



LEVERAGE THE WORLD'S BEST ECOSYSTEM FOR HEALTH R&D



FINLAND IS A GLOBAL LEADER IN INNOVATION TALENT

- #1** IN AVAILABILITY OF SCIENTISTS AND ENGINEERS
- #2** IN UNIVERSITY-INDUSTRY COLLABORATION IN R&D
- #1** IN AVAILABILITY OF LATEST TECHNOLOGIES

* WEF Competitiveness Report 2016-2017

BUSINESS OPPORTUNITIES IN FINLAND

The combination of a long-standing tradition in efficient healthcare, digitalization of health data and the Nokia engineering ecosystem has made Finland the premier location for health R&D.

Because of our free-of-charge and high-quality education at all levels, including university and post-graduate education, finding skilled R&D workers in Finland is easy. This is why Finland ranks as the best country in the world for the availability of scientists and engineers (World Economic Forum).

Finland is also one of the leading countries in terms of scientific researchers per capita, and the Finnish government's R&D expenditure per capita is among the highest globally. These factors combined make Finland the number one global contributor to innovation in terms of policies that support innovation (Information Technology & Innovation Foundation).

GOLDMINE FOR PHARMACEUTICAL AND HEALTHTECH R&D

Finland is a goldmine for drug discovery and Real World Evidence based research. This is a result of the systematic work started by the Finnish government in the 1960s. Today the health, social and welfare data stored in digital registries, combined with the 100% population penetration in electronic health records (EHR), make our health data unique in terms of breadth and depth.

What's more, all the electronic health data can be combined with the biological samples and phenotype data stored in the Finnish biobanks. The scientific and commercial application of the biobanks is further boosted by the globally unique

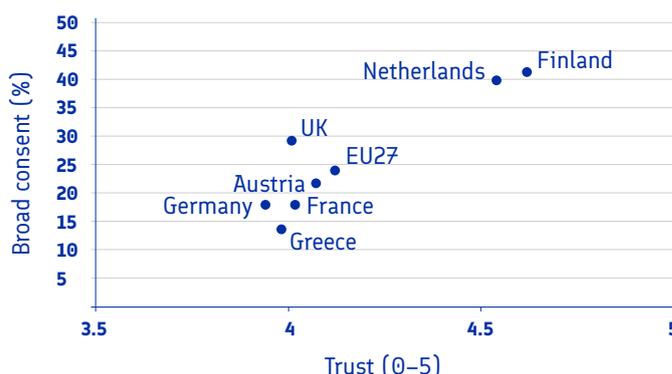
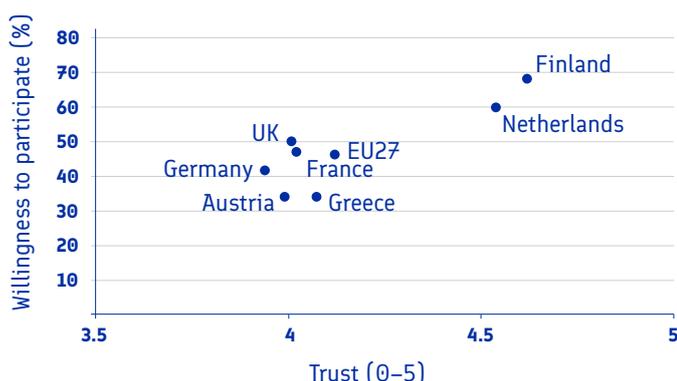
Finnish Biobank Act of 2012. The act allows for recalling of the persons who have given their sample to the biobank.

In global comparison, Finns have a very positive opinion of research and they trust researchers. Consequently, patient recruitment for clinical trials is much more rapid compared to most other countries.

Finnish biobanks and associated legislation combined with cost-efficient clinical trials can effectively reduce time to market for new drugs, technologies and solutions.

For these reasons, many global pharmaceutical and healthtech companies, including Pfizer, Merck and Roche, have already partnered up with Finnish biobanks and research institutions.

WILLINGNESS TO PARTICIPATE IN BIOBANKS AND PREFERENCE FOR BROAD CONSENT BY TRUST



** Publics and biobanks: Pan-European diversity and the challenge of responsible innovation (2013)

GLOBAL MEDICAL TECHNOLOGY R&D HUB

Finnish health technology is globally renowned. Finland is one of only seven countries in Europe that exports more health technology than it imports. The annual exports of Finnish health technologies were more than EUR 2 billion in 2016 with a compound annual growth rate (CAGR) of 9.7% between 2011–16 (Healthtech Finland).

Many leading global health technology companies have identified Finland as a health technology forerunner and have established R&D sites and Centers of Excellence in Finland, including GE healthcare, Thermo Fisher Scientific, Danaher, PerkinElmer and Bayer.

Finland is ranked #2 in the world in Industry-University collaboration, a fact valued by many medical technology companies that are developing new technologies and solutions in Finland. World-renowned expertise and research is available, for instance, in bioinformatics, diagnostics, oncology, neuroscience and diabetes. The establishment of testbed environments “living labs” in university hospitals and clinics answer industry’s needs for collaboration with healthcare providers and the acceleration of commercialization of new products.

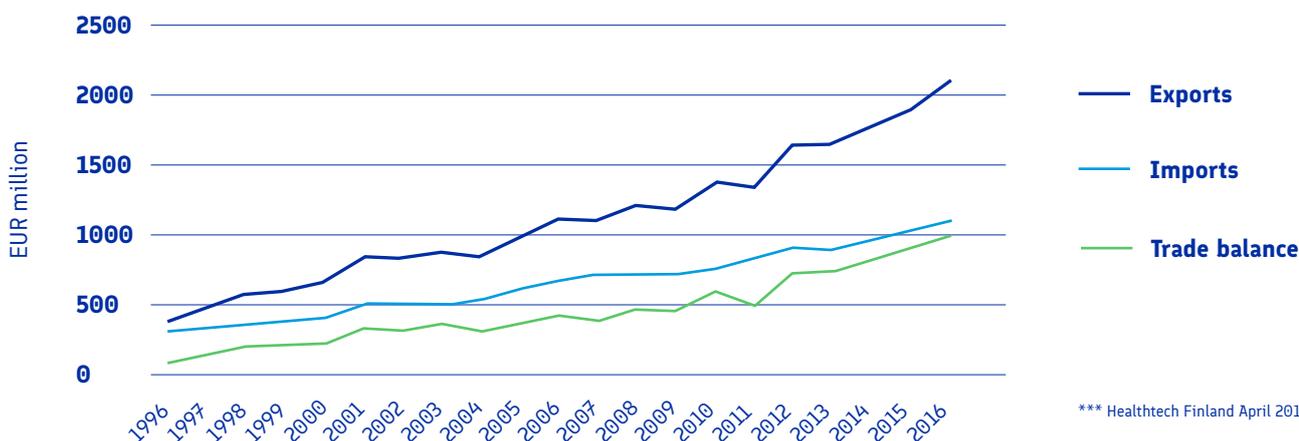
FRONTRUNNER IN DIGITAL HEALTH TECHNOLOGIES

Finland is the second most advanced digital economy in the EU (Digital Economy

and Society Index) and this also extends to healthcare. Finland has been one of the pioneers in health-related digitalization. National health registries have been held in databases since the 1960’s. Today, 100% population penetration in electronic health records (EHR) make our health data unique in terms of breadth and depth.

One example of pioneering virtual patient care is the Helsinki University Central Hospital’s Digital Mental Health Hub where patients can receive consultations and therapy in the comfort of their own homes. The clinic also provides tools for medical professionals. The virtual clinic model is rapidly extending into other therapeutic areas such as brain disorders, rare diseases, pain management, cardiovascular diseases and weight management.

FINLAND’S TRADE IN HEALTH TECHNOLOGY 1996–2016



CLEVERHEALTH

AN ECOSYSTEM OF DIGITAL HEALTH INNOVATIONS

Researchers and companies join forces in Finland to process data into new, better healthcare solutions in an environment that protects personal privacy and data security.

The CleverHealth Network, coordinated by the Hospital District of Helsinki and Uusimaa (HUS) and funded by Tekes,

the Finnish Funding Agency for Innovation, brings together companies and leading healthcare experts. Innovation take place in the development projects, combining interdisciplinary talent with agile joint development models. An essential part of the ecosystem is the HUS data lake. The network already involves 14 companies, including also international players like Fujitsu, GE, IBM, Microsoft and Nokia.

FUJITSU



NOKIA

Microsoft

IBM