

AN ENABLING STATE –
EXPERIMENTING FINLAND

Eds. Paula Tiihonen and Olli Hietanen

PUBLICATION OF THE COMMITTEE FOR THE FUTURE 10/2014

Cover: Kirmo Kivelä

Back cover: Part of the Artwork Tulevaisuus, Väinö Aaltonen (1932),
photo Vesa Lindqvist.

Committee for the Future

FI-00102 Parliament of Finland

www.parliament.fi

Helsinki 2014

ISBN 978-951-53-3577-7 (paper back)

ISBN 978-951-53-3578-4 (PDF)

ISSN 2342-6594 (printed)

ISSN 2342-6608 (web)

Contents

Background	3
Positions adopted by the Committee	14
Basic messages in the foresight vision set forth in the Report on the Future.....	16
International study connected with the Report on the Future	20
The Government Report on the Future	23
Points raised by the other committees that made submissions on the Report on the Future	25
Factors that are pervading and move structures.....	42
Democracy	43
The economy	46
The tasks of the state.....	48
Technology	51

Background

The future is made together – every person is worthy of a song

The decisions that we make now will be guiding Finland in 2030

Irrespective of our party affiliation, we members of the Committee for the Future are concerned about how our country will cope with a spiral in which the structures of the economy are crumbling and jobs are disappearing in the new global division of labour, while inequality is growing in our society of wellbeing. People are justifiably concerned about how they will cope with change, how they will support themselves, how they will educate their children so that those children will have a good life in Finland.

We in Finland can not blame the European Union or the financial crisis for our problems. We have a crisis of values. Elected representatives of the people have a responsibility to resolve this political crisis. The systemic changes that this new era demands must be made. We need boldness, a willingness to take risks and a desire to conquer the world.

Professor Pekka Himanen's working group points out: when what we are facing is an economic, social, cultural or political crisis, it can not be dealt with and resolved by the means of economic policy alone; instead, sustainable growth presupposes change in the structures of politics, society and the economy.

What must be built in Finland is a virtuous circle, in which dignified humanity, social justice produces a sense of belonging, participation, enthusiasm and a good life. The attitude must be that we can solve Finland's problems and we Finns are needed to solve the world's problems.

Our starting point must be Finland's strengths: a high standard of education throughout the population, good cooperation and a capacity for innovation.

Finland needs bolder shaping of visions and a more inspiring atmosphere

The faster change is and the more complex the world, the greater the importance of visions and political determination. Development of a national foresight operational model is stressed in the Report on the Future: the right information has to be in the right place at the right time. What is especially challenging is developing the way foresight information is used. Weak signals must also be noticed and provision made for surprises, be they good or bad.

We must dare to try the new. Decision making must be a learning process.

The core questions in the submission are how we can conjure up jobs and sustainable growth from virtual environments, technology and our bio-products? How could our society be more inspired, more agile and more creative?

Above all, how can each and every Finn feel proud to be Finnish, of the fact that his or her participation is a decisive factor in ensuring that this nation not only gets by, but is a success?

Finland's future lies in sustainable growth

The world is entering an era of growing scarcity. The limits of the carrying capacity of nature are looming in the distance, more has to be done with less. Technology and a high level of competence are engendering new solutions and new kinds of operational methods. The environment is spared at the same time as products are manufactured to higher quality standards and more efficiently.

Finland must invest resources to ensure a pioneering status in technology, in rising technologies. Contained in the submission is a technological development foresight model developed by our Committee to open perspectives on the future of technology and the future of the economy.

It has produced numerous solutions. These include nanocellulose, printable and inexpensive sensors, battery technology, movement-based drive controllers, real-time modelling of the environment, cloud computing and biochips capable of recognising diseases.

The bio-economy, cleantech and digitalisation are in the vanguard of sustainable growth in Finland.

Sustainable growth calls for structural reform of the economy

Our Committee stresses that creating the prerequisites for growth is a task of the state. Regulatory environments, innovation funding, research, the operational environment and its culture as well as rules of the game must be gotten into shape. That will make possible new research results to be refined to give us products and business operations for the world market.

The health of public finances is the most important matter of all.

The Committee underscores that sustainable growth presupposes a bolder policy supporting reform of the production structure and that new opportunities be seized. That will be promoted by means of experimentation, pilots and comparison facilities in Finland,

putting regulation on a sensible basis as well as through the instruments that taxation offers.

Public procurements by the state and municipalities and development of services offer opportunities in the field of introducing and experimenting with innovations. We need national and regional trial areas, in the countryside, urban areas, development corridors as well as also in schools, health centres and other public organisations. So that we find the best solution.

Essential procurements in the domestic market must be made to support product development and act as a reference in exports. It makes sense to focus national inputs and pilot schemes in the environment, waste management, energy, transport, construction as well as wellbeing and teaching into those technologies that also have prospects of yielding exportable products and services.

Sustainable growth is not just technological renewal; administration, the tasks of the state, competence and our own attitude must be reshaped at the same time.

Sustainable growth creates new jobs

Knowledge work, automatisisation and the virtual economy are changing the nature of work. Whole sectors are dying. The advent of technology is changing production and multipolarisation of the world the structure of work and Finland's position in the international value chain. The new text message service Whatsapp handles 50 billion e-mails with only 50 personnel. Technology does away with jobs, but at the same time it creates new ones. The faster we adopt new technology, the sooner we will achieve a pioneering status.

Any obstacles to reforming the structure of production and job-creation must be identified and dismantled. The emergence and growth of long-term unemployment must also be tackled by means of training, rehabilitation and increasing a variety of incentives aimed at employers and employees, such as wage support and participation payments.

The Committee proposes that training, better upgrading of occupational skills and inspiring work motivation be developed. Principles of early intervention must be embraced. Engagement in the labour market of young people who are at risk of marginalisation must be supported through special measures.

Work is very important both for the individual's wellbeing and the tax base that is the foundation of the welfare state. Finland must strive towards the highest rank in the value chain. A pioneering role ensures jobs.

Finnish tenacity and creativity must be upgraded

Shall we just give up in the face of change or do we want to get by in the new situation? Changes in the economy and working life are also changing society and the values that sustain it, our mental culture.

We need a more enthusiastic, more positive, more willing-to-experiment and more entrepreneurial attitude. Even when companies have funding and requests for offers, entrepreneurs do not necessarily get going.

Independent action on the part of people must be strengthened through new learning, upgrading occupational skills and developing the work culture. An administrative culture that facilitates active citizenship and enterprise must be strengthened on the national and regional levels.

We are entering an era of sharing. Learning, work, livelihood and everyday life are being built together. The new is coming into being through our collective building of knowledge and competence. A community spirit is becoming stronger.

Finnish civil society in renewal

Problems are becoming increasingly complex, information is difficult to obtain and forming an overall picture is becoming harder to do. There is a growing democracy deficit in Finland and this is something to which solutions must be found. Our Committee believes that we need new tools of political work in order to strengthen democracy.

There is a need to strengthen people's direct participation. Parliamentary preparation should be availed of in dealing with broad societal questions.

The Committee notes that democracy is understood too narrowly in Finland. Old democracy needs to be strengthened and new democracy foreseen. Formerly closed decision-making processes are being opened up online. By participating in the network, people contribute their competence, knowledge and experience. Information is increasing the transparency of political decision making and the credibility of politics. By contributing their knowledge and skills citizens mediate their values to serve as a foundation for decision making and at the same time completely new solutions are born. As an operational method it complements representative democracy.

People want to be heard and have an input into decision making. The involvement of citizens not only yields better decision making, but also increases unity between citizens and decision makers.

People's competence must be made full use of

Why do some of us enjoy success, whilst others are only banging their head against a wall? Even at a moment of failure, succeeders are able to give it an importance that supports the goal they have set for themselves. Optimists have embraced an attitude that they can influence their own life.

Failure is a part of a learning process. That attitude gives the courage to experiment and learn. We need more creativity, because creativity is risk taking and a game, and one can never fail in a game.

The Committee believes that schools should adopt an open/sustainable growth model. That means that all can be as good as possible – and that every person has something in which he or she is at his or her best.

Schools must teach pupils the skills that will enable them to cope in the working life of the future. Purposeful use of information and communication technology, virtual learning environments and games, programming, robotics, 3D printing and biotechnology must be increased in teaching.

Change in working life and a sustainable way of life demand a new kind of knowledge production. Nowadays a pupil no longer needs to go to school to obtain information; it is flowing all around us. Education should be oriented towards an active building of knowledge, in which the pupil's own initiative and group interaction are accentuated. A young person must learn the skill to seek information, inspire friends, understand, analyse, create new information and above all be critical when dealing with a flood of information.

The Committee requires that in a time of change management of competence must be developed and resources invested in basic and supplementary training for teachers and personnel. Significant education exports can grow out of all education-related competence.

Individual, constant and open competence, motivation, diligence and enthusiasm must be supported both in early education and in schools by means of creative spaces, new learning environments as well as their associated pedagogics.

When the surrounding world changes, the skills needed to cope in it also change.

The Finnish wellbeing society is founded on trust and participation

The comments concerning the Report on the Future include expressions of concern about growing inequality. Many young people are becoming marginalised, children and families with children are finding themselves in unequal situations and problems are being passed

on across generations. People feel they have few opportunities to make an input; they are not being listened to in matters that affect them.

In the view of the Committee, restructuring of social and health services must be hastened and electronic systems to enhance productivity taken into use in the social affairs and health sector without delay. This will make it possible to change over from redressing problems to preventing them.

The social affairs and health sector must, like school, play a pioneering role in applying and using new technology. This presupposes also development of basic and supplementary training for personnel in the sector. In addition, patient safety as well as data security and protection must be ensured.

A question that must be pondered is how to redefine the tasks of the state, i.e. what can be done, directly or indirectly, in the name of the state and using the state's money.

A wellbeing society will produce agreed services, but people must themselves be more active in their immediate environment. The new promise of wellbeing must be built on the foundation of people's participation. Only together are we powerful.

“Every person is worthy of a song, everyone's life is important”

I wish to thank the experts consulted at our hearings, other Eduskunta committees for their submissions, the committed members of our own Committee and its personnel. The submission is the fruit of our joint efforts. Unique cooperation makes it something that is in and of itself significant. It is a vision and stepmark towards a better future for Finland.

I have been thinking what brings about change nowadays. Change is not brought about by great authority. It is not hatched in the basement of a party headquarters, nor in a ministry. It comes about when one of us – you or I – start doing things differently. It's as simple as that.

The submission of the Committee concludes with the following stance:

On the basis of what is presented in the foregoing, the Committee proposes this stance for adoption by the Eduskunta:

1. The Eduskunta concurs with the stances and policies set forth in the Report, and at the same time
2. requires the Government to draft a science strategy for Finland and, together with the private sector, achieve the funding target of four per cent of GDP set for research, development and innovation activities.
3. The Eduskunta requires that the Government hasten implementation of the new national foresight model and draft a programme and adopt a decision-in-principle by means of which a political commitment to promoting experimentation is made.

4. The Eduskunta requires that reform of working life and creating employment for the Finns be included, as key objectives, in the next Programme for Government in such a way that the theme includes also promotion of enterprise, use of partial capacity for work as well as developing social security in a direction that supports these objectives. Something that must also be taken into consideration in the measures is the principle of early intervention: for example, learning difficulties manifest themselves already at a very early stage and getting young people who are in danger of becoming marginalised engaged in working life must be supported through special measures.
5. The Eduskunta requires that in all of its actions the Government promotes sustainable growth that will give impetus to the economy at the same time as it resolves social and ecological problems. This presupposes, e.g., pruning administrative obstacles, launching experimental projects, and economic guidance.

Päivi Lipponen

Chair of the Committee for the Future

What's Committee for the Future

The Committee for the Future is unique in the world. It is one of the Parliament of Finland's 16 standing committees. Normally all over the world standing committees are for making laws and for making the final decision of the budget of the state. The Committee has 17 members who are all members of the Parliament and represent different political parties. It's only task is to think futures and work for the best possible Future for the people. Time perspective is long and scale of issues broad. Situated in the corner of political life it has a lot of power - not legislative, but initiative and visionary. It really works, it has meetings twice a week.

What are the official tasks of the Committee for the Future? It

- prepares parliamentary documents entrusted to it, such as Parliament's response to the Government's Report on the Future
- issues statements to other committees on matters related to the future when asked to do so
- discusses issues pertaining to future development factors and development models
- analyses research regarding the future, including methodology
- serves as the parliamentary body responsible for assessing technological development and its consequences for society.

What does this mean? The Committee is supposed to deliberate factors that influence the development of the future, futures research and the impacts of technological development. So, unlike the other committees, it does not generally deal with legislative proposals. Instead, it is tasked with drafting the Parliament's response to the Government's report on the future (normally one report during election period) which is handled in the plenary session as well as, upon request, making submissions to other committees and doing preparatory work on other parliamentary matters assigned to it.

Absolutely the most important effort is put on its own issues, own projects. First of all, **power to decide on agenda** is one of the pillars in the strength of the Committee. From the very beginning it has had the initiative power. The Committee itself makes the agenda and chooses methods for its work. Nobody else.

The Committee prepares studies on futures, different options, dangers, scenarios using methods of future research. This means that the Committee must itself create its success and earn esteem for its work in each and every parliamentary 4-year term. What is of essential importance is to choose one MP to act as the coordinator or steering group chair for each project and commit to this work. Especially during this period the use of sections (7) has added efficiency to preparatory work.

By virtue of its exceptional role and task, the Committee serves as the Parliament's Think Tank and in this way also serves our parliamentary institution by obtaining information to support decision making and appraising the long-term effect of decisions.

Something of the mentality, the mindset tells that the English name was originally Committee *of* the Future, but this was changed at the first meeting to Committee *for* the Future. I have worked in the Committee from the very beginning and I remember that it was felt that the new preposition reflected a proactive and positive grasp on the future. Often proposed name “Committee for the Future, Science and Technology” is not comprehensive, because it excludes innovations (technological and social) for instance, in addition to which it is above all unwieldy and tied to a particular time.

Committee has a right also to draft it ‘s own future reports which are discussed in the plenary session. Deliberation of so-called own matters in a plenary session, as a topical debate on the basis of reports, is for sure a bit problematic. Another method that has been proposed is one in which the Committee would present joint long-term parliamentary initiatives, but this would for the long run blur the significance of both the Committee and the initiative institution. I would say that the same kind of problems are noticed with different kind of “ombudsman” organizations, including ombudsman for future generations. Those ombudsman that are part of parliamentary system are strong ones, others weak.

For all committees the corresponding minister/corresponding ministry is important. The Prime Minister as the corresponding minister is the only appropriate choice for the Committee for the Future. If, for example, a minister for science, technology and innovation is appointed, the matters associated with substantive questions that his or her remit would include would be in practice future-related. However, in accordance with the idea on which the Committee is founded, the broad scope of its tasks and a high level of Government-Parliament dialogue, the cabinet member with foremost responsibility must ultimately be the Prime Minister, who also chairs in Finland the Research and Innovation Council.

In accordance with the political system, it is the Prime Minister who should choose the theme for the Governmental Future report. There has been 7 reports:

- 1993 “Report on the Long-Term Future”
- 1996 “Part I “Finland and the Future of Europe”
- 1997 “Part II “Honest and Courageous – a Finland of Responsibility and Confidence”
- 2001 “A Finland of Balanced Development 2015”
- 2004 “A Good Society for People of All Ages”, a report on demographic development, demographic policy and preparation for a changing age structure, and
- 2009 “Towards a Finland of Low Emissions”, a report on climate and energy policy
- 2013 “Sustainable Growth for well-fare”.

Nearly 20 years ago, it was determined that the theme of the first report on the future in the early 1990s would be, already by virtue of the parliament debate that had preceded the Committee's establishment, a general one. The theme covered all sectors and levels of political activities, starting from global development, extending to Europe and Finland and ending with management of affairs and institutionally always down to the local level and even to families.

The theme of the second report a few years later, in 1996, focused on Europe. Since then, the Prime Minister/Government has chosen the themes dealing with important special themes, confined mainly to the national level. The 2009 climate report was partly international, but still on a special theme.

In order to strengthen the political system as specifically an active dialogue between the Parliament and the Government on the long-term future, it was appropriate and timely to switch again to a multi-sector, broad and international deliberation of the future. The theme for the present parliamentary term "*How Finland is equipped for success in a changing world*", the Finnish sustainable growth model in a changing world, provides again an opportunity to make a general exploration of the state of Finland in a global world and the scenarios associated with it and/or a map of the future with alternative development paths. The general map of the future is an umbrella, underneath which are located the special studies that the members of the Committee choose and direct. Outlining Finland's long-term position and alternatives in both the global and European environment and in the Nordic countries and the neighbourhood of Russia is now especially important, given that on the level of Europe as a whole the financial crisis has clearly highlighted uncertainties, structural problems and needs for change.

The Committee for the Future has chosen in autumn 2011 four areas of study for itself:

1. Sustainable Growth
2. An Inspired Society
3. Acquiring New Knowledge, and
4. Can the Welfare Society Endure?

Then from the methodological point of view some projects more:

5. crowdsourcing
6. radical technologies.

The dialogue between the Government and the Parliament on the long-term future has got its flexible forms during 20 years.

The Committee for the Future is the only forum in the Parliament where all parties can together, without unnecessary regional, chronological or sectoral limits, appraise the development of the entire political system against a time frame that is longer than that of day-to-day politics and a parliamentary term. Turmoil and uncertainties in the economy are elevating democracy and politics to the centre of interest in a new way.

Summary: The Committee for the Future is not one of the most desired committees after a general election among MPs, but it has proved itself to be a good vantage point from which to follow changes in the world. A considerable proportion of ministers have been members of the Committee. In the period 2003-07 the Committee's chair Mr Katainen was elected as the leader of the biggest opposition party, the National Coalition, and became Minister of Finance after the election. The Committee's report "A Caring, Encouraging and Creative Finland", which appraised the information society, was incorporated, complete with name, into the Programme for Government. Then Mr. Katainen was a Prime Minister and now Commissioner in the EU. There are strong signals that the next Prime Minister will come also from members of the Committee. Mr Juha Sipilä, who also was chosen after working only a short time in the Committee to lead the big party, the Center party. He is now number 1 in polls/gallups and nowadays the winner in elections will quite sure take the Prime Minister's post. We will see – elections are in Spring 2015.

Paula Tiihonen

Secretary of the Committee for the Future

Positions adopted by the Committee

(NB: Unofficial translation)

TuVM 1/2014 vp - VNS 7/2013 vp

Government Report on the Future: Wellbeing through sustainable growth

Introduction

Initiation

On 7 November 2013 the Eduskunta sent the Council of State (Government) "Report on the Future: Wellbeing through sustainable growth" (VNS 7/2013 vp) to the Committee for the Future for its deliberation.

Submissions

In accordance with a decision of the Eduskunta, the Finance, Transport and Communications, Agriculture and Forestry, Defence, Commerce, Education and Culture, Social Affairs and Health, and Employment and Equality committees have made submissions (VaVL 4/2014 vp , LiVL 1/2014 vp , MmVL 11/2014 vp , PuVL 2/2014 vp , SiVL 1/2014 vp , StVL 1/2014 vp , TaVL 13/2014 vp and TyVL 2/2014 vp) on the matter and these have been appended to this submission.

Positions adopted by the Committee

Supporting arguments

1. Background

In addition to contentual themes, the manner in which the Government Report on the Future was conducted was noteworthy. The preparatory work was a lengthy process involving many stages with the powerful and comprehensive involvement of a variety of stakeholders and citizens by means of new operational models and instruments. The process was also more international than usual. That is why in its submission our Committee examines the totality of the process through which the Government drafted its Report on the Future; both the Report itself and the foresight visions closely linked to it (www.2030.fi) and the two reports drafted by Professor Pekka Himanen's international

working group; *Sininen kirja* (Blue Book, 2012) and *Kestävän kasvun malli, globaali näkökulma* (Sustainable Growth Model, a global perspective, 2013).

Based on the experience gained from the process of drafting reports on the future, the Government has also devised a new operational method for use in national foresight drafting (Common and constant foresight - a proposed national operational method, VNKR 1/2014). The intention with the new operational method was to ensure that correct foresight information is available at the right time in the right place. Cooperation between users and producers of foresight information is being developed at the same time. A further factor in the background to the proposal is an external evaluation (2013) of the 2030 foresight section that was commissioned by the Government.

The aspects highlighted by our Committee in this submission are based on the study projects we undertook in the period 2011-2014, consultations of experts at hearings as well as submissions made by other committees on the Report on the Future.

Early in the term of the Government, in the autumn of 2011, our Committee heard the views of numerous experts and made visits to, among other countries, the United States, Canada, Estonia and Russia. The matters accentuated at the hearings included rapid technological change, the practical breakthrough of the knowledge society, new operational models, development of research and training, an environment and atmosphere supportive of growth and enterprise, the challenges facing the welfare society and the risks and opportunities that the international operational environment offers (China, Russia, the borders of Europe and the future of Islam) as well as surprises, i.e. Black Swans. Especially to study these themes, seven sections were created: 1) Sustainable Growth, 2) Acquiring New Knowledge, 3) An Inspired Society, 4) Will the Welfare Society Endure, 5) Crowdsourcing, 6) Radical Technologies and 7) Black Swans.

Later, in collaboration with the Aleksanteri Institute, a research project under the heading Russia in its Neighbour's Eyes was launched. It is a continuation of the Russia scenarios formulated earlier by the Committee. The results will be published in November 2014. The Committee familiarised itself with the borders of Europe and the future of Islam on its visit to Turkey. It studied the global economy and especially the cleantech sector when, using a new operational model, it cooperated with the Chinese People's Political Consultative Conference (CPPCC) and other Chinese partners and Finnish technology companies. Parliamentarians and companies worked seamlessly together. The Committee for the Future stresses three themes in its submission:

1. Sustainable growth
2. Training and research
3. Development of a national operational model for foresight.

And four interdisciplinary themes that pervade society and move structures:

- a) Democracy
- b) Economy
- c) The tasks of the state
- d) Technological breakthroughs.

As a preventive measure, the development of a Finnish operational model for foresight is accentuated in the submission on the future report. Something about the new role of the state is reflected by, in turn, a strengthening of facilitation, participation and partnership as well as promotion of an experimental society. These, too, have a preventive effect, also on long-term growth and wellbeing as well as on resilience, the ability to recover from crises.

Assessment of the societal importance of technology is one of the fundamental tasks with which our Committee has been entrusted. We see technology as a powerful engine of the economy and as a force that shakes society as a whole. The technological development foresight model developed by us, and which is described in our publication “A hundred new opportunities for Finland: radical technological solutions” (TuV 6/2013), opens many new perspectives on the future of technology and the economy.

During the present government term we have celebrated both the 20th anniversary of the Committee for the Future and the 150th of the creation of the Diet, the legislative assembly that preceded the Eduskunta. In conjunction with these events, the Committee has deliberated the history and future of democracy and compiled these thoughts in the book *New and Old Democracy* (TuV 7/2013 vp). During the spring session in 2014 we issued a statement on the Government Report on Democracy Policy (TuVL 1/2014 vp - VNS 3/2014 vp). Because the future of democracy and politics is an important question in the world, a unifying Europe and a Finland that is restructuring its welfare society, the future of democracy can not be ignored in a submission on the future.

The economy is the foundation on which the future is built. There is a lot of disagreement about the development of the economy, but especially about what politics can and should do with respect to it. In any case, a weakening of the economy and mass unemployment that has profoundly affected people almost everywhere in the EU has set new demands also for the state, the political system and democracy. We have to examine the role and tasks of the state from a new basis. The size of the public sector is the focus of criticism, especially in the Nordic model. In its capacity as a force steering economic development, the EU has acquired, in addition to legislative power, a tighter grip on the Member States’ budgetary power. Over the long term, what is at issue on both the EU level and the national level is the sustainability of democratic structures, the trust of citizens and the social contract.

2. Basic messages in the foresight vision set forth in the Report on the Future

The themes dealt with in the foresight section of the Government Report on the Future included administration as a facilitator, rejuvenation of companies, working life in the future, the opportunities that scarcity offers, the wellbeing of citizens and their participation as well as a new Nordic geography. Matters examined as interdisciplinary questions were competence and abilities, changes caused by the digital economy, globalisation and flexibility as well as resilience, the ability to cope with crises. Getting a culture of experimentation to take root in Finland became a core message in the foresight section. Motivated actors must be given the opportunity to look for new solutions to meet the needs of the national economy, the operating environment and individuals. Other

themes that came strongly to the fore in the foresight section were the perspective of people's everyday needs as well as the wellbeing of children and adolescents.

Our Committee accords with the goal, as expressed in the Report on the Future and its foresight section, of promoting a society of experimentation. The Committee has proposed this also in its own report Kokeilun paikka! Suomi matkalla kohti kokeiluyhteiskuntaa (A place for experimentation! Finland on its way to being a society of experimentation TuV 1/2013).

The Committee emphasises that sustainable growth presupposes a more courageous policy supporting a regeneration of the structure of production as well as grasping new opportunities. This can be promoted through, among other things, experiments, pilot schemes and domestic comparison institutions, making licensing practices easier, dismantling unnecessary regulation and putting other regulation on a sensible basis as well as through the means that taxation offers.

The Committee proposes that:

- 1. A programme be drafted and a commitment undertaken politically, by means of a decision-in-principle by the Government, to promote experimentation,*
- 2. that unnecessary regulation be pruned and dismantled,*
- 3. that the state and municipalities be required to encourage the adoption of innovations and trials with innovations in public procurements and the development of services.*

Through the programme and a visible political commitment, the national attitude atmosphere will be made more enthusiastic and positive than it now is and also authorities and decision makers will be encouraged to experiment. There is a need for national and regional experimental areas, in the countryside, urban areas, development corridors as well as also in schools, health centres and other public organisations.

As an evaluation of the foresight section, it is noted in the Report on the Future that the Finnish foresight field is strong and includes a large number of actors in the roles of producers, mediators and users of information, in both the private and the public sector. At the same time, national foresight is also fragmented, actors are doing overlapping work, information is not easily available and its usability is poor. Foresight activities likewise lack continuity and some questions relating to the future that are important from the perspective of decision making can remain in the shade. According to the Government, there will be a need from now on for better information than what has been available up to now about such matters as major global trends and analysis of their reflections on Europe and Finland. In addition to megatrends, there is a need for situational awareness about these faster-paced phenomena as well as the opportunities and risks associated with them. What is needed is both expert knowledge and also citizens' evaluations and an open discourse on the future. On this basis, a new national foresight operational model, in which foresight information produced in Finland and the world would be organised, evaluated and mediated through an open network for use in decision making, is proposed in the Report on the Future. A foresight process of this kind that works well would be, in

the assessment of the Government, a competitive advantage and enhance Finland's pioneering status.

The Government has proposed that the national foresight operational model be developed in the following way (VNKR 1/2014):

1. The Government will appoint a foresight pilot, a body that will contain both permanent and rotating members. The foresight pilot will be tasked with coordinating and adding an innovative dimension to Finnish foresight activities. A secretary general appointed by the Office of the Prime Minister will pre-process decisions of the foresight pilot and support its work. The permanent secretaries will be given regular reports on the results.
2. The national foresight network must be broadly-based and its mandate must be made concrete. As needs dictate, the members of the network will form their own networks, which can be both organisation- and theme-based and in which representatives of several different instances will participate.
3. Foresight actors will be brought together through regular foresight forums to share and discuss topical future-related themes and create new knowledge. The results achieved at the forums will be mediated widely and will form a dense communicative network.
4. Alongside foresight activities in Finland, a report on international-level foresight will be regularly compiled using studies commissioned from Finnish or foreign researchers. This research can focus on a pre-chosen theme or sift through new phenomena.
5. National foresight competence will be supported by arranging and providing training extensively. Responsibility for arranging training will be entrusted to the Foresight Secretariat at the Office of the Prime Minister.
6. The principal target group of the understanding and insight created with the aid of the new operating method will be political actors, for whom foresight reviews will be regularly drafted. The aim in the foresight reviews will not be agreement between actors; instead, a comprehensive picture of the opportunities and risks of the future will be created.
7. The possibility of creating an Internet portal called Tulevaisuuskartasto.fi ("Futureatlas.fi") to provide foresight data and facilitate analysis and discussion will be examined.
8. The effectiveness, topicality, objectivity and quality of the operating method must be monitored and evaluated on a regular basis.

The challenge does not lie so much in increasing the amount of foresight knowledge that is available, but rather in compiling the abundant material that is constantly being created and promoting the use of this knowledge: there is a need for a system that compiles the right information, into the right place and at the right time.

The Committee for the Future supports the development of a national foresight operational model in accordance with the Government's proposal.

The Committee stresses the importance of evidence-based decision making.

In addition to identifying various trends, we must also allow for surprises: wild cards and black swans, i.e. events that are improbable, but possible, and which would have a major influence if they occurred.

Matters highlighted in the report of the Committee's Black Swans section (TuV 4/2013 vp) are negative thinking, rapid technological change, environmental problems, collapse of the economy, wars and disturbances in Finland's immediate vicinity as well as various everyday challenges that include the availability of foodstuffs, medicines and energy.

When it was drafting its submission, the Committee heard the views of also regional foresight networks. A point that came strongly into focus in this conjunction was that, although we live in a shared world and megatrends are the same for everyone, the effects they have on various actors are very different. The opportunities and resources available to and the challenges facing metropolitan areas, other large cities, regions and rural areas are quite different in nature. That is why there is a need for regional foresight networks to harmonise international and national megatrends with the local context. The following kinds of needs and perspectives relating to the development of regional foresight were highlighted by the regional foresight networks at hearings arranged by us:

Foresight is associated with renewal and structural change.

- Contingency planning for alternative futures improves the resilience to recover from disturbances and increases flexibility.
- There is a need for operational models to bring actors together, networks, and production and distribution of information.
- Regional foresight is participation and dialogue and it is also closely linked to close-range democracy.
- There is a need for a common national knowledge base and in addition a visionary interpretation from the perspective of the regions.
- At its best, foresight is an active shaping of the future that draws on regional strengths and possibilities.

Foresight demands new tools and a common knowledge base.

- There is too much information and therefore the important things get lost in the flood: the knowledge that exists must be compiled.
- There is a need for better collaboration between national and regional foresight.
- In addition to foresight, there is also a need for decisions, inputs and concrete measures.
- There must be a changeover from a culture of planning to a culture of doing.
- There is a need for unifying pilots, experiments and development platforms to give concrete form to intelligent regional specialisation and group networks together (e.g. in the pharmaceutical industry and the bio-sector).

- Senseless norms/pointless obstacles must be dismantled – the state as a facilitator and not just commanding and prohibiting.
- The quality of regional foresight must be developed systematically.
- The support provided under the present Government’s education policy must be continued in order to ensure uniform and comparable information and planning of resources.

The Committee stresses that regional foresight networks must be involved and given a role in developing the national foresight model. Interaction between national and regional foresight activities must be improved. It is not enough that we identify national and international trends; they must also be interpreted regionally so that foresight leads to proactive decisions, commitment and measures.

3. International study connected with the Report on the Future

The interim report *Sininen kirja* (Blue Book) by Professor Pekka Himanen’s working group begins with the statements: “We have a model of development that is not making us happy, but is destroying our planet” and “The focus of concentration in the past 50 years has been on how to lessen the malaise. The concentration in the next 50 years will have to be on how to actually enhance well-being.” In the working group’s final report the new model of sustainable development is examined in the light of three different themes: 1) sustainable ecologicality, 2) sustainable wellbeing and 3) a sustainable economy. The ultimate goal of development is 4) a life of dignity. On the basis of this analysis, the Himanen working group presents Finland’s sustainable growth model 2.0 as a good framework in which sustainable ecologicality, a sustainable economy, sustainable wellbeing and a life of dignity nourish one another. Implementing the model in practice highlights three major challenges:

1. The perspectives of economic sustainability or material scarcity.

- The prospect of slow growth in Europe as the structure of the global economy is transformed.
- The limited nature of the public sector.
- The limits of ecologically sustainable growth.

2. Sustainability of wellbeing or new life habits

- Ageing: as a consequence of a lifestyle in which people have fewer children and live longer
- Physical wellbeing: as a consequence of a lifestyle with which excess weight and a lack of mobility are associated
- Mental wellbeing: as a consequence of questions of mental wellbeing, such as depression and work contentment, which are related to lifestyle, assuming centre stage

3. Ecological sustainability, i.e. especially responding to climate change

- Climate change as well as other limits of the sustainability of nature
- The possibilities of informational ecological economic growth
- Immaterial factors in wellbeing.

The Himanen working group calls the steps towards the new society of wellbeing 2.0 the Five Giants:

- Positive vs. negative,
- Proactive vs. reactive,
- Subject vs. object,
- Holistic vs. partial, and
- State vs. society.

The steps form pairs of opposites, which indicate the direction of the shift. Also a sixth pair of opposites, dream vs. fear, is presented in the summary of the final report. The message that the Himanen working group proclaims is an ethical one: a framework of good and the life of dignity that springs from it are set as the goal. In order for us to achieve this, our society must be made more positive, more proactive and more holistic. In the words of Himanen: "What is ultimately a bigger challenge than even the sustainability deficit afflicting Finnish society and its wellbeing and the Finnish economy is the country's spiritual sustainability deficit. We now need greater visions of the future and a mental culture conducive to their success." At the same time, civil society rather than the state must be strengthened in a way that makes people/citizens a subject rather than an object.

The Committee concurs with the view that the atmosphere in society holds a key position. We need a more enthusiastic, more positive, more willing-to-experiment and more entrepreneurial attitude. This presupposes a strengthening of civil society, new democracy and crowdsourcing.

The Committee's Inspired Society section studied the relationship between a social environment and enterprise, especially growth-oriented entrepreneurship. The study yielded the report Internal Motivation (TuV 3/2014), which has been used also in the Eduskunta's internal training programmes. In the view of the Committee, enthusiasm is a sustainable way of increasing work productivity and preventing a sustainability deficit in the welfare society. The challenge at workplaces is to create a work and managerial culture that supports the individual's internal motivation and enthusiasm. An administrative culture that facilitates active citizenship and enterprise must be created both nationally and regionally at the same time.

Correspondingly, the Committee section studying New Learning examined differences between schools achieving above- and below-average results and published the book New Learning (TuV 8/2013). What became the section's core theme was a model of open/sustainable growth, by which is meant that, although not everyone can be very good at, say, mathematics, all can be as good as possible – and also that every person has some or other thing at which precisely they are at their best.

This individual, constant and open competence, motivation, diligence and enthusiasm must be supported both in early upbringing and also in schools by means of, inter alia, creative spaces, new technology and new educational materials as well as the pedagogics associated with them, development of the management of educational institutions as well as basic and supplementary training of teachers and other educational staff.

On the basis of an international comparison (USA/Silicon Valley, China, South Africa and Chile) and a theoretical examination, the Himanen working group condensed the most significant conclusions arising from their research into three big matters:

- Transition from the industrial welfare state to the wellbeing society of the information age
- Transition to the ecological economy of the information age
- An intellectual culture that supports transitions in the world of learning, work culture and political leadership.

What is involved is the creation of a linkage between human development and informational development as well as the cultural context uniting them in such a way that they form a positive framework for sustainable development. With respect to the international comparison, the working group notes that the future success of all of the models examined depends on the challenge of this same sustainability/positive framework – irrespective of how successful regions and national economies have been to date.

On the concrete level, the working group has proposed, inter alia, the following kinds of measures:

Lifestyle challenges: a lifestyle in which people have fewer children and live longer leads to ageing. In addition, the challenges of mental wellbeing that are associated with lifestyle assume centre stage in a new way. The challenges of lifestyle include also problems of life management and choice the whole time in a life that is becoming increasingly complex.

Economic challenges: as the maintenance ratio, i.e. the ratio of working persons to those they support, changes, the welfare state runs up against a sustainability barrier. The decisive factor is the ratio between the productivity of the total work input and the productivity of activities that create welfare services. A matter that must be taken care of at the same time is sustainability of the less-discussed support ratio; in other words, the public sector's share of GDP must be in a sustainable proportion to the private sector that supports it.

Technological challenges: new information technology makes it possible both to enhance productivity and find new wellbeing-related solutions. However, productivity and wellbeing will increase only if the introduction of technology is combined with a new management and work culture.

On a detailed level, the working group has proposed that work careers be lengthened by two years, raising the employment rate by two per cent, improving the productivity of

public services by two per cent, improving work wellbeing by one per cent and a programme to raise the production potential by one and a half per cent. Implementation of these measures will require utilisation of new technology as well as a change in managerial and work culture to develop work welfare and productivity – as well as a more precise definition of the ethical vision of the welfare society. The Himanen working group, which also drew on the philosopher John Rawls' Theory of Justice, emphasises the principle of equal opportunities, according to which the state is in the final instance responsible for ensuring: 1) equal opportunities for everyone, 2) equal protection for all and 3) that everyone is able to share the benefits of development.

The Committee regards as important the principle of equal opportunities highlighted in the report of the Himanen working group. The Committee's Can the Welfare Society Endure? section has studied the same matter (TuV 4/2014) and condensed its view as follows: everyone has a right and an obligation to be of use. This view stresses, inter alia, the importance of partial ability to work: everyone must have an opportunity to participate and feel needed. A wellbeing society is defined through rights and obligations as well as participation.

That is why our Committee proposes that the Finnish wellbeing society is developed with the aid of a partnership programme, by means of which cooperation between the first, second, third and fourth sectors will be supported and regions and people will be helped to become different in accordance with their own strengths and needs. Crowdsourcing provides one of the ways in which this can be promoted.

4. The Government Report on the Future

In the actual Report on the Future, the Government emphasises technological change, the digital economy, ageing as well as sustainable development. Finland is recognised as having strengths in such areas as Arctic know-how, clean nature, bio-economy and green growth (cleantech). Also mentioned as important elements in sustainable growth are enterprise, an appealing urban environment, a lively and enthusiastic atmosphere, a well-functioning society, stability and safety as well as dependable infrastructure.

Particular causes of concern mentioned in the Report on the Future are marginalisation of young people, inequality between children and families with children as well as inequality being transferred across generations. It is estimated that about 30,000 young people are completely outside working life or studies. Even a very small amount of support early on can prevent the emergence of major problems.

The Committee recommends that work careers be lengthened, especially in their beginning stage. This will be achieved by developing the Youth Guarantee, devoting resources to student guidance, internship, work during studies and summer work as well as by improving familiarisation and supporting a good reception at the first workplace, for example assigning a mentor and adopting the master-apprentice model. Getting young people who are in danger of marginalisation engaged in work must be supported through special measures. The Committee supports also the

principle of early intervention. For example, learning difficulties are evident already at a very early stage.

On the basis of changes in the operating environment, such as climate change, development of the digital economy and the ageing of Finnish society, the Government has formulated in its Report on the Future a new sustainable growth model, presented by the Himanen working group and based on a good framework. In the Government's view, growth must be sustainable and employment-generating and it must also promote the wellbeing of citizens. The model is essentially linked to the new role of the public authorities as a facilitator as well as to building an experimentation society that encourages enterprise and promotes innovation. Other factors that are identified in the Report as a foundation for success and wellbeing are a new union between work, learning and enterprise as well as a diversification of culture, communality and participation and promotion of close-range democracy and civil society. According to the Report, the importance of the Third Sector will increase.

Civil society and citizens' opportunities can be promoted by means of, among other things, crowdsourcing. The Crowdsourcing section of the Committee studied the possibilities and challenges associated with crowdsourcing and also carried out two pilot schemes on the dedicated Internet platform www.suomijoukkoistaa.fi : 1. The Ministry of Finance's Finland's Open Government Partnership programme (TuV 2/2012) and 2. The Ministry of the Environment/Government proposal for legislation on off-road traffic (TuV 1/2014).

Based on its experience, the Committee recommends that experimentation with and development of crowdsourcing as an instrument promoting democracy and participation and also as a forum for new ideas be continued on all levels of administration. The aim of grasping the possibilities that crowdsourcing offers should be enshrined in the next Programme for Government. A party responsible for crowdsourcing work should be appointed in the Government.

The problems of wellbeing will lessen and the welfare society's sustainability deficit will be abolished if we succeed in creating new work. This is taken into account also in the Report on the Future, according to which the supply of and demand for labour must be increased in all stages of a work career; beginning, end and middle. According to the Report, achieving this goal presupposes greater flexibility in dovetailing work and learning across the various stages of life. More attention than hitherto must also be paid to work wellbeing, people's ability to carry on working and lifelong learning. There is a need for a flexible transition into and out of working life, work of a part-time nature and employment for part-abled people as well as for combinations of work, study and enterprise. Social security must be structured in such a way that it is better to earn at least part of one's income by working than to be completely dependent on social security payments.

The Committee agrees with the Government that work is of great importance both for the individual's wellbeing and also for the tax base of the welfare society. New technology, new operational models and the increasingly multipolar nature of the world are right now changing the structure of work and Finland's status in

international value chains. Possible obstacles to re-shaping the structure of production and employment must be identified and dismantled.

The emergence and growth of also long-term unemployment must be tackled by increasing training, rehabilitation and various incentives aimed at employees and employers such as wage subsidies and participation rewards. The Committee recommends that a key objective in the next Programme for Government and also a theme for a later Government Report on the Future be that of restructuring working life and employing Finns in such a way that the theme includes also promoting enterprise, using people's partial work ability as well as developing social security in a direction that supports these aims.

5. Points raised by the other committees that made submissions on the Report on the Future

The Committee for the Future received submissions concerning the Report on the Future from the Finance, Transport and Communications, Agriculture and Forestry, Defence, Education and Culture, Social Affairs and Health, Commerce, and Employment and Equality committees.

The Finance Committee focuses in its submission on the general points of departure and objectives in the Report as well as on some considerations that are of central importance from the perspective of the sustainability of public finances. It also evaluated what the Report had yielded and the novelty value of the information it had produced.

The Finance Committee lauds the fact that the Report draws attention to questions that are of key relevance for Finland's long-term future, but that otherwise would receive too little or scattered attention. In addition, in the view of the Committee, sustainable growth has been understood in the Report sufficiently broadly as an economic, ecological and social dimension and as a development that imposes obligations across generations. Something that the Committee sees as meriting trial is the way in which the Report has been carried out by involving extensive spheres and accords also with the Report's target vision of a positive Finland, in which the foundation for wellbeing has been secured and where it will be good for everyone to live in 2030.

At the same time, however, the Finance Committee points out that something detracting from the Report is that it only sets policy lines concerning the prerequisites for sustainable growth and does not contain a programme of action. Like the Defence Committee and the Commerce Committee, the Finance Committee also draws attention to the fact that the Report does not contain an examination of different alternatives nor a risk analysis. In common with the Employment and Equality Committee, the Finance Committee regrets the absence of an evaluation of the criteria for success in achieving the objectives set.

The Finance Committee notes that growth of global interdependencies and the rapidity of the changes facing us as well as key megatrends, such as globalisation, climate change, digitalisation and changing values, have been correctly identified in the Report. Despite

the challenges it faces, Finland is, in the Committee's assessment, well-equipped to create new sustainable growth. The foundation for this is seen as being a well-functioning, stable and safe society, a high level of competence as well as a climate of trust that is strong in international comparisons. Additional opportunities are opening up in, for example, the Arctic region as well as in general by playing a pioneering role in sustainable development in cleantech sectors. The Finance Committee additionally notes that matters appropriately highlighted in the Report are the present challenges facing public finances in Finland, the sustainability deficit and its essential background factors, slow economic growth as well as a dwindling population of working age, a weakening of the maintenance ratio and growth in age-related costs.

Based on this situation description, the Finance Committee would, however, have liked to see a more precise formulation of the public services promised to future generations. In the view of the Committee, other matters that have also been given too little attention in the Report are key fundamental prerequisites for economic growth, a higher rate of productivity and the availability of more jobs, changes in the content of working life and measures to improve work wellbeing and people's ability to carry on working that are called for due to a shortage of labour as well as inputs into reconciling working life with family life.

The Finance Committee finds the underlying objective in the Report, that of guaranteeing wellbeing and a life of dignity for everyone in Finland in 2030, to be a good one. The Committee concludes by highlighting, as individual questions relating to public finances, a sustainable tax system, the importance of work wellbeing, incentivising work, a low rate of employment, a high rate of incapacity for work, a trend towards inequality as well as, for example, the changes in corporate culture that digitalisation calls for. These themes should be given closer scrutiny in order to achieve the goals desired.

A matter that the Finance Committee highlights as an example of positive change is that ageing generations are now better-educated, in better condition and wealthier. Also educational background has been found to raise the retirement age and increase the number of healthy years of life. When prosperity in general is increasing, it influences demand for free time and through that the economy. Therefore also growth potential, and not just costs, is associated with ageing. Thus the question of what effects ageing has reveals many aspects, especially when four or five generations living at the same time will be increasingly common in the future.

The report Wellbeing through Sustainable Growth concentrates on the prerequisites for creating sustainable growth in order to ensure future wellbeing. It is pointed out in the Report that the most promising growth areas were not precisely picked out when the Report was being drafted, although there would have been a demand for accurate hints. The aim has been to formulate principles on the basis of which tangible reforms can be shaped in further work. The Report itself is not a programme of measures. It is pointed out in it that identifying opportunities for growth and job-creation and grasping them is a task for companies, municipalities or bodies like NGOs. According to the Report, it is even less justified in a small country like Finland for growth sectors to be defined or selected on the level of the state. Therefore the task of public administration is to put in place the prerequisites for growth and ensure that growth is sustainable by creating an enabling operating environment and culture as well as rules of the game.

In the view of our Committee, a mere description on a general level of changes and challenges in the operating environment and of policy lines relating to measures is not sufficient action to bring about a society that has bolder visions and is more inspired.

The Committee is also of the view that something else that is not enough is to leave it to someone else to take responsibility for more precise measures.

In the opinion of the experts heard by the Committee, the lack of tangibility in the Report is a weakness. Making something possible does not mean leaving things undone and failing to adopt a stance. Active deeds and bold decisions are associated also with facilitation.

Therefore our Committee has endeavoured in its own submission to give concrete form to the policy lines that the Government has set forth in its Report on the Future, and which are in and of themselves correctly oriented. In addition, the Committee highlights in its own submission some matters brought up by experts and other committees that have not been given sufficient attention in the Report.

The matters that the Transport and Communications Committee dealt with in its submission are maintenance of transport infrastructure, availing of digitality and cyber security. A point emphasised by the Committee is that sparsely populated areas, smaller urban areas and big cities have different kinds of development needs. Looked at from the perspective of transport infrastructure, the biggest threat is the rapidly growing repair debt (€2-2.5 billion). At the same time, intelligent traffic systems and services are bringing new opportunities for business operations, especially with applications associated with sustainability and safety. The ways in which new business operations can be promoted include open data, putting resources into research and dismantling unnecessary regulation (e.g. making crowdfunding and experimentation easier).

The Transport and Communications Committee notes in its submission that growth in the volume of car traffic within cities and between urban areas may even be replaced by a downward trend. Factors contributing to this include ageing, the consumption habits of the young age cohorts as well as digitalisation. This trend of development presupposes investment in public transport. Special support will be needed for public transport and information networks also in sparsely populated areas. With regard to cyber risks, the Committee believes resources must be put into both preventing risks and recovering from disturbances. Citizens' rights, e.g. in data protection, must be ensured at the same time.

Our Committee stresses the importance of transport infrastructure and information networks as a prerequisite for sustainable growth. The main arteries that are important for the economy and wellbeing of regions must be kept in good condition. Especially important from the perspective of sustainable development is determined development of public transport and intelligent traffic.

Our Committee has stated in its submission on a report on transport policy (TuVL 3/2012 vp) that the determined measures called for by growth in the number of electric cars on the road must be taken immediately. It proposes that:

- 1. sales of electric and other low-emission cars be boosted by means of fixed-term tax concessions*
- 2. the state and municipalities obtain electric and other low-emission cars for their own use*
- 3. municipalities launch pilot projects and give fixed-term relief in relation to, e.g., parking*
- 4. that national pilot areas for intelligent traffic be created in urban areas and development corridors*
- 5. Finnish intelligent solutions be sought for transport, inter alia through taxation*
- 6. public funding be channelled into developing and commercialising intelligent traffic solutions*
- 7. a road map showing commercialisation prospects for virtual environments and augmented reality be drafted and a growth strategy for the creative digital industry formulated in order to support decision making*
- 8. companies be encouraged, e.g., through tax incentives, to invest in product development of digital services and that immaterial rights and data protection associated with these services are taken care of*
- 9. support be provided for the introduction of augmented and virtual reality technologies in public projects (e.g. Kalasatama- and Keski-Pasila) and the possibility of building a Virtual Finland portal using open data published by the state be examined*
- 10. support be provided for basic research and application development in this field at universities and research institutes and teaching of 3-D modelling and visualisation applications be increased*
- 11. the societal and legislative problems of virtual and augmented reality be examined and the development of common standards be supported.*

The Agriculture and Forestry Committee concurs with the basic vision presented in the Report on the Future, i.e. that economic growth is inevitable at the same time as growth in the future will have to be based on sustainable development. The guiding principle in the strategy for the Finnish bio-economy completed in 2014 is that competitive and sustainable solutions to global problems be created in Finland and that new business operations, which will bring wellbeing to the whole country, be launched to serve the domestic and international markets. The objective in the bio-economy strategy is to raise our bio-economy output to €100 million by 2025 and create 100,000 new jobs.

Other matters that the Agriculture and Forestry Committee emphasises in its submission are security of supply and foodstuffs exports. It points out that the foodstuffs sector is already now a considerable employer and also one of the potential growth sectors in the

future. In addition to quantitative targets, important quality factors in the foodstuffs industry are taste, healthiness, sustainability as well as safety and, on the national level, also close-range production.

In the bio-economy a new kind of cooperation and industrial symbioses in, among others, the forest, energy, construction and chemical sectors will come into being between different sectors of operation. As examples of sustainable growth the Agriculture and Forestry Committee mentions diversified use of wood raw material (for example, as a liquid fuel, energy from wood chips, in the manufacture of chemicals, in composite materials, in textiles, and so on as well as in building wooden structures. Properly used, wood is suitable almost everywhere that also concrete and steel are used. Also the Committee for the Future examined, together with experts, the multiple use of wood and published the report *Kaikkea muuta puusta* ("Everything else from wood" TuV 3/2013), which has been put to widespread use.

With regard to energy, the Agricultural and Forestry Committee cites a calculation made by the European Renewable Energy Council (EREC) showing that raising renewable energy's share of total EU energy consumption by twenty percent in the period up to 2020 could create over two million green jobs in the EU area. The same opportunities apply to use of water resources and the related competence.

To speed up the emergence of new business operations, the Agriculture and Forestry Committee recommends that the Finnish domestic market can be used for experimentation and pilot schemes. "It is possible to turn the decentralised community structure in an extensive country to our advantage here. We are living in a test laboratory for the decentralised solutions of the future." Where the public authorities are concerned, promoting experiments, pilots and innovations means above all avoiding regulation that adds to costs and/or an administrative burden and, on the other hand, improving the conditions for effective operation. In common with the Transport and Communications Committee as mentioned above, the Agriculture and Forestry Committee emphasises in its submission how centrally important a well-functioning road network is for all functions in rural areas.

The Committee for the Future shares the Agriculture and Forestry Committee's view that the importance of the bio-economy for sustainable growth has not been sufficiently examined in the Report. The goal of the Committee's Sustainable Growth section was to produce ten concrete proposals for measures, by means of which economic growth can be increased at the same time as problems of sustainable development are resolved. On the basis of hearings, the section decided to focus on seven products/sectors and three operational models: net metering, electric cars, intelligent traffic systems, the pharmaceutical industry, new uses of wood, agrieconomy, virtual environments as well as crowdfunding, a society of experimentation and industrial symbioses. The measures proposed by the section that relate especially to the bio-economy were:

1. A Wood University, which will compile and combine national and international competence in relation to wood to create a multi-sectoral research, training, development and innovation process in collaboration with other universities, research

institutes in the sector and companies, will be established as a part of the University of Eastern Finland.

2. Finland will rank new possibilities of using wood high in its own strategic choices in such a way that this is reflected in, inter alia, the allocation of R&D funding by research institutions in the sector and Tekes, the funding agency for innovation.

3. To ensure that funding is available for companies in their growth stage, a well-resourced new growth fund, a sufficient share of the capital of which will channelled into business activities concentrating on the bio-economy, will be established.

4. The objective expressed in the Programme for Government of “making Finland a model country in recycling of nutrients” must be worked towards by means of concrete measures to promote industrial ecology and dispersed energy production in agriculture.

5. Restrictions on small-scale electricity generation must be reduced.

6. Sustainability, traceability and safety are competition factors in Finnish foodstuffs production and therefore also these strengths must be promoted throughout the foodstuffs chain.

7. Also organic cultivation must be promoted and obstacles to it removed.

8. The Finnish Food and Drinks Industries' Federation has, together with the Ministry of Employment and the Economy, the Ministry of Agriculture and Forestry, the Ministry for Foreign Affairs, the Office of the Prime Minister and Finpro, initiated drafting of an export programme for the Finnish foodstuffs sector and it is proposed that this be made part of the Team Finland 2015 strategy.

9. Reference facilities and pilots for industrial ecology, nutrient recycling and dispersed energy generation will be put in place and venture funding arranged for them.

10. The licensing process for industrial ecology production facilities will be speeded up and the possibility of a national client promise, which will guarantee that the licensing process is guaranteed to be completed in a year, will be looked into.

11. Legislation on waste must be developed in a way that facilitates better use of wastes as raw materials by means of product status for various purposes, e.g. as refined fuels, feedstock in the chemical industry or as components in the construction industry.

The Defence Committee dealt in its submission with overall security, defence, the state's global operating environment, the cyber theme as well as digitalisation and Arctic areas. In its view, overall security has linkages with all of the objectives set forth in the Report. Despite this, what is missing from the Report is deliberation of risks, vulnerability and interdependencies. The Committee emphasises that threatening with the use of military force and in the worst cases even using it are both in the present and also in the future

actual means of achieving political goals and for Finland a credible defence capability will continue to be a key factor in maintaining security-policy stability in Northern Europe. The events in Ukraine in 2014 as well as some border violations affecting Finland have further underscored the needs highlighted by the Defence Committee.

The Arctic region is one of the key operating environments of the future. The threats facing it are environmental catastrophes as well as accidents resulting from increased fishing, shipping and tourism.

Our Committee stresses that a priori the Arctic region will in the future be a major opportunity for diversified expertise and cooperation relating to trade, livelihoods, science and technology. The Committee arranged an international conference on the theme in Kittilä in 2013 as a part of European Parliamentary Technology Assessment, EPTA.

The Defence Committee points out that internal and external security are in practice impossible to separate from each other. States' critical systems are at risk of attack by both state and non-state actors. The change in the way threats are becoming more diverse in character has in practice caused a situation in which traditional ways of understanding security or threats are no longer sufficient. As security affairs become more complex, the need for foresight and a snapshot of the situation that transcends the boundaries of administrative sectors is also growing. Guaranteeing a secure society presupposes closer cooperation both on the international level and between different sectors of administration. The Defence Committee notes that security practices are developing increasingly towards producing flexible resilience. The starting point in flexible resilience is an ability to rebound to the original state when a surprise disturbance strikes. What will be essential in the future is that Finland is a society the most central security-producing property of which is its resilience, its ability to endure blows without key functions being paralysed.

Our Committee points out that more attention than hitherto must be paid to Finland's overall security. This involves both maintaining a credible defence capability and also the resilience to weather general disturbances in society and ensure security of supply. Regional, national and international cooperation and sharing of competence with actors in the sector of comprehensive overall security must be purposefully developed.

Our Committee shares the concern expressed by the Defence and Transport and Communication committees about safeguarding cyber security and calls for an examination of the need to develop legislation relating to coordination of cyber security and maintaining a picture of the situation.

Our Committee recommends that, as a matter of urgency, the software and data protection in the information systems belonging to the public authorities and other key actors in the sector of security of supply be upgraded to meet present-day needs.

The Committee additionally emphasises that Finland must conduct a precise examination of new cyber risks and possibilities associated with our everyday information society. In the view of the Committee, also citizens must be involved in developing cyber security and cyber security must be made one of the skills that

citizens possess in a modern Finnish everyday information society. The Committee stresses that implementation of the cyber strategy will require also inputs into research, training and product development.

In the view of the Committee for the Future, Finland must also have the preparedness to cope with cyber crises, rebound and recover from disturbances as well as ensure the ability of vital functions to handle the quite diverse range of disturbances on varying scales that may affect cyber security.

The Committee proposes that in the next stage the various actors, private and public, draft a cyber strategy that has also opportunities as its starting points.

In the same way as the Finance Committee, also the Defence Committee dealt in its submission with the structure of the Report. It pointed out that despite the traditional choice of a single theme for its Report on the Future, the Government must bear in mind when drafting such reports that there is not one single possible future, but rather several. This must be reflected also in the Report on the Future. From now on, in the view of the Defence Committee, there must be an emphasis on the importance of risk analysis and also what realistically achievable critical success factors are essential in order to implement the desired image of the future. Further development of foresight cooperation encompassing the entirety of state administration is also, in the assessment of the Defence Committee, a goal that merits support.

Our Committee concurs with the Defence Committee's stance and stresses the need for alternative visions and scenarios of the future both nationally and also from the perspective of regional foresight. Alternative visions of the future and preparing for them increases flexibility, resilience in the face of crises and management of risks and they also help in grasping opportunities. In addition to that, we must also prepare for surprises (wildcards and black swans).

The main themes in the submission by the Education and Culture Committee were: 1) the school in the present era – educational task, 2) revision of learning and thinking, 3) the importance of early education, 4) creating an entrepreneurial climate, 5) supporting teachers, 6) a lifestyle of physical exercise, 7) art education and the importance of culture as a wellbeing factor, 8) an active civil society, 9) immigrants as a resource as well as 10) the sensitivity of adult education and 11) challenges of digitality.

The Education and Culture Committee agrees with the perception in the Report that education, a community spirit and participation are the foundation of sustainable growth and the wellbeing of citizens and points out in its submission that Finland's exceptionally rapid advance to the front rank of productivity and technology would not have been possible without long-term inputs into human capital and competence on all levels of society. In its assessment, the importance of competence, education and science will further increase in the future. It notes that a good system of equality-based and uniform basic education has been created. What is needed to complement it is high-class early education and well-functioning educational pathways after the comprehensive school.

In its submission the Education and Culture Committee stresses the many different significances and benefits of the school. An adequately resourced school does not just

teach knowledge and skills, but also protects the development of the child and young adolescent and levels out health differences. Something that the Committee sees as a particular cause for concern relating to the future is a sedentary lifestyle, which weakens workplace productivity and competitiveness and is strongly linked to health and wellbeing differences between different population groups as well as to marginalisation. Experiencing success at school or in leisure pursuits is important for children and adolescents and helps their development by creating a positive everyday learning framework. The benefits of this can be added to by developing collaboration between various local-level actors that transcends sectoral boundaries.

The Committee points out that shortcomings in learning abilities are mainly recognisable already long before school age. That is why, with the aid of early education and measures to support it, the problems that pile up in school age and a spiral of failure in learning can be significantly prevented. The importance of trust as a factor affecting the future in Finnish society is invoked in many places in the Report.

School and the educational system contribute significantly to creating a foundation for a society of trust. Various forms of close-range democracy and exercising influence on the local level will gain more importance. Various means of close-range democracy and exercising influence locally will grow in importance. The importance of the Third Sector will likewise generally increase. The range of means of exercising influence and participating will broaden and diversify. Adult education will continue to be an important part of the national and regional educational system.

Looking at the matter from the perspective of teaching, the Committee reflected in its submission on the skills that will be needed in the future. In its view, they include an ability to understand and handle information, interaction skills like an ability to argue, debating skills, the ability to listen, the ability to mirror oneself in relation to others and group-work skills, empathy such as an ability to feel sympathy, and entrepreneurial skills, enterprise understood in a broad sense and democracy skills. Another content-related aspect highlighted by the Committee in its submission relates to a study conducted by the Federation of Finnish Enterprises which revealed that the proportion of entrepreneurs with comprehensive school-level education had dropped from 20 to 12 per cent in the period 2004-2013. The share of entrepreneurs with vocational training or university or polytechnic qualifications is trending clearly upwards. For this reason, the Committee considers it essential that attention is paid on all levels of education to ensuring that pupils and students can adopt an internal positive attitude towards enterprise.

Something to which our Committee attaches particular importance is the education and Culture Committee's view of the role the skills of the future will play in an ability to manage change in the world.

Based on the Education and Culture Committee's submission and the report (TuV 8/2013) presented by its own New Learning section, the Committee for the Future points out that:

1. The starting point in pedagogical restructuring must be growth-oriented thinking. Children must be given the instruments to build a strong identity so that they can conceive a healthy perception of themselves and their abilities.

2. New coping skills relate to learning, digital literacy as well as workplace skills, such as creativity, critical thinking, interaction, information and communication technology skills, initiative, self-guidance, social skills and leadership.

3. Our success in the Programme for International Student Assessment (PISA) obligates us to develop school teaching by investing in new learning environments and learning models.

4. Acquiring social skills must be taken seriously as a part of learning.

5. The status and importance of early education must be reinforced.

6. Pupils must be taught ethical sensitivity, i.e. an ability to form a picture of the direction in which one's life is heading: an ability to set for oneself a long-term objective that will bring joy to oneself and at the same time make it possible to help others.

7. Teaching and learning must place emphasis on initiative and interaction processes. Pupils must learn the skills to seek knowledge, motivate friends and workmates, understand and produce new knowledge.

8. The school must give children a growth-oriented way of thinking, i.e. a belief that they themselves can influence their own learning, the skill to steer their own lives. The school must give children experiences of successful learning and an ability to manage their lives. Also physical exercise and art subjects are of great importance for young persons' identity and life skills.

9. The Committee recommends that enterprise training be taken into consideration on all school levels.

10. Teachers' international careers and education exports must be developed.

Something that the Education and Culture Committee finds regrettable is that the key importance that art and other culture play in people's wellbeing has been hardly considered at all in examination in the Report. This means that libraries, museums, institutes established to meet adult education needs, possibilities of youth work as well as engagement in art and culture should be maintained and supported.

Our Committee concurs with the Education and Culture Committee on the importance of culture and art as well as adult education.

Much is certainly said in the Report about foresight, openness, enterprise, trust, creativity, work, envy and shame and especially the spiritual culture highlighted by the Himanen working group. But the future of cultural services and art is hardly examined at all. Correspondingly, the importance of research and the international challenges associated with it are indeed mentioned, fleetingly, but prospects for the future of science and its needs are hardly dealt with at all. Instead, there is much talk about innovation.

With its small population and economy, the most important foundation stones for sustainable growth in Finland are, however, education and competence. Culture, art, science and a world-class educational system are absolute prerequisites for sustainable growth and wellbeing.

Combining universities' funding and activities into bigger totalities as well as increasing national and international cooperation between universities are important measures to develop science and research. Many institutes belonging to Finnish universities are very small and the range of subjects they teach is narrow, and in such units it is much more difficult than at bigger universities to offer high-quality teaching and do high-level research.

Our Committee proposes that the next Government draft a science strategy for Finland. Basic funding for science must be safeguarded now and in the future.

It is the opinion of the Committee that, in order to ensure sustainable growth founded on innovation and competence, the development trend in the level of resources devoted to teaching and research must not be allowed to turn downwards and their growth must be safeguarded.

In addition, universities' opportunity to export education must be increased.

On 5.9.2013 the Government made a decision-in-principle to restructure research institutes and research funding. Under this decision, funding will be channelled into research that has the purpose of seeking solutions to significant challenges facing society. A further goal is to strengthen an operational policy and strategic overall view founded on information as well as to avail systematically of research, evaluation, foresight and study data in decision making. The decision-in-principle also envisions structural reforms.

Our Committee supports this reform, but what must be ensured at the same time is the adequacy of competed-for research funding and that sufficient funding is available to allow participation in EU research programmes.

One of the goals associated with the university reform carried out in 2010 was that universities would focus on their areas of strength and that small units that are now scattered could be amalgamated to form bigger totalities through cooperation. In the opinion of the Committee, cooperation between universities must be given new impetus. A good example of development of cooperation is a proposal in the Committee's report Everything else from wood (TuV 3/2013) that a Wood University be established at the University of Eastern Finland. Cooperation provides a way for also regional universities to develop into significant national and international centres of competence in their own areas of strength.

Resources must be put into using and commercialising research results. As things are, too great a proportion of research results are not put to practical use.

The changing nature of learning demands a change in teacher training. The Education and Culture Committee proposes that supplementary training for teachers be increased so

that all teachers have an opportunity to receive adequate upgrading of competence. Administration of schools is already digitalised to an advanced degree and has changed practices to make them in part more flexible and easier to manage. Digitality has also contributed to the fact that the home and the school have been able, e.g. by means of electronic communication notebooks, to share responsibility for upbringing.

A study conducted in 2013 of the use of information and communication technology in European schools revealed that Finnish schools were categorised in the results as belonging to the best-equipped group. Where the use figures for the equipment were concerned, however, Finnish schools were among those at the bottom of the list when the pupils themselves were asked about the matter. Pupils did not have sufficient opportunity to avail themselves of ICT equipment as an aid to their learning at school. Finnish teachers mentioned pedagogical reasons, such as the absence of good models, little supplementary training and a lack of digital learning material, as being the biggest obstacle to ICT being used for teaching purposes. The number of teachers in Finland who had attended supplementary training during the past two years was one of the lowest in Europe. The Education and Culture Committee considers it essential that the use and usability of ICT in teaching and in the introduction of new learning practices is promoted by all available means. Resources must be channelled into basic and supplementary training for teachers and new digital ways of developing learning and teaching practices that have been found to be good must be grasped more broadly.

The foundation for the Finnish education that is so admired internationally is good teacher training. Therefore new learning, open growth pedagogics as well as new technology establishing itself on the ground in the everyday reality of Finnish schools presuppose considerable inputs into also teaching leadership in the schools. Over the long term, it is precisely out of this skill and ability that also important education exports can grow.

Our Committee takes the view that especially supplementary training for teachers must be increased. This presupposes resources. There could also be personal development and supplementary training plans for teaching staff.

The Committee also recommends the purposeful use in learning of new technology, such as for example information and communications technology, virtual learning environments and games, programming, robotics, 3-D printing and biotechnology.

It emerges from the submission of the Social Affairs and Health Committee that special causes of concern relating to the social affairs and health sector that are identified in the Report on the Future are marginalisation of young people, growing inequality affecting children and families with children and the perpetuation of marginalisation across generation boundaries. The digitalisation emphasised in the Report on the Future means that data concerning clients and patients are converted into electronic form and transferred between data users. An example of this that the Social Affairs and Health Committee mentions in its submission is electronic medical prescriptions, the use of which has expanded to the whole country. Implementation of an electronic patient archive is proceeding on schedule. In the view of the Committee, however, the use of new technology, such as robotics, in social affairs and health services has been advancing more slowly than anticipated in Finland.

The Social Affairs and Health Committee mentions smartphones, computers, various tests, sensors and monitors as examples of the technological aids already being used in health services and which have improved the services and access to information. At the same time, the place where health care is provided is shifting increasingly from hospitals and health centres to the patients' homes. Patients are likewise taking more responsibility than formerly for maintaining their own health. The Committee points out that technological development must not, however, lead to unequal treatment of citizens and marginalisation of those who do not have the opportunity to use technology. Some of the clients and patients using social and health services are the least well-off in society and a priori do not have equal financial or competence-related opportunities to avail themselves of digitalisation.

The Committee stresses that new kinds of service production forms must be taken into consideration also in basic and supplementary training for health care staff as well as in physical planning and designing the service structure. In addition, what must be ensured in the regulation of new technologies is appropriate implementation of data security and data protection and an assessment of needs to make management of personal data more precise. As an example of the legislation that development in the medical field presupposes, the Committee mentions regulation of bio-banks, the purpose of which is to promote research use of samples taken from people in a way that those persons' privacy is protected. Consent and an advance appraisal of research ethics as preconditions for storing and using samples were also given a stronger status in the bio-bank legislation. The sample donor was given the right to be informed what research the samples have been used for, what has been examined in them and from what register the data relating to him or her have been collected, in common with the right to receive the data that has been gathered from a sample concerning his or her state of health.

In the view of our Committee, reform of the social and health services structure must be accelerated and productivity-enhancing electronic systems must be taken into use in the sector without delay. The sector - like schools - should be a pioneer in applying and introducing new technology. This presupposes also development of basic and supplementary training for personnel in the sector. In addition, patient safety as well as data security and data protection must be ensured. The Government must dismantle any administrative obstacles standing in the way of new operational models.

1. Bio- and medical innovation units will be set up at universities to help researchers process their research observations and engage in cooperative projects with companies.

2. A common innovation strategy for the medical sector will be drafted for use by ministries, the proposals made in the report Medical Research as a Support Pillar of Finland will be implemented and implementation of the Growth Strategy for Research and Innovation in the Health Sector will be supported.

3. A fund to assist growth in the health technology and pharmaceuticals sector will be set up to provide leverage in the capital investment market, funding will be channelled closer to pharmaceuticals research proper and the attractiveness of stock exchange listing as a source of growth funding will be improved.

4. Specialised units will be set up in areas of strong competence (e.g. a national cancer centre and a good vision development centre) and new interdisciplinary research units and research projects (e.g. precise drug dosage) will be implemented.

5. Efficient use of bio-banks and health registers in research and development will be ensured and regulations that act as a brake on innovations will be pruned.

The Commerce Committee regards the focus of the Report on the Future as a correct one: an analysis of the background factors to sustainable growth and wellbeing is the right starting point also for foresight of the factors that will ensure competitiveness in the future. From the perspective of reforming the structure of society, however, important openings and incentives should, in the opinion of the Committee, have been more prominently highlighted. A more precise risk analysis combined with the use of scenario analyses would also have been needed. On this point, the message that the Commerce Committee is sending accords with the comments that the Defence and Finance committees have made.

When creating the enabling operational environment that is called for in the Report on the Future, it is important to develop the ability of the public authorities to act as a progressive client in the domestic market and also as a party that adopts and experiments with new openings. Examples that the Commerce Committee cites are the cleantech sector and increasing the domestic bio-economy. The Committee believes that new opportunities can be found also in development of logistics, sensor technology and artificial intelligence. In addition, the Committee specifies robotics as one of the new emerging growth sectors. As new service robotics products become available, completely new international business opportunities may also be found. In addition, robotisation can contribute to preserving industrial jobs and even to some returning to countries with high labour costs.

The Commerce Committee calls in its submission for urgent measures by means of which the competence and applications that training and scientific research have produced could be utilised and commercialised more effectively than at present. It states that a bigger share of the population than is presently the case be drafted into societal functions as active citizens.

In common with the Traffic and Communications and Forestry and Transport committees, also the Commerce Committee considers it important to work towards building a telecommunications network spanning the whole country.

A well-functioning capital market is one of the key elements in an entrepreneurial operating environment. In the view of the Commerce Committee, there is a need for this market both to facilitate more effective use of the instruments already in use and to bring about completely new forms of financing. To increase the attractiveness of a stock exchange listing, any legislative amendments that may be needed should be looked into and implemented.

The Committee finds it desirable that the present system of supports for companies be reviewed in its entirety. The system needs to be made clearer, more transparent and less bureaucratic.

Like the Transport and Communications and the Agriculture and Forestry committees, also the Commerce Committee ranks the ability of the economy to renew itself as one of the critical success factors. The role of public administration must be primarily that of a facilitator and only secondarily that of a patcher of gaps in the market.

Our Committee emphasises in particular the global sustainable growth opportunities associated with bioenergy and biomaterials, intelligent energy networks, intelligent traffic systems as well as waste management. These leading sectors must be supported actively and purposefully through experimentation, reference facilities, standards, financial steering as well as new financing instruments and operational models.

Production of solid and liquid biofuels, bio-coal and bio-gas as well as forest-based biomass (pellets, heat-dried or torrefied wood or other biomass-based refined products) as a substitute for coal in, coal dust boilers for example, must be increased in the ways set forth in the Government Report on Energy and Climate Change Policy or, as circumstances permit, even faster than has been proposed. Using multi-fuel furnaces for burning wood chips can also compensate for use of peat. Our Committee particularly emphasises commercialisation of competence relating to intelligent metering and promoting exports in this sector. This know-how can be used both in intelligent electricity grids and also in intelligent traffic systems and building. Automation of infrastructure and services is opening up many kinds of applications for know-how associated with intelligent metering and which have an impact also on sustainability.

Several experts heard by the Committee raised the subject of the so-called Sixth Wave, which will see the next wave of development in technology and the next wave of growth in the economy will be founded on solving some of the thorniest questions that bedevil humankind. Signs of this were in evidence also on the Committee's visit to China, during which the Chinese presented their thoughts about the inputs that will be made into eco-efficiency and cleaning up the environment in the coming decades.

Environmental technology (cleantech) offers major opportunities for global growth. Challenges are more likely to arise from the domestic market and reference facilities.

In the view of the Committee, it makes sense to focus national inputs into, inter alia, the environment, waste management, energy, transport, building as well as wellbeing and teaching into technologies that it we believe also have a chance of becoming exportable. In that way, everyday essential procurements for the domestic market will support also product development and act as references in export efforts.

In addition, the Committee proposes that:

- 1. The Government study promotion of crowdfunding as a means of lowering the threshold to investing in start up and growth companies.*
- 2. The Financial Supervisory Authority will draft a definition of share-based crowdfunding and interpretation guidelines on what can be done without an investment counsellor's licence.*

3. *The definition of payment will be loosened to mean that it can also include, e.g., some matter or service that is of public utility or benefits a third party.*

4. *The current limits of €1.5 million and 150 persons on crowdfunding be re-assessed.*

5. *The public sector launches and supports experimental projects suitable for crowdfunding.*

The Committee further proposes that the Government initiate measures that increase people's enthusiasm for business angel activities. In its view, such matters as how well asymmetric models and taxation function as well as promoting investment by individuals of venture capital must be examined by means of experimentation and pilots. In asymmetrical models it is the state that bears the greater risk in investments.

Our Committee proposes also that the Government study whether, e.g. through legislation, taxation, promoting Finnish ownership as well as with the aid of asymmetric models it could contribute to bringing about a situation where the risk involved in investing in start-up and growth companies dwindles to the level that big anchor investors could put more funding than hitherto into companies of this kind.

The Committee considers it especially important that the state makes it easier to create a bond market and other instruments to facilitate capital investment to assist the funding of small and medium enterprises in Finland and, for example through the means that taxation provides, lowers the threshold to medium-sized enterprises securing a listing on a so-called multilateral trading facility, whereby collecting equity capital will become easier.

The Committee had cooperation with the Chinese People's Political Consultative Conference (CPPCC) in 2013 and 2014. A proposal calling for cooperation to develop a green growth model came from the Chinese side. The Committee was accompanied on its visit to Beijing also by representatives of Finnish cleantech export companies and collaborated with the Tekes (Finnish Funding Agency for Innovation) Beautiful Beijing network and Finpro. Several events in China and Finland were associated with the cooperation. The Eduskunta and the parliamentarians who took part in promoting exports found the experience positive and the Committee recommends that from now on the Eduskunta include export promotion more generally in its international activities.

The themes in the Employment and Equality Committee's submission are: 1) Identifying opportunities for growth and employment, 2) change in working life, 3) work wellbeing and the meaningfulness of work, 4) training and lifelong learning, 5) gender equality, 6) community spirit and inequality and 7) the role of the public sector. In the same way as the Defence and Commerce committees, the Employment and Equality Committee also adopts a stance on the way the Report was produced. In its view, looked at from the perspective of the impact that the report method has, attention should from now on be focused also on monitoring effectiveness.

In the same way as the Report on the Future, also the Employment and Equality Committee takes the view that a significant future challenge that Finland must respond to is that of having the ability to create and maintain sufficient economic prosperity and points out that achieving a high rate of employment is a key factor in economic prosperity. The digitalisation that features centrally in the Report has, in the assessment of the Committee, great importance from the perspective of growth and employment. However, the operating environment would need in the future to be strengthened by also other promising growth sectors, such as food production, biotechnology and bio-economy, mining, cleantech and the tourism industry. At the same time, the Committee believes, the international character of Finnish society should be strengthened by increasing the amount of work-based immigration, the number of foreign students and the Finns' international mobility.

In the view of the Committee, the importance of full-time paid employment may dwindle and it may be more difficult in the future to distinguish between employment, unemployment, an employment relationship for a wage, entrepreneurship and leisure time. There will also be qualitative changes in work. Work careers will assume multiple forms and the freedom of individual workers to plan their own work in the same as their responsibility for the results of the work will increase. The Committee points out that as multi-job, multi-incomes, part-time and entrepreneurial work increase and work that conforms to rules and is uniform decreases, we shall need a new kind of thinking that produces rules of the game, security and productivity in changing circumstances in working life. We also need more flexible ways than we currently have of harmonising work, learning, engaging in enterprise and other aspects of our life. Change is posing challenges also for training. Agreeing with the Education and Culture Committee, the Employment and Equality Committee takes the view that internalising information is no longer enough; instead, working life presupposes also comprehensive handling of information and its creative application, a capacity for critical assessment, negotiation and cooperation skills, skills relating to emotions, ethics and community spirit as well as the mastery of technology that the information society requires. Children and adolescents must be given sufficient support at various pivotal stages. In an environment of lifelong learning and as work careers become increasingly diverse, also adults will have to upgrade and develop their occupational skills in various stages more often than is presently the case. Changes in working life will pose new kinds of challenges also to work wellbeing and occupational health.

In the view of the Committee, Finland should in the same way as Sweden pursue a more active employment policy. Obstacles to and burdens on giving employment and entrepreneurial activities must be reduced and employment must be made more simple.

The Committee believes that there is a need in Finland for active deeds 1) to increase the number of jobs and Finnish ownership as well as to reduce the risks of employing people, 2) to lengthen work careers, 3) to get young people into working life earlier as well as 4) to promote employment of immigrants.

In the Committee's opinion, Finland must make inputs into especially helping new companies to come into being, meeting the changing training-related needs of working life, developing domestic markets, promoting comparison facilities and

similar experiments for new technologies as well as internationalisation by companies and removing legislative impediments.

The Employment and Equality Committee notes in its submission that our labour market is still strongly divided into men's and women's sectors and working life continues to look different depending on what gender a person belongs to. For example, there are still challenges with regard to achieving the goal of equal pay. Correspondingly, gender-based dividing lines continue to exist in questions of choosing training and an occupation. Dividing lines are formed also by the disappearance of jobs in male-dominated sectors, the large number of women employed for limited terms and the weaker position of young women in the labour market. Women are also more likely than men to suffer violence in their work. For this reason the Committee takes the view that recognising the significance of gender should have been included as a permeating aspect in the Report.

A cause of special concern that the Employment and Equality Committee shares with the Social Affairs and Health Committee is marginalisation of young people, inequality affecting children and families with children and the perpetuation of marginalisation across generations. In particular pupil welfare and guidance services in the comprehensive school have a significant role in ensuring that every child and adolescent can be guaranteed an equal starting point. Special attention must be paid to school conditions in regions where there is high unemployment, a below-average standard of education and large numbers of immigrants whose mother tongue is not Finnish.

Also the Employment and Equality Committee (like Transport and Communications, Agriculture and Forestry and Commerce) regard the views expressed in the Report about the necessity of open-minded experimentation as being in the right direction – but stresses at the same time that experiments of this kind can not substitute for planning, broadly-based preparation. Lightening administration and outsourcing functions must not jeopardise the effective operation of administration, the predictability of activities or citizens' protection under the law and equality.

Our Committee has the same view of the significance that equality questions have for sustainable growth, wellbeing and strengthening a society founded on trust. Equality of opportunity and of gender has been highlighted in studies of success as a factor explaining wellbeing and as a prerequisite for a society founded on trust. Secondly, there must also be an ability to couple equality to the intelligent specialisation of regions and individuals: the abilities and needs of regions and individuals differ and equality must not be understood as making everyone the same.

6. Factors that are pervading and move structures

The Report contains hardly any examination of the future of democracy or the state's new role – although also the international working group headed by Himanen highlights this need in its final report. In the view of the working group, what is involved in the problems currently besetting Finland and Europe is not economic recession or a financial crisis, but more broadly an “economic, social, cultural, political” crisis. Therefore the crisis can not be

dealt with using only the means of economic policy, either; sustainable growth presupposes that political, societal and economic structures be changed as well.

Democracy

The role of the state and its changing tasks are accentuated in the societal discourse. In the background to this is the question of our base of values, a social contract and trust. Thus our conception of democracy and of its future has to be pondered.

Respect for democracy, human rights and the rule of law is the foundation of Finnish society. The Government Report on the Future does not, any more than the long-range report on democracy policy Open and Equal Participation (VNS 3/2014 vp) published earlier, deal with the various segments and forms of the democracy that is important from the perspective of building the future nor evaluate how well it functions on various levels. Many vital sectors and levels of managing collective affairs, which affect the life of every Finn, are absent from the Finnish examination and understanding of democracy. The sector of politics is likewise fairly limited. Even if the scope of the examination is narrowed to so-called matters of state only, a well-functioning democracy will have to be striven for, more clearly than it has been up to now, also on those levels and in those places of power and exercise of influence in which we are involved and which already now have a substantial influence on our own decisions.

In the opinion of our Committee, democracy is understood too narrowly in Finland. The old democracy should be strengthened and the new democracy foreseen. We must have the boldness to try new things. Weak signals have to be noticed. Provision must also be made for black swans and surprises in both better or worse.

Futures researchers stress that there are many futures. Democracy researchers emphasise that there are many kinds of democracy. In Finland in recent decades, the concept of democracy has been narrowed to either the details of relationships between the highest organs of state, voting techniques or civic activity experiments on the grassroots level. For example, the constitutional reform work being done as long ago as the 1970s and 1980s meant that democracy was spoken of as being on several levels: global, European, regional and local. Democracy applied broadly to rather different types of institutions: the state, municipalities, administration, organisations, the labour market, companies, government agencies, schools, universities, utilities, housing companies and even families. In content, democracy was understood as political, social and economic. The forms of democracy were indirect and direct with their various adaptations.

The development of democracy was strong partly because the aid of the parliamentary committee institution was availed of when societal matters of wide-ranging importance were being deliberated in legislative drafting and other ways. Unlike the situation in Sweden, the committee institution has been largely abandoned in Finland. Persons appointed to conduct studies have not become a replacement for the joint deliberation, analysis and recommended solutions that parliamentarians, researchers, civil servants, lobby organisations and other interest groups have been able to contribute. A gap has appeared in trust-based consensus thinking.

In Oulu on 13.10.2013, as part of the celebrations marking the 150th anniversary of the Diet, our Committee arranged a seminar for citizens to discuss the future of democracy and published the book *Uusi ja vanha demokratia* (Old and new Democracy, TuV 7/2013). The articles written by the experts who contributed provide a good background for examining how the various forms of direct and other new democracy encounter old representative democracy.

A democracy deficit that is clearly growing, especially when the development trends of the future are taken into consideration, can be seen in various forms of exercise of decision-making power and on levels and instances of exercise of influence. The problem must be recognised and, in spite of its difficulty, an effort must be made to find also solutions.

Globalisation has increased democracy and equality. It has provided work and prosperity for hundreds of millions and, thanks to rapid economic growth, given several states opportunities to develop, very rapidly, education, health care, infrastructure and other fundamentals essential for future growth and thereby people's wellbeing. At the same time, looked at in the light of the starting points of citizens in the developed countries and from the perspective of the ever-higher goals that are being set for democracy, globalisation has detached people from decision making concerning them. A weakness of legitimation and in the foundation of trust, real or perceived, is reflected also in the attitude that citizens take to the leaders of their own countries.

Global democracy solutions are not easy. In a discussion of the future of democracy, however, this level can not be bypassed. Also awaiting solutions are 21st-century problems like climate change, population growth and poverty, and also various political and economic crises and in developments in recent times even a core question of democracy – the threat of war – as close to us as Ukraine.

The tasks of the EU, its organisations or methods of operation were not built specifically from the starting point of democracy. An effort has been made, especially in the 21st century, to bring citizens' rights and obligations to the fore, but democracy as a matter on the system level is still one of the fundamental problems of the EU. It is a question of the legitimacy of the power structure. Looked at from the perspective of the powers of national parliaments, what was earlier the focus of criticism was the division of legislative powers between the EU and national parliaments, whereas in the present decade it is budgetary power that has come in for criticism. Funding and financial crises have increased especially the EU's advance financial supervision, the EU Commission's power to exercise guidance over national budgets before governments have even been able to present the budgets to their national parliaments.

The biggest problems in the development of supranational-level democracy are sociological and cultural: the frailty of European civil society and publicity as well as the weak identity and fragile solidarity of EU citizens. The European economic crisis has had some effects that are positive from the point of view of democracy – an increased awareness both in the media and among the public in general of the community of destiny that the countries of Europe, or at least the Eurozone, share. An awareness of European intertwinement is an essential prerequisite for supranational, EU-level democracy.

A level of state democracy in which Finland, as almost the only country in Europe, has a deficit is the exercise of power in the space between the state and municipalities. It is often called intermediate-level administration, district administration or regional self-government. Finland differs from other countries in that administration is founded on a strong central government and powerful basic municipalities. Democracy was understood in the early period of independence as, to simplify somewhat, no more than own institutions chosen in elections and the right to collect funds to finance one's own activities. Could it be that what lies behind extensive reforms, including the ongoing revision of social affairs and health care structures or the redrawing of municipal boundaries is in part a democracy deficit? In elections, representatives are given a mandate by the people to take care of collective affairs and it is by virtue of this mandate that they can legitimately and to some degree transfer power downwards, but not upwards.

Democracy in companies and government agencies was discussed in Finland only as a part of a pan-European movement in the 1960s and 1970s. Several parliamentary committees sat and deliberated these sectors of democracy, but their proposals made no progress. In many countries, such as Germany and Sweden, personnel were given representation in such bodies as the management echelons of companies and government offices. Is one explanation for those countries' better management of economic crises, their success in raising the pension age or the higher level of job satisfaction in those countries to be found in company and government agency democracy?

Several researchers have taken the view that for the sake of the democratic system's credibility and future opportunities, it would be advisable to start evaluating economic power from the perspective of democracy. Democracy and the economy should be spoken of using the same criteria, with the same force, at the same time and in the same forums.

Five trends can be distinguished in the changing power relationships between democracy, politics and the economy: 1) a growing economy has led to economic power growing faster compared with politics, in which each voter still has only one vote, 2) economic power has become concentrated in the hands of a small elite, 3) liberalisation of markets and the economy has brought the private into public arenas, 4) political power has been pushed out of economic arenas; funding of political activities now comes from those with the ability, will and interest to pay for political activities and 5) with globalisation, deregulation and information technology, capital markets have fled nation-states.

Despite the drawbacks and evaluated as a totality, Finland is among the winners in globalisation. Through globalisation, international agreements, economic integration, better availability of information and openness, politics has received new instruments and democracy has been strengthened. The channels through which citizens wield direct influence have become more effective.

The economy has traditionally been measured a lot and precisely. Now also such sub-sectors of the economy and wellbeing that are difficult to measure, such as poverty and happiness, need increasingly precise measurement. An attempt to define greed is a new awakening, quiet signal that the economy, democracy and equality belong together. In the 21st century, the World Council of Churches has for the first time brought analysis of greed into the public discourse and is working on criteria to measure its different forms.

Rather powerless political institutions have had to admit that increasingly difficult problems have been made the responsibility of politics, but the keys to solutions have partly ended up elsewhere – to simplify the matter, they have gone from nation-states to supranational bodies and from politics to the economy. Several development features that reduce national legislative power are evident in all democracies. As an aspect of globalisation, big actors in the economy have acquired a new powerful instrument for exercising power: the possibility of transferring capital, production, jobs, head offices, taxes, innovations, research and development, new thinking to somewhere else. This possibility has existed earlier as well, but now the right of veto is real and credible. Supranational legislation and issuance of various norms (EU, UN, WTO, CoE, World Bank, IMF, G8, and so on) have increased.

Our Committee takes the view that democracy in its various forms and in different loci and on all levels must be strengthened. Citizens assume that it is precisely when times are bad that parliamentary democracy will forcefully exercise its power. Between the power concentrated in the hands of the parliament and the government that enjoys its confidence and the increased hopes of citizens there is a gap that results from the disproportion between politics and the economy. New political instruments are needed to strengthen democracy.

Our Committee believes that parliamentary preparation is needed in broad and major societal questions that transcend parliamentary terms and call for new thinking. A parliamentary committee should be appointed to study how democracy and decision making are changing in various sectors and on different levels of society and deliberate means of strengthening the social contract.

The economy

A good, well-functioning and sustainable economy is the foundation of society. Although views differ very greatly with regard to the economy and politics or the content and future of economic policy, it is impossible to imagine future policy being formulated without the economy.

Finland's foreign trade policy is founded on participation in international integration, the most recent stage of which is called globalisation. It is vital for a small country. Although the benefits of globalisation have been unevenly shared, Finland is undeniably one of the winners.

The Finnish economy has been grey and performing flatly, especially since the financial crisis that began in 2008 and the debt crisis that afflicted the countries of the Eurozone as a result. Compared with the situation in the early decades of national independence and especially the post-1960s period, unstable prospects combined with slow growth are casting a shadow over the future of the Finnish economy. The problems of the Finnish economy are grouped into cyclical and structural. As the economy turns upwards, some of the problems are solved, but only some. Structural problems are not solved when the cycle turns the economy onto a path of growth.

Since as long ago as the 1990s there has been a clear awareness that the demographic trend would slow down economic growth from the second decade of the 21st century onwards. An attempt has been made to redress the limit on growth resulting from a sharp reduction in the size of the working-age population by trying to improve the employment rate, making work careers longer and promoting immigration. As a result of the favourable development of the economy, the proposed corrections have not produced decent results. As recently as in the past few years it was thought that after the business cycle turned upwards we would return to the traditional path of rapid growth without our having to make particular big changes to established systems.

Nokia's problems and ultimately its sale to Microsoft revealed problems in Finland's production structure. Starting in the 1990s, the rapid expansion of the technology industry and its ascent to a status alongside the forest industry as the other supporting pillar of Finnish industry yielded good results and ensured stable growth. Globalisation, from which Finland has greatly benefited, revealed its adverse effects after the financial crisis. Finland's key industrial growth sectors, the forest and electronics industries, began waning. It became obvious that instead of a cycle-related problem, Finland is suffering from a structural crisis in its economy.

Restructuring of key industrial growth areas is already well under way, but despite this the Government has had to struggle to try and balance public finances. The welfare society that has been built up since the 1960s has run into a funding crisis. It has long been a matter of pride in Finland that growth of public spending has been kept in check and spending has been increased within the limits set by growth of the economy. Public debt has remained low by international standards and deficits in public finances have been moderate. International credit ratings have reflected trust in the sustainability of the Finnish economy.

The report *The nature of the Finnish economic crisis and the prerequisites for growth* (2014) contains an analysis of various means of speeding up economic growth. The recurring theme in it is that the wheels of the economy need to gain speed.

The Committee agrees with the idea that companies are the motor of economic growth, but the state is responsible for ensuring that companies have the prerequisites for job-creation and successful business operations. The state has an especially central role in the creation of a new creative and innovative environment, but it is only companies' ability to respond to the expectations of the market that will ensure profitability. The emphasis in payment of grants and subsidies to companies must be shifted from those supporting preservation to those supporting revitalisation.

The structural crisis that the financial crisis exposed and exacerbated has revealed the problems that result from the weak productivity of a large public sector at a time when a weak economic outlook prevails. The failure of the financing base and a weakening of Finland's position in the international division of labour reveal that public finances are not on a sustainable course. It may prove difficult to achieve, within the time period envisaged, the objective set for the development of public finances over the medium term. In the worst-case scenario, ending the upward trend in public indebtedness may be postponed. Implementation of the Government's structural policy programme will not be enough to permanently get rid of the sustainability deficit that awaits us in the next few

years. Safeguarding wellbeing services presupposes sustainable public finances. That, in turn, will not be achieved without a solution to the problem caused by ageing, raising the employment rate and taking care of the adequacy, mobility and deployment of labour. Tax revenues will be generated only if we are able to safeguard the tax base in a way that at the same time ensures the international competitiveness of Finnish production. Since Finland is a member of the Economic and Monetary Union (EMU), we do not have the traditional instruments of monetary and currency policy, which would otherwise have been used in the conditions of the present structural crisis, at our disposal. Now that the institutional instruments of economic policy have changed, the keys to a solution are in the hands of the Government and the labour-market organisations. Tax and wage solutions safeguarding economic competitiveness will assume a more central role in economic policy. In addition, we must prepare ourselves for assymetric shocks.

As an EMU member, Finland has been able to enjoy the benefits of a large economic area, including economic stability and economics of scale.

The structural change in the global economy shows that automation, robotics and digitalisation are altering the international division of labour. The state must support the Finnish economy's adjustment to this change. The training system must be able to avail itself of digitalisation. The public authorities must hasten the construction of an electronic service corridor. Public registers and data banks must be open for use by everyone.

The supply and mobility of labour must be promoted. Construction of affordable housing must be activated using various means. Unemployed job-seekers must be brought quickly into the labour market. Work must always be worthwhile. The solutions formulated with regard to an obligation to accept work have been justified.

The long time that it takes to complete studies in Finland must be reduced, for example by restructuring study grants in a way that shortens studies. Already this spring, in conjunction with the structural packet, the Government adopted a policy line to the effect that the qualifications for official posts must be loosened.

To reform the structure of the Finnish economy, the Government must by all means at its disposal support new creative growth companies and if necessary channel venture capital and growth funds into them.

The Government has decided in the structural package to prune the tasks of municipalities to the extent that the municipalities' operating costs are reduced by a billion euro. Balancing of public finances must be continued.

The tasks of the state

A correct definition of the tasks of the state is the foundation on which all exercise of public power and other public actions rest. Society is seen in the Report as undergoing reform in many respects, but change in the tasks of the state is not dealt with and therefore no stance is adopted on the matter in building the future. The basic tasks of the

state are defined in the Constitution and other legislation. In addition, the state performs tasks that are based on political decisions. However, the tasks defined in legislation are the most permanent of all and the most difficult to alter. The present tasks of the Finnish state have come into being in the span of centuries and decades and they have been adjusted to suit the societal and economic situation. The tasks of the public authorities reflect the citizens' conceptions of institutions for organising human life.

In the Constitution, the needs of citizens and the public authorities' responsibility for satisfying them are set forth in order of importance. The public authorities have a responsibility to implement fundamental and human rights. This responsibility includes respecting, protecting and implementing rights. The public authorities' primary task is to ensure the fundamental rights defined in the Constitution. Everything else comes after that. The fundamental responsibility of the public authorities has been coupled to responsibilities of a clearly more fundamental nature: the more fundamental the human needs that are threatened and the weaker the individual's own resources for coping, the stronger the individual's rights are and the clearer the public authorities' duty to to arrange a livelihood and security.

The Constitution contains 1) direct subjective rights such as the right to basic subsistence and care as well as the right to cost-free basic education; 2) subjective rights enshrined in an ordinary Act, especially the right to security of basic subsistence in the event of unemployment, illness, incapacity for work and old age as well as on the basis of the birth of a child or the loss of a provider; and finally 3) the obligation on the public authorities a) to promote employment and strive to safeguard for everyone the right to work, b) to support the opportunities of the family and others responsible for a child's care to safeguard the child's wellbeing and individual growth, c) to promote everyone's right to a dwelling and support them in their independent arrangement of housing for themselves and d) strive to safeguard for everyone the right to a healthy environment as well as the opportunity to influence decision making with respect to their living environment.

With the exception of subjective rights, the Constitution leaves the limits to public power quite open.

The tasks of the state were continually broadened in the 20th century. The financial crisis and the debt crisis afflicting the European Union countries have demonstrated that the public authorities' present task structure is vulnerable in a crisis situation. The state is able to handle its present tasks in normal conditions, but when a crisis is encountered, its ability to handle and act are substantially weakened. The structural development of world trade and the global economy that has been advancing since the 1990s and has called the basic assumptions underlying the European economic and wellbeing model into question can be regarded as another threat to the range of tasks currently performed by the state.

In Finland, discussion of the public sector's role has been lively since the 1990s, because the slump in the early years of that decade forced the Government to cut spending. The discussion was sparked off in autumn 1992 when the Director-General of the Ministry of Finance's Budget Department Raimo Sailas drafted a proposal with the title Improving the balance in public finances (VM 13.9.1992) and submitted it to the Economic Council. The principles on the basis of which a re-evaluation of the tasks of the public sector was to be made were pondered in the proposal. The discussion of the spending principles in public

finances that Sailas' proposal set in train proceeded to the values behind spending programmes, i.e. to the values base of public activities after the so-called Philosophy Group appointed by Prime Minister Aho published its memorandum titled The Mental Status and Future of Finland (VNK 1993).

Deliberation of principles relating to the tasks of the public sector faded away when there was no compelling need for it in the early years of the 21st century. Balance was restored to public finances quite quickly in the 1990s. Finland's competitiveness remained at a good level. The tax base sustained by growth of the economy has been sufficient to maintain the state tasks presupposed by the Finnish wellbeing model. For a long time, Nokia's success took care, extensively and profoundly, of an innovative vibe in our society. In the discussion that took place in the early years of the 21st century on the theme of the state's tasks, the emphasis has been on the pressures that change in the demographic structure is placing on the public sector's long-term sustainability, especially in funding pensions. The solutions proposed have been to raise the retirement age, increase the efficiency of public services production, new funding models for wellbeing programmes and bringing social security systems up to date. Privatisation and private services production have divided opinions.

As part of the current Government's effectiveness and productivity project, the core tasks of the state were mapped out. The project was demanding and high-profile. The final result was modest. Suggestions as to how smallish overlaps between administrative functions could be eliminated and ponderous administrative procedures lightened were collected from civil servants. In its visibility and results, the project was reminiscent of the bureaucratic collective efforts of the early 1980s.

Similar re-evaluations of public spending that have been carried out in other countries include the Program Review in Canada in 1994-1999, the Fundamental Expenditure Reviews programme in the Netherlands in 2009-2010 and the Spending Review Framework programme in the UK in 2010. The matter examined within these programmes was whether the tasks assigned to the state at that time were still within the sphere of public interest, in accordance with it and if the role of the state is justified and essential. Also looked at were alternative ways of organising functions – private, public or indirect public activities, can a task currently now entrusted to the state be performed by a party outside the state system or should it be transferred to citizens themselves either entirely or in cooperation with the state. Several different funding models for tasks were also developed within the programmes.

Wellbeing services in Finland are produced by municipalities. As recently as the 1990s, the state transferred a considerable number of new statutory tasks to municipalities, something that has blurred conceptions of the size of the state.

Our Committee takes the view that plenty of different kinds of pressures from many directions are being focused on re-evaluation of the tasks of the state. A political assessment of the role and tasks of the state in the future must be made. This assessment task lends itself best to being done parliamentarily.

The starting point in defining the tasks of the state is that the state must be able to comply with a high standard of quality when it performs the tasks assigned to it. It must also

continually assess the division of labour between private and public actors and the workability of institutions' operating principles on the basis of the demands, possibilities and limits set by economic, international and technological developments. The Government's role in managing the totality includes responsibility for ensuring stability and efficient allocation of resources. The financial crisis has shown clearly that it is the state that in the final instance bears responsibility for a stable, well-functioning economy as well as for managing crises and risks.

Our Committee is of the opinion that in order for the state to be able, in a powerfully and rapidly changing future, to discharge the tasks that the Constitution defines for it, a procedure must be devised under which there will be an obligation when new tasks are legislated for to assess the benefits and detrimental effects of the task, for example within five years of the legislation having been enacted (the general model in the EU) as well as when necessary to abandon altogether tasks that are of little importance from the perspective of society as a whole.

When new tasks are being defined, their necessity must always be examined. There must additionally be an examination of how civil society could together with the public sector take care of and develop them.

Public services, benefits and income transfer systems must be developed in a way that makes them incentivising and supportive of individual responsibility.

The state bears ultimate responsibility for public services even if they are produced in various ways in municipalities or as services purchasable from organisations, foundations or commercial enterprises. As the supreme regulatory body, the state can not relinquish its power to regulate the totality.

Funding and guidance mechanisms for public tasks must be clear. They must safeguard high-quality service production in the most economical way.

Technology

Finland has traditionally been a land of pioneers and eager embracers of innovations. As long ago as the 19th century, Finland was one of the leading countries in the adoption of new inventions. It was among the first countries in Europe to have electric light and telephones. Flying enthusiasts built aircraft. Nokia's success as a developer of telephone technology was more than just a fortunate coincidence. In the background was an enthusiastic group of persons with an avid interest in information and telephone technology. Even the world's first commercial microcomputer was built by Digelius Elektroniikka in 1973.

The Finnish pioneering spirit in technological development was still alive and thriving in the 1980s and 1990s. In the 1990s Finland was a shopping window for the world after it had been faster than others to embrace the Internet and mobile technology. Nokia prospered and Finland shone at or near the head of competitiveness comparison tables. Almost imperceptibly, however, the pioneering spirit ebbed in the first decade of the new

century, although there was much talk of innovation. In the intoxication of success, the perspective from which technology and its possibilities were viewed narrowed and, alongside Nokia, many companies concentrated on enjoying their technological achievements. Others caught up with and overtook us, especially when it came to seizing the opportunities that new radical technologies presented.

The ebbing pioneering spirit and narrowing perspective have been noticed by our Committee, the basic tasks of which include assessing the impacts of technology and technology foresight. The Committee now has a tool using which it may be possible to arouse the pioneering spirit again. The technology foresight model developed by our Radical Technologies section in 2012-2013 combines a comprehensive recognition, based on Internet sources, of the possibilities of new radical technologies with a systematic assessment of these possibilities. Our Facebook site is one of the means we have used as an aid to identifying possibilities. About 600 people have taken part in this crowdsourcing.

The technology foresight model was developed in two stages. A preliminary study (TuV 2/2013) was devoted to looking for what important and systematic work to foresee technological breakthroughs is being done elsewhere and how it is done. In the next stage, the section went on to developing its own foresight model and published assessments of the most promising radical technological applications that it had produced using the model (TuV 6/2013).

The study conducted by the Committee is important, but only the starting point for a tool that can be used not only by those who plan Finland's technology policy, but also by a great diversity of actors, such as companies, organisations, business angels and regional development organisations. Any citizen can with the aid of this instrument form an up-to-date view of the vanguards of technological development. A pioneering spirit also creates an opportunity to contribute to updating the tool. One reflection of the popularity of the tool is the fact that a doctoral thesis examining its application to the corporate environment is being written. The model has also prompted international interest.

In the first round of assessments done using the new technology foresight model, radical technological solutions were evaluated in a total of twenty different value creation networks, i.e. in global demand clusters created through customer need. The technologies were assessed also in the light of their maturity, by asking how far the development has advanced. Their importance, e.g. from the perspective of Finnish export industry, was likewise assessed.

As a result of the study, 100 radical technological solutions that were judged, in the light of the most up-to-date information then available, to be those likely to change the world most were identified. These hundred technologies can be awarded points both generally (global model) or from the perspective of Finland. In addition, the model makes it possible to examine the technologies at the bottom of the list as weak signals and competence needs in the future.

In the opinion of our Committee, Finland must have up-to-date competence in these technologies with the potential to change the world significantly in the next few decades. Developments in radical technological possibilities must be monitored constantly and alertly and methods developed by means of which up-to-date

assessments continuously and enthusiastically spread into society, leading to experimentation with new possibilities and a rapid response as the operating environment changes.

Finland should be especially active in those technologies that are of importance for the country's biggest sectors, particularly export ones. In addition, our research and training system should already in good time create competence in technologies that are predicted to become widespread only in 20-30 years' time.

For example, a professorial chair in theoretical electronics was created at the Helsinki University of Technology already in the 1950s, followed by the first chair in telecommunications in the following decade. The same period saw the creation of chairs in data processing science at the University of Tampere (1965) and the University of Helsinki (1967), and the electrical technology department at the University of Oulu (1965). It was from these investments in information technology (including radio technology) and telecommunications that Finnish competence in information technology grew. Electrical technology and electronics accounted for 2% of Finnish exports in 1970, 4% in 1980, 11% in 1990, 31% in 2000, and 15% in 2010. Thus science and basic research are turned into business operations and industry, but the time lags can be very long.

If we get into action only when technologies are already mature and certain, we are hopelessly late. Playing a pioneering role in technology presupposes vision and boldness, and that is what our Committee has striven for by creating its own technology foresight model.

The Committee proposes that development of the model be continued by the Academy of Finland, Aalto University and/or other universities of technology, the Finnish Funding Agency for Innovation Tekes, the Technical Research Centre of Finland VTT, the Finnish Innovation Fund Sitra and/or other equivalent organisations in collaboration with the Committee. Especially Finnish companies and young people seeking a direction for their lives must be inspired to experiment with the possibilities that new technology offers.

The Committee used its model to arrange the radical technologies that it had identified in order of importance. From the point of view of Finland, the list of most important technologies looked like this in 2013:

Radical technological solutions in sectors with the strongest export preparedness

- Antibacterial and other dirt-rejecting materials and surfaces
- Nanocellulose and cellulose microfibre
- Wireless transmission at 2.5 terabits per second (vortex beam)
- Production of liquid fuels with the aid of enzymes, bacteria and algae

Top Ten radical technological solutions in the sector with good capability to export

- Gamification of cooperation and society
- Robot car
- 3D printing of goods
- Printable and similar inexpensive sensors
- Rapidly cheapening solar energy
- Personal analyser for own body
- Medication to prevent dementia
- Light and efficient rapidly chargeable batteries and condensers
- Haptic user interfaces
- Movement-based drive controllers

Top Ten radical technological solutions in the sector with limited export capabilities

- Open data and Big Data
- Freely organisable distance work and organisations that form on the Internet
- Expanded reality instruments
- Reorganisation of learning
- Biochips or biosensors that quickly and cheaply recognise diseases, physiological states and the properties of organisms
- Cloud computing, massive concentrated data and processing power
- Routine comprehensive DNA reading
- Material radar
- Modular robotics
- Real-time 3D environment modelling

Top Ten radical technological solutions in the scientifically most interesting sectors

- Extremely dense processors that take quantum phenomena into account
- Biochips or biosensors that quickly and cheaply recognise diseases, physiological states and the properties of organisms
- Routine comprehensive DNA reading
- Medication to prevent dementia
- Genetics-based medicines

- Life simulation on the cellular level and artificial cells
- Genetically modified organisms as producers of multi-use materials
- Prolonging life and slowing ageing
- Repair and re-growth of organs, cell cultivation
- Nanocarbons in removing salt or bacteria and other separation techniques

Top Ten radical promises at laboratory test level

- Wireless transmission at 2.5 terabits per second (vortex beam)
- Life simulation on the cellular level and artificial cells
- Piezoelectric energy sources, harnessing kinetic energy
- Prolonging life and slowing ageing
- 3D printing of buildings
- Repairing brains and enhancing abilities
- Efficient light solar panels
- 3D and 4D printing of materials
- Repair and re-growth of organs, cell cultivation
- Self-organising virtual world from Internet 3D data

The Committee recommends that Finland be active in the development and adoption of technology and channel resources into promoting and applying the above-mentioned technologies in research, product development and training and education.

It is equally important to continuously monitor and predict changes in how promising radical technological solutions are spreading. The technology foresight model developed for this purpose by the Committee must be maintained and developed in cooperation with various producers and users of foresight information as a part of a new national foresight operational method.

The Committee has stated in its submission (TuVL 3/2013 vp) on the Government's budget for 2014 that inputs into research and development in Finland are quite high: research, training and innovation expenditure accounted for 3.65% of Finnish GDP in 2012. At the same time, however, the inputs made by the Finnish public sector into incentives for companies' research, training and innovation activities are among the lowest in the OECD countries. The public R&D funding that companies receive in Finland is just under 3% (2010) of their own spending, while it is about 7% in the OECD countries. The contradiction stems from the fact that the biggest part of public funding in Finland is channelled into the kind of research that is not aimed at achieving benefits for business

life. Only about 40% of the around €2 billion total paid out of public funds provided has the direct aim of yielding benefits for the national economy or business life. As a proportion of GDP, public incentives paid to companies for R&D in Finland are only a third what they are in the USA, two-thirds what they are in Sweden and half the EU level. Unlike the situation in most of our competitor countries, these inputs have been declining further in Finland in recent years.

The target amount set in the Programme for Government for research, development and innovation is 4% of GDP. This has not yet been achieved. The Committee calls for the target to be achieved as a matter of urgency. In addition, it recommends that the special focus of inputs into research, development and innovation be on growth-oriented companies and basic research.

Draft decision

On the basis of the above, the Committee for the Future proposes the following as the stance to be approved by the Eduskunta:

- 1. The Eduskunta concurs with the stances and policy lines adopted in the Report, and at the same time*
- 2. The Eduskunta requires that the Government draft a science strategy for Finland and that the target of 4 per cent of GDP set for the level of funding for research, development and innovation activities be achieved together with the private sector.*
- 3. The Eduskunta calls on the Government to make haste with implementation of the new national foresight model and draft a programme and make a decision-in-principle by means of which a political commitment to promoting experimentation is undertaken.*
- 4. The Eduskunta requires that reform of working life and creating employment for the Finns be included, as key objectives, in the next Programme for Government in such a way that the theme includes also promotion of enterprise, use of partial capacity for work as well as developing social security in a direction that supports these objectives. Something that must also be taken into consideration in the measures is the principle of early intervention: for example, learning difficulties manifest themselves already at a very early stage and getting young people who are in danger of becoming marginalised engaged in working life must be supported through special measures.*
- 5. The Eduskunta requires that in all of its actions the Government promotes sustainable growth that will give impetus to the economy at the same time as it resolves social and ecological problems. This presupposes, e.g., pruning administrative obstacles, experimental projects and economic guidance.*

Helsinki, 24 September 2014

The following took part in decisive deliberation by the Committee:

Chair Päivi Lipponen /Social Democrat (part of time)

Deputy Chair Oras Tynkkynen /Greens

Members: Mikko Alatalo /Centre (part of time)

Olli Immonen /Finns (part of time)

Harri Jaskari / National Coalition (part of time)

Kalle Jokinen / National Coalition (part of time)

Saara Karhu / Social Democrat

Antti Lindtman / Social Democrat (part of time)

Markus Mustajärvi /Left Union (part of time)

Jaana Pelkonen / National Coalition

Antti Rantakangas / Centre (part of time)

Leena Rauhala /Christian Democrat (part of time)

Kimmo Tiilikainen / Centre (part of time)

Stefan Wallin /Swedish People's Party (part of time)

Sinuhe Wallinheimo /National Coalition (part of time)

Pertti Virtanen / Finns (part of time)

Ville Vähämäki / Finns (part of time)

(Alternate member) Jouko Jääskeläinen /Christian Democrat (part of time)

Anne Louhelainen / The Finns (part of time)

The secretaries to the Committee were:

Committee Counsellor Paula Tiihonen and Permanent Expert Olli Hietanen

Experts

The following have been consulted at hearings arranged by the Committee:

Ministerial Adviser Riitta Kirjavainen and Secretary General Pekka Lindroos, Office of the Prime Minister

Ministerial Adviser Ilkka Mella and Ministerial Adviser Martti Myllylä, Ministry of Employment and Equality

Environmental Counsellor Timo Turunen, Ministry of the Environment

Professor Heikki Hiilamo and Professor Kirsti Lonka, University of Helsinki

Professor Minna Halme, Professor Petri Parvinen, Professor, D. Tech, Deputy Director of Institute Ahti Salo and Research Director, Docent Mika Aaltonen, Aalto University

Professor Asko Suikkanen, University of Lapland

Head of Research Jari Kaivo-oja, Research Professor Pirjo Stähle, Professor Markku Wilenius and Docent Sofi Kurki, University of Turku, Futures Research Centre

Professor, Rector Kalervo Väänänen, University of Turku

Professor Tuula Tamminen, University of Tampere

Director General Heikki Mannila, Academy of Finland

Expert Adviser Jari Konttinen, Confederation of Finnish Industries EK

Team Leader Sanna Rauhansalo, Federation of Finnish Technology Industries

Director (strategy) Paula Laine, Finnish Innovation Fund Sitra

Director Hannu Kemppainen, Finnish Funding Agency for Innovation Tekes

Economic Policy Expert Pia Björkbacka, Central Organisation of Finnish Trade Unions SAK

Deputy Chair Tapio Huttula, Rectors' Conference of Finnish Universities of Applied Sciences ARENE.

Head of Unit Juha Honkatukia, Government Institute for Economic Research VATT

Professor, KTT, Docent Mika Pantzar and Special Researcher Minna Ruckenstein, National Consumer Research Centre

Economist Petri Malinen, Federation of Finnish Enterprises

Director Matti Apunen, Finnish Business and Policy Forum EVA

Head of Development Ritva Kauhanen, Regional Council of Lapland

Head of Development Pekka Hokkanen, Central Finland Centre for Economic Development, Transport and the Environment

Head of Development Jouko Nieminen, Southwest Finland Centre for Economic Development, Transport and the Environment

Special Planner Anni Laihanen, Regional Council of South Karelia

Municipal Agent Marko Rossinen, Regional Council of South Ostrobothnia

Head of Development Hanna Makkula, Regional Council of South Savo

Development Director Soile Kuitunen, City of Mikkeli

Head of Development Marko Koskinen, Regional Council of Pirkanmaa

Special Planner Pekka Kauppinen, Regional Council of Ostrobothnia

Head of Research and Development Mikko Väisänen, Regional Council of North Ostrobothnia

Regional Researcher Tuula Hermunen, Regional Council of Satakunta

Head of Planning Olli Pekka Hatanpää, Regional Council of Uusimaa
Regional Development Expert Jouni Ponnikas, Regional Council of Kainuu
Regional Agent Kimmo Niiranen, Regional Council of North Karelia
Chairman of the Board Pekka Ala-Pietilä, Solidium Oy
Director Kimmo Halme, Ramboll Finland Oy
Director Mari Hjelt, Gaia Group Oy
Research Director Maria Mekri, SaferGlobe
Executive Director, Dr. Pol. Sc. Markku Pyykkölä, Suomen Toivo (Finland's Hope) think tank
Researcher Leena Ilmola, The X-Centre, Vienna
Executive Director Sonja Vartiala, Finnwatch ry
General Secretary Taru Anttonen, Visio think tank
Executive Director Simo Grönroos, Suomen Perusta (Foundation of Finland) think tank
Elina Hiltunen, What's Next Consulting Oy
Director, Dr. Soc. Sc. Karina Jutila, e2 think tank
Executive Director Mikko Majander, Kalevi Sorsa Foundation
Dr. Pekka Ylä-Anttila
Futures Researcher Paavo Löppönen
Researcher Antti Hautamäki, Ph. D.
Pekka Himanen, Ph. D.
Dr. Comm. Sinimaaria Ranki

In addition, the following made written submissions:

The Ministry of Education and Culture's Research and Innovation Council
Libera think tank
Tänk Fellow Ohto Kanninen, Tänk think tank
General Secretary Taru Anttonen, Visio think tank



PARLIAMENT
OF FINLAND

ISBN 978-951-53-3577-7 (PAPERBACK) • ISBN 978-951-53-3578-4 (PDF)
ISSN 2342-6594 (PRINTED) • ISSN 2342-6608 (WEB)