

COMMENTS TO THE CONSULTATION DOCUMENT ON STATE AID FOR INNOVATION

1. INTRODUCTION

The fundamental rationale for State aid for innovation described in this document is basically correct. State aid should target clearly defined market and systemic failures. State aid should also be a limited response to these failures to ensure that it will not hamper competition. State aid regulations should find a balance between ensuring competition and encouraging and facilitating innovation.

Consultation document paragraph (5) presents a specific rationale for State aid for eco-innovation. Market prices only reflect the direct economic costs and not the costs of environmental pollution. It should be recognised that the similar rationale can also apply to major social challenges. For example, developing medical treatments, pharmaceuticals or other health care related technologies for rare diseases or developing health care services for sparsely populated rural areas is not economically feasible because of high costs of innovation compared to market size.

One of the key barriers in eco-innovation is the small scale of the initial market. As long as the market remains small, prices stay high which in turn keeps the market small. As soon as the market and production volumes reach a critical size, prices fall and the markets start to grow. Other innovation besides eco-innovation can also face the same critical market size barrier, which could justify a time limited State aid until a critical market size has been reached.

A similar rationale applies to various networks and infrastructures. Single actors can not afford the costs of setting up networks or infrastructures. However, once the critical size has been reached the network or infrastructure can offer significant benefits to all users and allow further pursuit of market oriented activities using the networks and infrastructures. For example, it is doubtful whether internet would exist today without the significant initial public investments.

The Annex refers to many of the underlying reasons for these types of market failures, such as lack of common rules and standards, non-functioning product markets and general “systemic” failures. However, these failures are not considered sufficiently in the proposed rules.

Many of these types of failures and other failures for that matter are best targeted through demand side measures. In the case of State aid, this means providing the aid to the buyer rather than the producer, thus creating the demand for innovation. Innovative public procurement, vouchers for purchasing innovative products and services and various types of public-private partnerships are among the most potential policy measures targeting the demand for innovation.

The rules concerning State aid for innovation should therefore include guidelines for the use of these types of policy measures. There are currently no specific guidelines which would clearly define how State aid regulations should be interpreted in cases where R&D and innovation are encouraged via demand side measures, e.g. in the context of public procurement.

Question 1) Do you think that it is appropriate not to create a separate Framework for Innovation and that the new possibilities for State aid target selected innovation-related activities?

It is appropriate not to create a separate Framework for Innovation. It is important that the community State aid regulatory regime is as simple as possible also with regards to innovative activities. The proposal to integrate innovation into the Framework for R&D and Innovation, and Risk Capital and Environmental guidelines as well as Block Exemption is therefore recommendable. It is equally feasible that State aid targets selected innovation-related activities, as long as the selected activities sufficiently reflect the reality of innovative activities or private enterprises.

However, guidelines should also cover demand side policy measures, i.e. policy measures which encourage the demand for innovation rather than supply. The most important regulatory framework missing from this consultation document in this respect is the one concerning public procurement. It is important that appropriate guidelines concerning innovative public procurement and the arrangement of public-private partnerships be given in the public procurement regulations.

2. PRINCIPLES GOVERNING CONTROL OF STATE AID FOR INNOVATION

Questions 2-7 cover most of the important issues discussed in Chapter 2. However, there are two points which do not fall under any of the questions posed. First of these is the definition of the incentive effect and the second is the definition of innovative activities.

Consultation document paragraph (19) is not sufficiently clear in the way it defines the incentive effect. The first sentence clearly points to the behavioural change as the necessary outcome of State aid. However, the latter sentence limits this unnecessarily only to verifiable cases where no action would have been taken in the absence of State aid.

The definition of incentive effect should not be so categorical for two reasons: (1) it is very difficult to verify the counterfactual, i.e. that no action whatsoever would have been taken in the absence of State aid, and (2) desired behavioural change can take many forms, e.g. increased investments in R&D and innovation projects, ability and willingness to engage in more risky and if successful more rewarding projects, ability and willingness to engage in various forms of collaboration and networks, etc. and relate to different levels (project, enterprise, network, cluster, innovation system, economy, society). Especially when State aid contributes to firm behaviour in a sustainable and lasting manner, externalities can be significant and impacts at the systemic level substantial. The incentive effect should therefore cover all cases, where the quality of the innovative activity can be significantly improved.

Whereas the detailed definition of the incentive effect is non-relevant in the case of start-ups and SMEs (because it can for various reasons be assumed a-priori in most cases), it is important that sufficiently clear ex-ante criteria are defined for the incentive effect in the case of large companies. These criteria and thereby the eligibility of large companies for State aid for innovation should emphasise coordination and dissemination, collaboration, networking and creation of poles of excellence. This would target State aid for innovation for large companies to activities which would be most likely to produce significant externalities and systemic level impacts and therefore also facilitate and enhance innovative activities of SMEs and research organisations.

Consultation document paragraph (22) refers to innovation activities as stages that are close to market. Real life innovation processes are highly interconnected processes, where research, development and other pre-commercial activities take place simultaneously. Rather than defining innovation as a stage close to market, particular innovative activities should be referred to as being closer to market and therefore more likely to cause market disturbances. State aid regulations should then define which of these pre-commercial activities under which conditions can be assumed to cause negligible or no market disturbances and would therefore be eligible for State aid.

Question 2) Do you think that the problems presented in Annex and the market failures identified by the Commission as hampering the innovation process are accurate? If so, why? If not, why not?

The market failures and the related underlying problems identified by the Commission in the document and in the Annex are correct, as well as the principles described in paragraphs (15)-(17). However, it should be recognised that innovative activities are continuously changing and that new market and systemic failures may arise and that current failures may disappear in the future. It is therefore important that State aid schemes are approved only for a limited time and that State aid regulations are sufficiently adaptive and updated often enough.

One market failure that is under presented in the Communication relate to the systemic failures, particularly to the failures related to knowledge and learning. These failures are typically of the type that arise together with new emerging markets and disappear as the market in question matures. There is evidence in the economical literature that these kinds of learning failures are becoming more and more prominent.

Question 3) The measures described in this Communication provide ex-ante criteria on the basis of which State aid for innovation would be approved. Do you think that such an approach is adequate?

The approach used for State aid for innovation should be similar to the one adopted for State aid for R&D, i.e. the relevant frameworks should provide sufficient ex-ante criteria on the basis of which State aid for innovation can be approved.

However, guidelines should also include the key principles for approving State aid for innovation. Innovative activities are continuously changing. Limiting State aid categorically only for specific narrowly defined activities would create unnecessary regulatory rigidity. In addition to specific ex-ante criteria, the Commission should also invite State aid authorities to notify schemes under more general criteria described in the consultation document paragraph (12). In order to do this without significantly increasing the bureaucratic burden of the notification process, the Commission should make sure that it has the appropriate competencies and procedures.

Question 4) Stakeholders are invited to provide empirical evidence about the appropriateness of authorising State aid to large companies, in particular in connection with the objective of developing clusters around poles of excellence in the EU. Do you think that the Commission should develop ex-ante rules allowing State aid for Innovation to the benefit of large companies, or that such type of aid should always be subject to a case-by-case stricter analysis on the basis of a notification to the Commission? As far as support to innovation (or other state aid) is concerned, would it be appropriate to distinguish between different categories of large companies? If so, on the basis of which criteria? And for which purpose?

It is true that large companies may not be subject to market failure in similar degree than SMEs. However, innovations are frequently a result of collaboration between large and small companies and the decisions made by large companies have a significant impact on SMEs innovation capabilities and their capabilities to commercialise and access markets with new products and services. State aid for innovation is therefore justified for large companies to encourage them to collaborate and network with SMEs and public research to enhance innovation and especially coordination and dissemination.

The Advanced Technology Programme (ATP) in the USA has been for years funding both large and small enterprises. Recent impact evaluation of the programme has provided the following justification for funding large enterprises¹:

- The participation of large firms increases technology development opportunities across a broad spectrum of technology areas and industries.
- In single-company projects their participation enables ATP to support industry needs across the full spectrum of technology areas. Projects in Materials and Chemistry, in particular, often require extensive manufacturing and materials processing facilities that small firms do not have. Biotechnologies aimed at human therapeutics often require considerable technology development beyond ATP, extensive regulatory testing and trials, and production and distribution licenses with larger companies before they can make a major impact.
- Large firms are active in joint ventures.
- Large firms in joint ventures partner with all types of organizations
- Large firms offer critical advantages in certain industries and technology areas
- Large firms bring technical advantages related to size and scope and commercialization advantages through marketing and manufacturing capability.
- Large firms gain access to new technologies while small firms find opportunities to integrate their technologies into larger systems and build a customer base.

ATP is one of the most extensively evaluated public funding schemes in the world.

Commission should therefore seek to define ex-ante criteria for State aid for innovation for large companies with the emphasis on coordination and dissemination, participation in the creation of poles of excellence, enhancing training and mobility and encouraging risk capital investments in start-up and small innovative companies. Case-by-case stricter analysis would create unnecessary bureaucracy and rigidity and could therefore hinder the development of networks, clusters and poles of excellence as well as create barriers for technology transfer and dissemination. However, large amounts of State aid for large companies, similarly as in the current rules for State aid for R&D should be subject to case-by-case stricter analysis.

It is true that there are clear differences between an independently owned company of 251 employees and a multinational corporation of more than 10 000 employees, and that these differences could justify the definition of different categories of large companies. However, companies are increasingly networked and seek to complement their competencies through various forms of collaboration. State aid regulations should encourage collaboration and

¹ ANALYSIS OF ATP IMPACTS, Factsheets Provided by the ATP Economic Assessment Office, NIST, National Institute of Standards and Technology - Technology Administration, U.S. Department of Commerce, April 2005.

networking regardless of company size. The capabilities of companies to engage in collaboration and participate in networks increase with the company size up to a point, after which internal coordination and dissemination becomes an increasing challenge and typically leads into internal structures of smaller business or other units. Provided that the financial markets function properly, there are no significant differences in access to risk capital and other forms of funding between independent companies just over the SME limit and smaller business units or companies within large multinational corporations.

It is therefore unclear what the rationale for distinguishing between different types of large companies could be. Furthermore, additional differentiation according to company size would further increase the complexity of State aid regulations.

Question 5) Stakeholders are invited to provide empirical evidence about the appropriateness of authorising State aid to non-technological innovation, notably in services sectors

Services are a major contributor to economic growth in Europe and an increasingly important source of innovation, firstly as a demanding customer, secondly as innovators themselves and thirdly as an efficient intermediary in transferring knowledge, skills and technologies within and across industries. Furthermore, business activities and subsequently also research and development of industrial companies are increasingly focused on providing services. There is therefore no economic, social, political or environmental rationale for limiting State aid for innovation only for technological innovation. On the contrary, such a limitation could seriously endanger Europe's competitiveness and social development in the long run.

There are undoubtedly difficulties in differentiating between non-technological innovation and normal business operations. This is true especially in the case of small (service) companies, which do not have systematic structures and processes for innovation.² Defining innovative activities and even R&D e.g. in services is not straight forward. However, it can be done.

The OECD Frascati manual³ identifies the problems of defining R&D and innovation in services. The recently updated OECD Oslo manual⁴ defines four types of innovation:

- Product innovation (including services)
- Process innovation (including service production processes)
- Marketing innovation (introduced in the latest update)
- Organisational innovation (introduced in the latest update)

The Oslo manual provides definitions for each of these types and for innovation and innovation activities. It also provides a list of changes which are not considered innovations and examples highlighting different types of innovation and how to distinguish between different types of innovations. Furthermore, the OECD Oslo manual contains definitions for various types of innovative activities. The most important of these in this context are

² On the other hand, as it has been identified in the context of technological innovation, small companies are the least likely to cause any market disturbances. Larger service producers on the other hand are forced to organise their innovative activities for efficiency and quality. This means that their innovative activities are likely to be more distinguishable.

³ Frascati Manual. Proposed standard practice for surveys on research and experimental development, OECD, 2002

⁴ The 3rd and latest edition of the OECD Oslo manual has been published 27 Oct 2005
<http://www.oecdbookshop.org/oecd/display.asp?lang=EN&sf1=identifiers&st1=922005111p1>.

definitions for other preparations for product and process innovations, preparations for marketing and organisational innovations, training and design. It should also be noted that OECD no longer uses the concept of “technological innovation” because of definition problems.

The rules for State aid for innovation should make use of the extensive work that has been done to prepare these definitions in defining the eligibility of the related innovative activities for State aid.

Enhancing the production of non-technological innovations requires that companies develop clearly defined structures and processes for non-technological innovations, as companies have done for technological innovations. This will make it easier to distinguish innovative activities from normal business activities. State aid should encourage this development.

The boundaries between services and manufacturing are blurring, which also leads to blurring boundaries between technological and non-technological innovation. Limiting State aid eligibility to technological innovation only would lead into increasing interpretation problems and would encourage separation between technological and non-technological innovation rather than integration. Producing solutions and systemic innovations consisting of a number of interconnected innovative components, products, services and processes instead individual technological gadgets is much more likely to lead into productivity gains, competitiveness, growth and employment. State aid regulations should encourage integration rather than separation and therefore State aid for innovation should not be limited to technological innovations.

The costs and activities related to non-technological innovation are largely the same as those related to technological innovation. The major difference between non-technological and technological innovations are that the resulting innovation is typically a concept, a structural, operational or business model or a methodology rather than a concrete product. Although customers are a major source and increasingly also a partner in technological innovations, non-technological innovations, especially those in services are typically developed in even closer collaboration with customers. The actual production of services, especially knowledge intensive services requires a close interaction between a producer and a user. In practice, knowledge intensive services are frequently co-produced combining knowledge intensive service activities of both producers and users⁵.

The rationale for defining State aid eligibility of innovative activities targeting non-technological innovations should not be based on defining specific costs or activities, but rather on specific requirements for clearly separating R&D and other innovative activities from normal business activities. The aim of this approach would be to clearly define those characteristics which are self evident and embedded in technological innovation as eligibility criteria for non-technological innovation, thus bringing those innovative activities targeting non-technological innovations to equal footing with those targeting technological innovation. This leads in to the following proposal:

1. Refer to the forms of non-technological innovation defined in the latest OECD Oslo manual.

⁵ The use of knowledge intensive services in R&D can actually resemble collaborative R&D, where both parties can benefit and even share the risks.

2. Define the State aid eligibility of costs and activities related to non-technological innovation to be the same as for technological innovation with the additional requirement to verify that these costs and activities are separate from normal business activities and thereby not used to subsidise or lower the price of any commercial activity.
3. Relate customer oriented non-technological innovations such as innovative services to technological product innovation and organisational, business model and other production oriented non-technological innovations to technological process innovation.
4. Assume incentive effect for SMEs and clearly define it for large enterprises using the same rationale and definitions as for technological innovations.
5. Define the following additional conditions for the eligibility of activities targeting non-technological innovation:
 - a) The purpose of the activity is to develop a model, methodology or concept, which can be systematically reproduced.
 - b) The developed model, methodology or concept is general and it or services produced using it, are available to all customers on a non-discriminatory basis. It is not tailored to any specific customer. The company has many customers.
 - c) In case customers participate or co-operate in these innovative activities, they should share the risks.

Condition a) aims to ensure that the purpose is to develop a concept, model or methodology, which can later be used repeatedly for commercial purposes, hence ensuring similarity to technological product and process innovation. Condition b) aims to ensure that no services developed for the needs of single customers would be eligible for State aid⁶. Condition c) would allow customer participation only in cases of true and actual collaborative development in which risks are shared, thus making normal customer businesses non-eligible for State aid.

Defining similar eligibility of activities targeting at both technological and non-technological innovations would be a controlled approach in extending State aid to cover non-technological innovation. It would currently exclude majority of service companies outside the State aid for innovation because of lack of systematic and organised innovative activities and lack of ability to develop reproducible service models, methodologies or concepts. However, allowing State aid for non-technological innovation would in the longer run guide these service companies to organise their innovation and R&D functions in a more systematic and efficient way and aim at reproducible service models and concepts, which can have a significant impact on the productivity, competitiveness and growth of services developed and produced in Europe.

Empirical evidence and policy considerations related to enhancing service innovation and the role of knowledge intensive service activities in innovation can be found from recent OECD

⁶ Whereas the object of technological innovation is a concrete tangible product and the purpose is to produce a large number of identical copies commercially, the object of non-technological innovation is an intangible model, methodology or concept (e.g. service). Even if the purpose would be to reproduce this e.g. a service in large numbers, each will be slightly different due to the easiness of tailoring and individual characteristics of the actual producers and users of this model, methodology or concept. However, reproducibility linked with the requirement to have many customers eliminates strictly tailored services from State aid and therefore encourages systematisation and de-integration of innovative activities from normal business operations.

reports⁷. There is also a number of research papers focusing on innovation in services and on reproducibility and developing service products and concepts^{8,9,10}. The importance of service innovation has also been identified in the Commission communication “More research and Innovation – Investing for Growth and Employment: A Common Approach”¹¹, which addresses “*the full research and innovation spectrum, including non-technological innovation*” and where the Commission plans to define a strategy to promote innovative services in the EU by the end of 2006 based on the work and policy recommendations of the European Forum on business-related services¹². The Commission has also funded projects addressing innovation in services¹³. Given the importance adhered to non-technological innovations by the Commission in this and other policy documents, the exclusion of non-technological innovations from the State aid would undermine the coherence of the Commission’s policies.

The aforementioned and many other studies emphasise the need for encouraging innovation in services, but they also frequently refer to the need to enhance the demand for innovative services. Public procurement is often mentioned as a potential source of demand and should therefore also be considered in the wider context of competition regulation with regards to objectives of enhancing innovation, growth and employment.

Question 6) Should the rules on State aid for innovation include regional bonuses for cohesion purposes? Should they differ according to the geographical situation of the region, irrespective of cohesion issues?

Market failures for innovation are less and less geographically different in increasingly global markets. However, some markets are more local than others and companies operating in these markets are more likely to be subject to market failures than others. The main approach should be to ensure competition and only target State aid for innovation in enhancing the general business environment. Regional aid guidelines could specify conditions under which raised levels of State aid for innovation would be acceptable to enhance cohesion objectives. Specific rules for State aid for innovation should not define regional bonuses different from cohesion issues.

⁷ “The role of knowledge intensive service activities in innovation: Synthesis report”, KISA project, OECD, 2005 and “Enhancing the Performance of the Services Sector” (especially Chapter 6 “Promoting innovation in services”), OECD, 2005

⁸ Gallouj, F. (2002): *Innovation in the Service Economy: The New Wealth of Nations*. Cheltenham and Northampton: Edward Elgar

⁹ Gadrey J. and Gallouj F. (2002.): *Productivity, Innovation and Knowledge in Services: New Economic and Socio-Economic Approaches*. Cheltenham and Northampton: Edward Elgar

¹⁰ Toivonen M., Smedlund A. and Tuominen T. (2005), ‘Development of Knowledge Intensive Business Service Innovations and Innovation Networks’, Paper presented in the British Academy of Management (BAM) Conference, 14th September 2005, Oxford.

¹¹ Implementing the Community Lisbon Programme: Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of the Regions. “More research and innovation – Investing in Growth and Employment: A Common Approach”, COM(2005) 488 final

¹² http://europa.eu.int/comm/internal_market/services/brs/forum_en.htm

¹³ e.g. <http://les1.man.ac.uk/cric/services/default.htm>

Question 7) Are some types of aid more suited to specific situations and specific innovation activities (ex: tax rebates, secured loans, repayable advances)?

The main approach should be to define appropriate levels of State aid, not limit the rules to specific types of aid. Guidelines could be provided for the calculation of grant equivalents for various types of State aid, even though they can not be exhaustive because of continuously developing new forms of support. State aid authorities are likely to favour loans, repayable advances, risk capital and other forms of State aid with lower grant equivalent, because of market closeness.

3. SUPPORTING RISK TAKING AND EXPERIMENTATION

3.1. Supporting the creation and growth of innovative start-ups

Question 8) Do you agree with the proposed criteria to define innovative start-ups, with the approach of not defining eligible costs, with the amounts of aid and cumulation rules? Do you think that different eligibility criteria should be established for high-tech sectors like biotech and pharmaceuticals which have long time-to-market and product development cycles?

The proposed criteria to define innovative start-ups based on the company and not on eligible costs are recommendable. Innovative start-ups are a specific target group for innovation policy. Because of their specific needs and low probability of market disturbances, they should be treated more favourably.

The requirement (ii) proposed in the second point of the consultation document paragraph (38) is relevant for high-tech sectors, but is likely to be rather demanding for medium-tech and other sectors.

Some high-tech sectors, like biotech are characterised by relatively long time to market and product development cycles and could therefore be subject to more favourable treatment. The Commission should seek to define criteria which would allow the proposed type of State aid for innovation for high-tech companies for more than 5 years regardless of industrial sector. However, these additional rules should not allow indefinite State aid for those high-tech companies which normal business operations consist of R&D and innovative activities.

The Commission should therefore consider the following:

1. Provide separate innovativeness criteria for high-tech and other sectors. High-tech sectors should be defined using the current statistical definitions for high-tech.
2. Specific high-tech sectors such as biotech with long time-to-market would be eligible for twice the proposed amount within twice as long time.
3. Innovativeness criteria in high-tech sectors would be 15% R&D as proposed in the consultation document. For other sectors, the innovativeness criteria should be lower, say 10%.

This would lead into the following definitions and rules:

- Start-up criterion: must have less than 5 years or in specified high-tech sectors less than 10 years of existence; must be small companies (see SME-definition, notably independence of large companies not more than 50 employees);

- Innovativeness criterion: either i) proof that the beneficiary will produce products and processes which are technologically [or otherwise] new or substantially improved compared to the state of the art in its industry in the Community, and which carry a risk of technological or industrial failure or ii) R&D expenses represent minimum 10% or in high-tech sectors 15% of the beneficiary's overall expenditure.
 - High-tech sectors: based on statistical definition
 - Specific high-tech sectors: pharmaceuticals and biotechnology
- (1) exemption of 50% on social contributions and other local/regional taxes (i.e. not linked to profits) until 5 years or in specific high-tech sectors until 10 years after founding and for up to 5 years or in specific high-tech sectors for up to 10 years provided the benefits are reinvested in the company or repayable advances
- (2) [in addition / or] the possibility to grant aid of up to EUR 1 million over a 3-year period or in specific high-tech sectors up to EUR 2 million over a 6-year period to an innovative start-up without specific restrictions on eligible costs and provided that: i) it is not in cumulated with any other State aid; ii) the beneficiary is not a firm in difficulty, and iii) the company receives the aid only once.

Corporate tax regimes differ nationally and regionally in Europe. This means that allowing exemption of [50%] on social contributions and other local/regional taxes (i.e. not linked to profits) until [5 years] after founding and for up to [5 years] provided the benefits are reinvested in the company or repayable advance would be likely to place companies in different regions and countries in different position.

The State aid rules should not encourage competition between European countries and regions on corporate tax regimes. The Commission should at least consider limiting the absolute maximum amount of State aid allowed for innovative start-ups through such tax exemptions. It is important that all innovative start-ups are eligible for similar levels of State aid in Europe regardless of country and region.

Question 9) Beyond the proposed rules, empirical arguments are welcomed that demonstrate the need for State aid: i) for start-ups independently of the innovativeness criterion, and ii) for innovative SMEs established for more than [5 years].

Rather than proposing additional rules for State aid for start-ups regardless of the innovativeness criterion, the Commission should consider alleviating the proposed rules to make more start-ups eligible for the proposed State aid for innovation under the innovativeness criterion. See the answer to the previous question.

3.2. Tackling the equity gap to increase the provision of risk capital in the EU

Question 10) Do you think that other types of State aid apart from those currently granted in respect of risk capital are required in order to help European SMEs grow beyond the start-up phase? If so, which ones?

It is true that financial markets do not operate optimally and that especially the availability of risk capital for innovative companies in the start-up phase is a problem. However, a similar

although less serious problem is likely to exist in the growth stage. It is therefore important that the Commission considers specific provisions also for post seed stages.

The Commission should also consider the possibility to allowing some form of tax exemptions for private investors when they make risk capital investments in innovative SMEs. This could encourage more private investments in R&D and innovation.

Although the consultation document refers to problems stemming from asymmetric information and transactions costs, it does not make any proposals to alleviate these. State aid rules should provide guidelines on State aid for investors specifically targeted for the assessment of potential start-ups and SMEs for investment purposes.

3.3. Supporting technological experimentation and the risks of launching innovative products

Question 11) Do you think that these provisions would produce the expected effects in terms of encouraging SMEs to launch innovative products in the market? If not, what changes should be made to these rules?

Extension of current State aid Frameworks to include a wider set of innovative activities is recommendable as such. However, to define them as a separate stage is not advisable. This would only unnecessarily complicate the State aid Frameworks. It would be more recommendable to include the appropriate innovative activities to the definition of “pre-competitive development” stage. Furthermore, it is not likely that the proposed levels of State aid would sufficiently encourage companies to engage in innovative activities and thereby produce the expected effects. The levels of State aid should follow the ones currently allowed for “pre-competitive development”.

Proposed new formulation for “pre-competitive development”:

”- By pre-competitive development activity is meant the acquiring, combining, shaping and using existing scientific, technological, business and other relevant knowledge and skills for the purpose of producing plans and arrangement of designs for new, altered or improved products, processes, concepts and services, and for the purpose of analysing their commercial potential. These may also include other activities aiming at conceptual definition, planning and documentation and testing the feasibility of new products, processes, concepts and services. The activities may comprise training, experimenting and testing, and producing drafts, drawings, plans, software and other documentation, provided that they cannot be used commercially. Demonstrations, pilot projects, experimental production, marketing experiments and testing of products, processes and services are also included, provided, that these cannot be used or transformed to be used commercially. Pre-competitive activities does not include the routine or periodic changes made to products, production lines, manufacturing processes, existing services and other operations in progress, even if such changes may represent improvements. Commercial use means an objective to produce direct economic benefit by selling the prototype, results of a demonstration project or the output of experimental production at a price that is significant compared with the costs. It does not include random income linked with a prototype, demonstration project, experimental production or marketing experiment, provided, that income is significantly lower than costs.”

Rationale:

This is one of the most important definitions of the guidelines, because it in practical terms defines the limits for acceptable State Aid. There are several potential approaches to define the limiting condition; it could be based on risk, closeness to market or any other similar factor. The main addition to the current guidelines is that whatever the limiting condition is, it should be sufficiently defined in this context. Furthermore, the limiting condition and its definition should be as simple and understandable as possible.

The proposed new formulation defines commercial use as the limiting condition. The key rationale is that it is both a concept, which is relatively easy to define, and a concept, which is easy to understand in the context of State Aid (potential market distortion and unfair competition).

The other changes in the proposed new formulation attempt to modernise the current definition to take into account the modern understanding of innovation processes and practices in industrial R&D and innovation. Increasing amount of various types of knowledge and skills are necessary in earlier stages of industrial R&D and innovation to allow for faster and more efficient innovation processes from original ideas or scientific discoveries to successful commercial products, processes and services. It is important that the appropriate guidelines recognise the multi- and cross-disciplinary need for knowledge and skills in highly networked R&D and innovative activities. The limiting conditions for State Aid should not be set according to types of knowledge and skills. They should be set according to purpose and closeness to market, which eventually are much more understandable and sensible in the context of potential market distortion and unfair competition.

The proposed formulation includes activities targeting non-technological innovation.

Question 12) Is there evidence that these provisions should be extended to large companies? Do you think that notification should be required for measures granting substantial amounts of aid to individual firms or individual sectors? If yes, above what amount? What empirical evidence should then be requested by the Commission?

These provisions should be extended to large companies, when they specifically encourage large companies to enhance collaboration and networking with SMEs and public research organisations, enhance training and mobility or encourage large company participation in creating poles of excellence.

Substantial amounts of State aid for innovation should be subject to case-by-case notification under the same limits as are defined for other similar types of State aid, such as R&D.

4. A SUPPORTIVE BUSINESS ENVIRONMENT FOR INNOVATION

4.1. Encouraging innovation intermediaries

Proposed rules in the consultation document paragraphs (55)-(57) are recommendable. However, categorically denying direct support for intermediaries might not be advisable. Whereas the approach consisting of passing State aid through intermediaries to final beneficiaries on one hand and providing vouchers and other types of State aid for companies using the services of intermediaries on the other hand is recommendable, there might be time limited market failures which originate from the fact that the intermediaries are not developed or sophisticated enough to provide these services. It would therefore be advisable to allow direct State aid to intermediaries for the development of these services as long as the aid is not

used to subsidise the services provided to companies. The related rules should be the same as for service R&D and innovation in general.

The Commission should also state clearly that 100% support for intermediaries to carry out activities which are in the public interest is possible only if (1) these activities can not be performed market oriented by private companies and (2) intermediaries to carry out these activities are selected via open tender or public procurement.

Question 13) How would you regard specific support for innovation intermediaries which merge or develop a joint venture to reach critical mass in a technological field of specialisation? Should investment aid be permitted in this context? If so, on what conditions? What other measures could be envisaged?

This issue should be considered in a slightly wider context, because critical mass in a technological or other field of specialisation typically also includes public research or related organisations. The rules concerning State aid for these types of joint ventures should also be included in the appropriate public procurement regulations, which deal with public-private partnerships. Joint ventures between purely private organisations should be approached as any private collaborative undertaking focusing on R&D or innovative activity, with the possible additional limited support for investments either in the form of investment aid or in the form of risk capital to help set up the joint undertaking.

4.2. Encouraging training and mobility

Question 14) Is there evidence that the recruitment by SMEs of other types of highly skilled personnel should be also aided?

Innovative activities require capabilities beyond highly qualified researchers and engineers. Other types of highly skilled personnel should also be eligible for this type of aid, such as innovation management, design, initial market analysis to identify customer needs, etc.

The proposed rules in the consultation document paragraph (62) should clearly state if there are any limitations to the number of persons per project or per company at any one time.

Question 15) Should the Commission adopt specific rules for cases where a researcher chooses not to return to his/her home university or where the university no longer intends to hire him/her back?

No specific rules are likely to be necessary for cases of no-return. However, some rules may be appropriate for the cases of no-rehire as not to encourage public organisations or large companies to misuse this aid for getting rid of unwanted personnel.

4.3. Supporting the development of poles of excellence through collaboration and clustering

The primary objectives of State aid regulations concerning transfer of intellectual property created in collaborative R&D between public research organisations and private enterprises should be to encourage commercialisation and wide use of the results of collaborative R&D and facilitate fluent transfer of intellectual property for this purpose. Therefore, the equal recognition of respective contributions of all partners to produce intellectual property in collaborative R&D is recommendable. However, the *pro rata* approach proposed in the

consultation document paragraph (68) raises a number of questions. Does this apply to ownership of IPR, use of IPR in further R&D or use of IPR for commercial purposes? Are rights assigned only according to financial contributions or according to the value of the respective intellectual contributions? How would the value of intellectual contributions be assessed? A further concern especially related to joint ownership is that legal practices differ in this respect across European countries. This would be likely to cause uncertainty in cross-boarder collaboration.

The basic principle should be that all partners in the collaboration – both public and private – own the intellectual property they have created during the project. Joint ownership would only apply to cases where it is not possible to identify which of the partners has created it, in which case it would be jointly owned by those partners that have created it together. All transfer of ownership and all forms of exclusive rights (e.g. to use for commercial purposes, to sell the IPR further and use in further R&D) from public research organisations to private enterprises should be based on full market price. However, the actual transfer price should be calculated by reducing the full market price by the value of the receiving partner's contribution to the collaborative project in which the transferred IPR has been created. Furthermore, the rules should not limit this calculation to financial contributions only, since the value of intellectual contributions might in many cases be much higher. All transfer of all forms of non-exclusive rights (e.g. to use for commercial purposes, to sell the IPR further and use in further R&D) from public research organisations to private enterprises should be based on two key principles. First, the public research organisation is required to act as a normal market actor¹⁴. Second, all interested enterprises should have access to similar non-exclusive rights¹⁵. In case the buyer would be one of the private partners from the original project consortium, the contribution of the partner would be calculated in their favour in defining the actual transfer price. These rules should be included in the appropriate existing Frameworks, especially the one concerning State aid for R&D.

The European centres of excellence should primarily be seen in the context of the European Research (and Innovation) Area and EU framework programmes for R&D, innovation and competitiveness. Regional and national considerations with regards to State aid regulations should be secondary in the attempts creating globally recognised European centres of excellence.

It should be recognised that reaching the expected effects requires sufficient coherence across different policies. It is therefore important that State aid regulations are considered in the context of policies aimed directly or indirectly at developing a supportive business environment for innovation. A good example of this is the Environment State aid guidelines, which identifies the importance of R&D and innovation by referring to State aid for R&D. Since the public sector through procurement is a major market actor, it is important that public procurement regulations are also considered in this context.

¹⁴ What this means in principle is, that the price of non-exclusive rights is negotiated between the seller (in this case the public research organisation that has created the respective IPR) and the buyer (any private enterprise willing to buy the non-exclusive rights) in a normal business-like manner. Normal market actor also implies that the seller can not discriminate against or favour any enterprises based on ownership, nationality, region or other characteristic irrelevant to the potential commercial benefits in access or pricing. However, pricing could naturally vary with e.g. size of enterprise or type of industry or application if the potential commercial benefits can be expected to differ in magnitude.

¹⁵ This would ensure non-discrimination against any enterprises and thereby eliminate potential market disturbances. It would also indirectly encourage transfer of ownership or exclusive rights with full market price.

Question 16) What definition of cluster/clustering activities should be followed and what criteria should be used to distinguish clusters from the broader category of innovation intermediaries?

It is not clear why there would be a need to differentiate between various forms of collaboration and networking or clustering and intermediary joint ventures. Collaboration and networking should be encouraged and favoured horizontally. The only clear distinction between a more loose collaboration and a deeper and typically longer term commitment to a collaborative undertaking is the existence of a legal entity, which typically takes the form of a joint venture between key partners. The specific State aid for these joint undertakings requiring a deeper and longer term commitment is discussed in the answer to the next question.

Question 17) Do you think that State aid should be allowed to promote European centres of excellence? If so, what type of State aid, for what reasons, and subject to what conditions? What other, possibly better, measures could be envisaged?

European centres of excellence should be such a high quality that they could attract sufficient amounts of private funding. Therefore, the need for specific State aid is not clear with the exception of the launch phase. The initial costs of setting up a high quality European centre of excellence are likely to be relatively high and potentially not affordable for any private actor or even a consortium. It can therefore be justified that State aid would be made available for the preparation and early launch of such centres of excellence. The aid should be time limited and focus on the additional costs of planning and setting up a centre. Furthermore, returnable forms of aid such as risk capital, various types of loans and guarantees or tax rebates should be favoured over grants.

Question 18) Are additional criteria needed to avoid State aid being fragmented and to encourage the concentration of resources in a limited number of poles of excellence?

Although recommendable, it is unlikely that additional criteria would prevent fragmentation of State aid to any significant degree.

Question 19) What are your views more generally about the need for additional provisions for infrastructure that supports innovation (e.g. in the field of energy, transport etc.)?

The recommendable approach to supporting innovation infrastructure is through facilitating experimentation, encouraging innovative public procurement and supporting the creation of joint undertakings focusing on innovation and new market creation.

Question 20) Do you think that large firms should be entitled to State aid, e.g. to establish research facilities in a European pole of excellence? Should the Commission try and develop specific criteria to control such State aid? What type of economic evidence should be requested to analyse the necessity of such State aid?

Large firms should not be entitled to State aid merely because they establish research facilities in European poles of excellence. State aid for large companies should emphasise collaboration and networking,