DELIVERABLE

D6.2 – Ecosystem Building, Industrial Clustering & Stakeholders Engagement - First version

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Executive Summary

This document constitutes the deliverable D6.2 *"Ecosystem Building, Industrial Clustering & Stakeholders Engagement - First version"* of the EU-funded HosmartAI project (grant agreement No. 101016834).

The report outlines the approach to ecosystem building within the HosmartAI project and summarizes key results of the first year of the activity. It specifically explains the objectives of the activities related to ecosystem building and industrial clustering, its approach to stakeholder mapping, provides the first version of the stakeholder analysis and suggests a strategy of how to best exploit the resources to reach the aims. The report concludes with a list of the measures of the objectives.

For the stakeholder analysis, the report uses scientific literature on stakeholder engagement and uses specifically the power/interest-typology of Gardener, Rachlin and Sweeny (1986) [REF-01], which it adopts to the HosmartAI context. Within this specific context, the typology helos categorizes stakeholders into four categories which differ in their power to impact the advance of innovations and their interest to engage with HosmartAI. This way, the report identifies five stakeholder groups which are likely to be key players and thus deserve full focus in being engaged in the HosmartAI ecosystem. These five groups that were identified are: (i) (Industry) associations/ umbrella organisations, (ii) Health Care Providers, (iii) Clinicians, (iv) policy makers and (v) research.

The means to reach and engage these stakeholder groups as well as others, though with reduced effort, are outlined in the ecosystem building exploitation strategy (not to be confused with the business exploitation strategy). The heart of the exploitation strategy constitutes two stakeholder workshops, flanked by the exploitation of industry events. Further means to reach out are to exploit existing networks within the consortium and within the realm of the EU-finding ecosystem, as well as making use of classic dissemination channels of which some are already established.

This deliverable provides a first version of the ecosystem building and industrial clustering strategy. Its contents, including the stakeholder analysis, are being constantly iterated and updated. The follow up report, D6.3, will report on the activities and results of the task ecosystem building & industrial clustering at the end of the project (M41).

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1.0	2022-07-30	INTRA	QA and creation of the version to be submitted

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Definitions, Acronyms and Abbreviations

Acronym/ Abbreviation	Title
AI	Artificial Intelligence
D	Deliverable
M	Month
MS	Milestone
KPI	Key Performance Indicator
PU	Public
SME	Small and medium sized company
TBD	To Be Determined
WP	Work Package

1 Introduction

1.1 Project Information

VISION
The HosmartAI vision is a strong, efficient, sustainable and resilient European **Healthcare system** benefiting from the capacities to generate impact of the technology European Stakeholders (SMEs, Research centres, Digital Hubs and Universities).

MISSION
The HosmartAI mission is to guarantee the **integration** of Digital and Robot technologies in new Healthcare environments and the possibility to analyse their benefits by providing an **environment** where digital Health Care tool providers will be able to design and develop AI solutions as well as a space for the instantiation and deployment of AI solutions.

HosmartAI will create a common open Integration **Platform** with the necessary tools to facilitate and measure the benefits of integrating digital technologies (robotics and AI) in the healthcare system.

A central **hub** will offer multifaceted lasting functionalities (Marketplace, Co-creation space, Benchmarking) to healthcare stakeholders, combined

with a collection of methods, tools and solutions to integrate and deploy AI-enabled solutions. The **Benchmarking** tool will promote the adoption in new settings, while enabling a meeting place for technology providers and end-users.
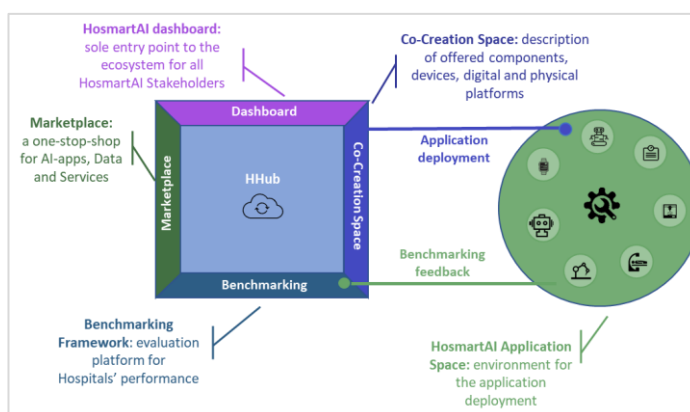
Eight Large-Scale Pilots will implement and evaluate improvements in medical diagnosis, surgical interventions, prevention and treatment of diseases, and support for rehabilitation and long-term care in several Hospital and care settings. The project will target different **medical** aspects or manifestations such as Cancer (Pilot #1, #2 and #8); Gastrointestinal (GI) disorders (Pilot #1); Cardiovascular diseases (Pilot #1, #4, #5 and #7); Thoracic Disorders (Pilot #5); Neurological diseases (Pilot #3); Elderly Care and Neuropsychological Rehabilitation (Pilot #6); Fetal Growth Restriction (FGR) and Prematurity (Pilot #1).

To ensure a user-centred approach, harmonization in the process (e.g. regarding ethical aspects, standardization, and robustness both from a technical and social and healthcare perspective), the

living lab methodology will be employed. HosmartAI will identify the appropriate instruments (**KPI**) that measure efficiency without undermining access or quality of care. Liaison and co-operation activities with relevant stakeholders and **open calls** will enable ecosystem building and industrial clustering.

HosmartAI brings together a **consortium** of leading organizations (3 large enterprises, 8 SMEs, 5 hospitals, 4 universities, 2 research centres and 2 associations – see Table 1) along with several more committed organizations (Letters of Support provided).

Table 1: The HosmartAI consortium.

Number[1]	Name	Short name
1 (CO)	INTRASOFT INTERNATIONAL SA	**INTRA**
1.1 (TP)	INTRASOFT INTERNATIONAL SA	**INTRA-LU**
2	PHILIPS MEDICAL SYSTEMS NEDERLAND BV	**PHILIPS**
3	VIMAR SPA	**VIMAR**
4	GREEN COMMUNICATIONS SAS	**GC**
5	TELEMATIC MEDICAL APPLICATIONS EMPORIA KAI ANAPTIXI PROIONTON TILIATRIKIS MONOPROSOPIKI ETAIRIA PERIORISMENIS EYTHINIS	**TMA**
6	ECLEXYS SAGL	**EXYS**
7	F6S NETWORK IRELAND LIMITED	**F6S**
7.1 (TP)	F6S NETWORK LIMITED	**F6S-UK**
8	PHARMECONS EASY ACCESS LTD	**PhE**
9	TERAGLOBUS LATVIA SIA	**TGLV**
10	NINETY ONE GMBH	**91**
11	EIT HEALTH GERMANY GMBH	**EIT**
12	UNIVERZITETNI KLINICNI CENTER MARIBOR	**UKCM**
13	SAN CAMILLO IRCCS SRL	**IRCCS**
14	SERVICIO MADRILENO DE SALUD	**SERMAS**
14.1 (TP)	FUNDACION PARA LA INVESTIGACION BIOMEDICA DEL HOSPITAL UNIVERSITARIO LA PAZ	**FIBHULP**
15	CENTRE HOSPITALIER UNIVERSITAIRE DE LIEGE	**CHUL**
16	PANEPISTIMIAKO GENIKO NOSOKOMEIO THESSALONIKIS AXEPA	**AHEPA**
17	VRIJE UNIVERSITEIT BRUSSEL	**VUB**
18	ARISTOTELIO PANEPISTIMIO THESSALONIKIS	**AUTH**
19	EIDGENOESSISCHE TECHNISCHE HOCHSCHULE ZUERICH	**ETHZ**
20	UNIVERZA V MARIBORU	**UM**

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[1] CO: Coordinator. TP: linked third party.

Number[1]	Name	Short name
21	INSTITUTO TECNOLÓGICO DE CASTILLA Y LEON	**ITCL**
22	FUNDACION INTRAS	**INTRAS**
23	ASSOCIATION EUROPEAN FEDERATION FORMEDICAL INFORMATICS	**EFMI**
24	FEDERATION EUROPEENNE DES HOPITAUX ET DES SOINS DE SANTE	**HOPE**

1.2 Document Scope

The report outlines the approach to ecosystem building within the HosmartAI project and summarizes key results of the first year of the activity. It specifically explains the objectives of the activities related to ecosystem building and industrial clustering, its approach to stakeholder mapping, provides the first version of the stakeholder analysis and suggests a strategy of how to best exploit the resources to reach the aims. The report concludes with a list of the measures of the objectives.

1.3 Document Structure

This document is comprised of the following chapters:

Chapter 1 presents an introduction to the project and the document.

Chapter 2 provides a stakeholder analysis comprised of a theoretical and an analytic part.

Chapter 3 provides the methods used as an exploitation strategy to reach the task's objectives.

Chapter 4 presents an overview of the technicalities such as KPIs and the timeline of the activity.

2   Stakeholder mapping

The stakeholder mapping is grounded in literature research on stakeholder engagement, using specifically the typology of Gardener et al. (1986) [REF-01] of a power-interest dynamic. This typology is applied to the HosmartAI context which categorizes various stakeholder groups by importance to HosmartAI's objectives for ecosystem building and its exploitation.

2.1 Stakeholder Theory

Disseminating and exploiting the objectives, learnings and results of the project requires knowledge of which groups have which interest towards it. These groups are referred to as stakeholders. A common and fitting definition in literature defines stakeholders to be "any group or individual who can affect or is affected by the achievement of the organization's objectives" (Freeman 1984 in Mitchell et al., 1997) [REF-02]. The importance of stakeholder groups external to the project lies in their capacity to fuel transformation and extend the transformation further than the project itself can. By reaching out to and involving stakeholders, the project multiplies its learnings into public knowledge, contributing to the usage of its results and learnings, to an optimization of its results and processes, and hopefully to an adaptation of it all.

The range of stakeholders differs widely but literature has identified common stakeholder groups to include policy makers, regulatory bodies, universities, research institutes, influential interest organisations and financing providers (Bergek et al., 2008) [REF-03].

Naturally, stakeholders differ in their interests and goals, their dynamics and their value to the project's objectives. Various parameters define the potential relationship and ability to cooperate between the project and the stakeholders.

A body of literature and Research has discussed and identified the parameters defining these relationships in the past. Various frameworks have been developed. Commonly used frameworks that have proven useful are the Power/Interest-Grid, originally introduced by Gardner, Rachlin and Sweeny (1986) [REF-01].

2.1.1 The Power/Interest Grid

The Power/Interest-Framework by Gardner et al. (1986) considers two parameters central for sorting stakeholders in a useful way to build, manage and exploit relationships: Power and Interest.

Power has been defined in stakeholder literature very early on and since gone through a myriad of further definitions, thus the literature is still in a challenge to agree on a definition. A common ground seems to be provided by Salancik & Pfeffer (1974) [REF-04] who state: "Power may be tricky to define, but it is not that difficult to recognize: the ability of those who possess power to bring about the outcomes they desire."

In this context, power is sometimes also referred to as influence. The wording is not pivotal, but it fits more nicely with the societal context, HosmartAI operates in and finds frequent use in this analysis. Power/Influence describes the x-axis of the grid.

The other parameter, describing the y-axis of the grid, is interest. Interest is very intuitive, still, we include and follow Murray-Webster and Simon (2006), defining interest to be "[The measure] by the extent to which [the stakeholder] will be active or passive." [REF-05]. Interest is closely connected to the "stakes" a stakeholder has in the matter (cf. Ackerman and Eden 2011) [REF-06]. It should further be noted that interest does not necessarily have to be sympathetic. Stakeholder can very well take interest in a subject yet confront it.

The resulting grid along the parameters power/influence and interest, takes shape as in Figure 1. Four quadrants open:

i.   (Key)[2] Players: commanding over high power & high Interest
ii.   Subjects: commanding over low power/ high interest
iii. Crowd: commanding over low power, low interest
iv.   Context Setters: commanding over high power/ low interest
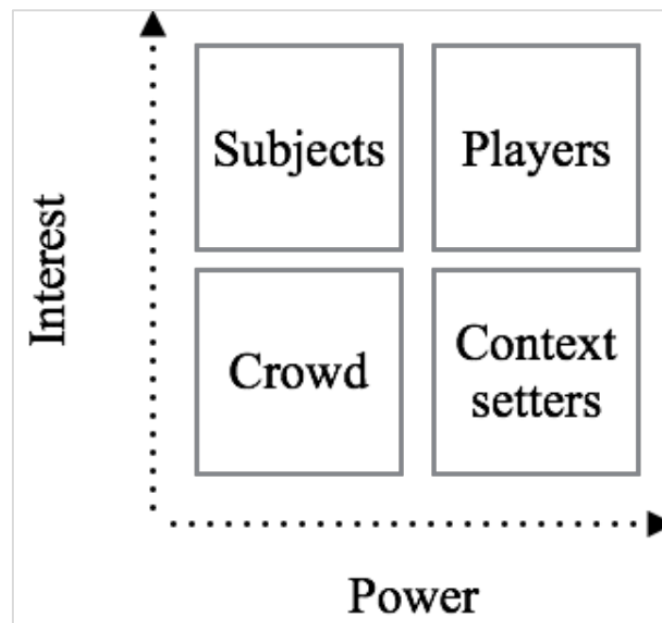
Figure 1: Power/Influence-Interest Grid. Adapted from Ackerman and Eden (2011) [REF-06].

Table 2: Stakeholder Typologies according to Gardner (1986).

(Key) Players	High power, high interest	These stakeholders need the most attention, as they have power and resources to move and to support the project. They also have the power to block. They are frequent engagers and should be taken seriously in their interest to support and move forward but also in the potential interest to obstruct. Involving these

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[2] While Gardner called the role *Players*, within literature, this role is more often referred to as *Key Players*.

		stakeholders – whether or not their interest is of a positive attitude – is key.
Subjects	low power, high interest	Stakeholders hold value as supporters and ambassadors. Without actual power, attention should not focus on subjects. But spill over effects of their interest in the matter are possible.
Crowd	Low power, low interest	Stakeholders hold little value, thus little attention to the group is needed.
Context Setters	high power, low interest	Without interest but with power, these stakeholders constitute sleeping giants. Addressing their needs and keeping them informed and satisfied is important.

2.1.2 Power/influence in the HosmartAI project context: Taking a look at innovation/transformation pathways

Health Care is not an environment lacking in challenging regulation requirements – for good reason. For regular medical devices, the innovation pathways are challenging but they have been well defined. This is less the case for HosmartAI's work. With its focus on integrating digital and robotic technologies into the Health Care environment, HosmartAI is at the forefront of innovation implementation in the European Health Care Sector. The scale of transformation drives – however – considerably deeper than product and service developments. The shift in baseline technologies – towards software based digital tech, robotics and AI – provides the additional challenge that transformation pathways are still in development and implementation is accompanied by higher than usual uncertainty. Even if regulatory hurdles can be taken, innovative health tech often faces difficulties in achieving widespread adoption or local infrastructure challenges.

This provides the context, within which the parameters of power/influence and interest need to be considered. A more targeted definition of power/influence within the context of innovation pathways can be taken from the work of Smith et al. (2005). Analysing regimes and regime transformation, Smith et al. consider influence the ability "to bring about pressure, deploy resources, and collaborate in processes of system innovation" (Smith et al. 2005) [REF-07]. Put differently, the key to influence is, if a stakeholder can translate their position into tangible results in either driving change or maintaining the status quo.

Concerning the interest-parameter, Murray-Webster's & Simon's above-mentioned definition is rather independent of the specific context of innovation/transformation pathways. Interest is a parameter in need of observation. In the beginning of this analysis, the authors will have to assign a funded guess of the extend of interest for each stakeholder. Within the exploitation strategy, the activity and feedback will tell how accurate the guess has been. The stakeholder analysis thus needs iteration and will see updates throughout the project's runtime.

2.2 Stakeholder groups

In order to identify stakeholders for HosmartAI, one can go along two lines. The first is by general themes, the second is by pilots. The first – themes – refers to the general buzzwords of HosmartAI: digital health, Robotics and Artificial Intelligence. The second one – pilot related topics – is more specific. The issues here include medical diagnosis, surgical interventions, prevention and treatment of diseases, and support for rehabilitation and long-term care as well as organisation and logistics.

Considering the second approach as too specific for the early stage of the project, the stakeholder analysis scouted stakeholders along the first approach. The second approach will be taken into account within the course of Sprint 3 of WP1, as the project moves from abstract to more concrete terms. It will help to deepen the stakeholder analysis The results will feed into the work of T6.2 but are only a second step, its results are not yet available to this deliverable. The selected stakeholders for approach 1 include: Industry (Associations and Firms), Health Care Providers, Clinicians, Investors, Research Institutes (public and private) and decision makers and multipliers in policy and politics.

2.2.1 Industry

Industry along with academic research is the birthplace of much of our innovation. Industry is not a single actor but several different actors with differing power and interest levels. We differentiate between corporate companies, start-up companies and associations/umbrella organisations which themselves exist on several levels – regional, national and international but also within various topical domains.

2.2.1.1   Corporate and large companies

Corporate companies within the Health Care industry command considerable resources. Within the innovation pathway, corporates are strong in turning innovation into viable services and products and creating financial revenue which secures the financial sustainability and thus longevity of the innovative solution. Corporates have either in-house trained personnel experienced in the (inter)national regulatory systems or command the resources to reliably buy the respective services, ensuring the quality of the services and products. Finally, the success of corporates has proven corporates to be sensitive to market trends and good timing in providing their products. The reputation that especially global players, as well as market leaders, have built, often acts as a door opener to regulators and policy makers. They are further trusted with experimental pilots and cutting-edge projects.

According to the definition laid out above, we consider these resources to be considerable power within innovation pathways and rank corporates to be high power actors.

Due to their considerable resources, corporations often have teams at their disposal that research and investigate current developments in their respective innovation fields, being highly informed about the state of the art of technology. Additionally, corporations can access highly skilled, leading professionals, and thus are able to quickly accumulate and invite external knowledge into their firms. Furthermore, they often are involved in cutting edge pilot projects, starting them either on their own or within public projects, which provide them with

playing fields for their developments. These factors reduce corporations' need to rely on the processes and results of other public projects in which they have not involved themselves for inspiration or learnings. Interest in engaging with a public project such as HosmartAI as an external thus is considered to be rather low.

According to our theory framework, industry in form of corporations and big firms combine high potential power with low interest in the project. This analysis sorts corporations into the category of context setters. The task will be to reach out to, invite them and engage with them, but to be considerate of the resources invested, considering the lower likelihood of their potential engagement.

Large companies and corporations are looking to:

- Understand the needs of Health Care professionals and nurses that can be addressed with innovative technologies
- Understand challenges and hurdles in hospital processes
- Understand implementation processes within clinics
- Access to trusted Health Care Provides
- Understand trust processes within institutions

HosmartAI can address their needs in the following way:

- Provide insights into technology implementation processes within hospitals
- Provide an understanding of challenges and potentials within the implementation of technology processes
- Provide knowledge of standards and interoperability of solutions
- Provide experience in trust processes regarding the implementation of new technologies
- Provide Health Care Providers that are experienced in implementing innovative technologies

2.2.1.2 Start-ups

Start-ups and small companies constitute the classic opposite of corporate companies. Small companies are usually not provided with considerable resources, neither in staff, in finances, nor in reputation and networks. Considering Smith et al.'s (2005) definition of power as "potential to bring about change", start-ups and small companies hold little power, even though some truly cutting-edge start-ups hold some potential (e.g. the biotech start-up BioNTech that produced the first mRNA-vaccination against Covid-19).

As their resources are limited, start-ups constantly look out for opportunities to learn on, to grow and to raise finances. Their interest in public projects such as HosmartAI is expected to be considerably high. Start-ups do not have the same access to Health Care Providers as corporations. Projects like HosmartAI potentially provide start-ups with transparency into processes and facilities they cannot produce themselves. HosmartAI additionally offers start-ups an opportunity to come on board, and work with renowned universities and companies within its open call scheme, providing a certain measure of financing within the project's

framework. And lastly, the results, HosmartAI is producing, are results start-ups can build on but not produce themselves.

With high interest but low power, start-ups fall into the category of subjects. The goal is to reach subjects by dissemination and communication. In the case of HosmartAI, the project includes start-ups additionally through its open call scheme, profiting off their drive in new technologies. As with context setters, however, the project needs to balance their engagement with these stakeholders well, keeping in mind their low power position in the potential exploitation of the project's results.

Regarding their products and Services, Start-ups are experiencing the same needs as corporations:

- Understand the needs of Health Care professionals and nurses that can be addressed with innovative technologies
- Understand challenges and hurdles in hospital processes
- Understand implementation processes within clinics
- Access to trusted Health Care Provides
- Understand trust processes within institutions

HosmartAI can address their needs in the following way:

- Provide insights into technology implementation processes within hospitals
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- Provide knowledge of standards and interoperability of solutions
- Provide experience about trust processes regarding the implementation of new technologies
- Provide Health Care Providers that are experienced in implementing innovative technologies

2.2.1.3   Industry associations and umbrella organisations

Associations and umbrella organisations are the extended arm of the industry that care about transversal issues within and across the industry, such as AI and robotics constitute, in order to assess their impact on the industry. Within this function, the interest in developments and results of public projects is indeed high as it is not as specific as within the individual corporations. It is worthwhile to differentiate also between industrial associations and other umbrella organisations, such as hospital/ clinic associations and other Health Care associations, e.g. associations of Health Care insurances. All of these organisations hold high interest in following the current developments at the interface of Health Care and the digital revolution.

As lobby organisations, often being set up by their interest groups themselves (by clinics, by corporations, etc.), they hold considerable power in impacting the innovation pathway for new development. Tracking and assessing the developments, they are in a position to consult and advise their members, their industry as a whole, the public as well as politics. If the

association is within the one or two top institutions in their field with a considerable standing, their network includes a broad range of decision makers worthwhile to reach out to.

Associations and umbrella organisations are thus a worthwhile group to target for HosmartAI, considering them as key players within the above-described evaluation scheme. Associations and umbrella organisations exist on European, national, and even regional level. It will need some more research to identify the relevant and impactful ones within their niche and level.

Associations are looking to:

- Advice policy makers on legal hurdles and potential solutions
- Advice institutions on potential hurdles and provide solutions
- Improve standards and acceptance and uptake thereof
- Work out solutions for systemic shortcomings of manual infrastructure and provide solutions for digital infrastructure

HosmartAI can address their needs in the following way:

- Provide accepted standards
- Provide consultation in interoperability
- Provide consultation in legal challenges for Health Care Providers and clinicians and potential solutions
- Provide insights into systemic shortcomings for several countries
- Provide experience in transformation and change management processes
- Provide insights into financing mechanisms

2.2.2 Health Care Providers

Health Care Providers provide the central locations for HosmartAI's project to take place and are per definition of the project central actors not only within the process but also in the exploitation of the work. Providers, clinics, regular hospitals, practices, and other forms of Health Care providers are considered to have a high interest in HosmartAI's work. As technologies advance and become ever more central to Health Care services, the interest in how to implement these technologies within the providers is expected to exponentially grow. This is relevant for the results HosmartAI is going to produce as well as the implementation process itself, considering the highly regulated and often slowly changing structures within Health Care.

Decision makers of Health Care providers hold significant power in the exploitation of the project's results as they are the ones able to start similar processes within their own institutions, leaning on the results, processes and experiences of the project, taking them one step further. Potential obstacles in starting similar processes may be capacity issues and financial challenges. Especially financial challenges can be alleviated by joining public projects, which is another aspect of HosmartAI which Health Care providers will potentially be interested in learning about.

The combination of high interest and high power in exploiting the results and experiences of HosmartAI identify Health Care providers to be key actors, we want to reach out to. Central challenge is the vast number of providers and to find efficient ways of identifying high potential providers, worthwhile to invest the limited resources of HosmartAI.

Health Care Providers, especially Hospitals, are looking into new technologies with the following needs:

- Guidance in the implementation of innovative technologies;
- effective & high-quality digital solutions to improve their products/services;
- understanding of fast emerging new trends and technologies in AI for health;
- understanding of the new and innovative business models;
- links to trusted and AI health smart solution providers;
- easy-to-use digital solutions which would require fewer digital skills (or training on the usage of such solutions.

HosmartAI can meet these needs:

- provide vast experience in the implementation of innovative technologies from a process, a financial, a technical and a trust perspective;
- Redesign workforce planning and clinical education processes to address the needs of both future healthcare and AI-focused professionals; and invest upfront in upskilling frontline staff;
- provide opportunities to co-design and test applications, get the tailored solutions;
- market insights;
- access to diverse new health technologies;
- provide links to health clusters supporting entities, market experts and AI Health-related SMEs.

2.2.3 Clinicians

Clinicians as individuals but also as a group constitute their own interest group as they often hold considerable power within their institutions. Often decision makers themselves on respective levels, they are strong advocates within their institutions for their demands. In many countries, clinicians hold the power to initiate processes within their sphere of control, making projects happen within their bigger institution. Even if happening on a smaller scale, this power is relevant for HosmartAI to access as it can lead to the same result as to reach out to heads of Health Care providers.

Interest of clinicians is considered high within the specific fields and departments that are already involved into the HosmartAI project within the pilots. Clinicians are thus considered key actors for the project.

Clinicians are confronted with the following needs towards innovative technologies in their professions and workplaces:

- Resources (mostly time and energy) to learn about and identify innovative technologies, already being confronted with high demand and workload;
- There is a lack of trust towards AI in Health Care;
- Support with understanding of how to integrate AI and adapt the role and execution of their work alongside;
- a good change management.

HosmartAI can address these needs in the following way [REF-08]:

- Identified technology which helps clinicians refocus energy on their patients, spending less time on administrative tasks and more on direct delivery of care;
- Provide technology that will be more efficient or deliver better outcomes (or both);
- Provide experience and practiced support for Healthcare practitioners to transition into new roles – no longer being the god in white but moving into the role of "counsellor";
- Provide knowledge about new professionals managing and maintaining the innovative technologies (such as data engineers, analysts, data scientists) that will be needed within the hospital setting, developing, recruiting and integrating them well into the processes.

2.2.4 Investors

The main interest of investors is to create return on their investment. Their general interest in publicly funded projects is therefore low. Considering the specific pilots, some interest may be generated by the projection of an uptake and the production of any of the individual solutions.

Mandating considerable resources in form of funds, investors theoretically hold high power within transformation pathways. However, these resources target specifically investments in form of functioning companies with the potential to scale their services and products within a foreseeable timespan. Within the context of this public project, the direct impact of investor's resources is very limited.

We categorize investors as important context setters, shaping the course of the technologies with their considerable power. But not accessible for the project, the resources HosmartAI will invest into connecting with investors will be very limited.

Investors' needs:

- High potential business model(s);
- Innovative technologies;
- Scalability;
- Revenue creation;
- Insights into technological feasibility.

HosmartAI can address these needs by:

- Providing implemented innovation technologies within clinics;

- Provide potential business models for these solutions;
- Providing insights into technology adoption and trust building.

As mentioned, investors' needs are generated by their goal of creating revenue from their investment. The European clinic and hospital landscape is largely publicly owned and debate about private shareholders is intense. HosmartAI can provide some insights into clinical processes, implementation of innovative technologies and potential business models, but scalability and revenue opportunities remain scarce.

2.2.5 Research

University research as well as private and public research organisations, are keen to follow along with the technological advances that are being made, especially when being implemented in concrete terms. We believe that HosmartAI's work and results will be able to serve as benchmarks to similar projects currently in the pipeline of universities and research centres and as an inspiration to new advances. Research will be able to use profit off HosmartAI's results in planning and operating their own initiatives by learning from its experiences and building on results such as technical standards, data harmonization, etc.

With their solutions, universities and other research institutions have revolutionised every existing industry and sphere of life. Yet, while the innovation is often being invented within these research institutions and universities, they themselves usually hold little power in directly impacting the innovation pathway itself considering the upscaling of the uptake of technology or the reduction of hurdles within the pathway. However, designing and taking part in public and private research projects themselves, research institutions consider results and state of the art of other public projects. HosmartAI can serve as a valuable resource for research departments to design their projects building on top of HosmartAI's results, methods and experiences.

Being in close contact with researchers from universities and research institutions will provide an interesting exchange between the research community and the project. And on an operational level, research is able to take up central elements of HosmartAI's work and take them further. Within an operational level (e.g. designing similar projects), thus, research does play the role of a key player. It is rather in the role of subjects, however, in the aspect of consulting on the further transformation of innovation pathways to decision makers on the abstract process level (e.g. legal issues, market access regulations etc.).

Researchers' needs include:

- To evaluate innovative technologies within Health Care providers;
- To optimize the technology implemented;
- To assess the effects of these technologies on clinics, clinicians, staff, patients, patient well-being.

HosmartAI can attend to these needs by

- Providing research with use cases of implemented innovative technologies;
- Providing access to clinics;

- Providing access to clinicians, staff, patients;
- Providing insights: results, learning effects, hurdles, trust building, standards, interoperability, etc.

2.2.6 Policy & Politics

Policy makers are central stakeholders on the abstract level of considering legal and regulative issues affecting the use of the new technologies within the Health Care setting. They hold the power to establish legal grounds, to amend security regulations and steer national and international reimbursement schemes. On this abstract level, their interest in advances of the digital technologies is existent. On an operational level, policy makers are not involved, they cannot be expected to take concrete results further as companies or research do. Engagement with policy makers is very time consuming and additionally, access to policy makers is often dependent on current issues. Nevertheless, engaging policy makers successfully is important to achieve further national and regional funding. For HosmartAI, policy makers are thus considered key players.

For HosmartAI, policy makers matter on all levels of government: EU, national and regional. In order to provide implementation of an effective rollout of AI and robotics in health care on the scale needed, it requires the EU to tackle several issues [REF-08]:

- Consolidating funding against strategic AI priorities;
- Creating a level playing field across European healthcare;
- Clarifying key aspects of regulation around product approval, accountability, and liability;
- Maintaining a leading role in introducing trustworthy AI that is ethical, technically robust and lawful.

HosmartAI provides several use cases, in which these issues become concrete and actual solutions are being identified. HosmartAI can address these needs to policy makers in the following ways:

- The project reflects on and identifies standards on data, privacy, interoperability, shared requirements and governance in all its pilots. The experience is not just theoretical but practically experienced within a thorough implementation process, HosmartAI can provide experiences to shape ongoing policy consultations.
- The same applies to the pathway of regulation, product approval, liability and accountability. With its experience in the implementation process, HosmartAI knows of many pain points of the process, caused by the absence of streamlined regulation within the realm of AI, robotics and data and can contribute valuable insights to the discussions.
- For hospitals, the trust of their patients is crucial. Implementing innovative technologies in hospitals is challenging. HosmartAI provides policy makers with examples of players that manage not only technical implementation but also social implementation, generating and ushering the necessary trust into these new technologies within an intimate realm of people's lives.

- As a publicly funded implementation project, it proves how public funds are being used effectively and lead to real impact in strategically important technological processes.

2.3 Mapping conclusions

The adaption of the typology to the HosmartAI context and its analysis provides us with the following conclusions and requires the following next steps:

2.3.1 Analysis results

The stakeholder analysis based on the typology by Gardener (1986) [REF-03] helps to identify those stakeholder groups that are interesting for HosmartAI to engage with, in order to maximise the exploitation of its results including its processes and methods. And the experiences made during the course of the project and the implementation of the pilots which implement new technologies – AI, robotics and data analytics – within Health Care providers.
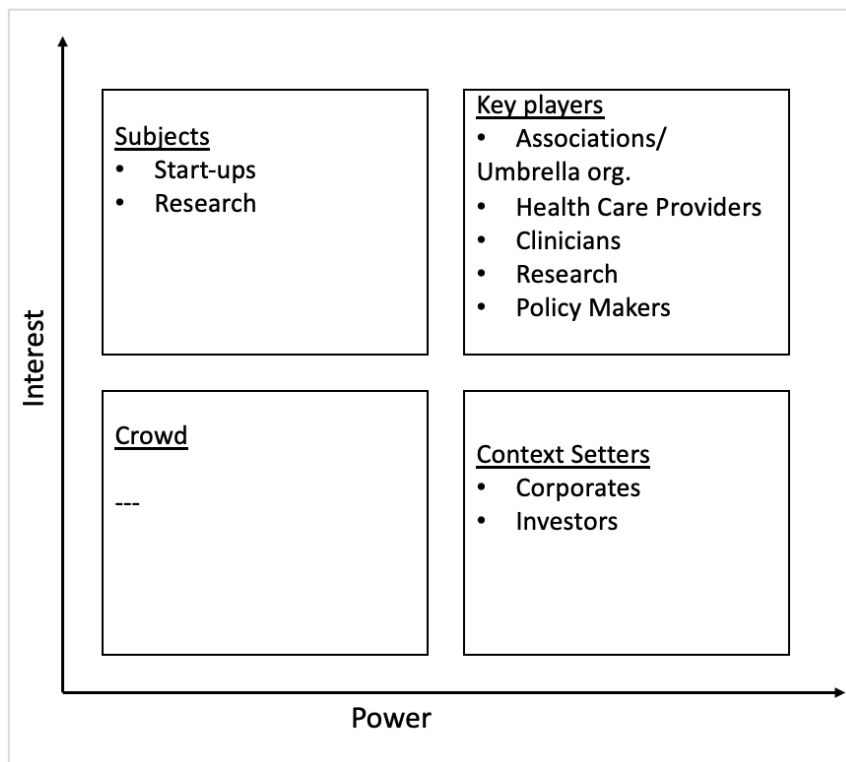
Figure 2: Power/Influence-grid adapted to HosmartAI context.

The typology thereby classifies stakeholder groups into four categories – key players, subjects, context setters and crowd – along which the HosmartAI project can reach out and build an effective network around the project, directing its resources efficiently.

Five of the analysed stakeholder groups fall within the typology of key players. Key Players are marked by the mixture of high interest in the project's work and results and their power to exploit the project's experiences effectively regarding taking new technologies another

step further, optimising the transformation pathway for these technologies within the hospital setting.

The five stakeholder groups considered key players are (i) (Industry) associations/ umbrella organisations, (ii) Health Care Providers, (iii) Clinicians, (iv) policy makers and (v) research.

These four stakeholder groups will be the target groups to focus on and those that will enjoy priority attention. Specific goal is specially to engage them in the project via the two planned stakeholder workshops. The exploitation strategy will mainly focus on their ability to exploit the HosmartAI results.

The typology of the subjects includes the groups of start-ups and also of research (reminder: research moves between "key actors" and "subjects"). Their interest is high and for HosmartAI, there is an interest in engaging them. Disseminating its results and creating a meaningful exchange will benefit all parties. The level of activity and engagement will be less than for key actors. Concerning start-ups, they are already being involved within the open call scheme which can be built upon.

The last meaningful stakeholder typology to consider is the context setters. Considering their rather low natural interest in the specifics of HosmartAI, we are expecting the engagement with context setters to be generally less of a dialogue and more of a one-sided information sharing and reaching out. The hope is to be able to identify and gain access to some decision makers genuinely interested in the subject after all. The high power and the reputation context setters can provide, makes a successful engagement with context setters worthwhile even within tight limits.

2.3.2 Next steps

The analysis needs to be iteratively updated according to the experiences with stakeholder engagement mainly in the year of 2023. We are expecting to see some groups being more easily approachable than others. The access to stakeholder groups will also differ between national context and highly depend on the quality of direct contacts the consortium can provide.

Another next step is to update the analysis with individual stakeholder requirements expressed by internal stakeholders. A valuable tool for this is the internal sprints, in particular the upcoming sprint will be made use of in order to deepen the stakeholder analysis with the needs of the pilots which are increasingly becoming clearer with the progress of the pilots. In November 2021 there has been a first analysis to gather a first insight, a deeper assessment at that time has been discarded though due to the pilots' early stages.

3   Ecosystem building exploitation strategy

Within the Task 6.2, the HosmartAI project seeks to exploit its results and find a strategy to encourage external stakeholders to transfer HosmartAI's results to regional and national contexts. HosmartAI's first key to create effective exploitation of its results, is its own consortium. With 24 partners within the consortium, it already spans across twelve European countries and unites a diverse set of institutions including corporations, SMEs, universities, research centres, hospitals and associations.

The consortium will raise awareness with regards to the HosmartAI objectives and results, and through them try to promote the project results and bring the project one step closer to the market, ensuring dialogue with potential funders and/or customers. Interaction with stakeholder groups sits on four pillars: (i) two (2) stakeholder workshops, (ii) an event strategy, (iii) engagement with related projects, and (iv) making use of the already established communication channels.

The work of building an external ecosystem that can effectively exploit the results produced by HosmartAI overlaps with the efforts taken in the Task 6.1 (Communication and Dissemination), Task 6.6 (Open Calls), a great deal with Work Package 7 which take care of Business Development and the exploitation of the project from a business point of view rather than from a networking point of view. And finally, it connects with WP1, which drives consortium internal exchange among partners, using the sprints method.

3.1 Stakeholder Workshops

In order to facilitate the uptake of HosmartAI's results by external stakeholders, the consortium is planning to organize two (2) industrial and stakeholders clustering workshops. The first one, to be organized in month M24 intends to present the first version of the integrated HosmartAI platform, to (i) inform the key stakeholders identified, (ii) giving emphasis on the description of the pilots that will demonstrate the applicability of the solution, and (iii) generating early interest. The second industrial workshop, to be organised on M36, has the goals to (i) demonstrate the final version of the integrated platform, (ii) present the results of the demonstrators, and (iii) highlight the project's industrial and business impact, the lessons learnt, and the adoption methodologies. These workshops will include representatives from various communities, especially members of the stakeholder groups identified as key players. EIT Health Germany will lead the task while all industrial partners will be significantly involved in the clustering activities. Research and academic partners will also contribute yet with reduced effort, mainly through the mobilization of contacts from their network.

3.1.1 Workshop 1

Objectives:

- to generate interest in the project and communicate the potential of the solutions in development and implementation

- to receive feedback from experts and key stakeholders on the HosmartAI approach and potential impact and
- to liaise and develop linkages with relevant (e-)Health policies, initiatives, and projects.

The format will be a mixture of a presentation of the solution (by the exercising pilots) and technology discussions with the interested stakeholders.

Setting:

The first workshop will take place in extension to the internal consortium meeting in late November 2022, currently planned at Eindhoven, Netherlands. The goal is a face-to-face event, alternative measures will be considered and prepared in case of an online-version of the event is the more sensible option considering the at this point unforeseeable Covid-19 situation.

Potential Agenda:

Table 3: Potential agenda for stakeholder workshop 1.

Time	TOP
09:00	Introduction to event and to workshop objectives
09:10	Introduction to project
Part I: Two parallel blocks of introductions of the 8 pilots. Pilots introduce shortly their objective with a focus on the progress of the implementation and the challenges they address. These introductions serve as a foundation for the following debate sessions	
09:20	Introduction to pilots
10:50	Coffee break
Part II: Debate the two topics of *Clinical Leadership* and *Improvement of security, data quality, administration and interoperability.* HosmartAI representatives lead the discussions and can provide solutions but also point out difficulties that need to be addressed. Stakeholders engage.	
11:10	Debate & exchange Session I: Clinical Leadership – implementation hurdles: what are the expectations, what needs to improve, who does it need for real transformative change? Session II: Improvement of security, data quality, administration and interoperability – implementation hurdles: what needs to advance, on what level is it to be addressed?
13:00	Lunch break
Part III: Debate the two topics of *Clinical Leadership* and *New Roles in Health Care & Education in new technologies* and *Regulation and Financing of progress towards new technologies in Health Care.* HosmartAI representatives lead the discussions and can provide solutions but also point out difficulties that need to be addressed. Stakeholders engage.	
14:30	Debate & Discussion:

	Session I: New Roles in Health Care and education in new technologies - implementation hurdles: what are the expectations, what needs to improve, who does it need for real transformative change? Session II: Regulation and Financing of progress towards new technologies in Health Care - what are the needs, what needs to improve, who does it need for real transformative change?
16:00	Conclusive Session & Close
16:30	End of event

3.1.2 Workshop 2

Workshop 2 will build on the experience of workshop 1, event planning is only sensible in 2023.

3.2 Events

Members of the HosmartAI consortium will and already do participate in a series of different national and international events to raise awareness of the project, engage with specialist groups of stakeholders and disseminate the project results. During the coming two years, the consortium is planning to attend a range of different events to reach different audiences:

- Scientific conferences to promote the scientific and technical results of the project;
- Health Care related events to specifically target the Health Care Professionals and the Health Care stakeholders;
- AI, Robotics and digitization-conferences in Health Care, to specifically target the technical professionals.

The focus for attending events is the year of 2023, following the first stakeholder workshop and leading up to the second. Workshop 1 is the first point in time of the project, where the current status and results and progress are being worked out and debated in a manner that is beneficial to external stakeholders. With these results and defined messages, the project partners will have gained an understanding of what external stakeholders are looking for and a value offer to present.

The project creates a list of relevant events in which participation could be envisaged. It is to be noted that, depending on the timing of these events, the type of results to be disseminated and budget constraints, only a limited number of events will be selected. This will be discussed by the consortium in due time, with Task Leaders of tasks 6.1, 6.2 and the project lead.

Table 4: Potential list of events to attend.

2023	Event name	Focus	Location	Start date	End Date
1	ICHDA 2023: 17. International Conference on Healthcare Data Analytics	Healthcare digitization	Paris	06.02.23	07.02.23

2023	Event name	Focus	Location	Start date	End Date
2	Rewired 2023	Healthcare digitization	London	14.03.23	15.03.23
3	Future Health Innovation 2023	Health innovation, digital transformation	London	15.03.23	16.03.23
4	ICDHI 2023: 17. International Conference on Digital Health and Informatics	Healthcare digitization	Athens	03.04.23	04.04.23
5	Innovation for Health 2023	Health innovation, digital transformation	TBD	06.04.23	
6	DMEA 2023	Health innovation, digital transformation	Berlin	25.04.23	27.04.23
7	ICDHTA 2023: 17. International Conference on Digital Healthcare Technologies and Applications	Healthcare digitization	Rome	04.05.23	05.05.23
8	International Conference on Integrated Care (ICIC23)	Healthcare	Antwerp	22.05.23	24.05.23
9	VITALIS	Health innovation	Stockholm & Virtual	23.05.23	25.05.23
10	10th European Conference on Hospital Engineering	Hospital Tech	Paris	14.06.23	16.06.23
11	ICHHM 2023: 17. International Conference on Healthcare and Hospital Management	Healthcare digitization	Paris	19.07.23	20.07.23
12	European Conference on Artificial Intelligence (ECAI)	AI in Health	Vienna	23.07.23	29.07.23
13	46th World Hospital Congress	Hospital Care	Lisbon	14.06.2023	16.06.2023
14	AI4 Healthcare summit	AI in Health	Digital	(Feb 2023)	
15	MedTech Forum 2023	MedTech Europe		May (TBD)	

2023	Event name	Focus	Location	Start date	End Date
16	AI for Health Care	AI in Health	Olympia, London, UK	(TBD)	
17	HIMSS 2023 - Global Health Conference & Exhibition	Health innovation	TBD	June (TBD)	
18	AI for Health Summit	AI in Health	France (Virtual)	(July or Nov 2022)	
19	Automat Health 2023	Healthcare digitization	Zurich	September (TBD)	
20	Digital health and care congress 2023	Healthcare digitization	London	October (TBD)	

3.3 Related Networks and Projects

HosmartAI does not need to start from the very beginning. The EU has within H2020 already constructed tools and networks on which HosmartAI can build upon. Additionally, HosmartAI has a strong consortium at its disposal, within which all partners not only are able to provide a high reputation and natural strong contacts. Some of the consortium partners have specifically come on board to support with their networks, are networks themselves (in this case, HOPE and EFMI, which are associations). This provides HosmartAI with a great starting landscape.

3.3.1 Internal channels and contact points to build upon

The consortium starts off in a strong position regarding potential exploitable contacts. Within the consortium, there are two associations – EFMI (Association European Federation for Medical Informatics) and HOPE (Federation des Hopitaux et es soins de Sante) with a broad network and important contacts to potential key actors. Additionally, EIT Health Germany – the Germany representation of the EIT Health network – has a pan-European network of reliable and effective partners. These networks constitute a good starting point to build upon. It will be further explored what other contacts the rest of the partners have at their disposal. HOPE is to be mentioned especially as the association's partnership covers 80% of hospital activity within the EU.

In addition, EIT and HOPE have conducted a stakeholder mapping with the consortium partners in the project's second plenary meeting. The mapping posed three questions: (i) "Could you select which kind of [these stakeholders] will be the most important to help you in the co-creation?", (ii) "Could you identify the main barriers to involve those stakeholders in the co-creation throughout all HosmartAI?", and (iii) "Do you already know if those stakeholders are well connected to their representation on EU-level?".
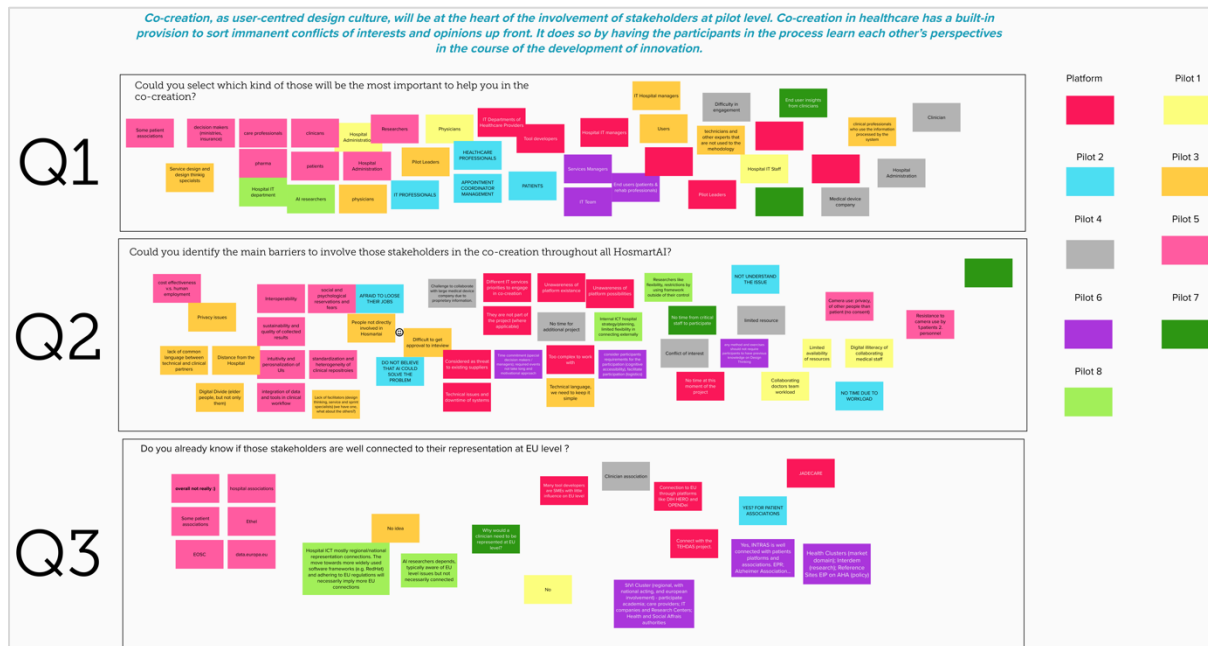

Figure 3: Co-creation stakeholder mapping, mural exercise.

The objective of these questions was to learn about the collaboration that stakeholders internally need to implement the project, and to learn this about each pilot. Knowing about which stakeholders it takes to interact within each pilot is beneficial for the stakeholder mapping to identify these stakeholders also externally. Because it is precisely these stakeholders that have an interest in implementing the same technology within their facilities. Thus, these are the ones, HosmartAI aims to reach (in addition to groups that are not involved operationally, such as policy makers).

The activity also made transparent, how internally, the attention towards stakeholders was distributed (at that point in time). An attention map made visible that the pilot's focus was towards Health Care providers. Next in line ranked facility administration and IT-departments, only then came patients and technology providers. Last attention was spent towards researchers, decision makers and political stakeholders such as associations and policy makers.
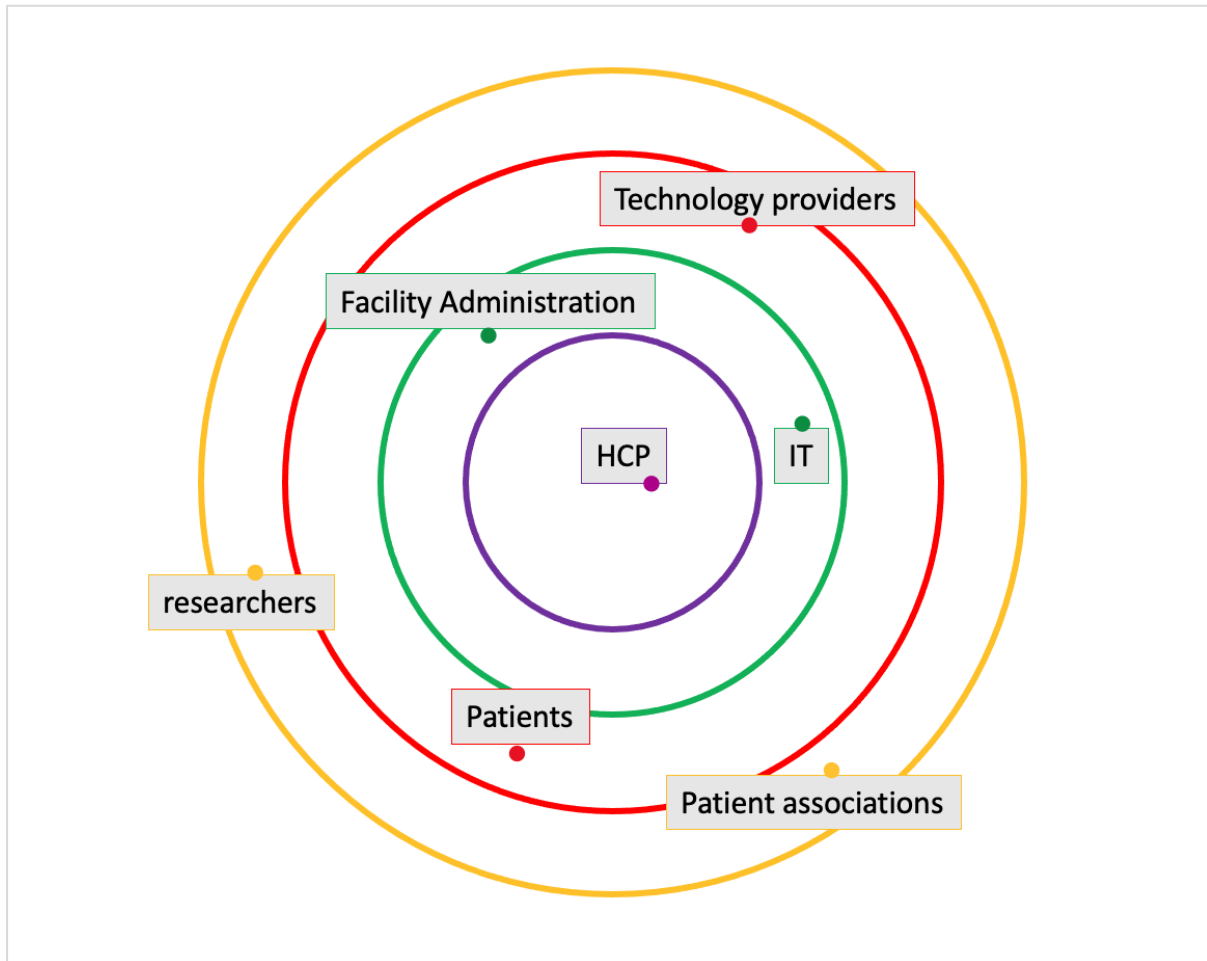
Figure 4: Attention Map based on mural exercise.

The results of the workshop were unfortunately on a more abstract level than needed in order to directly use them. However, the results still serve as a basis to further investigate within bilateral calls with pilot leaders and they provided an informed early insight for the stakeholder mapping.

3.3.2 Other EU-funded Projects

The HosmartAI project is just one project among several EU-funded projects that tackle the implementation of IoT technologies within the realm of Health Care. In order to facilitate the exchange between these projects, the EU-funded initiative OPEN DEI has been created. The objectives of OPEN DEI are:

- Platform building: comparing reference architectures and open source reference implementations, enabling a unified industrial data platform;
- Data ecosystem building: enabling an innovation and collaboration platform, forging a pan-European network of Digital Innovation Hubs, contributing to an industrial skills catalogue and observatory;
- Large scale piloting: contributing to a digital maturity model, creating a set of assessment methods and a migration journey benchmarking tool;

- Standardisation: conducting cross-domain surveys, performing promotion and implementation, building alliances with existing EU and standard developing organisations.

OPEN DEI is active in the categories of Agri-Food, Energy, Manufacturing and Health Care. HosmartAI participates within the Heath Care domain. Work Package 6 members are active in OPEN DEI's working group 1, focusing on dissemination and communication. The goal is to identify dissemination and communication opportunities, to discuss best practices, to share resources, to align work where beneficial and share experiences.

Other EU-funded Health Care projects constitute an important element of a dynamic and effective ecosystem for HosmartAI. Besides the opportunity to fine tune the strategy and receive feedback to the work of the ecosystem building, the contact within OPEN DEI with other high-profile EU-Health Care projects is a potential channel to identify, reach out to and get in touch with potential stakeholders.

There is no one strategy to engage with these projects, however. For each and every project, synergies concerning building an ecosystem need to be considered one by one respectively. A lot depends on the varying objectives, the groups of stakeholders to be reached, the willingness to engage with its own ecosystem on behalf of another project (e.g. sharing each other's news on social media, etc.). But it also depends on HosmartAI's willingness to cooperate and provide support in return, as resources are limited on both projects' sides. So far, no direct cooperation outside of the working group within OPEN DEI have been developed.

Table 5: List of related EU-Health Care Projects.

Project Name	description	Running time (years)	Link
TeNDER	TeNDER will develop an integrated care model to manage multi-morbidity in patients with Alzheimer's disease (and other forms of dementia), Parkinson's disease, and cardiovascular disease.	2019-2022	Link
PHArA-ON	The overall objective of the PHArA-ON project is to provide support for Europe's ageing population by integrating digital services, devices, and tools into open platforms that can be readily deployed while maintaining the dignity of older adults and enhancing their independence, safety, and capabilities. The project will utilise a range of digital tools including connected devices (e.g., the Internet of Things, IoT), artificial intelligence, robotics, cloud and edge computing, smart wearables, big data, and intelligent analytics that will be integrated to provide personalised and optimised Health Care delivery.	2019 - 2023	Link

Project Name	description	Running time (years)	Link
Shapes	The Smart & Healthy Ageing through People Engaging in Supportive Systems (SHAPES) Innovation Action intends to build, pilot and deploy a large-scale, EU-standardised open platform. The integration of a broad range of technological, organisational, clinical, educational and societal solutions seeks to facilitate long-term healthy and active ageing and the maintenance of a high-quality standard of life. Mediated by technology, in-home and local community environments interact with health and care (H&C) networks contributing to the reduction of H&C costs, hospitalisations and institutional care.	2019 - 2023	Link
Gate Keeper	Smart Data driven Solutions for Personalized early risk detection and intervention.	2019 - 2023	Link
Smart4health	The Smart4Health project will develop a prototype application that allows users to collect, manage, share and donate their health-related data throughout the EU. It will pave the way for the full deployment of citizen-centred solutions and services in a digital single market for well-being and healthcare. The platform under development will ultimately advance citizen health and digital innovation by providing easy-to-use and constantly accessible health data. It will facilitate feedback and interaction between patients and healthcare providers and support disease prevention and citizen empowerment.	2019 – 2023	Link
Smart Bear	Smart Big Data Platform to Offer Evidence-based Personalised Support for Healthy and Independent Living at Home	2019 - 2024	Link
FAITH	FAITH is an EU-funded research project that aims to provide an Artificial Intelligence application that remotely identifies depression markers, using Federated Learning, in people that have undergone cancer treatment.	2020 - 2023	Link
ADLIFE	ADLIFE is a European project funded by Horizon 2020 and involves 12 partners from 6 European countries, collaborating in research to improve the health and quality of life of the elderly population suffering from advanced chronic diseases. Our key areas of interest are digital health, innovation and integrated care.	2020 - 2024	Link
AICCELERATE	Healthcare systems lack flexible AI solutions that allow hospitals to improve efficiency and the quality of patient care. Current solutions provide limited	2021 - 2024	Link

Project Name	description	Running time (years)	Link
	scalability and are confined to isolated applications. Scalable models that address data sharing, integration, privacy, and ethics are needed to ensure better adoption of AI in healthcare.		
ODIN	ODIN is a European multi-centre pilot study focused on the enhancement of hospital safety, productivity and quality	2021 - 2024	Link
Aidpath	The EU consortium AIDPATH is dedicated to enable and to augment the next-generation of personalised medicine with gene-engineered immune cells at EU hospitals through the use of AI technology. The exemplary embodiment of gene-engineered immune cells in AIDPATH will be T cells, modified to express a synthetic chimeric antigen receptor (CAR-T), that are already a revolutionary novel treatment in haematology and oncology. AIDPATH will apply AI technology to integrate patient-specific data and biomarkers in CAR-T therapy and to optimise scheduling and resource planning to reduce costs and hospital resource utilisation. The consortium members are well-positioned to engage in a productive dialogue with regulators and patients to ensure acceptance and rapid adoption by EU hospitals and industry.	2021 - 2024	Link

3.4 Other Communication

The Ecosystem Building and Industrial Clustering activities will use a selection of channels to get in touch with stakeholders in addition to the methods already described. Some of these channels have been established already within the broader scope of the project. The following channels are interesting for the activities of this task:

3.4.1 Newsletter

Within Task 6.1 (Communication and Dissemination), the consortium has set up a newsletter to inform about the progress of the project. For the ecosystem building Task, this channel can potentially serve as a strong external information channel not only to the wider public but also to the external stakeholder groups identified in the analysis. It remains to be seen if the wider public newsletter is fit well for the purpose of informing the stakeholders.

3.4.2 Targeted Mailings

The strongest and most convincing contacts are direct contacts. Targeted Mailing to small groups or even individual mailings can be very effective. The intention of these mailings is to inform about the progress of the project, but only with information relevant to the external stakeholders. Depending on its design, it may come close to the newsletter, which is why

potentially, a newsletter can replace these mailings. Targeted mailings can also be a valuable tool in addition to the newsletter or constitute their own format, not building on the newsletter at all. The decision about targeted mailings will need to be taken once the information about the solutions being implemented become more concrete and communicable.

3.4.3 Webinar Series

A potential idea, if feasible within the consortium, is to hold a webinar series on the project's technologies and platform. The webinars thereby extend beyond the actual work by raising and debating the deeper issues behind the use cases and the implementation of the technology. Alternatively, the webinars can follow the process by discussing successes and hurdles along the way.

The Webinar series provides valuable insights into the project and keeps interested stakeholders updated. It also provides stakeholders room for engagement and communicated with the wider public.

The series of 4-5 webinars, focused on 2023 (between the workshops), would fit well within the communication and exploitation strategy.

3.4.4 Social Media

HosmartAI has set up LinkedIn, Twitter and a YouTube-Account, with the Linked-In Account being the most active. The existence of social media channels is a small but important element within the ecosystem building strategy, as these channels serve as regular reminders of the existence of the project, making sure the receivers keep it in mind.

3.4.5 (Workshop) Publication

The discussions of both workshops are planned to be recorded and published as a small publication which efficiently and effectively distils the discussions and results and presents them in a professional manner.

4   Measures: Objectives and KPIs

In order to measure the progress of the ecosystem building and industrial clustering, KPIs have been defined. A list of the measurable goals can be found below to receive a better understanding of the impact, HosmartAI is looking to achieve with the *Ecosystem Building and Industrial Clustering* Task.

4.1   Objectives

The Grant Agreement provides the following objective for the Task 6.2 on which this deliverable reports:

B.O-2: Ensure wide communication and scientific dissemination of the innovative HosmartAI results to the research and academic communities, to promote clustering activities amongst the industrial communities and all stakeholders involved in the Health and Care domains (with emphasis on the AI and robotics), to contribute to relevant standardization bodies, to collaborate and align with the EU Digital Innovation Hub networks and platforms. [WP6]

Means to achieve:

- Define all stakeholders involved in this value chain, and carefully design and plan dissemination, communication and industrial clustering activities, tailoring information to each stakeholder category based on the information needs of each, and the aspired level of involvement;

- Design and implement dissemination activities dealing mainly with the diffusion of scientific and technological knowledge generated within the context of the project, and aiming to address the full range of potential stakeholders;

- Design and implement a blend of communication and stakeholder's engagement activities dealing mainly with raising awareness and attracting potential supporters, end users and customers;

- Design and implement a blend of industrial stakeholders clustering and decision makers engagement activities dealing with raising targeted awareness to industrial stakeholders involved in AI and Robotics (technological perspective) and HealthCare (business perspective) value chains, facilitating discussions about business cases/models and implementation pathways, and promoting project results, bringing them one step closer to the market, ensuring dialogue with potential investors and Public Procurers and/or customers;

- Consider and contribute to relevant standardization bodies for maximising the possibility of health sector/government acceptance, to collaborate and align with the European Digital Innovation Hub networks (such as DIH-Hero).

Measurable outcomes:

- **R4**. **Communication Roadmap** (WP6) that documents communication activities, awareness generation plan with identified opportunities, target groups & specific actions (delivered by M3-D6.1 and milestone MS1).

- **R5.** (Periodic) **dissemination activities** reports (WP6), documenting the S&T dissemination and standardization activities (delivered by M18/M40 - D6.5, D6.5 and milestone MS5/MS9).

- **R6**. (Periodic) **communications activities** reports (WP6), documenting the communication and stakeholders' engagement activities (delivered by M18/M40-D6.5, D6.5 and milestone MS5/MS9).

- **R7**. (Periodic) **clustering activities and ecosystem building** reports (WP6), documenting the stakeholders clustering and decision makers engagement (delivered by M18/M40 - D6.2, D6.2 and milestone MS5/MS9).

The Grant Agreement also provides the following impact relevant to the Task 6.2 on which this deliverable reports:

Reaching a high leveraging effect on other sources of funding, in particular regional and national funding
Impact: Strong. **How this is addressed:** Investors and policy makers will be close to HosmartAI in order to see the effectiveness of the Concept and the Pilots. The participatory design will actively engage those stakeholders throughout the project lifecycle, analysing, harmonizing and prioritizing primary and secondary users' needs with a patient-centred care delivery perspective. This will lead to new funds for AI/Healthcare project through investors and announcement of new regional or national programmes related to AI thought policy makers. The involvement of HOPE gives an **opportunity to connect to national** (Spain, Ireland, Austria, Greece, Malta, Cyprus, Croatia) and **regional authorities** (Italy, Denmark, Sweden, Finland), major sources of funding in several healthcare systems. Moreover, members of the consortium (especially Hospitals) participate in **national and regional initiatives, facilitating** the high leverage effect.
(1.3.1.9). The effective communication and dissemination will also help in the same direction.

4.2 KPIs & Milestones

List of KPIs to which *T6.2 Ecosystem Building and Industrial Clustering* contributes:

Table 6: List of KPIs to which Ecosystem Building and Industrial Clustering Task is contributing.

Description	Measure	Means of verification
Collaboration with other Networks	>= 2	**D6.2**, **D6.3**, D4.1, D4.2, D4.3, D4.6

Description	Measure	Means of verification
Attendees per Stakeholder workshop	>= 15	**D6.2, D6.3**
Connect to EU policy makers, decision makers and other stakeholders	>= 12	**D6.2-D6.3**
National hospital associations or representatives from national hospital owners' organisations	80% of hospital activity in EU	**D6.2-D6.3**
Links to national & regional initiatives by HosmartAI consortium	> 10	**D6.2-D6.3**
Funding for HosmartAI follow-up activities	4x EU project funding (= € 39,988,976.00)	**D6.2-D6.3**, D7.1-D7.3
Milestones		
Availability of 1st Functional Prototypes of AI-based solutions, 1st version of HosmartAI integrated framework, of detailed Pilot specification and 1st version of business plan. **Engagement of stakeholders and other visibility enhancement activities**	MS 5	D3.2, D4.4, D5.2, **D6.2**, D6.4, D7.4.

5 Conclusion

The report set out to outline the approach to ecosystem building within the HosmartAI project and to summarize key results of the first year of the activity.

The approach followed for the stakeholder mapping builds on a theoretical framework that was introduced to the project within this deliverable. The framework identifies stakeholders' interest in HosmartAI and their power to have an impact within the realm of the project. It further provides an understanding of the stakeholders' needs and links, the project can make use of. The mapping is key to a focused and concise targeting of relevant stakeholders.

The mapping suggests that the following stakeholder groups are key players for HosmartAI, as their interest in the project as well as their power is significant. These groups are: Health Care Providers, Clinicians, Associations (within the Health Care realm), research and policy makers.

The means to reach and engage these stakeholder groups as well as others, though with reduced effort, are outlined in the ecosystem building exploitation strategy (not to be confused with the business exploitation strategy). The heart of the exploitation strategy constitutes two stakeholder workshops, flanked by the exploitation of industry events. Further means to reach out are to exploit existing networks within the consortium and within the realm of the EU-finding ecosystem, as well as making use of classic dissemination channels of which some are already established.

 This deliverable provides a first version of the ecosystem building and industrial clustering strategy. Its contents, including the stakeholder analysis, are being constantly iterated and updated. The follow up report, D6.3, will report on the activities and results of the task ecosystem building & industrial clustering at the end of the project (M41).

6 References

[REF-01]	Gardner, J. R., Rachlin, R., & Sweeny, A., 1986. *Handbook of strategic planning*. John Wiley & Sons Incorporated. doi.org/10.1111/j.1467-9310.1989.tb00639.x
[REF-02]	Mitchell, R.K., Agle, B.R., Wood, D.J., 1997. Toward a Theory of Stakeholder Identification and Salience: Defining the Principle of Who and What Really Counts. Acad. Manage. Rev. 22, 853–886. doi:10.2307/259247
[REF-03]	Bergek, A., Jacobsson, S., Carlsson, B., Lindmark, S., Rickne, A., 2008. Analyzing the functional dynamics of technological innovation systems: A scheme of analysis. Res. Policy 37, 407–429. doi:10.1016/j.respol.2007.12.003
[REF-04]	Salancik GR, Pfeffer J, Kelly JP., 1978. A Contingency Model of Influence in Organizational Decision-Making. Pacific Sociological Review. 21(2):239-256. doi:10.2307/1388862
[REF-05]	Murray-Webster, R.; Simon, P., 2006. Making sense of stakeholder mapping. PM World today, 2006, 8. Jg., Nr. 11, S. 1-5.
[REF-06]	Ackermann, F. & Eden, C., (2011). Strategic Management of Stakeholders: Theory and Practice. Long Range Planning. 44. 179-196. 10.1016/j.lrp.2010.08.001.
[REF-07]	Smith, A., Stirling, A., Berkhout, F., 2005. The governance of sustainable socio-technical transitions. Res. Policy 34, 1491–1510. doi:10.1016/j.respol.2005.07.00
[REF-08]	EIT Health, McKinsey, 2020. Transforming healthcare with AI - The impact on the workforce and organisations.