



Health sector growth strategy Mid-term evaluation

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Sisällys

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1 Introduction

1.1 Background and subject of evaluation

The Growth strategy for the health sector's research and innovation activities is a continuation of the Health technology and pharmaceutical research to support Finland's growth report commissioned by the Ministry of Economic Affairs and Employment in 2012. The report's key conclusions stated that Finland has strong expertise in the health sector that could be utilised considerably more effectively than at present to reinforce growth and competitiveness. According to the report, the sector's private research activities could be increased to 2.5 times what they are by 2020 by increasing cooperation and creating a common action plan.

Three ministries (Ministry of Economic Affairs and Employment, Ministry of Social Affairs and Health, Ministry of Education and Culture), Tekes and the Academy of Finland worked together with research and innovation funding providers and the health sector's actors to prepare the Growth strategy for the health sector's research and innovation activities in 2014. This was the first time that the health sector was observed and examined in cooperation of this scope from the perspective of innovation activities and business life.

The strategy contains key recommendations for measures that aim for the systematic development of research and innovation activities as well as to increase investments in the health sector and establish the sector's economic growth. The development of university hospitals and the competence clusters that have formed around these are fundamental to competitiveness from the perspective of research and business partnerships. An effort will be used to improve competitiveness with the specialisation of areas and nationally cohesive operating models. Finland is viewed at being in a good position as a leading country in the research of personal health care. Finland has a high level of research and expertise and has access to exceptionally comprehensive data on its citizens' health by international standards.

To speed up the implementation of the strategy the three involved ministries worked together to draft a Roadmap for 2016-2018, which provides more specific information on the Government's priorities and investments. The Roadmap contains concrete measures for the promotion of the Health Sector Growth Strategy. The ministries that took part in preparation are together responsible for and will cooperate in the implementation of the Roadmap.



Figure 1. Health Sector Growth Strategy and Road Map 2016–2018

In its 2017 Reviews of Innovation Policy in Finland, the OECD highlighted the need to renew the administration of research and innovation policy more in the direction of systemic development. According to the review, the premise for this should be a research and innovation policy perspective that covers all of administration where national and regional actors act in cooperation coordinating their work. This would require the utilisation of new tools to bring various actors together, for example the promotion of public-private partnerships (PPP). (OECD 2017, 11)

The Health Sector Growth Strategy has been set as the premise for systemic development. The Growth Strategy is an ecosystem strategy by nature, and it aims to identify the health sector innovation ecosystem areas the development of which will create a competitive advantage for Finland as a partner in health sector research and innovation activities and as an investment destination. The Growth Strategy has been divided into eight key sets of measures (see Figure 2):

1. New forms of research and innovation cooperation
2. Securing competence base
3. Allocation of funding
4. Research infrastructures
5. Commercialisation of research
6. Policy guidelines and innovation-positive regulation
7. Facilitating the utilisation of health and social data
8. Marketing of competence

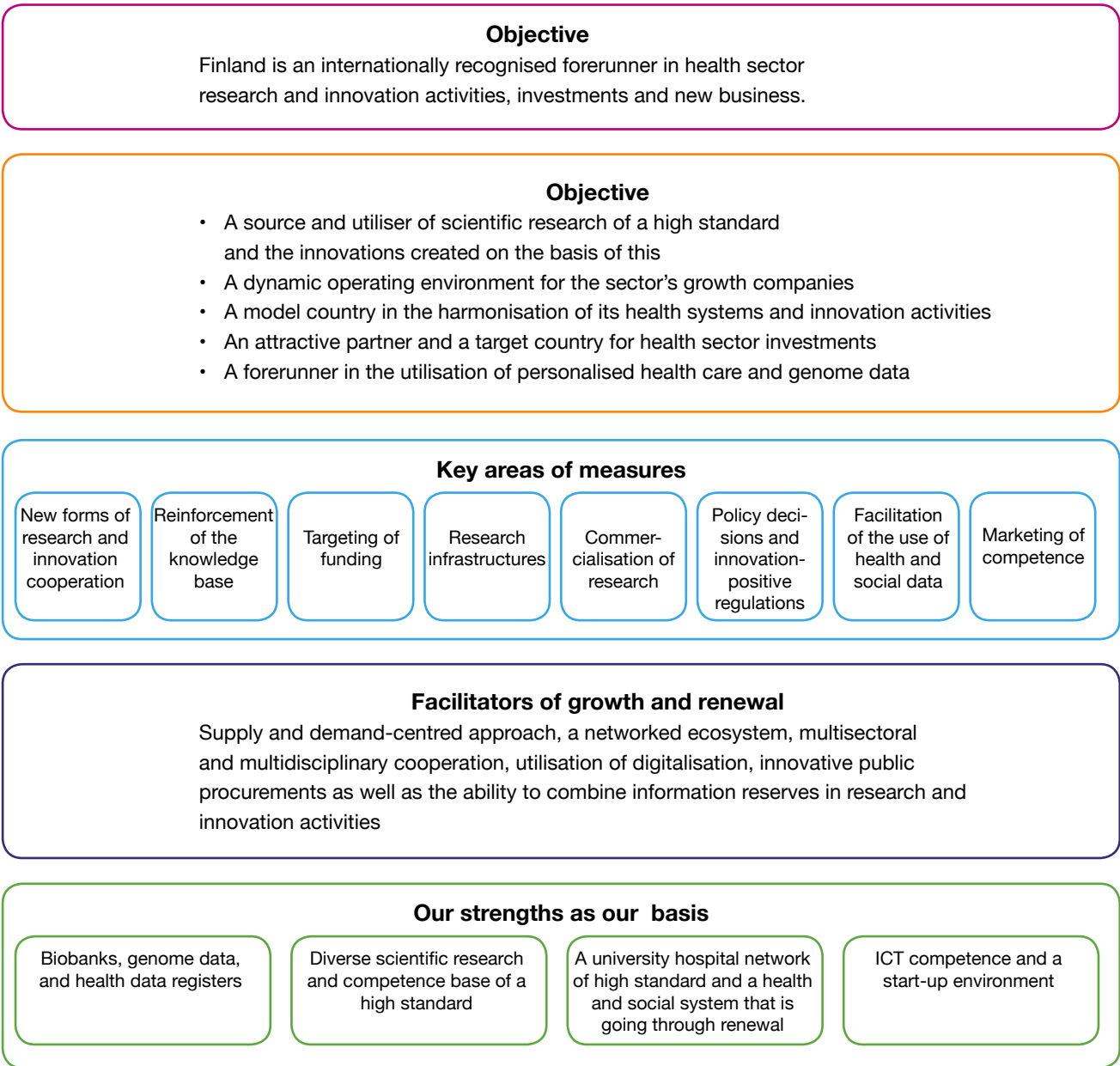


Figure 2 Health Sector Growth Strategy objectives and measures (Source: Roadmap 2016-2018)

The implementation of the Health Sector Growth Strategy will see the operating environment development with a systemic approach cross-administratively and together with other actors in the sector. Its implementation is based on cooperation and division of work between the ministries, funding providers, institutions of higher education, the health service system, business life and regions. Figure 3 illustrates the Health Sector Growth Strategy's stakeholder network.

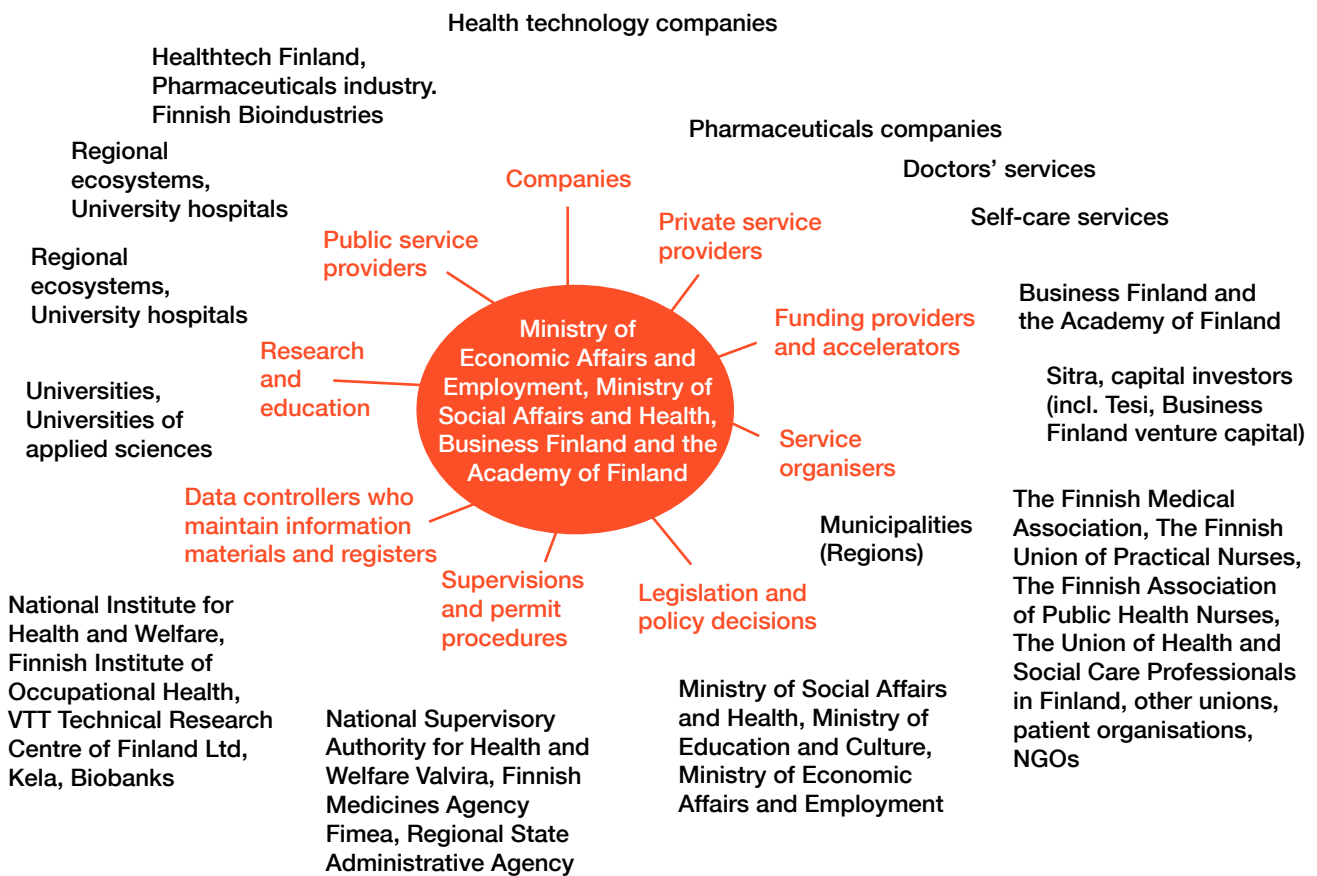


Figure 3. Stakeholder network for the Growth strategy for the health sector's research and innovation activities

The strategy contains key recommendations for measures that aim for the systematic development of research and innovation activities as well as to increase investments in the health sector and establish the sector's economic growth. The development of university hospitals and the competence clusters that have formed around these are fundamental to competitiveness from the perspective of research and business partnerships. An effort will be used to improve competitiveness with the specialisation of areas and nationally cohesive operating models. Finland is viewed as being in a good position as a leading country in the research of personal health care. Finland has a high level of research and expertise and has access to exceptionally comprehensive data on its citizens' health by international standards. (MEE 2014, 1 & 7)

1.2 Evaluation objectives and implementation

The purpose of the commission has been to produce a mid-term evaluation of the operating model for the Growth strategy for the health sector's research and innovation activities. The aim has been to examine how successful the implementation of the Growth Strategy has been from the perspectives of systemic development and a competitive research and innovation environment as well as the other objectives set for the Growth Strategy. From the perspective of systemic development, a point of emphasis has been creating mutual understanding and shared goals related to the Growth Strategy between different parties.

The primary objective has been to generate an overall picture of the operating model, its performance and areas of development. A key question that has been examined is whether implementation that has proceeded in the context of cross-administrative dialogue and dialogue with funding providers, the higher education sector, the healthcare system, companies and research institutes has generated added value in comparison to traditional approaches by actors. Another objective is to identify good practices and operating models as well as to produce information on change needs and new focus areas to ensure the impact of results.

The key perspectives of the evaluation are presented in Figure 4. The evaluation examines the setting of objectives FOR THE Growth Strategy , its operating model and the added value it will generate. As regards the operating model, the areas examined included management and organisation, processes and operating practices as well as resources and operating prerequisites. Another dimension that will impact the structure of the evaluation setting applies to the Growth Strategy’s implementation process from the drafting of the strategy to the implementation of the measures listed in the Roadmap. The evaluation has examined the approach and systemic development separately during three different phases: the drafting of the Growth Strategy, the launch/kick-start of activities and the actual implementation phase.



Figure 4. Various perspectives of the evaluation.

The evaluation’s phasing and methods

The evaluation consists of five key stages (see Figure 5):

1. Launch of the evaluation and background analysis
2. Interviews with health sector actors
3. Supplementary electronic hearing
4. Comprehensive analysis
5. Reporting on the evaluation

The evaluation was launched at the end of August and at its beginning the evaluators read the written materials they were provided. In the preliminary stage, also the representatives of the three ministries that are directing the Growth Strategy were interviewed, which improved the understanding the evaluators had of the Growth Strategy and its operating model.

During the next phase, a broad-scoped round of interviews with health sector actors (companies, authorities, funding providers, institutions of higher education, public health care and advocacy groups) was carried out. A total of 38 people were interviewed for the evaluation. The interviewed persons are listed in Appendix 2 of the evaluation. Of the interviewed persons, fourteen can be described as representatives of parties that have been responsible for the drafting of the Growth Strategy or the Roadmap or who are now responsible for the implementation of the Growth Strategy and 24 are representatives of stakeholders.

The interview materials were supplemented with an electronic survey, which was aimed at health sector actors. The survey was sent out with the Health Sector Growth Strategy newsletter and posted on the Ministry of Economic Affairs and Employment, Business Finland and Academy of Finland social media accounts. A total of 151 people responded to the survey by its deadline. Half of the respondents were from companies, 15% were from institutions of higher education and research institutes and 9% were from a city /municipality / joint municipal authority. One fourth of respondents were from the health technology sector, 17% from the pharmaceuticals sector and 17% from health and social services (see Figure 6). Half of the respondents were very familiar or fairly familiar with the Health Sector Growth Strategy and one fourth were reasonably familiar with it. See Appendix 3 for the outline of the survey.

	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1. Launch of the work and background analysis Kick-off meeting, analysis of written materials, preliminary interviews					
2. Interviews with health sector actors Implementation of broad-scoped interview round					
3. Supplementary electronic hearing Implementation of electronic survey for health sector actors					
4. Comprehensive analysis Results workshop with the Health Sector Growth Strategy's steering group, comprehensive analysis of collected materials					
5. Reporting on the evaluation Drafting of the evaluation report					

Figure 5. The key stages of the evaluation and their timetables

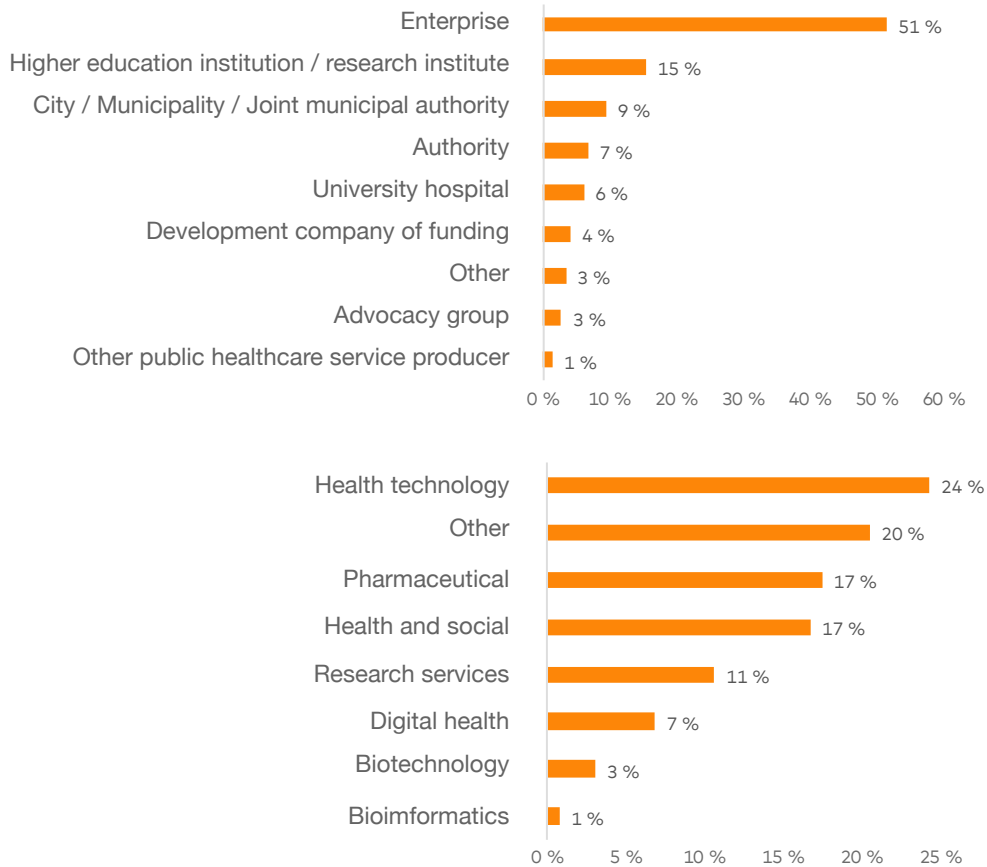


Figure 6. The background organisations and sectors of those who responded to the electronic survey

2 Preparation and Organisation

2.1 Preparation of the Growth Strategy and strategic choices

Key observations made during the evaluation

- » A preparation process in which the health sector's actors were extensively included created favourable conditions for the Growth Strategy's success.
 - » As a rule, the Growth Strategy's framing and choices were considered successful. All the actors felt that, in particular, centres of expertise, the secondary use of health and social data, cooperation between universities and companies and action areas related to innovative procurements were the Growth Strategy's and Roadmap's most important areas of focus.
 - » The Growth Strategy's key measures are related to the administration's activities and structures. It is been said that to some extent the strategy is central government oriented and the role of companies has remained insubstantial.
-

A preparation process in which the health sector's actors were extensively included created favourable conditions for the Growth Strategy's success. The preparation of the Health Sector Growth Strategy began in 2013 and the strategy was published in 2014. The premise for preparation work was an aim at a comprehensive approach to the strategy, where the sector is observed from a broad perspective and based on ecosystem thinking. The preparation work was based on a) a work group comprising the three key ministries (Ministry of Education and Culture, Ministry of Social Affairs and Health and Ministry of Economic Affairs and Employment), Tekes (now Business Finland) and the Academy of Finland; b) a group of experts as well as c) the hearing of key stakeholders at meetings, seminars and during cooperation. (Alkio 2014, 4 & 6). It was the first time the health sector was observed and examined in cooperation that was this extensive in scope with actors from various branches of administration and various sectors from the perspective of innovation activities and business life.

The key actor's in the health sector ecosystem were well-represented during the preparation phase and participants welcomed the inclusive preparation process. Key factors related to preparation highlighted during interviews were cooperation between the three ministries and the inclusion of an extensive group of actors during the preparation work. Preparation was carried out in good cooperation, and the common understanding of the health sector and its strategic development needs has strengthened as work in the Growth Strategy has progressed. According to the members of the Health Sector Growth Strategy steering group, the drafting of the Roadmap for the Health Sector Growth Strategy increased close cooperation and division of work between the ministries and funding providers as well as contributions by the Government in the implementation of the strategy.

The framing and choices in the Growth Strategy and the Roadmap that specifies its implementation are for the most part considered successful. The framing and the choices included in the Health Sector Growth Strategy and Roadmap have succeeded fairly well according to the actors that responded to the evaluation’s survey (see Figure 7). All the actors felt that areas that were especially important included the bringing together of research cooperation between research institutes and institutions of higher education to reinforce impact and form an entity

that better serves decision making and society (centres of expertise), the seamless shared use of personal health data and patient documents for research purposes (secondary use of health and social data), the drafting of action plans for universities and university towns for the development of research and innovation ecosystems at hospital centres and the corporate cooperation related to these (cooperation between universities and enterprises), as well as promoting the introduction of innovative goods when reforming health technology and pharmaceutical legislation in the strategies of institutions and public procurements (see Table 1). Companies felt that areas of importance included innovative procurements, secondary use of health and social data and increasing the appeal of international investments.

“The points of development selected were seen as bottlenecks. We have chosen to focus on these. The framing has been justified,”

“A broad-scoped entity. This raises the question of whether framing or phasing would have been more effective.”

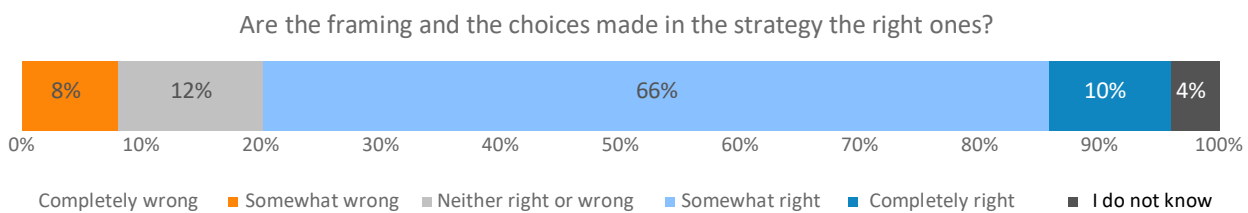


Figure 7. Success of framings and choices made in the Growth Strategy

Some of the people, who were interviewed, felt that no actual choices were made during work on the strategy and the strategy should have been more stringently framed: resources are limited, and a more tightly framed or phased strategy would have ensured that the likelihood of attaining objectives would have been more realistic. On the other hand, an opposing viewpoint that the health sector has been defined in too narrow-scoped a manner was also presented. According to respondents, areas that more attention should be given to than present included ICT and data analytics, the role of universities of applied sciences, growth entrepreneurship, the health and social market, reinforcement of sectoral business and funding expertise, corporate cooperation models for clinical research and building a national collective research infrastructure. Generally, it was noted that the strategy’s content should be updated regularly, as the operating environment and health sector are in a constant state of change.

Many of the parties that were heard during the evaluation have felt that the Growth Strategy’s key measures were related to the administration’s activities and structures. Although the Growth Strategy aims to increase the growth of the sector’s business, many felt that the Growth Strategy was public sector oriented: key measures are related to public sector actors and publicly funded activities. The role of companies and the perspective on the development of business are lacking in the strategy. Some of those who were interviewed felt that the responsibility and role of companies in both the implementation of the Growth Strategy and the focus of activities must be increased.

Table 1. Most important areas of the Health Sector Growth Strategy's Roadmap from the perspective of stakeholders (Source: the evaluation's electronic survey).

The most important areas of the Growth Strategy	Percentage of respondents (N=101)
Centres of Expertise: The research community comprising research institutions and higher education institutions will be assembled to maximise impact and to create a whole that better serves decision making and society	42 %
Secondary use of health and social data: Seamless joint access to personal health data and patient documents will be facilitated for research purposes. 8. b) A national operations programme and rules for the application of genome data will be drawn up.	40 %
Cooperation between universities and enterprises: Universities and cities with university hospitals will draw up action plans for developing hospital cluster research and innovation ecosystems and related cooperation with companies.	37 %
Innovative procurements: The implementation of innovative goods will be promoted when modernising the health technology and pharmaceutical legislation as well as in the strategies and public procurement of the health sector institutions.	36 %
Marketing of competence: Systematic activities will be initiated to attract foreign industry investments, and a decision will be made on the related division of labour. An annual marketing plan for the sector will be prepared in cooperation with the sectoral associations and expertise hubs.	30 %
The profiles and research foci of higher education institutions, research institutes and university hospitals will be reinforced when developing the international competitiveness of competence clusters (e.g. profiling, infrastructures)	29 %
Through cooperation between Tekes (now Business Finland) and the Academy of Finland, funding instruments will be developed further, taking the special features of the sector into consideration in order to make the most of research.	26 %
The needs for risk capital in the health sector will be taken into consideration in State capital investment activities (Tesi and Tekes / Business Finland).	20 %
The Academy of Finland, Tekes / Business Finland and other public operators will consider the development of the health sector when summarising their strategic and operational models for cooperation.	17 %
Higher education institutions and research institutions will bring their technology transfer and commercialisation operations closer together in central university cities by assembling them and particularly by reinforcing sectoral national cooperation.	16 %
Proactive control of the research and innovation activities for health sector products and pharmaceuticals will be reinforced by developing company advisory activities. Training on legislation for health sector research, regulations and standards will be increased on a national level.	16 %
A joint operation model will be drawn up to reinforce the work of government ministries and the business sector for exerting influence in the EU.	4 %

2.2 Organisation of the growth strategy's implementation

Key observations made during the evaluation

- » The cornerstones of the Growth Strategy's implementation include communication and cross-administrative cooperation, as the central government's power relationships have not been altered. Each organisation is independently responsible for the progress of its measures.
 - » Work on the Growth Strategy is being funded for the most part with the reallocation of funds. The exceptions to this are the 17 million euros allocated in 2017-2019 for establishing the National Genome Centre and the Comprehensive Cancer Centre and the harmonisation of biobank activities.
 - » The Growth Strategy steering group monitors the progress of the work in its entirety. Actors that implement measures are responsible for the monitoring of their own measures.
-

The Roadmap defines the priorities for the implementation of the Growth Strategy in 2016-2018 and the parties responsible for the various measures in different packages of measures. The idea behind work on the Growth Strategy is to develop the operating environment in its entirety utilising the central government's extensive instruments for the development of regulation, policy decisions, competence and infrastructure. The Growth Strategy has not altered the central government's power relationships, instead each party is responsible for activities that meet with the strategy's objectives in their own areas. Additionally, other actors implement the strategy independently with their own activities. The implementation of the Growth Strategy is based extensively on mutual understanding and the will of parties to act together according to the goals that have been agreed on.

The strategy and the Roadmap that specifies its implementation do not have a locked budget with the exception of the 17 million euros allocated for the establishment of the National Genome Centre and the Comprehensive Cancer Centre and the harmonisation of biobank activities in 2017-2019 according to the Government's decision on spending limits. Each actor has been independently responsible for the funding of the objectives outlined in the Growth Strategy according to its own decision making. The aim of cooperation between funding providers and the targeting of funding have been to create incentives for change and to support, for example, new forms of research and innovation cooperation. Funding has been provided for the attainment of the Growth Strategy's objectives from, for example, the Academy of Finland's and Business Finland's research and innovation funding, the basic funding of institutions of higher education and research infrastructure funding. Additionally, the Ministry of Education and Culture and the Ministry of Social Affairs and Health have granted funding for the preparation of Neurocentre Finland.

Monitoring of the Growth Strategy's implementation is carried out at different levels. Each organisation is independently responsible for the implementation of measures and for monitoring these. A steering group has been appointed for the Growth Strategy with the task of monitoring the progress of the strategy in its entirety. The steering group includes representation from the Ministry of Economic Affairs and Employment, the Ministry of Social Affairs and Health, the Ministry of Education and Culture, the Academy of Finland and Business Finland. The Ministry of Economic Affairs and Employment holds chairmanship of the steering group. The Ministry of Social Affairs and Health and the Ministry of Education and Culture hold the group's deputy chairmanship. The steering group meets and exchanges information on the progress of the strategy's different areas 7-8 times a year. Also the ministers of the key ministries (Ministry of Economic Affairs and Employment, Ministry of Social Affairs and Health, Ministry of Education and Culture) involved in the Growth

Strategy outline and monitor the implementation of the Growth Strategy. Two persons at the Ministry of Economic Affairs and Employment have worked on the Growth Strategy full time and the Ministry of Social Affairs and Health has employed 1-3 people to work on tasks related to the implementation of the Roadmap depending on the time in question. In other respects, work on the Growth Strategy has been carried out as part of other official duties.

Communication and dialogue are the key approaches to work on the Growth Strategy. As the Growth Strategy brings together measures that various actors are promoting in their own areas and the strategy does not have a direct role in steering operative activities, communication is one of the key functions for implementation. Various means of communication can be used to provide information on the Growth Strategy's progress to the sector and stakeholders and in getting the sector's actors to commit to the strategy as well as bring them together in accordance with the concept of an ecosystem strategy. Seminars are held each year on the Growth Strategy, where the progress of work on the strategy is discussed with the health sector's actors. The Growth Strategy has its own newsletter, which deals with current topics related to the Growth Strategy and the strategy's progress. Information has also been provided via the ministries' social media accounts and press releases. The parties responsible for measures provide information on these themselves. Various parties have organised for example stakeholder events and put together information packages related to the preparation of measures.

3 Implementation of Growth Strategy

3.1 Successful implementation of Growth Strategy

Key observations made during the evaluation

- » The Growth Strategy has increased cooperation and dialogue between ministries, in particular between the Ministry of Economic Affairs and Employment and the Ministry of Social Affairs and Health. The role and position of the Ministry of Education and Culture has remained somewhat distant in implementation.
- » The Growth Strategy has formed a common, cross-ministry agenda for the administration. The strategy has offered a common pillar on which decision making and bring things forward have leaned on, and it has improved mutual understanding between parties. A broad-scoped group of actors have welcomed, in particular, the Ministry of Social Affairs and Health's improved ability to understand the sector's business perspective.
- » The Growth Strategy has facilitated homogeneous and common communication and dialogue on the national will of the health sector. However, many key stakeholders felt that they did not have enough information on the progress of key measures packages included in the Growth Strategy.
- » It was felt that the lack of own funding for the implementation of the strategy and the limited amount of resources tied to the Growth Strategy's coordination hampered the attainment of objectives.

The Growth Strategy has increased cooperation and dialogue especially between ministries.

Cross-administrative cooperation was highlighted without exception in interviews as a key factor in the implementation of the Health Sector Growth Strategy and it was considered an example of how sectoral boundaries can be crossed in Finland. It was also noted that the preparation of laws that are fundamentally related to the Growth Strategy took place now in significantly more broad-scoped cooperation with the sector's actors than before and a large group of actors was included in the work from its very beginning.

The Growth Strategy has formed a common, cross-ministry agenda for the administration, but each ministry has been independently responsible for the strategy's implementation. Role model for cooperation. Sector boundaries have been crossed."

Sector boundaries have been crossed."

"Laws have been drawn up in a different way than previously, a broad-scoped group of stakeholders have been involved from the start in thinking up the pros and the cons. [--] Act on the Secondary Use of Health and Social Data, Act on Biobanks, National Genome Centre Act. Preparation has been very thorough. Cooperation has been initiated in completely different ways than previously [--] and we are now beginning to understand the importance of other parties."

"More transparency is needed with regard to which area each party is responsible for. How can actors get involved in these groups and how can they have an impact?"

Cooperation in the implementation of the Growth Strategy has consisted primarily of information exchange. Each ministry and organisation has, for their own part, been responsible for the furthering of measures. The strategy has for the most part acted as a pillar for practical implementation on which decision making and the furthering of matters have leaned on as well as better mutual understanding on the measures implemented by various parties.

A key aspect of the work has been the formation of a common vision between the Ministry of Economic Affairs and Employment and the Ministry of Social Affairs and Health and the better than before understanding of different parties' viewpoints. The Ministry of Education and Culture has to some extent become a "third wheel" and has not integrated in work to implement the Growth Strategy as seamlessly as the other two ministries. This is in part due to the Ministry of Education and Culture not having a sectoral strategy. Nearly without exception, companies highlighted the Ministry of Social Affairs and Health's new and more open attitude towards the sector's companies and the ministry's improved ability to understand the sector's business perspectives and needs as the most important achievement of work on the Growth Strategy. The change was described as "dramatic" compared to the previous attitude climate.

To some extent the interviews brought forth the idea that although participation in the Growth Strategy was extensive, dialogue between various sectors should be more intensive and parties felt that discussion had taken place solely within different sectors and organisations. Even many of the key stakeholders in companies, administration as well as research activities felt that information on the Growth Strategy's progress and activities were not forwarded sufficiently. For example, the Act on the Secondary Use of Health and Social Data, which is considered of key importance, and the measures for completing the drafting of the Act, were not visible enough to all actors.

"The final form [of the Act on the Secondary Use of Health and Social Data] is still unknown. All new projects lean on the new law, and we do not have any idea when the law will be implemented. Everyone is eager to use information and data from registers in research, but there is, as of yet, not information on its accessibility."

"Information is not disseminated enough. Key relationships are still unclear even with regard to work in practice; who will do and what. There are many events where we see people and yet we receive no information."

Despite these critical observations on the flow of information, it was noted that the Growth Strategy had improved communication and the dissemination of Finland's common policy and objectives internationally.

The Growth Strategy has facilitated homogeneous and common communication on the national will of the health sector. This is significant with regard to communication within the administration and companies, in the formation of a common vision and in communicating Finland's common national policy internationally. Respondents were divided in their opinions on the successfulness of communication. On one hand, respondents were impressed with how much visibility the Growth Strategy has received, the strategy has been brought up in many forums and parties have been successful in engaging the media's interest. On the other, respondents said that the Growth Strategy's communication should be planned more strategically than the present system of just publishing press releases and the sector's news. Communication would require adequate resourcing. Respondents felt that the lack of resourcing was slowing down the implementation of the Growth Strategy.

The lack of own funding tied to the implementation of the strategy and the shortage of resources tied to coordination were considered factors that hampered the attainment of objectives in spite of the funding the Academy of Finland and Business Finland have appropriated to the sector.

The Academy of Finland has appropriated additional funding to the health sector through new means of funding, which were established after 2014 (research infrastructure funding, strategic research funding, funding for the profiling of universities and one-off key project funding). In total, the Academy of Finland has appropriated more than 300 million euros of funding to the sector. Business Finland has launched funding and innovation programmes, such as the Bits of Health programme (this has provided 60 million euros in funding to projects) and appropriated funding to the sector, for example to the FinnGenn research project. Additionally, during the implementation of the Health Sector Growth Strategy, Business Finland has funded separate strategic research projects with 25 million euros and renewed research funding with the aim of being able to better meet the needs of business life. Business Finland has used cluster funding to support the development of competitive ecosystems. The Personalised Health programme was launched in 2018, and its financial reservation for a period of four years was 80 million euros in total.

Even so, some of the companies, research institutes and advocacy groups heard during the evaluation raised the point of funding as an area of development. Development needs are related in particular to the appropriation of funding for certain groups and the development of new types of funding instruments. Respondents requested, for example, the reinforcement of research resources for institutions of higher education, universities and university hospitals for both basic and applied research. The general need for long-term funding of research and development were called for. Respondents also mentioned the providers, which was seen as hampering the establishment and growth of health sector companies. Respondents requested that ecosystem thinking be also extended to funding, respondents would like, for example, to see instruments that large investors could use to invest in the health sector in its entirety instead of investing in individual companies. Respondents asked that the rules for support granted by Business Finland be reviewed critically. In relation to this it was mentioned that these should take into consideration the “future value” of companies instead of just their financial growth profile and that the health sector’s actors such as hospital districts, university hospitals and biobanks should not be classified as large enterprises. The lack of common practices related to public-private cooperation was believed to hamper the initiation of public-private cooperation.

“Development needs are related in particular to the appropriation of funding for certain groups and the development of new types of funding instruments. Respondents requested, for example, the reinforcement of research resources for institutions of higher education, universities and university hospitals for both basic and applied research. The general need for long-term funding of research and development were called for. Respondents also mentioned the scarcity of internationally networked funding. Funding channelled through Tekes/Business Finland and the Academy of Finland has not been targeted enough on top research and on the other hand the financing of top research has continuously grown more difficult.”

“At no point is the most fundamental need mentioned: the need to create basic funding for university hospitals at the implementor level and new clinician-researcher positions and bring the hospital and university organisations together in order to reduce bureaucracy and improve the efficiency of activities.”

“No common practices have been established for the Growth Strategy’s measures in public-private cooperation. Funding providers continuously change their funding instruments, which makes it difficult to develop cooperation.”

“It is good to keep priorities on the academic side, but it should not be forgotten that small innovative companies may carry out very valuable and immediately beneficial work. Business Finland’s support for business is based solely on the financial growth profile of companies and not enough on the immaterial “future value” of companies.”

Another critical observation was also related to resources. Some felt that the resourcing of the Growth Strategy was too flimsy and that there was too little concrete coordination and responsibility. It was felt that implementation was solely made up of information exchange and some actors wished more in depth cooperation in relation to implementation. Although the Growth Strategy has significantly improved cooperation and information exchange, many felt that in the future stronger contributions to moving things forward would be required in the future, so that key measures packages such as the Centres of Expertise could be implemented according to set objectives.

Case examination: Cooperation between Business Finland and the Academy of Finland

With the implementation Health Sector Growth Strategy, Business Finland and the Academy of Finland have targeted funding according to the strategy. These parties are involved in cooperation on a daily basis and continuously at different levels and this has been the case for quite some time already. Neither organisation recognises that the Growth Strategy in itself would have influenced cooperation. In practice, cooperation manifests as programme cooperation, research infrastructure cooperation, expert cooperation in the assessment of applications, in connection with key projects, in cooperation that aims at the development of flagships and growth engines, foresight as well as in international cooperation, especially in the scope of the EU's framework programmes. The Health Sector Growth Strategy has supported cooperation, when organisations have considered and prepared activities related to the health sector.

3.2 Results of growth strategy work and added value for the sector's actors

Key observations made during the evaluation

- » The most important result of the Growth Strategy will be a new type of cooperation, cross-administrative cooperation and the generation of a common national vision.
- » The attitude towards work on the Growth Strategy has been positive even though the tangible results have thus far been minimal, and the work is still incomplete in all the various areas. However, the strategy's objectives remain relevant and work to implement them must continue.
- » Common indicators for the monitoring of results and clear and regular communication to stakeholders on how work is progressing in relation to the objectives are needed.

70% estimated that the Growth Strategy had been at least reasonably successful. According to the survey carried out in connection with the evaluation, 70% of respondents felt that the Growth Strategy had been at least fairly successful in its entirety. Approximately one fourth of respondents felt that work on the Growth Strategy had succeeded very well or extremely well.

The most important result of the Growth Strategy will be a new type of cooperation, cross-administrative cooperation and the generation of a common national vision. Many of those who were interviewed felt that the Growth Strategy's most important result was the Growth Strategy itself, in other words, the successful creation of a common national policy that actors have committed to. This in turn has facilitated cooperation and dialogue and the foundation of a common language between actors.

How would you assess the success of Growth Strategy in its entirety,
its approach and its results in relation to
the objectives that were set for it and the expectations of various parties? (N=89)

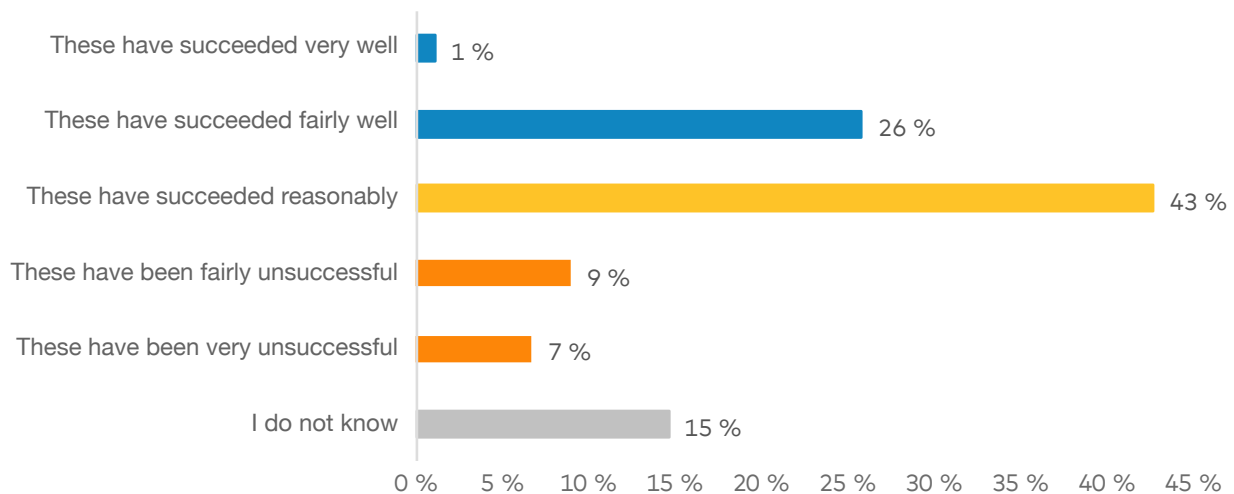


Figure 6. Views given by survey respondents on how successful the Growth Strategy has been thus far

The strategy has increased mutual understanding between different actors in the health sector and the sector’s potential is understood better and more extensively. The creation of the Growth Strategy marked the first time that the health sector was examined by the central government also from the perspectives of business and growth. As a result of the strategy, the health sector has raised its profile in social debate and the Growth Strategy is seen as having moulded the sector’s atmosphere in general in a more development-positive direction. At the same time, the creation of the strategy was seen as being an important factor in the growth of a common vision. It was noted that as a result of the cross-administrative approach and the inclusion of a broad-scoped group of experts “everyone in the field now speaks the same language” and people have a better understanding of other sectors. Just the existence of the Growth Strategy was considered significant and as a result the implementation of the measures listed in the strategy (which would have been promoted anyway) were considered easier to advance in one’s own organisation and sector.

Concrete results have been minimal for the time being. Although the creation of the Growth Strategy was widely welcomed and the sector’s actors held positive attitudes towards work on the strategy, the Growth Strategy results have remained minimal thus far and many expressed their disappointment in how slowly all the things believed to be important by everyone have been advanced even with the Growth Strategy in place:

- » Key legislative projects (Genome Act, Act on the Secondary Use of Health and Social Data) are still being prepared
- » The establishment of Centres of Expertise has not proceeded in the desired manner: all the different parts of this work are incomplete.
- » Biobank activities are for the most part still very modest

Although the work has not proceeded as quickly as stakeholders would have wanted, the key objectives are still considered relevant and their implementation should be continued. Every person stated that the implementation of the Act on the Secondary Use of Health and Social Data was of great importance.

“It is unclear whether [the Act] will ever be completed. If it is not, from our perspective nothing has happened. The establishment of the Genome Centre has also been pushed forward, which also just means no results. Much has been said, but no progress has been made.”

“It would have been better had the legislative work been completed already. If these had been completed, we would have already proceeded significantly. These are of key importance and will facilitate business in the health sector,”

Case: The Comprehensive Cancer Centre

The idea for the Comprehensive Cancer Centre was first raised in 2007, when 16 European cancer centres signed a strategy for the establishment of national comprehensive cancer centres (ccc). The cancer centre aims to improve the quality of cancer treatments, but also to create a new type of cooperation between companies, research and health care.

A working group tasked with reporting on the approach for the Comprehensive Cancer Centre and opportunities for establishing the centre submitted its final report to the Ministry of Social Affairs and Health in May 2014. According to the report, establishing the centre would promote the implementation of equal cancer treatments. The nationally determined common treatment guidelines and coordinated equipment and pharmaceuticals procurement would bring significant opportunities for saving finances. Finland would be better able to compete for international research funding. From the perspective of international pharmaceuticals companies, Finland’s appeal as a partner in the development of pharmaceuticals would increase. We could develop Finnish innovations and cancer diagnostics and treatment even further on our own. This could lead to significant amounts of business. In these respects, the project would be linked to the implementation of the Biobanks Act, the Bioeconomy Strategy which is currently in the works as well as the development of joint national and EU research infrastructure.

Establishing the Comprehensive Cancer Centre has been one of the key objectives of the Health Sector Growth Strategy. In spring 2016, during its discussion on spending limits, the Government decided to grant 17 million euros to the foundation of Finland’s Comprehensive Cancer Centre for the time period 2017-2020. The funding will be divided between the National Genome Centre and the Comprehensive Cancer Centre. In addition to the 17 million euros in spending limits allocated by the Government, the HUS Council has decided to support the cancer centre’s coordination work with half a million euros and the University of Helsinki will fund the work with a corresponding sum. The Comprehensive Cancer Centre was also in the Government’s previous Government Programme, but the project do not materialise at that time.

In addition to the funding granted for its establishment, the Comprehensive Cancer Centre is also a concrete example of cooperation in line with the Growth Strategy between the three ministries. The Comprehensive Cancer Centre will begin to coordinate nation cancer research and cancer treatments, and the centre will act in close cooperation with the National Genome Centre, universities as well as companies.

The Comprehensive Cancer Centre will also aim to initiate a new type of corporate cooperation. The coordination of cooperation will be simplified as everything will be handled through on national unit. Coordination takes place through the Comprehensive Cancer Centre, and companies will no longer have to hold separate talks with each unit.

How well have actors been able to promote the different areas of measures listed in the Growth Strategy starting from 2014 (1=very poorly – 5= very well, n=93)?	
The health sector research community formed by research institutions and higher education institutions will be assembled to maximise the impact and to create a whole that better serves decision-making and society (participation of the private sector included) e.g. biobanks, the Comprehensive Cancer Centre, Neurocentre Finland.	3.5
Universities and cities with university hospitals will draw up action plans for developing hospital cluster research and innovation ecosystems and related cooperation with companies.	3.0
Seamless joint access to personal health data and patient documents will be facilitated for research purposes. 8. b) A national operations programme and rules for the application of genome data will be drawn up.	3.0
The Academy of Finland, Tekes / Business Finland and other public operators will consider the development of the health sector when summarising their strategic and operational models for cooperation.	2.9
The profiles and research foci of higher education institutions, research institutes and university hospitals will be reinforced when developing the international competitiveness of competence clusters (e.g. profiling, infrastructures)	2.9
Proactive control of the research and innovation activities for health sector products and pharmaceuticals will be reinforced by developing company advisory activities. Training on legislation for health sector research, regulations and standards will be increased on a national level.	2.6
Through cooperation between Tekes (now Business Finland) and the Academy of Finland, funding instruments will be developed further, taking the special features of the sector into consideration in order to make the most of research.	2.6
Higher education institutions and research institutions will bring their technology transfer and commercialisation operations closer together in central university cities by assembling them and particularly by reinforcing sectoral national cooperation.	2.5
The needs for risk capital in the health sector will be taken into consideration in State capital investment activities (Tesi and Tekes / Business Finland).	2.5
Systematic activities will be initiated to attract foreign industry investments, and a decision will be made on the related division of labour. An annual marketing plan for the sector will be prepared in cooperation with the sectoral associations and expertise hubs.	2.5
The implementation of innovative goods will be promoted when modernising the health technology and pharmaceutical legislation as well as in the strategies and public procurement of the health sector institutions.	2.4
A joint operation model will be drawn up to reinforce the work of government ministries and the business sector for exerting influence in the EU.	2.4

Table 2. Views given by survey respondents on the progress of the Growth Strategy's key areas of measures

Common indicators for the monitoring of results and clear and regular communication on how work is progressing in relation to the objectives are needed. Many stated that the valuation of the results of work on the Growth Strategy is difficult because there are not common indicators. On the other hand, many said they did not know how matters related to the strategy are progressing at the moment and what phase they are at. In this respect, actors wanted a clear and scheduled Roadmap and indicators with which the results and impact of the work could be evaluated.

Many of those who were interviewed also said it was challenging to determine and specify which present health sector activities were the result of the Growth Strategy and which would have happened in any case. The Growth Strategy is an umbrella under which a group of measures have been collected. Many of these measures have been on the agenda long before the Growth Strategy existed. However, respondents felt that the Growth Strategy had strengthened the advancement of these matters. The Growth Strategy was seen to have succeeded in particular in creating networks and bringing actors together around central themes. For example, achieving nation cooperation through national competence clusters, such as the Comprehensive Cancer Centre, the National Genome Centre and Neurocentre Finland was considered one of the Growth Strategy's key achievements.

Case examination: Marketing of competence

The marketing of competence is one of the Growth Strategy's areas of measures. The objective has been to initiate systematic activities to attract foreign industry investments and make a decision on the related division of labour. In the Roadmap, the measures have been divided into three sections – the implementation of Team Finland's Health growth programme, as well as the sub-measures under this, increasing dialogue between public sector actors and business life as well as investments in the Health Sector Growth Strategy's communication in individual projects and in the strategy in its entirety. Respondents to the evaluation survey felt that the marketing of competence had proceeded reasonably. Just under 40% of companies and around 50% of other actors felt that the sector has been promoted poorly or very poorly.

The finlandhealth website has been established as part of the marketing of competence. But some actors feel that its utilisation has been insufficient due to the merger of Tekes and Finpro into Business Finland going on simultaneously. The marketing of competence has been carried out in a targeted manner, for example as part of Business Finland's programme activities (as well as those of Finpro and Tekes). For example, delegation visits organised by Business Finland were noted in evaluation materials as individual successes.

As a result of efforts by the Ministry for Foreign Affairs, the Finnish health sector has been highlighted in communicating our country image and in Team Finland's work. Information has been disseminated bi-directionally: information on the competence of the Finnish health sector has been provided to foreign actors, while Finnish companies have been provided information on international markets where there could be potential for expanding their activities. Marketing has been competence based, and it has primarily been targeted at small and carefully selected target groups. One method used for marketing has been cooperation between Finnish and foreign companies, for example in the form of seminars and delegations. A second method has been the presentation of Finnish competence in various media.

According to the views of actors the marketing of Finnish competence must be even more comprehensive and better coordinated and it should not happen through individual organisations. Respondents indicated that they would like a concrete action plan for the marketing of competence, which would define responsibilities and to which numerous actors would be asked to commit, and which would promote cooperation between actors. The implementation of the marketing of competence would require that resources be guaranteed.

"I expected a clearer package of measures and plan for the marketing of competence."

"International companies that invest in Finland are for the most part those that already have established activities in Finland. We've gotten no help for actual capital investments from abroad."

"Finland has been exported with health data at the forefront. We have good companies in the health and ICT sectors, which should be pooled and marketed together."

"Denmark and Sweden have the Medicon Valley innovation cluster, which produces an annual State of Medicon Valley report. This is something that should also be required for all of Finland or from some university hospital towns, as these provide excellent data for foreign investors on how dynamic development is in the area."

"If there is strong competence in Helsinki and again in Oulu, it should be evident to foreign actors that competence is strong in Finland. Researcher groups do not work in close cooperation with one another. -- We would like to see companies included even more so than at present."

3.3 Promotion of matters in line with the growth strategy in the future

Key observations made during the evaluation

- » All stakeholders feel that work on the Growth Strategy must be continued in one form or another and that the health sector needs long-term cooperation that will extend over government terms.
 - » The Growth Strategy's key objectives and measures are still relevant.
 - » The Health Sector Growth Strategy is seen as a future model also for other sectors in the organisation of cross-administrative cooperation at the government level.
-

All stakeholders feel that work on the Growth Strategy must be continued in one form or another and that the health sector needs long-term cooperation that will extend over government terms. The health sector's challenges and opportunities will remain the same regardless of government terms. The stakeholders heard during the evaluation strongly emphasised that an action plan that would extend over government terms, which all parties had committed to, would also be needed in the future.

The Growth Strategy's key objectives and measures are still relevant. The representatives of companies emphasised, in particular, that planned measures were still of key importance in the development of the sector and these should be completed.

The Health Sector Growth Strategy is seen as a future model also for other sectors in the organisation of cross-administrative cooperation at the government level. The Health Sector Growth Strategy was considered a model which could be used in the future to implement cross-administrative cooperation in other sectors.

4 Summary

4.1 Key conclusions

In the strategy, for the first time ever, the health sector was recognised and named as a key growth sector. The broadening of the Ministry of Social Affairs and Health's viewpoint was especially important - the ministry now understands the health sector from the business perspective better than before.

The Growth Strategy has formed a common cross-ministry agenda for the administration. The strategy has offered a common pillar on which decision-making and bringing things forward have leaned on, and it has improved dialogue and mutual understanding between parties.

The Growth Strategy has facilitated homogeneous and common communication on the national will of the health sector. This has been significant in communication within the administration and companies, in forming a common vision and in communicating Finland's national policies internationally.

The Growth Strategy has increased cooperation and dialogue between ministries - in particular between the Ministry of Economic Affairs and Employment and the Ministry of Social Affairs and Health. The role and position of the Ministry of Education and Culture has remained somewhat distant in implementation. This is in part due to the Ministry of Education and Culture not having a sectoral strategy.

The Growth Strategy has not altered the power relationships of the involved organisations. Each organisation is independently responsible for the progress of its measures. The role of the Growth Strategy in implementation is to support dialogue, information exchange and to provide information on the progress of measures.

As a rule, the Growth Strategy's framing and choices were considered successful. All the actors felt that, in particular, centres of expertise, the secondary use of health and social data, cooperation between universities and companies and action areas related to innovative procurements were the Growth Strategy's most important areas of focus.

The Growth Strategy's key measures are related to the administration's activities and structures. It has been said that to some extent the strategy is central government oriented and the role of companies has remained insubstantial. The stronger integration of companies and business with the strategy would support its goals. For example, companies have asked that their needs be taken into account in a more in-depth manner in measures.

The impacts of the Growth Strategy on cooperation between funding providers have remained meagre, as, for example, Business Finland and the Academy of Finland have already been engaged in close cooperation before the Growth Strategy existed. These funding providers have appropriated funding to the sector, but many of the sector's actors felt that more attention than at present should be given to the targeting of funding and its sufficiency.

As funding is not determined in the strategy, this has diminished its ability in practice to see its measures implemented. Financial contributions to the implementation of the strategy have been meagre in their entirety, and the objectives set, for example for the Comprehensive Cancer Centre, cannot be attained with the current approach and financing.

The tangible results of the Growth Strategy have thus far been minimal and the work is still incomplete in all the various areas. The laws that are of key importance are still being prepared and the establishment of Centres of Expertise has not proceeded at the desired pace. However, work on the Growth Strategy has reinforced prerequisites for their attainment and the objectives remain relevant

No strong monitoring or reporting processes have been organised for the implementation of the strategy. The steering group will monitor the progress of the strategy in its entirety and exchange information on progress made. This has meant that stakeholders not involved in the implementation of the strategy do not have a clear understanding of where the work stands or its results.

4.2 Recommendations

The key objectives set for the strategy remain relevant and work that aims at achieving these must continue over government terms. In order for the objectives to be achieved, the health sector requires long-term, cross-government term work. Instead of implementing new objectives, an effort should be made to ensure that the initiatives promoted in the Growth Strategy are completed.

Cooperation between different actors must be further increased and coordination between actors must be reinforced. The Growth Strategy has increased dialogue and information exchange, but cooperation to implement common goals should be increased even more. For example, a more coordinated approach has been requested for the marketing of health-sector-related competence. As no funding has been linked to the Growth Strategy and the strategy has not altered existing authority relationships, work to attain objectives is still very siloed. Successful attainment of objectives will likely also require structural and funding-related changes.

The responsibility and role of companies in both the implementation of the Growth Strategy and the focus of activities must be increased. The stronger integration of companies to the strategy would support the attainment of the Growth Strategy's goals and objectives. The strategy's key measures are related to public actors and publicly funded activities. Although cooperation between companies and the public sector has developed, companies were considered in many ways to be by the side-lines when it came to the implementation and focus of the Growth Strategy. Companies would like to be more involved in the implementation of the Growth Strategy and the discussions that are related to its progress and they would like to see the needs of companies taken into consideration in the implementation of the strategy.

The monitoring of the Growth Strategy's results will require a common set of indicators and clearer communication to stakeholders on the progress of the work in relation to set objectives. Stronger monitoring and common indicators will support the implementation of the strategy even if the strategy does not include steering power. A clear roadmap with its objectives and indicators will also reinforce the conditions for assessing the adequacy of measures and resources for the attainment of objectives.

Appendix 1 Interviewed persons

Organisation	Full Name
Aalto University	Markus Mäkelä
Avance Attorneys	Mikko Alkio
Bayer	Miriam Holstein
Biocenter Finland	Marja Makarow
Bioteollisuus Ry	Carmela Kantor-Aaltonen
Finnish Bioindustries	Pekka Simula
Business Finland	Auli Pere
Business Finland	Minna Hendolin
Business Finland	Mirja Kaarlela
Business Finland	Pia Mörk
Business Oulu	Maritta Perälä-Heape
Docrates	Ilpo Tolonen
Fimea	Eija Pelkonen
HUS	Markku Mäkijärvi
Kela, the Social Insurance Institution of Finland	Maritta Korhonen
Pharma Industry Finland	Mia Bengtström
Pharma Industry Finland	Sanna Lauslahti
Merck	Petri Lehto
Ministry of Education and Culture	Erja Heikkinen
Ministry of Education and Culture	Riina Vuorento
Orion	Timo Lappalainen
Oulu University of Applied Sciences	Jouko Paaso
University of Oulu	Anne Remes
Sitra	Antti Kivelä
Sitra	Hannu H Hämäläinen
Ministry of Social Affairs and Health	Liisa-Maria Voipio-Pulkki
Ministry of Social Affairs and Health	Saara Leppinen
Academy of Finland	Riitta Maijala
Technology Industries of Finland	Mervi Karikorpi
Healthtech Finland	Saara Hassinen

National Institute for Health and Welfare	Marina Erhola
THL Biobank	Sirpa Soini
University of Turku	Kalervo Väänänen
TYKS	Päivi Rautava
Ministry of Economic Affairs and Employment	Asta Wallenius
Ministry of Economic Affairs and Employment	Kirsti Vilén
Ministry for Foreign Affairs	Antti Niemelä
National Supervisory Authority for Welfare and Health (Valvira)	Jussi Holmalahti

Appendix 2 Interview Outline

1. Background information on the interviewee

- a. Name and organisation
- b. In what way have you taken part in the planning and implementation of the Growth Strategy ?
- c. How well are you familiar with the Growth Strategy?

2. What has been the added value of the Growth Strategy from the perspective of your organisation or group?

- a. How has your organisation promoted issues that are in line with the Health Sector Growth Strategy?
- b. How would you estimate the importance of work on the Growth Strategy in the implementation of the presented measures and recommendations?
- c. What added value has the Growth Strategy brought in comparison to previous approaches?
- d. Who, in particular, will benefit from the Growth Strategy and in what way?

3. The Growth Strategy's strategic choices and foci

- a. From the perspective of your organisation/group what were the most important areas of the Growth Strategy?
- b. Are the choices and framings that were made in the strategy the rights ones/justified?
- c. Have the strategy's priorities been set correctly?

4. Success of the Growth Strategy's implementation

- a. Work methods
- b. Cooperation between the different parties
- c. Decision making
- d. Communication

5. Growth Strategy results.

- a. What matters have been promoted most successfully in the scope of work on the Growth Strategy? Why?
 - i. Have you observed any spin off effects from the Growth Strategy?
- b. What areas are those in which the least headway has been made? Why?
- c. Have the work's priorities focused on the right things in relation to the set objectives and expectations?
- d. How would you assess the success of Growth Strategy in its entirety, its approach and its results in relation to the objectives set for it and the expectations of various parties?

6. What will come after the Growth Strategy?

- a. Should the current operating method continue to be used in the future?
- b. How would you update work on the Growth Strategy in the future?
- c. How would you develop the marketing of Finnish health sector competence in Finland and internationally?
- d. Do you know of alternative or better models for the future promotion of objectives set in the Growth Strategy ?

7. Other possible matters that should be taken into consideration in the evaluation?

- a. Which materials do you feel it would be particularly important for the evaluators to make themselves familiar with?
- b. Who else in your own organisation should we hear in relation to the evaluation?
- c. Possible other issues related to the evaluation that you would like to bring forth?

Appendix 3 Survey Outline

Page 1 – Background information

1. Which of the following best describes your organisation?
 - a. Company
 - b. Advocacy group
 - c. Higher education institution / research institute
 - d. Authority
 - e. City / Municipality / Joint municipal authority
 - f. Development company or funding provider
 - g. University hospital
 - h. Other public healthcare service provider,
 - i. Other, please specify

2. Which of the following best describes the field in which your organisation operates?
 - a. Bioinformatics
 - b. Biotechnology
 - c. Digital health
 - d. Pharmaceutical industry
 - e. Health and social services
 - f. Health technology
 - g. Research services
 - h. Other, what?

3. How well are you familiar with the Growth strategy for health sector research and innovation activities?
 - a. Very well
 - b. Fairly well
 - c. Reasonably
 - d. Quite poorly
 - e. Very poorly
 - f. I do not know

Page 2 – Planning and implementation

4. From the options given below, choose the Growth Strategy areas of measures (at most three) that are most important to the strategy from the perspective of your organisation or background team.
 - a. Universities and cities with university hospitals will draw up action plans for developing hospital cluster research and innovation ecosystems and related cooperation with companies.
 - b. The profiles and research foci of higher education institutions, research institutes and university hospitals will be reinforced when developing the international competitiveness of competence clusters (e.g. profiling, infrastructures)

- c. The health sector research community formed by research institutions and higher education institutions will be assembled to maximise the impact and to create a whole that better serves decision-making and society (participation of the private sector included) e.g. biobanks, the Comprehensive Cancer Centre, Neurocentre Finland
- d. Higher education institutions and research institutions will bring their technology transfer and commercialisation operations closer together in central university cities by assembling them and particularly by reinforcing sectoral national cooperation.
- e. Through cooperation between Tekes (now Business Finland) and the Academy of Finland, funding instruments will be developed further, taking the special features of the sector into consideration in order to make the most of research.
- f. The needs for risk capital in the health sector will be taken into consideration in State capital investment activities (Tesi and Tekes / Business Finland).
- g. The Academy of Finland, Tekes / Business Finland and other public operators will consider the development of the health sector when summarising their strategic and operational models for cooperation.
- h. Seamless joint access to personal health data and patient documents will be facilitated for research purposes. 8. b) A national operations programme and rules for the application of genome data will be drawn up.
- i. A joint operation model will be drawn up to reinforce the work of government ministries and the business sector for exerting influence in the EU.
- j. The implementation of innovative goods will be promoted when modernising the health technology and pharmaceutical legislation as well as in the strategies and public procurement of the health sector institutions.
- k. Proactive control of the research and innovation activities for health sector products and pharmaceuticals will be reinforced by developing company advisory activities. Training on legislation for health sector research, regulations and standards will be increased on a national level.
- l. Systematic activities will be initiated to attract foreign industry investments, and a decision will be made on the related division of labour. An annual marketing plan for the sector will be prepared in cooperation with the sectoral associations and expertise hubs.

Open comments / reasoning:

- 5. Are the Roadmaps' choices and framing listed in the previous question justified?
 - a. Completely right
 - b. Fairly right
 - c. Not right or wrong
 - d. Fairly wrong
 - e. Completely wrong
 - f. I do not know

Open comments:

6. Next, assess the success of the Growth Strategy's implementation in the following areas. (Not successful at all – successful in its entirety – I do not know)
 - a. Work methods (public-private cooperation, inclusion of various actors, etc.)
 - i. How have the work methods been visible in your organisation?
 - b. Cooperation between the different parties
 - i. How has cooperation been visible in your organisation?
 - c. Communication and dialogue (e.g. newsletter and stakeholder events)
 - i. How has this been visible in your organisation?

Reports (e.g. the regulation environment for research and innovation activities, the operating models for the Comprehensive Cancer Centre and a survey on competence, research and key infrastructures in Finland).

7. How have areas and issues that are in line with the Growth Strategy results be promoted in your own organisation (for example your own projects)? (open question)

Page 3 – Results

8. Next, assess how well the Growth Strategy's various areas of measures have been advanced? (No progress has been made – Significant progress has been made, I do not know)
 - a. Universities and cities with university hospitals will draw up action plans for developing hospital cluster research and innovation ecosystems and related cooperation with companies.
 - b. The profiles and research foci of higher education institutions, research institutes and university hospitals will be reinforced when developing the international competitiveness of competence clusters (e.g. profiling, infrastructures)
 - c. The health sector research community formed by research institutions and higher education institutions will be assembled to maximise the impact and to create a whole that better serves decision-making and society (participation of the private sector included) e.g. biobanks, the Comprehensive Cancer Centre, Neurocentre Finland
 - d. Higher education institutions and research institutions will bring their technology transfer and commercialisation operations closer together in central university cities by assembling them and particularly by reinforcing sectoral national cooperation.
 - e. Through cooperation between Tekes (now Business Finland) and the Academy of Finland, funding instruments will be developed further, taking the special features of the sector into consideration in order to make the most of research.
 - f. The needs for risk capital in the health sector will be taken into consideration in State capital investment activities (Tesi and Tekes / Business Finland).
 - g. The Academy of Finland, Tekes / Business Finland and other public operators will consider the development of the health sector when summarising their strategic and operational models for cooperation.
 - h. Seamless joint access to personal health data and patient documents will be facilitated for research purposes. 8. b) A national operations programme and rules for the application of genome data will be drawn up.
 - i. A joint operation model will be drawn up to reinforce the work of government ministries and the business sector for exerting influence in the EU.

- j. The implementation of innovative goods will be promoted when modernising the health technology and pharmaceutical legislation as well as in the strategies and public procurement of the health sector institutions.
- k. Proactive control of the research and innovation activities for health sector products and pharmaceuticals will be reinforced by developing company advisory activities. Training on legislation for health sector research, regulations and standards will be increased on a national level.
- l. Systematic activities (Team Finland Health) will be initiated to attract foreign industry investments, and a decision will be made on the related division of labour. An annual marketing plan for the sector will be prepared in cooperation with the sectoral associations and expertise hubs.

Open comments

- 9. What kinds of benefits has the implementation of the Growth Strategy had on the promotion of your organisation's objectives? (open question)
- 10. What has been the Growth Strategy's greatest achievement? Why? (open question)
- 11. Who or what operator do you feel has benefitted the most from the Growth Strategy? (open question)
- 12. What type of added value has the Growth Strategy produced from the perspective of the health sector's research and innovation ecosystem? (open question)
- 13. How would you assess the success of Growth Strategy in its entirety, its approach and its results in relation to the objectives set for it and the expectations of various parties?
 - a. These have succeeded very well
 - b. These have succeeded fairly well
 - c. These have succeeded reasonably
 - d. These have been fairly unsuccessful
 - e. These have been very unsuccessful
 - f. I do not know

Open comments:

- 14. Has the Growth Strategy added something new to your organisation's activities? If so then what? (e.g. changed approaches to cooperation) (open question)

15. The objective of the Health Sector Growth Strategy has been to comprehensively develop the operating environment for the health sector's research and innovation activities and to increase cooperation and division of work between actors. How would you reform/develop the operating environment for the health sector's research and innovation activities in the future (e.g. priorities, approaches)? (open question)

16. How will your organisation participate in health sector's research and innovation ecosystem development/cooperation in the future? (open question)

Thank you for completing the test!

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