Advisory Council for Science and Technology Policy

# Valuing Services

**Advisory report 79**
December 2012

## Summary

### Background

Services are important to the Dutch economy. The export of services is almost as important to economic growth as the export of domestically produced goods. Arguably, it would therefore be logical for innovation policy to focus strongly on services. This is not or, at any rate, is no longer the case in the Netherlands, however, certainly when compared with the situation in other countries in the region. Several other countries export more services than the Netherlands. Germany's position is striking in this regard. Not only is it in the world's top three as an exporter of goods, it has also been in the top three as an exporter of services for many years. The Netherlands is number nine in the world and there is reason to believe that considerable potential remains for the export of services, enough reason for the Minister of Economic Affairs to ask the Advisory Council for Science and Technology Policy (AWT) whether innovation policy should also focus on service innovation and, if so, how such policy should focus on this area.

### Service innovation is value creation

According to experts, 'service innovation is not about services, it is about all innovation'. Since it is blurring, the distinction between products and services is no longer meaningful. This becomes clear if we use the following classification of services: (1) product-driven services (services relating to motor vehicles like refuelling, maintenance and leasing, for example), (2) product-service combinations (Starbucks, which is about the coffee and the experience, for example) and (3) stand-alone services (healthcare and financial services, for example). Innovations are increasingly occurring in value chains of raw material-product-service-user. Many innovations therefore have characteristics of both products and services. Does TomTom, for example, supply a product (a physical device) or provide a service (information for route navigation)? Does Apple supply products (iPhones) or provide services (iTunes, access to applications)? Does Philips supply products (scanners) or provide services

(optimal use of operating theatres)? The council notes that symbiosis is occurring between products and services and therefore deems it advisable to view products and services as interrelated parts of a single whole in the context of innovation. The user wants a solution to his or her need or problem and it does not matter in this regard whether the solution is a physical or a virtual one or whether it is a tangible product or an intangible service. Without defining service innovation in exact terms, the council takes potential value creation as a starting point. This starting point can concern both economic and social value creation and is in keeping with the interpretation of service innovation opted for in countries like Germany, Sweden and Finland.

Our society is evolving into a network society in which the individual person (customer, user, one who defines needs) is increasingly at the centre. There is considerable potential for value creation, since all innovations that lead to improvements in effectiveness and/or efficiency contribute to value creation. Value will mainly be created by innovations that occur close to the user. Of the many potential sources for value creation, the council singles out two in particular: (1) better meeting the needs of consumers and business users and (2) reducing transaction costs in value chains and networks. There will be major opportunities in the future, possibly the near future, to create value in this area, opportunities that will lead to export opportunities for Dutch companies (economic value) and contribute to the resolution of social challenges (social value). Information and communication technology (ICT) is becoming an increasingly important enabler in both spheres, primarily in terms of the use of ICT. In this context, much will be expected in the coming years, particularly in terms of the possibilities provided by big data.

## All innovation is important

Examples of innovations that meet the needs of users are Albert.nl (convenience through the delivery to homes of shopping items bought from Albert Heijn supermarkets or the option of picking these items up at a pick-up point), Buienradar (online weather information), smartphone banking (banking from the comfort of an armchair), Facebook (sharing experiences with friends), financial settlement with the insurer by Carglass in the event of damage to car windows, Albelli (the possibility to personally compile a high-quality holiday photo album), the projection of images on walls in rooms in which MRI scanners are located (as a result of which children lie more calmly in the scanner, thus reducing the likelihood that a repeat examination will be required). Examples of innovations that reduce transaction costs include ICT platforms for joint logistics planning, e-commerce, websites that enable comparisons to be made, the public transport chip card and electronic invoicing.

These innovations encompass a wide range of aspects. First, technology, primarily ICT, is used in virtually all cases. In addition, innovations usually include non-technological aspects like cooperation with new partners (an insurer that cooperates with a fitness centre and the cooperation of Dutch Railways with bookshops regarding the sale of tickets, for example), new ways of involving the user in the process (evaluation of hotels and restaurants by users, for example), new revenue models (separate payment for additional in-flight services, for example) or improvements in the design of customer experience (the user interface of a parking ticket dispenser or the design of the complete customer journey of a flight, including booking, taxi, checking in, waiting, the flight and subsequent transport, for example).

Innovations that contribute to value creation are almost always a combination of technological innovation and non-technological innovation. These two elements reinforce each other in the sense that value creation is achieved primarily if both elements are strong. The council notes that, although the current innovation policy of the Ministry of Economic Affairs focuses on service innovation, the policy instruments are biased towards technological innovation, while, in the Netherlands, far fewer companies implement non-technological innovations relative to other countries like Germany, Sweden and Denmark, or in terms of the European average. Although there are policy instruments that also support this kind of innovation, for example through network formation (Innovation Performance Contracts, Syntens and regional initiatives), the budgets available for the purpose are small and will even be reduced in the coming years. The set of instruments in the so-called 'top sector' policy (with two top sectors aimed at services, namely logistics and the creative industries) have so far focused on demand-driven research, in respect of which the government contribution for the two services top sectors is relatively small. This is because the contribution referred to is based on cash contributions for research, whereas these sectors have a less developed research tradition and operate on the basis of a rapid innovation cycle.

## The role of the government

The council notes that there are various problem areas that will prevent innovation, particularly non-technological innovation, from occurring itself or at any rate from occurring to a sufficient degree. These problem areas are a lack of organisational capability to respond to changing circumstances, a lack of training programmes for service innovation, inadequate and fragmented knowledge about service innovation, inadequate self-organising capacity in services sectors, a lack of trust for launching partnerships in the area of service innovation, export barriers and an inadequate focus on innovative services in the government's procurement policy. Money is therefore not the problem as such. The issue is first and foremost about knowledge, organisational capability, networks and market size.

Countries like Germany, the United Kingdom, Sweden and Finland conduct targeted innovation policy for service innovation that focuses on all forms of innovation and are therefore capable of increasing their export of services. The governments of these countries are not 'cheating' by any means, since what they are doing is permitted under European state aid rules. Support is provided in various ways that include research programmes, knowledge dissemination, network formation, the funding of innovation projects, the enforcement of standardisation and the rapid national implementation of new European legislation and regulations. This support enables or encourages national players to innovate and thereby secure a lead over the international competition.

Why must the Dutch government conduct a policy for service innovation, particularly non-technological innovation? If we view products and services in combination in the context of innovation and different forms of innovation are effective precisely as interrelated parts of a single whole, then this question must in essence be deemed to be the same as the question as to why the government must conduct policy for innovation. The government's position is currently based on the principle that the government has no role unless there are market and/or system failures. The council is of the opinion, however, that this approach will become increasingly difficult in practical terms, since markets and

innovation systems are becoming so dynamic that the government can rather easily be overtaken by events. In addition, the relationship between citizens, companies, knowledge institutes and authorities is changing in the network society and the government is expected to play a different role.

Based on joint ambitions and common interests, for example, the government could assume an active role by shifting from a 'no, unless' position to one of 'yes, provided that'. There are common interests in the area of social challenges or international competitive position (level playing field), for example. A considerable amount of potential social value creation will be lost if companies fail to take sufficient action with respect to service innovation. This is a cause for concern, since social challenges are of such magnitude that all improvements are needed. In the case of healthcare innovations, for example, success is determined mainly by other forms of innovation. Foreign companies that receive government support with respect to non-technological innovation therefore have an advantage relative to their Dutch competitors. This is a problem in terms of the competition for the growing markets in Asia and South America.

## Main recommendation 1:
## review the intervention logic of the innovation policy

The tremendous growth of ICT means that our society is increasingly becoming a network society. We are in the utilisation phase of the current ICT era, a phase in which value is created primarily by the smart combination of technology and ICT in new combinations of products and services. Innovations are increasingly occurring in value chains of raw material-product-service-user. This development requires skills at companies other than only the ability to invent and develop new technology. Other forms of innovation are becoming more important, such as new interactions with users and new joint venture partners, organisational structures and/or revenue models.

The current innovation policy focus strongly on stimulating technological innovation and the demand management of scientific research. In the council's opinion, this policy is useful and necessary, and legitimate in terms of market and system failures. However, in a world in which markets are arising and disappearing with increasing rapidity and where innovation systems are becoming more dynamic, the 'no, unless' position, which is aimed at repairing market and system failures, is no longer always practicable. Reality therefore requires that the innovation policy be based on a different approach: short-term cyclical, agile and based on a 'yes, provided that' position.

The council therefore advocates expanding the paradigm underlying the innovation policy. Science and technology alone are not enough, the government must also value services and, to this end, must review the intervention logic of the innovation policy. Reconsider the philosophy and principles underlying the stimulation of innovation and consider value creation in the entire chain. This process includes making better use of the outcomes of fundamental research by strengthening applied research and improving the integration of skills in the arts, sciences and social sciences.

The council notes that, although the need for this review is based on the perspective of service innovation, it will in fact pertain to the innovation policy as a whole, since various

forms of innovation must be viewed together. The council expects that this review will lead to a modernised intervention logic that will provide a frame of reference for both stimulating scientific and technological innovation and realising potential value creation close to the user.

## Main recommendation 2: implement targeted improvements immediately

The world is changing rapidly and the council advises the government to take steps in the right direction immediately based on the current policy. In this second main recommendation, the council makes five recommendations for this purpose.

***1: Invest in research and education on service innovation***

The council advises the government to strengthen and combine the knowledge infrastructure in the Netherlands in the area of service innovation by starting a multidisciplinary service innovation research programme. This programme will bring together knowledge in fields like psychology, anthropology, service design, supply chain management, transaction management, ICT and service engineering. It could be set up by the Netherlands Organisation for Scientific Research (NWO). Ensure the active dissemination of the results among companies. Consider asking the top sectors to draw up a research agenda containing knowledge questions concerning service innovation. This agenda would form the foundation of the programme. The council also advises strengthening the education infrastructure in the area of service innovation, in the first instance by actively involving universities of applied sciences in the aforementioned research programme and, where possible, giving greater attention to service innovation in the Regional Attention and Action for Knowledge Circulation (RAAK) programmes. In addition, it is important to invest more in applied and multidisciplinary ICT research, also at universities of applied sciences.

***2: Invest in the organisational capability of businesses***

The challenge with respect to service innovation lies mainly in the implementation of good ideas. Businesses capable of such implementation are therefore required. The council advises investing in improving the organisational capability of businesses. In this context, the government must focus on SMEs with export potential in all sectors (both the manufacturing industry and services sectors). In this context, the government must primarily connect in the sense of connecting service providers and knowledge providers and brokers with each other. Consider providing coaching support on a large scale in the form of growth and innovation associations and use the services of Syntens Innovation Centre in this regard.

***3: Make an innovation fund available for social innovation projects***

The government must involve the demand side in the innovation policy more explicitly. The council advises the government to invest in concrete innovation projects that (1) contribute to resolving social problems and (2) have export potential. This can be done by making an innovation fund available for innovation projects of groups that are developing a pilot of a new product-service system for the resolution of a social problem. Consider participating mainly in projects, regional and otherwise, that involve co-creation with users or citizens, cross-sectoral innovation (between top sectors, for example) and expert contributions from the arts, sciences and social sciences.

***4: Strengthen the role of the government as a purchaser of innovative services***
The government can provide opportunities for service innovation as an innovation-oriented purchaser. The council therefore advises the government to make full use of the possibilities of innovation-oriented purchasing and, in that context, give greater attention to innovative services or product-service systems. Consider the development of a guarantee facility for the purchase of innovative services by public organisations, as has been done for innovative products in the top sector Water. In addition, in the event of proven success, the government must take strong follow-up action with respect to the recently launched 'Inkoop Innovatie Urgent' programme concerning the use of innovation by the government.

***5: Continue advocating the completion of the internal market for services in Europe***
Scale, and therefore sufficient export potential, is also important to the development of new services, including digital services. A properly functioning internal European market for services, digital and otherwise, is therefore of major importance to the Netherlands. Through greater competition, such a market would also provide more incentives to Dutch service providers to innovate. The European Commission is giving attention to the implementation of the Services Directive and the internal digital market. The council advises the Dutch government to continue making a case for a large internal market for services, digital and otherwise, in Europe.