Industry Deep Dive Research: Digital Health & Medical Technology

Executive Summary

24 February 2025

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Introduction

Purpose and Scope:

Scotland has established itself as a growing hub for innovation in Digital Health and medical technology (MedTech), leveraging its rich history of healthcare innovation, strong academic infrastructure, and a supportive policy landscape. This executive summary distills key findings from an in-depth study of the Scottish Digital Health and MedTech sectors, examining the current landscape, global competitiveness, and growth potential. It provides actionable insights for industry stakeholders, policymakers, and potential collaborators, with a focus on fostering innovation, addressing challenges, and maximising international opportunities.

Key Definitions:

The report defines **Digital Health** as the use of digital tools and technologies to enhance healthcare delivery, improve patient outcomes, and optimise operational efficiency. This includes telehealth, wearable devices, mobile health (mHealth), and data-driven analytics. **MedTech** encompasses medical devices and systems for diagnosing, treating, and monitoring medical conditions, ranging from diagnostic imaging tools to software as a medical device (SaMD). Both sectors play a pivotal role in reshaping healthcare systems, providing scalable solutions to global challenges like ageing populations, chronic disease management, and rising healthcare costs.

Methodology:

The findings in this summary are based on a mixed-methods approach, combining:

- Quantitative data analysis of market trends, company turnover, employment metrics, and funding sources.
- Qualitative insights based on interviews with key stakeholders, including Scottish companies, innovation hubs, and policymakers.
- Landscape mapping to categorise and geographically map companies and innovation organisations in Scotland’s Digital Health and MedTech ecosystem

Global Markets and Trends

Key Global Trends

The global Digital Health and MedTech sectors are undergoing transformative growth, driven by technological advancements, changing demographics, and shifting healthcare paradigms. The global Digital Health market was valued at $233.5 billion in 2022 and is forecast to grow to a value of over $940 billion by 2032, at a CAGR of 15% over the period. Similarly, the global MedTech market was valued at $518.46 billion in 2023 and is projected to grow to $886.80 billion by 2032, at a CAGR of 6% over the period, underpinned by growth in orthopaedics, diagnostics, and imaging technologies. Although growth in each sector is being driven by specific trends, the boundaries between Digital Health and MedTech are, increasingly, blurred with hybrid solutions like AI-driven imaging tools and Software as a Medical Device (SaMD) leading to enhanced patient outcomes and operational efficiencies. As a result, there are opportunities for Scottish companies to expand globally, including established markets such as the US and emerging regions, such as Southeast Asia and the Middle East, where there is demand for cost-effective diagnostic and monitoring solutions.

Key Trends in Digital Health

Telehealth and Virtual Care: Becoming an established part of healthcare delivery, telehealth supports remote patient care and chronic disease management with growing patient adoption.

AI Integration: AI enhances diagnostics, workflow automation, and personalised treatment, particularly in areas like radiology and patient monitoring.

Wearables and mHealth: Devices and apps enable real-time health tracking, empowering patients in managing fitness, chronic conditions, and mental health.

Data Analytics and Interoperability: Advanced platforms drive insights for predictive care, while interoperability frameworks support seamless data integration.

Consumerisation of Healthcare: Patient-centric tools like self-monitoring apps and telemedicine platforms align with growing consumer demand for flexible, accessible care.

Key Trends in MedTech

Early Diagnosis and Prevention: People are living longer often with multiple chronic conditions. The demand for devices that enable early diagnosis and preventive care is increasing, as healthcare systems, globally, aim to reduce disease burden and improve patient outcomes.

Minimally Invasive Technologies: Robotic-assisted surgeries and smart devices are enhancing patient outcomes by reducing recovery times and complications.

Advanced Diagnostics and Imaging: AI-enabled tools and portable devices democratise access to accurate, early-stage diagnostics.

Smart Medical Devices: IoMT and AI-integrated devices enable real-time diagnostics, remote monitoring, and clinical workflow automation.

Emerging Therapeutic Areas: Innovations in artificial organs, bionics, and advanced prosthetics address unmet medical needs.

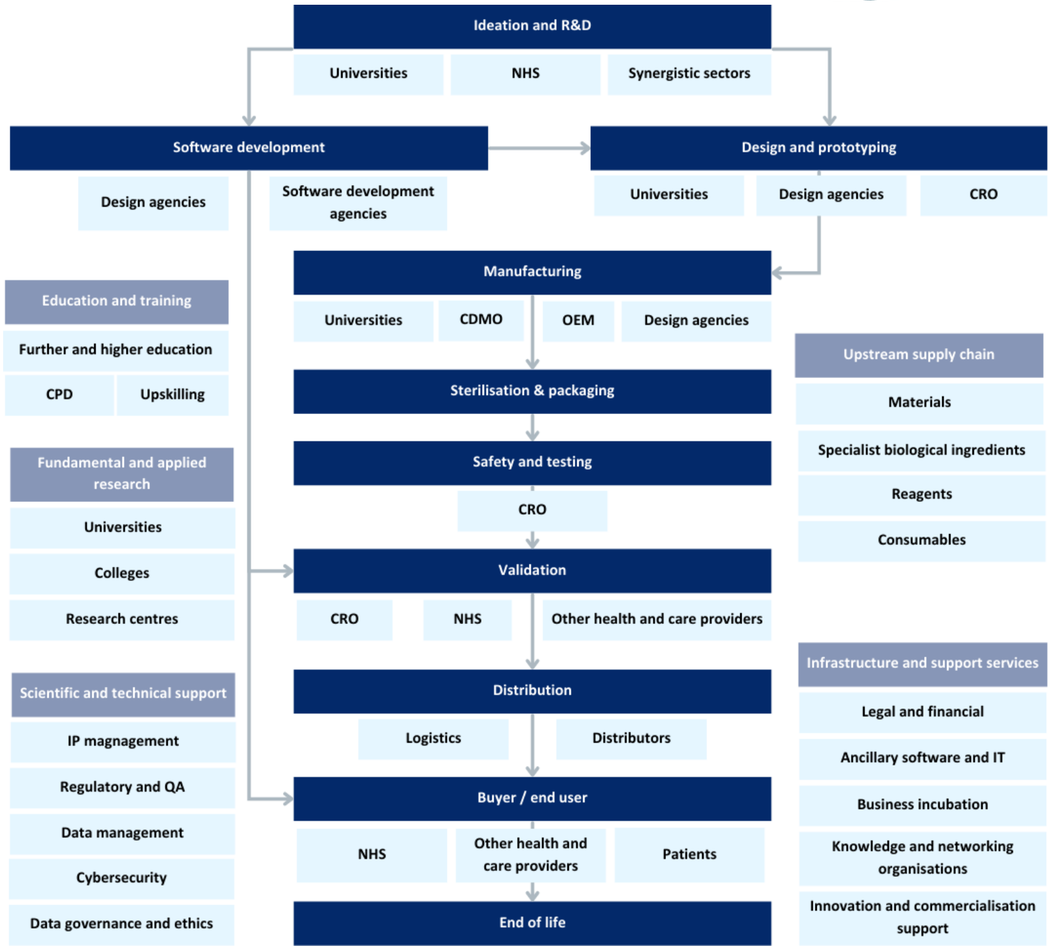
Digital Health and MedTech Value Chains

The value and supply chain for Scotland's digital health and MedTech sectors showcases significant collaboration across academia, industry, and government. This integration is key to fostering innovation and overcoming barriers to commercialisation.

Value Chain Structure

The value supply chain can be broadly divided into key stages:

- **Ideation and R&D**: This stage includes initial research, design, and prototyping. Universities and innovation centres, such as the Digital Health and Care Innovation Centre (DHI) and the Medical Devices Manufacturing Centre (MDMC), play a pivotal role by offering specialised facilities, expertise, and collaborative opportunities.
- **Development and Testing**: Companies engage in product development and validation, often supported by Scotland's network of clinical partners and regulatory advisors. The availability of testbeds and validation labs, such as the Digital Health Validation Lab (DHVL), facilitates real-world testing and accelerates time-to-market.
- **Manufacturing and Distribution:** MedTech companies frequently outsource manufacturing to specialised contract research organisations (CROs) and contract development and manufacturing organisations (CDMOs). Distribution networks connect companies to hospitals, healthcare providers, and international markets.
- **End-Use Applications:** Digital health solutions and MedTech devices are deployed in healthcare settings, often supported by public sector initiatives to help with adoption and alignment with NHS needs.



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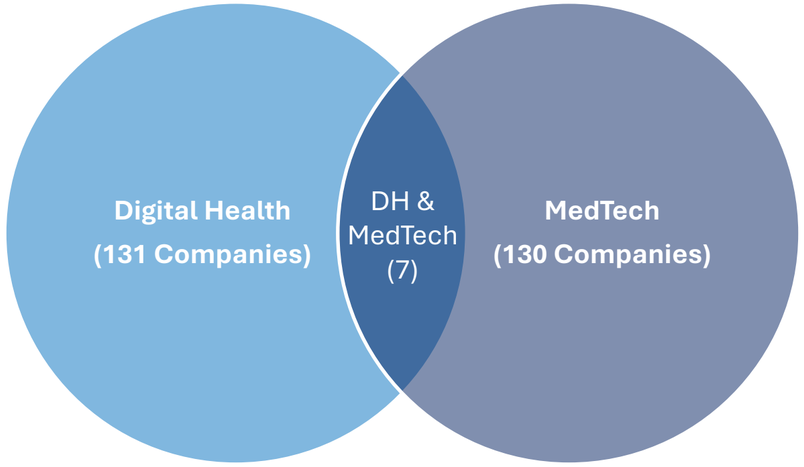
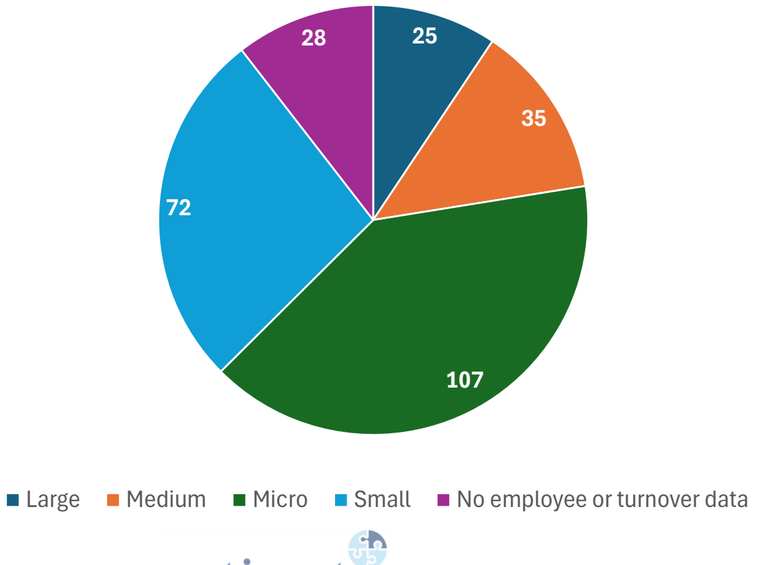
Mapping the Scottish Digital Health and MedTech Landscape

Digital Health and MedTech are valuable and fast growing sub-sectors of life sciences in Scotland and their advancement is well supported by government policy and public sector initiatives. Scotland's ecosystem is diverse, comprising 268 companies operating across a range of categories that reflect the sectors' multidisciplinary and cross-sectoral nature. These companies are primarily SMEs (90%), with a small number of large enterprises, and their activities span a broad range of areas in healthcare innovation. Most companies are based in the central belt of Scotland, particularly in Glasgow and Edinburgh. Smaller clusters exist in Aberdeen and Dundee, reflecting academic and industrial collaborations. These companies, collectively, make a significant contribution to Scotland's economy, both in terms of employment and turnover. 28 of these companies have spun out from Scottish Universities (since 2015) with the Universities of Edinburgh and Strathclyde showing the highest level of spin-out activity over the period

Distribution of Digital Health and MedTech Companies in Scotland



Number of Companies by Company Size



Spin-Outs by Academic Institution

Academic Institution	Spin Out Company
Heriot-Watt University	IntelliPalp Dx
University of Aberdeen	Saccade Diagnostics Sight Science Sirakoss (acquired by Oss Design)
University of Bath, University of Glasgow	Prothea Technologies
University of Dundee	Calcivis Exscientia MyWay Digital Health PhaSER Bio
The University of Edinburgh	BioCaptiva BioLiberty Blackford Analysis DestiNA Genomics Edinburgh Molecular Imaging (EMI) Invizius Wobble Genomics
University of Glasgow, University of Dundee	Eye To The Future
University of Glasgow	Nami Surgical Acu-Flow (t/a Nebu-Flow)
University of St Andrews	Lustre ClearSkin
University of Strathclyde Glasgow	Bellrock Technology Dxcover Microplate Dx Ohmedics OrganLike Osbot PAL Technologies Solus Scientific

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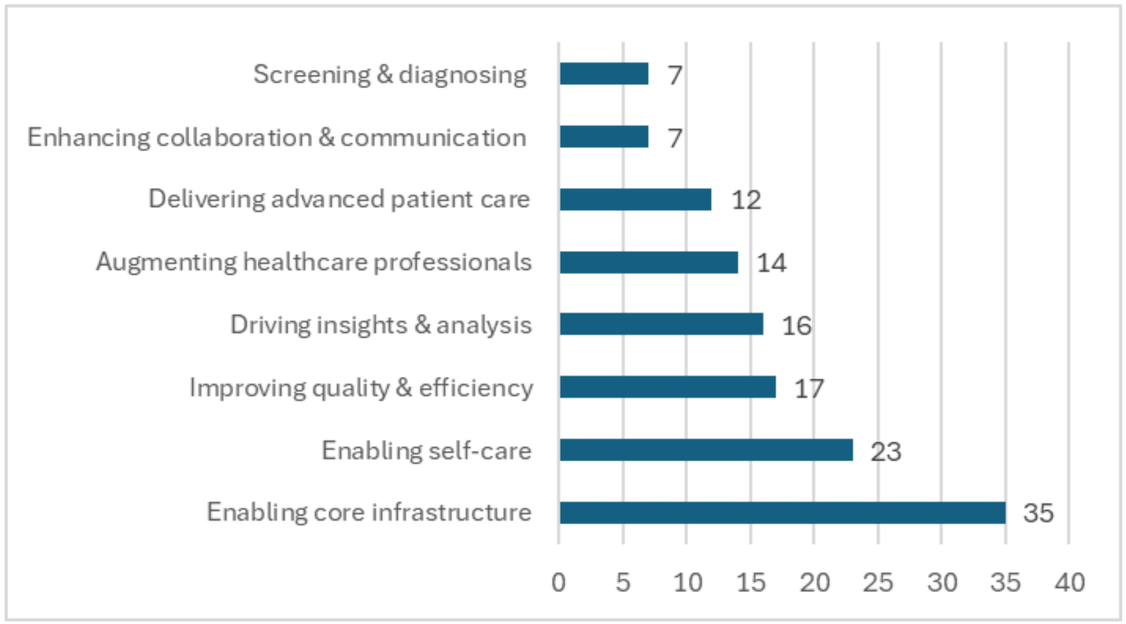
Digital Health in Scotland

131 companies that align with the definition of Digital Health were identified. Together, these companies employ a total of 12,872 staff and contribute an estimated total turnover (based on latest available figures) of £1.25 billion to the Scottish economy. There is a robust ecosystem with a significant presence of companies specialising in enabling core infrastructure, facilitating self-care, and enhancing quality and efficiency within the sector. This distribution highlights the diverse contributions of the Digital Health industry to improving healthcare delivery and outcomes.

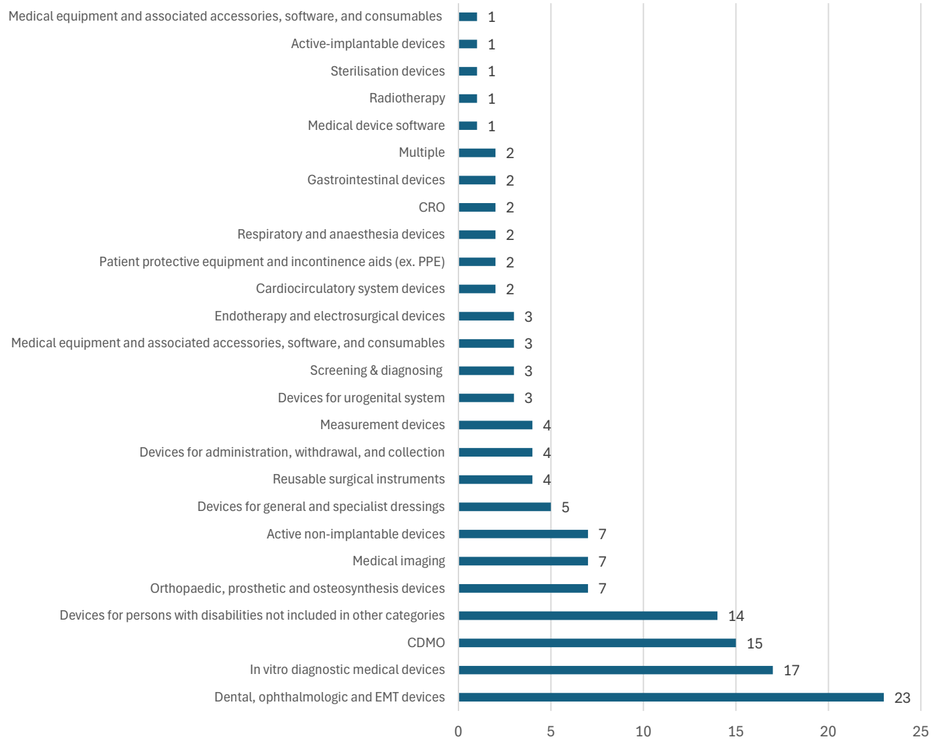


Total Number of Digital Health Companies per Primary Category

Examples of Scottish Companies by Primary Category

MedTech in Scotland

Analysis identified 137 companies that align with the MedTech definition (including software as a medical device), including contract research organisations (CMO) and contract development and manufacturing organisations (CDMO). In total, these companies employ 14,247 staff, and the estimated annual turnover of this ecosystem, per last financial year records, is over £8.9 billion. This includes revenue realised in Scotland, as well elsewhere in the UK for a small number of large companies with multiple UK sites. Scotland's MedTech ecosystem has a particularly strong presence of companies in the dental, ophthalmologic and EMT devices (17%) and in vitro diagnostic medical devices (12%).



Total Number of MedTech Companies per Primary Category

Examples of Scottish Companies by Primary Category

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Companies with Potential to Pivot into Digital Health

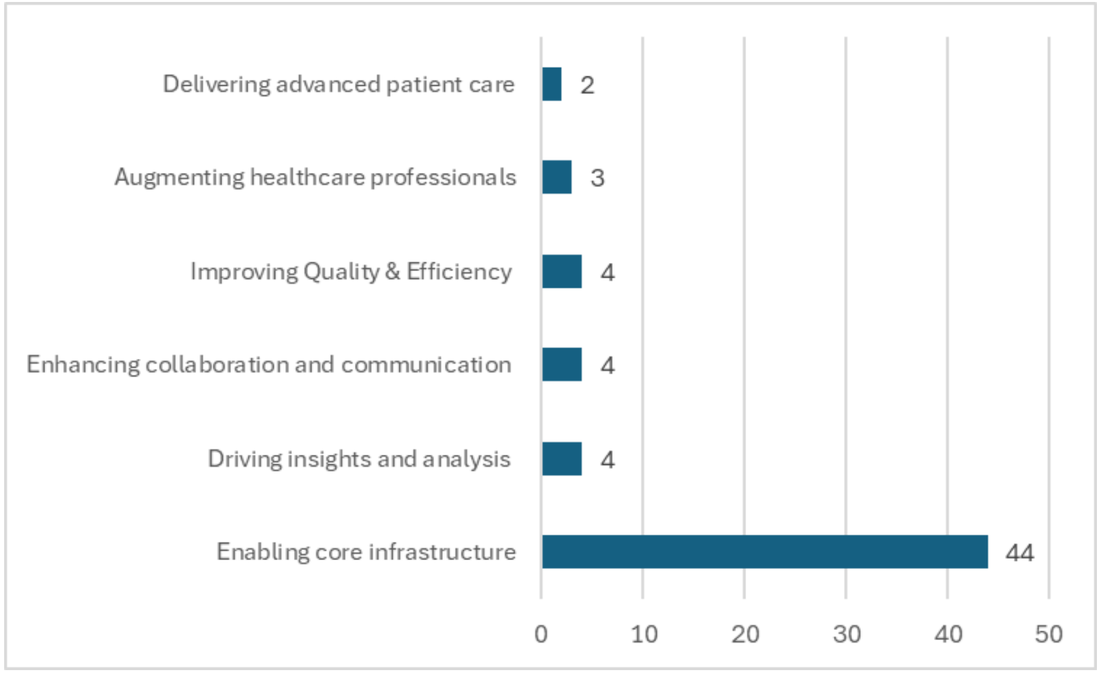
Our analysis identified 61 companies with capabilities that align with the technological and operational needs of the Digital Health sector, positioning them for potential transition. Their expertise in AI, cloud computing, and data analytics positions them to drive innovation and sector growth.

These companies span a diverse range of industries, showcasing significant opportunities for innovation and growth in the sector. Their existing capabilities suggest a strong foundation to address the evolving needs of Digital Health. This includes contributing to enabling core infrastructure by digitising healthcare systems and improving interoperability, enhancing patient engagement and remote monitoring and developing data analytics to drive health insights and support personalised care

These companies collectively highlight their potential to contribute to a robust and integrated Digital Health supply chain, addressing critical needs such as infrastructure, patient engagement, and efficiency.

They have demonstrated success in securing public funding, collectively raising £5.4 million in Innovate UK funding, which reflects their capacity to develop cutting-edge technological solutions, many of which can be directly or adaptively applied to Digital Health. Geographically, these companies are predominantly concentrated in Scotland's central belt, with 39% in Edinburgh and 30% in Glasgow. These urban hubs serve as strategic innovation centres, facilitating the transition of businesses into the growing Digital Health sector.

Categorising these companies based on their service offerings reveals a strong ecosystem, with notable opportunities for those specialising in enabling core infrastructure and improving quality and efficiency within the sector.



Enablers and Support Infrastructure

Scotland's Digital Health and MedTech sectors benefit from a well-developed support ecosystem that integrates academic research, innovation centres, and public sector initiatives. These enablers provide companies with some of the resources, expertise, and partnerships needed to innovate and scale.

Academic and Innovation Support

Universities: Institutions like the University of Edinburgh, University of Glasgow, and Heriot-Watt University are important in driving R&D, offering expertise in fields like AI, data science, and medical devices.

Innovation Centres: The Digital Health and Innovation Centre (DHI), Medical Devices Manufacturing Centre (MDMC), The Digital Health Validation Lab (DHVL) and the NHS Innovation Hubs support companies with product and service development, prototyping, testing, manufacturing and regulations as well as facilitate collaboration between academia, industry, and the NHS.

Digital Health & Care Innovation Centre
Transforming great ideas into real solutions

MDMC
Medical Device Manufacturing Centre

NHS SCOTLAND West of Scotland Innovation Hub

DHVL DIGITAL HEALTH VALIDATION LAB

North of Scotland NHS Innovation Hub

health innovation South East Scotland

Funding for Innovation

Public sector organisations such as Scottish Enterprise, Highlands and Islands Enterprise, South of Scotland Enterprise, InnovateUK and the European Commission offer grant funding to support product development and innovation, helping companies to overcome both technical and financial barriers.

Public Sector and Policy Frameworks

Scottish Enterprise provides funding through R&D grants and SMART grants, helping companies overcome financial barriers to innovation.

Scotland's National Innovation Strategy (2023–2033) prioritises Digital Health and MedTech as key growth areas, aligning public sector efforts with industry needs. The implementation of the strategy is supported by organisations such as Scottish Enterprise, that provides companies with a wide range of financial and business support, and Scottish Development International that helps companies to access global markets through export advice and networking opportunities.

Collaborative Networks

Scotland's innovation hubs and thematic clusters, such as those focused on mental health and healthy ageing, promote cross-sector collaboration. These initiatives connect SMEs with healthcare providers and researchers, enabling faster adoption of new technologies.

Potential and Ambition

Companies in Scotland's Digital Health and MedTech sectors have significant potential for growth and innovation, driven by increasing global demand, technological advancements, and strategic international opportunities. The sector is characterised by its strong research capabilities, a collaborative ecosystem, and the ability to align with evolving healthcare trends, such as telehealth, AI-driven diagnostics, and data-driven health platforms.

Scotland’s Position in the Digital Health and MedTech Markets

Scotland plays a modest but notable role in the global Digital Health and MedTech markets. Its share is estimated at 0.33% and 0.4% respectively. Scotland is, however, recognised for innovation and research as a result of strong collaborations among academia, healthcare, and technology sectors. Together with supportive policies this positions it as a potential hub for growth and leadership in global Digital Health and MedTech markets.

“Rising Stars”

Scotland is home to a number of “rising star” companies that show significant potential for growth and leadership in their fields. They have demonstrated strong, growth and are achieving high levels of turnover through innovation and sound business management.

Market Opportunities

Scottish Digital Health companies are optimistic about growth, driven by global demand and trends like AI, telehealth, and wearables, leveraging strengths in diagnostics and scalable platforms. MedTech firms, while cautious post-COVID, see opportunities in in vitro diagnostics and diversifying platform technologies, supported by Scotland’s deep knowledge base in diagnostics and orthopaedics.

Internationalisation

The USA is a top export market for Scottish companies due to faster regulatory approval pathways and an openness to new technologies. In Europe, Germany provides a gateway for regulatory validation and broader European market entry, while Scandinavian countries present opportunities for digital transformation. Other high-growth regions like Malaysia, Saudi Arabia, and the Middle East are investing heavily in healthcare infrastructure, offering opportunities for innovative solutions.

Business Model Innovation

Many Scottish companies employ innovative business models to drive growth. In MedTech, in-vitro diagnostic companies, for example, self-sustain through CRO revenue, reinvesting in platform technology development, retaining ownership but growing more slowly. Digital health firms leverage adaptable models, including partnerships, modular platforms, and tailored pricing, to scale efficiently. AI and data monetisation enhance predictive care, operational efficiency, and market innovation, enabling companies to address global challenges and exploit opportunities.

Barriers and Challenges

Despite Scotland's strengths in Digital Health and MedTech, several systemic and operational challenges limit the sector's ability to scale and innovate at pace. Addressing these barriers is critical to unlocking the full potential of the ecosystem.

Fragmented and Outdated Healthcare Infrastructure

Scotland's healthcare systems are often built on legacy infrastructure, limiting the interoperability required for seamless data integration and the adoption of advanced digital health tools. This creates data siloes, resulting in challenges in sharing health data across regions and institutions, which can reduce the efficiency of care delivery and inhibit innovation and patient-centred solutions

NHS Engagement and Procurement

SMEs face prolonged timelines for securing NHS engagement and approval for product trials, which can delay innovation and market entry. Often, this is the result of resource constraints where under-resourced NHS teams struggle to support the adoption of new technologies, creating bottlenecks for companies aiming to scale within the healthcare system.

Regulatory Challenges

Navigating compliance requirements for the UK and international markets, particularly for novel devices and software used in clinical applications, remains a significant hurdle for many companies, especially SMEs, that may not have the required resources and capabilities.

Market Entry Challenges

Demonstrating the economic value of products in domestic markets before seeking international adoption is a persistent challenge, particularly for early-stage companies.

Complexity of the Innovation Support Ecosystem

Companies find the innovation support ecosystem complex, with unclear pathways and overlapping roles, making navigation challenging. Many are unaware of available services, resulting in missed opportunities for collaboration, growth, and leveraging support infrastructure effectively.

Accessibility of Funding

SMEs, in particular, report difficulties navigating the extensive paperwork and due diligence requirements for public funding, which often diverts valuable resources from R&D activities. While grants are available, the amounts on offer often fail to meet the scale required for SMEs to develop, test, and commercialise products effectively. This is particularly the case in MedTech where the time to market can be much longer.

Talent and Skills Gap

Whilst Scotland has a skilled workforce, both the Digital Health and MedTech sectors face shortages of professionals skilled in AI, data science, and regulatory compliance, which are critical for scaling innovations

Recommendations to Support Scottish Companies' Growth Ambitions

To capitalise on Scotland's strengths, address challenges and barriers, accelerate growth and maintain global competitiveness in the Digital Health and MedTech sectors, the following strategic actions are recommended for Scottish companies and stakeholders:

Improve Visibility and Accessibility of Innovation Support

Despite Scotland's robust innovation ecosystem, many companies find it complex and difficult to navigate. Consolidating and regularly updating information on funding, events, and expertise specific to Digital Health and MedTech would be very beneficial. Providing clear guidance, developing tailored pathways, and showcasing success stories through case studies can encourage engagement and maximise impact.

Expand and Diversify Funding Opportunities

Address funding gaps for mid-stage companies and those scaling up by introducing development grants and scaling support mechanisms. Increasing the maximum value of existing funding streams, particularly for MedTech companies with high development costs, could facilitate the transition from R&D to commercialisation.

Foster Collaboration Through Targeted Initiatives

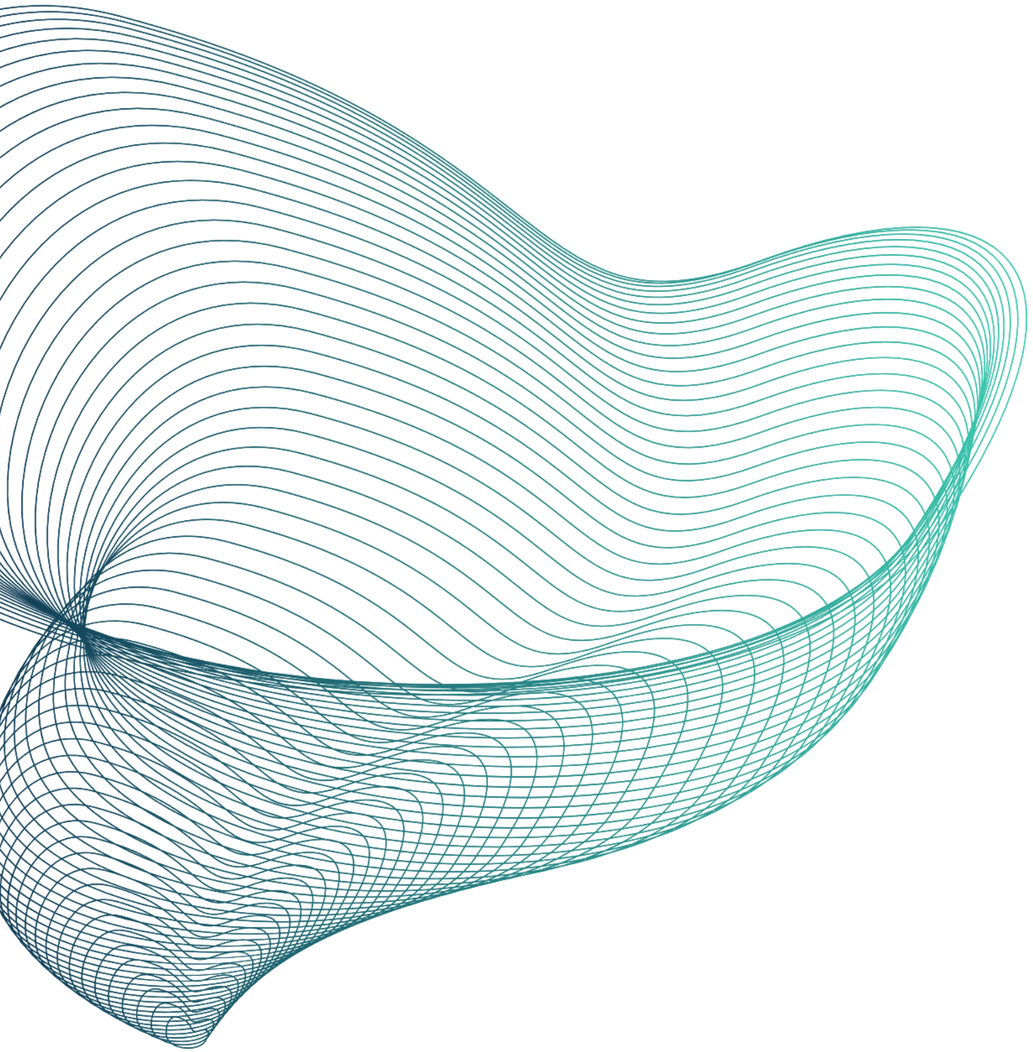
Encourage collaboration with sector-specific networking events, hackathons, and grand challenge competitions. Focus areas could include non-competitive challenges like regulatory compliance or sustainability, or the development of solutions for chronic conditions. Such initiatives have proven successful in other life sciences sectors.

Support International Market Expansion

Enhance internationalisation support through expanded export advice and financial assistance. Initiatives such as sub-sector-specific trade missions, regulatory training, and market entry support, particularly for high-potential markets like the USA, can help companies overcome challenges and strengthen global partnerships. Companies could also be supported to identify innovation partners to increase their visibility internationally.

Clarify Skills Gaps and Shortages

Skills shortages are a significant bottleneck for growth. A comprehensive study would enable a much better understanding of current and future skills demands and training provisions. This research could then guide initiatives to ensure companies have access to the specialised talent required for innovation and commercialisation.



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