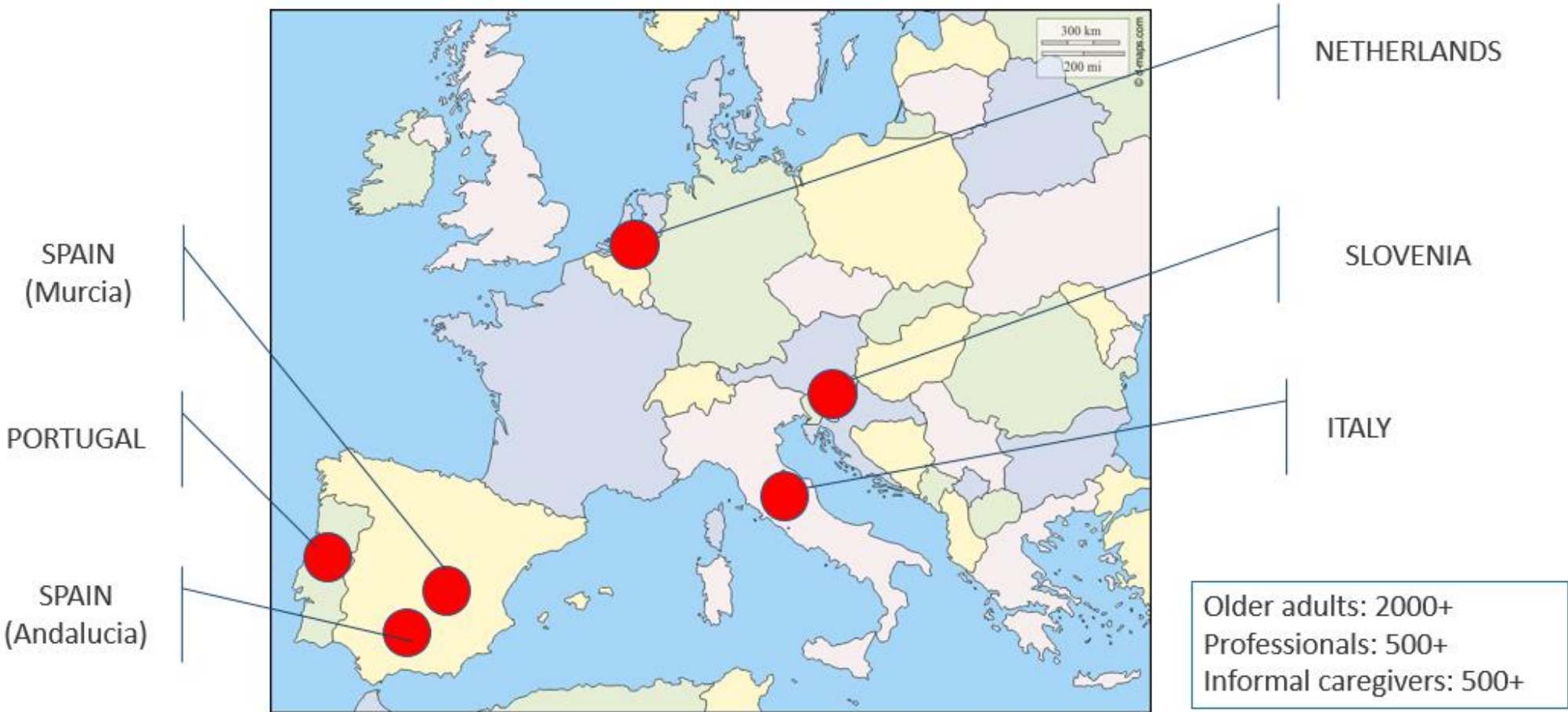
Pietro Dionisio (Medea)



Main information



Overall budget:
€ 21.319.813,75



Overall Objectives.....

**.....to provide support for
Europe's ageing population**

**..... maintaining the dignity of
older adults and enhancing their
independence, safety, and
capabilities....**

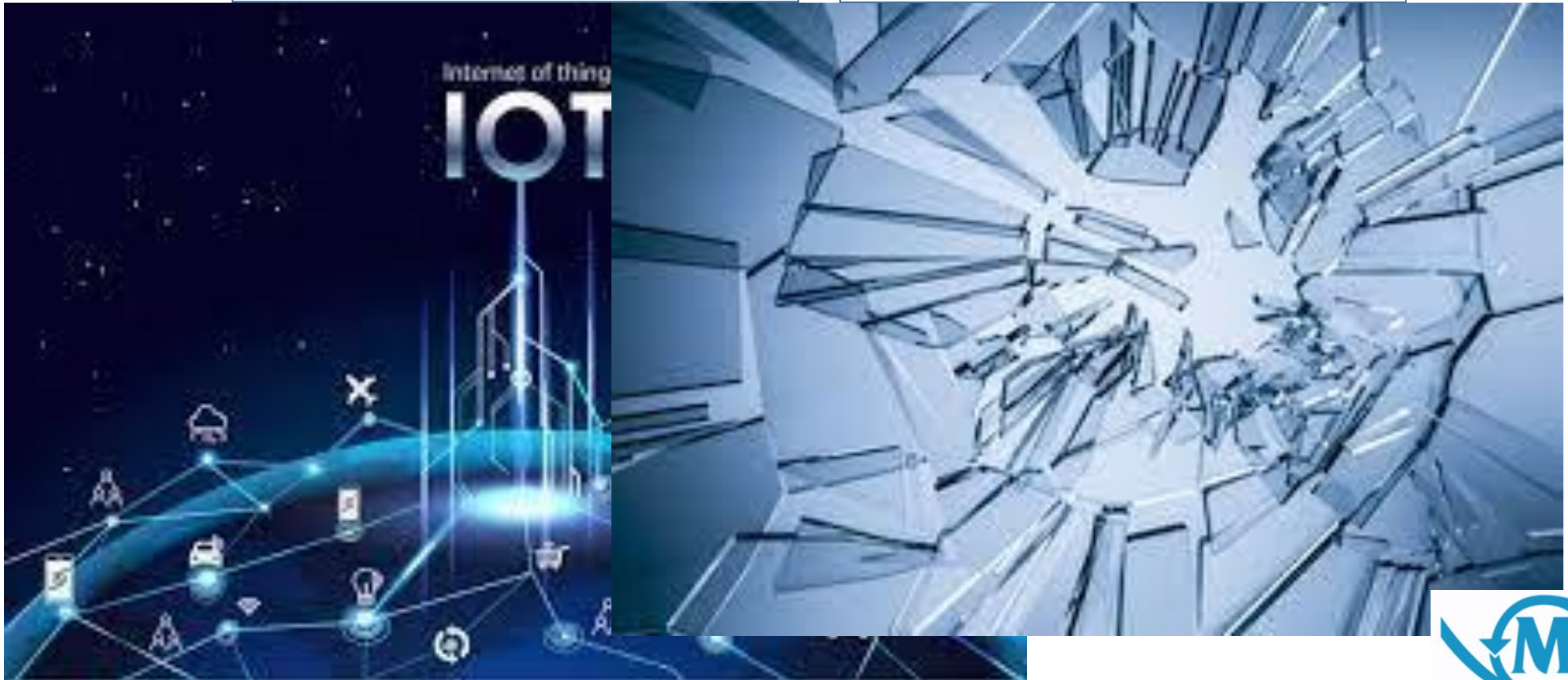
**.....providing personalised and
optimised health care
delivery.....**

**..... integrating digital services,
devices, and tools into open
platforms.**

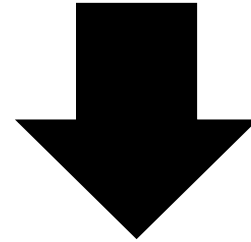
CARPE DIEM: Momentum for impact assessment for ICT/IoT services in healthcare

The market: Massive opportunity

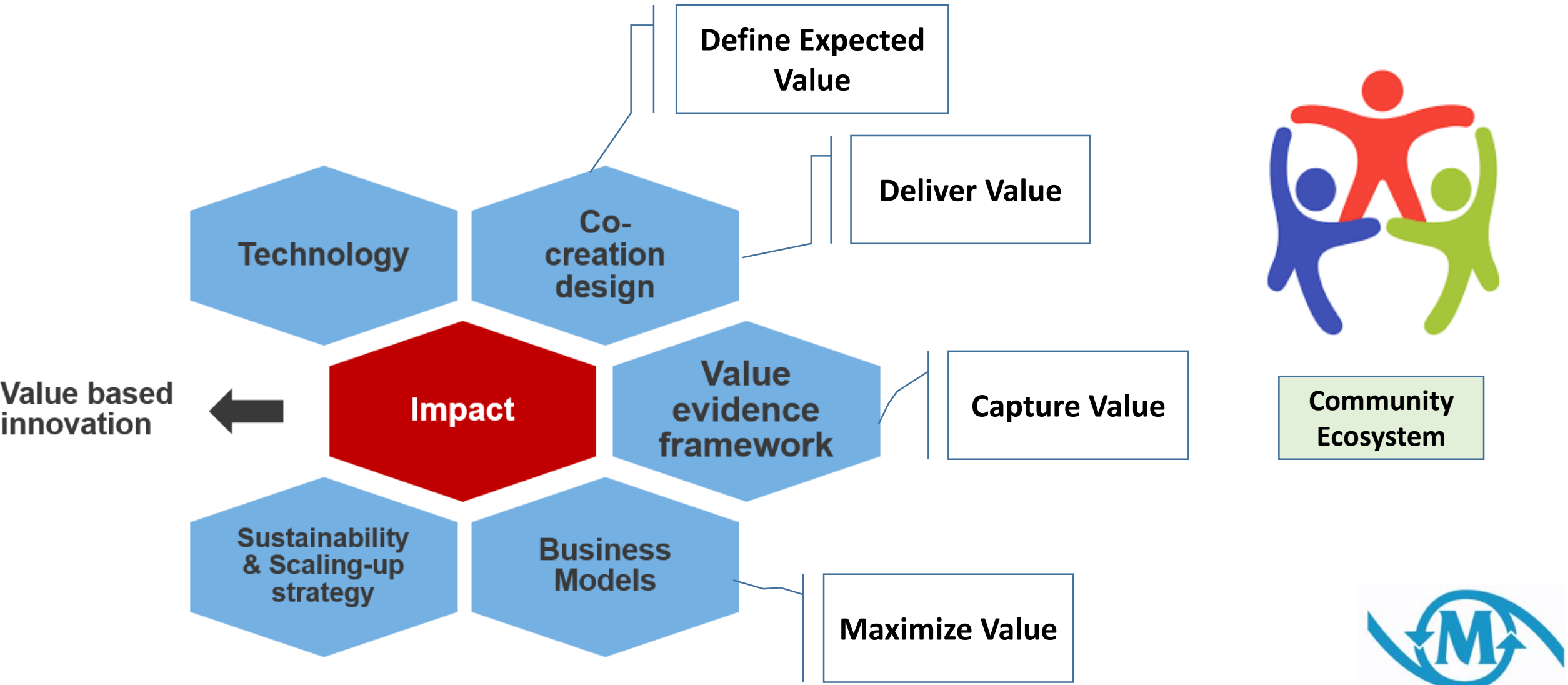
The market: high fragmentation



SO.....There is the need to provide instruments to drive the innovation adoption and support decision-makers in services selection



VALUE BASED INNOVATION



Vision



“My Quality of Life is better because I have a blend of affordable services that fit my (our) needs. I’m feel free to choose what is better for me (us) any time and I’ve full control on my life”



“As a formal/informal caregiver my Quality of Life is improved and I feel less stress and pressure during caring activities. I can dedicate my time to more various tasks and leisure activity.



“As Service Provider, I have enlarged my services’ portfolio for the living of senior people customers and I’m able to upgrade, downgrade, adapt to the very personal needs of my customers. Moreover, I’ve enlarged my customer base!!!! And now I’m more profitable!! “



“In my town we have deployed an IoT smart City infrastructure. In addition to city services we are providing platform service to our Social Care Office to deliver multiple services through providers to senior citizen in town .

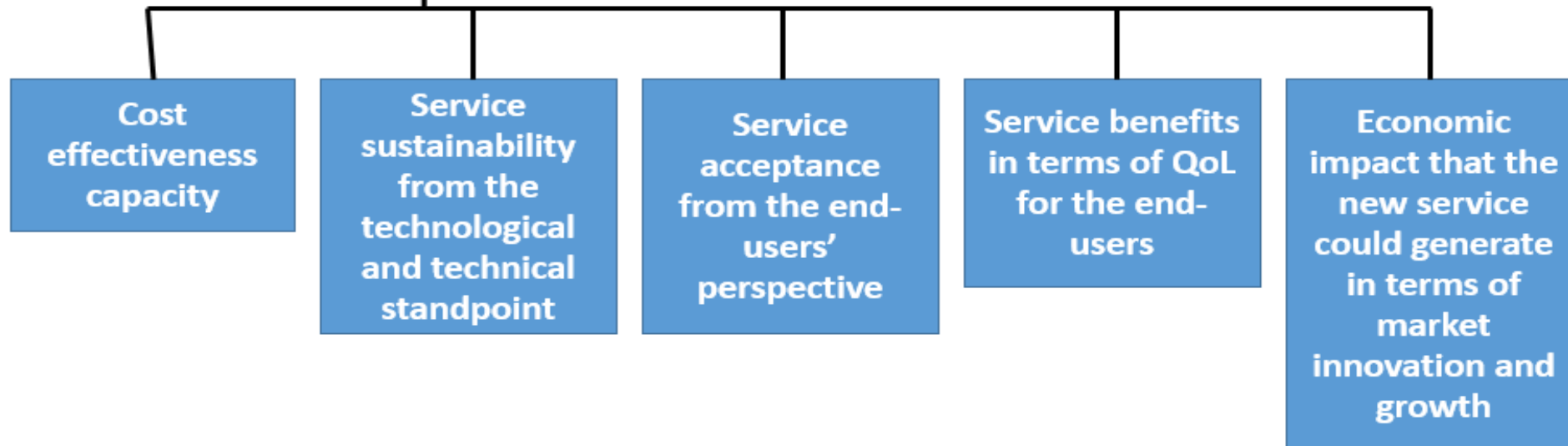
Impact assessment and EVIDENCE creation

How are we going to achieve that vision

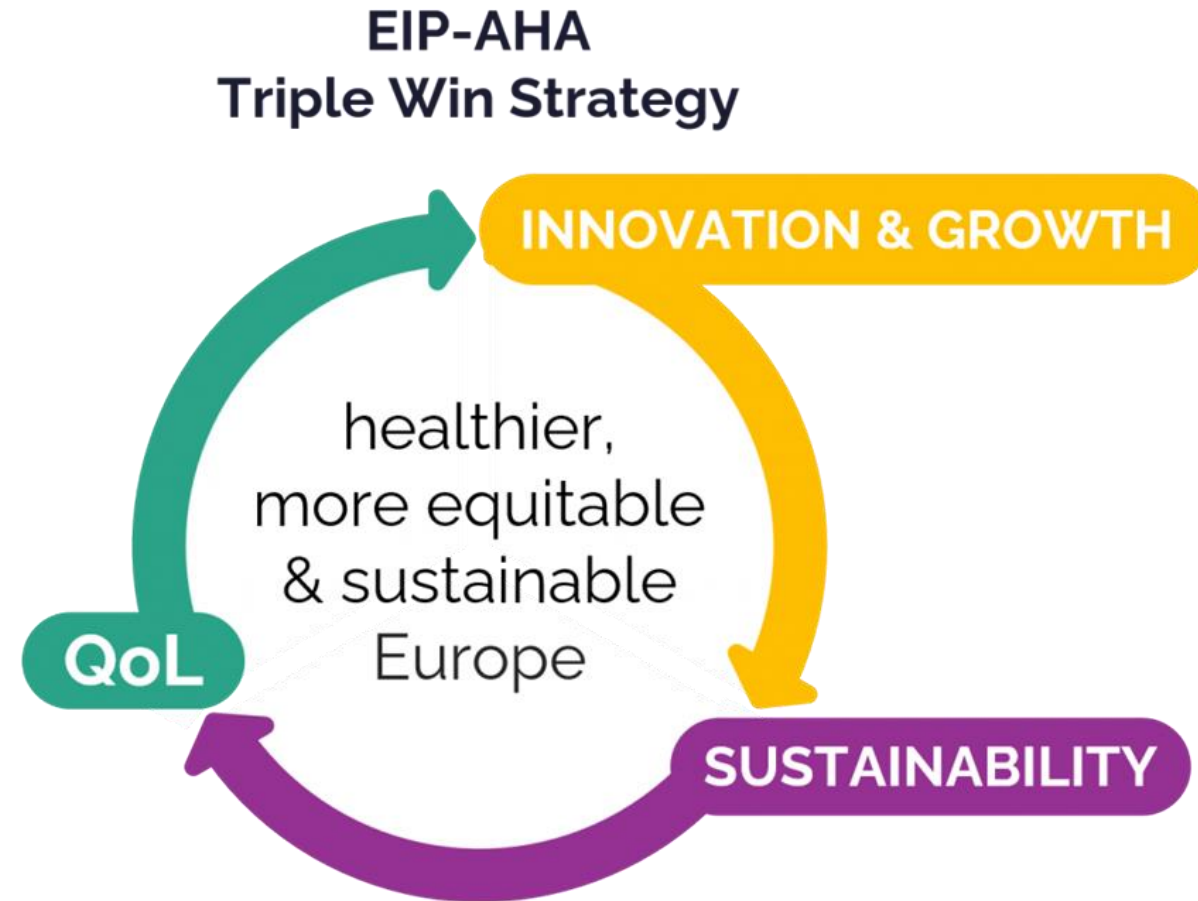


DECISION MAKER

EVIDENCE

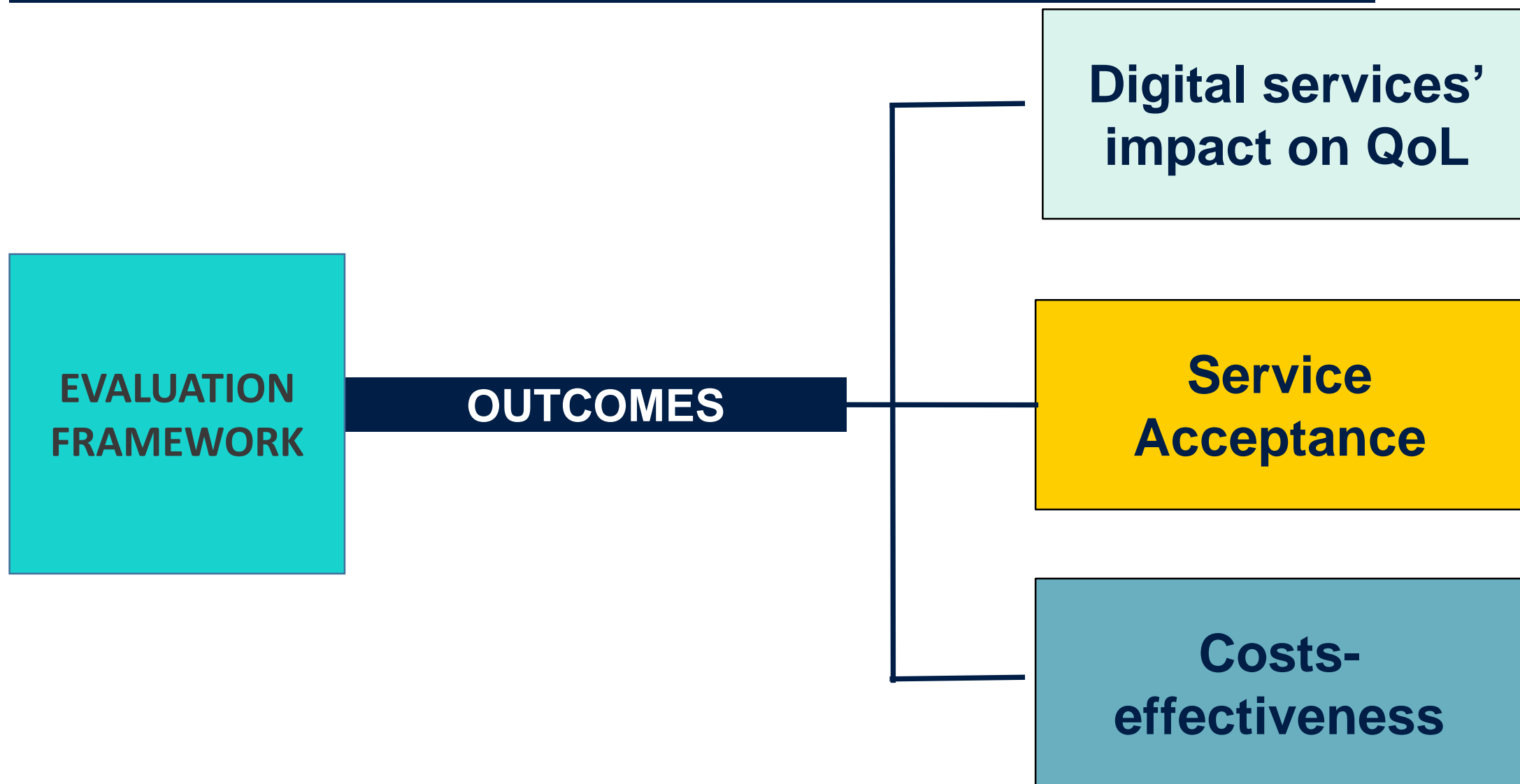


Pharaon's evaluation methodology



Pharaon impact evaluation and Evidence creation

Pharaon's Evaluation dimension



MEDEA monitored the implementation of the following innovative service

The service: Since 2020, the municipality of Valencia offers an integrated service comprising the following sub-services:

+ 200 paying users in the service

Home monitoring

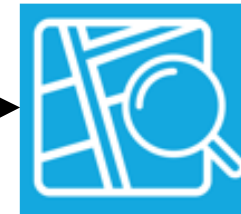


It aims to monitor the behavior of the frail person (e.g. detect actions that may require the intervention of health professionals).



**AJUNTAMENT
DE VALÈNCIA**

Outdoor monitoring



It aims to provide follow-up of the person outside the home (e.g. in an urban environment).

Q & A

Which are the main ongoing and future projects and initiatives you foreseen to be relevant or can benefit from such approach?



Pietro Dionisio

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