

IVD Diagnostic Tests

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INVEST IN FINLAND

Business Opportunities and
Consulting Services for
International Companies

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1. Executive summary

The demand for in-vitro diagnostics (IVD) testing is increasing because there is a growing awareness that it is a cost-efficient way of providing the information required for earlier diagnosis and treatment of many diseases. It is estimated that over 60% of information on patients' files is based on IVD test results.

The main groups include the following pathologies with a major impact on public health: diabetes, cardiovascular diseases, cancer, nosocomial infections and infectious diseases.

The global medical devices and diagnostics industry (MD&D) generated worldwide nearly US\$290 billion in revenues in 2007. Following the global financial crisis of 2008 and the impact of severe cost constraints on healthcare systems (cutbacks in hospital budgets, fewer hospital admissions and less elective surgery), sales have declined.

The IVD market in Europe (EU-27 and European Free Trade Association countries, not including Iceland and Liechtenstein) was worth €10.2 billion in 2009. In this year the market for medical equipment in Finland totalled €633 million, of which IVD instruments and reagents represented the largest share.

While Finland appears as a relatively small market with lower spending than the USA and some European countries, the consumer market for healthcare is expected to grow and population ageing is constantly creating new demand for diagnostics.

Early diagnostics of diseases is proving increasingly effective as new technologies are applied in personalised medicine. For this and other reasons, consumers are increasingly willing to invest and pay for their healthcare.

Finland's IVD cluster comprises some 30 Finnish in-vitro diagnostics manufacturers. All companies in the Finnish IVD cluster (FIVDIC) have R&D and production in Finland. They generate yearly sales of around €350 million, 90% of this from exports, and work mainly with foreign clients and distributors. Two-thirds of products sold are instruments, the other third being reagents and antiserums sold to other diagnostics manufacturers.

Finland is an attractive location for the development of innovative diagnostics solutions, both for Finnish companies and the many foreign diagnostics companies with a sales office or R&D unit in the country.

Opportunities for collaboration in Finland include the joint development of affordable diagnostic solutions, with particular emphasis being on the early detection and efficient treatment of disease and injury. Finland offers a strong research and university/industry technology platform to develop innovative diagnostics products aimed at both industrialised and developing countries.

2. Diagnostic tests in the study

This cluster study concentrates on human health and clinical diagnostics/in-vitro diagnostics systems produced by the IVD industry.

While the industry also produces imaging technologies, information communications and technology and accessories (such as software used to run instrumentation and control solutions to check system performance), this study focuses on IVD tests and the importance of IVD-testing companies in the Finnish diagnostics cluster.

IVD testing includes measuring concentrations of chemical and biochemical components, counting cells, measuring physical properties, examining cells and other structures under the microscope, and making biological cultures. Together, reagents, instruments and accessories are referred to as 'in-vitro diagnostic systems'.

Although most IVD tests are performed using highly automated equipment in hospital laboratories, an increasing number of tests are also available for point-of-care testing or patient self-testing (for example to test for pregnancy, glucose or diabetes). User-friendly devices for self-testing have become more important as people are increasingly concerned about their health.

Diagnostic tests are used: for systematic screening of certain populations; to establish a diagnosis for a person presenting clinical symptoms; to determine appropriate treatment based on diagnosis; and to monitor its effectiveness.

Diagnostics are used to detect an increasing number of diseases. The main groups include the following pathologies with a major impact on public health:

- **Diabetes – the top IVD test market**
The global market for therapeutic and diagnostic products for diabetes alone was valued at US\$38 billion in 2010. This is expected to grow at a compound annual growth rate of 6.1% to reach US\$51.2 billion in 2015. More than 220 million people worldwide have diabetes, a number likely to more than double by 2030 without intervention. In the US, diabetes is the seventh-leading cause of death, and recent surveys estimate that annual costs associated with the chronic care of diabetes complications exceed US\$174 billion.
- **Infectious diseases caused by bacterium, virus or parasite**
Infectious diseases are responsible for 17 million deaths each year, representing a third of annual mortality worldwide. They are responsible for 43% of deaths in developing countries (and 1% of deaths in industrialised countries). These figures do not take into account certain forms of cancer of infectious origin, which could represent 16% of cancers. Immunological tests and, more recently, molecular biology techniques, enable the diagnosis and monitoring of viral infections such as HIV, hepatitis and certain infections affecting pregnant women.
- **Detection and monitoring of antibiotic resistance, or the monitoring of nosocomial infections (hospital-acquired infections (HAI))**
In industrialised countries, healthcare-associated infections affect around 5% to 10% of hospitalised patients (2 million patients a year in the US). They have considerable impact both in terms of public health (contributing to an increase in morbidity and mortality) and in

economic terms (HAI diagnosed in intensive care wards alone account for 15% to 20% of hospital expenditure). Bacteria acquired during a hospital stay and which have developed resistance to multiple antibiotics may remain with a patient for many years.

- **Cardiovascular pathologies**

Among the cardiac pathologies, biological diagnostics can be used to diagnose a myocardial infarction (heart attack) through the detection of cardiac markers, which indicate the destruction of myocardial cells. Cardiovascular diseases are the number one cause of death in industrialised countries. In 2002 they affected 147 million people worldwide and resulted in over 16 million deaths.

- **Cancers** provoke uncontrollable multiplication of abnormal cells which bring abnormal antigens to their surface, or release abnormal substances into the bloodstream. The detection and measurement of these antigens or substances (known as tumour markers) is an important part of the diagnosis and monitoring of a wide range of cancers. Every year 11 million people worldwide are diagnosed with cancer and 7 million people die from cancer, accounting for nearly 1 in 5 of all deaths in developed countries. It is estimated that there will be 16 million new cases every year by 2020. In the past five years alone, 25 million people alive have received a diagnosis of cancer. Cancers of the breast, colon/rectum, prostate and lung account for almost half of all cancers diagnosed worldwide. The financial cost of cancer is staggering.

2.1. IVD – the use of in-vitro diagnostics

Population screening and disease prevention

- Screenings are carried out when there is a high prevalence of the disease and a sub-population can be selected for testing (for example for cancer)
- Both the individual and the public healthcare system benefit when testing rules out a disease
- Prenatal and newborn testing is used to identify infants who need early treatment

Diagnosis

- Correct diagnosis is important to determine the right treatment and to avoid wasting resources on incorrect treatment
- Early diagnosis can allow treatment to begin before any physical symptoms even show
- Early diagnosis lengthens people's life expectancy, increases the chances of full recovery, speeds recovery and helps avoid pain and suffering

Monitoring of prescribed treatments

- The monitoring of prescribed treatment is essential for successful treatment
- Mistreatment may be recognised by measuring biochemical parameters
- Monitoring enables doctors and patients to take the appropriate actions
- Treatment monitoring also saves money

Assessment of medical interventions

- Public health systems have limited resources. Medical interventions are therefore increasingly subject to health technology assessment. IVDs are an essential part of this.

Genetic testing

- Genetic testing provides many possibilities in terms of new treatments (eg, pharmacogenomics)

- Patients may request genetic tests from their doctor to learn more about personal risk factors

[EDMA genetic testing position paper](#) Medical genetic tests manufactured by industry must comply with the In Vitro Diagnostic (IVD) Medical Device Directive 98/79/EC. However, some health institution laboratories carrying out genetic testing do not use products manufactured in compliance with the directive but use tests developed in-house. This is because it contains an exemption relating to test products that are made in, and used only within, the same health institution. In such institutions, genetic tests that have been developed by the professional users themselves can be, and are, used.

3. The global medical devices and diagnostics industry

The global medical devices and diagnostics industry (MD&D) generated almost US\$290 billion worldwide in 2007. Following the global financial crisis of 2008 and the impact of severe cost constraints on healthcare systems (cutbacks in hospital budgets, fewer hospital admissions and less elective surgery), sales have declined.

Demographics, the growing prevalence of age-related and chronic diseases (such as Alzheimer's, Parkinson's and diabetes), and increased treatment of infectious diseases in developing countries, all point to market growth. However, MD&D suppliers are concerned about competition for scarce funds.

3.1. Global IVD market trends and forecasts, 2008-2014

- By 2009 there were 12 countries with more than 10 million people aged 60 or over. At US\$10 billion, Europe was the second largest in-vitro diagnostics market after the US.
- Point-of-care (POC) testing dominated the IVD market with a more than 30% market share. Immunoassay is second, with a market of over US\$7 billion.
- In 2009 Roche, Siemens and Abbott Diagnostics had a combined 42% share of the IVD market. All are strong players, for example in diabetes diagnostics.
- Roche has the highest market share in the IVD industry.
- 51 mergers and acquisitions took place in 2008, compared with 84 deals in 2007.
- 18 in-licensing deals were announced in 2008, compared with 27 in 2007.
- Third Wave Technologies (TWT) was acquired by Hologic to grow its women's health and diagnostics business – considered the best deal in 2008.
- In 2009 Beckman Coulter acquired the diagnostic systems part of Olympus to broaden its clinical chemistry offering, especially in the ultra-high throughput setting.
- Globally the IVD market is forecasted to exceed US\$60 billion by 2014. The fastest growing area of the market is molecular diagnostics, which is expected to have a market share of around 18% by 2014.

3.2. European IVD market trends

Demand for IVD testing is increasing because there is a growing awareness that it is a cost-efficient way of providing the information required for earlier diagnosis and treatment of many disease states. It is estimated that over 60% of the information on patients' files are based on IVD-test results.

Other factors driving increasing demand for IVD testing are the ageing population, better informed patients and the availability of improved technologies. There is a growing interest in 'theranostics', or 'personalised medicine'. This is where the use of biomarkers assists with predicting the outcome of a particular therapy for an individual patient. Effective treatment regimens can therefore be selected early, saving time and money and helping to ensure a better outcome for the patient.

Despite evidence showing that IVD testing can lead to cost savings in the treatment of patients, government efforts to balance budgets limits have limited testing volumes and reimbursements. Government cutbacks have significantly decreased sales of IVD products in Norway, Hungary, Greece and Romania.

Currently most IVD testing takes place in public hospitals. However, the role of private laboratories is increasing as hospitals outsource their routine pathology services to take advantage of economies of scale and cost transparency at the large private laboratories. The degree of outsourcing varies a lot between the European countries. Germany is by far the biggest IVD market and the leading proponent.

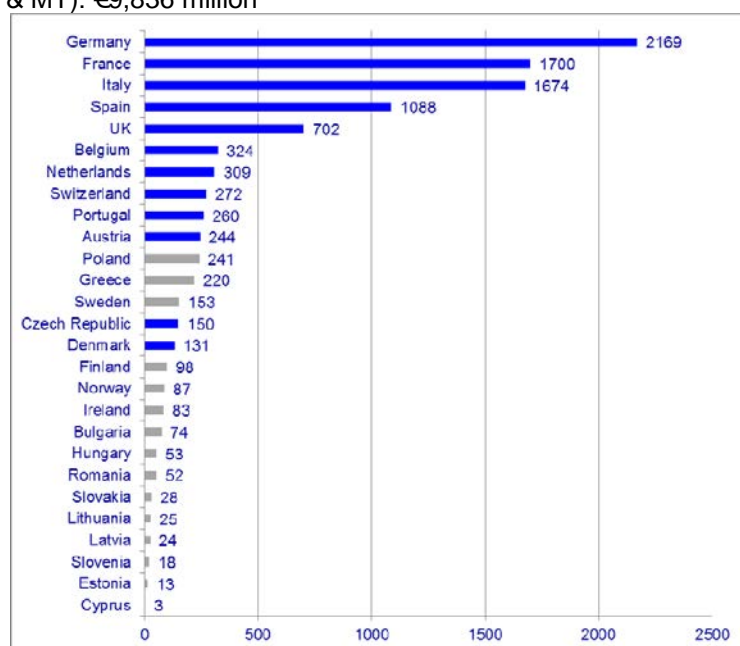
In many countries smaller laboratories are consolidating to provide wider ranges of tests. The efficient transportation of samples and secure data networks give doctors access to patient results as quickly as, or faster than, was the case before consolidation.

4. The IVD market in Europe

According to the European Diagnostic Manufacturers Association's (EDMA) latest estimates, published in 2010, Europe's IVD market (EU-27 and European Free Trade Association (EFTA) countries, but not including Iceland and Liechtenstein) generated revenues of €10.2 billion in 2009. This represents only 0.8% of Europe's total healthcare expenditure of €1,228 billion. In most countries in Europe, the total healthcare expenditure accounts for less than 10% of GDP. Yearly healthcare expenditure per capita varies widely, ranging from €244 in Bulgaria to €4,622 in Switzerland and up to €5,255 in Norway.

Total IVD market 2009:

EU-27 (except LU & MT) + EFTA and Turkey (except ICE & LIE): €10,195 million/EU-27 (except LU & MT): €9,836 million



Europe's biggest IVD markets are Germany, France and Italy

- the top three IVD markets are worth over €1.5 billion a year

The other countries may be divided into two groups:

- medium-sized markets from €1 billion to €100 million
- small markets from €100 million to €3 million.

Finland is a small- to medium-sized market, with €98 million of IVD revenues in 2009.

European total healthcare expenditure, 2008, compared with IVD market and trends, 2009

Countries	Population	GDP	GDP / capita	THE	THE / capita	THE as % GDP	IVD mkt. 09	IVD mkt. growth rate 08-09	IVD mkt. / THE	IVD mkt. / capita	
	'000	Mio €	€	Mio €	€	%	Mio €	%	%	€	
	Source: OECD 2008						Source: EDMA				
Germany	82,807	2,495,800	30,396	263,216	3,206	10.5%	2,169	2.09%	0.8%	26.2	
France	62,149	1,948,511	31,509	217,352	3,515	11.2%	1,700	1.79%	0.8%	27.3	
UK	60,930	1,627,106	26,885	140,869	2,328	8.7%	702	9.05%	0.5%	11.5	
Italy	58,947	1,567,851	26,636	141,900	2,411	9.1%	1,674	3.02%	1.2%	28.4	
Spain	44,511	1,088,502	24,565	97,614	2,203	9.0%	1,088	6.79%	1.1%	24.4	
Netherlands	16,418	595,883	36,356	58,775	3,586	9.9%	309	3.69%	0.5%	18.8	
Greece	11,252	239,141	21,318	21,893	1,952	9.2%	220	-4.35%	1.0%	19.6	
Portugal	10,646	166,435	15,672	15,786	1,486	9.5%	260	2.85%	1.6%	24.4	
Belgium	10,542	344,676	32,773	35,272	3,354	10.2%	324	2.86%	0.9%	30.7	
Sweden	9,301	297,513	32,279	27,946	3,032	9.4%	153	3.24%	0.5%	16.5	
Austria	8,366	281,867	33,825	29,549	3,546	10.5%	244	2.95%	0.8%	29.2	
Denmark	5,519	233,357	42,514	22,102	4,027	9.5%	131	7.14%	0.6%	23.7	
Finland	5,327	184,179	34,705	15,453	2,912	8.4%	98	0.00%	0.6%	18.4	
Ireland	4,298	181,816	42,780	15,895	3,740	8.7%	83	2.47%	0.5%	19.3	
Luxemb.	475	39,348	83,541	2,461	5,225	6.3%					
EU-15	391,488	11,291,985		1,106,083	2,840	9.80%	9,155	3.28%	0.8%	23.4	
Poland	38,153	295,566	7,754	20,729	544	7.0%	241	7.25%	1.2%	6.3	
Romania	21,499	139,753	6,491	5,364	249	3.8%	52	-21.59%	1.0%	2.4	
Czech Rep	10,271	139,887	13,632	9,951	970	7.1%	150	0.00%	1.5%	14.6	
Hungary	10,021	95,290	9,496	6,936	691	7.3%	53	-2.62%	0.8%	5.3	
Bulgaria	7,607	35,431	4,637	1,877	246	5.3%	74	4.23%	3.9%	9.7	
Slovakia	5,397	67,221	12,464	5,263	976	7.8%	28	0.00%	0.5%	5.2	
Lithuania	3,350	32,288	9,591	1,490	443	4.6%	25	4.17%	1.7%	7.5	
Latvia	2,261	23,037	10,145	977	430	4.2%	24	0.00%	2.5%	10.6	
Slovenia	2,020	37,135	18,429	3,093	1,535	8.3%	18	0.00%	0.6%	8.9	
Estonia	1,340	16,073	11,986	983	733	6.1%	13	0.00%	1.3%	9.7	
Cyprus	797	17,248	21,852	899	1,139	5.2%	3	0.00%	0.3%	3.8	
Malta	414	5,744	13,998	419	1,021	7.3%					
EU-27 (EU-15 + new MS)	494,617	12,196,656		1,164,065	2,363	9.5%	9,836	3.09%	0.8%	19.9	
Switzerland	7,742	358,933	46,932	38,504	5,034	10.7%	272	2.04%	0.7%	35.1	
Norway	4,829	291,449	61,126	24,887	5,220	8.5%	87	-1.54%	0.3%	18.0	
Iceland	319	8,674	27,191	788	2,469	9.1%					
Liechtenst.											
TOTAL (EU-27 + EFTA)	507,507	12,855,712		1,228,243	2,430	9.6%	10,195	3.02%	0.8%	20.1	
Turkey	75,643	578,792	7,741	23,512	314	4.1%	250	0.40%	1.1%	3.3	

The EDMA figures per country are compiled from the "European Diagnostic Market Statistics" (EDMS) programme (where companies report invoiced sales of reagents, instruments and consumables to an independent auditor, CIP, based on the EDMA Classification), in association with the EDMA Market Research Committee and the National Associations members of EDMA.

More than 85% of the market is covered by EDMS, ensuring the reliability and objectiveness of the information provided by EDMA and its members. EDMA encourages all companies and countries to participate to the EDMS programme, which is the largest *In Vitro* Diagnostic audit in Europe and the most accurate source of information to understand and foresee the market trends.

5. EDMA – the European Diagnostic Manufacturers Association

EDMA, the European Diagnostic Manufacturers Association, represents national associations and major companies engaged in the research, development, manufacture or distribution of IVD tests in Europe. Through its membership, EDMA represents more than 500 companies (or over 700 legal entities). EDMA's mission is to raise awareness of the importance, usefulness and added value that diagnostic information can provide to healthcare. It therefore cooperates with European institutions, patient groups, trade associations, health professionals and academia to support an appropriate regulatory system and work towards a realistic economic environment.

5.1. Recognition of EDMA expertise within the EU

EDMA is widely recognised as a legitimate and constructive player in the European healthcare debate. Representing the IVD sector in such a multi-faceted environment requires engaging with a wide range of stakeholders, including European institutions, standardisation organisations and notified bodies, as well as patient groups, scientific societies and international non-government organisations. EDMA's extensive IVD expertise is widely recognised by invitations for EDMA to represent the industry and its interests in EU Commission decision-making groups. The organisation provides the European platform for IVD market players to come together, build consensus and agree policy priorities.

EDMA's international activities are well established, and relevant regulation is monitored throughout the world. In recent years, aside from regular dialogue with AdvaMed (US), IVD Australia, JACRI (Japan), MEDEC (Canada) and SALDA (South Africa), there has been an intensification of the relationship with Asian, and more specifically Chinese, industrial and regulatory bodies.

5.2. IVD classification and nomenclature: EDMS to GMDN conversion tables

EDMA has provided its nomenclature for IVD medical devices in Europe for several years. However, with the advent of the global medical devices nomenclature (GMDN), the question often arises of which EDMA code corresponds to which GMDN code.

Since these codes are used in the notification of CE (European Conformity) marked products to competent authorities in the EU, it is important to provide the correct codes as required.

EDMA has therefore developed two tables for the easy use of correlation data gathered, as well as an access database containing all the information used to generate these tables:

- UPDATE – new correlation kindly provided by Dr Tomomichi Nakazaki (July 2010)
- To find a GMDN code from a known EDMS code, click here: [EDMS to GMDN codes](#)
- To find an EDMS code from a known GMDN code, click here: [GMDN to EDMS codes](#)
- The access database can also be directly downloaded here: [access correlation database](#)

5.3. EDMA: three future challenges

1. IVD Directive:

In January 2009, EU authorities decided that following ongoing discussions on the medical devices regulatory framework, a full revision of the IVD Directive was necessary to update the legislation and implement changes following 10 years of implementation experience in the EU.

The EU Commission and competent authorities have confirmed their commitment to an independent IVD directive for the sector. EDMA has been involved in the process since the decision was taken, the key discussion points being the:

- Implementation of global harmonisation taskforce principles – notably changes to the classification and conformity assessment which will, in principle, give CE-marked IVD devices easier access to foreign markets.
- Provision of clinical evidence by manufacturers before placing an IVD device on the market – discussions continue on the devices concerned and level of evidence required.

2. Environment:

The inclusion of IVDs under the Restriction of Hazardous Substances (RoHS) Directive will have a significant impact on IVD equipment, notably analysers, which will have to demonstrate compliance with these new requirements.

Simultaneously, both the RoHS and the Waste Electrical and Electronic Equipment Directive (WEEE) Directive, which covers the treatment recovery and recycling of electronic equipment, are being revised. These changes will need to be addressed by IVD manufacturers.

This is coupled with the ongoing implementation of Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), which regulates the use of chemical substances in the EU and which will be going through various implementation deadlines for the next few years. The biggest challenge will come from additional restrictions on the use of certain substances.

3. Late Payment Directive:

Late payments are a threat to the efficient functioning of the Single Market and have a severe impact on companies across Europe, especially small- and medium-sized enterprises (SME). The healthcare sector is more severely affected than most.

Following a proposal of the European Commission, the European Parliament and European Council have been working on the recast of Directive 2000/35/EC on combating late payment in commercial transactions over the past year. The final report foresees a general payment period of 30 days (which may be extended up to 60 days only on grounds of objectively justifiable reasons) and a specific payment period of 60 days for the healthcare sector. These provisions will apply not only to public authorities (PA2B), but also to the private sector (B2B).

In the IVD sector the average days sales outstanding (DSO) is particularly high – 300 days. EDMA has demonstrated this in an advocacy campaign highlighting the severe consequences of payment delays on public hospitals in member states.

6. The Finnish in-vitro diagnostics industry

The Finnish IVD industry is the most important product category of the medical devices technologies produced in Finland.

Some 30 companies are in the Finnish IVD industrial cluster, FIVDIC, and all have R&D and production units in Finland. They generate yearly sales around €350 million, 90% of this from exports. Two-thirds of products sold are instruments, the other third being reagents and antiserums.

The most important markets for Finnish IVD technology are in industrialised countries: in the EU (over 50% of exports), the USA and Japan.

Asian countries such as China and India are newer, rapidly growing markets. They are also particularly interesting from a partnership point of view. Finnish organisations (Tekes, Academy of Finland) and diagnostics companies have initiated cooperation activities with both countries regarding the development of new, affordable diagnostics for developing countries, demonstrating that the Finnish IVD industry has good access to these dynamic markets.

In the medical equipment industry, the IVD market historically attracts the most funding. These resources provide an opportunity for Finnish companies to increase their international reach. Rising per capita healthcare expenditure in developing economies such as China and India, and the regulatory/legislative framework, will give medical devices manufacturers more opportunities to serve these developing markets and expand this part of their business.

Finland's IVD sector employs around 2,000 professionals. Most Finnish companies are small according to the EU SME standard – with fewer than 250 employees and a turnover of under €50 million. Even Orion Diagnostica (part of Orion Corporation) is in the medium-sized company category, with a turnover around €45 million. The biggest industrial companies, Perkin Elmer, Thermo Fisher and Finnzymes (acquired by Thermo in 2010), belong to global American groups.

The Finnish IVD sector continues to offer companies opportunities for success. The sector enjoys a good position in national plans and strategies and welcomes innovative companies willing to develop. Establishing a research unit in Finland may also offer particular opportunities for non-EU companies looking for existing networks in Finland, the Nordic countries and the EU.

6.1. Research and development in diagnostics – funding and programmes

In general, research and development is funded by the public sector. Relevant organisations include the Ministry of Social Affairs and Health and Academy of Finland (the prime funding agency for basic research, operating within the administrative sector of the Ministry of Education). Quasi public-sector organisations include TEKES, the Finnish Funding Agency for Technology Development and Innovation.

The Finnish Innovation Fund SITRA, an independent public fund supervised by the Finnish Parliament, used to be an important fund and investor in biotech diagnostics. SITRA radically changed its strategy a couple of years ago, withdrawing from the sector due to below expected investment profitability.

Tekes (Finnish Funding Agency for Technology and Innovation) technology and innovation programmes are the most essential research enablers. Massive programmes have increased multidisciplinary links but decreased unity between operators in the IVD field. The former Tekes FinnWell programme (to 2009) provided major support to IVD companies, mainly through project funding. The need to focus joint efforts towards developing 'next-generation diagnostics' was seen as evident following the FinnWell programme and, according to FIVDIC, especially in the integration of IVD platforms to produce low cost, easy-to-use analytical monitoring tools. www.tekes.fi

SalWe (Strategic Centre for Health and Wellbeing) has been created to support company-driven R&D programmes. Altogether 13 multidisciplinary companies and seven research organisations are participating in the three-year programme that has a total budget of €26 million.

The diagnostics sector is one of Salwe's key areas, especially through IMO, the 'Intelligent Monitoring of Health and Wellbeing' programme. IMO's goal is to develop tools that enable individuals and healthcare professionals to promote wellbeing and health. The programme began in autumn 2010. In 2011 SalWe started planning its international network expansion. www.salwe.fi

VTT Technical Research Centre of Finland is an important part of the Finnish innovation network. VTT is a globally networked, multi-technological contract research organisation. It provides high-end technology solutions and innovation services including diagnostics biotechnology, food technology and pharmaceutical development.

For diagnostics VTT develops novel antibodies and new-generation process analytics. VTT has special expertise in new measurement methods and sensor technologies for small analytes such as hormones, narcotics and toxins. It can also help its clients to benefit from various in-house competencies in information technology, systems biology and pharmaceutical development to find and further develop biologically significant analytes.

For all the industries above, VTT also provides novel types of process analytical methods to improve efficiency and reduce costs. It owns large-scale pilot equipment for trial activities. www.vtt.fi

VTT Ventures Oy, part of the VTT group, administers and co-invests in its spin-offs with private investors. The company aims to stimulate innovation in Finland and to receive a return on its pre-seed and seed capital investments. Its spin-off portfolio includes 20 company start-ups. www.vttventures.fi

6.2. Finland's regional centres of excellence

There are a several bio-life sciences competence centres at the university towns of Helsinki, Turku, Tampere, Oulu and Kuopio. These centres provide the incubation environment for new research and companies in the field, both Finnish and international.

The task of the centres of expertise is to use internationally competitive knowledge and skills as a resource for business activities, the creation of new jobs and regional development. Finnish centres of excellence can launch cooperative projects between research sectors and industries. They continually strengthen and modernise top-level expertise in the region.

University towns offer excellent research facilities and are also home to a number of IVD companies. The Turku region, for example, is internationally known as a significant cluster for the pharma and bio industries. Over 50% of Finland's pharmaceutical and 60% of diagnostic industries are in the Turku region.

Finnish regions and competences are grouped together in HealthBIO National Centre of Expertise Programme (OSKE). This focuses on the health applications of biotechnology and business areas related to health, including IVD. www.healthbio.fi

6.3. Finnish diagnostics manufacturers

The industry largely comprises companies exploiting a unique technology or product category. Particular strengths are: reagent production (Hyttest is the world leader in cardiac biomarkers, and Medix Biochemica), pre- and neo-natal screening; and infectious diseases (Wallac/Perkin Elmer is a major innovator and active worldwide).

There is also innovation in diagnostics, in new areas and technologies such as rapid and POC diagnostics. Companies include Mobidiag (rapid-test microarrays), Zora Biosciences (lipidomics research) and Anilabsystems (diagnostics solutions from neonatal to infectious disease screening).

All Finnish companies provide high-end products and are constantly active in research and further development. New start-ups and university spin-offs frequently emerge.

As resources are required to access to foreign markets, the sector continues to offer interesting co-operation and partnership opportunities to foreign entrepreneurs and investors.

The list below covers companies with a mature product line and sizeable business – with their own R&D and production. Also listed are companies with similarities to medical devices producers.

- Abacus Diagnostica, www.abacusdiagnostica.fi – fluorescence-based diagnostic systems and reagents
- ArcDia Group, www.arcdia.com – technology transfer and licensing of IVD systems
- AniLabsystems, www.anilabsystems.com – EIA and FEIA test kits for infectious diseases, neonatal screening and other disorders
- Ani Biotech, www.anibiotech.fi – diagnostic rapid tests for professional and individual use
- BioChance Oy – immunoassay technology and synthetic peptide antigens for infectious diseases serology
- Biohit, www.biohit.com – liquid handling products (pipettes) and diagnostic products
- BioNavis Oy, www.bionavis.com – multi-parametric surface plasmon resonance instruments
- Fit Biotech, www.fitbiotech.com – gene transport unit (GTU®) technology and GTU® product applications in DNA vaccination
- Hyttest, www.hyttest.fi – monoclonal antibodies and antigens for diagnostic industry and research, and cardiac markers
- Labmaster Oy, www.labmaster.fi – cathodic electrochemiluminescence technology
- Mediracer, www.mediracer.com – POC testing equipment for diseases of the peripheral nervous system
- Medix Biochemica, www.medixbiochemica.com – monoclonal antibodies and diagnostic tests
- Mendor, www.mendor.com – advanced diabetes management products
- Mobidiag, www.mobidiag.com – rapid and reliable identification of bacteria, and microarrays

- Nanobac Oy – laboratory equipment
- Orion Diagnostica, www.oriondiagnostica.com – reagents and kits for hormones and bone markers, infectious diseases and specific proteins, and QuikRead POC system/hygiene
- PlexPress Oy, www.plexpress.fi – high-content gene expression analysis kits and services for drug discovery and safety assays
- Reagen Oy Ltd, www.reagen.fi – various rapid diagnostics tests (Hantavirus tests)
- Zora Biosciences, www.zora.fi – lipodomic research, such as target discovery and validation, dosage responses, plus toxicological and translational studies, and personalised medicine

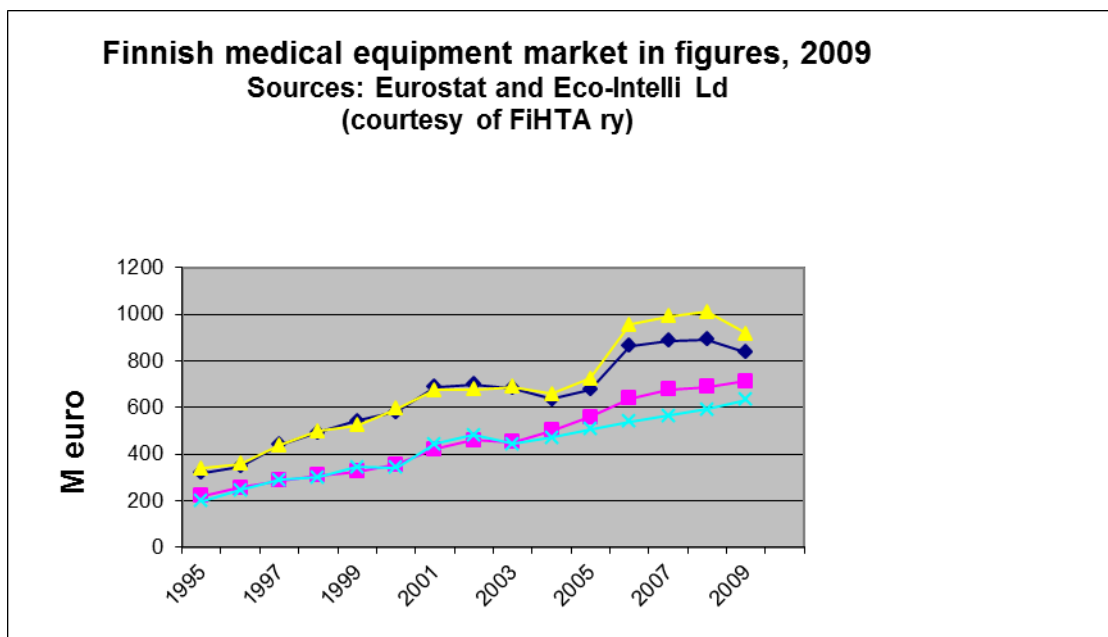
Other Finnish companies are members of several associations:

- the Finnish In Vitro Diagnostics cluster (FIVDIC) – www.fivdic.fi
- the Finnish Health Technology Association FiHTA – www.fihta.fi and <http://www.teknologiateollisuus.fi/en/branches/member-companies-and-organizations.html>
- the distributors of health technology in Finland (Sailab) – www.sailab.fi

7. IVD: the biggest part of Finland's medical equipment market

Worth €633 million in 2009, Finland's medical equipment market comprises a wide variety of different products required by the healthcare system:

- IVD instruments and reagents, the biggest segment accounting for over a third of total expenditure on medical technology
- surgical instruments, dental equipment and mechanotherapeutic devices
- orthopaedic and supportive products



More than four-fifths of products (81%) of imported products are of EU origin, or imported by a company in the EU.

Imports from Germany account for 23% of the value of all imports, up by 50% over the past five years; in the same period the share of products of US origin has dropped from 26% to 8%.

Imports from Japan have dropped to 2%, while imports from China have increased to 3%.

With a high income and an increasingly health-conscious, ageing population, Finland is a relatively small but growing market. Personalised medicine and self-testing are trends that will boost the use of innovative, high-end IVD solutions that well-informed consumers and patients are starting to require themselves and are ready to pay for.

In many health-technology categories Finnish prices appear to be higher than in other European markets, providing opportunities for strong margins.

8. Foreign-owned companies with R&D units and production in Finland

Companies with R&D units in Finland have established their presence by acquisitions: Thermo and Perkin Elmer have had clear technology-based interests in LabSystems, Wallac and Finnzymes.

Technology development, active and high-level research and platforms are the main assets of Finland's diagnostics-related industry. Even under foreign ownership, all these companies have continued to maintain and develop their research activities in their Finnish business units, attesting to the sector's high quality and strong knowledge base.

- Perkin Elmer Wallac Oy is part of Perkin Elmer, headquartered in the US, and is involved in genetic screening, analytical science and life science – www.perkinelmer.com
- Thermo Fisher Scientific Oy is part of Thermo Fisher Scientific, also headquartered in the US – www.thermoscientific.com
- Finnzymes, part of Thermo Fisher Scientific, also has its headquarters in the US – www.finnzymes.com

Thermo Fischer Scientific press release, 2010

Thermo Fisher Scientific Inc. (NYSE: TMO), the world leader in serving science, announced today that it has signed a definitive agreement to acquire Finnzymes, a well-recognized provider of integrated tools for molecular biology analysis, including reagents, instruments, consumables and kits. Headquartered in Espoo, Finland, Finnzymes has 90 employees and generated revenue of US\$20 million in 2009.

Finnzymes provides comprehensive solutions for high-performance polymerase chain reaction (PCR), reverse transcription-PCR (RT-PCR) and real-time quantitative PCR (qPCR). The company's expertise in DNA polymerases has led to significant increases in the performance of these enzymes, making the PCR process faster and more accurate. The ability to quickly and reproducibly amplify and quantify particular DNA sequences benefits a variety of applications, including basic genomic research, genetic testing, forensics and food testing.

The acquisition of Finnzymes expands Thermo Fisher's portfolio of reagents and other consumables for the molecular biology research and diagnostics markets through the addition of its proprietary DNA polymerases, Phire(TM) and Phusion(TM), and high-speed miniaturized thermal cyclers and innovative plastic tubes and plates. These products complement the recently launched Thermo Scientific Solaris qPCR gene expression assays and, together, deliver a more complete solution for customers. Combining the gene-specific MGB(R)-based probes from Thermo Scientific with the advanced enzyme performance from Finnzymes will further enhance qPCR assay technology.

"The addition of Finnzymes' innovative enzyme portfolio and unique PCR instrument platform strengthens our broad range of life science reagents and consumables, as well as our specialty diagnostics product offering," said Marc N Casper, president and chief executive officer of Thermo Fisher Scientific. "This combination brings together key complementary technologies for molecular biology and diagnostics, allowing us to create significant value for our customers."

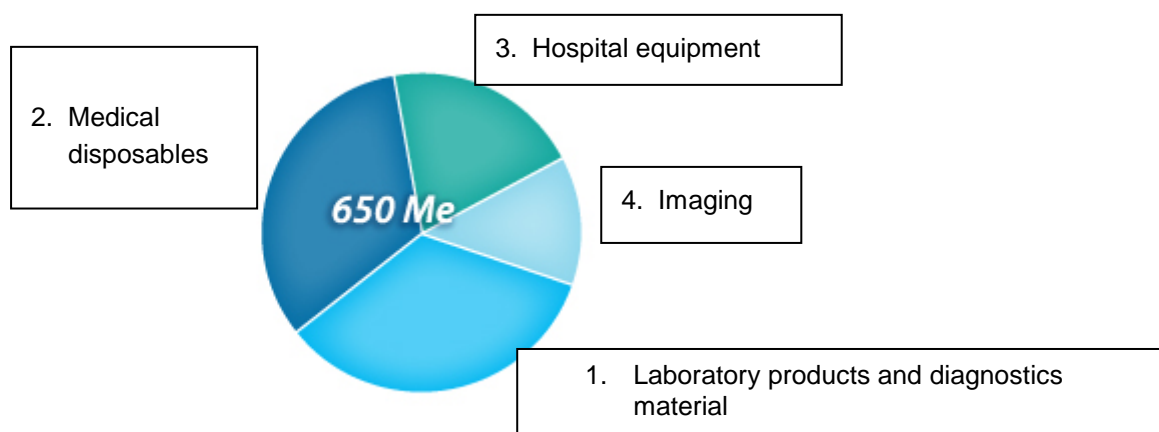
9. Distribution of IVD technology in Finland

Sailab ry is the association for companies delivering medical equipment and supplies to hospitals, clinics, health centres, laboratories and the medical and diagnostics industry. Sailab has some 81 members including most of the global companies present in Finland. The Sailab membership list is at www.sailab.fi/jasenlista.html

The turnover of Sailab members ranges from €1 million to €200 million. Its members generated a total of around €650 million in 2009, corresponding to almost 90% of the sector's turnover in Finland.

To create an economically viable Finnish distribution structure, an annual turnover of €1 million is considered a minimum for establishing a profitable liaison/sales office in Finland.

The biggest share of Sailab's member companies' sales is laboratory products and diagnostics material, followed by medical disposables, hospital equipment and imaging.



In all, Sailab brings together 54 companies providing medical products and 35 healthcare organisations.

To help its members and clients work efficiently, Sailab has created Sailab Fennica, a database used for tenders, orders and information search. For example hospitals and clinics use Sailab Fennica to find product information and companies. The pages are built with direct connections to e-commerce sites and electronic catalogues.

Since the update and modernisation of the database in 2007, the number of products has steadily increased. Today Sailab Fennica has around 32,000 product references and detailed information on over 75,000 products.

9.1. The world's biggest IVD companies have a sales office in Finland

All the biggest diagnostics companies have opened Finnish subsidiaries/sales offices to handle distribution. These include Abbott Diagnostics, 3M, BD Diagnostics – Diagnostic Systems, BioMérieux, Boston Scientific, Merck, Roche and Sigma Aldrich.

In addition to the traditional IVD equipment producers, a variety of business areas are linked to other technologies outside diagnostics. Finland offers excellent cross-industrial platforms to develop new solutions in cooperation with other industries in serving diagnostics market needs. Companies 3M and VWR are good examples:

3M Health Care is a traditional company that has transformed itself and continually innovates: 3M and Zargis Medical are winners of the Innovation of the Year award (for the Littmann® 3200 Stethoscope and Cardioscan™ software).

3M technologies are leading the fight against dangerous microbes. Drawing on its knowledge of speciality materials, coating, nanotechnology, signal processing and microreplication, 3M has developed fast and easy-to-use systems for detecting, identifying, and quantifying pathogens and other organisms. These are used in hospitals, medical labs, clinics, and food-handling and preparation facilities. 3M is also developing microbial detection and characterisation technologies based on genetic markers.

3M scientists and researchers are exploring a new world at the nanometer level, where materials exhibit unique physical, chemical and biological properties. These unusual properties are already being exploited in dental restoratives and brightness-enhancing optical films (used in LCD displays). Many 3M technology platforms, including adhesives and coatings, are being influenced by the emergence of nanotechnology.

VWR is as an example of a global laboratory supply and distribution company. VWR International LLC, headquartered in Radnor, Pennsylvania, is a global laboratory supply and distribution company with global sales in excess of US\$3.5 billion in 2009. With 150 years of industry experience, VWR offers a well-established distribution network that reaches thousands of specialised labs and facilities worldwide. VWR's 6,500 associates are working to streamline the way researchers stock and maintain their labs. It also supports its customers by providing onsite services, storeroom management, product procurement, supply chain systems integration and technical services.

Many companies are analysing their international operations development in a larger, more regional way. Combining the European activities for 27 countries may be challenging but, for example, Nordic or Baltic operations offer sufficient basis for a regional office. In the IVD sector, sales are always linked to support and often maintenance personnel.

Finland offers a good location and excellent language skills. Finnish and Swedish are Finland's official languages, and English is spoken by all business people.

9.2. Importer-distributors

The largest distributors of medical equipment and supplies are Mediq and OneMed, both multinational corporations operating in several countries. Mediq recently entered the Finnish market through the acquisition of Oriola KD, the market leader in healthcare and laboratory equipment, supplies and distribution.

Mediq Suomi Oy, www.mediq.com

Mediq operates in 14 countries: Belgium, Denmark, Estonia, Finland, Germany, Hungary, Latvia, Lithuania, the Netherlands, Norway, Poland, Sweden, Switzerland and the USA.

Mediq Suomi Oy (previously Oriola-KD Healthcare Trade) is Finland's leading supplier of healthcare and laboratory equipment, supplies and services. Listed on the Euronext stock exchange in Amsterdam, Mediq NV has a total of 8,200 employees in 14 countries and net sales of €2.6 billion (2009). In Finland Mediq has 200 employees.

Mediq delivers from manufacturer to patient in three ways: directly to people's homes, if necessary with nursing support (Mediq Direct); via hospitals, nursing homes and other healthcare institutions (Mediq Institutional); and via pharmacies (Mediq Pharmacies). By cooperating with manufacturers, prescribers and insurers, Mediq has become a leading player in this market. Mediq has dedicated business sales teams for several fields including clinical laboratory diagnostics, research and industrial laboratories, and medical imaging.

In the clinical laboratory diagnostics field there are also small, more scientifically oriented companies that serve research groups and clinical labs for their more specific product needs.

Due to growing competition in markets and the rationalisation of structures using web-based purchasing, mergers and acquisitions are increasing and many small- and medium-sized companies face challenges in Finland. Immuno Diagnostics, Labnet and Ordior are examples of this trend.

Finland is a small, research-oriented market where research and testing activities are constantly increasing and where manufacturers also gain an important business advantage when they have a local warehouse or stock present in Finland. The market offers potential for companies looking for reliable, serious business partners.

The local presence and a range of selected brands guarantee visibility and sales to research and academic organisations. It is a long-term decision when a research group adopts a certain type of equipment and materials.

Press release of 7 May, 2010

Addtech Life Science, a business area in the Addtech Group, has today signed an agreement to acquire all shares outstanding in Immuno Diagnostic Oy. Immuno Diagnostic Oy sells diagnostic and research reagents to hospital laboratories, medical schools, universities and to the pharmaceutical industry. The company has a strong position on the Finnish market and represents leading suppliers in the field of immunology and molecular biology. The company has 10 employees and revenue of approximately €4 million. Immuno Diagnostic Oy constitutes an excellent compliment to Addtech's operations within the business unit Diagnostics. This business unit focuses on sales of reagents and equipment for hospital laboratories in the entire Nordic Region.

Labnet Oy, www.labnet.fi

Labnet Oy is a typical Finnish distributor of clinical diagnostics equipment and materials to laboratories, covering Finland and Estonia. (Labnet has food-supplement storage in Estonia to serve smaller food industry clients.) The company's main customers are: universities/biotech start-ups and spin-offs, research institutes, university hospitals, the pharmaceutical industry and the food and beverage industry.

Ordior Oy

Ordior Oy operates in Finland and Estonia, distributing diagnostics equipment for biotech labs and food industry-related diagnostics. Its daughter company, Ordior Eesti OÜ, in Estonia, was established in 2007.

Ordior Oy was established in 1992 to import and sell laboratory instruments, reagents, consumables and accessories manufactured by well-known international partners such as Foss, BeckmanCoulter and Shimadzu. It has 23 staff in Finland.

Instrument service and spare-part support is handled by its own service group. Ordior has had a certified quality management system, ISO 9000, since 1996. With a warehouse and other facilities in Helsinki, it also has local branch offices in Kuopio, Oulu and Seinäjoki.

University Pharmacy is the majority owner, with 89.5% of its shares. The biggest pharmacy chain in Finland, University Pharmacy recorded a turnover of €292 million in 2008.

Ordior wants to partner with industrial laboratories, quality control laboratories and research laboratories.

10. Opportunities

10.1. Finland's diagnostics market

In the Finnish diagnostics market there are some 53 million laboratory tests annually – or around 10 per person per year. The basic Na+, K+, CRP and creatinine tests account for 40% (21 million) of the total.

Finland's diagnostics sector has a cumulative turnover of around €100 million.

There are some 30 pure diagnostics companies in Finland.

Self-testing is one of the most dynamic product segments. Diabetes is the leading area for testing and monitoring. In Finland, there are around 600,000 diabetes patients, of which around a half have not been diagnosed and therefore do not know about the pathology. As an example, even though part of the patient group does not yet have monitoring or treatment, daily blood sugar measurements represent 100 million tests a year.

Besides diabetes/blood sugar measurement, cardiovascular disease group and blood pressure measurement have quickly moved towards more direct-to-consumer sales.

10.2. What will the Finnish diagnostics sector look like in 2014?

The results below are from Future Diagnostics Finland Query in 2009/Foresight Summary 2014

Source: Views of Finnish IVD experts (n=48/116)

Estimates for 2008-2014:

IVD sales: increase of 16%

Personnel: increase of 8%

R&D investment: increase of 12%

- Point-of-care testing:
CVD – cardiovascular diseases > MBO – metabolic syndrome > asthma > antibiotic resistance
- Self-testing: MBO-metabolic syndrome > CVD – cardiovascular diseases > asthma
- Growth opportunities: China > USA > India > EU – all emerging markets worldwide
- Future products originate:
Customer needs > start-ups > b2b > occupational health > home care
- Future applications: therapy monitoring > risk assessment > self-IVD companies
- Success enablers:
Therapy linked > effect on health cost > intelligent testing > screening platforms
- Biomarker types:
Quantitative tests > microbial probes > multiplexed testing > genetic data linked
- Topics of interest:
Intelligent integrated platforms > rapid screening

- Laboratory testing:
CVD > cancer > MBO > antibiotic resistance microbiology >
intelligent multiplexed biomarkers > osteoporosis

Finland's clear strength in the diagnostic field lies in its innovative research and technology platforms. It is a leading country in areas such as cancer and cardiovascular diseases.

Finland also has a strong position in developing genes and genetic markers, cardiac marker tests, coeliac, diabetes and *heliobacter pylori* tests, and reagents.

Technology convergence is a strong trend in diagnostics. Among the top 10 medical devices technologies, such diagnostics-related technologies as molecular diagnostics (eg, biosensors, proteomics, nanotechnology) and diagnostic imaging (eg, nuclear imaging, interventional radiology, capsule endoscopy) show how new innovations can transform patient care.

Finland has expertise in many innovative diagnostics-related technologies:

- Optics
- Printing (biomolecules, microfluidics)
- Biomolecular recognition
- Material sciences, functional- and nano-materials

Finland is a small part of the more than €30 billion worldwide market for medical diagnostics. Internationalisation is essential for companies in the sector and over 90% of Finnish diagnostics companies' turnover comes from abroad.

The Finnish diagnostics market is mainly limited to Finland. Some companies, mainly smaller Finnish distributors, also have warehousing and production facilities in Estonia. Russia is a complicated market and, since the Pharmaceutical Act of 2010, the regulatory burden has become heavier.

Global companies wanting to cover the main western markets and Nordic countries together unfortunately quite often choose Denmark or Sweden due to their more central location and good records for medical devices/biotech.

Finland is nevertheless attractive as a place to develop innovative diagnostics solutions and partnerships. Finnish companies have a strong research and academic-industrial technology platform.

Asian countries have quickly shown interest in this opportunity. This is exemplified by the Indian-Finnish diagnostics cooperation development, DBT Delhi–Turku University–Tekes–Academy of Finland. Starting from pure research cooperation and post-doc researcher exchange programmes, in 2011 cooperation is being extended to more business-oriented activities and Tekes is supporting company partnership creation through the Finnnode India and India activation programmes.

10.3. Global trends of interest for Finland

Genomics are increasingly important in the diagnostics industry. The impact of consumerism and use of funds for public healthcare systems in some countries are also driving consumer demand for testing. In addition, public concern about errors is fuelling the drive for faster, more accurate testing.

Strong opportunities for cooperation exist in the following diagnostics areas:

- Molecular diagnostic assays used to test newly identified disease targets, highlighting the promise of personalised medicine. Growing potential within the sector. Strong Finnish R&D and organisations such as the Institute for Molecular Medicine Finland, FIMM.
- Near-field and point-of-care diagnostics: POC products that can link up with major electronic medical record systems/a multipurpose POC platform that can run chemistries and immunoassays.
- Diagnostic biomarkers, as with other innovative new healthcare solutions, will require that doctors and healthcare providers are educated and receive statistical training to understand tests and results. Moreover, information on the clinical use of biomarkers will be needed at the point of care as it may affect the care process. Finland has a highly educated workforce and can act as a test market for the use of this type of innovative diagnostics.
- E-health, m-health solutions and diagnostics industry (wireless healthcare as an important part of controlling healthcare costs).
- Biologic product development: by 2015, 8 of the top 10 selling drugs are predicted to be biologics. Finland offers excellent premises and qualified professionals for demanding production of even the smallest quantities needed.
- Many of the top biologics patents are reaching the end of their exclusivity and many large pharmaceutical companies are entering the generic biologic market.
- Cancer care – genomic data related to personalised medicine (FIMM).
- Developing new methodologies and approaches for the early valuation of health innovations (eg, genetic tests, biomarkers) to guide investors and purchasers of innovation, and to assist researchers and early-stage product developers in licensing out technologies appropriately.

10.4. Opportunities with industrialised countries – protection of consumers' health

In advanced areas in which diagnostics are widespread and products known, the typical medical diagnostics will grow less rapidly than in Asian markets. In the US and Europe, there is increasing demand for solutions for the food, pharmaceutical and cosmetics industries in the fields of food safety, quality control, traceability, sterility controls, water controls and environmental controls.

The food, pharmaceutical and cosmetic industries are required to control the microbiological quality and composition of their products. The industrial microbiology laboratory tests the sterility of a product (absence of micro-organisms) and the absence of pathogenic bacteria (which cause infections), as well as ensuring that commensal bacteria (normally present in man and harmless in small quantities) are only present in quantities under a certain limit. Industrial microbiological controls are therefore performed throughout the production chain, from raw materials to finished products, as well as in the manufacturing environment.

Several Finnish companies have the know-how and technology to conduct control and testing (such as the world-famous Environmental Research Laboratory of Tampere), POC, self-testing and other services.

10.5. Opportunities with developing countries – innovative and affordable diagnostics

Joint development of affordable, innovative devices is needed, with particular emphasis on early detection and the efficient treatment of disease and injury. Finnish priorities and ideas for cooperation with developing countries such as India include:

1. Low-cost glucose monitoring for diabetes care

2. Low-cost platform technologies for multiple diagnostic tests:
 - a multiplex, lab-on-a-chip technology for sexually transmitted diseases and other infections
 - point-of-care diagnostics for infant screening
 - a pre-screening test for blood bank safety
 - early detection of cardiovascular disease
 - POC tests and reagents for cancer screening

Example:

DBT (Department of Biotechnology) started medical and biotechnological research cooperation in Finland with the Academy of Finland, and then by TEKES. It holds regular forums, for example meetings for low-cost diagnostics development in which industry, academia and government funding agencies work together.

India has enormous human resources in engineering, manufacturing and biomedical science. One purpose of DBT and TEKES cooperation in the biotechnology field is to harness the intellectual capacity of Indian scientists, and focus their efforts on solving the engineering problems associated with developing low-cost medical devices. Finland provides complementary expertise and technologies.

Finnish scientists and engineers can therefore work with their counterparts in India to develop nascent technologies. Their goal is to make low-cost medical, diagnostic and therapeutic technologies that could become more widely available in India and other developing countries.

Main sources

European IVD markets:

EDMA, www.edma-ivd.be

Global IVD market trends:

Research and markets, www.researchandmarkets.com

Businesswire, www.businesswire.com

World Health Organization, www.who.org

American Diabetes Association, www.ada.org

FINLAND:

FIVDIC, www.fivdic.net

HealthBio, www.healthbio.fi

Sailab, www.sailab.fi

SalWe, www.salwe.fi

Tekes, www.tekes.fi

VTT, www.vtt.fi

VTT Ventures, www.vttventures.fi

Interviews:

Saara Hassinen, SalWe Oy

Jouko Haapalahti, Orion Diagnostica Oy

Leena Kontola-Kuusisto, Labnet Oy