

Pathways for increased collaboration of the value chain

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lessons learnt from
co-leading the Sustainability pillar within the EDITH CSA



PI SCHOOL
MACHINE INTELLIGENCE
MEETS HUMAN CREATIVITY

EDITH project has received funding from the EU H2020 Research and Innovation Programme, under Grant Agreement n. 101083771

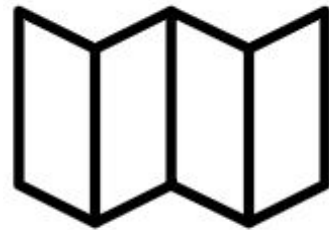


EDITH-CSA objectives

Ecosystem



Roadmap
Platform



Repository



Simulation



Ecosystem
for Digital Twins
in Healthcare

VHT/DT: A key tool for new patterns for prediction and prevention, 22/10/2024

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Ecosystem



EDITH had the objective to frame an inclusive ecosystem of digital twins in healthcare within the EU Member States and associated countries.

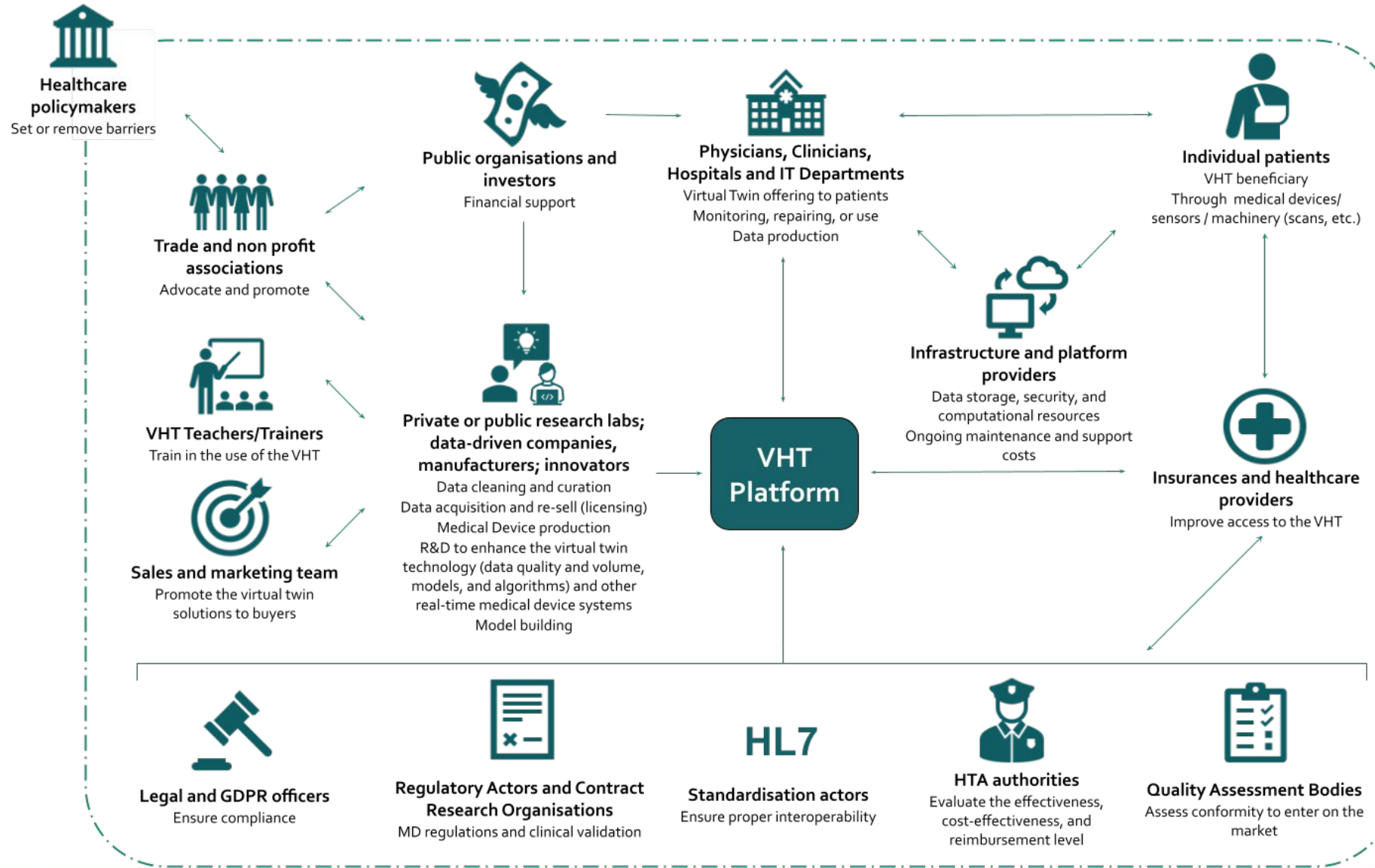
- Show comprehensive mapping of the existing relevant actors, initiatives, resources (i.e., models, data sets, methods, good practices, infrastructures, solutions, services), and barriers in the digital twin development.
- Leverage clinical representation
- Foster collaboration



Ecosystem
for Digital Twins
in Healthcare

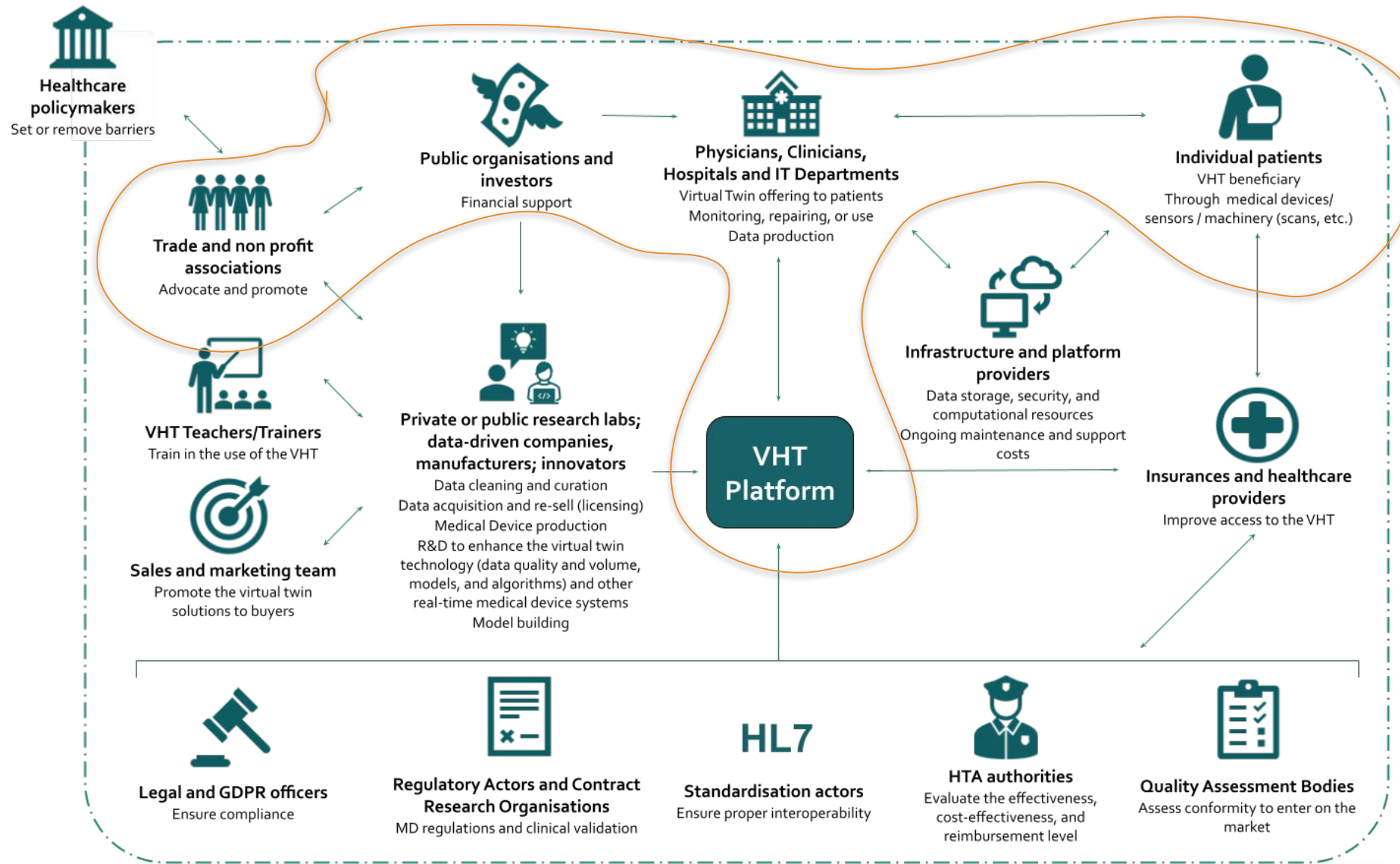
VHT/DT: A key tool for new patterns for prediction and prevention, 22/10/2024

VHT Ecosystem*: composition, roles and interactions



*non exhaustive mapping

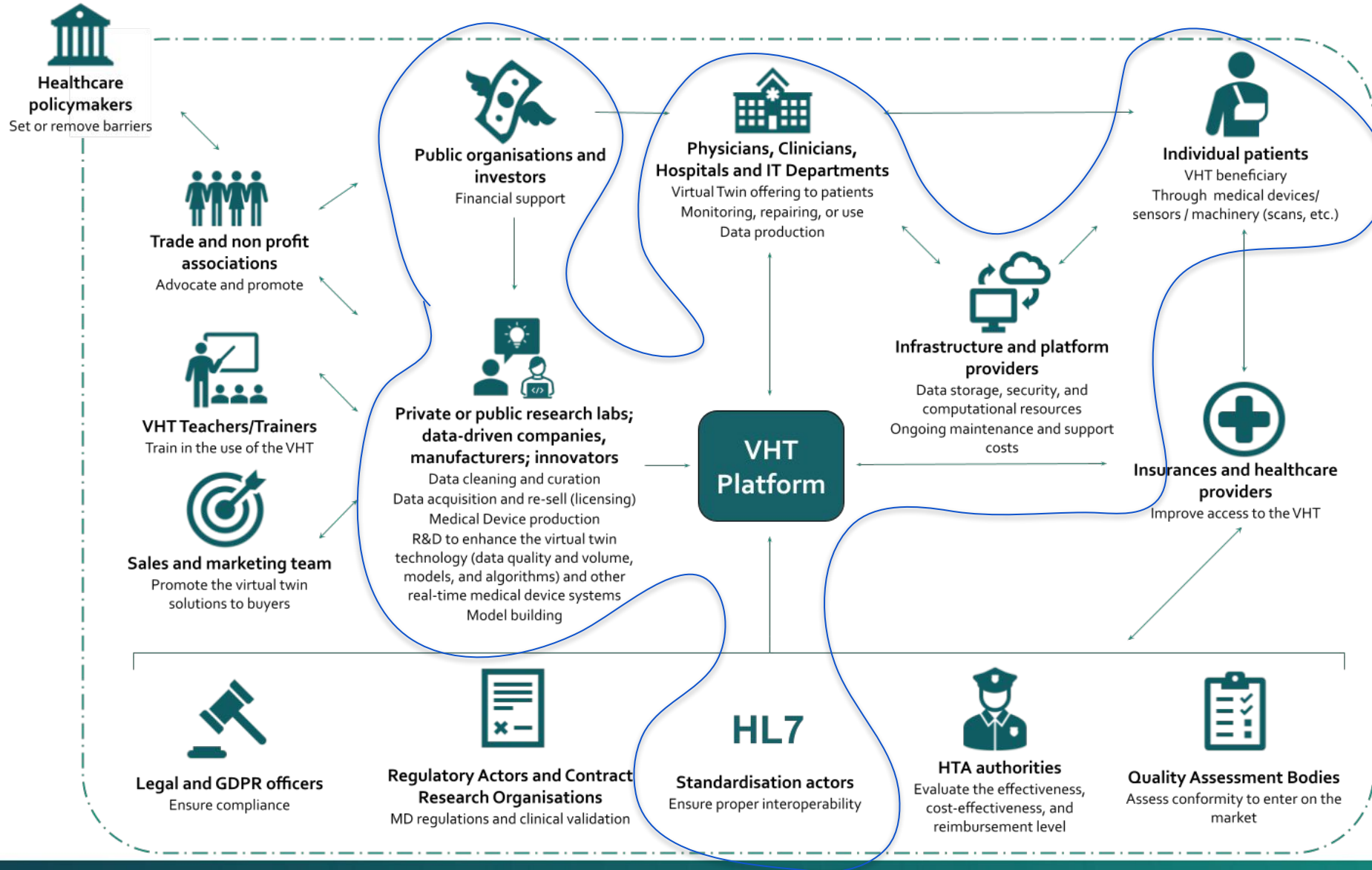
VHT Ecosystem*: composition, roles and interactions



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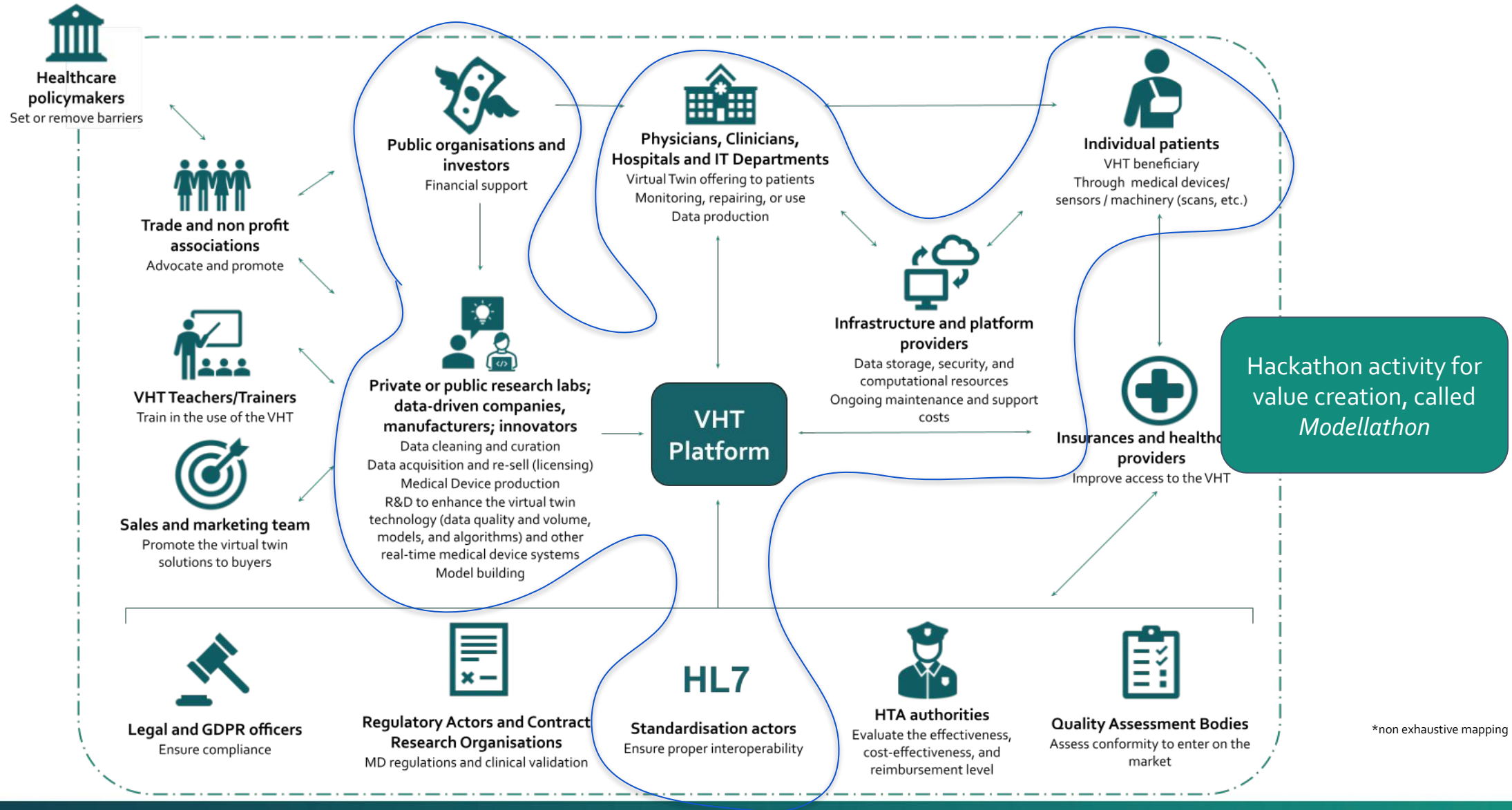


VHT Ecosystem*: composition, roles and interactions



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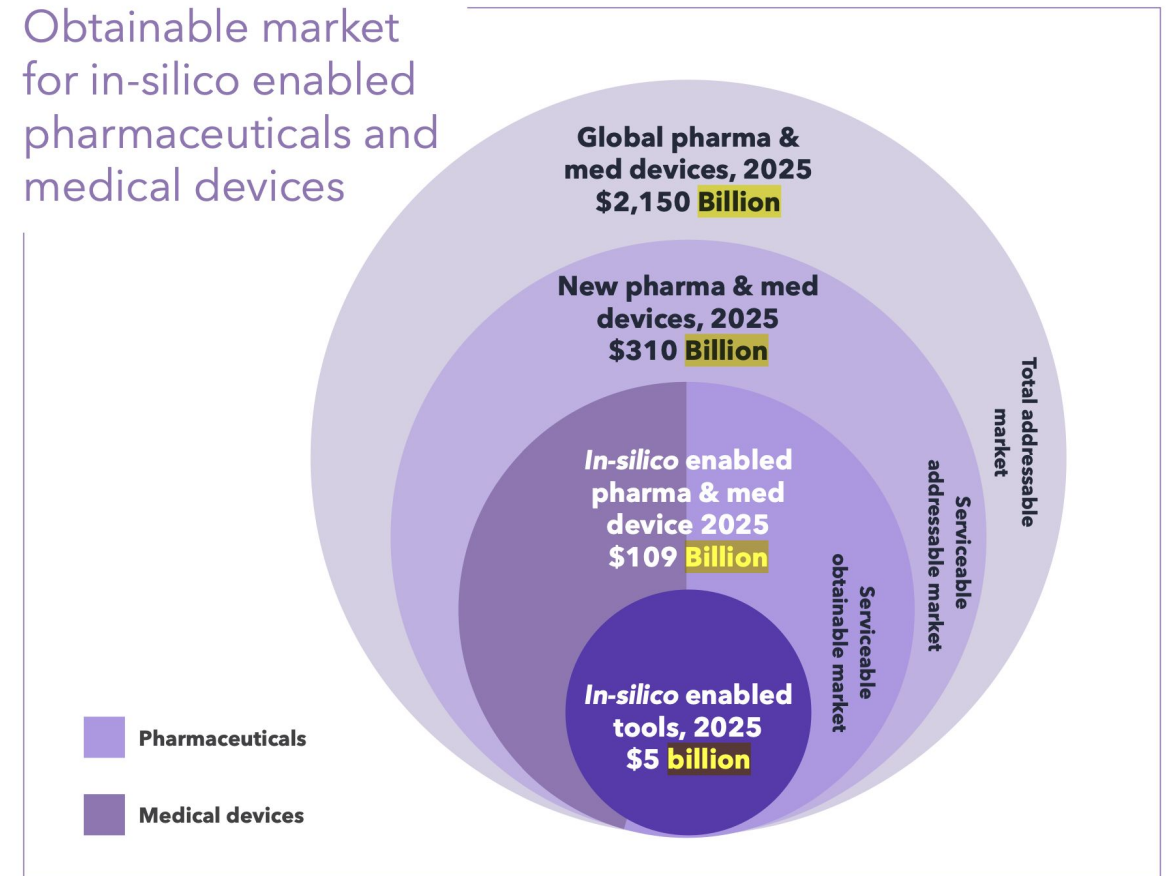


From Use Cases to Value Creation

Creating Sustainable Value from Virtual Human Twin

- **Actual Virtual Twin use cases are seeds for scalable innovations:** such as clinical decision support systems; personalised medical products; real time data acquisition for emergency care management; etc.
- **VHT brings significant key value propositions:** enables predictive healthcare, reducing medical errors, streamlining drug development, supporting personalised therapies, precision medicine, early detection
- **Social & Economic Impact:** Citizens benefit through personalised health screening and forecasting, impacting global markets
- **Costs & Risks:** clinical trials, computing costs, certification costs (and complex validation processes), and data privacy (GDPR) remain key barriers

Obtainable market for in-silico enabled pharmaceuticals and medical devices



Source: *The Economic Impact of In-Silico Technology on the UK and its Lifesciences Sector*

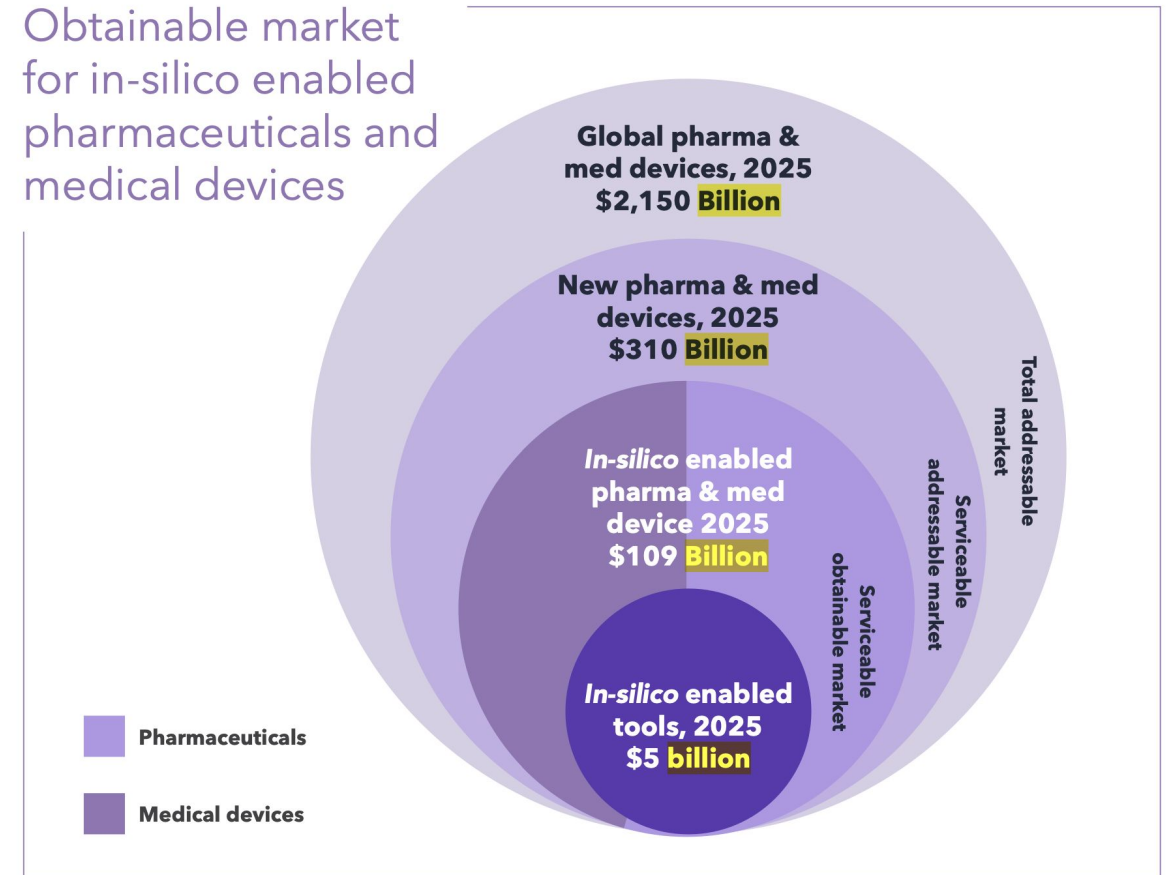
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takes solutions for cardiovascular and psychological diseases one step further

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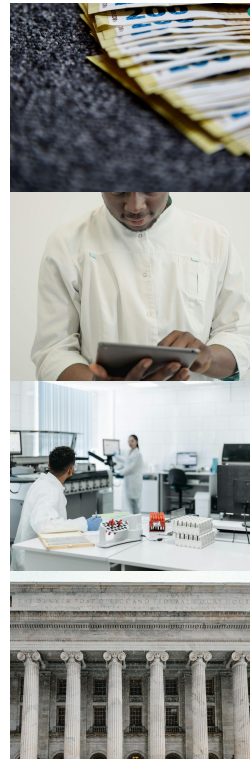


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Benefits and Costs



Ecosystem-Wide Impacts and Incentives for VHT Adoption



For Public Organisations & Investors: outcomes are improved healthcare and a huge potential for public health cost savings ; VHT can boost Europe's leadership in digital health and bring innovation opportunities

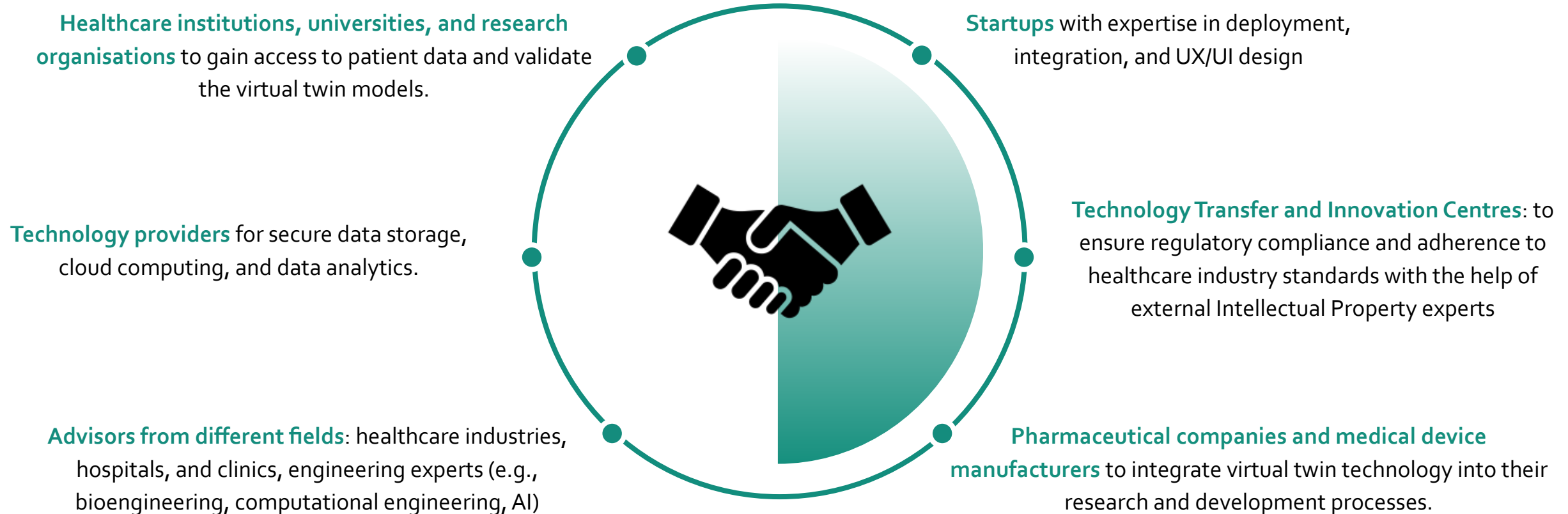
For Hospitals & IT Departments: VHT streamlines diagnostics, resource allocation, and patient care. Investing in IT systems is crucial for better integration and effective monitoring

Research Labs & Innovators: New R&D pathways; opportunities for advanced medical products

Regulatory & Legal Stakeholders: Challenges around GDPR, intellectual property, and standardisation.

New challenges bring new markets, and new markets increases the number of partnerships

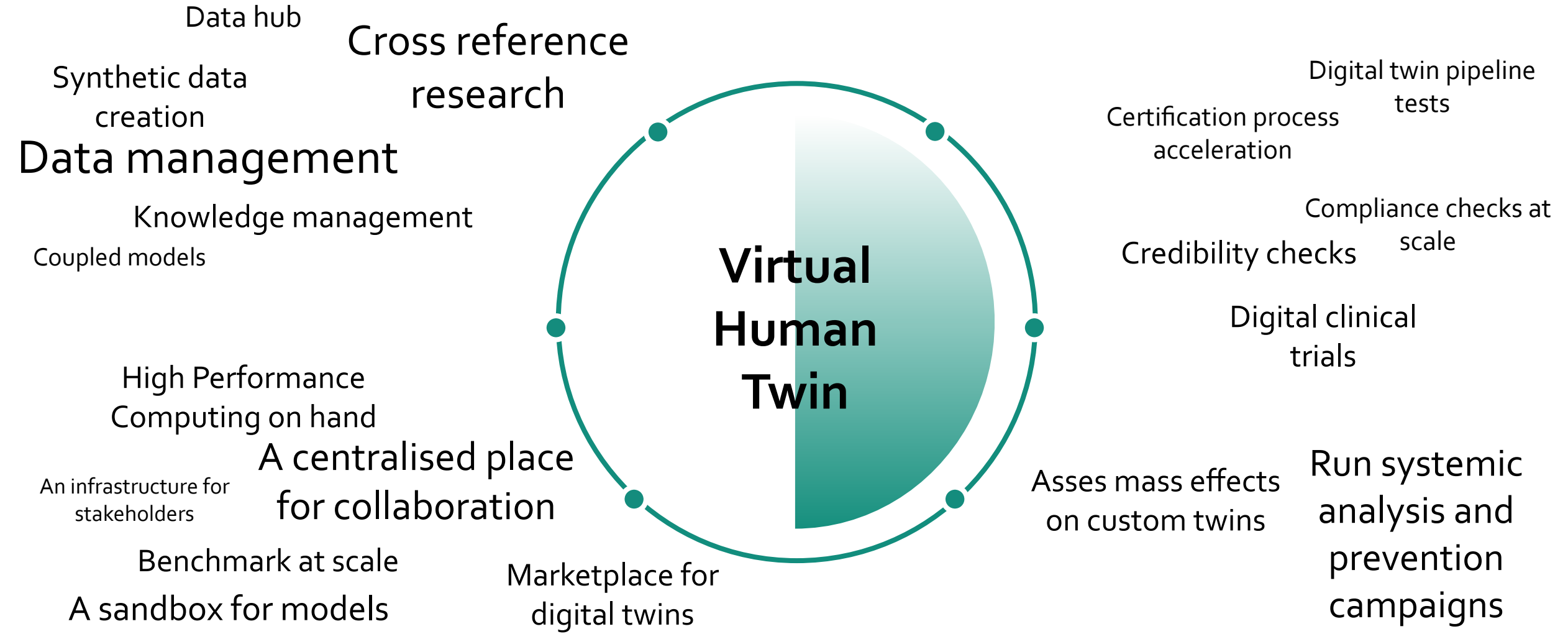
Key partnerships, to name a few



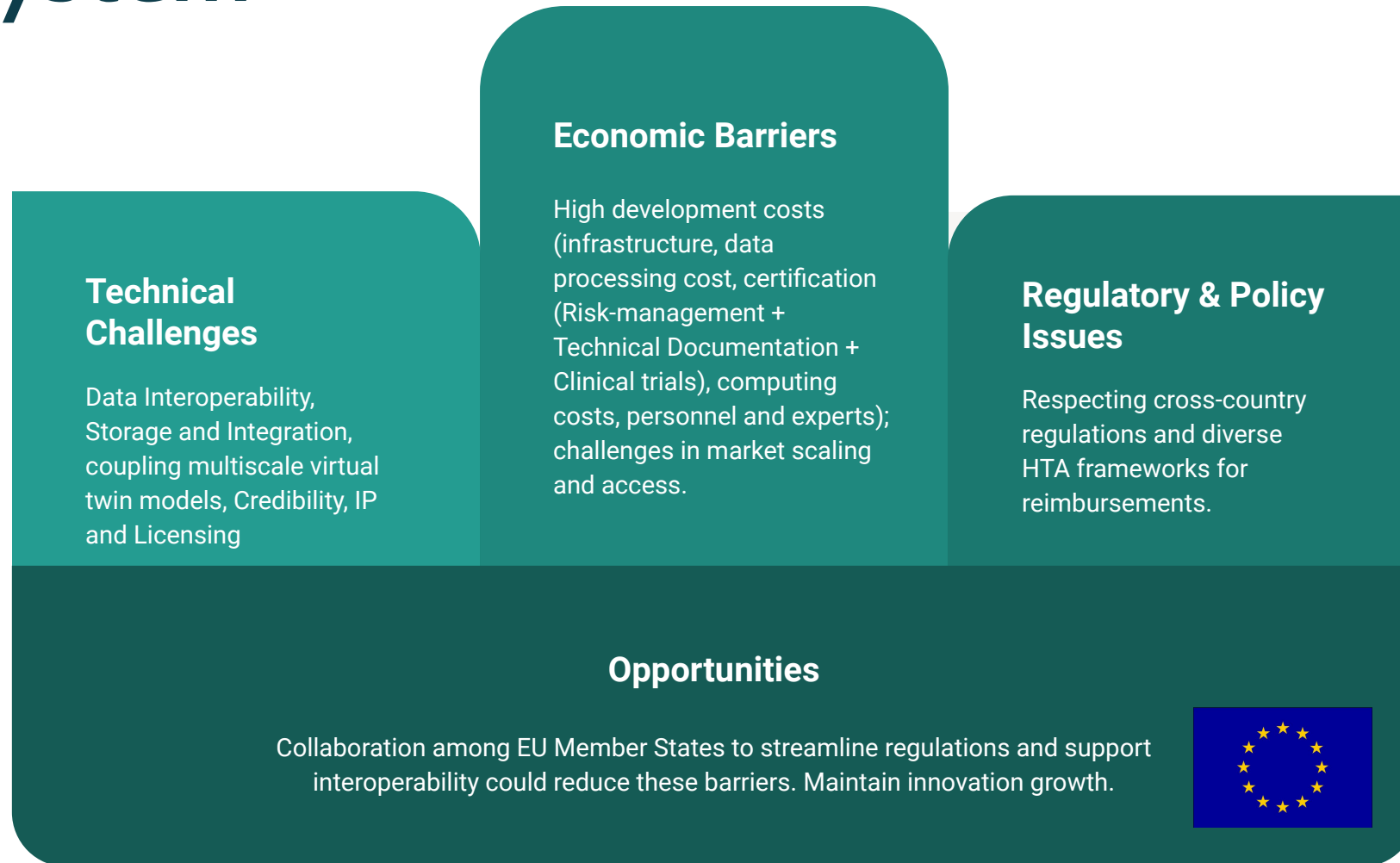
Barriers and opportunities for collaboration

- **Data Silos and Interoperability Issues**
 - Fragmented data across different institutions, countries, and healthcare systems.
 - Different data governance and standards
- **Lack of Multidisciplinary Collaboration**
 - Insufficient interaction between clinicians and innovation providers creation silos between innovation projects and implementation in clinical practice.
- **Regulatory and Ethical Concerns**
 - Variability in regulatory frameworks across regions, leading to slow adoption.
 - Ethical issues in data sharing, privacy, and the responsibility of AI predictions.
- **Facilitate data use**
 - Implementing international standards for healthcare data
 - Open-access platforms and collaborative repositories for sharing non-sensitive patient data.
- **Provide Public-Private Partnerships (PPP)**
- **Co-Create Models:** co-designing digital twin solutions for more personalized healthcare applications
- **Align regulations**
 - Harmonizing regulations at national and regional levels to facilitate smoother market entry.
 - Encouraging alignment on data ethics and privacy laws (e.g., GDPR compliance).

VHT, more than isolated Digital Twins



Hurdles & Opportunities in a Digital Health Ecosystem



Thank you

www.edith-csa.eu