

Demand and User-driven Innovation Policy

Framework (Part I) and Action Plan (Part II)

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Demand and User-driven Innovation Policy

Framework (Part I) and Action Plan (Part II)

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Tiivistelmä Referat Abstract <p>The national innovation strategy of Finland was prepared with the aim of finding new sources of competitive advantages for Finland in response to the ever-increasing global competition. Demand and user-driven innovation policy was identified as a key policy area to be developed. This led the Ministry of Employment and the Economy, in cooperation with various stakeholders, to determine the demand and user-driven innovation policy areas in need of development, and to compile an action plan for the policy area.</p> <p>Demand-driven innovation policy aims to promote the creation and diffusion of innovations by strengthening the demand for innovations and improving the prerequisites for their adoption. This may be achieved by, for example, using public procurement to promote innovations, or by enhancing demand through regulation and standardisation. User-driven innovation policy in turn promotes deeper understanding of user needs and strengthening the users' role in innovation activity. In addition, the aim is to increase the commercialisation of user innovations, i.e. innovations developed by users for their own needs.</p> <p>This is a two-part report. Part I of the report describes the significance of a demand- and user-driven approach to innovation policy, and explains why this new approach is necessary. In addition, it presents the key elements of demand- and user-driven innovation policy: competence development, regulatory reform, new operating models for the public sector, and development of incentives.</p> <p>Part II of the report presents improvement measures for the near future. The initiatives of the action plan include, for example, using public procurement more effectively to support innovation by enhancing the innovation role of organisations active in developing public procurement processes and practices - such as Hansel, Motiva and HAUS. Citizen participation in public sector services related innovation activities can be facilitated by making public sector information resources more easily accessible to users, user communities and enterprises. Design has a more prominent role in user-driven innovation than before, and it can be applied in a comprehensive way to developing services and products alike. Design tools are also applicable to developing solutions to social challenges.</p> <p>In international terms, demand and user-driven innovation policy forms a new policy area with vast potential. Finland is in an excellent position as a forerunner in the design and implementation of the new policy. However, the role of a forerunner also presents challenges, because there are very few policy models or tools that have already been tested elsewhere. The diverse nature of demand and user-driven innovation policy also adds to the challenge, because its measures are cross-cutting not only from the perspective of the Ministry of Employment and the Economy, but also in respect to several other administrative sectors.</p> <p>Contact person within the Ministry of Employment and the Economy: Innovation department/Teija Palko, tel. +358 10 606 4122</p>		
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Foreword

The national innovation strategy, adopted in 2008 by the Government, was prepared with the aim of identifying new sources of competitive advantage for Finland. This was done on the basis that, while good results have been achieved through science, technology and innovation policy, changes in the operating environment and intensifying global competition required the review of even well-proven policies.

Demand- and user-driven innovation policy was identified as a central policy area to be developed. In many respects, a closer inspection of demand- and user-driven innovation opens up a whole new world of innovation activity: alongside the private sector, the public sector can be a forerunner in innovation. It is now easier for citizens to participate in innovation, as individuals and part of communities, and their resources should be utilised in innovation activities. In addition to improving the visual appearance and usability of physical products, design philosophies can be applied to the development of public services. Societal challenges such as climate change can be turned into competitive advantages, if policy is used to accelerate the crafting of innovative solutions. Enormous opportunities exist, but to seize them a new kind of attitude environment, greater risk taking ability in the public sector, and the adoption of new operating methods are required.

Since, on an international basis, demand- and user-driven innovation policy is a new field, few tried and tested models or policy instruments are available for adoption. In many respects, Finland is a pioneer in shaping and implementing a demand- and user-driven innovation policy.

As in all innovative activities, risk is a key element in acting as a pioneer. Not all of the challenges, opportunities and mechanisms related to a new policy can yet be fully understood. The measures presented in this report have been identified alongside stakeholders in order to provide solutions to identified problems. In respect of such problems, the policy therefore has a high chance of success. Common actions also enhance the impact of measures taken.

The policy framework and action plan presented in this report was prepared by the Demand-driven innovation -group in the Ministry of Employment and the Economy in cooperation with an extensive group of actors from the private and public sectors. On behalf of the Ministry, I would like to extend my warm thanks to all who participated in this work. Especially the CEO of European Touch Oy, Jari Kuusisto, and MIT professor Eric von Hippel provided valuable advice in preparing the report. This

report utilises materials from research projects conducted by the Lappeenranta University of Technology and funded by Tekes, the Finnish Funding Agency for Technology and Innovation, for which I would like to thank the researchers.

PETRI PELTONEN

Director General

Ministry of Employment and the Economy, Innovation Department

Demand and User-Driven Innovation Policy

Framework (part I)

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1 Introduction

Constantly evolving innovation activities and changes in the operating environment create pressure on innovation policy development. The need to develop demand- and user-driven elements of innovation policy emerged during the national innovation strategy preparation.¹ In order to attain a national competitive advantage, innovation policy should better respond to the challenges posed by constantly evolving and diversifying innovation activities, and more efficiently grasp the new opportunities offered by changes in innovation. In the innovation strategy report to Parliament,² the Ministry of Employment and the Economy was requested to consider what kind of policy would best promote demand- and user-oriented innovation, and to draw up the related action plan.

The report sets out to address the task assigned in the Government's communication. The first part of the report (part I) describes the concept of a demand- and user-driven approach in the context of innovation policy. It also demonstrates how identified policy contents can be structured into a logical policy framework. Since the innovation policy field in question is a new, developing one, the report also explains the need for a demand- and user-driven innovation policy on a more general level. The latter part of the report (part II) comprises an action plan, which gives due consideration to the first part of the report.

A demand- and user-driven approach forms a rather multi-dimensional entity, as the aspects it covers can be related to activity in the public sector, within companies, and among individual consumers. The background and justifications for the policy framework and the policy programme have therefore been prepared in cooperation with various stakeholders. In addition, extensive use has been made of the latest research data.

1.1 Expanding the scope of innovation policy

During the last few years, innovation activity has become significantly more multi-dimensional, which can be viewed as representing a rather fundamental change. While innovation activities have expanded outside their traditional fields, the group of actors involved in innovation has extended from developers, in the direction of users and user groups. It is expected that, to an increasing extent, innovation activity will provide answers to many significant societal challenges, such as sustaining well-being, curbing climate change and reducing energy consumption.

¹ Ministry of Employment and the Economy (2008) National innovation strategy, Helsinki.

² Government (2009) Government's Communication on Finland's National Innovation Strategy to Parliament, VNS 5/2008, Government, Helsinki.

Due to the change in innovation activities, a more extensive concept of innovation has been adopted as the starting point of innovation policy. Under innovation policy, the definition of innovation emphasises the competence-based aspect, various sources of innovation and new applications of it.

“Innovation refers to a utilised, competence-based competitive advantage. A competence-based competitive advantage can emerge from scientific research, technology, business models, service solutions, design, brands or methods of organising work and production. Typically, an innovation is generated by a combination of different competencies. Capitalised as innovations, competence-based competitive advantages promote the advancement of businesses, society and wellbeing.”

Until now, innovation policy has focused on promoting the supply of innovations and the policy’s target area has been rather narrow. Through a demand- and user-driven approach, innovation policy is able to address many fields of mounting importance that are central to innovation activity. This can further enhance the policy’s effectiveness.

1.2 Particular features of demand- and user-driven innovation policy

Demand- and user-driven innovation policy includes new perspectives, activities and target groups that supplement and broaden the current innovation policy in a significant manner.

Demand orientation places a particular emphasis on the macro perspective, i.e. promoting the innovativeness of markets, while taking advantage of, and steering, market demand in a way that encourages innovation. The aim is to improve market conditions so that the introduction and diffusion of innovations is as efficient as possible (see Figure 1).

The market incentive effect refers to the diverse ways in which the markets encourage innovation. For example, in the case of companies these are related to profit seeking or being “forced” to use innovations in order to evade the toughest competition in the markets. From society’s point of view, however, they can be related to political decision-makers’ desire to steer the development of markets by setting new requirements for market actors, such as that of increasing energy efficiency.

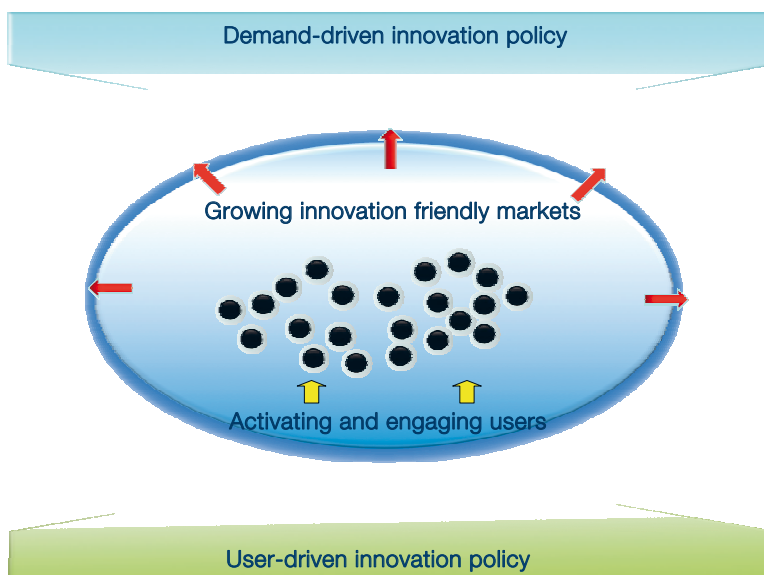
In demand-driven innovation policy, a more comprehensive (systemic) approach to implementing innovation policy is also emphasised (see figure 1). This requires closer coordination of various policy tools, and cooperation between various administrative sectors. Furthermore, an in-depth understanding of sector-specific differences in market dynamics is required (horizontal co-operation).

Broad-based innovation activity also applies to a wider group of actors, requiring the ability to co-operate (vertical co-operation) between policy makers, those who implement the policy and those who are affected by it. Since several factors play a role in the development of markets, generating and increasing demand is often achieved most efficiently when several policy measures are applied simultaneously. This also requires the close coordination of supply- and demand-based measures and their timing.

On the other hand, innovation policy with a focus on user-orientation emphasises the micro-perspective, aiming to advance innovations that are based on user needs and created by active users. A specific policy challenge then lies in utilising the creative potential, inherent in individuals and communities, in both business and the reform of public services.

User-driven innovation policy places an emphasis on the development of products and services that are based on user needs, on user and user community participation in development work, and on taking greater advantage of users' own innovations (see figure 1). The focal point of innovation policy is close to individual market actors, comprising users of products and services, and the companies and organisations who offer such products and services. The term 'users' usually refers to individual end users, encompassing consumers (in the case of public services, citizens), but also various user consortiums, user communities, and even user masses. Also, companies are deemed users when examined as end users of a given product or service. User masses refer to large groups of users, especially those on the Internet, for which it is difficult or even impossible to provide an unambiguous definition.

Figure 1. Demand- and user-orientation in innovation policy



1.3 Why is demand- and user-driven innovation policy needed?

The focus of traditional innovation policy tools has been on increasing the supply of innovations. These tools include, for example, public research investments and the provision of support for the research and development activities of companies. This method, ideally suited to the so-called linear innovation model and market gap thinking in economic theory, has long been the prevailing one.

However, the linear model gives too narrow an idea of innovation activities. For instance, innovations created by users themselves or innovations created by market actors through collaboration are ill-suited to this model. This is one of the reasons why it was considered necessary to renew innovation policy. Thus, the aim is to complement the current supply-driven innovation policy so that the latent expertise within society, and some policy tools that have not yet been utilised in innovation activity, can be harnessed to develop the economy and society and increase well-being.

One of the central premises of demand-driven innovation policy is that promising innovations often already exist, but there are obstacles to their diffusion. However, such obstacles can be reduced through policy measures affecting demand. For instance, standardisation can be used to increase market demand by harmonising product specifications. Society can also be the first to adopt a promising innovation, thereby helping innovators to obtain references that are important in the markets. As far as the adoption of innovations is concerned, coordinating the activities of various policy sectors by taking the innovation policy perspective into account can be crucial.

Targeting of the public sector's own demand is an important factor in demand-driven innovation policy. Public procurement volumes in Finland are approximately EUR 22 billion, corresponding to 15 per cent of our gross domestic product. The more efficient allocation of a few per cent to innovation procurement would already represent an addition the size of Tekes' entire budget to the public sector's research, development and innovation investments.

Demand-driven innovation policy can also be used to grasp the opportunities provided by societal challenges. Several such challenges faced by developed economies, such as climate change, are global in nature. If new solutions to these challenges can be created through innovation, it is then often possible to take commercial advantage of such innovations globally.

User-driven innovation policy aims to increase the number of innovators within the economy and in society on a wider basis. This is a question of harnessing the latent and often dispersed competencies in society to the benefit of innovation activity. In particular, rapid development in the field of information technology has provided new tools, through which users can innovate on their own terms and within their own communities. This has also contributed to the ability of companies to

outsource their innovation activities to external developers on a more extensive basis.

User-driven innovation policy emphasises innovation that is steered by user needs, in which the utilisation of user information, cooperation in product development between users and companies, and users' own innovation activities, are central. These factors can significantly improve the likelihood of successful innovation activity.

2 Demand-driven innovation policy

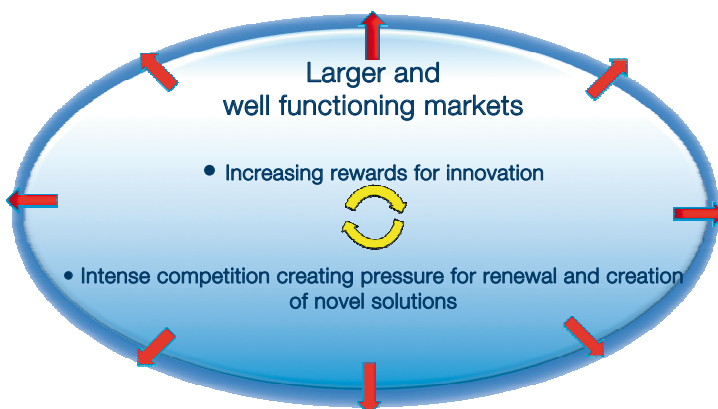
2.1 Markets and demand as a driver of innovation activity

The starting point of demand-driven innovation policy lies in the fact that innovations and their diffusion can be promoted through a policy that focuses on market demand in addition to supply. Supply- and demand-driven innovation policies are complementary and, combined, can reinforce the impact of measures.

The aim of demand-driven innovation policy is to influence market conditions so that they become as favourable as possible to innovation activity. The underlying assumption is that the market and competition form the most important incentive for innovation and have a significant impact on the diffusion of innovations. Enhancing demand and strengthening the market improves incentives for innovation by increasing the rewards of innovation activity (see figure 2). In addition, stronger demand usually increases competition, providing a further boost to innovation incentives.

Demand-driven innovation policy measures have a particular focus on the final phase of the innovation cycle, where undeveloped markets can constrain the efficient utilisation of innovations. Policy is used to steer demand towards innovations, with the aim of improving the functioning of markets and boosting the impact of innovations on economic growth and well-being in society.

Figure 2. The effect of demand on incentives for innovation



2.2 Objectives and challenges of demand-driven innovation policy

The objective of demand-driven innovation policy is to create new markets for innovations and to stimulate demand for novel goods and services. This is pursued by facilitating the market entry of new products and services, and by steering public and private demand towards innovative products and services by means of public procurement, regulation and taxation.³ In short, demand-driven innovation policy and its objectives can be defined as follows.⁴

Demand-driven innovation policy creates stimulus for innovations and their diffusion by strengthening demand and facilitating favourable market conditions for the adoption of novel products, services and processes.

The policy aims to promote demand for innovations and competition in the markets, so that the markets function as an efficient driver for the creation and diffusion of innovations.⁵ The primary purpose is to remove obstacles that have a negative impact on the markets. Incentives for the development of innovations can be created through, for example, tax incentives, or by directing public procurement towards innovative products, services and solutions. The public sector can also set challenging targets through regulation, thereby increasing companies' motivation to innovate.

Directing public demand towards innovations takes concrete shape in the form of public procurement. In the European Union, public procurement accounts for 16 per cent of GDP.⁶ These large procurement volumes provide the public sector with a significant opportunity to have a direct influence on demand for innovations through its own activities.

Efforts to steer *private sector demand* towards innovative products and services can be made through regulation, taxation, pricing, standardisation and competition policy. Furthermore, consumer choices can be influenced by means of recommendations, informative labelling and through consumer policy. For its own part, the public sector can set an example through the early adoption of innovative services and products, thus creating trust in the introduction of new innovations.

3 Blind, K, Edler, J, Georghiou, L, Uwarra, E, Cox, D, Rigby, J, and Nugroho, Y. (2009) Monitoring and Evaluation Methodology for the EU Lead Market Initiative - A Concept Development, PRO INNO Europe initiative, European Commission, Brussels, Belgium; OECD (2009) Demand-Led Innovation: Key Messages to the OECD Innovation Strategy, DSTI/IND/STP (2009)3, Paris, France.

4 Edler, J. 2009, Demand Policies for Innovation in EU CEE countries, Innovation for Competitiveness Workshop INCOM, Prague, Czech Republic; Cunningham, P. (2009) Demand-side Innovation Policies, Policy Brief No:1, 2009, European Commission, Pro Inno Europe, Policy Tend Chart, Brussels, Belgium.

5 Georghiou, L. (2006) Effective Innovation Policies for Europe – the Missing Demand-side, contribution to the project Globalisation Challenges for Europe and Finland organised by the Secretariat of the Economic Council, Prime Minister's Office, Helsinki, Finland; Lovio, R. (2009), Näkökulmia innovaatiotoiminnan ja –politiikan muutoksiin 2000-luvulla (Perspectives on the changes in innovation activity and innovation policy in the 21st century), Department of Marketing and Management, Helsinki School of Economics, Helsinki, Finland.

6 http://www.proinno-europe.eu/doc/procurement_manuscript.pdf (visited on June 22nd, 2010)

There is an urgent need to seek solutions for global and societal challenges. This creates significant market opportunities for new innovative products and services. Demand-driven innovation policy can be used to encourage the markets to develop solutions to these global challenges and to promote the exploitation of the new business opportunities that arise from them. This approach requires that the policy reflect an in-depth understanding of the desired improvements in the functioning of markets and of the tools that can be used to have an effective influence on the emergence and growth of markets.

For instance, in addition to technological development, curbing climate change requires that demand be directed towards products, services and operating models that meet sustainable development requirements. Private and public demand can be directly influenced through regulation, taxation, public procurement and consumer policy, for example.

The type of demand can also be indirectly influenced by reinforcing trust in new innovative solutions. For instance, citizens' trust in new energy efficient construction solutions can be bolstered by introducing such solutions in public buildings at an early stage. Simultaneously, growing demand will encourage companies to develop innovations while diminishing the risk of commercial failure.

The goal of the Finnish climate and energy policy is to reduce greenhouse gases by 80 per cent, from 1990 levels, by the year 2050. This challenging target is primarily being pursued by increasing energy efficiency and saving energy. Sector-specific measures to reach these goals were defined in 2009. Stricter regulations, taxation and financial steering and support measures are being used in efforts to improve the efficiency of energy use in the built environment, traffic and industry, and to encourage the development of new energy-friendly solutions. Consumer choices are being steered towards energy-saving solutions and practices through guidance and energy efficiency labelling.

In terms of energy saving, the built environment is a major area, since the energy consumption of buildings represents as much as 40% of the total energy used. The Ministry of the Environment, the Finnish Innovation Fund Sitra and Tekes are currently preparing a national action plan focusing on improving the energy efficiency of buildings. Stricter energy regulations for both new building projects and renovation construction will be implemented in phases. Financial steering and support measures are being used to encourage repair work that increases energy efficiency. Stricter regulations will increase demand for new innovative structure solutions and more energy efficient heating systems.

The need for a comprehensive demand-driven innovation policy poses challenges to policy planning. A need for comprehensive measures and cooperation between different sectors of public administration is particularly emphasised when addressing

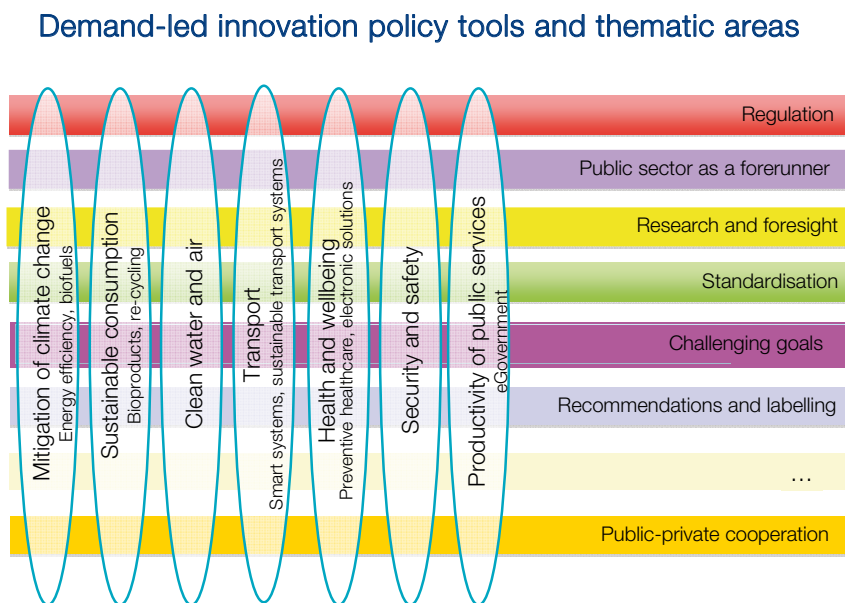
societal challenges. Individual, separate policy measures will not suffice in ensuring the promotion of innovation activities and growth in national productivity and competitiveness.⁷ It is therefore a prerequisite for the comprehensive planning of measures that promoting innovation also be adopted as an objective in administrative sectors outside the traditional ones steering research and innovation activities.

When non-traditional innovation policy tools are also utilised, the challenge lies in aligning and evaluating the various policy goals. In the case of public procurement, for example, requirements not only exist relating to cost-effectiveness, quality and the environment, but also to societal perspectives.

Implementing demand-driven policy requires cooperation and coordination between various actors. The systematic approach taken by innovation policy includes public sector cooperation with key stakeholders in developing regulation and standards, for example. In addition, new measures under the European Union's demand-driven innovation policy, such as the Lead Market Initiative, require cross-administrative cooperation both at national level and within the European Union.⁸

Differences between sectors add to this challenge. In the environment and energy sector, strengthening demand for innovation may require systematic utilisation of several policy tools, such as tax incentives, regulation and public procurements. In the defence sector, public procurement itself forms the major part of demand.

Figure 3. An example of applying demand-driven innovation policy to solving societal challenges



7 Government (2009) Government's Communication on Finland's National Innovation Strategy to Parliament, VNS 5/2008, Government, Helsinki.
 8 OECD (2009) Policies for demand-led innovation: Interim report. DSTI/IND/STP (2009)2, Paris, France.

Figure 3 illustrates this comprehensive perspective. The vertical ovals represent challenges of major importance to society while the policy tools in the horizontal bars represent the available policy tools. In order to generate innovations, several demand-driven innovation policy tools should be simultaneously applied to each challenge.

2.3 Demand-driven innovation policy framework

Demand-driven innovation policy has therefore been divided into four areas:

- 1) competence development,
- 2) regulatory development
- 3) development of public sector operating models, and
- 4) incentives for demand-driven innovations.

Policy tools, which can be used to promote innovations through demand, have been identified for each of these areas.

2.3.1 Competence development

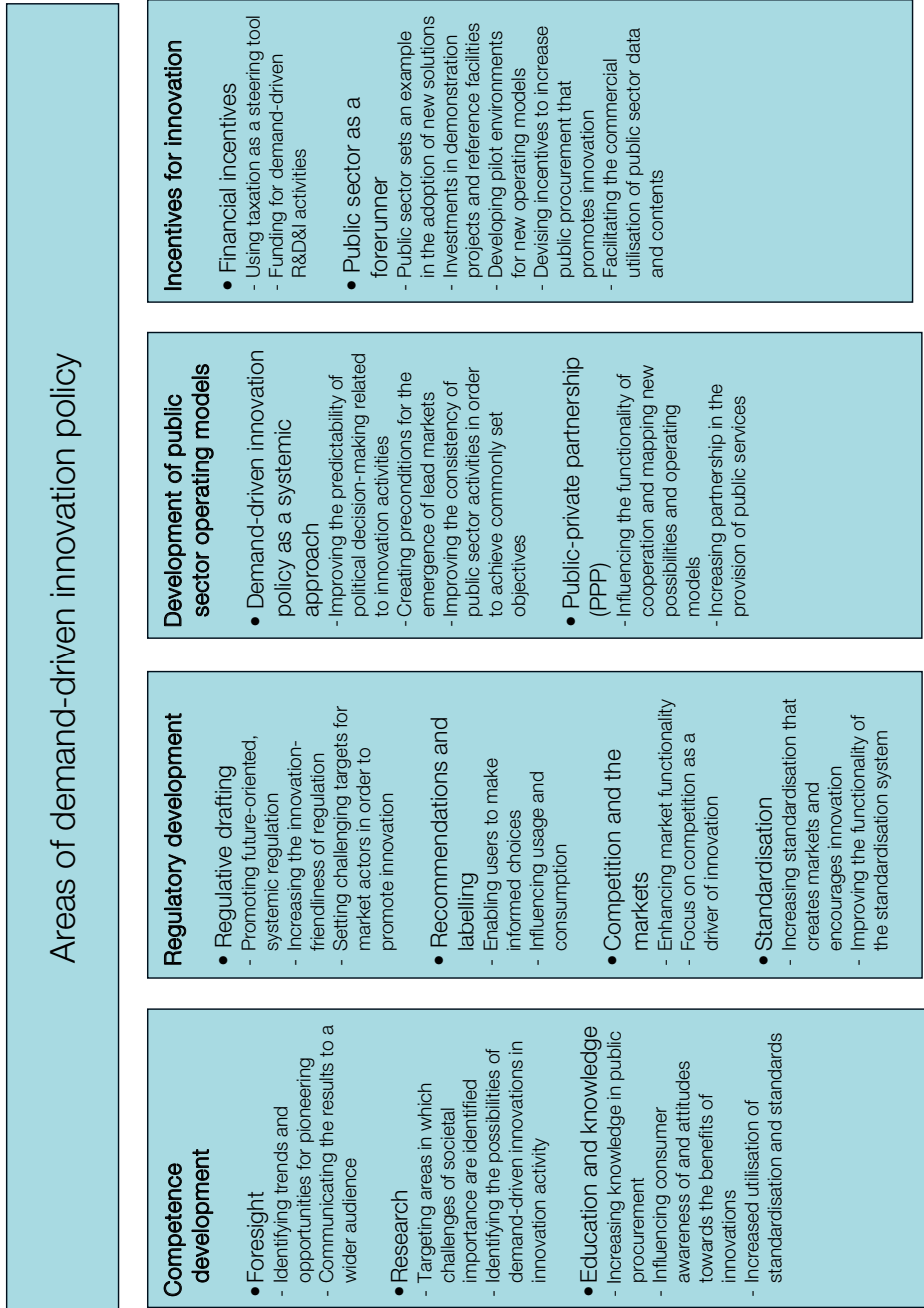
Demand-driven innovation policy aims at sufficiently large markets in which there is demand for innovative products and services, and which thus present innovating companies with a high chance of success.

Developing demand-driven innovation policy therefore requires a better understanding of how more public and private demand might be steered towards innovative products and services. Improved know-how and competence is also required with regard to identifying new growing markets and the related prerequisites for success. Societal challenges together with recognition and utilisation of the business opportunities arising from them contribute to the creation of a central area of expertise.

Foresight helps in the early identification of trends influencing society, the operating environment and the markets. Change processes often open up new markets and influence innovation activity. Such changes occur, for example, in technologies, markets, the organisation of production and in the social environment. In the case of foresight, demand-driven innovation policy measures can be better steered in the direction required by changes in the operating environment.

In addition to identifying opportunities and challenges, it is important to *communicate foresight results* to citizens, companies and the public administration on a broad basis. Such communication can increase awareness, thereby strengthening demand in accordance with emerging trends. Communication foresight results may also have a persuasive impact, since they may help the general public to understand and accept the necessity for changes resulting from societal challenges.

Figure 4. Demand-driven innovation policy framework



Research plays an important role in identifying and solving challenges that are of social importance. Through research, not only expertise linked to demand for innovations, but also *the ability to recognise the possibilities of demand-driven innovations* can be increased. This applies to both businesses and the public sector. Existing research data will be utilised, but new research on demand-driven innovation activity and policy is also required.

Well functioning markets and consumers' attitudes and the ability to adopt innovations play a central role in demand-driven innovation policy, for which reason improvements are required in the related expertise. *Enhancing consumer awareness* and, in particular, positive attitudes towards innovations and their benefits, offers a way of influencing the allocation and quality of demand. For instance, rapid technological development can lead to situations where demand does not improve as quickly as the available solutions, leaving some innovation potential unutilised. A targeted policy can be used to enhance consumer awareness, and consequently demand for innovations.

One area of research is *the strengthening of expertise regarding standardisation and its utilisation*. Standardisation can be used to promote the emergence of innovations and to facilitate their market entry. However, insufficient knowledge of the impacts of standardisation on the market entry of new products and solutions hampers the efficient utilisation of standardisation in supporting innovation. Therefore, awareness of standardisation and its benefits should be enhanced, especially among SMEs and in the public sector.

In addition, expertise related to *public procurements* should be improved. Innovative procurement requires that public sector organisations acquire new kinds of expertise and adopt new operating models. In this context, it is important to look abroad for good practices and concrete examples.⁹

2.3.2 Regulatory development

Regulation is used to influence decision-making and the choices made by society, companies and citizens, and to affect the attractiveness of the objects of regulation. This makes regulation a key factor in shaping society and the business environment for enterprises. Broadly speaking, regulation refers to both mandatory provisions and recommendations, as well as voluntary agreements made by the public sector and enterprises, for example.

The objective of regulation is to promote the achievement of goals considered desirable by society, such as social, economic and environmental ones. However, together with other policy measures and changes in the market, regulation also directly and indirectly affects both supply and demand for innovations.

⁹ Australian National Audit Office (2009) *Innovation in the Public Sector: Enabling Better Performance, Driving New Directions*, Commonwealth of Australia, Canberra, Australia; Treasury (2009) *PUTTING THE FRONTLINE FIRST: smarter government*, Presented to Parliament by the Chief Secretary to the Treasury by Command of Her Majesty, December 2009, London, UK

From a business perspective, one of the most important objectives of regulation is to create an internationally competitive regulatory environment. In this, a central factor is *the improvement of competitive circumstances and market functionality*. For instance, it is important to ensure equal opportunities for competition on the borderline between the private and public sectors.

Regulation influences innovation activity in many ways, and the relationship between them is very complex and interactive. The development of new technologies, products and business processes can lead to the emergence of new markets and market disturbances, which may need to be addressed through regulation. Regulation, for its part, can affect product, service, process, marketing and organisational innovations. In turn, changes in the competitive situation, expertise, investments and taxation influence innovation incentives and risks. The changing and complex relationship between regulation and innovations thus renders the promotion of innovation through regulation a challenging task.

Demand-driven innovation policy aims to utilise the positive effects of regulation in encouraging innovation. An example of regulation favourable to innovations is regulation determining the performance level or end result. This means that the desired performance level or end result is specified through regulation, leaving businesses with a broad set of options for taking advantage of new technologies, solutions and methods to achieve the desired outcome. Furthermore, characteristics of innovation-friendly regulation include predictability, consistency and future-orient- edness. It is also important to consider the effects the timing of regulation has on innovation activity.

Only the systematic development of expertise related to regulation and the assessment of its impacts create the preconditions for setting targets for market actors that are both challenging and which genuinely encourage innovation. Alongside legally binding regulation, various softer forms of steering exist, allowing for demand-based support for innovations. These forms of regulation include *recommendations and labelling*. For example, they can be used to increase the transparency of products, services and processes, enabling consumers to make informed choices. Influencing the usage and quality of demand are therefore important elements of demand-driven innovation policy.

In addition to securing their competitiveness and market position, companies' innovation activity is motivated by the targets set by regulation, such as reducing emissions that have an environmental effect.¹⁰

The objectives of environmental policy, in particular the implementation of climate policy, present major challenges and opportunities in the development and introduction of new technology. At the same time, new opportunities open up for environmental business. However, generally speaking, environmental policy programmes do not include evaluations of technical development needs, technology

10 Department for Business Enterprise & Regulatory Reform (BERR) (2008) Regulation and innovation: evidence and policy implications, BERR Economics Paper No: 4, December 2008, London, UK.

mainly being examined in order to identify an appropriate target-setting level. There is therefore an obvious need for closer cooperation between innovation and environmental policies.

A good example of cooperation between actors that takes innovation objectives into account is the Environmental Innovation Panel established by the Ministry of the Environment. The purpose of this panel is to investigate how environmental policy support for the development and introduction of environmental innovations might be increased. The aim is both to promote cost-effective environmental protection and create the preconditions for environmental business. In addition, the panel aims to increase the dialogue between the environmental administration and developers of environmental technology, while improving opportunities for actors in the field to keep abreast of developments in environmental legislation. The focus areas of the Environmental Innovation Panel's work are the prevention of climate change, sustainable use of natural resources, protection of the Baltic Sea and air pollution control.¹¹

Regulation is a very powerful policy tool. It is therefore important that more systematic account be taken of the impact of regulation in *legislative drafting* with regard to demand for innovations and the development of innovative markets. This is a highly challenging task and requires expertise, tools and cross-administrative cooperation.

The principles of innovation-friendly regulation in the UK are listed below.

Innovation-friendly regulation can be pursued by, for example, the following principles:¹²

- 1 Provide businesses with some flexibility as to how they deliver desired policy outcomes.
- 2 Clearly inform businesses of future changes in the regulatory framework well in advance so that they have sufficient time to comply with new rules and requirements.
- 3 Specify desired outcomes which cannot be easily achieved using existing technologies and business practices.
- 4 Stipulate clear requirements which are easily understood by businesses, reducing the possibility of misinterpretation.
- 5 Impose minimum compliance costs on businesses.
- 6 Complement other government market-based and regulatory-based policies which promote innovation.

11 The Ministry of the Environment (2009), Luonnon ympäristöpaneelin toimintasuunnitelmaksi (A draft action plan for the Environmental Innovation Panel), Environmental Protection Department, Helsinki, Finland. <http://www.ymparisto.fi/default.asp?node=24757&lan=fi> (visited on June 22nd, 2010)

12 Department for Business Enterprise & Regulatory Reform (BERR) (2008) Regulation and innovation: evidence and policy implications, BERR Economics Paper No: 4, December 2008, London, UK.

In many ways, these principles of innovation-friendly regulation are linked to the principles of *better regulation*, defined by the European Union.

Standards are another way of influencing innovation activity. Standardisation means making common agreements on products and operating methods with the aim of facilitating the activities of businesses, the public administration and citizens. Standards are also used to improve the compatibility and safety of products, services and management systems. Furthermore, they can be used to protect the environment and facilitate domestic and international trade.

Standardisation can be used to bring together dispersed demand and to improve the compatibility of products and services, thereby promoting demand and the market for innovative solutions.

Basing standards on, for example, performance requirements instead of technology-bound solutions enables the development of new solutions while creating demand for innovations. Standards can also consolidate and clarify the market situation, especially at an early stage of the commercialisation of innovations, thereby speeding up the commercialisation process.

With regard to developing and implementing *standards* that create markets and encourage innovation, it is important that the functionality of the standardisation system and its improvement be examined in a co-ordinated manner as part of standardisation policy and the development of the standardisation system. Prerequisites for the efficient utilisation of standardisation in innovation activity include a functioning and dynamic national standardisation system, as well as channels and mechanisms for efficiently influencing European and international standards.

2.3.3 Developing public sector operating models to promote demand for innovations

Promoting demand for innovations is influenced by several factors related to the economy, politics, the social environment and institutions. Combined, these factors form an environment for innovations that is greatly affected by the public sector's operating models. Demand-driven innovation policy is also aimed at developing public sector operating models favouring innovation. A systemic approach and closer co-operation between the private and public sectors are essential in developing such operating models.

A central objective is high predictability in political decision-making related to innovation activity. Consistent, long-term efforts by the public sector to achieve commonly set targets create the basis for a market favourable to innovation, by reducing risks related to innovation activity. A comprehensive policy is used to consciously create favourable conditions, covering the entire trajectory of innovation from invention to commercialisation.¹³

13 Lovio, R. (2009), *Näkökulmia innovaatiotoiminnan ja -politiikan muutokseen 2000-luvulla* (Perspectives on the changes in innovation activity and innovation policy in the 21st century), Department of Marketing and Management, Helsinki School of Economics, Helsinki, Finland.

Promoting the creation of lead markets is a new EU policy area aimed at increasing demand for innovations.¹⁴ Its purpose is to improve the European market environment in order to provide better conditions for the creation and growth of new innovative markets, while bolstering the preconditions for the development of worldwide operations by pioneering companies operating in Europe. However, the fragmented nature of the internal market and innovation system is one factor which is slowing down the creation of lead markets and a lead market position in the European Union.

A sufficiently extensive, growing market with efficient competition best fosters the motivation and preconditions for innovative business. It is in this scenario that demand for, and the supply of, new products and services most probably arise. Competition provides enterprises with an incentive to produce innovative solutions. In an extensive, growing market companies can achieve both advantages of scale and major revenue. Companies that have established a strong market position in the European Union can be among the first to enter the growing global market.

The chosen tools of the *Lead Market Initiative*¹⁵, launched by the European Union in 2008, are regulation, public procurement and standardisation. Priority areas are sustainable construction, bio-based products, renewable energy, recycling, protective textiles and electronic health care services. One selection criteria is that these areas are linked to broader strategic, societal, economic and environmental policy objectives.

The central drivers in the creation of lead markets can be divided into five groups that should be taken into account in policy development¹⁶:

- 1 Demand advantage
 - Refers to demand and market conditions that anticipate global trends in a certain country or market area.
- 2 Price and cost advantage
 - Refers to a version of an innovation being cheaper than competing versions, for instance thanks to technological solutions or a large and efficient market.
- 3 Transfer advantage
 - Refers to a situation in which a solution with exceptional properties and quality is developed due to demanding customers. If companies in this area are export-oriented, there is a positive impact on transferability.
- 4 Export advantage
 - Emerges when companies take account of the demands of broader markets in the design of products, services and solutions.
- 5 Market-structure advantage
 - Emerges when the country or area has a competitive and well-functioning market. It is in this situation that companies are under pressure to

14 European Commission (2006) 'Chapter 6: The 'Lead Markets' approach to innovation policy' European Competitiveness Report 2006. Luxembourg, Office for Official Publications of the European Communities, Brussels, Belgium.
15 <http://ec.europa.eu/enterprise/policies/innovation/policy/lead-market-initiative> (visited on June 22nd, 2010)

16 Beise, Marian and Cleff, Thomas (2004) Assessing the lead market potential of countries for innovation projects, *Journal of International Management*, Vol. 10, Issue 4, 2004, Pages 453-477.

produce high-quality products and services, while the competition forces companies to innovate and constantly improve their products and services at a rapid pace.

The better the above characteristics describe a single market, the better a chance it has to develop into a lead market.

In addition, by increasing public private partnerships (PPP), the objectives of demand-driven innovation policy can be furthered. Various cooperation models combining knowledge in public and private sectors offer a host of opportunities, for instance in the development of public services. At the same time, significant business opportunities may open up for companies.

Partnership refers to an operating model whereby actors in the public sector, together with private companies or other organisations, aim to produce or deliver a service for which the public sector is primarily responsible. Such a partnership is based on measurable targets that have been set together, and on producers' responsibilities as well as on trust and openness, thereby providing innovation incentives for each producer.

Many of the problems now faced by society are extremely challenging. To address these challenges, broad and open-minded utilisation of knowledge and resources from different sectors is needed. This requires a well functioning dialogue and partnership between the parties, and a common vision of the implementation of development projects.

2.3.4 Developing incentives for demand-driven innovations

Incentives are designed to influence businesses' motivation to innovate. They include direct monetary incentives to develop innovations and the direction of public and private demand towards innovations.

The first group of incentives for demand-driven innovations is economic incentives, comprising, among others, taxation as a steering tool and the funding of demand-oriented research, development and innovation activity.

Taxation can be used to influence the emergence and growth of innovative markets. Particular attention must be paid to directing the steering impact towards genuinely innovative solutions. In addition to the direct impact, the indirect, long-term impact of taxation must also be taken into account.

Public funding can also be used to cover extra costs and risks linked to directing public procurement towards innovations. These may include risks related to the functionality or cost-effectiveness of the innovation, or to the procurement process itself. Risk sharing and funding allocated for that purpose can be used to lower the threshold of innovation procurement, and thereby create demand and markets for innovative products and services. Tekes' funding instrument for innovative public procurement was created for just this purpose. It aims to improve the quality and productivity of services, the functionality of markets, innovativeness and the

lifecycle approach on the part of producers, and to prompt the creation of innovative solutions through competitive tendering. Funding from Tekes can cover as much as 75 per cent of the costs related to planning and carrying out procurement.¹⁷

The objective of the Small Business Research Initiative (SBRI)¹⁸ in the UK is to activate SMEs in developing solutions to the public sector's problems. Government departments and public sector organisations define research areas related to, for example, societal challenges, either alone or in cooperation with external experts. An open competition for ideas is being organised to encourage SMEs to map out alternative solutions and technologies. An independent panel of experts will evaluate the project ideas and choose winners, who will participate in a development phase fully funded by the state. Based on a six-month feasibility study, with an estimated value of EUR 111,000 (£ 100,000), there will be a further assessment for a two-year development phase (max. £ 1 million / EUR 1.1 million), in which a public institution will be the lead customer. The goal is to develop commercial products, whose intellectual property rights will be retained by the company. The tendering process for the actual contract is open to all applicants.

The SBRI programme offers SMEs a chance to cooperate with a public sector customer and thereby diminish the risk involved in bringing a new technology or solution to the market. For the public sector, the SBRI programme represents a way of acquiring innovations, identifying new actors on the markets and adopting new solutions with a managed level of risk.

Through its own actions and acquisitions, the *public sector* can serve as an example to other actors in the markets in increasing demand for innovations, especially during the market-entry phase. Public sector "approval" in the form of public procurement, also lends innovations credibility on the markets.

The public sector shows a *pioneering approach in its own actions* with regard to, for instance, curbing climate change, by giving preference to low-emission and energy efficient forms of transport and buildings.

According to the decision-in-principle¹⁹ made by the Government in the spring of 2009, the goal is that by 2010, central government will take environmental aspects into consideration in at least 70 per cent of procurements. In 2010, the central government's new properties must be of energy efficiency class A, and buildings constructed, renovated and rented after 2015 must be passive houses. Another significant development area in terms of pioneering lies in the public sector's role in introducing electronic services.

17 Tekes (2009) Innovaatiot julkisissa hankinnoissa –rahoitus (Funding for innovative public procurement), Presentation material 10/2009, Tekes, Helsinki.

18 UK Technology Strategy Board, What is SBRI? <http://www.innovateuk.org/deliveringinnovation/smallbusinessresearchinitiative.ashx> (visited on June 22nd, 2010)

19 <http://www.vn.fi/toiminta/periaatepaatokset/periaatepaatos/fi.jsp?oid=258914> (visited on June 22nd, 2010)

Various criteria and targets have been set for public procurement. In many cases, adding the promotion of innovation to procurement objectives renders the procurement process highly demanding. New expertise and operating models are therefore required. Not only does the buyer need expertise and readiness to take risks, but also the backing of strategic upper-level decisions and support for change.

Account has taken of the challenging aspects of making innovative public procurements in the guide²⁰ published by the European Commission, where recommendations are given on promoting innovation through public procurement.

- 1 Act as an 'intelligent' customer
- 2 Consult the market before tendering
- 3 Involve key stakeholders throughout the process
- 4 Let the market propose creative solutions
- 5 Seek value for money, not just the lowest price
- 6 Take advantage of electronic means
- 7 Decide how to manage risks
- 8 Use contractual arrangements to encourage innovation
- 9 Develop an implementation plan
- 10 Learn for the future

Other ways in which the public sector can promote demand-driven innovation include *investments in demonstration projects and reference facilities*. The aforementioned projects are especially important where investment-intensive, complex or high-risk projects are concerned. Demonstration and reference projects can also, for their part, improve the quality of demand when it does not develop in pace with the available solutions. Successful pilot projects can provide a significant competitive advantage and even lead to a position as a global forerunner.

In 2008, Denmark initiated a pilot project for the testing of electric cars and the related infrastructure. This project will continue until 2012 and is funded by the Danish Energy Agency. In the first round of funding, 10 million Danish crowns (EUR 1.35 million) were invested in 17 projects. Some 44 electric cars, two areas of local administration, six municipalities, two associations and one research institute are involved.²¹ In particular, the electric car pilot is aimed at utilising wind power energy produced in Denmark.²² An important partner in the project was Californian-based company Better Place, which specialises in the development of electric cars and the infrastructure they require. In addition to the Danish pilot, the company is involved in similar projects in Israel, Hawaii, Portugal and San Francisco.²³

20 http://www.proinno-europe.eu/doc/procurement_manuscript.pdf (visited on June 22nd, 2010)

21 <http://www.ens.dk/en-us/climateandco2/transport2/Sider/testscheme.aspx> (visited on June 22nd, 2010)

22 <http://www.kemin.dk/en-US/climateandenergypolicy/dkpolicy/electriccars/Sider/Forside.aspx> (visited on June 22nd, 2010)

23 http://news.cnet.com/8301-11128_3-10150716-54.html (visited on June 22nd, 2010)

By developing its own operating methods, the public sector can open up possibilities for the emergence of significant new, innovative markets. On the other hand, even individual regulations can prevent this from happening. For instance, the Act on Criteria for Charges Payable to the State has slowed down the further processing and commercial utilisation of information produced by the public sector. The public sector produces and compiles significant amounts of *documents, information material and databases, and maintains registers*. These constitute a large national asset that can be utilised most efficiently by providing external actors with access to it. The practical implications come to the fore when comparing the situation in the USA to that of the EU. Opening up the public sector's data to commercial utilisation has increased its financial value to the point where, in the USA, commercial utilisation of public sector data is estimated to be tenfold that of the European Union.²⁴ Practical applications include weather information services, patent databases and public transport databases.

24 http://www.ofcm.gov/sai/presentations/02-panel_1-part1/05-p_weiss.ppt (visited on June 22nd, 2010)

3 User-driven innovation policy

3.1 User-driven innovation

User-driven innovation is increasingly important in relation to producer-driven innovation. Companies that pay strong attention to their customers' needs and expectations when developing products and services have always had good prerequisites for success. Together with advanced research methods, technological development has provided companies with new opportunities to collect information on users and their needs as well as to engage users in innovation activity.

On the other hand, users are increasingly interested in, and have greater possibilities with respect to, having an influence on, or even tailoring the features of, products and services according to their individual needs. User-driven innovation offers companies a competitive edge that innovation policy is striving to enhance. The aim is also to utilise a user-driven operating model in reforming public services.

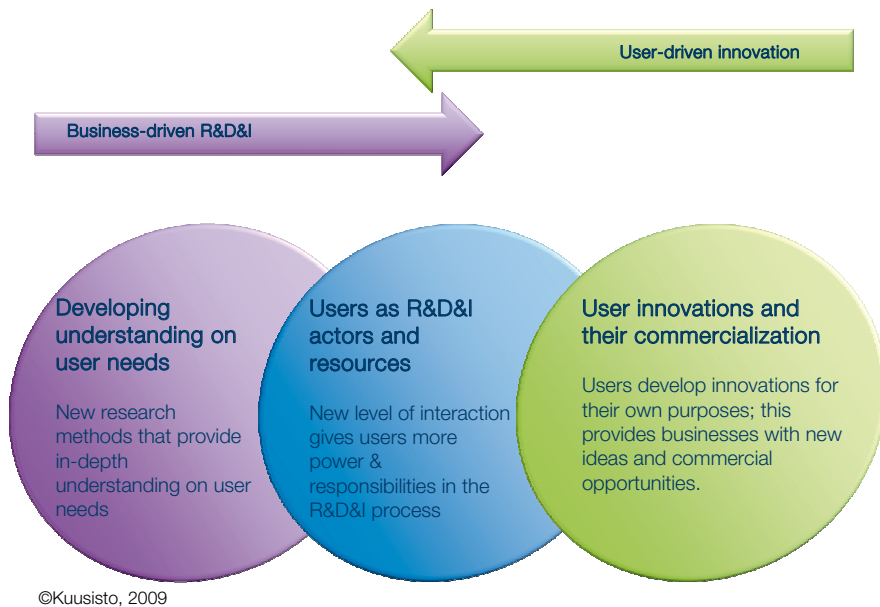
User-driven innovation takes various forms.

User-driven innovation is manifested in

- the utilisation of user information and the understanding that users are at the centre of innovation activity,
- users' role as active participants and resource in innovation processes
- user innovations produced by users themselves for their own needs, and in
- citizens' engagement and participation in the reform of public services.

Figure 5 presents different forms of user-orientation in innovation as well as the related drivers and challenges. The utilisation of user information aimed at achieving a more in-depth understanding of user needs is closest to traditional research and development activity. Plenty of methods are available for this, and communication technology provides new opportunities to utilise such methods more broadly. User needs and understanding users play a central role, especially in marketing and the management of the related product and service development.

Figure 5. Manifestations of user-driven innovation



The middle section depicts *users as active actors and a resource in innovation processes*. This type of situation reflects increasingly open innovation activities undertaken by producer businesses. Such an operating model will open up many new opportunities for businesses and other types of organisations, such as public sector service providers. This approach requires that producers operate more openly and acquire new kinds of expertise in utilising user knowledge and in organising open innovation activities.

Users can be an extremely important resource in the development of products and services for both businesses and the public sector. The role assigned to users in development activities greatly depends on the business' goals, expertise and the type of innovation pursued. This kind of innovation, characterised by strong user interaction, is commonly called *co-creation*.

Not all open innovation is user-driven innovation. When companies open up their innovation process to participation by actors outside the company, their prime objective is often to collect ideas and engage outside innovation resources in their innovation process, rather than gaining a better understanding of user needs.

The right side of Figure 5 depicts *user innovations* that refer to innovations created by users. User innovators may have a varying degree of interest in commercialising their innovations, but they in any case represent important commercialisation potential for businesses. This type of innovation is common across industries, for example in the development of medical instruments, where doctors act as developers in the context of their own work. The strength of user innovations lies

in the fact that users create solutions to meet their own needs, without the limitations commercial producers face in their innovation activity related to, for example, the small size of the existing market. As a result, users often create entirely new, pioneering solutions that are unavailable in the markets. They also modify products and services in ways that sometimes even lead to radical innovations, or find new uses for them.²⁵

Many new innovative services operating over the Internet are based on user-produced content and the users' development efforts. These include the free encyclopaedia Wikipedia, the photo service Flickr, the video service YouTube, and several software development projects, such as 'Apps', applications developed by users for each other's use on Google and Apple mobile devices. In the context of these services, the business offers its user-developers a platform and tools enabling a large number of users to develop content and services.

Users can also act as an important development resource for public services. For instance, allowing third party access to public data offers an opportunity for this kind of development activity. An example of this is users developing applications with which they can improve public transport services.²⁶ In the United States, the public sector's open development projects already succeed fairly well in activating citizens, an example of this being "The Open Planning Project" in New York.²⁷

3.1.1 Drivers for strengthening users' role in innovation

In recent years, the importance of user-driven innovation activities has risen rapidly and will most likely continue to do so in the near future. On the one hand, this is due to ongoing socio-economic development and evolving business models. On the other, users now have much improved capabilities and increasing willingness to participate actively in innovation-related activities, thanks to the Internet and improvements in user-friendly computer-based design technologies.²⁸ Users can be a source of new ideas and innovations and point the way ahead to businesses' innovation activities.

A key driver to users assuming a greater role in innovation lies in the low success rate of traditional producer-driven innovation. In producer-driven research, development and innovation activity, up to 70 per cent of new products tend to fail commercially in the marketplace.²⁹ This pattern has been reported as part of research

25 Hippel, E. (1988) *The Sources of innovation*, Oxford University Press, New York, USA.

26 For examples on the utilisation of public traffic data, see for example <http://www.massdotdevelopersconference09.com/> (visited on June 22nd, 2010)

27 See <http://openplans.org/> (visited on June 22nd, 2010)

28 Baldwin, C. and Hippel, E. (2009) *Modeling a Paradigm Shift: From Producer Innovation to User and Open Collaborative Innovation*, MIT Sloan School of Management Working Paper p. 4764-09: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1502864 (visited on June 22nd, 2010)

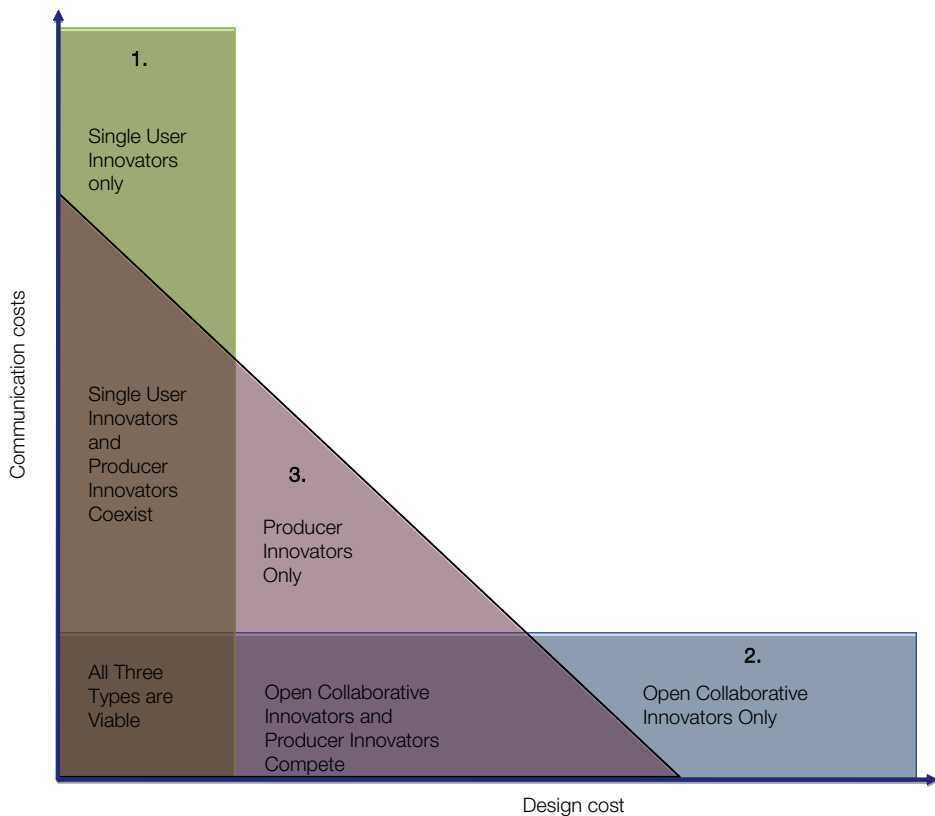
29 Hippel, E. (2005) *Democratizing Innovation*, The MIT Press Cambridge, Massachusetts, USA.

which has accumulated convincing and consistent evidence on such a high failure rate. Inadequate understanding of user needs has been identified as the most important reason for such failures.

In recent years, there has been rapidly growing evidence to indicate that users – both firms and individual consumers – frequently create and modify products and services to serve their own needs. It has also been found that many products successfully commercialised by producers were initially developed by users. As many as 10 to 40 per cent of users develop new products and services or modify existing ones.²⁹ User innovation is projected to continue to increase in importance. As a result, producers are being forced to adapt to an increasing amount of innovation by users.

The increasingly important new roles played by users and user communities in innovation are illustrated in figure 6, which depicts the strengths of different types of innovation activity.

Figure 6. Strengths of different types of innovation activity



Source: Baldwin and Hippel, 2009.

From the perspective of producers and user innovators, innovation activity can be divided into three key types: 1) user innovations, 2) open innovation based on collaboration between users and producers and 3) producer innovations.³⁰

Figure 6 presents the most favourable conditions for different forms of innovation activity on a general level. These are examined in relation to the development costs of a new innovation (horizontal axis), and in relation to the transfer costs of knowledge and expertise (vertical axis).

Thus, when the knowledge and expertise transfer costs related to the innovation task are high, innovation by individual users is efficient (1). This is particularly true when development costs are relatively low and individual users are able to cover them.

Correspondingly, when low information and expertise transfer costs are combined with high development costs, forms of innovation founded on collaboration are strongest (2). One example of this is user and developer communities, where several actors contribute to the development process. In this way, costs that are reasonable to individual actors are accumulated into a sufficient whole.

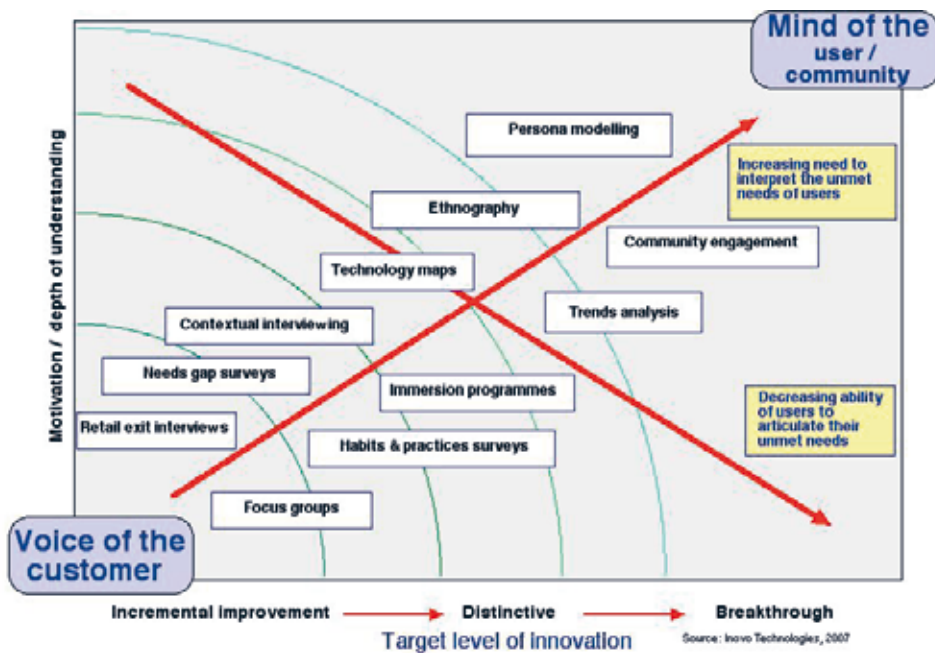
In circumstances where neither of the key cost factors is very high, producer innovation is an efficient operating model (3). Therefore, the producer innovation sector covers a large part of the innovation field, but thanks to cost-efficient networking and increasing activity on the part of users, it is now shrinking. It is expected that in many sectors open innovation, user communities and individual users will strengthen their relative position in innovation activity.

3.1.2 Tools for analysing user needs

Figure 7 illustrates the relationship between different methods of analysing user needs and the nature of innovations. Traditional methods, such as customer interviews, group interviews and surveys typically only reveal matters that the users acknowledge and are able to articulate clearly ("the voice of the user"). In innovation activity, these traditional methods have their limitations, most often resulting in only minor improvements.

30 Baldwin, C. and von Hippel, E. (2009) Modeling a Paradigm Shift: From Producer Innovation to User and Open Collaborative Innovation, MIT Sloan School of Management Working Paper p. 4764-09, Cambridge, USA. For Facebook's policy regarding content rights, see <http://www.facebook.com/terms.php> (visited on June 22nd, 2010)

Figure 7. Tools for analysing user needs



Moving to the upper right corner of the figure, the presented methods focus on understanding the usage situation. They include surveys mapping out needs and deficiencies, surveys for mapping out usage methods and practices, exposure to the usage situation, and interviews on usage situations. These methods are used to achieve a deeper understanding of user needs by becoming acquainted with and gaining experience of the circumstances in which users operate. In this way, the acquired knowledge does not remain disjointed, while familiarity with the usage situation may enable more accurate and balanced analytical interpretations. However, although the methods described can yield valuable information, they require a great deal of effort and far more expertise from the information gatherer than traditional interviews. In addition to analytical skills, those utilising this method need situational sensitivity and the ability to place themselves in the user role, within the users' own environment.

Technology roadmaps and trend analysis are used to gain an understanding of broader entities and to analyse options for future development. Trend analysis seeks to identify societal and economical development trends that can be used to forecast the development of user needs.

Technology roadmaps aim to map out various options related to how enabling technologies develop and what kinds of needs they are expected to cater for. The goal is to establish a common vision of new opportunities and critical technologies on the markets. In this context, another aim is to identify major obstacles and limitations to future development. Furthermore, technology roadmaps are used to identify skills that are critical to development.

Turning one's attention to hidden needs and needs to be realised in the future increases the need for a deep understanding of users, and the ability to interpret needs of which users are unaware or that they are unable to articulate. In these situations, ethnographic methods and engaging users in development processes become vital. Qualitative methods are used in efforts to understand the world of user and user community experience, and thereby acquire a deeper understanding of their actions and needs. By genuinely engaging users in development processes, their various competencies can be utilised while increasing our understanding of which matters are important from the users' point of view. Moreover, having users participate in research and development, as well as some qualitative methods, can bring hidden or later-emerging needs to the fore. Methods that are strongly based on predicting and interpreting needs (mind of the user) can therefore produce significant new departures and even radical innovations.

In the case of developed methods, users' active involvement in innovation is not necessarily required. Instead, the purpose is to examine and understand users' needs in order to direct innovation activities in such a way that new products and services bring added value to users. Research methods focusing on user needs have developed rapidly in recent years, facilitated in particular by information technology and the Internet. Nowadays, the cost-efficient gathering and analysis of even large amounts of user information is possible. Moreover, qualitative analysis methods have greatly improved and are being increasingly utilised by companies as well as the research community. For instance, using ethnography, knowledge can be acquired on user needs and trends that are hidden or which will become concrete only in the future.

In addition to the methods depicted in figure 7, *design thinking*, *service design* and *design* are also examples of user-driven methods.

Design, and more broadly, design thinking, can be viewed as a creative problem-solving tool that can be utilised across industries with respect to innovative products, services, processes and even societal challenges. The key issue lies in becoming well acquainted with user activities and needs in their own environment. Design thinking does not typically focus on improving existing solutions, but examines challenges and opportunities in order to find new, need-driven solutions. This forms a basis for design thinking, which creates new innovative and need-driven improvements on products, services and even highly complicated processes. Methods include user-centred design and the creation of new ideas, visual communication, synthesis and the use of prototypes. Design thinking has been successfully employed, for example, in the improvement of airport security, the development of hotel services, public service reform and securing the supply of clean drinking water.³¹

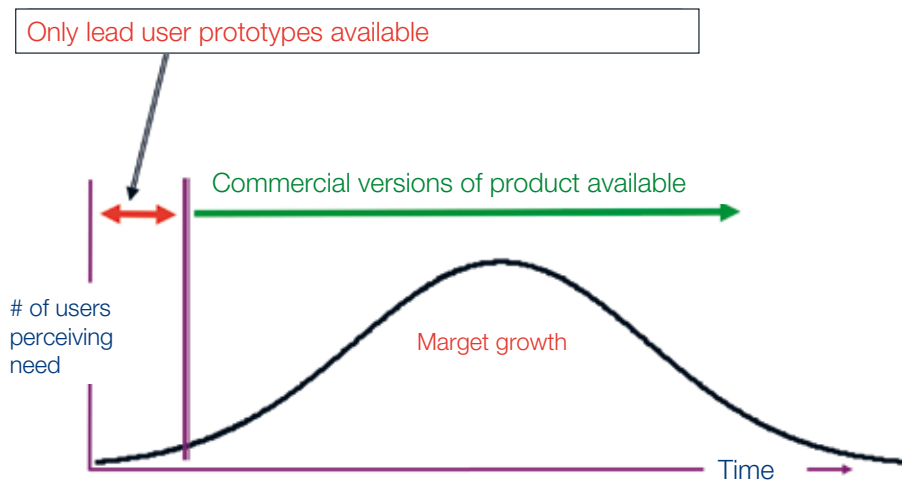
31 Brown, T. (2009) *Change by design – How design thinking transforms organizations and inspires innovation*, HarperCollins, New York, USA; *Muotoilun muuttunut rooli* (Changing role of design), Provoke Design Oy; report commissioned by Ministry of Employment and the Economy, Finland, 2/2010.

3.1.3 Methods of commercialising user-developed innovations and utilising user-innovations more effectively

When producers become interested in commercialising products that users develop for themselves, they must change their innovation processes significantly. Instead of using marketing research methods to study target market users with respect to unmet needs, many are changing over to methods that can efficiently identify innovating users and assess whether their innovations can be transformed into attractive new commercial products.

Lead users, many of whom are also user innovators, are an important resource in this respect. Figure 8 shows that lead users are at the leading edge of the market with respect to important market trends, and many of the novel products they develop for their own use would also appeal to wider markets. As a result, many innovations reported by lead users are judged to be commercially attractive or have actually been commercialised by manufacturers.³²

Figure 8. Lead users as early innovators



Source: Hippel, E. (2005) *Democratizing Innovation*, The MIT Press Cambridge, Massachusetts, USA

Methods of systematically identifying lead users and the commercially promising products they create have been energetically developed since the mid 1990s.

³² Lilien, G., Morrison, K., Searls, K., Sonnack, M. and von Hippel, E. (2002). Performance Assessment of the Lead User Idea-Generation Process for New Product Development, *Management Science* 48(8): 1042 – 1059.

3.2 User driven innovation policy – a new perspective

User-driven innovation policy provides a fundamentally new perspective in comparison to traditional, supply-driven and R&D driven innovation. This perspective is illustrated in figures 9 and 10, the former presenting the central characteristics of supply-driven innovation. The key differences between supply-driven research and development activity, and user-driven innovation activity, are represented in simplified form.

Traditional supply-driven innovation activity emphasises factors that influence the supply of innovations. Innovation-related research is rather distant from the market, and interaction with, for example, users is relatively limited. Accordingly, research and development results are "pushed" towards the markets, and only a fraction of research results are successfully utilised in commercial products.

Figure 9. Traditional supply-driven innovation perspective

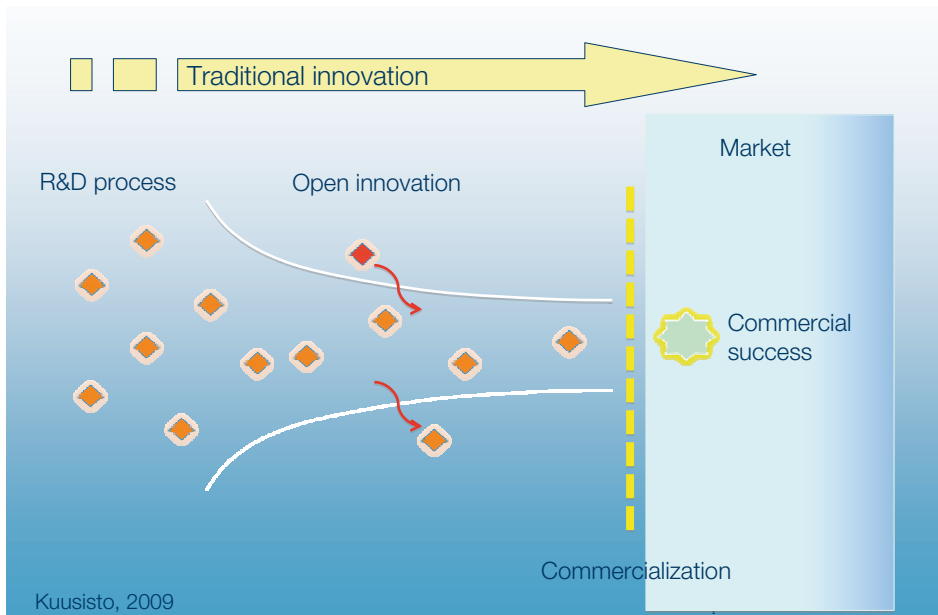
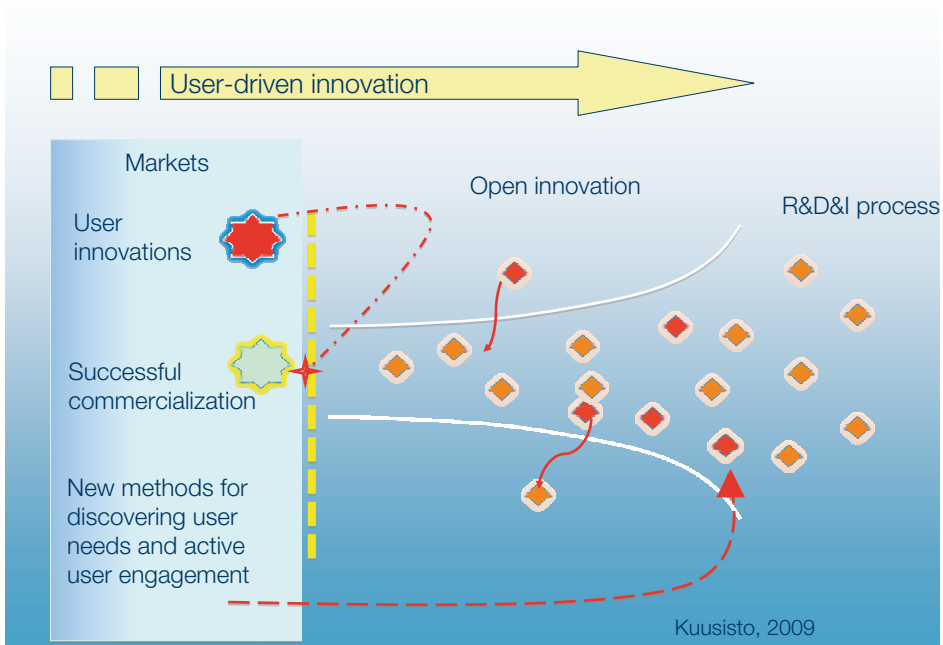


Figure 10 presents a user-driven perspective on innovation policy, which highlights the importance of achieving an accurate understanding of user needs, and the significance of user innovations to successful innovation and value creation processes for both products and services. Well-understood user needs and innovations developed by users have a key role as drivers of innovation.

Research also plays an important role in user-driven innovation, but is more closely linked to user needs than is the case in supply-driven innovation. When this is achieved, research data - whether developed by the innovating firm or acquired

from external parties as in “open” innovation – is utilised more effectively than before in commercially successful products.

Figure 10. The user-driven innovation perspective



3.3 User-driven innovation policy objectives, definition and framework

User-driven innovation policy improves the conditions in which user needs and active participation in innovation activity function as strong incentives for the creation and diffusion of innovations. The policy is aimed at creating opportunities for value creation linked to user-driven innovation in both the private and public sectors. In this way, different sources of innovation, and the innovation potential found in various sectors, can be utilised more effectively. The objective is to advance the development of an operating environment and the methods and tools that support a user-driven approach. Focus areas include user needs and the innovations based on them.

In this context, user-driven innovation policy is defined as follows:

User-driven innovation policy promotes innovation activity that is based on user needs and the systematic engagement of users, in both the public and private sectors.

The key is to regard both users and producers of products and services as possible sources of innovation. While user innovation is motivated by the idea of creating a solution primarily for one's own use, producers innovate in order to sell products and services to others. Where producers are concerned, such a policy emphasises a qualitative reform of innovation activity in order to take more systematic account of user needs and their engagement in innovation. This definition includes innovations by users themselves.

User-driven innovation policy can be divided into four key areas 1) competence development, 2) regulatory development, 3) developing public sector operating models and 4) incentives for innovation.

3.3.1 Competence development

Competence development and applying knowledge in practice within companies and the public sector enable the development of user-driven innovation. The objective is to make user-driven innovation activity more common and to derive benefits from its value generation possibilities on a broad front, for both companies and citizens. Expertise in user-orientation already exists in universities, research institutes and many other sectors. These competencies could be utilised more efficiently, if they were applied in practice in businesses and the provision of public services. There is also a need for further study and better utilisation of international networks.

Both academic and commercial research resources are directed in support of user-driven innovation in companies and other organisations. It is also necessary to create indicators for monitoring the prevalence and level of development of user-driven innovation, in order to obtain an overall picture of the extent, nature and development of activities.³³ Monitoring changes in user-driven activity also provides important information on the impact of policy measures.

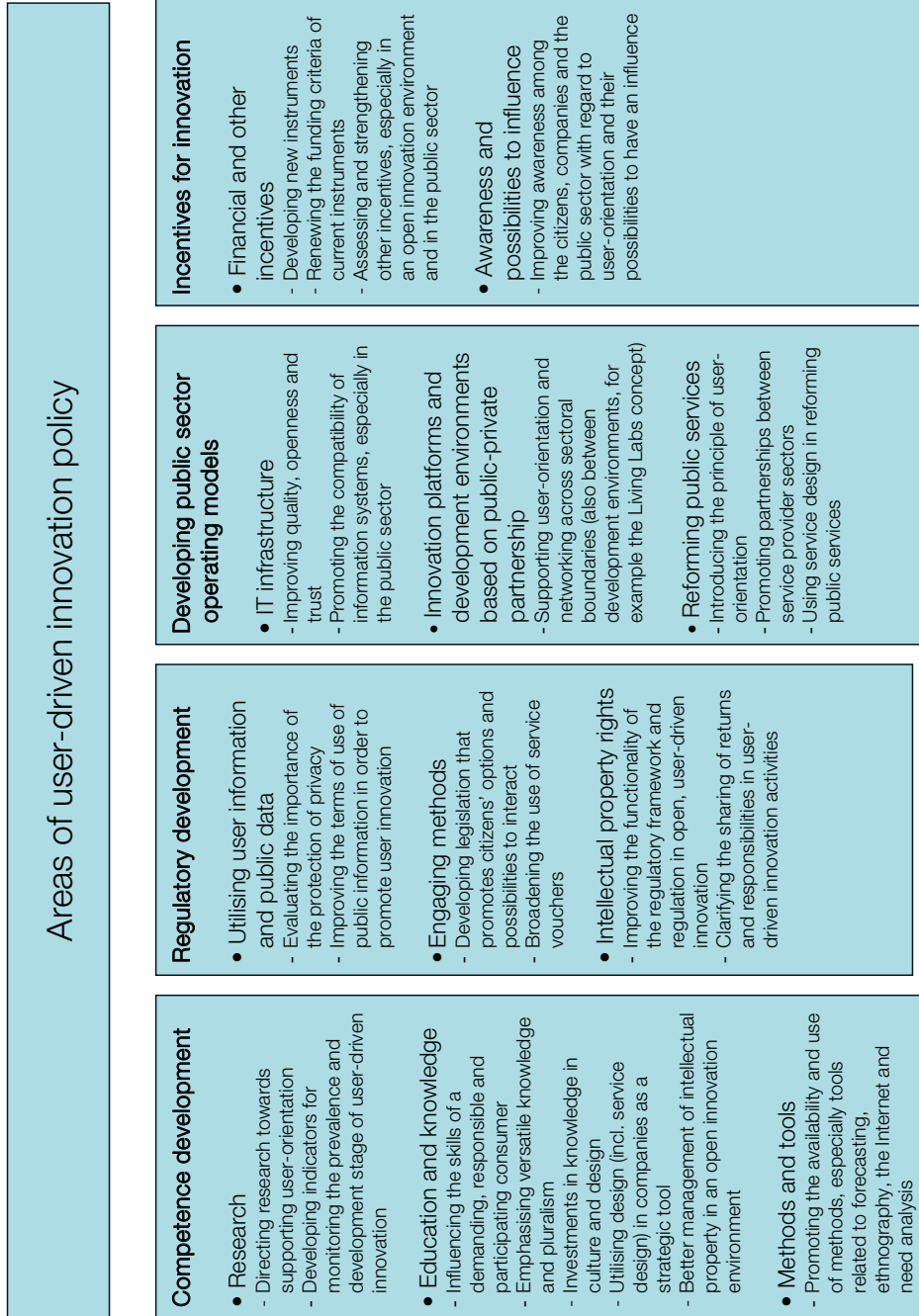
Central themes related to education and competence development include:

1 *Users' skills as demanding, responsible and participative consumers.*

Active, participating users and consumers are a significant resource of innovation, and through education this potential can be tapped more effectively. Moreover, active and knowledgeable consumers create healthy pressure on companies to continuously improve and create innovations that provide consumers with added value, i.e. products and services they are ready to pay for. Similarly, citizens who are aware and skilled can create pressure for reforms and innovation with regard to public services.

33 Gault, F. and Hippel, E. (2009) The prevalence of user innovation and free innovation transfers: Implications for statistical indicators and innovation policy, MIT Sloan School of Management Working Paper p.4722-09, Cambridge, MA, USA.

Figure 11. User-driven innovation policy framework



- 2 *Developing networking skills and the ability to identify opportunities to create value for the end user.*

In many ways, innovation activity has become more open in nature, as companies utilise external expertise. Increasingly often, a network-like approach is being utilised in production and service provision. New network-based forms of activity enable various new and efficient ways of providing users with added value. However, the efficient utilisation of networks requires a new kind of expertise, which can be developed by means of research and education.

- 3 *The role of versatile expertise and pluralism in user-driven innovation.*

It is characteristic of user-driven solutions that they combine various kinds of expertise in an innovative way. This means that businesses need multi-skilled employees with the ability to utilise very different types of competencies. Consequently, versatility and the ability to combine different skills are often just as important as in-depth knowledge of a single field. Since a positive attitude towards pluralism and multiculturalism creates a favourable environment for innovation, account should also be taken of their importance in education and research.

- 4 *Emphasising cultural and design competencies, using design as a strategic tool in enterprises and utilising service design.*

Design has rapidly developed into a perspective and tool which enables enterprises to efficiently employ a user-driven approach, which systematically and strategically directs their activities. In many cases, through design, technologies and operating models can be adapted into more innovative and user-oriented entities.

- 5 *Improved ability to create, manage and commercialise intellectual property in an open innovation environment.*

The current intellectual property management system, operating models and instruments largely stem from the needs of industrial society and were created at a time when open innovation activity did not exist to the current extent. The increase in the diversity of user-drivenness and innovation has created different "worlds of innovation," in which the status and importance of intellectual property rights vary greatly. It is crucial that intellectual property right management be developed so as to encourage user-driven innovation in its various forms. For example, this applies to user innovations and their efficient transfer to the sphere of commercial activities. For this reason, the development of, say, licensing practices suitable for these new forms of innovation activity is rendered important.

From the viewpoint of innovation policy, it is also important to *promote user-driven innovation methods and their availability and use*. These methods and operating models present means of implementing a user-driven approach on a practical level. An important area of application for this approach is public services and the development of their user-orientation. User-driven innovation methods can yield significant

benefits in the reform of public services. However, utilising new methods often also requires a major change in attitudes and a new kind of expertise from public sector actors.

Intel is an example of a company utilising ethnography-based methods as a means of predicting the development of new markets more effectively, as well as understanding customer needs and the logic of the company's own operations.³⁴ Online tools and platforms for user innovation have been successfully developed by, among others, Apple and Google, especially in the field of software.

3.3.2 Regulatory development

Regulation is a key infrastructure component that the public sector can use to either promote or slow down user-driven innovation and the utilisation of its full potential. User-driven innovation, which is fragmented and occurs mainly outside research institutes and product development units, is affected by regulation in a variety of ways. Therefore, the impact of regulation on innovation activity should be viewed in a much wider context than before, rather than merely in terms of traditional research and development activities. The key objective is to have regulation encourage user-driven innovation rather than presenting obstacles to it.

To mention an individual, extensive area of regulation, the regulation of intellectual property rights still takes little account of user-driven innovation and its potential. Removing obstacles to, and creating incentives for, user-driven innovation should be the focus areas in the development of such regulation.

Allowing external actors wider access to public sector functions and information provides major opportunities for value creation through user-driven innovation. Only some of the information held by the public sector is confidential in nature. To a large extent, there are no specific reasons why public sector data could not be used and further processed. In fact, information gathered by the public sector can be viewed as part of our national assets, whose value can be increased through user-driven innovation activity. By opening up public sector operations, the possibilities of open innovation can be utilised more extensively. In this way, solutions and services will emerge with a positive impact on both public sector operations and the development of a whole new market. To date, the results of opening up public databases have been rather encouraging.

34 Anderson, K. (2009) Ethnographic Research: A Key to Strategy, Harvard Business Review, March 2009, Harvard Business School Publishing Corporation. <http://hbr.harvardbusiness.org/2009/03/ethnographic-research-a-key-to-strategy/ar/1> (visited on June 22nd, 2010)

Opening up weather data for further utilisation by external parties has created several new services and significantly contributed to the growth of the industry in the USA. In ten years (1994–2004), the industry’s value grew from USD 4 billion to USD 56 billion. Simultaneously the number of enterprises in the industry grew rapidly, so that in 1991 there were 900 companies in the industry, while by 2003 the figure had risen to 4,060. Opening access to public data has created a whole new market with, for example, several industry-tailored services. The industry has also expanded into international markets, as the opening of public weather data has given businesses in the USA a significant competitive advantage.³⁵

In addition, the Google maps³⁶ service has created whole new global markets and services based on openly available, free-of-charge satellite map and locality data produced by the United States’ public sector.

A recent example is Washington DC’s Apps for Democracy competition, in which public databases were opened up to developers. External parties produced 47 applications in 30 days. Their estimated value is USD 2 million, taking account of costs related to production and sourcing³⁷. Washington DC’s example has been followed by Boston, San Francisco, Toronto and Vancouver, to cite a few examples.³⁸ The underlying principles include free access to public information and its usability for third parties, open standards and the use of open-source software.

The Finnish Apps for Democracy competition, ‘Kansalaisosallistujan työkalut’, organised in 2009 according to Washington D.C.’s competition model, yielded 23 applications and ideas by citizen developers.

The use of *operating methods that engage citizens and increase their opportunities to exercise choice and influence* has thus far been very limited. In this context, improving regulation to encourage user-orientation occupies a central role in the development of public sector services. Genuine engagement calls for wide participation and serious opportunities to have an influence. In this context, participation will be perceived as meaningful and encourage active participation in the future. Engaging citizens is realised through processes that include genuine options and which have room for new, innovative solutions.

For instance, the introduction of service vouchers provides users of public services with options from which to choose. User preferences steer demand and the development of public services. Moreover, in many other contexts, regulation must be developed so as to enable user-driven service development while offering citizens more choice.

35 Weiss, P. (2002) Borders in Cyberspace: Conflicting Public Sector Information Policies and their Economic Impacts, U. S. Department of Commerce National Oceanic and Atmospheric Administration National Weather Service, USA.

36 <http://maps.google.com/> (visited on June 22nd, 2010)

37 <http://en.oreilly.com/where2009/public/schedule/detail/7244> (visited on June 22nd, 2010)

38 <http://www.cbc.ca/technology/story/2009/05/22/tech-vancouver-open-source-standards-software-city.html?ref=rss> (visited on June 22nd, 2010)

In order to efficiently reform principles guiding regulation, a change of attitude is required in the public sector. This is the only way to fully exploit the potential of user-driven activity in reforming services, creating user-driven value and making operations more efficient.

Due to the rapid development of innovation activities, *intellectual property rights*, their creation, management and commercialisation also face pressure for change. Against this background, improving the regulatory framework and rendering regulation more functional in open user-driven innovation has been defined as a target area of Finland's national IPR strategy. A central objective is to have intellectual property rights take better account of user-produced innovations and aspects related to their commercialisation. Regulation should also create sufficient incentives for user-driven innovation. Existing regulation should be developed so as not to hinder the creation and commercialisation of user-driven innovations.

A concrete new development area related to immaterial property rights lies in *clarifying how the returns and responsibilities of user-driven innovation are shared*. Here, licensing agreements, for example, can be used. Users are able to decide whether they wish to sell innovation rights, or guarantee through licensing that they can be freely exploited.

Agreements can also be used to define how returns and responsibilities are shared in those cases where users participate in enterprises' development projects. One example of this is Ford, since the company utilises licensing in the recruitment of users for its software projects.³⁹ Infrastructure supporting user-driven innovation has already been developed, for example by using the international Creative Commons licensing system.⁴⁰

3.3.3 Operating models supporting user-orientation in the public sector

Since data networks are a key component in an infrastructure enabling user-driven innovation, they must be extensive, sufficiently fast, reliable, and have low operating costs. Data networks allow users to communicate with each other and with producers, while also facilitating cost-efficient, broad-based information acquisition. For the above mentioned reasons, information society policy significantly influences the preconditions for user-driven innovation.

In the public sector too, the IT infrastructure, in particular its high compatibility, enables the interaction that is an important prerequisite of user-driven innovation. It is therefore important to promote the compatibility of information systems in general, especially in the public sector.

39 Ford developer's license, see http://media.ford.com/article_print.cfm?article_id=31625, and <http://www.ur.umich.edu/update/archives/100114/umdsync> (visited on June 22nd, 2010)

40 <http://creativecommons.org/international/fi/> (visited on June 22nd, 2010)

Data networks enable interactive innovation, comprising activities such as cultivating, screening and combining new ideas and concepts. The efficient organisation of work, possibilities for group work, piloting and finalising prototypes, as well as telecommuting, are central elements of user-driven innovation.⁴¹ In addition to the functionality of data networks, policy can be used to promote other prerequisites of user-driven innovations, including mutual trust and openness between users and other actors. These are also central aspects with regard to *cooperation between the public and private sectors (PPP) and its improvement*.

A versatile, user-driven approach and the related methods will be utilised in reforming and developing public services. A practical measure lies in the utilisation of service design methods. Service design refers to innovating, developing and planning services by means of design methods. Although service design is still a rather new tool in the development of public services, it appears to be yielding clear benefits. The function of design is to interpret user needs and identify new solutions. This facilitates the organisation and provision of services, primarily in accordance with citizens' needs. Services are designed to be accessible, attractive and to yield an advantageous result for the user. The service provider perspective will also be taken into account by planning services, rendering service provision both cost-efficient and sensible with a view to the big picture. Service design also helps to outline and conceive solutions to issues which are not necessarily yet acknowledged as problems. Identifying these is based on observations and need assessments, which provide an in-depth understanding of the usage situation. Service design processes are therefore expected to provide new, innovative and user-oriented options in addition to traditional solutions.⁴²

The city of Mikkeli aims to engage its dwellers more closely in the city's development. Apart from information sharing, the city has emphasised the genuine participation of city dwellers, as well as self-motivated organisation regarding issues they consider important. For instance, the starting point for service development in practice was current services, which are being developed from the user-orientation perspective by utilising service design methods. Participation has been enhanced in three ways: by inviting city dwellers to open discussion and idea forums, by offering them an opportunity for participation via the Internet, and by initiating user-driven service development processes.⁴³

41 Computer Mediated Transactions, The 2009 Guglielmo Marconi Lecture, delivered to The Lisbon Council by Hal R. Varian Chief Economist, Google Professor, University of California at Berkeley, Résidence Palace, Brussels, 16 June 2009.

42 <http://www.servicedesignthinking.com/2009/12/kaupunkilaiset-pitaa-osallistaa.html> (visited on June 22nd, 2010); Muotoilun muuttunut rooli (Changing role of design), Provoke Design Oy; report commissioned by Ministry of Employment and the Economy, Finland, 2/2010.

43 www.mikkeli.fi (visited on June 22nd, 2010)

Varying forms of collaboration between the public, private and third sectors facilitate the creation of innovative services corresponding to user needs and complementing the public sector service offering. Policy measures are used *to promote partnerships between service providers, which enable user-driven innovation.*

For instance, various everyday welfare services can be provided more flexibly through partnerships. Local enterprises and associations representing the third sector are able to react rapidly to dwellers' needs in this area. Hence, the focus of operations is on local expertise, safety, attractiveness, tailored services and employment. In future, the need for everyday welfare services is expected to increase due, for instance, to the ageing population using more and more services that support living at home. To cite a few examples, user-driven, innovative services produced on a partnership-basis include domestic help, help in running errands, meal services, training for the elderly in basic IT skills, installation services for various applications, cleaning services, village caretaker services, sewing services and child care aid.

Innovative co-operation models for the public and private sectors are facilitated by investing in the creation of innovation platforms and development environments. An example of new development environments is the Living Labs concept, developed on the basis of MIT's residential laboratory.

Living Labs development environments operating in Finland vary in their extent of user-orientation and are broader entities than an individual company's research laboratory. Actors involved in such activities are either users, utilisers, developers, enablers or actual Living Labs.⁴⁴

In Living Labs, users can be involved in development work at various stages of the product's or service's lifecycle. Products and services are also tested in their everyday usage environments. Development is no longer merely a question of how one company will change its product or operating models, but the improvement of user experience can also require changes further on in the value chain. This is best achieved when the parties collaborate closely, for instance in the context of Living Labs innovation environment.

In the absence of common criteria for the related operating model, applications of the Living Labs concept have so far varied somewhat. Although best practices have been compiled, the activity and its results have not been sufficiently studied.

3.3.4 Developing incentives for user-driven innovations

User-driven innovation activities can be promoted through public *funding incentives*, including the use of taxation as a steering tool and the funding of user-driven research, development and innovation activities. With Tekes playing a central role in the funding of innovation, public support can be directed at the promotion of user-driven innovations by developing Tekes' operating models. The increasingly active

⁴⁴ Orava, J. (2009) Living lab toiminta Suomessa (Living Lab activities in Finland), network publication of the Regional Centre Programme 3/2009, Innovation and knowledge network, The Seinäjoki Technology Centre Ltd.

role played by users in innovation is a theme that can be promoted by Tekes, on a broad front through its own activities. On a general level, funding will be directed at user-driven innovation activity. On the level of the funding process and instruments, it will be ensured that they are suited to the promotion of user-driven innovation in its various forms.⁴⁵

In the future, account will be taken of the diverse drivers of user-driven innovation when developing policy incentives. The goal is to develop incentives for user-driven innovation that are also suitable for the public sector.

Awareness related to the user-driven approach and identifying opportunities to have an influence represent an important prerequisite and incentive for innovation. Recent years have seen rapid growth in the importance of user-orientation in innovation. However, its content and benefits are far from self-evident to the wider public. Increasing awareness therefore represents an important policy measure targeted at enterprises, citizens and, in particular, actors in the public sector who have the task of promoting this point of view.

The policy objective is also to improve opportunities for citizens, enterprises and the public sector to have an influence with regard to user-orientation. A concrete example of such action is the establishment of a forum for the promotion of both user-driven and user innovations. In the UK, one of the pioneering countries in this field, the establishment of such a forum has been recommended.⁴⁶

45 Nesta (2008) *The New Inventors – How users are changing the rules of innovation*, National Endowment for Science, Technology, and the Arts, London, UK.

46 Nesta (2008) *Final draft: User-led innovation & innovative consumers*, National Endowment for Science, Technology, and the Arts, London, UK.

Demand and User-Driven Innovation Policy

Action Plan (part II)

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Introduction

Demand- and user-orientation provides a fresh perspective to innovation policy, and new opportunities for improving the competitiveness of enterprises and renewing public services.

This action plan for demand- and user-driven innovation policy was prepared for the years 2010 to 2013. It is based on the demand- and user-driven innovation policy framework and content presented in part 1 of this report, and takes advantage of international research data and case examples.

The action plan is divided amongst seven areas of innovation policy. These areas are

- 1) demand- and user-orientation as a source of competitiveness – building competencies and the knowledge base
- 2) innovations by bolstering demand
- 3) innovations in public sector renewal - aiming at a forerunner position
- 4) incentives for grassroots initiatives
- 5) efficiency from user-driven innovation tools and methods
- 6) diffusing innovations through networks
- 7) assessing the impact of the demand- and user-driven innovation policy action plan.

Each area includes 1 to 4 policy measures. In addition to listing the actual policy measures, the action plan presents their objectives, background and rationale, time frame and responsible parties for each measure. Various actors who have participated in preparing the measures also take part in their implementation. Additional actors representing different areas of expertise can flexibly join the implementation of the measures at later stages. The cooperation with stakeholders in preparing the measures reflects the systemic nature of demand- and user-driven innovation policy. In all policy areas, the exchange of information and experiences will continue throughout the implementation of the action plan at national level, but also within the EU and the OECD.

1 Demand- and user-orientation as a source of competitiveness – building competencies and the knowledge base

Demand- and user-driven innovation activity can only be exploited for the economy or society if our research and education systems continue to provide new information, skills and competencies. Demand- and user-driven innovation activity should therefore be strengthened in our research and education systems.

A stronger research and education base for demand and user driven innovation requires: research professor positions, activation of research communities focusing on the policy area, taking account of new perspectives of innovation activity in the funding of basic research, steering public funding for innovation towards the renewal of enterprises and research communities through the use of demand- and user-driven innovation activity, and a broad-based approach on the part of the education system and citizens.

1.1 Strengthening research and development of demand- and user-driven innovation

Objective:

Demand- and user-driven innovation activity will create competitive advantages only if long term research in the area provides a firm basis for organisations with innovation activity to generate new competencies and utilise information.

User-driven innovation research in Finland remains dispersed and, in many parts, relatively limited. On the other hand, there is no comprehensive view of the research on demand-driven innovation, and currently, there are neither research professor positions nor well-established researcher networks focusing on the topic area in Finland.

However, research on demand- and user-driven innovation can benefit from existing research in areas close to innovation research. For several years, the National Consumer Research Centre has conducted research on consumer policy, which in practical terms is highly similar to user-driven innovation research. The establishment of the Aalto University provides an opportunity to increase interdisciplinary research on demand- and user driven innovation. There should be an active attempt to establish research on demand- and user-driven innovation as one of the key areas of the Aalto University's operation.

The recently created Strategic Centres for Science, Technology and Innovation (SHOK) were founded to renew industry clusters, and they have already started carrying out demand- and user-driven research and development. The Flexible Services

programme of the ICT-SHOK TIVIT Oy is building new types of ecosystems where service producers develop ICT services in cooperation with service providers and end users. Forestcluster Ltd's RAMI project on radical market innovations sought new growth opportunities for the forest industry by mapping consumer needs and the media-related behaviour of young people in developing countries. The research themes of the Finnish Metal and Engineering Competence Cluster (FIMECC Ltd) highlight user experience and societal goals, such as energy and material efficiency as well as eco-friendliness.

The currently strengthening emphasis on demand- and user-driven innovation research in Europe will open up new possibilities for the internationalisation of Finnish research in the field. In autumn 2008, the European Institute of Innovation and Technology (EIT) decided on its first funding projects with objectives highly similar to the goals of the demand- and user-driven innovation. The Finnish research consortium did well in one of three areas of expertise (Future Information and Communication Society), leading to the EIT locating an ICT Department at the Aalto University. The EU's new innovation programmes will most likely include increased funding for demand-driven innovation activity. On the other hand, a network of researchers in the Nordic countries is being established while new Nordic funding is being made available for research on user-driven innovation.

Among the public organisations promoting innovation, Tekes plays a significant role in providing research funding and promoting enterprises' development of innovation activity. A significant portion of Tekes funding for public research is directed to research communities for a variety of applied research projects. Tekes programmes play an important role in activating and networking actors. Demand- and user-driven innovation has not yet been comprehensively taken into account in Tekes' criteria for funding. The development of competencies related to demand- and user-driven innovation would benefit from increased emphasis on this perspective in Tekes' operating models and funding criteria.

Measure 1.1 a)

Carrying out an evaluation of existing competences in user-driven innovation research and its development. The objectives of demand- and user-driven innovation will be included as a new perspective within the entire research system, through mainstreaming, whilst the public funding of research is directed in a way that strengthens the competence base of demand- and user-driven innovation. In order to promote this objective, Tekes will activate and network research communities. This is specifically aimed at ensuring the resourcing and mutual networking of early mover research communities in the area, such as the Aalto University and the National Consumer Research Centre.

Background and rationale:

Demand- and user-driven innovation research must become more systematic in order to help create a competitive advantage. Currently, innovation research does

not sufficiently recognise the objectives of demand- and user-driven innovation, and research communities do not operate as a network. User-driven innovation activity cannot take root and spread in Finnish society and the nation's economy unless the education system offers more of the skills and competence required. Competences related to user-driven innovation will be evaluated in order to get a view of the situation as a whole and to identify the areas in need of development.

Responsible parties:

Ministry of Education and Culture, Academy of Finland, Tekes, Ministry of the Employment and the Economy.

Time frame:

2010–2013

Measure 1.1 b)

Tekes operations will be developed so as to take account of demand- and user-driven innovation as a horizontal approach in the development of operating models and funding criteria. Demand- and user-driven innovation will be taken into account particularly, when planning new Tekes programmes and other measures.

Background and rationale:

Tekes plays an important role in directing resources towards research and development and, through R&D, towards producing new information and competence. A functioning incentive system is one of the prerequisites for promoting demand- and user-driven innovation. Therefore, it is justified to develop Tekes' funding criteria and operating models in a manner that enables them to encourage, even more strongly than before, enterprises and research communities to participate in demand- and user-driven innovation activity.

Responsible parties:

Ministry of the Employment and the Economy, Tekes.

Time frame:

2010–2013

Measure 1.1 c)

The position of the National Consumer Research Centre as a centre of strategic demand- and user-driven innovation research and competence will be strengthened. Maintaining the competence level required by demand- and user-driven innovation research is ensured through performance management. This policy goal will also be taken into account when determining research priorities.

Background and rationale:

The National Consumer Research Centre has developed research competence through systematic operation, and its competence level is particularly high in user-driven research. The research competence of the National Consumer Research Centre can be exploited in order to enhance the user-driven approach in innovation policy. The National Consumer Research Centre's approach to networking disseminates competence into enterprises and the society.

Responsible parties:

Ministry of the Employment and the Economy, National Consumer Research Centre.

Time frame:

2010–2011

Measure 1.1 d)

A developer forum will be established in order to network researchers, developers and enterprises involved in demand- and user-driven innovation activities as well as for the dissemination of information and the renewal of innovation policy.

Background and rationale:

Extending innovation policy from technology policy into supporting more broadly based creativity and competence poses new challenges for policy design. The inclusion of demand- and user-driven innovation activity into innovation policy requires a new way of understanding the operations of enterprises, organisations and the public sector, as well as consumer activity. The challenge is to understand, support and utilise the creativity, diversity and the ability of individuals and communities to take initiative.

Innovation actors, business organisations, active user groups, researchers and research institutes in addition to representatives from key ministries will be invited to take part in an interactive developer forum. The aim of the forum is to improve the awareness of demand- and user-driven innovation activity – especially from the perspective of a broad-based innovation policy – and to combine innovation policy development with current research and grassroots development work as well as discuss and disseminate innovation-related information.

Responsible parties:

Ministry of Employment and the Economy, National Consumer Research Centre, Tekes, Forum Virium Helsinki, VTT Technical Research Centre of Finland.

Time frame:

2010–2013

1.2 Directing innovation activity towards addressing societal challenges

Objective:

The core message of demand-driven innovation policy is that the opportunities in the growing market should be utilised better. A concrete example of such opportunities lies in global societal challenges. Nearly all countries are searching for solutions to challenges related, for example, to the climate change, energy resources and materials management. Forerunner countries and enterprises that find innovative solutions first may greatly benefit from being able to readily scale these solutions to suit the needs of other countries facing the same challenges. The challenges of innovation policy include being able to identify and evaluate the opportunities related to the global societal challenges quickly enough and steering policy tools towards addressing the challenges with innovative solutions.

New innovation opportunities have been identified in the low-income, developing markets – so called Base of the Pyramid (BoP) markets. Several enterprises have already developed solutions to local challenges (such as water, energy and communications). The Base of the Pyramid markets represent new opportunities for enterprises. In terms of policy, the challenge lies in the ability to network national actors, locate current bottlenecks and develop a functioning approach for the systematic exploitation of the BoP markets.

Measure 1.2 a)

Ensuring that Tekes programmes take account of business opportunities arising from global societal challenges. Utilisation of these demand-driven innovation opportunities will be promoted through research and competence development.

Background and rationale:

Tekes plays a key role in activating enterprises and research communities to grasp the business opportunities related to responses to societal challenges. Trends and phenomena in societal challenges are already being analysed by Tekes. Tekes' programme activity has been steered towards them, as seen for example, in the ongoing programmes such as Innovations in the social and health care service system, and Low carbon economy currently in preparation. This type of development must be strengthened. All key stakeholders need to be engaged, including ministries, whose activity is essential for the development of the sector's innovation environment.

Responsible parties:

Tekes, Ministry of Employment and the Economy.

Time frame:

2010–2013

Measure 1.2 b)

Drawing up a national operating model focusing on the Base of the Pyramid concept in order to utilise the innovation opportunities of developing markets with significant demand potential.

Background and rationale:

Opportunities in the Base of the Pyramid markets have been identified, but activity at national level does not support their utilisation. Therefore, it is necessary to bring together the nationally dispersed competence and resources in order to promote enterprise-driven innovation activity directed at the markets of developing countries. Market development requires clear ownership. For instance, the Ministry for Foreign Affairs already provides funding for this type of operation, but the networking of actors has not reached an adequate level. Cooperation between the Ministry for Foreign Affairs and Tekes must be intensified, which in practice mainly entails better coherence between development and innovation policies through increased cooperation.

Responsible parties:

Ministry for Foreign Affairs, Ministry for Employment and the Economy, Confederation of Finnish Industries, Tekes, Finpro, Aalto University.

Time frame:

2010–2011

1.3 Improving awareness and development of user-driven innovation activity

Objective:

In addition to measures that enhance competence, awareness of the significance and methods of user-driven innovation activity can also be raised through dissemination of information by campaigns and compiling information on the subject into databases that are easy to find. Cases and best practices raise awareness amongst the public sector and enterprises in key positions.

Measure 1.3 a)

Establishing a website (udi.fi) that supports user-driven innovation activity and provides information and case examples of user-driven innovation. The website will also network actors in the field.

Background and rationale:

Awareness of the possibilities, methods and tools of user-driven innovation is currently low. Networking innovation actors and improving awareness of various

innovation methods and their functionality in various applications is required to promote user-driven innovation.

For the purposes of having users participate in innovation activity and finding out user needs, user-driven innovation activity, methods and tools are presented on the udi.fi website, set up in early 2010. The website presents success stories and promising projects. Enterprises, public sector actors and researchers are encouraged to take part in user-driven innovation activity. The website acts as a forum for organisations engaged in user-driven innovation, and establishes networks between users and various actors.

Responsible parties:

Ministry of Employment and the Economy, Tekes, VTT Technical Research Centre of Finland, National Consumer Research Centre.

Time frame:

2010–2011

Measure 1.3 b)

User-driven innovation has been selected as a special theme in the President of the Republic's InnoSuomi ("InnoFinland") 2010 contest. Information of the benefits and methods of user-driven innovation will be disseminated in conjunction with the publicity campaigns for the contest.

Background and rationale:

The annual InnoSuomi contest is supported by the industries. Participation in the contest provides a substantial incentive for innovation activity. The contest promotes the recognition of awarded enterprises and improves the position of their innovations in the markets. Participating in the contest also allows enterprises to test the competitiveness of their innovations in front of InnoSuomi jury and to receive expert feedback. The contest and its marketing offer good opportunities for improving awareness of the methods and benefits of user-driven innovation.

Responsible parties:

National Board of Patents and Registration of Finland, Foundation for Finnish Inventions, Ministry of Employment and the Economy.

Time frame:

2010

2 Innovations by bolstering demand

The public sector may promote innovation by directing its market demand towards procurement of innovations. In addition, it can indirectly influence the behaviour of market actors towards promoting innovation – for example, by setting new requirements (regarding e.g. energy efficiency) and by means of regulation and standardisation.

Most of these opportunities for influence concern actors that are not familiar with the perspective of promoting innovation. Best practices and case examples have great significance in creating an attitudinal environment favourable to innovation amongst new actors.

From the innovation perspective, it is crucial to eliminate obstacles generated by regulation and to enhance incentives for innovation. When drafting regulations, comprehensive attention should be paid to the impact of regulation on innovation activity. Regulatory development must be future-oriented and consistent, and it should encourage innovation by setting challenging targets for market actors. Putting more focus on innovation in drafting regulations also requires new tools for evaluating and monitoring the impacts of regulation on innovation activity.

Standardisation is voluntary activity mainly undertaken by businesses. It has a strong impact on the adoption and diffusion of innovations, and is also increasingly perceived as a policy tool for promoting innovation. This means that the standardisation system should be improved to better support innovation activity. The competence, awareness and active participation of actors involved in standardisation must be promoted in order to gain the best possible benefits.

A new policy area – creation of lead markets – is being established through the coordinated use of demand-driven innovation policy instruments. The Lead Market Initiative, launched by the EU in 2008, acts as a model here. Finland participates in the initiative by determining at national level the potential in the selected fields, and the applicability of demand-driven innovation policy instruments. In addition to the lead markets of the fields selected for the EU initiative, the methodology of the initiative may be applied to the identification and development of other lead markets. Domestic markets in Finland are small, but they provide a basis for generating new demand and can act as important pilot markets for new innovations. Full-scale utilisation of lead markets requires active pursuit to enter global market.

Demonstration projects and support to reference facilities help promote the adoption of new solutions and their distribution into wider use, which in turn helps reduce the risks involved in adopting innovative solutions. At the same time, the developers of innovative solutions have the opportunity to gain experience and proof of the functionality of solutions in their real-life operating environment. Reference facilities especially help support the adoption of investment-intensive innovations.

Supporting these types of facilities' market entry and sales activity requires proof that the new technology fulfils its reliability and performance requirements.

2.1 Promoting innovation friendly regulation

Objective:

Regulation influences innovation activity in many ways, and its impact mechanisms may be complex. It is therefore difficult to provide unambiguous information on the impacts of regulation on innovation activity, which in turn complicates consideration of innovation impacts in the drafting of legislation.

Together with other policy measures, regulation has an impact on the benefits, risks and costs of innovation activity as well as on the demand and introduction of new products, services and technologies. On the other hand, changes in innovation activity influence, for example, the achievement of regulation targets. According to research, regulation can have a positive impact on innovation – if it is performance or outcome-based and places minimum administrative burden on businesses and the companies are allowed enough time to adjust to the new regulation. Innovation-friendly regulation has similarities to the principles of better regulation.

Some sector-specific research on the impacts of regulation on innovation has already been conducted in Finland. VTT Technical Research Centre of Finland has developed methodology for modeling impacts of regulation on innovation (Sfinno-database; Environment and regulation driven Finnish innovations in 1980s and 1990s - Profile). So far, however, evaluating the impacts of regulation on innovation has been limited. In order to develop markets that are favourable to innovation, it is important that the drafting of legislation takes account of the impacts of regulation on innovation. The objective should be future-oriented and consistent regulation that sets challenging targets for market actors.

Measure 2.1 a)

Assessing the impacts of regulation on innovation activity on the basis of existing research and conducting an experimental project in cooperation with the Ministry of the Environment in order to evaluate the innovation impacts of a set of environmental regulation to be selected for impact assessment.

Background and rationale:

Currently, there is insufficient information on the impacts of regulation on innovation activity, or what type of regulation most effectively promotes and encourages innovation. The project will collate, in the most practical way possible, the national and international scientific research conducted on the impacts of regulation on innovation activity.

Responsible parties:

Ministry of Employment and the Economy, Ministry of the Environment, Environmental Innovation Panel of the Ministry of the Environment.

Time frame:

2011-2013

Measure 2.1 b)

Promoting awareness of the impact of regulation on innovation activity and preparing recommendations for taking the innovation perspective into account in regulation. Examining the possibilities for developing practical tools for assessing innovation impacts. Integrating new measures with the ongoing measures for better regulation.

Background and rationale:

Currently, innovation impacts are only randomly taken account of in the drafting of legislation.

For those involved in legislative drafting, there is little practical information and few instructions or tools for assessing and taking the impacts of regulation on innovation into account. The aim is to distribute information and promote awareness of the impacts of regulation on innovation activity, and prepare recommendations that take better account of this perspective in the drafting of legislation. Practical tools and models are required in order to systematically take account of innovation impacts in legislative drafting.

Evaluating innovation impacts requires extensive expertise, and is time-consuming work. Also, human resources and funding are required for the evaluation of innovation impacts.

Responsible parties:

Ministry of Employment and the Economy, Ministry of the Environment, Ministry of Education and Culture, other ministries, Confederation of Finnish Industries.

Time frame:

2010-2013

2.2 Standardisation to provide more effective support to innovation

Objective:

Changes in the operating environment and the increased social and economic significance of standardisation pose challenges and offer opportunities for the development of standardisation activity and more efficient use of standards. Globalisation has reduced the significance of national standards for businesses, and the focus of

standardisation activity has shifted towards participation in European and international standardisation.

The challenges of the standardisation system, such as the vast number of standards, need for improved efficiency, more active SME participation, more efficient use of research data, and stronger emphasis on demand-orientation are present in the European and national discussions.

The significance of unofficial international standardisation consortia and fora alongside the official standardisation system has grown, especially in rapidly developing sectors, such as information and communication technology (ICT). This is because the official standardisation system has proven too slow in many areas to respond to new market situations created by rapidly developing technologies. In ICT, one of the key functions of standardisation is promoting the interoperability of equipment, applications and services. Additional competitive advantage can be gained by using standardisation to enable semantic interoperability, as seen in the development of, for example, the set of codes used for real-time economic reporting and for exchanging purchase messages.

Standardisation is increasingly perceived as a tool for promoting innovation. Attempts are made to solve even more societal challenges through the combined impact of innovation policy and various sector policies. An example of this are the innovative solutions to climate change sought by combining methods of environmental and innovation policies.

Standardisation is an area where demand-driven innovation policy strives to promote the creation and development of innovations, and expedite their diffusion into international markets. The aim is to develop the standardisation system so that it supports innovation activity more efficiently. It is important to increase various actors' competence and awareness of standards and their benefits by promoting the actors' participation in standardisation activities. Prediction of future standardisation needs on the basis of the development of technologies and policies is also an important topic for demand-driven innovation policy.

Measure 2.2 a)

Improving the national standardisation system to better support innovation activity. Carrying out an impact assessment of state aid for the standardisation system to study how state aid can be more efficiently support national standardisation actors in promoting innovation and influencing standardisation at the European and international levels. Exploring ways of better predicting future standardisation needs, and promoting the selection of standardisation items of national importance both in EU and internationally.

Background and rationale:

The growing significance of standardisation to innovation is a relatively new topic area for innovation policy, so it is justified to assess how standardisation activity

can better take account of promoting innovation, and identify the best ways to utilise state aid for this purpose. In order to benefit innovation activity and promote solving societal challenges in particular, standardisation activity must be future-oriented and have the ability to predict future needs.

Responsible parties:

Ministry of Employment and the Economy, Finnish Standards Association, other ministries.

Time frame:

2010–2011

Measure 2.2 b)

Taking account of the possibilities to support innovation offered by standardisation when preparing Tekes' programmes and exploring the possibilities for providing funding for standardisation costs as part of R&D&I activities.

Background and rationale:

The possibilities of standardisation to support innovation are not always identified in R&D&I activities. The role of standardisation and the opportunities it provides should be clarified in innovation funding and in the preparation of research programmes. Adequate human resources and funding for standardisation should also be ensured in upcoming projects..

Responsible parties:

Tekes, Ministry of Employment and the Economy.

Time frame:

2010–2011

Measure 2.2 c)

Specifying measures to increase awareness of the importance of standardisation during market entry, and of the benefits of standardisation in general.

Background and rationale:

Awareness of standardisation and its role in innovation activity is limited amongst innovation actors and the industry, and amongst SMEs in particular. Improving awareness and competence can increase the utilisation of standardisation in innovation activity.

Responsible parties:

Finnish Standard Association, Ministry of Employment and the Economy.

Time frame:

2011-2012

2.3 Promoting the emergence of lead markets

Objective:

In the national innovation strategy, lead markets are viewed as a means of compensating for the small domestic markets, cited as one of Finland's weaknesses in competitiveness rankings. Under this strategy, Finland undertakes to create lead markets promoting Finnish innovation activity in selected areas within the EU, and to launch the necessary national measures.

The EU has launched the Lead Market Initiative in order to create lead markets in six areas: eHealth services, bio-based products, recycling, sustainable construction, renewable resources and protective textiles. Concrete impacts of the implementation of this EU initiative may be expected in 5 to 10 years' time.

Domestic markets in Finland are small, but they can act as important pilot markets for new innovations. However, wider introduction and utilisation of new products and solutions requires exploiting the European and global markets. Therefore, it is important that Finland participates actively in the implementation of the EU's Lead Market Initiative and enhances its influence on national measures. The lead market approach is also strongly promoted in the Digital Agenda, a flagship initiative in the EU 2020 Strategy. The priorities of the Digital Agenda include, for example, 'greener mobility', smart grids and meters that improve energy efficiency, and the new strategic infrastructures of the information society such as 'cloud computing' and 'Future Internet'.

A joint project of Tekes and the Ministry of Employment and the Economy, due to be completed in summer 2010, collects data for the purposes of identifying Finland's potential lead markets and forming the basis for decision-making processes. In addition, an operating model is created to systematise the approach and assess the impacts of the policy measures. Systematic promotion of lead markets requires political commitment.

Finnish participants of the EU Lead Market Initiative include Helsinki Culmination Innovation and Motiva Oy. For now, activity remains dispersed.

Measure 2.3 a)

Drawing up an operating model for the national development of lead markets.

Background and rationale:

The significance of demand-driven innovation policy within the EU, including the Lead Market Initiative, can be expected to increase due to a need, for example, to address the global requirements for competitiveness and major societal challenges.

In order to support decision-making, the joint project of Tekes and the Ministry of Employment and the Economy provides information on the national market areas suitable for creating lead markets. In addition to decision-making purposes, information on the policy instruments applicable for each market area is required. Decision-making practices that take account of the comprehensiveness and the inter-administrative nature of promoting the creation of lead markets need to be established. An evaluation of how to organise the management and coordination of the implementation of the Lead Market Initiative, for example, between various policy instruments, is also required.

Responsible parties:

Ministry of Employment and the Economy, other ministries, Tekes, business organisations.

Time frame:

2010–2011

Measure 2.3 b)

Networking national actors related to the EU's Lead Market Initiative.

Background and rationale:

The EU initiative implementation and potential national measures affect a wide selection of actors. In order to gain maximum benefits, it is important to network various actors and encourage them to actively take part in the EU initiative, and also provide and disseminate information.

Responsible parties:

Ministry of Employment and the Economy, Tekes, lead market actors.

Time frame:

2010–2011

2.4 Developing funding models for the introduction of investment-intensive innovations

Objective:

The adoption and diffusion of new solutions into wider use in the markets can be promoted by placing emphasis on demonstration and reference facilities, and by supporting the adoption of new solutions through the use of public funding. The aim is to share the risks of adopting innovative solutions, and create opportunities for the

developers of innovative solutions to gain experience and proof of the functionality of the solutions in their real-life operating environment.

Reference facilities especially help support the introduction of investment-intensive innovations. Supporting these types of facilities' market entry and sales activity requires proof that the new technology fulfils its reliability and performance requirements. In exchange for public funding, for instance, an obligation may be imposed on reference facilities to provide verified evidence of the performance and environmental impacts of new technologies.

The support and funding systems for demonstration and reference facilities may combine both private and public funding. The general understanding is that the most efficient funding solution includes funding for the party providing the facility and the actual investment item.

However, at the moment, the party providing the facility only receives Tekes' R&D&I funding for developing solutions. The Ministry of Employment and the Economy promotes the introduction of new energy technology solutions by means of energy support schemes intended for adopting renewable energy solutions and investments in improved energy efficiency. Energy support schemes are available for the adoption of existing solutions which have not yet been fully adopted into general use. So far, only the energy sector has active funding instruments for investments in reference facilities, but similar funding is required also in other sectors, especially for the purposes of promoting the introduction of new, environmentally friendly technologies.

Measure 2.4

Developing support and funding models for establishing demonstration and reference facilities and for verifying the performance of new products and processes.

Background and rationale:

So far, only the energy sector has active funding instruments for supporting reference facilities. The experiences related to the energy sector's funding instruments have been good, and the needs and opportunities of expanding their use to other sectors should be explored. For instance, there is a need for providing incentives for promoting environmentally friendly solutions.

Responsible parties:

Tekes, VTT Technical Research Centre of Finland, Ministry of Employment and the Economy, Ministry of the Environment, other ministries.

Time frame:

2011-2013

3 Innovations in public sector renewal – aiming at a forerunner position

The public sector is a key component of the national economy. Therefore, activity and decision-making within the sector have wide-ranging impacts on the whole of society. Measures taken by the public sector have significant impacts – direct or indirect – on the development, renewal and performance of the markets.

The major challenges for the public sector – such as the ageing of the population, challenges in funding public economy and citizens' need for more personalised services – require improvement in the productivity and quality of services, and innovations play a key role here. Being able to respond to challenges and generate new innovations requires open-minded decision-making, and the integration of the competence in public and private sectors. Modern public services are built upon open and close-knit public-private partnerships (PPP) and the user-orientation of services.

User-driven innovation activity enables the production of services in a way that benefits users the most. On the one hand, this requires engaging users in the design and delivery of services, and on the other, the possibility for users to influence the production of services by giving them more freedom of choice. Alongside providers of public services, service users are a resource whose competence, expertise and feedback can be used in the design of the services.

Public-private partnerships (PPP) refer to an approach where the public sector performs its tasks in cooperation with enterprises or organisations. In order to function properly, public-private partnerships require mutual trust, opportunities for both parties to benefit from the cooperation, and commitment to long-term cooperation and its development.

Public procurement can be used as an efficient method to promote innovations in both private and public sectors. It can be used to purchase new solutions, commission R&D services (so-called pre-commercial procurement) and boost innovation-friendly demand on private sector (so-called catalytic procurement). The procurement of new solutions puts emphasis on more broad-based entities that may include various combinations of products, services, technologies and operating models. According to research, at its best, public procurement can provide a more efficient incentive for enterprises to expand their innovation activity in comparison to public R&D funding.

Improving the quality, efficiency and productivity of public sector services requires introducing new operating models and practices at the government and local administration level. However, the public sector has few incentives to search for new solutions and operating models and their adoption is often tentative. Model cases

help demonstrate the functionality and benefits of new operating models, and encourage their more extensive implementation.

The public sector may act as a model for other public sector actors and the private sector in introducing new solutions. It is an important forerunner in solving major societal challenges. Through its example, the public sector is able to promote trust in the usability of new solutions and encourage their more extensive adoption, and at the same time, create markets for new solutions. Being a model and a forerunner also entails the risk of failure and negative publicity, but renewal is rarely possible without having the courage to take risks.

Changes in the production and organisation of services also require renewal of the management of public organisations. Municipalities are shifting more and more away from being service providers and towards resource management and the procurement of services. This new role focuses on the management and development of partnerships and service entities. The private sector and markets must be viewed as partners who provide new innovations and ideas for the purposes of renewing public services.

3.1 Partnerships and user-orientation in the renewal of public services

Objective:

Municipalities are responsible for providing public services, and traditionally the municipalities' own service organisations have produced these services. However, an operating model where the municipality commissions services from an enterprise or an organisation, has become more common. The number of these types of procurements varies a lot from one municipality or service to the next, but in some instances, the share of services provided by the private sector is greater than the share of services provided by the municipality's own service organisation.

Service procurement procedures have been very traditional, and characteristically, services themselves have been easy to define and describe for contractual purposes. In these service contracts, prices have been the key determining factor in decision-making.

Several of society's future challenges related to public services (such as the ageing of the population, marginalisation of young people, environmental and energy concerns) involve broad-based, complex themes, and solving these challenges requires more extensive competence and procurement activity than currently is available. From the community's perspective, the best solutions are to be found through the cooperation of various sectors and actors, and bringing together competencies in an open-minded manner.

The public sector should utilise competencies available in the markets more. Partnerships provide opportunities for creating innovations, and improve the productivity of services. Learning from one another makes service development and resource use more efficient. Partnership networks also enhance the flexibility of producing services.

User experiences and user expertise form the key design and knowledge base for providing user-driven public services. Giving citizens right to exercise choice, service users are able to influence the content of services provided for them. By bringing their own expertise into the process of creating services, users themselves become partners in the production of public services.

The service voucher is a good example of how users can have an influence on public services through their own choices. The users' right to choose creates innovation incentives for service providers to develop their own services in order to meet user needs, and service providers who cannot do this in a cost-effective manner, exit the markets. This way, the users' right to choose also increases productivity in the field.

The active participation of users in the design and production of services also requires guidance to their new role. There have been good experiences in the UK on assigning personal advisers to provide user support for citizens in order to empower them to participate in the design and production of services. In addition, user communities and various peer groups are important actors in the empowerment process.

ICT and various electronic service portals offer new opportunities to highlight user needs, because they support the users' right and opportunities to choose, thereby also supporting and enabling the user-orientation of services. A perspective that emphasises user and customer engagement and the right to choose brings together projects and programmes that promote the use of electronic services into a service entity where the components support each other.

The public-private partnership approach described above is relatively new, but there are signs of it being launched. Promoting practices that are based on partnerships between actors and users alike requires placing emphasis on strengthening existing projects and on the dissemination of information and best practices.

Active development of partnerships and cooperation models does not have to be restricted to national actors. It may be justified to attract international enterprises and their expertise into our country to assist in responding to national challenges. This way, international enterprises can develop their own competencies and, at the same time, the cooperation provides Finnish SMEs with opportunities to internationalise their operations. The role of public sector actors, such as hospital districts and municipalities, is to provide development environments where products and services can be finalised into end products.

Measure 3.1 a)

Establishing a group for innovative forerunner cities to renew public services by means of innovation.

Background and rationale:

The aim of the group for innovative forerunner cities is to bring together cities willing to open-mindedly develop their public services in cooperation with ministries and development organisations. The group facilitates adoption of operating models

based on public-private partnerships, user-orientation of services and service design approach, as well as developing procedures for public procurement of innovations. The target is to create public service innovations. New management practices for the public sector, and activating employees and engaging them in innovation activity, are important factors for achieving these targets.

The operating models for the group emphasise the spirit of discussion and trying out new things. Plenty of R&D work related to public service innovations is performed in Finland and abroad, so one of the group's key duties is to examine this work and try to learn from it. The objective of the group is to act as pioneers in identifying and examining new research data, experiences and trial runs.

In addition to examining the latest research data and experiences, it is important to be able to apply new methods in practice. That is why another objective for the actors included in the group is to actively pilot new methods within their own organisations. Learning from the trial runs brings a more practical dimension to the group's activity. Ministries and development organisations involved in the group's activity promote helping new ideas move forward with one's own activities.

Responsible parties:

The cities of Helsinki, Espoo, Vantaa, Tampere, Mikkeli, Kuopio, Jyväskylä, Pori and Sievi. Ministry of Employment and the Economy, Ministry of Social Affairs and Health, Ministry of Finance, Association of Finnish Local and Regional Authorities, Tekes, Finnish Innovation Fund Sitra.

Time frame:

2010–2013

Measure 3.1 b)

Evaluating the possibilities of establishing a development environment for social and health care innovations.

Background and rationale:

Establishing a development environment provides Finnish SMEs and developers of social and health care service systems a new type of environment for developing social and health care service innovations. The objective for the development environment is to invite national and international, private and public sector organisations to solve acute national social and health care challenges through innovation. Various parties face common challenges they try to solve through the use of new products and services, and new forms of cooperation. The creation of a new development environment brings together Finnish SMEs, providers of funding, and organisers and providers of services to form an interesting environment for international enterprises to come and invest in Finland.

The aim is to establish a dynamic development environment that combines the competencies of international enterprises in the field, Finnish SMEs, and Finnish social and health care organisations. Through testing, piloting and introducing new products and services in the social and health care service organisations producing the services creates a link between development work and practice. This enables more efficient and rapid introduction of new products and services.

The development environment also offers Finnish SMEs the opportunity to cooperate with international enterprises operating in the social and health care sector. This type of cooperation opens up opportunities for Finnish enterprises to observe, from a front row seat, the development of international social and health care service markets, and learn from international enterprises in the field how to operate in these markets. This type of development environment offers a unique opportunity for the Finnish social and health care system to learn from international practices, and thus creates opportunities to diffuse new practices across Finland. It also gives opportunities to promote the internationalisation and export of Finnish expertise and innovations.

Responsible parties:

TeKes, Ministry of Employment and the Economy, Ministry of Social Affairs and Health, Association of Finnish Local and Regional Authorities, Finnish Innovation Fund Sitra.

Time frame:

2010–2011

Measure 3.1 c)

Improving patient associations' and family caregivers' possibilities to influence the user-driven development and provision of public nursing services, and the development of their own activities, such as peer support.

Background and rationale:

Family caregivers and patient associations conduct valuable work through providing support and inspiration to their members in their everyday life, and at the same time, bring valuable expertise into the development of public services. This type of activity requires closer commitment from these actors in the renewal of public services, and the development of practices and methods that support this renewal.

With respect to the quality of the services, it is essential that the public services are developed based on customer needs. Customers themselves may be assigned responsibility and provided with opportunities to participate in the development of services, for example, by including various user communities more closely in public service development processes. User communities may play a key role in iden-

tifying customer needs and designing service entities that are functional from the users' perspective.

At best, user communities such as family caregivers and patient associations support and complement the public sector in achieve its targets for promoting health and wellbeing. Renewing public services and developing innovations also require more efficient utilisation of such user communities and the latent competence within them.

Patient associations provide information and peer support for people in similar situations. Through activating patient associations and creating new operating models for them, their operation can be developed more towards that of user communities. The aim of developing user communities is to activate them and improve their operating conditions, whilst creating opportunities for people themselves to influence and take part in the planning of public services.

User communities may play a key role in the diffusion of new services and service models, because they often possess the most up-to-date information on new and best practices and services that best serve their members. Active user communities may promote the adoption of best health care practices and services amongst various organisations and regions through their actions.

Responsible parties:

Organisations for family caregivers and patient associations, Finland's Slot Machine Association, Ministry of Employment and the Economy, Ministry of Social Affairs and Health.

Time frame:

2010–2011

3.2 Promoting innovation by means of public procurement

Objective:

So far, promoting innovation by means of public procurement has not been systematic in Finland, but it has received more attention in recent years. Public procurement is a key policy instrument for demand-driven innovation. Public procurement procedures will be developed so that they offer opportunities and incentives for innovative public procurement.

The legislation on public procurement enables innovative public procurement, but does not encourage it. Procurement of new types of solutions entails financial and operative risks. Current risk-averse attitudes, organisational structures of public procurement, and lack of systematic approach in procurement do not encourage public sector actors to procure innovative new solutions. Higher start-up costs may

often prevent innovative procurement. Furthermore, most procurement units lack the necessary expertise in drafting complex, long-term public contracts.

Steering public demand towards innovative solutions requires a strategic approach to procurement procedures and political and administrative support. The commitment of organisations' political leaders and officials to the development of procurement is an essential prerequisite for promoting innovation procurement in the public sector. Financial and human resources dedicated for developing procurement are also needed.

Innovation procurement requires determination of long-term strategic needs, long-term planning of procurement procedures, clearly defined organisation of procurement and division of responsibilities, and a progressive and professional approach to procurement. In addition to proper advance planning, procurement of innovative solutions requires knowledge of the markets and technological development. Suppliers need to know the procurement procedures in use, and to actively offer innovative solutions. New opportunities for the procurement of innovative solutions are offered by public-private partnerships.

Measure 3.2 a)

Developing central and local government procurement, and methods for promoting the procurement of innovations. Launching trial projects in collaboration with various actors to promote the procurement of innovations and the establishment and dissemination of best practices, for example, through the group for innovative forerunner cities. Together with the Ministry of Finance and other actors, concrete measures will be devised for the implementation of the innovation section of the state's procurement strategy.

Background and rationale:

Promoting the procurement of innovative, new solutions in the public sector requires organising procurement in a way that enables not only determining long-term strategic needs, but also defining relevant procurement concepts together with suppliers and users.

A more permissive and encouraging environment for procurement of innovations is necessary in order to boost demand for innovations on public sector. It is also necessary to support procurement and adoption of innovations, and recognise and reward good achievements throughout the procurement organisation. Authorities' procurement procedures require development of effective methods for identifying, assessing and managing risks. Life cycle costs and actual total costs should be systematically incorporated as the basis for calculating the most financially advantageous contracts.

The objective of the new strategy for government procurement is to enhance its professionalism. The suggested measures include, for example, clarifying and strengthening the management model of procurement, enhancing the systema-

tic approach to procurement, developing procurement-related competence, and supporting innovation activity by means of public procurement.

Together with the Ministry of Finance and other ministries and authorities, the implementation of the state's procurement strategy will be confirmed, and concrete measures for promoting innovation procurement will be devised. In addition, together with the Association of Finnish Local and Regional Authorities and other actors, the municipal sector's capability to benefit from innovative procurement is promoted within the sector, especially with regard to the procurement of public services.

Responsible parties:

Ministry of Employment and the Economy, Ministry of Finance, Tekes, Association of Finnish Local and Regional Authorities, other administrative sectors.

Measure 3.2 b)

Strengthening the role of actors who develop public procurement in order to enhance knowledge in procurement of innovations.

Background and rationale:

In addition to good organisation and a professional approach, innovation procurement requires expertise and special methods. For developing them and supporting procurement units, support services and units need to be established. The tasks of the support units would include developing methods based on best practices, assisting procurement units with procurement procedures, and developing and providing procurement training.

Hansel Oy is an expert in large-scale procurement of products and services, and development of procurement procedures. Motiva Oy actively promotes public procurement that focuses on improving material and energy efficiency. HAUS Finnish Institute of Public Management Ltd plays an important role in procurement training. The aim is to enhance these actors' roles in promoting procurement of innovations, and to evaluate the potential need for bringing in more actors like Motiva Oy to the state and municipal sectors.

The proposed tasks for the actors who develop public procurement include:

- developing methods and services to assist procurement units and encourage procurement of innovations
- generating and promoting best practices
- developing practical tools for promoting the procurement of innovative solutions
- promoting dialogue and partnerships between public and private sectors
- improving procurement training and procurement-based competence.

Responsible parties:

Ministry of Employment and the Economy, Ministry of Finance, ministries, institutions, authorities, Association of Finnish Local and Regional Authorities, Tekes, Hansel Oy, Motiva Oy, HAUS Finnish Institute of Public Management Ltd.

Time frame:

2010–2013

Measure 3.2 c)

Examining different incentive models and ways to manage risk, as well as possibilities to implement them, in order to promote the procurement of innovations.

Background and rationale:

Public sector innovation procurement must be supported and rewarded. This applies to the organisation as a whole, the units conducting procurement work and the people who work there.

Competence and financial incentives need to be developed for risk management and encouraging risk-taking. Working in close cooperation with customers and suppliers is one of the key factors in risk management. Additional methods are still needed in order to partially or completely compensate the financial risks related to innovation procurement. Such methods include funding the higher start-up costs of innovative solutions and having the public sector share the risks with the supplier.

Financial risks can be managed, for example, by covering parts of procurement costs with the saving achieved. For instance, in projects targeted at improving the energy performance of buildings in accordance with the so-called Energy Service Company (ESCO) model, customers cover their investments in energy saving solutions from decreased energy costs in the long run. A similar model can be applied to material service companies' projects (the MASCO model) targeted at more efficient use of raw materials.

Management of technology- and operation-based risks is possible through the multi-phased introduction of pre-commercial procurement. Some countries are using the operating model of the Small Business Research Initiative (SBRI). Its first phase includes selecting suppliers through an open competition, commissioning a pilot study that is limited to 6 months, and then selecting the most promising plans to go through to the next phase. The second phase includes continuing the development work and performing a feasibility test, after which decisions on procurement will be made. Close cooperation between customers and the developer of the innovation increases the probability to succeed.

Tekes' funding for the public procurement of innovative, new solutions is between 25–75 %. Funding may be granted to the public sector and the developer of the solution for the purposes of planning, developing and implementing innovation procurement. The funding is intended for the development of challenging new solutions

that are not yet available on the market. The public sector is encouraged to utilise solutions already available on the market, if the solutions enable new, more productive practices.

Further examination of the incentive models for innovation procurement used abroad, and their applicability in Finland, is required.

Responsible parties:

Ministry of Employment and the Economy, Ministry of Finance, Tekes, Association of Finnish Local and Regional Authorities.

Time frame:

2011-2012

4 Incentives for grassroots initiatives

Broad-based innovation policy strives to broaden the traditional areas of innovation activity to the whole economy and the society. One of the key objectives is to allow users and citizens even more opportunities to influence the development of public services.

Citizens' grassroots initiatives may prove to be a significant factor in renewing operating models and services of general interest. In light of international examples, citizens, third sector actors and enterprises are both interested in and capable of generating innovative services and solutions, if opportunities and tools are made available for them. However, so far, the service providers' insufficient readiness to open up and use the innovation activity of external parties to their advantage has created a bottleneck hindering this type of progress.

Thanks to the rapid development of the IT infrastructure, opening up public sector information for public reuse has proven an excellent way of providing opportunities for single users, user groups and enterprises to generate innovations. Data collected by the public sector may be used as raw material in the development of a variety of applications and services. This is turning out to be an important new area of innovation activity.

Empowering citizens with a right to choose their service provider may help speed up the development and renewal of public services. In addition, the public sector could include citizens in the development of public services, because it enhances the benefits citizens gain from these services.

4.1 User innovation through opening up public sector information

Objective:

The public sector collects, produces, maintains and refines a wide range of information for the purposes of its operation. However, in addition to administrative use, this information may also be used, as such or in a processed form, for a multitude of innovative purposes, both commercial and non-profit.

Recently, several countries have created political guidelines in order to promote the utilisation and further processing of public sector information. Access to information is improved by allowing citizens to utilise the public sector raw data, and to provide online services for their use via computers and wireless terminals. The terms of use and pricing policy related to information produced and compiled by the public sector have been amended in several countries to encourage the comprehensive use of public sector information.

Facilitating the opening up and further processing of public sector information offers various possibilities for creating user innovations that make citizens' everyday lives and participation easier. Distributing information via joint platforms creates partnerships between organisations that distribute information, and enhances public sector activity whilst increasing the number, diversity and quality of services that utilise public information.

Creating services on the basis of public information also provides new business opportunities for SMEs. It is noteworthy that the users of public information may act as producers of information and enrich the public sector databases and information resources through the information they produce. Electronic notifications about faulty street lights that citizens can add to a database or on an online map provided by the city are a practical example of this.

There are plenty of international recommendations on how to facilitate the further use of public sector information outside the public sector. However, the implementation of recommendations based on EU directives and best practices has been fairly modest in different countries, including Finland. In Finland, four working groups appointed by different ministries are currently examining how the utilisation of public sector information could be facilitated both inside and outside the public sector. Amongst the four working groups, the working group appointed by the Ministry of Transport and Communications is focusing on direct measures related to user innovation.

The user-driven utilisation of public sector information is being complicated by the disparity, strictness - in some parts - and disconnectedness (for example, pricing) of the terms of use for public sector information. Promoting user innovation may include: removing the obstacles related to legislation, technology and the attitudinal environment; hindering the further processing of public sector information; improving the findability of information; and, networking developer communities.

Measure 4.1 a)

Facilitating the user-driven utilisation of public sector information by means of, for example, influencing the development of the related legislation (e.g. the Act on Criteria for Charges Payable to the State), the terms on further use of the information, and the availability of such information.

Background and rationale:

Making the information produced and compiled by the public sector available for further use provides plenty of raw materials for user-driven innovation. The terms of use should be amended to make them more open and unambiguous. In addition, the use of public information should be mostly free-of-charge. For the most part, public information has already been transferred into electronic form, and the aim is to digitise the rest of the information as quickly as possible. Plenty of data is available in electronic form, but in many cases in formats that make further use of the information difficult. This presents technical obstacles for its use, so it is important to

develop the machine-readability and open service interfaces in order to be able to utilise public sector information.

Opening up public sector information, and improving its findability and usability for the purposes of its user-driven further development, are measures included in the policy mix promoting the wider use of public sector information, for example, amongst authorities and in the private sector.

Facilitating the further use of public information is already mandated in the EU Directive on the re-use of public sector information. However, more efficient enforcement of this directive would improve the functionality of public administration and free up innovation potential.

Responsible parties:

Ministry of Finance, Ministry of Transport and Communications, Ministry of Employment and the Economy, other administrative sectors.

Time frame:

2010–2012

Measure 4.1 b)

Evaluating the need to establish a national contact point for the utilisation of public sector information in cooperation with stakeholders. The tasks for the contact point would include the disseminating information, providing guidance, and networking actors.

Background and rationale:

The findability of public sector information is included in the prerequisites for its further utilisation. The findability may be facilitated by informing about public information at one of the contact points for the utilisation of public sector information, and by compiling information on and links to relevant information sources and promotion projects in order to include them into national portals.

A data catalogue (only in Finnish) was compiled by using public information provided by the public sector, and published on the Suomi.fi portal to be used by citizen developers participating in the 2009 Apps for Democracy Finland competition. The international approach is to provide citizen developers with access to freely available public information, so that they can further develop the information through the use of web portals similar to opendata.gov or opengov.fi.

Some information facilitating developers' work is available in different theme portals, such as the paikkatietoikkuna.fi portal maintained by the National Land Survey of Finland. Information related to various projects promoting the utilisation of regional information is also likely to be made available on designated portals.

Access to information and information service, as well as exchange of information, could be facilitated by setting up a centralised contact point and portal.

Responsible parties:

Ministry of Transport and Communications, Ministry of Employment and the Economy, other stakeholders who promote opening up public sector information.

Time frame:

2010–2011

Measure 4.1 c)

Piloting the utilisation of public sector information in the Helsinki Region Infoshare project and, in conjunction with the project, promoting the exchange of experiences and the broader development of operating models in Finland.

Background and rationale:

In many countries, opening up public sector information to be further developed by enterprises and citizen developers has moved ahead by following the example of local administration, and especially forerunner cities. In Finland, municipalities in the Helsinki region have been eager to take the initiative. In accordance with the concept of the Helsinki Region Infoshare project, the municipalities are committed to cooperation promoting the mutual and external utilisation of regional information.

Helsinki Region Infoshare project is expected to help discover good operating models for facilitating the exchange of information between urban and rural municipalities. At the same time, information on experiences on the user-driven utilisation of information outside the public sector is collected. The measures will promote information exchange in order to utilise innovation potential more quickly across Finland, and also pilot an ecosystem of actors who utilise public sector information.

Responsible parties:

Municipalities in the Helsinki region, Forum Virium Helsinki, Ministry of Employment and the Economy, Tekes.

Time frame:

2010–2012

4.2 Empowering citizens with service vouchers

Objective:

Citizens' opportunities to choose their service producers have been systematically increased in publicly financed social and health care services. The most advanced example of this is the new legislation expanding the use of service vouchers, entered into force in 2009. The new legislation offers citizens the opportunity to choose between private sector service producers whilst using publicly financed services. The new Health Care Act, currently under preparation, will increase people's freedom to choose between public services.

Freedom of choice is an important aspect in innovation activity. It allows citizens the possibility to influence their service experiences and the quality of services with their own choices, and increases competition between service producers. This in turn obliges service producers to pay more attention to the price-cost-quality ratio of their services and provides an incentive to improve their services. Freedom of choice creates a dynamic effect in publicly financed services, which in turn has a positive impact on the productivity of public services.

It would enhance the positive impacts of freedom of choice, if citizens had easy access to information on service providers and were able to convey their own service experiences to other people. This would strengthen the dynamics of the service markets, and citizens' actual possibilities to exert influence. All municipalities considering the introduction of service vouchers have to address this issue. There is a risk of overlapping efforts as municipalities are setting up their own electronic portals which are not networked with each other. Currently, there are no national service portals for citizens for the purpose of enhancing the impact of the service voucher system.

Measure 4.2

Examining the possibility of setting up a nationwide interactive electronic service portal together with stakeholders to help citizens choose social and health services to better meet their needs. This is part of the process of introducing service vouchers in social and health care services. Promoting the development of other factors to support the introduction of service vouchers (such as cost accounting for public services).

Background and rationale:

A nationwide electronic service portal related to service vouchers would increase awareness of available service producers, and offer municipality residents the opportunity to convey their own service experiences to other people. A mutual service platform would help reduce municipalities' costs. From the perspective of the service providers, the portal would assist citizens in finding appropriate service producers, and provide an opportunity to observe the development of the service markets. On a centralised basis, the portal could provide information on service producers, their location, their service profile and the feedback they have received.

The introduction of service vouchers can also be supported by other ways, for example, through the development of cost accounting for public services.

Responsible parties:

Ministry of Employment and the Economy, Association of Finnish Local and Regional Authorities, other stakeholders in the private and public sectors.

Time frame:

2010–2012

5 Efficiency from user-driven innovation tools and methods

Extensive utilisation of user-driven innovation requires swift and comprehensive introduction of supportive actions for the economy and the society. The infrastructure should support the utilisation of new methods in the best way possible.

Design in its broader context emphasises the significance of users in planning products and services, and also on a wider scale, in strategic business development and management of organisations. Utilising design in business operations may help improve the international competitiveness of enterprises. Service design presents an opportunity to renew public services comprehensively and in a manner that benefits users, whereas design thinking offers an open-minded, user-driven approach to renewal.

The IT infrastructure forms a basis for developing user-driven innovation activity, and its functionality is a prerequisite for interactive innovation activity and user participation in development activity.

New types of environments for testing products, services and operating models (e.g. Living Labs) offer opportunities for supporting user participation in innovation activity. Together with users, the aim is to obtain information on the features and usability of products and services as well as the need for them, prior to putting them on the market.

5.1 The new role of design emphasises the importance of users

Objective:

Design as a concept has changed significantly over the recent years. It has expanded into new areas of use and has been introduced as part of the strategic decision-making in business management. The horizontal change in design – i.e. its expansion – refers to a shift from product design into new areas of use. In addition to traditional product design, new areas of use, such as service design and user interface design, have emerged. The vertical change in design refers to its transformation into a more strategic tool for business and management purposes. In addition, the new concept, design thinking has been introduced. Design thinking examines challenges and opportunities in order to find new, user-driven solutions, and it may be used to engage users in innovation activity. Design as a method is moving closer to open innovation activity. The new roles of design do not displace its traditional use, but evolve alongside them.

Design is also applied to services. This is called service design. It refers to the user-driven planning of services and improvement of the service experience. Through

different service design methods, the production of better quality services that meet the users' needs is possible, and users can be better acknowledged whilst improving the existing services and developing new ones.

These changes in design mean new challenges for the utilisation and implementation of design. Design-related concepts and terminology are not clear or unambiguous, which causes confusion and makes communication complicated. What is more, competence is limited, especially within the new areas, and training and design activity are not truly international. Design evolves rapidly, and there is a danger that Finland gets left behind in international development, because the perspective of utilising design in the development of products and services is not raised enough. Also, there are insufficient statistics available on the benefits of design use. These challenges have also been noticed in connection with the development of the creative economy.

The concept of design and innovation activity moving closer together is reflected in innovation policy. Design has been highlighted in the current government programme, and the national innovation strategy approved in 2008. Design is an important part of user-driven innovation policy, which acknowledges design as a strategic tool for enterprises and views service design as a principle enabling, for instance, the renewal of public services. The EU has also acknowledged the significance of design in its recent guidelines on innovation policy. In spring 2010, the Commission prepared a new innovation programme for the EU, in which design has been included in the EU innovation policy for the first time.

Design is promoted with the help of several actors. However, there are currently no long-term development guidelines for design in Finland. This makes development work fragmented in part, and diminishes its effectiveness. The changed role of design presents further challenges for development activity. To effectively respond to the challenges, it has been proposed that a national developer entity for design should be established, following the example of several countries. In these countries, the focus has been on design and its new role, and substantial public funds have been invested into promoting the utilisation of design in business. The best-known example amongst developer organisations for design is the Design Council in the UK.

The designation of Helsinki as the World Design Capital for 2012 presents an opportunity, for example, for wider use of design thinking and service design tools in the renewal of public services. In order to promote the utilisation of design in the SME sector, existing networks and developer organisation activity will be activated. In addition, existing business and expert services will be renewed, and emphasis will be put on creating new networks of actors in the design sector.

Measure 5.1 a)

Outlining a common view on development challenges with regard to strengthening the competitiveness of design, in cooperation with stakeholders. In this context, the need to

support and centralise national design promotion tasks will be evaluated. A potential model for the project would be the Design Council in the UK.

Background and rationale:

Changes in design have brought on the need to establish a common view on the direction, objectives and content of design development. Comprehensive common guidelines on design development would assist in outlining the current design debate and its use of new concepts as well as increase general awareness on design. The outlining process would take account of the possibilities of design thinking.

Centralising resources would increase the effectiveness of design activity. In practice, design activity could include the networking of actors in the design sector and enhancing activity in the service design market. Design activity could also include the development of statistics and indicators, and the analysis of the benefits of design-related investments in business operations. In addition, design activity would participate in the distribution of up-to-date information on design, and present example cases of the successful utilisation of design. The aims could also include the improved monitoring of the social impacts of design. The project would act as an intermediary between the design field and the parties that provide funding (such as Tekes, the Centres for Economic Development, Transport and the Environment).

Responsible parties:

Ministry of Employment and the Economy, Ministry of Education and Culture, Tekes, other stakeholders.

Time frame:

2010–2012

Measure 5.1 b)

Piloting service design models as part of the World Design Capital project, and raising awareness of service design and its possibilities in public sector innovation activities. Establishing best practices on the basis of pilot project experiences, and their diffusion.

Background and rationale:

For now, the use of service design in the renewal of public services is fairly limited in Finland, though from the user perspective it would assist in providing better services. In practice, efforts that increase the general awareness of the possibilities of service design are required. In cooperation with other actors, pilot projects on applying the principles and methods of service design to public sector service activity will be carried out as part of the innovative environment of the World Design Capital project. The issues examined in connection with the pilot projects will include, for example, strategic vision, decision-making authority, openness, and the flow of

information in planning user-driven services. The pilot projects will utilise the comprehensive approach of service design in order to find new service solutions.

Responsible parties:

Ministry of Employment and the Economy, Ministry of Education and Culture, Tekes, Association of Finnish Local and Regional Authorities, parties participating in the World Design Capital project.

Time frame:

2010–2013

Measure 5.1 c)

Activating the use of design in SMEs with the help of national developer organisations and networks. At the same time, public business and expert services supporting the use of design will be renewed (e.g. Design Start) and the networking of actors in the field will be supported.

Background and rationale:

The use of design is still relatively limited with regard to the business operations of SMEs. There are also regional differences. Particular challenges occur with using new forms of design.

The measures help increase and enhance the comprehensive utilisation of design, especially in the SME sector. Through the Centres for Economic Development, Transport and the Environment programmes and the funding instruments at the centres' disposal, the SME sector is encouraged to use design as a competitive advantage in business operations. Increasing the design competence of the Centres enables providing better service for enterprises. Development of business and expert services enables them to correspond better with the current views on design. Steering state aid available for promoting design towards the networking of actors in the field will help enhance competence in addition to finding and establishing new practices.

Responsible parties:

Ministry of Employment and the Economy, Centres for Economic Development, Transport and the Environment, Centre of Expertise Programme, Regional Cohesion and Competitiveness Programme (COCO), Aalto University, Design Forum Finland.

Time frame:

2010–2012

5.2 IT infrastructure in support of user-driven innovation

Objective:

The development of ICT offers the users of products and services various new opportunities to create, develop and distribute their own ideas and innovations. Information technology has become one of the key elements of innovation environment and infrastructure supporting user-driven innovation activity.

ICT allows user forums to operate regardless of geographical distances. In many cases, users have become independent producers of new innovations and new content. Through ICT, enterprises are able to engage users in their innovation activity more extensively and more deeply than before. ICT - and especially the Internet - provides new possibilities for enterprises and users to enhance diverse interaction related to innovation processes. ICT also helps enterprises and researchers gather and analyse data on user needs and preferences more easily than before, and facilitates the testing of products and services under development.

For the purposes of developing user-driven innovation activity, it is important that the IT infrastructure functions efficiently and reliably, and that its platform and services are easy to use, because IT infrastructure is becoming one of the key components of user-driven innovation activity, such as user-driven development of services. In addition, it is crucial for the competitiveness of our innovation system that the components of the ICT infrastructure are interoperable, and that it is easy to build new levels of services on top of previous ones.

One example of a service platform project supporting user-driven innovation activity is the Flexible Services programme of Tivit Oy, in collaboration with the Strategic Centres for Science, Technology and Innovation (SHOKs).

Measure 5.2

Promoting the development of user-driven innovation and the required IT infrastructure through information society policy. Important factors include the efficiency and openness of data networks (e.g. standards and interfaces), the development of user-driven IT tools and a regulatory environment that supports user innovation utilising information technology.

Background and rationale:

User-driven innovation activity gains competitive advantage when the components of IT infrastructure (such as broadband, mobile services, ubiquitous technology platforms) function efficiently, and remain in the frontline of development.

The information society strategy and the innovation strategy share several objectives and areas requiring measures, and these strategies will become much more integrated in the future. Integrated strategy areas may be specified once the national information society strategy has been updated in autumn 2010.

Responsible parties:

Ministry of Transport and Communications, Ministry of Employment and the Economy, Tekes.

Time frame:

2010–2013

5.3 Enhancing the use of user-driven innovation platforms

Objective:

Innovation platforms and development environments have been established for joint innovation activity of the private and public sectors to test different operating models for the purposes of developing products and services.

The most well-known user-driven innovation platforms based on the cooperation between public and private sectors are the Living Labs development environments. In these environments, products and services can be developed by collecting user experience information and development suggestions of a vast number of user groups in everyday situations.

New innovation platforms and environments that apply user-driven innovation methods and utilise IT efficiently are still in the start-up phases of their development process. Their competitiveness can be influenced by developing, for instance, sets of criteria, incentives and operating models.

Information on new innovation platforms, their functionality and the competence required for their efficient use has accumulated through surveys and international networks. However, the development of the Living Labs concept in particular has been quite fragmented. Enterprises that have been interested in utilising the concept have wished for a clear set of criteria for Living Labs innovation environments.

So far, there are not much research data available on the development of the methodology of innovation activity performed in innovation platforms based on the cooperation between public and private sectors.

Measure 5.3

Establishing a national Living Labs network and a management mechanism for it. The objectives include: ensuring the development of a national network, establishing connections with international Living Labs networks, disseminating best practices, developing tools and methods, and making it easier for enterprises to utilise Living Labs development environments. In creating the network, the objective of developing Living Labs activities included in the letter of intent between the state and the metropolitan area will be taken into account.

Background and rationale:

The Living Labs concept offers new tools for innovation projects that systematically utilise user information and test comprehensive user-driven frameworks for products, services, operating models and ecosystems in everyday situations.

The introduction and use of the Living Labs concept may be enhanced by networking Living Labs development environments at national level. The effectiveness of the network can be enhanced, if a sufficient number of different development environments are able to agree on its management and coordination. An organised national contact point for the network may raise the visibility of Finland as a leading country in Living Labs activity and facilitate networking at international level. Through coordination, common tools and services may be developed for the network.

In connection with implementing this measure, the following tasks may be performed: examining and removing obstacles related to public funding with regard to Living Labs and other user-driven innovation platforms; drafting a set of quality criteria for Living Labs innovation platforms; creating incentives for public sectors actors; testing new operating models in Living Labs environments; and, removing obstacles hindering participation in broad-based, user-driven innovation projects implemented through the cooperation between public and private sectors. A deeper engagement of users generates user information. Utilisation of this information must take account of key concerns related to intellectual property rights (IPR), protection of information and privacy, and the trust between users and development environments. Projects may examine these concerns and develop new operating models for the purposes of controlled utilisation of Living Labs.

The letter of intent between the state and the metropolitan area includes the networking objective for Living Labs development environments. Development activity in the metropolitan area may be utilised in networking at national and international levels.

Responsible parties:

Ministry of Employment and the Economy, Living Labs actors (incl. thematic actors, regional actors, universities of applied science), Tekes, Ministry of Education and Culture.

Time frame:

2010–2013

6 Diffusing innovations through networks

The wide-ranging utilisation of innovations in society requires their adoption as part of everyday activities and practices. It is essential to be able to disseminate them efficiently between various areas.

A key element in the regional dissemination of innovations is to make use of existing networks. The Finnish innovation system is appreciated for its ability to utilise the knowledge provided by universities. The cooperation of the public sector, businesses, universities and users may speed up adoption of innovations in everyday life and make it more efficient, while saving in product development costs. Regional centres of excellence have succeeded in networking actors at the local level to participate in cooperation that benefits all parties. The basis for innovation activity has been built since the 1990s by the Centre of Expertise Programme OSKE, and since the 2000s also by the Regional Cohesion and Competitiveness programme COCO (formerly known as Regional Centre Programme RCP).

The efficient diffusion of innovations requires knowledge of the local markets, local networks, ability to understand user experience, and skills and knowledge about how to scale innovations.

Urban areas, their local markets and the cooperation between actors there, provide a fertile environment for the emergence and diffusion of innovations. For instance, in the Vasa region in 2008, the area of the annual housing fair was used to gather heat energy from the seabed – a local energy innovation. The development work engaged researchers, developers of innovation, enterprises, residents, energy users and public sector actors.

Businesses' and organisations' competence – gained from practical situations and field operations – should be utilised in the development of products and services. This type of competence is gained, for example, through interaction with the users of products and services. One of the pioneers of this type of development work is the Lahti Science and Business Park. It has created several innovation concepts for enterprises and public organisations in the Päijät-Häme region located in the centre of Southern Finland in cooperation with the Lappeenranta University of Technology (such as innovation session methods and innovation net projects). This type of innovation activity is called practice-driven innovation. It emphasises the significance of users and practical situations as initiators of innovation activity, which is why it is closely connected to user-driven innovation.

The driver of development in Finland is the Helsinki metropolitan area, where a population of over one million residents, opportunities for work and studying, and the demand created by international visitors and tourists, create a fertile environment for market-driven development. By shifting the focus to the local level, the real

market situation and the true end user needs and values are added to development work. Both new housing districts and older districts targeted for redevelopment in the Helsinki metropolitan area form an interesting development environment for the best enterprises in the field.

Providers of public funding, so-called intermediary organisations (universities of applied science, technology centres, other development companies, etc.), associations and social enterprises all play a significant role at local level. They often have expertise in grassroots activity. However, renewal of public sector (public procurement, partnership models) and utilisation of methods that promote user-orientation (service design, innovation platforms) are essential for implementing new solutions.

6.1 Efficient utilisation of local level innovation and knowledge networks

Objective:

Existing networks need to efficiently diffuse demand- and user-driven innovation in order to utilise the innovations to their fullest extent. This also requires efficient cooperation at local level.

Comprehensive networks of local level innovation have been developed in Finland in recent years, and they have been networked together. The cornerstones of this network are centres for technology, centres of expertise, universities of applied science, and Centres for Economic Development, Transport and the Environment. The Innovation and Knowledge Networks, under the guidance of the Ministry of Employment and the Economy, have generated and disseminated information on various user-driven innovation methods. Currently, the network includes 34 different types of areas, and 21 centres of expertise., forming a good basis for the diffusion of innovation.

Although there is currently significant public investment and emphasis on promoting user-driven innovation activity in several areas, local level innovation networks at present are unable to identify all possibilities with regard to demand- and user-driven innovation activity. In addition, this type of promotion of knowledge and competence conducted by the Centres for Economic Development, Transport and the Environment is not yet full-scale either at the local level. However, because of their expert and financial services, the Centres for Economic Development, Transport and the Environment play a key role in supporting various actors in various areas and encouraging participation in user-driven innovation activity. Coordination and steering is required in order to avoid overlapping activities and to promote best practices. At the moment, projects operate independent of each other and exchange information and competencies only occasionally. First, developing and testing the same operating methods in several locations wastes resources. Secondly, chances of improving the operating methods are slim, because information on best practices is not utilised or disseminated.

This is why ‘intermediary’ organisations are required to diffuse innovation and to assist in bringing together knowledge and competence with practical experiences, users and the rest of the grassroots level reality.

Measure 6.1

Strengthening the role of the Centre of Expertise Programme’s (OSKE) clusters of expertise and the Innovation and Knowledge Network in the diffusion of demand- and user-driven innovations. Centres for Economic Development, Transport and the Environment will be supported as local sources of information, competence and practices with regard to demand- and user-driven innovation activities. Bolstering demand- and user-driven innovation activity at the local level also requires the enhancement of the competence levels of key actors, such as providers of funding and intermediary organisations.

Background and rationale:

National innovation networks are key instruments in the diffusion of innovations. The demand- and user-driven innovation must be promoted in the public and private sectors with the networks’ operations. Effective communication has a key role in these operations. At the same time, new operating models must be developed for the networks to assist in the dissemination of best practices and experiences rapidly across Finland. The aim is to network and accelerate the transfer of good experiences and models between various areas.

Various national intermediary organisations will be activated for the diffusion of innovations, so that they can boost breakthrough of new innovations on the grassroots level. Local economy that reaches single users and consumers will bring necessary reinforcement to implementing innovations.

The measures will be specified in connection with the Centre of Expertise Programme’s interim evaluation in autumn 2010.

Responsible parties:

Ministry of Employment and the Economy, Centres for Economic Development, Transport and the Environment, Centre of Expertise Programme, Innovation and knowledge network, intermediary organisations.

Time frame:

2010–2013

6.2 Implementing city innovations

Objective:

Urban environments offer a fertile environment for developing and diffusing innovations. A key requirement is to match supply of innovations with demand. On the demand side, social needs (the ageing of the population, climate change, youth

unemployment, etc.) meet with urban development needs (need for changes in retail trade, more intensified community structure and use of urban transport). Correspondingly, the supply field requires development projects (R&D projects currently in the innovation implementation phase) and real-life testing areas (brand new and renewable city districts).

The so-called city innovations developed in this environment include renewal and improvement projects that have been implemented in practice, utilised in the community, and applied to the local urban environment. City innovations can be scaled and multiplied in order to diffuse them at national and international levels. City innovations may refer to housing, transport, supply of services, or people's everyday lives and participation.

The criteria for choosing targets for city innovations include: social significance, impact on systemic changes, user-orientation, applicability on a local city district level, customers' and users' willingness to adopt new innovations, perseverance of activities (commitment of the organisation and personnel), new forms of cooperation, networking actors and the preventability of the measure (prevention/early intervention).

For the next few decades, new housing developments in the Helsinki metropolitan area provide plenty of opportunities for various testing and development work on urban housing. Currently, the Helsinki metropolitan area is one of the fastest-growing urban areas in Europe. From the business perspective, both brand new and renewable city districts form various localised economies where different kinds of scalable products and services may be piloted and introduced. City districts also form real user-driven markets where innovations are developed based on user preferences and needs in order to ease the implementation of innovations.

Various existing innovation platforms (development programmes, Living Labs development platforms), and methods that promote public sector renewal (public procurement, partnership models) and user-orientation (service design) may be utilised in the implementation of city innovations. In addition, smart solutions for transportation and ubiquitous technology projects as part of the community structure offer new opportunities. Also, municipality actors that have joined the framework agreement on increasing energy efficiency are potential participants in the development and introduction of city innovations related to energy efficiency.

Putting city innovations into practice and practical actions requires bringing together and enhancing new forms of competence. Innovations can be put into practice only in cases where demand and supply for renewal exists.

Measure 6.2

Launching a new, broad-based programme with the state and municipalities in the metropolitan area in order to develop new types of user-driven city innovations. The objective is to develop products, services and operating models that are based on research, development and the broad-based adoption of innovations, and are especially related

to energy efficiency, transport, supply of services and citizens' everyday lives and participation. The two-year pilot phase for city innovations covers about 10-15 separate city innovations and their further processing.

Background and rationale:

A broad-based, joint programme of the state and the municipalities in the Helsinki metropolitan area for the realisation of city innovations, the City Innovation Approach, is scheduled to be implemented in 2010-2011. The programme focuses on the public and social utilisation of innovations related to urban environments.

City innovations are included as part of the implementation of new housing developments in the Helsinki metropolitan area. Testing and development work are also conducted in existing city districts, with a particular focus on energy-efficient renovation activity and various service models. New regions targeted for housing development include Jätkäsaari, Kalasatama, Kruunuvuorenranta and Östersundom in Helsinki; the Tapiola-Otaniemi-Keilaniemi-Suurpelto region in Espoo; Marja-Vantaa district in Vantaa; the municipality group KUUMA, which comprises Ristinummi, Kaunismäki, Tuomaala and Lepola; and the municipality group NELOSET, which comprises Söderkulla, Yli-Jurva and Palojärvi-Huhmari.

About 10-15 different development projects will be chosen for the adoption of city innovations to help test and further develop operating models. The pilots for city innovation will be selected on the basis of representing different types of projects in various local environments. Within the municipality groups KUUMA and NELOSET, the focus will be on building single-family homes in a high-quality manner that helps unify the community structure.

Responsible parties:

Cities in the Helsinki metropolitan area, municipality groups KUUMA and NELOSET, Uusimaa Regional Council, Tekes, RAY (Finland's Slot Machine Association), Ministry of the Environment, Ministry of Transport and Communications, Ministry of Education and Culture, Ministry of Employment and the Economy.

Time frame:

2010-2011

7 Assessing the impact of the demand- and user-driven innovation policy action plan

From the perspective of steering innovation policy, it is recommended to evaluate the development of demand- and user-driven innovation activity in the economy and the society. At the same time, the impact of the action plan to be implemented in 2010-2013 on the realisation of the general objectives of innovation activity and the social objectives of various policy sectors will be evaluated. This is important for assessing the success of the action plan and the need for further measures once the action plan is completed.

7.1 Monitoring and assessing the action plan

Measure 7.1 a)

Monitoring the realisation and impact of the action plan by means of coordinated self-evaluation amongst sub-projects.

Background and rationale:

It is characteristic of broad-based programme work that several parties work together to implement certain measures. The work moves forward through several varying project entities and sub-projects. According to past experiences, the implementation of action plans and their sub-projects is often fragmented. In addition, the provided resources may vary significantly, and measures have been placed within the time frame in highly varied intervals. The challenges of the process of implementing action plans also frequently include the so-called top-down, hands-off management model, which refers to the distribution of project activity amongst so many organisations that, in the end, no one actually manages the activity. In these types of situations, the ultimate objectives of the action plan may not be reached, or the impact of the action plan remains limited in some other respect. A self-evaluation conducted once a year will help improve the monitoring of the implementation of the action plan, and it also provides an interim evaluation of the impacts of the action plan, enabling potential corrective measures.

Responsible parties:

The Ministry of Employment and the Economy

Time frame:

2011, 2012 and 2013

Measure 7.1 b)

After the action plan has been implemented, an external evaluation of the impact of the measures will be commissioned.

Background and rationale:

Evaluation of the action plan is performed on the basis of a separate evaluation scheme.

Responsible parties:

The Ministry of Employment and the Economy

Time frame:

2013–2014

7.2 Developing indicators for broad-based innovation activity

Objective:

Monitoring user-driven innovation activity and its development must be feasible in order to systematically address any weaknesses in the policy and towards evaluating its benefits. This requires several years of development work, because currently there are no indicators available for monitoring development. However, international interest has been raised with regard to the development of indicators, for instance, in Denmark, the Netherlands, Canada, the United States, and the European Commission. Finland should actively join this group of forerunners. Development work that is more focused is required in connection with user-driven innovation activity and user innovation, but also on a wider scale, so that indicators for user-driven innovation activity and user innovation are developed as part of a set of indicators for broad-based innovation.

Measure 7.2

Developing broad-based innovation indicators for Finland.

Background and rationale:

Whilst innovation policy is being systematically expanded, developing indicators for monitoring innovation has not started yet. This is an important issue for innovation policy, for example, in light of monitoring the benefits of investment and areas of emphasis and, on a more general level, evaluating the impacts of the policy. At international level, some countries have already initiated development work on innovation policy indicators. The forerunner amongst these countries is the UK, where the UK Innovation Index, established under the guidance of the Government, is leading the way for all developers. As such, the Index does not provide a perfect example of

national development work, because it lacks the indicators for demand- and user-driven innovation activity. The European Commission and the OECD are also initiating the development of innovation policy indicators. In Finland, the issue is being addressed through launching a comprehensive national project in cooperation with key stakeholders. The aim is to create more broad-based innovation policy indicators than the current ones, so that they cover demand- and user-driven innovation activity. Employee innovations must also be taken into account in connection with user-driven innovation. The project will be linked to similar international development projects. A link will also be created between this work and the current development work being conducted on the development of public service indicators.

Responsible parties:

Ministry of Employment and the Economy, Tekes, Finnish Innovation Fund Sitra, Statistics Finland, Research and Innovation Council.

Time frame:

2010–2013

Tekijät Författare Authors Työ- ja elinkeinoministeriön kysyntäinnovaatiot -ryhmä	Julkaisu-aika Publiceringstid Date Elokuu 2010 Toimeksiantaja(t) Uppdragsgivare Commissioned by Työ- ja elinkeinoministeriö Arbets- och näringsministeriet Ministry of Employment and the Economy Toimielimen asettamispäivä Organets tillsättningsdatum Date of appointment	
Julkaisun nimi Titel Title Kysyntä- ja käyttäjälähtöinen innovaatiopolitiikka – Jäsenty (osa I) ja toimenpideohjelma (osa II)		
Tiivistelmä Referat Abstract <p>Kansallista innovaatiostrategiaa laadittaessa pyrittiin löytämään uusia kilpailuedun lähteitä kiristyvään globaaliin kilpailuun vastaamiseksi. Yhdeksi tärkeäksi politiikan kehityskohteeksi tunnistettiin kysyntä- ja käyttäjälähtöinen innovaatiopolitiikka. Tämän pohjalta työ- ja elinkeinoministeriö on yhdessä sidosryhmien kanssa määrittänyt kysyntä- ja käyttäjälähtöisen innovaatiopolitiikan kehittämisalueet ja laatinut politiikka-alueita koskevan toimenpideohjelman.</p> <p>Kysyntälähtöisen innovaatiopolitiikan tavoitteena on edistää innovaatioiden syntymistä ja leviämistä vahvistamalla innovaatioiden kysyntää ja parantamalla niiden käyttöönoton edellytyksiä. Tämä voi tapahtua esimerkiksi hyödyntämällä julkisia hankintoja innovaatioiden edistämiseen tai vahvistamalla kysyntää sääntelyn ja standardien avulla. Käyttäjälähtöisellä innovaatiopolitiikalla puolestaan edistetään käyttäjien tarpeiden syvällisempää ymmärtämistä ja käyttäjien roolin vahvistamista innovaatiotoiminnassa. Tavoitteena on myös lisätä käyttäjien omiin tarpeisiinsa kehittämien innovaatioiden (käyttäjänovaatioiden) kaupallistamista.</p> <p>Raportti koostuu kahdesta osasta. Raportin I osassa kuvataan, mitä kysyntä- ja käyttäjälähtöisyys merkitsee innovaatiopolitiikassa ja miksi tätä innovaatiopolitiikan uutta lähestymistapaa tarvitaan. Lisäksi siinä esitellään kysyntä- ja käyttäjälähtöisen innovaatiopolitiikan eri osa-alueet: osaamistason nostaminen, sääntelyn uudistaminen, julkisen sektorin toimintamallit sekä kan-nusteiden kehittäminen.</p> <p>Raportin II osa sisältää lähivuosien kehittämistoimenpiteet. Toimenpideohjelmassa esitetään mm. julkisten hankintojen kehittäjäorganisaatioiden, kuten Hansel Oy:n, Motiva Oy:n, HAUS Oy:n innovaatiroolin vahvistamista keinoksi hyödyntää julkisia hankintoja innovoinnin tukena. Kansalaisten osallistumista julkisen sektorin palvelujen innovointiin voidaan helpottaa avaamalla julkisia tietovarantoja käyttäjien, käyttäjäyhteisöjen ja yritysten hyödynnettäväksi. Muotoilu nähdään aiempaa selvemmin osana käyttäjälähtöistä innovaatiotoimintaa. Muotoilun käyttökohteita voivat olla sekä palvelut että tuotteet. Sen välineistön avulla voidaan etsiä vastauksia myös yhteiskunnallisiin haasteisiin.</p> <p>Kysyntä- ja käyttäjälähtöinen innovaatiopolitiikka on kansainvälisesti uusi politiikka-alue. Sen mahdollisuudet ovat mittavat. Suomi on erinomaisessa asemassa edelläkävijänä uuden politiikan muotoilussa ja toimeenpanossa. Edelläkävijyyttä asettaa myös haasteita, koska muualla kehitettyjä malleja tai politiikkavälineitä ei juuri ole. Haastavuutta lisää myös kysyntä- ja käyttäjälähtöisen innovaatiopolitiikan monitahoisuus. Toimenpiteet koskettavat läpileikkaavasti paitsi TEM:n hallinnonala, myös monia muita hallinnonaloja.</p> <p>Työ- ja elinkeinoministeriön yhteyshenkilö: Innovaatio-osasto/Teija Palko, puh. 010 606 4122</p>		
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Julkaisun nimi Titel Title Den efterfråge- och användarorienterade innovationspolitiken – Uppställning (del I) och åtgärdsprogram (del II)		
Tiivistelmä Referat Abstract <p>När den nationella innovationsstrategin utarbetades försökte man finna nya källor till konkurrenskraft för att kunna svara på den allt hårdare globala konkurrensen. Den efterfråge- och användarorienterade innovationspolitiken identifierades då som ett viktigt utvecklingsobjekt för politiken. Utgående från detta har arbets- och näringsministeriet tillsammans med intressentgrupperna fastställt utvecklingsområdena för den efterfråge- och användarorienterade innovationspolitiken och utarbetat ett åtgärdsprogram för politikområdet.</p> <p>Målet för den efterfrågeorienterade innovationspolitiken är att främja uppkomsten och spridningen av innovationer genom att stärka efterfrågan på innovationer och förbättra förutsättningarna att ta dem i bruk. Detta kan ske t.ex. genom att utnyttja offentlig upphandling för främjande av innovationer eller genom att stärka efterfrågan med hjälp av reglering och standarder. Genom den användarorienterade innovationspolitiken främjas en djupare förståelse för användarnas behov och stärkandet av användarnas roll i innovationsverksamheten. Ett mål är också att öka kommersialiseringen av innovationer som användarna har utvecklat för sina egna behov (användarinnovationer).</p> <p>Rapporten består av två delar. I del I beskrivs vad efterfråge- och användarorientering innebär i innovationspolitiken och varför detta nya angreppssätt inom innovationspolitiken behövs. Dessutom presenteras de olika delområdena inom den efterfråge- och användarorienterade innovationspolitiken: höjning av kompetensnivån, regleringsreformer, verksamhetsmodellerna inom den offentliga sektorn och utveckling av incitament.</p> <p>Del II innehåller utvecklingsåtgärder för de närmaste åren. Som ett medel för utnyttjande av offentlig upphandling till stöd för innovation föreslås i åtgärdsprogrammet bl.a. att innovationsrollen stärks för de organisationer som utvecklar den offentliga upphandlingen, såsom Hansel Ab, Motiva Oy och HAUS Oy. Medborgarnas deltagande i innovationer för den offentliga sektorns tjänster kan underlättas genom att offentliga dataarkiv öppnas, så att de kan utnyttjas av användare, användargemenskaper och företag. Design ses tydligare än tidigare som en del av den användarorienterade innovationsverksamheten. Designen kan användas för såväl tjänster som varor. Med designens medel kan man söka svar också på samhälleliga utmaningar.</p> <p>Den efterfråge- och användarorienterade innovationspolitiken är internationellt sett ett nytt politikområde. Dess möjligheter är omfattande. Finland har en utmärkt ställning som pionjär i utformningen och verkställandet av den nya politiken. Pionjärskap innebär också utmaningar, eftersom annanstans beprövade modeller eller politikverktyg just inte finns. Graden av utmaning ökar också på grund av den efterfråge- och användarorienterade innovationspolitikens komplexitet. Åtgärderna genomsär och berör förutom arbets- och näringsministeriets förvaltningsområde, också många andra förvaltningsområden.</p> <p>Kontaktperson vid arbets- och näringsministeriet: Innovationsavdelningen/Teija Palko, tfn 010 606 4122</p>		
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Demand and User-driven Innovation Policy – Framework (Part I) and Action Plan (Part II)

The national innovation strategy of Finland was prepared with the aim of finding new sources of competitive advantages for Finland in response to the ever-increasing global competition. Demand and user-driven innovation policy was identified as a key policy area to be developed.

Demand-driven innovation policy aims to promote the creation and diffusion of innovations by strengthening the demand for innovations and improving the prerequisites for their adoption. User-driven innovation policy in turn promotes deeper understanding of user needs and strengthening the users' role in innovation activity.

The Ministry of Employment and the Economy, in cooperation with various stakeholders, has determined the demand and user-driven innovation policy areas in need of development, and compiled an action plan for the policy area. This is a two-part report. Part I of the report describes the significance of a demand- and user-driven approach to innovation policy, and explains why this new approach is necessary. Part II of the report presents improvement measures for the near future.

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