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COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels,
COM(2005) XXX

COMMUNICATION FROM THE COMMISSION

CONSULTATION DOCUMENT ON STATE AID FOR INNOVATION

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1. INTRODUCTION

- (1) As set out in the State Aid Action Plan, “Innovation is related to a process connecting knowledge and technology with the exploitation of market opportunities for new or improved products, services and business processes compared to those already available on the common market, and encompassing a certain degree of risk”. The present document launches a **consultation** designed to gather stakeholders’ views on specific improvements in the rules on State aid for innovation, including clarifications to increase legal certainty, new funding possibilities for innovation, the formulation of criteria to target the aid more effectively, and simplification of the regulatory framework.
- (2) Innovation is a central issue for the EU to deliver growth and job creation, as explained in the forthcoming Communication ‘More Research and Innovation: Investing for Growth and Employment’. State aid policy can contribute to a more innovative economy, both by preserving product market competition as a driver of innovation, and by putting forward a framework of rules that facilitates the design of effective State aid for innovation by Member States.
- (3) **Preserving competition** should be the first priority when designing effective systems to foster innovation in the EU. Competition in a functioning market creates incentives for companies to invest in knowledge and innovation, since this helps them generate competitive advantage and profits.
- (4) Nonetheless, State aid can in some cases effectively and efficiently contribute to foster innovation, when it addresses market failures that hamper the innovation process without excessively distorting competition. The Commission has identified a series of problems for unsatisfactory innovation in Europe (see annex). However, many of these problems cannot be solved by State aid and require a more comprehensive policy approach. Furthermore, too much aid in the name of innovation may actually frustrate the innovation process, as it might undermine competition as the most effective stimulant for comparing ideas and for new, innovative market entry. Therefore, **State aid policy can only be a limited response to the problem** of unsatisfactory innovation in Europe.
- (5) For example, the Environmental Technologies Action Plan¹ aims at harnessing environmentally-friendly technologies and innovation, which can contribute to environmental protection and at the same time contribute to competitiveness and growth. The development of eco-innovation is essential in order to prepare an environmentally sustainable future, but economic barriers hinder their development. In particular, market prices reflect the direct economic costs and not the costs of environmental pollution (such as health care costs from urban air pollution). This leads to systematic underinvestment in environmental technologies, especially from firms which cannot afford to be charitable in a competitive market. Well-targeted economic incentives can therefore be useful in helping to promote the take-up of environmental technologies.

¹ COM(2004) 38 final of 28.1.2004

- (6) At this stage, the Commission considers that developing a new separate framework for State aid for innovation on the basis of an abstract definition of innovation is unnecessary and also not in line with the objective of simplifying EC State aid rules. A series of concrete and targeted **innovation-related activities**, subject to this consultation, were identified, which clearly address the market failures that are hampering innovation and for which the benefits of State aid are likely to outweigh any possible harm to competition and trade. In doing so, the Commission used a **methodology** in line with the economic approach defined in the State Aid Action Plan. The new rules will be integrated mainly in a framework for R&D and Innovation but also in the Risk Capital guidelines, in the Environmental guidelines and in the general Block Exemption (thereby avoiding the notification requirements for Member States).
- (7) The following types of innovation-related activities have been selected:
- activities that **support risk-taking and experimentation** and help bridge the gap between technological knowledge and the market
 - activities (business services and infrastructure) which improve the general **business environment for innovation**.
- (8) **For each of the proposed measures**, the Commission would like to obtain detailed comments about the appropriateness of the measure and its design.
- (9) In addition, questions are asked on more specific issues about which the Commission would also like to obtain detailed comments.
- (10) The results of the consultation will be used to formulate new clear rules for inclusion in the legal instruments on State aid and which will define the limits within which State aid to innovation may be seen to be compatible with the Common Market. Ultimately, it will be the responsibility of Member States to better target their resources and design effective support measures to foster innovation in the EU.
- (11) The Commission would welcome any comments on this Communication **by 21 November 2005**. Comments should be sent to the European Commission with the reference Consultation State aid for Innovation by email to STATEAIDGREFFE@CEC.EU.INT or by post to:

DG Competition

State Aid Greffe

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Belgium.

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?

2. PRINCIPLES GOVERNING CONTROL OF STATE AID FOR INNOVATION

- (12) State aid for Innovation can be authorised by the Commission on the basis of Article 87.3 c) of the EC Treaty. In line with the principles set out in the State Aid Action Plan, a general test for the approval of a State aid measure for innovation has to address the following issues:
- (a) a well-defined market failure has to exist
 - (b) the aid instrument has to target the identified market failure:
 - State aid must be the appropriate policy instrument
 - The aid measure must have an incentive effect, i.e. it must generate additional innovation-related activity
 - The aid measure has to be proportionate to the problem addressed
 - (c) distortions of competition and the effect on trade should be limited to ensure that the aid measure is not, on balance, against the general interest.
- (13) By applying this general test, one can devise a series of normative criteria which can help in designing ex-ante rules for State aid for innovation (to be included in Frameworks, Guidelines or Block Exemptions). The purpose of this methodology is to identify concrete activities for which State aid may be authorised, provided it fulfils a series of rules and criteria. Past experience can also contribute to identifying activities and drawing up appropriate rules. The criteria put forward in this document will be used for the drafting of such ex-ante rules. It is not foreseen to use the general test to assess the compatibility of individual notifications. Moreover, at this stage, the document is produced for consultation only.

2.1. Identifying market failures that affect innovation

- (14) A “**market failure**” occurs when the market on its own does not lead to an economically efficient outcome. The Innovation Vademecum² indicated that private companies may be reluctant to innovate: they may feel they cannot appropriate fully the benefits of innovation as a public good and they may not be aware of the positive spill-over effects of innovation (externalities). In such cases, State aid providing direct support to undertakings can be an appropriate instrument to compensate for unfavourable risk/return factors linked to innovation. Other market failures identified in the Vademecum were inefficient dissemination of information; shortcomings in the capital markets; and mismatches on the labour market. In addition, coordination problems may lead to market failure, thus hampering innovation.
- (15) The scale of market failures that hamper innovation may vary depending on the undertaking and the type of activities concerned. On the basis of past experience, the Vademecum set out three main principles: i) small and medium-sized enterprises are

² SEC(2004) 1453 of 15.11.2004

more affected than large firms³; ii) market failures affect newly-established firms more; and iii) market failures are greater and distortive effects smaller for activities at a distance from the market (e.g. training).

- (16) Furthermore, innovative ventures and activities have specific dynamics which can produce rapid changes in market conditions. Generally, market failures should decrease over time, for instance because the market concerned has matured and information has been disseminated more effectively.
- (17) Market failures involving cross-border cooperation and cooperation between several partners tend to be larger, due to coordination problems and the nature of innovation as a public good. Market failures in relation to projects disseminating their results to a wider public or allowing non-discriminatory access to the research output are also likely to be larger. For that reason, bonuses for coordination and dissemination may be appropriate.

2.2. The aid instrument has to target the identified market failure

– *Is State aid the right policy instrument?*

- (18) Experience shows that it is very difficult to know in advance which innovative products and services will become successful in the market. For that reason, State funding for innovation activities should not aim at ‘picking winners’; it should rather make innovation more likely by optimising the business environment.

– *Incentive effect*

- (19) State aid for innovation must have an incentive effect and result in the beneficiaries changing their behaviour in the desired way. Aid should be granted only if it can be shown that, without it, the proposed innovation activities would not have been undertaken.

- (20) State aid can be granted by different means. In general, only the grant equivalent and intensity is taken into account. However, the incentive effects of an aid measure may be influenced by its form (e.g. direct subsidy, repayable loan, tax reduction or guarantee).

– *Proportionality*

- (21) The aid measure also has to be proportionate to the market failure tackled. There should be no other less distortive measure (such as general measures, or measures involving less aid, or aid for a more limited duration) which could deal with the market failure as effectively. The aid should be limited in time and scope and should be subject to some evaluation, so that it can be stopped if it does not produce the expected result over time.

3 In fact it is not clear to what extent large firms are affected by market failures. Small and medium-sized enterprises (SME) are defined in the Commission Recommendation of 6 May 2003 concerning the definition of micro, small and medium-sized enterprises (notified under document number C(2003) 1422).

2.3. Limiting distortions to competition and the effect on trade

- (22) Innovation activities include stages that are close to the market. This makes it all the more important to ensure that the distortions of competition and the effects on trade are limited so that the aid measure is not, on balance, contrary to the common interest.
- (23) It is generally accepted that small amounts of aid and lower levels of aid intensity cause less distortion of competition. Furthermore, the possible extent of distortion of competition depends on the market power of the recipients involved.
- (24) State aid rules on innovation should be designed according to the importance of the knock-on effect on competition. While State aid to **SME's** and/or to **activities far away from the market** may qualify for lighter procedural rules, and could be exempted from notification (or at least be subject to simplified approval procedures), State aid for instance to large undertakings or to undertakings with a high market share may only be authorised after an investigation by the Commission.
- (25) The Commission currently considers that there are significant risks in authorising aid for non-technological innovation on the basis of ex-ante rules, since these activities could practically cover any routine activity of the beneficiaries. At this stage, it is proposed that ex-ante rules for State aid for innovation be restricted to those activities that relate to **technological innovation**⁴, so as to limit the risks of circumvention of the rules and distortions of competition.
- (26) In addition, the beneficiaries of a given aid measure should preferably be chosen on the basis of an **open, transparent and non-discriminatory** criteria, in order to limit distortions of competition and negative effects on trade by unduly favouring some undertakings. To limit these effects, there should be no discrimination according to the EU country of origin, for example.
- (27) Another important principle is that State aid should avoid making it non-viable for private undertakings to develop their activities in a market where all undertakings are subsidised, thus crowding out private initiative. Risks are particularly high in the presence of network externalities as then the winner takes it all. In particular, by choosing State aid as an instrument, governments should **seek to attract private sector financial participation**, rather than to dissuade it. For this purpose as well, State aid should be limited in time and amount and possibly be shortened over time.

2.4. Regional dimension

- (28) Innovation very often takes a regional form and the Commission is committed to supporting regional innovation clusters and poles of excellence. Many existing State aid rules can be used to generally support regional development (e.g. regional investment aid, aid to SMEs, for training, employment, aid for R&D). A specific issue

⁴ As defined in the Oslo Manual page 9: “A technological product innovation is the implementation/commercialisation of a product with improved performance characteristics such as to deliver objectively new or improved services to the consumer. A technological process innovation is the implementation/adoption of new or significantly improved production or delivery methods. It may involve changes in equipment, human resources, working methods or a combination of these.” (‘Oslo Manual: Proposed Guidelines for Collecting and Interpreting Technological Innovation Data’; 1997; OECD and European Commission, available at <http://www.oecd.org/dataoecd/35/61/2367580.pdf>)

is whether cohesion policy considerations should be tackled separately or cumulatively to the targeting of the market failures hampering the innovation process. While lower levels of wealth may be associated with more severe market failures, this may not always be the case and it is not clear, from the outset, why there are more market failures in some regions than in others.

- (29) Currently, the Regional Aid Guidelines are the main instrument of regional cohesion through State aid. However, there is provision in some horizontal instruments (e.g. SME BER, environmental guidelines) for regional bonuses to increase aid intensity in assisted areas. Aid allowed for innovation may normally be cumulated with regional aid since each relates to different eligible costs; regional premiums are also possible.
- (30) Whereas the regional bonus approach is appropriate for dealing with cohesion issues, it may not address perfectly the geographical dimension of market failures and restrictions of competition in the field of innovation.
- (31) The question is to what extent specific additional provision for regional aspects should be included in the rules on State aid for innovation. The Commission is ready to consider suggestions as to the best way to address the possible influence of geographical differences on market failures and restrictions of competition, in addition to (or instead of) regional cohesion bonuses.

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?

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?

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?

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

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?

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

3. SUPPORTING RISK-TAKING AND EXPERIMENTATION

- (32) Innovative projects/companies exhibit a high risk of failure and may require substantial investment. Private investors may be unwilling to finance them, due to information asymmetries resulting in high transaction costs for assessing and monitoring the risk of innovative projects/companies, and sometimes a lack of the necessary collateral (failures in the capital markets). Companies may refrain from investing in innovation for the same reason and/or because they may feel unable to appropriate the profits of innovating (market failures linked to externalities and innovation as a public good).
- (33) State aid may help in alleviating those market failures, thereby attracting additional innovative activity and complementary private funding. The Commission has identified three areas which may be prone to this type of market failures, and where well-targeted State aid may become a necessary and efficient means: i) supporting the creation and growth of innovative start-ups; ii) risk capital and iii) support for experimentation and commercialisation as ways of meeting that condition.

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

- (34) **Market failure targeted and appropriateness of aid:** While start-ups and innovative SMEs are key to innovation and the renewal of industry, they are seriously affected by many market failures hampering the innovation process. In particular, owing to a lack of internal capital and/or shortage of the collateral needed to obtain funding, they may face very tight funding constraints. Despite the existence of market-driven solutions (ex: seed capital and business angels) State aid may be necessary to support the funding of innovative start-ups to an efficient level.
- (35) **Incentive effect and proportionality:** For the purpose of designing State aid rules in this area, it can be assumed that there is an incentive effect in the case of innovative start-ups (as defined below). However, to ensure proportionality, there need to be limits on the maximum amount of aid and a timeframe.
- (36) **Distortion of competition and effect on trade:** The effect on trade and competition of supporting start-ups is likely to be fairly small. However, unless it is sufficiently targeted, there is a risk that public funding of innovative start-ups may result in mostly unprofitable start-ups and crowd out private money. Hence, rules have to be established to ensure that funding is limited in time and that the profitability incentives are not weakened.
- (37) Taking these arguments and the need to limit red tape into account, the Commission considers that State aid should be allocated on the basis of a definition of innovative start-ups which avoids the need to define “eligible costs”.
- (38) **Proposed rules:** the proposed definition of innovative start-ups is that they should meet both of the following criteria:
- Start-up criterion: must have less than [5 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 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 [15%] of the beneficiary's overall expenditure

(39) The following rules could apply for granting State aid:

- (1) 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 advances
- (2) in addition, the possibility to grant aid of up to EUR 1 million over a 3-year period to an innovative start-up without specific restrictions on eligible costs and provided that: i) it is not cumulated with any other State aid; ii) the beneficiary is not a firm in difficulty⁵, and iii) the company receives the aid only once.

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?

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].

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

- (40) **Market failure targeted and appropriateness of aid:** Risk capital is essentially organised via private operators. Nevertheless, the current rules governing State aid for risk capital identify an equity gap in the EU and recognise that market failures linked to imperfect or asymmetric information and transaction costs may justify State aid. In that context, innovation-related market failures interfere with the efficient funding of firms with equity. While those market failures are potentially greatest in the very early phase of the lifecycle of an enterprise, State aid too may play a role in later stages e.g. in post-seed stages (i.e. the end of the early-stage phase and the beginning of the expansion phase, when a new round of financing is needed). The OECD Working Party on SMEs and Entrepreneurship, at the 2nd OECD Ministerial Conference on SMEs in June 2004 issued a report that explicitly identifies this market gap⁶.
- (41) **Incentive effect and proportionality:** For the purpose of designing State aid rules in this area, the existence of an incentive effect in the case of SMEs can be taken for granted. However, limits on the maximum amount of aid and a time horizon are necessary to ensure proportionality.

⁵ as defined in the Communication from the Commission — Community guidelines on State aid for rescuing and restructuring firms in difficulty (OJ C 244 of 01.10.2004)

⁶ DSTI/IND/PME(2002)12/final dated 25.05.2004

- (42) **Distortion of competition and effect on trade:** the effect on trade and competition of supporting SMEs in their early stages is likely to be fairly small. However, unless such aid is targeted, there is a danger that public funding of SMEs may lead to mostly unprofitable start-ups and crowd out private money, which conflicts with the need to create private equity markets. Hence, rules have to be established to ensure appropriate private investor participation, to keep funding short-term and to maintain the incentives to push for profitability.
- (43) **Proposed rules:** More flexibility than under the current rules could be envisaged for assessing aid provided in the form of risk capital under the terms of the Communication on State Aid and Risk Capital, which will expire soon and is currently being reviewed. The Commission will consider whether the current levels of the safe-harbour investment tranches need to be adjusted to take into account the changed situation of the venture capital markets in Europe and its likely future developments. The Commission will examine the case for allowing more flexibility in the investment tranches and the possibility of block exemption.
- (44) Currently, state ownership in risk capital funds is not allowed beyond thresholds of 50% total ownership (70% in assisted areas). Only in the case of funds targeting investment at the seed stage, the Commission could consider the possibility to authorise funds with state ownership going beyond current maximum.
- (45) The Commission may consider **specific provisions for post-seed stages**, which facilitate the growth of enterprises without blocking the exit of venture capitalists: by allowing the aid given to SMEs to be added to aid given under the risk capital rules, or through guaranteed loans (but at less favourable rates than for start-up), or through repayable advances with shorter repayment terms.

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?

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

- (46) **Market failure targeted and appropriateness of aid:** Currently, under the R&D framework, it is not possible to grant State aid to activities that go beyond the first prototype. Those activities are closer to the market and therefore have the potential to significantly distort competition and adversely affect trading conditions. Nevertheless, under certain circumstances such activities may be prone to the same type of market failures described before. Small enterprises may, for instance, need external financing for the building of large-scale prototypes even if they are marketable, or extended financing to allow market testing of new products.
- (47) **Incentive effect and proportionality:** SMEs may be particularly affected by this problem since the costs associated with these activities can be substantial. However, the aid intensity should be limited since it relates to activities close to the market.
- (48) **Distortion of competition and effect on trade:** As there is a risk that activities linked to experimentation and commercialisation might be the same as those for routine business, it is proposed to restrict State aid to technological innovation and to SMEs.

(49) **Proposed rules:** A series of activities could be included in the last R&D stage of pre-competitive activities, which would become the ‘experimental development stage’ and qualify for aid.

(50) The following rules could be envisaged to help SMEs:

(a) additional activities (in addition to those currently covered in the R&D framework) could be deemed to constitute compatible aid:

- development of commercially usable prototypes and pilot projects for the purpose of conducting technological and/or marketing experiments, where the prototype is necessarily the final commercial product and where it is too expensive to produce for it to be used only for demonstration and validation purposes
- technical evaluations and feasibility studies preparatory to the launch of a new product, which will include costs for software and computer modelling for the purpose of conducting technological and/or marketing experiments; testing and laboratory costs
- expenses for adapting technologies to particular production specifications and for optimising the production process, up to the production of the first pre-series batch
- marketing costs relating to technological design
- management and marketing training

(b) The eligible costs should be similar to those currently covered in the R&D context

(c) Forms of aid and conditions:

- limited level of aid intensity [15%]
- grants, subsidised or guaranteed loans or subsidised repayable advances
- necessity to link the above activities to a specific R&D project carried out by the firm itself or by another firm
- aid must relate to products and processes that are technologically new or substantially improved by comparison with the previous state of the art in this industry in the Community, and which carry a risk of technological or industrial failure.

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?

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?

4. A SUPPORTIVE BUSINESS ENVIRONMENT FOR INNOVATION

4.1. Encouraging innovation intermediaries

- (51) Innovation intermediaries are entities providing infrastructure and services to undertakings involved in innovative activities. They may be public or private entities. The consultation on the Innovation Vademecum showed that these intermediaries were not sufficiently covered by existing State aid rules, a factor which potentially restricted their development. Two cases should be covered: first when the aid is passed on to the final beneficiaries, and secondly when the intermediary receives the aid.
- (52) **Market failure targeted and appropriateness of aid:** Innovation intermediaries can help solve market failures due to insufficient information dissemination, externalities and lack of coordination, by providing services and infrastructure to undertakings. However, the market price for services may be at too high a price for start-ups, small and medium-sized enterprises, and the market may be insufficiently developed for private actors to be willing to enter it. State aid could be an appropriate solution to change the incentives and increase the provision and consumption of the services provided by innovation intermediaries.
- (53) **Incentive effect and proportionality:** It is taken for granted that there is an incentive effect for small enterprises. However, this will need to be demonstrated in the case of medium-sized enterprises, while it is generally acknowledged that large enterprises are not affected. Proportionality dictates that aid should be targeted and limited in amount and in duration; innovation intermediaries should be open facilities, not discriminating between undertakings.
- (54) **Distortion of competition and effect on trade:** Only SMEs should be considered as eligible for aid, in order to limit distortions. Large firms should pay normal prices, not subsidised prices. As regards direct State aid for innovation intermediaries, there is a risk that this could prevent the emergence of sustainable private markets and crowd out private initiative.
- (55) **Proposed rules:** Current State aid policy authorises aid when it is passed on to final beneficiaries. The Commission considers that if intermediaries make a minimal profit, the principle of no aid can apply to them.
- (56) As with R&D, innovation intermediaries may carry out activities which are in the public interest but which cannot be clearly separated from economic activities and therefore fall under State aid rules. Where such activities are not market-oriented and do not create selective advantages for the benefit of individual undertakings, they could qualify for 100% State funding.
- (57) State aid may be authorised only where the following conditions are fulfilled:
- (a) Aid should only be used to purchase a set of well-defined services. Such aid should be part of schemes which would specify the precise services that could be entitled to State aid. Such services might include:

- research and identification of innovative projects;
 - business advisory services such as: research, identification of and connection with suitable business location (e.g. in a cluster) and/or business partners; strategic advisory and training during incubation and after creation; technological assistance for innovative projects; consultancy for acquisition, protection and trade in Intellectual Property Rights and for licensing agreements; consultancy on the use of standards,
 - provision of facilities such as: office space; data banks for the search of existing technologies and of partners for transfer of technology; quality labelling, testing and certification services;
- (b) Aid should only be used to purchase these services from clearly defined Innovation Intermediaries. Building on the example of the European BIC Network, the Commission proposes to define ‘innovation intermediaries’ on the basis of the services they provide, as support organisations (public or private) for innovative SMEs and entrepreneurs. To qualify as an innovation intermediary, a legal entity should provide in particular:
- specific services as defined above;
 - at least one of the following types of infrastructure: physical incubation for innovative projects (fully equipped offices); training facilities; laboratory facilities; testing and certification facilities;
 - dissemination of services provided and results obtained
- (c) SMEs could receive State aid through a kind of “innovation services voucher” of a maximum of € 200 000 over a three-year period (irrespective of possible *de minimis* contributions) in order to buy services from innovation intermediaries up to that ceiling.
- (58) Except for non-market-oriented activities in the public interest (see above), direct aid to innovation intermediaries should not be permitted. However, the Commission considers that aid measures for the clients using these structures can help stimulate a market for innovation intermediaries, and indirectly support them.

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?

4.2. Encouraging training and mobility

- (59) **Market failure targeted and appropriateness of aid:** High level of training and mobility of researchers, engineers and other employees ~~are~~ is necessary to increase innovation in the EU and there may be problems in matching the supply and ~~needs in~~ demand for personnel. The Commission considers that the training of employees in entrepreneurship, creativity, change management and other subjects related to innovation is highly beneficial. Similarly, the recruitment of highly qualified

researchers and engineers would help to pull research results into use. Therefore, measures going beyond the scope of the current Block Exemption Regulation⁷ could benefit from state aid and be exempted from notification, to a certain extent. In addition, the temporary loan and exchange of personnel between universities or large companies and SMEs could be encouraged.

- (60) **Incentive effect and proportionality:** The incentive effect could be presumed to be present for start-ups and small enterprises, provided that aid is not used to simply replace other employees. The incentive effect would have to be demonstrated, especially with regard to medium-sized companies in their development phase. With regard to lending of personnel by large companies to SMEs, the incentive effect will have to be clearly and specifically demonstrated, for example by showing that the project could not be implemented without the loan of these temporary personnel.
- (61) **Distortion of competition and effect on trade:** Only SMEs should benefit from aid. Universities or large enterprises loaning personnel would receive compensation for sending personnel to work in an SME (host SME). Large enterprises exchanging personnel with SMEs should not belong to the same group. The duration and amount of the aid should be limited.

(62) **Proposed rules**

Aid for SMEs:

- Eligible recruitment costs: personnel costs for highly qualified researchers and engineers
- Project-related training costs of staff
- Gross aid intensity: maximum [35%]
- Project-related limited duration, maximum of [3 years] per enterprise
- Condition: need to prove that personnel recruited is not simply replacing other personnel

Compensation for the university or enterprise sending personnel on loan to an SME:

- Eligible costs: personnel costs incurred in the home university or enterprise in the past two years for highly qualified researchers and engineers
- Amount of aid: cost linked to the loan of personnel
- Project-related, limited duration, maximum [3 years]

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

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?

⁷ Commission Regulation (EC) No 68/2001 of 12 January 2001 on the application of Articles 87 and 88 of the EC Treaty to training aid (OJ L10 of 13.01.2001)

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

- (63) The Commission's Communication 'Building the ERA of knowledge for growth'⁸ sets as one of the objectives of the 7th Research Framework Programme the development of capacities to enhance research and innovation capacity throughout Europe and to allow for the emergence and reinforcement of European poles of excellence in various fields. Poles of excellence could be defined as regional research-driven clusters able to attract researchers, investors and leading players in a given sector in terms of R&D expenditure; they can contribute greatly to European global competitiveness.
- (64) **Market failure targeted and appropriateness of aid:** Clusters are generally identified as groupings of innovative start-ups, small, medium and large enterprises as well as universities or research institutions, operating in a particular sector and region and designed to stimulate innovative activity by promoting intensive interactions. To become poles of excellence, clusters need to have a certain critical mass. They need to contribute effectively to technology transfer, networking and information dissemination among the firms in the cluster. They also need to create a proper balance of SMEs and large firms. However, market failures (like externalities and coordination problems) may prevent the establishment and development of clusters as poles of excellence. In particular, public research bodies cooperating with industry generate positive externalities but they often suffer from higher degrees of market failure. State aid may therefore be a way of tackling these market failures.
- (65) **Incentive effect and proportionality:** State aid should be targeted so that businesses and universities/research institutions decide to establish activities and invest in innovation-related activities within the cluster.
- (66) **Distortion of competition and effect on trade:** State aid for collaboration and clustering should not be used to circumvent the restrictions on investment aid outside assisted regions. It should be granted only if it can be shown that the benefits of clustering outweigh its negative impacts on competition. To that end, ex-ante rules authorising State aid for collaboration and clustering should only cover SMEs and entities providing infrastructure generating positive externalities (such as universities or research institutions).
- (67) **Proposed rules:** the Commission has identified a number of measures that could support collaboration and clustering. However, as this is a new area in the field of State aid where there is no established practice, and previous experience is extremely limited, the Commission would particularly welcome additional feedback on certain aspects detailed in the questions below.
- (68) In the current R&D framework, where there is cooperation between industry and public institutes, industry has to pay the full cost of the project or give all intellectual rights to the public institute so that the payments are not classified as State aid. This provision should be amended, and rights should be allocated between partners on a pro rata basis according to the contribution of each partner.

⁸ COM(2005) 118 of 06.04.2005

- (69) As is currently expressed in the R&D framework, in all cases where the Commission concludes that the purpose of the aid in question is to promote the execution of an important project of common European interest, that aid may qualify for the derogation contained in article 87.3 b).
- (70) The setting-up of a research centre, private university or equivalent to support a cluster could create an entitlement to State aid, for instance in the form of tax exemptions or repayable advances.
- (71) State aid for infrastructure may also be authorised cumulatively with the above rules. For example, aid could be justified if its purpose is to provide access to broadband in “grey” or “white” areas where the market offers no or not enough broadband coverage. More generally, aid for infrastructure supporting innovation could be authorised when technological neutrality and open access are guaranteed.

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?

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?

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?

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.)?

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?

ANNEX: PROBLEMS AFFECTING INNOVATION IN EUROPE

Insufficient innovative activity has been cited by the Commission as a key factor in Europe's underperformance in productivity growth⁹. It has been identified as one of the reasons for insufficient growth and job creation. The 2003 Communication on 'Innovation policy: updating the Union's approach in the context of the Lisbon strategy' as well as indicators such as the Innobarometer¹⁰ made it clear that the EU as a whole is not performing well enough in the field of innovation. Despite some successes in R&D and the presence of a number of technological leaders, it is widely accepted that the EU has to embrace a more innovative approach to growth in order to sustain its commitment to wider social welfare goals.

In that context, the Commission tried to identify the problems with innovation in Europe and to evaluate what positive contributions State aid policy could have. This was based on an analysis of past practice, resulting in the publication of the Vademecum on Innovation, as well as on internal research and contacts with innovation experts.

The Commission found that the EU has great untapped **innovation potential**. The EU's performance in innovation shows a large degree of variance between the different sectors of industry. In some areas, the EU has success stories in terms of R&D and hosts a number of technological leaders. This is notably the case in the field of transport (e.g. Airbus, high-speed trains, intelligent signalling systems) and energy (renewable energy, gas insulated transmission lines, nuclear, gas or hydraulic power plants). In other areas, the EU has to import many of the state of the art technologies and has little successful projects on its own.

The Commission found a series of **problems**, which affect innovation in the EU and prevent Europe from fulfilling its innovation potential. The problems can be categorised as follows:

- (1) *Lack of common rules and standards*: Among the problems identified are differences in tax and social security systems preventing the mobility of researchers and innovators; different certification procedures slowing down the transfer of innovative business models and ideas across EU countries; differences in patent protection procedures in the different Member States.
- (2) *Weaknesses in financial and labour markets*: The main problems identified here are the lack of private funding for R&D and innovation, especially for SMEs; underdeveloped venture capital markets; lack of investor expertise and of the ability to evaluate innovative companies; lack of availability of skilled labour; inability of SMEs to attract highly qualified staff.
- (3) *Non-functioning product markets*: The problems identified under this heading include barriers to entry for start-ups and SMEs, leading to insufficient successful market entries; the inability of start-ups and SMEs to grow rapidly, both within national markets and in other Member States (by contrast with the US market, for example); unsatisfactory IP protection; unattractive risk/reward ratios for investing in radically

9 Productivity: The Key to Competitiveness of European Economies and Enterprises, COM(2002) 262
10 see: <http://www.cordis.lu/innovation-smes/src/innobarometer2004.htm>

innovative products; difficulties for SMEs to identify, develop and promote untested technology; and also to create market opportunities and partnerships.

- (4) *Insufficient policy coordination:* Increasingly the location of R&D and innovation business units is decided on a global level. While the US, Japan and emerging technology competitors in East Asia are improving their ability to put together major resources, infrastructure and funding to attract researchers and investments for innovation, the EU is increasingly seen as being unable to avoid fragmentation between Member States, and is becoming less attractive for the location of R&D and innovation business units.
- (5) *General “systemic” inefficiencies:* Among the problems identified are poor industry-academia interaction; lack of collaboration and networking; slow adoption of ICT in business activities, excessive bureaucracy in government funding; slow development and adoption of environmental technologies; no entrepreneurship “culture”; negative attitude towards failure; and risk aversion.

Many of the above problems relate to systemic and regulatory problems, as well as to a lack of funding and of market openness. Consequently many problems cannot be solved by State aid and require a more comprehensive policy approach. Besides, while some of the problems identified above are due to inadequate or deficient public policies, some of those in categories 2), 3) and 5) may also be the result of **market failures**.

The sources of market failures which are relevant to innovation have been identified by the Commission as the following, on the basis notably of a review of case practice: innovation as a public good and externalities; inefficient dissemination of information; shortcomings in the capital markets; mismatches on the labour market and coordination problems. These market failures can possibly be tackled through State aid, by changing the incentives of the beneficiaries so that they engage more in innovation-related activities.

In addition, the Commission found that technological innovation represents only a part of the innovation potential. In particular for the services area, innovation also requires developing new business models, methods and tools. Innovation practices in the services sector tend to be different from those of other sectors. They tend to rely more on, for instance, professional knowledge and creativity and on organisational innovation. Many service companies are believed to invest substantially in innovation related activities, but this phenomenon remains largely unreported in national statistics, surveys and accounting statements. In the absence of adequate data on non-technological forms of innovation related investment, it is difficult to ascertain where market failures might exist. The Commission is currently working on improving financial reporting on non-technological R&D expenditure

Comments are welcomed on the problems identified as affecting innovation in Europe.