



**DIGITALWELL**  
**ARENA**

**SELF-ASSESSMENT**  
**REPORT VINNVÄXT**

**2019-2021**

# Development of DigitalWell Arena

## Actors, organisation and governance

### Mobilisation and engagement of actors

#### Overall development

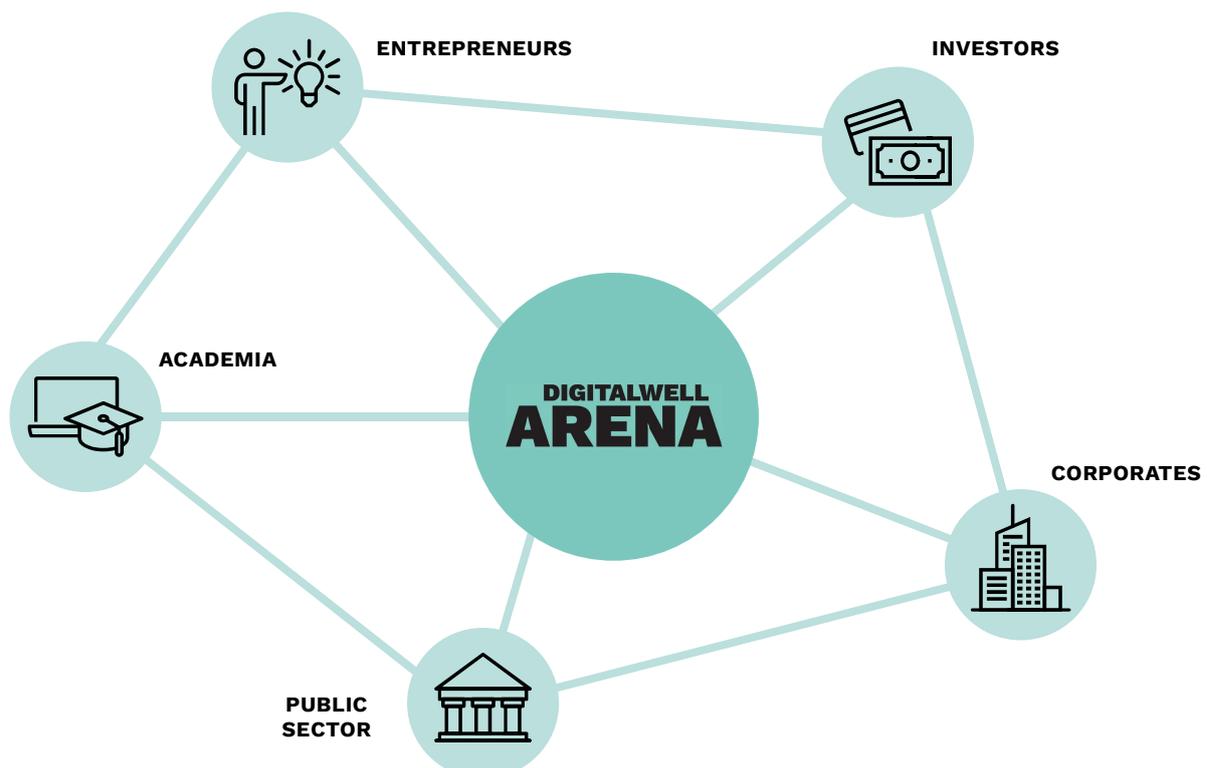
DigitalWell Arena started off as a Vinnväxt initiative with the vision of becoming a “... growth-creating ecosystem for user-driven innovation of digital health services. Through individualized, cost-effective and accessible solutions, we create health for everyone.” During our first phase, we have had a strong development and are now established as a platform for user driven innovation.

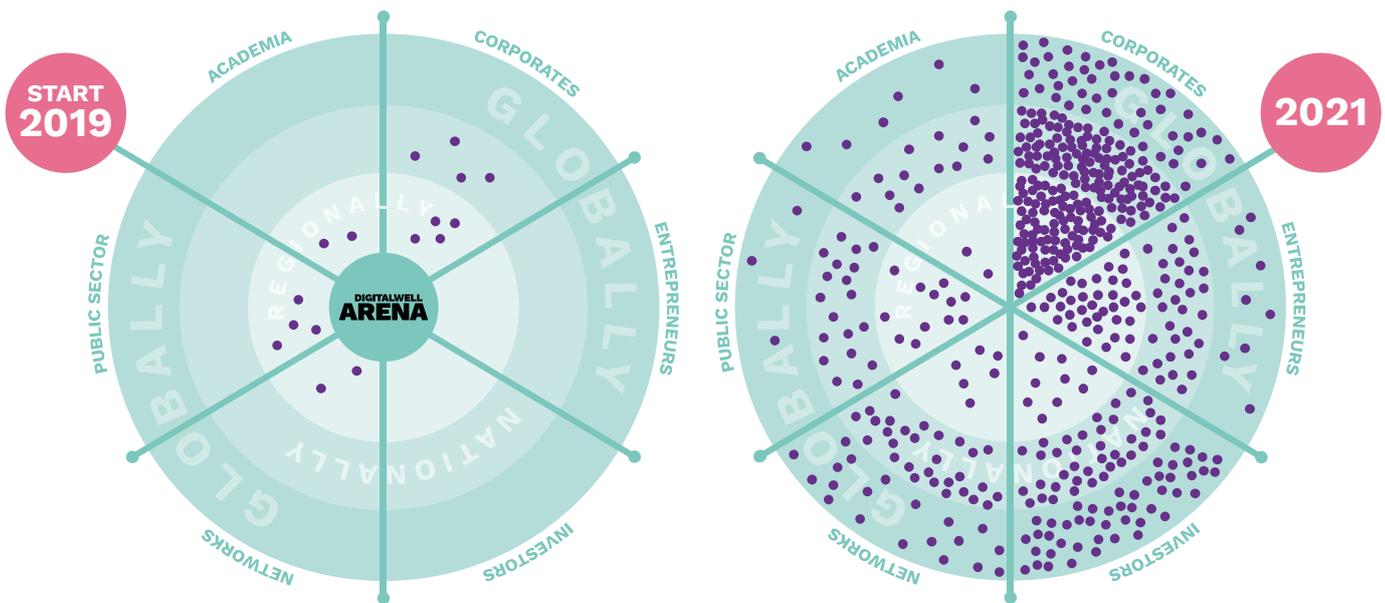
Over 500 actors have engaged in the initiative’s activities driving the strategic development of DigitalWell Arena – including new national, and regional public sector organisations, academia, corporates and entrepreneurs. A new group of actors related to corporates – investors and mentors is now connected to the ecosystem for digital health innovations.

A strengthened mobilization of forces has taken place - during 2020 related to a direct

investment in support services for entrepreneurs and SMEs through the Innovation Support – development and delivering of support services, and the establishment of the virtual accelerator for entrepreneurs developing digital health services - DigitalWell Ventures together with a maturity in collaboration with public sector through Health Arenas – real life environments for innovation, collaboration, as well as focusing on safe and secure testing in Project Test. This evolved during 2021 to a broadened involvement regionally, nationally, and internationally through collaborations and forming new partnerships leading up to now being connected to all the NUTS-regions in Sweden. (NUTS3), as well as international investor and mentor networks.

DigitalWell Arena has gained a strong regional anchoring as a driver of the Smart Specialisation Strategy related to digital health innovation, as well as becoming a self-evident platform to enhance and accelerate innovation within the area.





Development of committed actors 2019-2021.

### Corporates, entrepreneurs and investors

The involvement of corporates and entrepreneurs represents the largest increase in actors' involvement, from 5, to a bit over 400. Corporates have joined forces by offering their knowledge of expertise to increase interaction between innovative companies and public sector, through activities and projects, the Innovation Support and DigitalWell Ventures. Value creating services and support have been delivered to 77 entrepreneurs with the purpose to facilitate and support the development of digital health services. An international network of 96 investors as well as a mentorship program with 64 mentors from 18 countries and 4 continents have been established.

### Public sector

Public sector is taking an active role driving innovation, interacting with innovative companies, testing new digital health services, managing lock-ins and applying policy affecting methods. Dissemination of knowledge has contributed to a broader involvement and interaction, both within the region and nationally. Region Värmland has played a large role in process development and learnings related to test of digital health services in real environments - **Field Test Process**, and has taken the initiative to increasing health innovation between regional actors in new projects.

The number of involved regional municipalities have grown from 1 to 9, further contributing to increasing innovation capacity as well as taking an active stand for the need for interaction with corporates and entrepreneurs to be able to handle our societal challenges related to health. Karlstad municipality was also appointed "Model municipality" regarding development of digital solutions within elderly care, by the Swedish Association of Local Authorities and Regions, in 2020.

Collaboration with regional and national organisations and authorities has been established through engagement, and active interest in working groups e.g. the County Administrative Board, and implemented projects. National governments and organisations such as Swedish Association of Local Authorities and Regions -SKR, The National Agency for Public Procurement, and Swedish eHealth Agency participate through reference groups and collaborations regarding lock-ins and challenges related to digital health innovation.

### Networks

DigitalWell Arena is active across borders with now approximately 55 different network-organisations connected to the initiative. DigitalWell Arena also takes part in several reference groups run by the network-organisations. The clusters, innova-

tion hubs, incubators, accelerators, Science Parks and collaborative projects are all aiming to achieve a sustainable market for health innovation. The connection and collaboration has increased synergies and shared knowledge related to the development of digital health services such as the use and development of common models and methods like The KTH Innovation Readiness Level™ and how to make it easier for innovative companies to go to market reaching sustainable businesses.

Compare, as the coordinator of DigitalWell Arena has evolved from focusing on IT to tech-innovation. The broadened focus has had a positive effect on DigitalWell Arena bringing a broader tech-perspective related to health.

### **Academia**

The mobilization of academia has progressed from a "core group" of two research groups from Karlstad University (KaU), Service Research Center (CTF) and Computer Science (CS) and Grants and Innovation Office (GIO) to a broader base of research areas and groups from Nursing and Health, Center for Gender studies, Center for research on the mental health and life circumstances of children and youth and Center for research on social service and welfare, connected in the Arena Project. In total there are more than 30 researchers at KaU involved in various research activities linked to DigitalWell Arena. The interdisciplinary network is defined as the DigitalWell Research Group. From GIO, at KaU, both research advisors, innovation advisors and communication officers are involved in developing both the research linked to DigitalWell Arena as well as the initiative in general. The DigitalWell Research Group at Karlstad University is connected to several national and international research institutions and consortia.

Implemented activities as well as the expanded network have contributed to an increased interaction with academia and research in new collaborative constellations and projects.

### **Internal organisation and governance**

DigitalWell Arena started off with five work packages each one with a responsible Work Package Manager. Along the way, the importance of work packages has decreased in favour of the individual projects and identified lock-ins as well as the focus on the interaction between public sector and innovative companies. The actors involvement is equally important as starting off, if not more today, and the collaboration has grown stronger and evolved throughout the first phase.

DigitalWell Arena started off with a project group coordinating the operational activities and a Core Team handling the strategic and tactical development. Halfway through the first phase, the Core Team evolved into the main coordinating group with meetings every week and representatives from Compare, Karlstad University and Region Värmland.

Collaborative working groups have been set up with representatives from Karlstad municipality, Region of Värmland, Karlstad University, as well as corporate representatives depending on the topic. Early on method developing groups were put together with the purpose to share knowledge as a way of stimulating interaction. Quite fast this developed in to instead establishing working groups with the purpose to create direct value for public sector and innovative companies.

The larger mobilization of forces and initiation of new activities is reflected in the governance of DigitalWell Arena – with strengthened engagement in the Steering Group including new members from Karlstad Municipality, additional departments within Region Värmland and national Health Corporate KRY. The steering group has met 4 times per year regularly, with one longer meeting each year focusing on strategic planning and development of DigitalWell Arena. The members of the Steering Group have an important role of setting the scene and addressing the value of collaborating in DigitalWell Arena.

During the first phase, the initiative has used the competence of three expert coaches within system transformation, sustainability and with the purpose to challenge and provoke the management and development of the initiative.

An Advisory Board consisting of individuals from key actors and external innovative orga-

nisations has been connected to support and challenge the management and steering group.

Based on our learnings and the development of the initiative, the governance structure of the initiative is further developed and elaborated in the strategy for the second phase.

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## Realisation of results

### Overview

DigitalWell Arena has catalyzed the initiation of over 50 collaborative projects during our first phase. All of them have contributed to the development of the initiative and led us to where we are today. Significant events (level 4) related to the activities, or the overall initiative have been documented and reported annually<sup>1</sup>. They are markers of progress and notable highlights that affect the continual development and choice of activities along the way.

Example of significant events and activity-areas are:

- The establishment of the Innovation support together with the increased need of support to innovative corporates during the Covid-19 pandemic has resulted in over 77 corporates getting support services leading to new prototypes and digital health services and implementations in public sector.
- The admission to Founder Institute's (USA) accelerator programme in 2020 resulted in establishing DigitalWell Ventures – a unique virtual start-up accelerator focusing on digital health innovation, attracting corporates, investors, and mentors taking DigitalWell Arena to an international setting.
- Contact with the Nordic Interoperability Project - addressing the need for a Nordic validation program for quality assurance of digital health services, led to DigitalWell

Arena taking a national role within the area together with the Swedish eHealth Agency.

- Swedish Association of Local Authorities and Regions -SKR appointed the municipality of Karlstad as 1 of 10 model cities for development of digitalisation within elderly care, strengthening the regional role within health innovation.
- The research-project DigitalWell Research together with interdisciplinary research studies and educational programmes contributes to attracting new research-areas and forming the Arena project tying 4 research areas and 2 research groups closer together with a focus on digital health innovation.
- The emergence of the project Demand accelerator with Karlstad municipality and Vinnova followed by identifying public procurement as a potential tool for driving innovation, through co-creating of digital health services within the framework of innovation procurement, adding start-up acceleration services to the process.
- The establishment of the national Innovation Hub Health Innovation of Sweden leading up to the joint application of becoming a European Digital Innovation Hub, focusing on health data and health innovation. Our common goal is to be a national super cluster in health innovation
- Region Värmland has started two projects focusing on innovation and digitalisation to challenge current methods. DigitalWell

<sup>1</sup> Vinnväxt annual reporting includes the "layer model" - an approach to capturing the ripple effects to which the initiative contributes and the development of the innovation ecosystem over time. Layer 1 (which represents the core Vinnväxt funding from Vinnova and regional actors) is leveraged to initiate new collaborative activities and mobilise additional project funding, either directly to the Vinnväxt initiative (Layer 2), or to other actors supported by the initiative (Layer 3). Layer 4 is a listing of key events and system-level developments that can be linked to the financial and human resources mobilised in the first three layers.

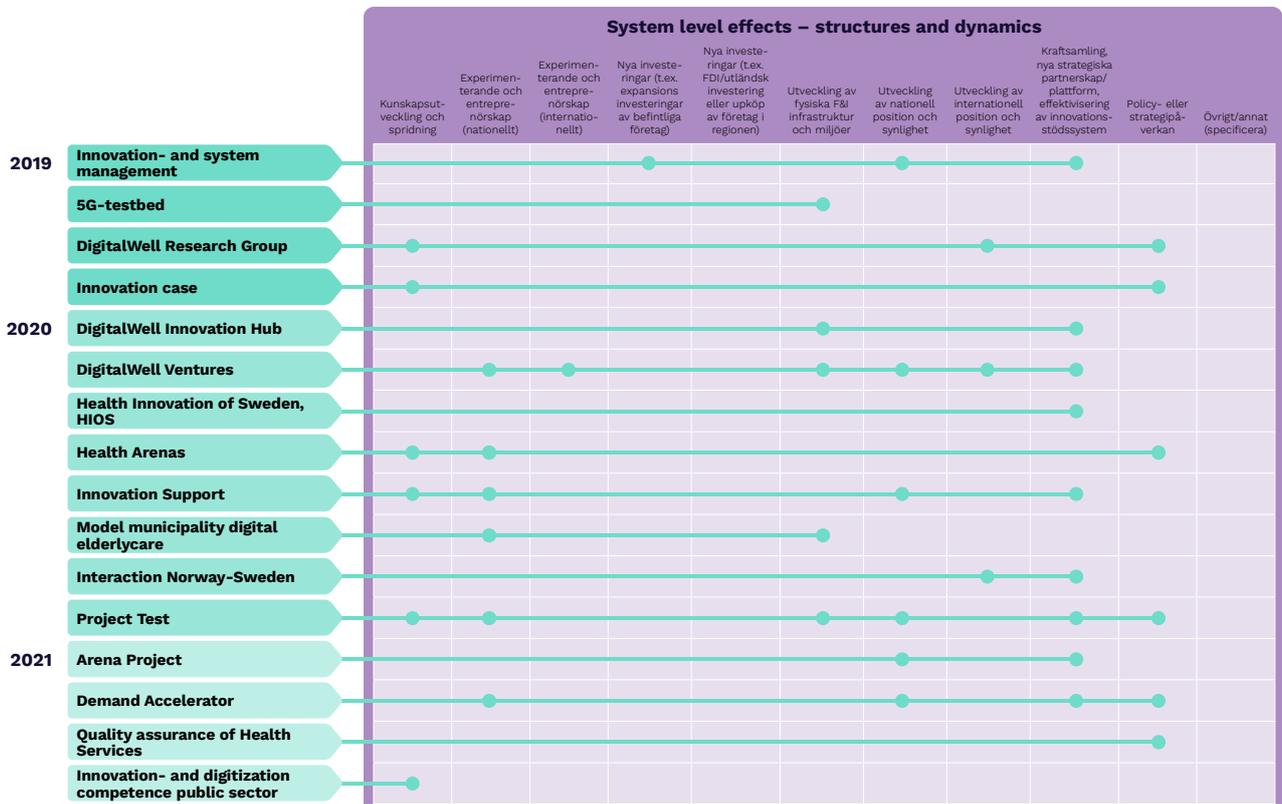
Arena is engaged as innovation managers in the project core team as well as covering the external monitoring and attraction of new competence and resources to the area.

Summing up significant events documented and connecting it to the projects and activities accomplished, we can visualise the effect the initiative has had on the structure and dynamics of the system connected to digital health innovation.

Results show that DigitalWell Arena has had an impact in many categories of system-level structures and dynamics (reported in layer 4), such as:

- **Strength of forces and new strategic partnerships** and a more effective innovation support system (SP/ISS). Increased interaction between all actors in the innovation ecosystem, and developing and testing a collaboration model in the pentahelix environment the actors are taking a more active role and shared leadership of the ecosystem's development and progress towards strategic aims.

- **Development and dissemination of knowledge (KU)** is exhibited in lifelong learning courses, proactive integration of university researchers, field tests of digital health services as well as the learnings from use of common methods and collaborative work in projects and working groups.
- Development of **new infrastructure (INF)** and accorporating support services for innovation exhibited in DigitalWell Ventures, Health Arenas, the Demand Accelerator and the HIOS national network of digital innovation hubs, accompanied by support services and processes for test and quality assurance of digital health services (POS-N)
- Leveraging the various innovation infrastructure and support services to catalyse new processes of **national entrepreneurial experimentation (EE-N)** in multiple public sector organisations for health and social care,
- Contributing to the attraction of **new investments (INV-N)** in expanding corporate establishments to the region.
- **Development of national and international position and visibility (POS-N),**



Impact of projects and activities connected to significant events.

**(POS-I)** for driving health innovation, through new national and international networks and collaborations, innovative activities such as DigitalWell Ventures, the Demand Accelerator, Project Test, Innovation Support, Arena project, some turning in to scalable operations.

● **Impact on policies and strategies**

**(POL/ST)** Research and public sector strength of forces taking lead to increase interaction with innovative companies in Health Arenas and Demand Accelerator, through test and innovative procurement, and addressing new areas – quality assurance of digital health services.

Moreover, DigitalWell Arena has contributed to attract added capital and funding both to the initiative process management strengthening the establishment of new projects and activities (level 2), as well as funding for the individual actor groups acting in the arena (level 3).

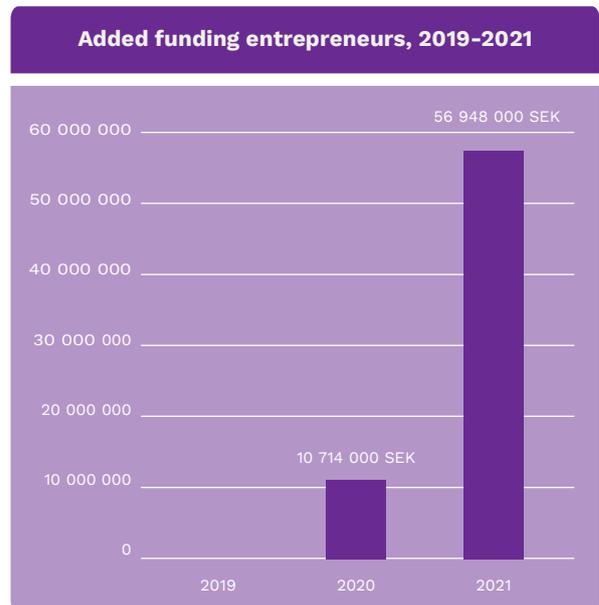
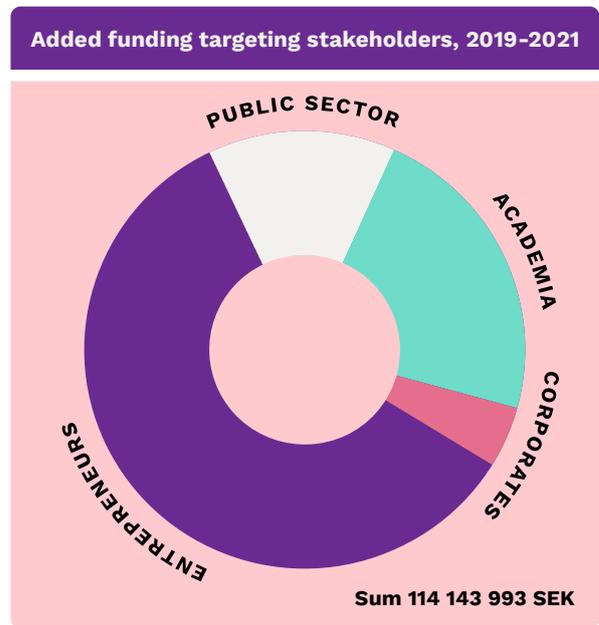
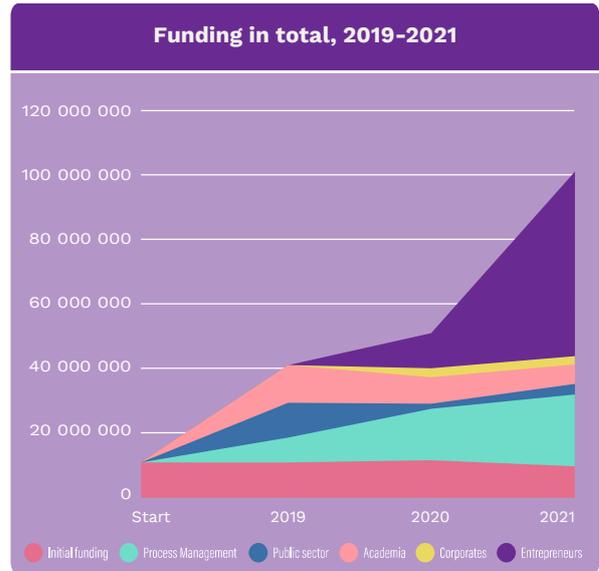
In total 158 MKR has been added to the original approved Vinnova- and partner-actor fundings from the start of 2019 to the end of 2021. Added funding can be related directly to the establishment of collaborative projects and activities related to public sector - Health Arenas and research as well as support services to entrepreneurs through Innovation Support and DigitalWell Ventures. The largest increase in added capital is related to entrepreneurs.

**Development of methods, working practices and processes**

DigitalWell Arena has both developed and taken in existing methods, processes, and work practices. Some have shown to lay out guiding principles. Methods addresses the area of needs driven innovation, increasing interaction between the actors as well as simplifying implementation and dissemination of digital health services and knowledge.

The DigitalWell Innovation Support was established in 2020 with the purpose of

Distribution of capital between actor groups, as well as in specific for entrepreneurs.



strengthening the entrepreneurs' innovative capability and supporting the development of digital health services. Covid-19 further addressed the need of digitalisation and 2 MSEK was set to develop and deliver value creating support services for entrepreneurs and SMEs. Gathering several actors from the innovation support system, applying approved methods for assessment, and focusing on developing a scalable process, the Innovation support has developed from a project into an established operation. The framework KTH Innovation Readiness Level™ is used in the process of guiding idea development and assessing idea status contributing to synergies between the Innovation Council-member actors. The use of the framework to assess entrepreneurs need for support has created national interest and resulted in national reference group membership and joint development of the KTH IRL-model relating to new areas - KTH Sustainability Readiness Level as well as synergies for supporting entrepreneurs with services related to the Medical Device Regulation, MDR. The KTH IRL-model is now established as a standard for Swedish incubators. The work practice of DigitalWell Innovation Support has also scaled and is also applied related to supporting corporates in the hospitality industry. In addition, methods and support services developed are used in connection with other activities such as the accelerator DigitalWell Ventures, Demand Accelerator and Health Arenas.

DigitalWell Ventures offering accelerator services to innovative companies in the digital health and welfare sector as well as to the public sector. The development as a virtual, dual location - Sweden-Norway, it is unique and has proven its success hosting 17 entrepreneurs - from Sweden, Norway, Iceland and Latvia, in the accelerator program in just a year. The program is designed, including processes for managing deal flow and selection of participating entrepreneurs, as well as use of the KTH framework for funding - KTH Investor Readiness Process. The accelerator has an international approach and has the new Nordics as main market. An investment company has been established as an impor-

tant tool connected to the accelerator. The investor offering will be launched Q2 2022. The approach of the **Demand accelerator** - addressing how public procurement can be used as an instrument for driving innovation adds a new view on existing procurement processes not being used to the extent it should - testing a focus of 90% innovation and 10% procurement. It also contributes to an integrated need analysis together with innovative corporates' product development process and decision basis for procurement. DigitalWell Arenas role in the Demand accelerator-process also adds the perspective of scaling and dissemination which is not an assignment put on public sector today.

The heading "**Health Arenas**" was launched as a collective name for digital and physical locations where innovative collaboration between public sector, innovative companies and academia is taking place. The meaning of the naming has created many questions but serve a purpose in the larger context as a collective name for collaborations in public sector, rather than a label for any organisation or organisational unit where collaboration occurs. The two methods Innovation Forum - unconditional exchange of knowledge to create new insights and the Field-Testing Process - a structured process for safe and secure testing of digital health services in real life environments, are two specific services developed together with key actors from public sector and corporates (Nordic Medtest, regarding test), also becoming approved methods of use for interaction with innovative corporates and academia, as well as for learning. The structure of the Field Test Process addresses areas such as procurement, information security, IT and value in use, facilitating continued route selection after a test is completed. It is also a key service offered in the national digital Innovation Hub - Health Innovation of Sweden, HIOS and in the joint application with KTH Royal Institute of Technology becoming a European Digital Innovation Hub, EDIH.

**DigitalWell Innovation Hub** is a physical premise gathering actors in or related to

the arena to share and take part of new knowledge. It is therefore not a process or a method but with the unexpected traction of Covid-19 creating lack of meeting-sites it has functioned as both a physical and digital tool for networking, learning and collaborative innovation. The innovation hub-concept is now dual location in the municipalities of Arvika and Karlstad as well as Oslo.

### **Enhanced innovative capacity and collaboration**

The joint work in DigitalWell Arena has enhanced both the possibility and capacity for public sector to be innovative, created new patterns of collaboration, as well as increased interaction with innovative companies.

The actors' joint forces and combined knowledge in the Innovation support and DigitalWell Ventures have provided a fast track for entrepreneurs with digital health services to the larger innovation support system. The Innovation Council (leading the Innovation Support) consisting of representatives from Region Värmland, Karlstad University, the state-owned business development support organization ALMI and tech-cluster Compare has supported 77 entrepreneurs in one and a half years, as well as contributed to each specific actor's development and to more quickly reach entrepreneurs not meeting the criteria's for support from DigitalWell Arena. The collaboration with the expert-partner in supporting and building successful start-ups – Xplorico, led to the launch of DigitalWell Ventures accelerator program in 2020. This transnational collaboration has expanded to include an international network of 96 investors and 46 mentors from 18 countries in 4 continents, as well as connection to the Norwegian chapter of Founder's Institute - the world's biggest pre-seed accelerator, strengthening the international profile and attractiveness of DigitalWell Ventures, currently with 17 entrepreneurs from the Nordics and Baltics.

Including corporates as service providers, investors, and members of mentorship-pro-

grammes as well as their knowledge and expertise has formed new patterns of collaboration having synergies and added value.

### **Entrepreneurs - Increased innovative capacity**

- 21 new prototypes
- 13 new or improved digital health services
- 11 new corporates being launched
- 56 new employments
- 67 MSEK added funding

The Innovation support and accelerator programs in DigitalWell Ventures have also contributed to corporates' ability to attract follow-on investments. The virtual dual-location (SE-NO) DigitalWell Ventures has received international attention as a virtual accelerator enabling support globally and contributed to an investment company connected to the accelerator. The investor offerings will be launched in Q2 2022.

The areas related to **Health Arenas'** aiming at enhancing innovative capacity in public sector have had a longer distance to walk, compared to the fast-moving support to entrepreneurs. However, the collaborative, and unprejudiced methods Innovation Forum and the Field Test Process, has increased concrete interaction between public sector and innovative companies. Since 2020 over 40 Innovation Forums and 7 tests of digital health services have taken place contributing to lowering the threshold for interaction and strengthen the development of digital health services and ability to innovate. While offering a safe and secure method for testing it has attracted national interest from several Swedish regions and contributed to partnership with Karolinska Institutet, establishing innovation milieus in precision health related to early detection of dementia – PREDEM. The individual projects and studies that touched on specific areas and issues have further brought the actors together and built trust for further cooperation, and finding new areas for interaction, innovation and validation. The newly initiated educations **Digitalisation leaders**

**in the welfare sector** and **Level up** aims to increase digital maturity and innovation capacity for both staff and managers within health and social care. This has already proven to have synergy effects related to the needs of having skilled process managers leading field tests. That way creating concrete innovation capacity in core public sector activities.

The working group “Innovation Funding” – focusing on finding new capital for funding innovative projects consists of Grants and Innovation Office, GIO at Karlstad University, together with The Swedish Civil Contingencies Agency and representatives from Region Värmland.

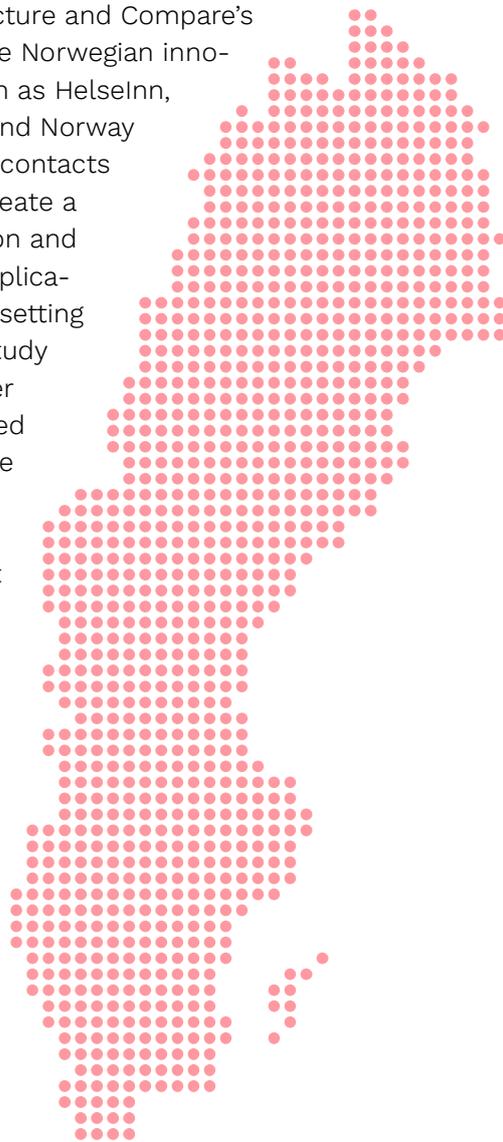
Academia is playing an important role in finding new areas for research, as well as supporting and interacting with corporates through the Innovation support and DigitalWell Ventures. Distinct and transparent projects, activities and needs described have contributed to establishing new contacts and collaborations between the actors. Collaborative studies and research are done together with corporates and entrepreneurs and public sector. Interaction with researchers from Karlstad University and public sector contributes to identify needs of knowledge and new areas for research.

National and international collaborations have established along with our dissemination of methods and learnings, key areas being identified, and new opportunities arisen. The broader multi-cross border connections have given access to new arenas and new actors also relating to the same societal challenges concerning health, e.g. PREDEM mentioned above, where the methods used in DigitalWell Arena can contribute to the acceleration of identifying early dementia by increasing the use of digital health services. Collaborations with national organisations and authorities has opened up the possibility to have a national dialogue and exchange regarding the application and interpretation of national policy's and regulations, such as innovation procurement, as well as DigitalWell Arena

being a recognised force to drive development within new areas relating to quality assurance of digital health services.

The established partnership in HIOS – Health Innovation of Sweden ([www.hiossweden.com](http://www.hiossweden.com)) consisting of an organizing university, six regional innovation hubs and the national research institute has resulted in the joint application to become an EDIH – Health Data Sweden comprising 18 actors with the joint focus on making health data available for health innovation in Europe. This has both given a coverage of all NUTS-areas in Sweden as well as opening up corridors for collaboration with European cluster and innovative organisations within health.

A working group targeting Norway has been established, together with Region Värmland, Compare and Xplorico in shaping a common strategy for developing new types of collaborations with Norway. Combining the region's structure and Compare's connection to the Norwegian innovation hubs, such as HelseInn, Digital Inlandet and Norway Health Tech, the contacts have led us to create a common ambition and goal – and an application for Interreg, setting up a feasibility study on a cross-border Tech cluster linked to health with the focus on how to form a tech-wide cluster that removes barriers to collaboration. This is the result of a strategic collaboration developing the dual-location accelerator DigitalWell Ventures managing 5



### **Development of the regional research base within digital welfare solutions**

The expanded network of researchers at Karlstad University, in the **Arena project** has resulted in not only new people, institutions and faculties being involved, but also a much stronger multi-disciplinary character of the research base within digital health solutions. This multi-disciplinary group enables easier access to academia as well as closer collaboration to identify needs of new knowledge, research and educational programmes contributing to the development of digital health innovation.

During the first phase, interaction between research, public sector and corporates has developed from collaboration related to specific needs-cases to now engaging in developing and initiating new research areas in dialogue with public sector actors in joint projects like giving access to real life cases, users and new data, or areas for research. Increased exchange has evolved by taking on an advisory role for Värmland's digital health centre related to the area of behavioural change.

Collaboration with corporates and entrepreneurs has resulted in new developed prototypes and digital health services, as well as new learnings related to digitizing existing work processes, and behavioural science, such as DIGital Early Labour (DIGI-EL) - "A digital application for dealing with early contractions"- Contraction Coper, and TRUEdig - service design contributing to data sharing. A new **5G testbed** has also been developed and inaugurated enabling edge computing and more precise measuring related to delay and capacity.

Various types of research have been conducted with relevance to digital health innovation such as Ageing Alone and Feeling at Home, models to evidence the value of welfare technology and challenges in software development for the healthcare sector, just to mention a few. In total 39 research articles have been written and

published connected to Karlstad University's collaboration in DigitalWell Arena.

Interdisciplinary collaborations have resulted in new courses and learning opportunities for healthcare professionals and emerging international research collaborations such as the international cross-disciplinary summer school - Intersections between design, technology and gender together with the university of Hongkong as well as planning of the intensive course Digitalization and technology in health care along with ethics and person-centered care, in collaboration with Nordsne-network with participants from Iceland, Norway, Latvia and Sweden. The course Gender, Health, and Technology at Karlstad University is offered to both Swedish and international students.

Projects have been carried out within the framework of the Academy for Smart Specialization, such as DigitalWell Research (phases 1 and 2) and the Research School Funding. An OECD report, from 2020, for the evaluation of the Academy for Smart Specialization states that the Academy for Smart Specialization has played a crucial role in the development of the regional network within digital welfare services. Collaboration has been strengthened between research areas and new initiatives for joint research projects have been taken. These strengths in the regional research base support visibility and attractiveness and contribute to efforts to develop new international links (e.g. two MSCA doctoral fellowship applications submitted) and peer learning activities with Digital Health & Care Innovation Centre in Scotland. The research-area within Karlstad University has also attracted international research competence of excellence related to Service design – "Att leda för digital transformation". Research capacity has also increased through the collaboration in Health Innovation of Sweden and the joint application with Health data- innovation hub connecting DigitalWell Arena to all NUTS-regions. Hence a focus on Health data as an enabler for innovation. Collaborating with actors with an excellence within health data.

All in all, the research infrastructure at Karlstad University has been strengthened. This can be seen in terms of the academic output as well as the increased level of co-creation of knowledge with external organizations.

### **Contribution to development and implementation of regional and national strategies**

DigitalWell Arena has during its first phase received a strengthened mandate and strategic framing being recognized as the motor and platform behind the priority area of digital health innovation within Värmland's new Smart specialization strategy, 2022-2028, taking the lead on the regional level. Through the coordinator Compare, the platform has also recently earned a Silver Label Certificate in EU's quality assurance for cluster management organizations.

The initiative has become a considerable force and platform for innovation with a mission to solve the societal challenges related to health. The initiative has received an important role in supporting the national and regional focus on national primary care reform "God och Nära vård" both in an overall system level, but also in practice as the innovation driver of major regional transformation activities to challenge existing methods and the building of a new hospital. Input has also been put into the regional strategy covering people's health as well as the strategy of Värmland pointing out collaboration, strengthened trade and industry, testing and digital innovation as important areas to achieve improved living conditions, increased involvement and equal structures.

A common strategy has also formed together with Region Värmland, concerning increased interaction with Norway.

The visibility on a national level has contributed to involvement in forums for policy related issues together with national organizations and authorities. Close co-operation and advocacy work together with NIP, which is

funded by the Nordic Council of Ministers with the aim of influencing the national strategies regarding certification of health services led up to cooperation with the Swedish E-health Agency regarding National quality assurance and certification of digital health services. The Swedish Association of Local Authorities and Regions is a member of the Demand Accelerator reference group relating to innovation procurement.

Within iHubs, we have been involved and influenced how innovation capacity can increase in regional innovation environments.

### **Con tribution to more sustainable solutions and system transformation**

Our work over the past three years has focused on building a strong foundation – joining actors together in a common innovation ecosystem, developing strong working practices and innovation support infrastructure - physical and digital, as well as institutional structures and services that can facilitate the desired long-term transformation for health innovation.

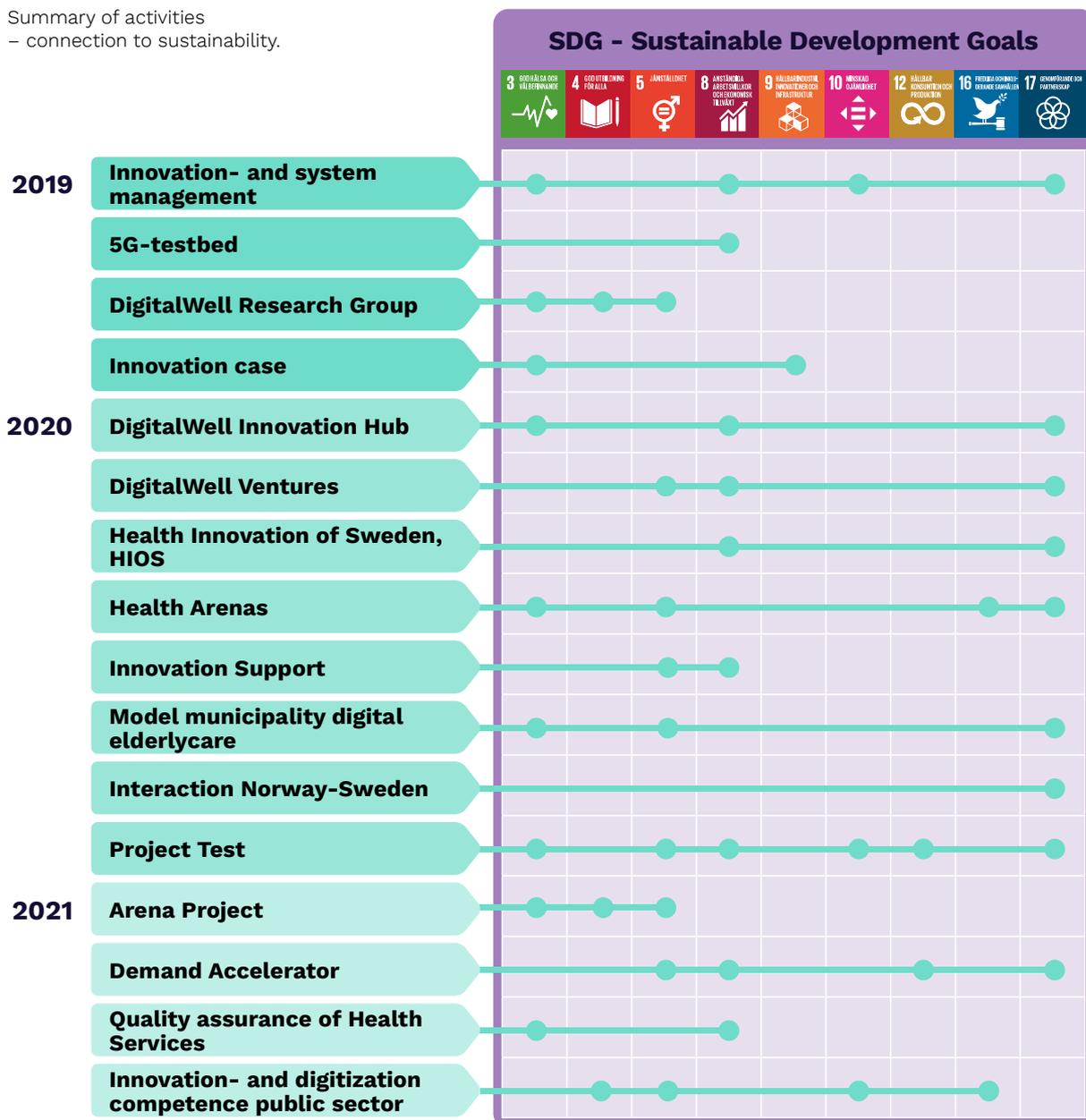
DigitalWell Arenas impact on the sustainability development goals, this far, has been mapped out related to the significant events (level 4) and connecting activities and projects.

Some of DigitalWell Arena significant events, activities and milestones that has contributed to such sustainable solutions are distributed regarding impact on social, financial, and ecological sustainability.

### **Social sustainability**

- Model municipality demonstration house "Stjärnhuset" in Karlstad municipality, purpose to test and develop new digital solutions that strengthen individual's self-sufficiency and health (SDG 3.8)
- Innovation support, supporting digital health services addressing women's health issues, increasing the use of favourable technologies, in particular information and communication technologies, to promote women's empowerment. (SDG 5.b)

Summary of activities  
– connection to sustainability.



- DW Ventures invests in corporates that are owned and managed by women, encouraging diversity in management teams, strengthening the prominence of women in the health and care profession, currently dominated by men. (SDG 5.5)
- Research activities within DigitalWell Arena related to digital health services strengthens the work to foster gender mainstreaming through activities such as: multi-disciplinary research that links gender science to computer science and service research, research on women's health issues that links to collaborative activities with corporates, integration of the gender perspective

in the ongoing multi-disciplinary research, as well as a course in digital health in relation to gender. (SDG 5.b)

- The vocational course Digitalisation leaders in the welfare sector increases knowledge increases knowledge in digital health services and innovation capacity, leading to increasing individual's inclusiveness. (10.2)

#### Financial sustainability

- Collaborations in over 30 projects and activities has resulted in increased interaction gathering forces solving common challenges and forming strong effective public / private partnerships. The Collaborations

have stretched from the regional working groups to a broadened regional collaboration to national and international networks and partnerships creating the start of the ecosystem for health innovation. (17.17)

- The collaborations have resulted in actors both sharing knowledge and starting to use the same methods through KTH IRL, as well as applying structured methods for interaction and test lowering making it easier to interact for needs driven innovation, resulting in more sustainable use of resources for the innovation support system, innovative companies developing digital health services as well as public sector. (17.6)
- Building cross-border infrastructure through DigitalWell Ventures and collaboration with Norway. (9.1)
- National connection in the Demand Accelerator covering policy-related issues concern-

ing innovation procurement for more functioning and sustainable markets. (12.7)

### **Ecological sustainability**

- Participating together with Medtech for health, and KTH Royal Institute of Technology, among others, in national efforts to develop a new Sustainability Readiness Scale which will be implemented in 2022 as part of evaluating of corporate development. (8.4)
- The Project Test and Field test Process covers an inclusive and secure innovation processes in real life environments. While contributing to health and wellbeing, the activities also contribute to achieving higher economic productivity through technical upgrading and innovation in the field of health (8.2).

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## **Own reflections on DigitalWell Arenas development during the first phase**

### **Perspective on what we've done and how we've done it**

Summing up our first three years as a Vinnväxtinitiative we can state that we have come a long way from where we started. The follow-up of objectives and indicators (see Appendix 1) summarizes the results achieved. Activities being implemented and important events and milestones have made a particular contribution to catalysing many "ripple effects. The lessons learned, and knowledge gained has had an impact not only on the regional setting in Värmland, but also on the national arena. New types of alliances and collaborations have been formed, innovation is applied in a broader scale and value creating structures as well as challenging areas have been put in the light, setting the scene for our continued work.

### **Innovation collaboration and capacity**

A strong advantage and strength for the development of DigitalWell has been the partnering actor's commitment to participate and collaborate in the arena. The large number of

activities being implemented together with different frames of reference, perspective on time and expected level of ambition has challenged an inclusive and engaged partnership as well as a sense of recognition. Health is a very broad area, having different meanings depending on the target group. However, by facing and acknowledging our differences we have built valuable trust between each other that enables us to share knowledge, contribute to creating new synergies, and daring to ask as well as make mistakes. There are high ceilings and any sense of not feeling included is now no problem to express.

This has also resulted in strengthening the relationships between individuals, as well as among participating partners, making it easier to innovate together. The strong expanded involvement and joint representation in activities and as well as working groups has further created ambassadors within each actor's organization, contributing to synergies in development and dissemination of new ways of thinking, processes, working methods and strategies.

The actors own driving forces and capacity have increased during the period. Region Värmland has merged the areas growth, development, and health care under the same organizational leadership as well as developed strong and well-established strategies for the coming years. Karlstad municipality breaks out digitalization from IT – raising new discussion on how to view the area and acts for transparent and inclusive dialogue and collaboration with innovative corporates and entrepreneurs. Karlstad University increases focus on digital health innovation gathering research competence through the Arena project and the Vinnväxt-coordinator Compare is developing as an innovation- and tech cluster. The increased ability and strength of forces has resulted in more actors taking own lead in innovative projects and activities such as IoT in school for each and everyone - Arvika municipality, and the newly started project I Region Värmland “Projekt Västra” and “Nya CSK”, challenging the ways of today. Through Karlstad's assignment as a model municipality for digitization of elderly care, several projects have been started where the relationships and knowledge gathered in DigitalWell Arena, such as contact with innovative companies and research expertise, are used to find and validate new ways and solutions.

Finding ways to involve regional corporate partners has been a challenge. The complex societal challenges related to health demands time and resources to address. Further stressed by the Covid-19 pandemic short-term business is found more important than the very long-term one. In the end, it was the concrete needs of entrepreneurs and SMEs for support services that opened the door to increased corporate involvement and participation. Through the Innovation Support and DigitalWell Ventures this has also developed in to increased synergies through offering mentorships as well as funding in investor network. The work and issues handled within the individual projects creates further engagement and participation also strengthening relationships and enhan-

cing innovative capacity.

The result of DigitalWell Arena relating to the supported entrepreneurs has to be assessed as being a success. We have helped the entrepreneurs increase their innovative capacity. New employment has been made and funding attracted. The Innovation Support has become a national operation offering innovation checks from Swedish Incubators and Science Parks, SISP. Our investments have increased interest in entrepreneurship and today we receive many inquiries from other tech areas that we do not have the opportunity to support. Compare will therefore in the future take the experience from the investments in DigitalWell Arena and build a tech incubator that can support both health tech but also other tech areas.

The research area connected to health innovation has strengthened and developed and many requests are made to include companies and public organizations in European projects and with a link to improved health that did not exist before the Vinnväxtinitiative. The new strength in forces will make it possible to increase interaction with both corporates, entrepreneurs, and public sector to increase access to new validated knowledge.

Compare has also increased in strength going from 8 to 19 employed, where the majority has a role in DigitalWell Arena. This means that we today can follow through on more investments and activities. Today we have the resources to establish new projects and attract added funding for both investments of our own, as well as for corporates or other organisations.

### **Methods and working practices**

The methods and processes used have taken us from applying linear innovation processes leading us towards agile collaborations integrating need analysis, and aspects like procurement, integrity and data security, evidence, ethics and patient safety – through the principle of build measure, learn. We have increased our knowledge related to agile



methodology. Actors interacting with corporates (Innovation council, Karlstad municipality, Ventures team) has developed the same language related to service development from start to finish. The use of common frameworks, based on variability, has also increased innovation knowledge. During DigitalWell Arenas first phase the KTH Innovation Readiness Level™ has been established as a standard for national incubator programmes, which further has contributed to the reliability to apply the model. This way of working has also taught us that the future might hold other ways or models that outmatches the existing. It addresses the need for organisations and units to be allowed to test new ways to develop and innovate. Testing small and the possibility to do so is therefore a key factor for innovation. national attention has also been given because of the fact that we have applied existing methods, like KTH IRL in new settings. DigitalWell Arena is by that slowly on its way to change both the mentality and methodology of working.

The large number of projects, activities, and important events needs to be taken in to account to make use of the learnings and create synergies. For example Project Test both stimulates the availability of field test environments, as well as new roles within public sector while educating test managers related to the

Field Test Process in the vocational course Digitalisation leaders in the welfare sector. Having an agile approach has made it possible to organize the work based on the needs and development of the different areas of work that we test, start or establish. Not having the suitable structure, during our first phase, this has challenged the actors ability to stay update on DigitalWell Arena. The purpose has to along the way identify structured ways to test and learn. This also means that we must dare to fail.

### **National and international role and influence**

The potential in collaborating with other actors both nationally and internationally has become clear during the period. The importance of having a national and international mission as a Vinnväxt initiative has motivated us daring totaking the leap. The feeling of having a mandate has strengthened us and made us dare to take a place on the national stage through many different efforts and commitments. Through concrete cooperation with national authorities and organizations, related to quality assurance of digital health services, innovation procurement and standardised support structure for entrepreneurs and SMEs we have started establishing a national position within needs driven innovation of digital health services. The processes, methods and knowledge developed, as well as the gathered strength in the regional actors in Värmland means that we have also have a lot to bring to the table and ability to contribute on the national and international arena.

Partnering with national actors in Health Innovation of Sweden HIOS, and the joint application to become an EDIH, Health Data Sweden - comprising 18 actors that cover all NUTS2-areas in Sweden, and with a focus on making health data available for health innovation in Europe, Health Data Sweden (HDS) further confirms the position we are establishing not just nationally, but also internationally.

### **Expecting the unexpected**

Many of the events that occurred during the first phase have not been foreseeable, such

as the area of quality assurance of health services, the journey from launching the Innovation Support to graduating the very first entrepreneurs from DigitalWell Ventures accelerator programme. We have learned to be agile, which has led us to events and results, while in the moment, not feeling unexpected.

Considering our scope and area of activity, we expect to identify obstacles. Some, but far from all can be predicted which further affects our view of what can be expected or not. It is easy to underestimate the size of lock-ins. Therefore it is important for us to direct our resources to prioritize and balance which lock-ins or obstacles to take on and take a deeper look in to. However, by establishing structured working methods, we get the tools to handle both new insights and challenges.

### **Key learnings and directions for the future**

Summing up the results a clear mission has formed – to contribute to a well-functioning market for digital health services emerging in Sweden, enabling innovative companies and the public sector to interact and disseminate effective health services to many so that good and equal health can be achieved in society.

DigitalWell Arena has identified a few key learnings and reflections where we believe the Vinnväxtinitiative can make a difference. We have to take on the focus of creating conditions for dissemination of the values that digital health innovation entails. Key areas identified, concerning the interaction between the public sector and innovative corporates are quality assurance of digital health services and how the process related to test in different stages need to be developed to create or ascertain the value of the service or solution tested. The lock ins in the market for digital health services are many and significant. It is hard to reach the stage of implementation and easy to get stuck in extensive regulations that are difficult to interpret. One example is the new and extended Medical Device Regulation, where more and more corporates and people need to deal with the issue.

Lock-ins and obstacles are identified in the activities carried out. As more activities are carried out, more and more obstacles come to the surface. By testing and making lock-ins visible we not only validate the service tested, but also open up to find the solutions that can take us further. By testing we increase our ability to both address locks and disseminate results. By establishing structured working methods, we get tools to handle the challenges.

A significant aspect of both quality assurance and test is to validate and/or ensure safe and secure use by organisation and individuals. This demands a clear interpretation of evidence in relation to digital health services. Both public sectors, together with academia have an important role of validating new knowledge related to the use of digital health creating evidence needed for both use and dissemination.

How we organize ourselves is crucial and we need to do it on the basis of being allowed to experiment. We need to find structured ways to test and learn. This means that we must dare to fail. We also need to clarify the ways to develop actual activities from the most promising experiments, so we do not stop at pilots.

Activities made working practically to bridge the worlds of corporate and public sector innovation, such as Project Test and the Demand Accelerator has actively addressed significant lock-ins or contributed to their coming to the surface. Although this process or processes have just started, we can already design the structure needed to overcome the obstacles. Also creating a security strengthening innovation capacity.

### **Directions for the future**

Regarding the mission of creating a functioning market DigitalWell Arena aims to:

- Clarify DigitalWell Arena's governance structure based on the lessons learned and the emergence of what we have tested to take advantage of the expertise, create synergies and contribute to the spread of digital health innovation.

- Continued development/expansion of field test and the Demand Accelerator concepts adding focus of strengthening public sector innovation as well as strategies for health, such as God och Nära vård.
- Be an active party in HDS where DigitalWell Arena will conduct the work package Test Before invest, and take advantage of the cutting-edge and broad-based expertise available in HDS.
- Build on HIOS as a super-cluster in health innovation and increase collaboration with other innovation hubs both nationally and internationally.
- In these collaborations, our areas of strength will be strengthened even more and serviced in order to be able to spread to many.
- Testing new business and models for procurement as well as health- and national economy– aiming to make it easy to disseminate to many.

That is, DWA will increasingly contribute to Sverige AB and Europe being able to develop value-creating services that can be used by many.

**How can we strengthen our ability to affect policy's to achieve a functioning market related to digital health services in Sweden?**

**Questions to discuss and get feedback on from Vinnova and/or external evaluators**

How can innovation in a pentahelix environment be managed and organised while creating synergies for learning and at the same time keep a fast and flexible work-environment?





# DIGITALWELL ARENA

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