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COMMISSION STAFF WORKING DOCUMENT

Towards enhanced patent valorisation for growth and jobs

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Towards enhanced patent valorisation for growth and jobs

In its conclusions of 4 February 2011, the European Council invited the European Commission to ‘explore options for setting up an intellectual property rights valorisation instrument at the European level, in particular to ease SMEs’ access to the knowledge market and to report back to the Council by the end of 2011’¹.

The main purpose of this Staff Working Document (SWD) is to serve as a basis for future discussions among the Commission, the Council and the European Parliament on the need to enhance patent valorisation for growth and jobs. To this end, it presents and analyses the major obstacles European companies, mainly small and medium-sized enterprises (SMEs), have to face in valorising existing patents, especially ‘dormant patents’. While describing the current European initiatives aimed at addressing issues in this area, it also outlines short- to medium- and long-term options for making better use of intellectual property.

1. THE NEED TO ENHANCE PATENT VALORISATION FOR GROWTH AND JOBS

The European Union (EU) has developed the Europe 2020 Strategy to turn the EU into a smart, sustainable and inclusive economy that delivers high levels of employment, productivity and social cohesion². Part of the rationale behind the strategy is the need to improve the framework conditions and support for research and innovation so that innovative ideas can be turned into goods and services that create growth and jobs and help to address European and global societal challenges³.

This is the key to an industrial policy that puts innovation at the centre in a European Union with a high quality of life and a strong, sustainable industrial base. Improving the quality of life and strengthening the industrial base as part of the Europe 2020 flagship initiative for ‘An Industrial Policy for the Globalisation Era’⁴ will allow large companies and SMEs to compete globally.

With industry at the centre of the Europe 2020 Strategy for growth, among the various forms of intellectual property rights (IPR), the focus is on patents, notwithstanding the increasing importance of associated services. The EU’s ‘Innovation Union’ flagship initiative addresses the need to improve the economic exploitation of unused intellectual property rights, notably patents⁵. Industrially valorising or exploiting an IPR in this way⁶ is the subject of this document, in particular with regard to patents.

¹ Conclusions of the European Council of 4.2.2011, p. 8. <http://register.consilium.europa.eu/pdf/en/11/st00/st00002-re01.en11.pdf>.

² *Europe 2020. A strategy for smart, sustainable and inclusive growth*. COM(2010) 2020 final, 3.3.2010.

³ *Europe 2020 Flagship Initiative. Innovation Union*. COM(2010) 546 final, 6.10.2010.

⁴ *An Integrated Industrial Policy for the Globalisation Era. Putting Competitiveness and Sustainability at Centre Stage*, COM(2010) 614 final, 28.10.2010 and its update, *A Stronger European Industry for Growth and Economic Recovery*, COM(2012) 582 final, 10.10.2012.

⁵ Action 22 of the Innovation Union Communication reads: ‘By the end of 2011, working closely with Member States and stakeholders, the Commission will make proposals to develop a European

Innovations, especially technology-driven ones, often require the exploitation of one or more patents and of the related know-how.

A patent grants a temporary exclusive right to prevent third parties from financially and commercially exploiting the patented invention, subject to compliance with the provisions of other fields of law. Patents can be exploited in two ways. The patent holder commercially exploits the patent with a view to introducing new goods and services in the market, or the patent holder obtains monetary compensation through selling, licensing and other methods. In some cases, a patent holder who is commercially exploiting the patented technology may also decide to generate additional cash-flow by licensing it non-exclusively to a third party for further financial exploitation. Ownership of the patent and its exploitation must fully comply with the EU's competition rules.

Worldwide competition through innovation means that better valorisation of patents must be considered in a global context. The key role the international dimension of IPRs plays in the EU's internal market is reflected in the opportunities that external trade offers⁷.

As part of a single market for Intellectual Property (IP), a valorisation instrument is a novel policy option to ease the access of SMEs to the knowledge market. The Small Business Act and even the Single Market Act⁸ have already underlined this. For SMEs to get better value out of this form of intellectual asset in their innovation management, their rights must be protected and enforced through dispute resolution and counterfeiting must be vigorously opposed⁹. The social, economic and environmental benefits of an IPR are only reaped through what enterprises do to use the patented invention in a good or for a service.

2. PATENT VALORISATION IN EUROPE

2.1. The potential of unused patents

A patent is an exclusive right granted for an invention¹⁰, in any field of technology, provided it is new, industrially applicable, patentable and it involves an inventive step,¹¹. The invention may relate to a physical entity (a product or an apparatus) and/or an activity (e.g. a process or

knowledge market for patents and licensing. This should build on Member State experience in trading platforms that match supply and demand, marketplaces to enable financial investments in intangible assets, and other ideas for breathing new life into neglected intellectual property, such as patent pools and innovation brokering.⁶

⁶ The expression 'patent valorisation' refers to creating value from patents by harnessing their economic potential. This is done by developing and commercialising the underlying technology. It is used synonymously with 'patent exploitation' in this document.

⁷ *A Single Market for Intellectual Property Rights. Boosting creativity and innovation to provide economic growth, high quality jobs and first class products and services in Europe.* COM(2011) 287 final, 24.5.2011.

⁸ *Single Market Act. Twelve levers to boost growth and strengthen confidence. "Working together to create new growth."* COM(2011) 206 final, 13.4.2011.

⁹ *An Industrial Property Rights Strategy for Europe.* COM(2008) 465 final, 16.7.2008.

¹⁰ 'Innovation' rather than 'invention' is also found in the literature.

¹¹ See Articles 52 and 53 of the European Patent Convention.

a use). The invention has a value the company can exploit without a patent. Even so, the patent adds value to an invention¹².

The invention is made public the day the patent application is published. It may then be used by others as a starting point for their research, which may lead to further developments and maybe even other inventions and innovation. Making the invention public is the counterparty for the prospect of being granted a temporary exclusive right. When the patent expires or is surrendered, or if a patent transaction takes place¹³, people other than the original inventor can exploit the invention.

In general terms, the first step in obtaining patent protection for an invention is filing a patent application. A patent application must describe the invention clearly and completely enough for it to be executed by a person skilled in the art. It must contain a description of the invention, one or more claims and an abstract. The claims determine the extent of the protection conferred by the patent or its application. Patent rights can be enforced in courts, which have the authority to preliminarily or permanently prohibit the infringement of the patent. A patent can also be revoked or declared invalid if a third party succeeds in challenging it.

Companies also apply for patent protection in third countries to which they export or in which they invest, or may do so in the future. They also source patented technology worldwide for industrial exploitation in Europe.

Inventions that may lead to the grant of a patent are often the result of costly public and/or private research. Renewal fees must be paid to maintain patent protection. Right holders have an incentive to pay these fees if the returns they expect exceed the costs of maintaining patent protection. Calculating the maintenance costs is therefore one way of estimating patent value. If the patent right is no longer maintained, everyone may use the invention to which it relates.

The grant of a patent means that the competent authority considered the claimed invention novel and non-obvious compared to state-of-the-art technology and that it considered it was patentable. It represents the potential to introduce, but is no guarantee of introducing, new or improved goods and services in the market.

The patent holder can commercially or industrially exploit the patent internally to introduce new goods and services in the market or to improve internal processes. He or she would have to invest in other activities to turn the patent into a product. He or she may also set up a new company — an innovative start-up — to commercialise the patent-based product.

As an alternative or in addition to internal exploitation, the patent holder may decide to generate additional revenue by selling or licensing the patent, thereby allowing other parties to exploit it. Such financial exploitation is particularly suited to research organisations and small companies. This is because they do not have adequate complementary downstream assets to internally exploit these intangible assets.

¹² Gambardella, A., Giuri, P., Mariani, M. (2006), *Study on evaluating the knowledge economy — what are patents actually worth? The value of patents for today's economy and society*. Final report on Lot 2 of a study for the European Commission.

¹³ A patent transaction is the purchase, sale or licensing of a patent or a patent application.

Companies do not often exploit only the patents they own, nor should they be encouraged to do so. On the contrary, licensing patents to and from other companies or research organisations makes their allocation more efficient, making them available to those who are willing and able to exploit them.

Not all patents are used though. Published data¹⁴ show that the patent holders do not actively use all granted patents. These patents are not used to introduce new or improved goods or services in the market. Although it is not possible to know exactly how many patents are not exploited and therefore to identify accurately the amount of growth and number of jobs that could be generated by exploiting them, the sources below provide some evidence.

Various international studies have assessed the number of patents that are not used to generate economic activity.

- (a) A survey conducted by the Japanese Patent Office found that in 2007 almost 50% of Japanese patents were unused¹⁵. Although the world leader in patent generation (in 2008, it headed the top ten list of countries of origin for patents), Japan ranks only third in terms of revenue generation from patents.
- (b) The OECD refers¹⁶ to surveys which indicate that only 15% of respondents from 150 technology-intensive patentees in Europe, Japan and the USA reported that they had no unused patents in their portfolios. Almost 25% reported that they had more than 100 unused patents and 12% more than 1 000 unused patents.
- (c) OECD data show that only 20–40% of patents held by the technology transfer offices of public research organisations in countries taking part in the survey were licensed¹⁷.
- (d) The European PatVal study¹⁸ showed that **about 36% of European patents are not used** for industrial or commercial purposes¹⁹. Their number varies across technological fields. Chemical-based and electronic-based industries have a significant share of unused patents; in some fields, the number of unexploited patents is as high as 75–90%²⁰.

¹⁴ Gambardella, A., Giuri, P., Mariani, M., (2005), *The Value of European Patents. Evidence from a Survey of European Inventors*. Final Report of the PatVal EU Project.

¹⁵ Japan Patent Office, *Overview of the Result of the 2008 Survey of Intellectual Property-Related Activities*. Cited in Japan Patent Office, *Open Innovation and Intellectual Property*, 2010, p. 18.

¹⁶ Kamiyama, S., Martinez, C., Sheehan, J., *Valuation and Exploitation of Intellectual Property*, OECD Working Paper 2006/5.

¹⁷ 'Trends in Patenting and Licensing across OECD Countries' in OECD (2003), *Turning Science into Business. Patenting and Licensing at Public Research Organisations*, p. 72.

¹⁸ The PatVal EU dataset is based on a survey relating to 27531 patents applied for at the EPO with the priority date 1993–97. At the time of the application, the inventors named first in these patents were located in the six European countries that participated in the project: France, Germany, Italy, the Netherlands, Spain and the United Kingdom. The survey was conducted mainly in 2003. See footnote 14, op. cit. The original EU-6 dataset was expanded to include EU-8 by adding data from Denmark and Hungary in 2005. For the datasets of these two countries, see the annex on datasets in Gambardella, A., Giuri, P., Mariani, M., (2006), *Study on evaluating the knowledge economy — what are patents actually worth? The value of patents for today's economy and society*.

¹⁹ See footnote 14, op. cit.

²⁰ Chesbrough, H. (2003), *Open Innovation: The New Imperative for Creating and Profiting from Technology*, Massachusetts: Harvard Business School Publishing Corporation.

Several types of patents not used to bring products or services to the market have been identified²¹, notably the ‘dormant’ or ‘sleeping patent’²², but also the ‘blocking patent’²³ or patents defending the freedom to operate²⁴. The unexploited part of the current stock of granted patents constitutes a pool of inventions and of improvements of products or processes that have not yet been introduced in the market.

There may be several reasons for not exploiting a patent. There is no market or the patentee sees no market for the protected invention. The invention is not (yet) ready for the market. The product would infringe a competitor’s patent (no freedom to operate). If a patent is used as a blocking patent, it cannot be said that the patent is not commercially used, because the patentee defends his market share by preventing competitors from providing alternatives.

The PatVal study distinguishes between blocking and sleeping or dormant patents on the basis of answers from interviewees on whether patents were used as blocking patents²⁵. The priority date of the patents concerned was at least six years before the interviews.

The Japanese survey mentioned above found that almost 20% of patents were dormant, while around 30% remained unexploited for strategic reasons. The PatVal EU study found that about half of the unused patents, or almost 19%, help block competitors, while the other half, **about 17%, are left unexploited**²⁶. The preliminary results of the recent PatVal II study confirm this for patents from 2003 to 2005. The variation across technology fields can also be observed with regard to sleeping patents. The share of sleeping patents varied from 6% in agro-food processing to 30% in fine organic chemicals²⁷.

The report of a recent Commission expert group on patent valorisation²⁸ quantified **the share of European patents that could be valorised in the range of 8% to 24% of the total number of patents granted**. The estimate includes patents that SMEs tried unsuccessfully to license²⁹.

The expert group said that not all unused patents can be considered suitable for exploitation, because some of them may be worth too little. **A small number of patents accounts for most of the value of unused patents**. This means that, based on the PatVal study, roughly 3.5% could account for 77% of the value of the potentially exploitable patents³⁰. These

²¹ See footnote 12, op. cit.

²² ‘Sleeping patents’ are patents left unexploited by the patent holder.

²³ ‘Blocking patents’ are patents intended to block rivals from using a technological invention, even if the patent holder does not use it.

²⁴ A company’s freedom to operate is at risk if another organisation is granted a patent that can challenge a good or production technology the company uses.

²⁵ Giuri, P., Mariani, M., Brusoni, S. et al. (2006), *Everything you Always Wanted to Know About Inventors (But Never Asked): Evidence from the PatVal-EU Survey*, Munich School of Management, University of Munich.

²⁶ See Troy, I. and Werle, R., *Uncertainty and the Market for Patents*, Max Planck Institute for the Study of Societies, Working Paper 08/2, p. 5. <http://www.mpifg.de/pu/workpap/wp08-2.pdf>.

²⁷ See footnote 12, op. cit., pp. 39-42.

²⁸ Expert group on IPR valorisation, *Options for an EU instrument for patent valorisation*, European Union, 2012. http://ec.europa.eu/enterprise/policies/innovation/files/options-eu-instrument-patent-valorisation_en.pdf.

²⁹ See footnote 28, op. cit., pp. 24-25.

³⁰ See footnote 28, op. cit., p. 25.

estimates are based on the views of patent holders views. The finding is in line with those of the OECD survey of public research organisations and other studies^{31, 32, 33}.

Leaving patents dormant may sometimes not benefit society. It prevents knowledge that adds value to society from being transformed into new products or services for the market. It also prevents people other than the patent holder from valorising the protected invention, at least as long as they are unused before they expire, because not renewed or because the statutory duration of the right.

From data relating to eight Member States of the Union (EU-8), the PatVal study found that about 5% of their patents had possibly lead to the creation of a new company³⁴. Based on the assessment of the EU-8 data, the estimated monetary value of unlicensed patents that patentees are willing to license is about 0.1% of GDP³⁵.

How can the estimated potential for further exploiting patents be realised? Given the EU 2020 objective of smart growth, patent valorisation is not an end in itself. Rather, EU action to improve patent valorisation should target patents that have the potential to be translated into innovative goods, processes and services, potential which is hampered by unfavourable framework conditions. To devise measures that can address unfavourable conditions, the reasons behind such conditions must be better understood. The rest of this section looks in more detail at reasons for non-exploitation, before examining options to address them.

2.2. Obstacles to patent valorisation in Europe

The possibility companies have of accessing this ‘technology market’ appears to be limited by a number of factors that have a negative impact on the possibility a company has of engaging in a patent transaction.

Firstly, the fragmentation in the patent market results in low transparency. This makes it unnecessarily difficult for companies to identify the offer in spite of the progress made in recent years. Secondly, they face costly, lengthy procedures to obtain information and access granted patents. Thirdly, companies lack information or are unaware of the business opportunities patents offer. Finally, it is difficult to obtain funding that would allow them to exploit patents.

The following table gives an overview on the obstacles (in the top row) and of factors that create them (in the column corresponding to each obstacle).

³¹ See footnote 17, op. cit., pp. 72-73.

³² Troy, I. and Werle, R., *Uncertainty and the Market for Patents*, Max Planck Institute for the Study of Societies, Working Paper 2008/2. <http://www.mpifg.de/pu/workpap/wp08-2.pdf>. The authors argue that most unused (notably ‘dormant’) patents are of low economic value and are therefore not in demand.

³³ As also demonstrated on an empirical basis different from that of other studies in *Creating a financial market for IPR*, University of St. Gallen, 2011. http://ec.europa.eu/enterprise/policies/innovation/files/creating-financial-market-for-ipr-in-europe_en.pdf.

³⁴ See footnote 12, op. cit.

³⁵ Estimate obtained as the difference between actual and potential market sizes indicated in footnote 12, pp. 20-21. For the soundness of the underlying estimate, see footnote 12, op. cit., technical annex, section A 1.1.

Low transparency on the patent market (2.2.1)	Insufficient awareness of business opportunities (2.2.2)	High transaction costs of trading patents (2.2.3)	Difficult access to funding to commercialise patents (2.2.4)
What is available for a transaction?	Insufficient use of IPR exchange platforms	Partner identification	Financing the stages from patented invention to market introduction
Who is its current owner?	Quality service providers hard to identify	Negotiation of agreement	
Which country is it granted for?	Open innovation resistance	Diverse valuation models	
		Patent language	

Table summarising the obstacles that have a negative impact on patent valorisation.

2.2.1. Low transparency on the European patent market

Information about valid patents in Europe continues to be fragmented instead of being available at one easily accessible point. Applications for a European patent can be filed centrally with the European Patent Office (EPO). It examines them, grants the patent right if the legal requirements are met, and makes the information about the applications and their outcome available. The maintenance of the European patent is managed by the national patent offices of the Member States for which it was granted. This is because after a patent is granted, it is treated like a national patent in the Member States for which it was granted and, if applicable, where it has been validated.

An inventor may also file a patent application nationally, in his home country only or in several countries. In that case, the national patent office(s) is (are) responsible for examining the patent application.

The information about which patents are granted is therefore distributed across different patent databases, operated by the EPO and national patent offices. The national patent offices do not have to give the maintenance information to the EPO. The same is true with regard to a possible change in ownership of the patent. The availability of data on the maintenance, ownership or licensing of European patents in the EPO Patent Register (see 3.1.1) depends on whether or not national patent offices transmit them to the EPO. The completeness and accuracy of the information in the Register about patent owners and the renewal of patents are therefore not guaranteed³⁶.

³⁶ This is because the EPO is not responsible for the administration of European patents when the proceedings before it have been closed.

A company interested in acquiring an invention can obtain a complete overview of patented inventions that could be relevant for its product idea by searching all the patent databases in the EPO contracting states. Such a search does not identify the patents on offer for a transaction however, because this information is barely available in patent databases.

In Europe therefore, the way of identifying candidates for patent transactions is unsatisfactory as well as the way of searching a complementary patent to exploit the EU's dormant patent in the patent databases of non-EPO countries.

As registrars of titles to patents, patent offices therefore hold essential information for the parties to a patent transaction, be they public or private. The easier it is to access this information, the more transparent a market can be. There is currently no single point, a market, where the offer of patents for a given demand can be transparently indicated.

2.2.2. Insufficient awareness of business opportunities

Increasing the number of market actors presupposes awareness of the opportunities the market offers and of how to participate in it.

Patent, or IPR, exchange platforms are websites that help match potential sellers and buyers of patents by centralising information on available patents and/or the needs of buyers in repositories. The use of facilities which in principle increase price transparency, namely auctions and patent exchanges, is very low in comparison to the widespread use of other means, notably personal networks and intermediaries³⁷.

Awareness of suitably qualified providers of advisory and support services related to patents is very important. The fact that such intermediaries are not accessible enough suggests that the complexities of a patent transaction require high-quality service. Such service is hard to find^{38, 39}. Given SMEs depend much more than larger companies on intermediaries, this is a major obstacle to more SME participation in patent markets.

Concerns about the exploitation of patents are usually viewed from the patent holder's point of view, be it an SME or a research organisation. Due to the high cost of good advice, it would probably be harder for an SME that wants to buy patents to obtain such advice than it would be for patent owners. The business plan for a new product requires very advanced, specialised business services. The demanders may also be less familiar with patent services. Arguments regarding the obstacles to open innovation could also yield reluctance to find solutions for the technical properties of envisaged products on a patent market.

2.2.3. High transaction costs of trading patents

Even a fully transparent patent market gives rise to transaction costs. It is clear from 2.2.1, however, that the low transparency of the European patent market entails unnecessarily high search costs, with other transaction costs adding to the burden.

³⁷ *Creating a financial market for IPR*, University of St. Gallen, 2011, p. 97. http://ec.europa.eu/enterprise/policies/innovation/files/creating-financial-market-for-ipr-in-europe_en.pdf.

³⁸ Radauer, A., Streicher, J., Ohler, F., (2007), *Benchmarking National and Regional Support Services for SMEs in the Field of Intellectual and Industrial Property*, p. 91.

³⁹ See footnote 37, op. cit., p. 30 and footnote 9, op. cit., 2.3.

Firstly, a patent transaction hinges on the buyer's ability to find a seller for a technology and vice versa. Screening the market and gauging the market potential of a patent is costly. Patent transactions are often initiated by personal business networks rather than in the open market; personal ties make it easier to overcome information asymmetries.

Secondly, when the potential demand for and supply of patents meet, asymmetric information about the patent's value may result in long due diligence activities (especially on the buyer's side) and an uncertain transaction outcome. Additional know-how is sometimes needed to effectively exploit the patented technology. SMEs often lack this know-how in comparison to large companies. The disclosure and transfer of know-how requires sophisticated contractual arrangements to prevent the leakage of information, while ensuring that the buyer can exploit the patented technology.

Thirdly, a new product on the market is often based on several patented technologies. It is therefore sometimes necessary to simultaneously conduct several patent negotiations to acquire the patents needed for the envisaged product. The buyer may also be unable to identify all necessary patents and therefore risk infringing the patent rights of third parties. This could put their freedom to operate at risk.

The valuation of a patent appears to be one of the main barriers in transactions. There is no 'one size fits all' model for valuing patents⁴⁰. The choice of method and its application are not obvious, due to the advantages and disadvantages and the different degrees of complexity of the various methods. Patent valorisation is therefore hampered by the fact that different parties may apply different valuation methods⁴¹ before a transaction. This leads to (sometimes substantially) diverging opinions on the value of individual patents. Valuing patents is particularly difficult for early-stage technologies because it is difficult to apply valuation approaches due to a lack of comparable data. Negotiations and valuation in patents are interdependent. Failure to contract a patent may delay, if not jeopardise, the development of the product and thus reduce the value of the other patents for a buyer.

The fact that companies' reporting systems reflect patent values only to a very limited extent illustrates the difficulty of valuing patents. If this situation were improved, the reported value could be used as a basis to assess the potential return on investment. This would be very useful for financial investors, who rely on financial and non-financial information, usually based on the company's accounts.

Search, analysis and interpretation costs are compounded by the diversity of languages. While worldwide searches encounter the same obstacle, this will be a major obstacle as soon as sleeping European patents are better exploited. Dispensation with the translation requirements for granted patents in accordance with Article 65(1) of the European Patent Convention will help increase the supply of patents to the market⁴².

⁴⁰ Van Zeebroeck, N., van Pottelsberghe de la Potterie, B., 'The vulnerability of patent value determinants', *Economics of Innovation and New Technology*, Vol. 20, No 3, 2011, pp. 283-308. <http://www.tandfonline.com/doi/abs/10.1080/10438591003668638>.

⁴¹ Valuation approaches and methods include the cost approach (replacement cost method and reproduction cost method), the market approach (market prices in active markets, analogous method), income approach methods (direct cash flow prognosis, relief-from-royalty method, multi-period excess earning method, incremental cash flow method). See Gassmann and Bader (2011), IDW S 5 (2008), Smith & Parr (2005).

⁴² See <http://www.epo.org/law-practice/legal-texts/london-agreement/key-points.html> for the current status.

Search and contracting costs increase the time it takes for, and what it costs, a company to complete a patent transaction to the point where the transaction costs are an impediment to participating in a patent market, in particular for SMEs. Due to the cost of valuing a patent, identifying transaction partners and negotiating the contractual terms, screening, information and contracting costs are the most significant transaction costs⁴³.

2.2.4. Accessing funding to commercialise existing patents

After acquiring patent rights, an SME or the future founders of an SME have to develop the envisaged product and its production and finalise and execute the corresponding business plan, including possibly a prototype or a proof of concept, or even filing new patents and much more. The funding needed for these close-to-market activities are known often exceed the expenses the inventor supplying the patent right incurred. There can be significant variations across sectors, with some development time reaching 10 years, and similar challenges for long-term endeavours.

With regard to financing, SMEs on the demand side of the patent market are in a similar situation to SMEs exploiting their own patents. In some cases, the acquired patent may be made more suitable for financing, because it can be booked with a market price. The fundamental issue for the exploitation of patents, be they own developments or traded, remains financing the stage from technology to market.

Due to the various market failures, banks shy away from lending for patent transactions and the subsequent commercialisation stage⁴⁴. Companies that want to commercialise patents are more likely to raise the capital they need by selling equity shares to early-stage investors such as business angels and seed funds.

2.3. The incidence of market and regulatory failures

Section 2.2. sets out a number of obstacles that are overcome at some cost and partly explain why companies fail to exploit dormant patents. The potential for valorising sleeping patents is currently quantified by patent owners as about 8% to 24% of the total number of patents granted, as set out in 2.1. The obstacles to patent transactions are partly the result of institutional failures and partly of market failures.

The available evidence points to the cost of transactions as the main observable reason for the underutilisation of patents⁴⁵. The analysis of a UK survey on the IP transactions of public research organisations, including universities, finds that the organisations consider institutional failures less significant than market failures⁴⁶. Among the institutional failures, transaction costs are considered important. In particular, negotiation is considered hampered by asymmetric information and the difficulty of valuing the IP.

⁴³ See footnote 37, op. cit., pp. 80-81.

⁴⁴ For an overview of the literature regarding the financing constraints of innovation activities beyond the R&D stage, see Hall, B., *The financing of innovative firms*, EIB Papers, Vol. 14, No 2, 2009.

⁴⁵ See footnotes 12 and 28.

⁴⁶ Andersen, B., Rossi, F., *Inefficiencies in Markets for Intellectual Property Rights: Experiences of Academic and Public Research Institutions*, Paper presented at the DIME Final Conference 6-8 April 2011. http://final.dime-eu.org/files/Andersen_Rossi_A6.pdf.

3. REALISING THE POLITICAL VISION: A DYNAMIC, TRANSPARENT AND ACCESSIBLE PATENT MARKET

The vision set out in the Europe 2020 Strategy is one of a transparent and dynamic European IP market with enough capital to facilitate the acquisition of patents. It will take time to make such a vision a reality, but the Commission departments believe that it is not possible to delay action.

The EU Member States and the European Commission have already put forward proposals to work towards achieving the political objectives (3.1). In addition, a twin-track approach is considered: On the one hand, the EU could reinforce current initiatives in the short to medium term to raise awareness among businesses and improve the conditions of access to IP (3.2.). On the other hand, and on the basis of the Commission's experience during this first phase, Europe may need to examine whether further changes to the IP market are needed in the long term (3.3).

Options presented in sections 3.2 and 3.3 would have to be considered in terms of their potential to mobilise licensable patents. A decision on measures to be taken would have to take into account that the cost of the measures adopted should not exceed the expected benefits. Public rather than private funding should be used only to alleviate market failures. An incentive system would have to avoid introducing unintended disincentives. For instance, owners of patent rights of rather low value who consider letting their right lapse by not renewing it could be tempted to retain their right in the hope of its being purchased publicly. The invention would not be exploitable in the public domain.

The Commission departments will ensure that all measures under consideration comply with competition rules, in particular state aid rules.

3.1. Ongoing initiatives to improve the EU's patent system

The European Commission and the EU Member States are already trying to improve the transparency of the European patent system and reduce the number of barriers to an effective, cost-efficient patent system for the EU.

The main measures on framework conditions are the Commission's proposals for the creation of the European patent with unitary effect⁴⁷. Following the failure of negotiations with all Member States, the Council has decided to proceed with the creation of unitary patent protection in the framework of enhanced cooperation among 25 Member States. The regulations on which political agreement has already been achieved in the Council and in the European Parliament would be accompanied by an international agreement of presumably 26 Member States on the creation of a common jurisdiction for European patents (Agreement on the Unified Patent Court). This unitary patent would bring advantages with regard to transparency, the cost of transactions and awareness of a patent marketplace to increase the supply from SMEs. Companies could obtain unitary patent protection in the participating 25 Member States on the basis of a single application without having to fulfil additional requirements in the individual Member States. One jurisdiction for patent matters would

⁴⁷ COM(2011) 215 final, proposal for a Regulation of the European Parliament and of the Council implementing enhanced cooperation in the area of the creation of unitary patent protection and COM(2011) 216 final, proposal for a Council Regulation implementing enhanced cooperation in the area of the creation of unitary patent protection with regard to the applicable translation arrangements.

reduce the cost of litigation and remove the legal uncertainty which arises from different legal decisions being taken on the ‘same’ patent in different national jurisdictions.

The unitary patent package, consisting of the creation of unitary patent protection and one jurisdiction, would make patents a more dependable asset for exploitation. This would facilitate patent transactions in Europe, resulting in more effective exploitation of patented technologies.

3.1.1. Improving transparency

A great number of initiatives funded by the EU are already in place to increase transparency in the patent system and to help SMEs navigate the complexities of the system and exploit patents⁴⁸.

The central source of information about European patent applications and patents is the EPO’s Patent Register⁴⁹. In addition to the file history and the bibliographic data, information about the validation of a European patent in a contracting state of the European Patent Convention or its lapse can be found there. The availability of data about the situation after the patent is granted depends partly on the provision of such data by the contracting states. This means that the current owner of a patent which the original owner had sold cannot be identified soon enough⁵⁰.

For European patents with unitary effect (unitary patents), the situation concerning the completeness and reliability of post-grant data would improve. Since these data would be centrally administered by the EPO, the availability of data for such European patents in the EPO’s Patent Register would be improved.

The World Intellectual Property Organisation (WIPO), which the EPO has a cooperation agreement with, offers PatentScope⁵¹. This search service gives access to published international patent applications filed under the Patent Cooperation Treaty (PCT) and to applications from national or regional bodies, such as the EPO’s, to the extent that the participating patent offices provide information about patent documents. Since January 2012, applicants interested in licensing the inventions in their PCT applications can ask to make this information available on PatentScope.

3.1.2. Increasing the participation of SMEs in the patent system

A number of initiatives funded by the EU are in place to provide SMEs with different tools to enable them to participate in patent markets and valorise their patents.

Most patent offices offer web-based information about patent law and guidelines for patent application and enforcement. Some of them recently launched tools to help manage patents⁵². In some Member States SMEs and public research organisations that wish to avail of the IP

⁴⁸ *Enhancing the patent system in Europe*, COM(2007) 165 final, 3.4.2007 and footnote 9.

⁴⁹ <http://www.epo.org/searching/free/register.html>.

⁵⁰ That timely delivery of information on patent availability is an issue is shown by the high ranking of the time factor as a critical factor in patent searches. See footnote 49, pp. 90-91.

⁵¹ <http://patentscope.wipo.int/search/en/structuredSearch.jsf>.

⁵² Examples of such tools include the UK Intellectual Property Office’s IP Healthcheck, the provision of online models of Technology Transfer and R&D Agreements by the Portuguese Patent Office, or IPscore, the European Patent Office’s patent portfolio management tool.

services of external consultants are given financial support⁵³, while other Member States or the European Union have set up their own network of business advisors who also deal with IPR.

Cohesion policy, specifically the European Regional Development Fund, has provided considerable support by providing grants and advisory and support services for SMEs, specifically those located in the most disadvantaged regions and Member States, to help them exploit their patents. Enterprises supported by cohesion policy maintained patent applications while other enterprises cut back⁵⁴.

Patent offices in EPO countries have created a network of patent information centres (PatLib centres). They are spread at regional level throughout Europe to offer services related primarily to patents. Member States and the European Commission offer information and referral services through the regional nodes of the Enterprise Europe Network, which collaborates with the PatLib centres and the European IPR Helpdesk.

The European IPR Helpdesk⁵⁵ is also funded by the European Commission. It provides services to SMEs involved in transnational partnership agreements and to current and potential beneficiaries of European collaborative research projects⁵⁶. The Helpdesk's helpline service, backed up by a team of IP experts, answers individual IP inquiries within three working days, and offers different training and awareness-raising services. In some Member States that receive larger amounts of structural funds, there are several projects to provide similar support to SMEs.

The European Commission and the Department of Commerce of the USA are collaborating on the TransAtlantic IPR Portal⁵⁷ to make it easier to access support services they provide. The China IPR SME Helpdesk and the India IPR Helpdesk focus on issues specific to SMEs operating in China and India.

European IP offices work to reduce the cost of transactions, to raise the awareness of SMEs and help them develop the skills required to manage patents by improving the advisory and support services SMEs and intermediaries can use in the projects IPEuropeAware and IPorta⁵⁸. Tools they have developed are made available on InnovAccess⁵⁹ for use by SMEs themselves or their intermediaries. Their activities serve to disseminate best practice in patent valorisation services at national and regional level across Europe.

⁵³ This model has been adopted by the SIGNO initiative in Germany and Denmark. In Germany SMEs that have not filed a patent in the last five years are eligible for partial funding for the services of a local consultant, from top-quality investigation to national/international patent filing and preparation of market access. In Denmark, there is the possibility of having one hour of free consultation with a private advisor, and co-funding for a preliminary search in view of patenting.

⁵⁴ Czarnitzki, D., Lopes Bento, C., Doherr, T., (2011), *Counterfactual impact evaluation of cohesion policy. Work package 2: Examples from Support to Innovation and Research*, Catholic University of Leuven. http://ec.europa.eu/regional_policy/information/evaluations/pdf/impact/ciewp2_final.pdf.

⁵⁵ <http://www.ipr-helpdesk.org/>.

⁵⁶ In particular of the EU's Seventh Framework Programme (FP7), and the Competitiveness and Innovation Framework Programme (CIP).

⁵⁷ http://ec.europa.eu/enterprise/initiatives/ipr/index_en.htm.

⁵⁸ This collaboration is known as IPorta (previously called IPEuropeAware), see www.innovaccess.eu. A network of European national IP offices has been created under the IPEuropeAware pilot project with the aim of developing IP support services for SMEs. This network will be further developed under the IPorta project, which started at the beginning of 2012.

⁵⁹ <http://www.innovaccess.eu/>.

Training courses for SMEs are in place too, to raise awareness of patents, pass on basic knowledge about them, teach SMEs how to use patent databases and services to identify relevant patents and to point out issues which need attention when preparing patent transactions. Together with some of the EU's IP Offices and innovation agencies, the EPO has developed a comprehensive set of IP training tools with the ip4inno project⁶⁰. The training material is also a useful resource for IP trainers who wish to improve the capacity of SMEs and intermediaries in this area and for schemes to train the trainers. The European Patent Academy of the EPO also offers a capacity-building programme for public institutions.

The EUKTS project⁶¹ can help address the issue of identifying highly professional patent experts to increase the likelihood of transactions on a patent market.

The EPO implements a programme on European language technology services for patents to make patents accessible in all EU languages by means of automatic translation on the web free of charge. The launching of Patent Translate in February 2012 was a major milestone in machine translation⁶².

Experience with IPR exchanges, including patents, has been made part of public policy in some Member States, for instance by the IP Marketplace in Denmark⁶³ or the German InnovationMarket under the federal programme SIGNO⁶⁴.

Several patent funds have been created in Europe since the second half of the last decade. The only public policy measure currently in place is the more recent *France Brevets*⁶⁵.

Some Member States, e.g. Belgium, Luxemburg or the Netherlands, have followed⁶⁶ the European Commission's suggestion to try promoting IP licensing activities through tax incentives within the EU's framework for R&D⁶⁷ or, like the UK,⁶⁸ to consider such a policy measure.

3.1.3. Improving the conditions for the commercialisation of IP through new business

Under the current Competitiveness and Innovation Framework Programme (CIP) which runs until 2013, the EU provides financial support to SMEs willing to commercialise IP. It is

⁶⁰ <http://www.ip4inno.eu/>.

⁶¹ <http://www.eukts.eu/>.

⁶² <http://www.epo.org/searching/free/patent-translate.html>.

⁶³ The Danish Patent and Trademark Office launched the web-based IP Marketplace in 2007 (<http://www.ip-marketplace.org/>). It contains anonymous offers of patents, trademarks, design and utility models available for sale or licensing, including prices.

⁶⁴ In Germany, the Federal Ministry of Education and Research established an 'innovation market' in 1998 (<http://innovationmarket.de/>). This platform is a repository of inventions available for sale or licensing, enterprises that wish to acquire inventions, and innovative enterprises that seek capital to implement innovations. See also the relevant sections in Astor, M. et al. 'Evaluierung des SIGNO-Förderprogramms des BMWi in seiner ganzen Breite und Tiefe.' Berlin, 2010. Available at <http://www.signo-deutschland.de/e5072/e6287/SIGNO-EvaluationAbschlussberichtApril2010.pdf>.

⁶⁵ For examples of private funds, see footnote 37, op. cit., pp. 102-103, and footnote 28, op. cit., pp. 40-43. For *France Brevets*, see <http://www.francebrevets.com/>.

⁶⁶ Ministère de l'économie, de l'industrie et de l'emploi, Les états généraux de l'industrie: Rapport du groupe de travail 'Innovation et entrepreneuriat', Paris, 2010, p. 29. http://www.industrie.gouv.fr/archive/sites-web/etats-generaux-industrie/fileadmin/documents/National/documents/Innovation_et_entrepreneuriat/EGI_-_innovation_et_entrepreneuriat.pdf.

⁶⁷ See footnote 9, op. cit., p. 11.

⁶⁸ http://www.hm-treasury.gov.uk/consult_patent_box.htm.

funding equity investments through the High Growth and Innovative SME Facility (GIF-1 and GIF-2), which aims to improve access to finance for the start-up and growth of SMEs, in particular those undertaking research, development and other innovative activities.

Under GIF-1, the European Investment Fund, on behalf of the European Commission, makes early-stage (seed and start-up) investments in specialised venture capital funds focused on specific sectors, technologies or research and technical development and funds linked to incubators, which in turn provide SMEs with capital⁶⁹. These SMEs often focus on commercialising IP.

Under cohesion policy in the current programming period, Member States and regions use financial engineering instruments to finance SMEs in different sectors, including research, development and innovation, by means of repayable forms of assistance such as equity investments, loans or guarantees. All these instruments are part of operations funded through multi-annual operational programmes and implemented at national or regional level under shared management. Today, nearly all Member States implement a multitude of equity and debt instruments, directly through specific funds or through holding funds, in accordance with governance structures specific to each Member State or region. In certain cases holding funds are implemented with the assistance of the EIF (see the Joint European Resources for Micro to Medium Enterprises, JEREMIE⁷⁰, but largely also through national public and private institutions or fund managers.

3.2. Options for short- to medium-term improvements

Particular attention must be paid to measures which have a short-term effect on improving the conditions for access to patents and thus create jobs and growth. These measures should focus on addressing the main deficiencies of the patent market, i.e. lack of transparency, lack of awareness, lengthy, costly transaction procedures and lack of financing to commercialise patents.

The table below gives an overview of the improvements (in the top row) with measures that would contribute to achieving them (in the column corresponding to each improvement).⁷¹

<p>Improving the transparency of the EU's patent market</p> <p>to address the lack of accessible information on unused patents</p>	<p>Increasing awareness</p> <p>to address the low awareness of patents as business opportunities</p>	<p>Lowering transaction costs</p> <p>to address the high costs of patent transactions</p>	<p>Improving access to funding</p> <p>to address the difficulty of accessing funding to commercialise existing patents</p>
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⁶⁹ http://www.eif.org/what_we_do/resources/CIP1/index.htm.

⁷⁰ http://www.eif.org/what_we_do/jeremie/index.htm.

⁷¹ The small letters in the cells of the table refer to the more detailed description of the measures in the rest of this section.

(a) Better identification of patents on offer	(b) Making patent exchange platforms more accessible	(d) Making patent data more accessible	(h) Incentivising early-stage investment in SMEs
	(c) Conducting pilot projects on valorising unused patents	(e) Continuously improving for patent valorisation services	
		(f) Reviewing current approaches to patent valuation	(i) Valorising patents that are the result of research and innovation projects funded by the EU
		(g) Fostering pro-competitive forms of patent aggregators	

Table 2 summarising the measures identified to address the main problems that have a negative impact on patent valorisation in Europe.

The actions considered could be implemented in the short- to medium term at EU or national level depending on political decisions.

3.2.1. Improving the transparency of the EU’s patent market

To address the fact that there is not enough accessible information on existing patents due to the lack of transparency in the European patent market, the following measure could be considered.

(a) Better identification of patents on offer

To increase the transparency of the patent market in Europe, more effective co-operation between national patent offices and the European Patent Office could be useful. For example, the extent to which more items of national patent documents could be made available through the EPO Register, or whether a faster, more extensive update of the data on the legal status of granted patents or on their ownership would be useful, could be assessed. This would help to identify more reliably who owns patents and in which countries a patent has been granted and maintained.

Further work would be useful to expand the content of the databases with information on the willingness of the current owners of patents to license or sell them. In this case, they may also indicate the application potential they see. As an incentive, a lower maintenance fee could be offered to organisations willing to disclose the licensing status of their patents.

3.2.2. Increasing awareness of patents as business opportunities

(b) Making patent exchange platforms more accessible

The emergence of web-based exchange platforms is a recent trend that can be expected to continue. Commission departments may look into how the Enterprise Europe Network could provide services to SMEs to allow them take full advantage of current patent exchanges. Doing an overview of patent exchanges available on the web would be a good start.

Existing technology transfer and technology brokers could raise the awareness of their clients, especially SMEs, of these platforms and provide expert services to help SMEs use them efficiently. IP exchange platform providers could assess how accessible existing platforms are to potential buyers, particularly SMEs, and make them more accessible if necessary.

(c) Conducting pilot projects on valorising unused patents

Various factors influence the propensity of SMEs to exploit unused patents. They also affect the availability of support for services that aim to reduce the cost of transactions. Pilot projects could examine this complex interplay. The core objective of such projects should be to conclude transactions for unused patent rights to create new business. Such projects would provide insight into the process of matching suppliers and customers of patent rights. The information thus obtained would feed into well-targeted public policy measures to encourage the exploitation of unused patents.

The scope of such pilot projects could be defined in various ways. Their nature would therefore differ widely. For example, projects seeking to learn the most about the processes involved in a patent transaction from a high number of subsidised transactions could result in supporting a mere change of ownership without necessarily encouraging commercial exploitation. Projects to create new business opportunities would involve the steps in section 3.2.4. It would therefore be quite long and might have a bigger budget than public authorities would typically grant for a pilot project. The results would also be uncertain because of the risks of a commercialisation project. Depending on the nature of the project, the same type of organisation would not benefit from it.

Since the traditional attitude of public policy to patent exploitation is on the side of the researcher-inventor, policy measures may neglect factors related to the prospective acquirer of an unused patent. Factors on the demand side of a patent market are however critical for the commercial potential of the prospective innovation. The specific case of social enterprises should be taken into account in that context, so that they too can benefit from a technology-based development despite their non-profit-seeking nature⁷².

Both Member States and Commission departments wishing to conduct such pilot projects would therefore have to test various project designs, depending on their capabilities and previous experience. Efforts to identify and activate entrepreneurial talent could prove useful in this regard to connect them better with researchers. A system of incentives for the exploitation of unused patents should also be explored, e.g. through studies and by evaluating the suitability of current policy measures. In cooperation with the national and regional managing authorities of the structural funds, the Commission departments could analyse any good practices developed when implementing the European Regional Development Fund.

An assessment and an evaluation of the effectiveness and efficiency of possible policy measures targeted at dormant patents would certainly also benefit from a better baseline indicator, with possible emphasis on specific sectors.

3.2.3. Lowering the costs of patent transactions

(d) Making the information in patent documents more accessible

⁷² *Social Business Initiative*, COM(2011) 682 final, 25.10.2011.

Even if all patent applications and information on granted patents were disclosed and accessible in public databases, it would still be difficult to understand the content of patent documents. This is because the language of the patent document is different from the reader's and a translation would therefore be required.

The EPO continues to prepare the translation tools to make patent documents more accessible across diverse languages by developing more language combinations^{73, 74}.

(e) Continuously improving patent valorisation services

Section 3.1.2 describes the work the EU has already done through public policy at all levels in terms of IP, in particular patent-related advisory and support services for SMEs. The provision of IP and other technical, commercial and managerial services to reduce the number of obstacles SMEs face in exploiting unused patents appears to be less developed. Even if such services are available, they are scarcely big enough to serve all potential beneficiaries. This is the area the recently consulted expert group on patent valorisation considered to be a **practical and immediately feasible field of action with promising impact**⁷⁵.

The Commission departments understand that such services can be most cost-effectively provided to SMEs at nationally, regionally or even locally. The local implementation of these IP services contributes to their success. This is because the absence of language barriers and local knowledge is commonly considered to make it easier to detect opportunities for patent valorisation and to deliver adequate services.

There may still be untapped potential for European structural funds to be used to this end. Experience and good practices identified in Member States can be disseminated through the activities of the *IPorta* project in view of their adoption in other parts of Europe.⁷⁶

The PatLib centres, IPR helpdesks and the Enterprise Europe Network can be expected to further improve their interconnection to reach more potential SMEs and refer them to the most suitable support service provider for their need with regard to patents and other IP. The Enterprise Europe Network could also be used to compile examples of good practices in Member States and their regions.

The exploitation of patent-based products overseas would be further assisted by other IPR helpdesks expected to be set up for the ASEAN and MercoSur regions under the CIP-EIP.

In addition to making patent data more accessible, it would also be worthwhile to provide guidelines for correctly interpreting the information included in patent databases together with patent-based indicators. This could help to reduce the 'IP/patent illiteracy' and to better bridge the gap between IP professionals, academia, business people and policy-makers.

⁷³ See the 2012 annual work programme for the Entrepreneurship and Innovation Programme of the Competitiveness and Innovation Framework Programme. [http://ec.europa.eu/cip/files/cip/docs/eip_2012_work_programme_-_consolidated_version_\(may_2012\).pdf](http://ec.europa.eu/cip/files/cip/docs/eip_2012_work_programme_-_consolidated_version_(may_2012).pdf).

⁷⁴ The WIPO is currently testing a translation tool for Korean patent documents in PatentScope. See page 10 of http://www.wipo.int/edocs/pctndocs/en/2012/pct_news_2012_13.pdf.

⁷⁵ See footnote 28.

⁷⁶ A separate project pursues the same goal with regard to enforcement services. See http://ec.europa.eu/enterprise/policies/industrial-competitiveness/intellectual-property-rights/expert-group-report/index_en.htm.

(f) Review current approaches to patent valuation

Given the essential function of valuation models in patent transactions and their diversity and complexity, some public support in favour of their use by SMEs might reduce their transaction costs.

The European IP offices that lead the IPorta project to further improve intellectual property services for SMEs could develop an SME-friendly description of the strengths and weaknesses of different valuation methods and present them on InnovAccess.

To increase confidence and facilitate IP transactions, Commission departments could review current valuation methods and assess the feasibility of and need for developing a European approach in this area. Simplified, yet recognised, valuation methods suited to SMEs could be assessed. It is often asked how likely it is that some form of ‘standardisation’ could be achieved considering worldwide experience in this area.

Building on the experience gained with other innovation support services tailored to SMEs, one might test to what extent a software tool to help them choose the most suitable valuation method would constitute progress. Such a measure could be extended by developing tools to automatically value patents, based on a selected model, notably in the case of a European approach.

(g) Fostering pro-competitive forms of patent aggregators

The role of intermediaries that accumulate patents, hereinafter called patent aggregators, could be further assessed, as under certain circumstances, they may have pro-competitive effects and/or may help with the appropriate valorisation of patents.

One kind of aggregator is a **patent pool**. This is a multi-party arrangement whereby two or more parties assemble a package of patents that is licensed to third parties in addition to contributors to the pool⁷⁷.

Another kind of aggregator is a **patent fund**. This is an entity that acquires patent titles through bilateral purchase or licensing contracts for the purpose of disposing of them to other parties. Under certain conditions they also monetise their holdings through litigation or the threat of litigation.

These are two distinct types of aggregators. The patentees conclude a legal agreement among each other to constitute a pool (collective agreement), while they license or sell their right independently of each other to a fund (bilateral contracts). A pool is not an investment vehicle between the patentees, while a fund is financed by a third party that is independent of the patentees. In general, the members of a pool exploit the portfolio themselves for the production of a good or service, which a typical patent fund does not.

There is a large variety of patent funds⁷⁸. Among them, there are funds that invest in companies that exploit the patents whose rights they have acquired from the fund. Such funds are ‘cross-overs’ to the issue of access to finance for the commercialisation of patents (see

⁷⁷ Patent pools are technology pools in the sense of paragraph 41 of Commission Notice 2004/C 101/02 *Guidelines on the application of Article 81 of the EC Treaty to technology transfer agreements*.

⁷⁸ See footnote 28, op. cit., pp. 40-42, and footnote 37, op. cit., 5.3.1.4.

point (i) in section 3.2.4 below). Some of these even take the form of a private-public partnership, where public and private capital constitute the fund's capital. The broader purpose of such funds makes them rather unlike typical patent funds⁷⁹.

Patent pools or patent funds may produce pro-competitive effects, in particular by reducing transaction costs and by setting a limit on cumulative royalties to avoid double marginalisation. The creation of a pool enables one-stop licensing of the technologies covered by the pool. This is particularly important in sectors where intellectual property rights are prevalent and licences need to be obtained from a significant number of licensors to operate on the market. If licensees receive on-going services concerning the application of the licensed technology, joint licensing and servicing can lead to further cost reductions.

A patent fund might potentially ensure that the sleeping patent and forgotten inventor receives appropriate compensation or it could serve as a middleman to connect inventors with capital and expertise. A mass aggregator could also serve as a litigation defence by providing just-in time patenting and create a weapon against troublesome infringement suits.

Aggregating patent portfolios could therefore lead to innovation that would otherwise not have come to light. It can also prevent the use of abusive strategies to constrain the freedom to operate of European companies, especially SMEs, notably in certain overseas markets. Their acquisition of patent rights is also beneficial for patentees that want to exploit their patents financially.

On the other hand, patent pools may restrict competition. Creating a technology pool means jointly selling the pooled technologies. In the case of pools composed solely or predominantly of substitute technologies, this amounts to a price-fixing cartel. Moreover, in addition to reducing competition between the parties, in particular when they support an industry standard or establish a de facto industry standard, patent pools may also reduce innovation by blocking alternative technologies. The existence of the standard and the related patent pool may make it more difficult for new, improved technologies to enter the market⁸⁰.

Patent funds as non-practising entities might have an incentive to engage in questionable activities by purchasing patents only to assert them against existing, successful products instead of licensing the patents to companies to produce new products and innovations. This activity might operate as a tax on current production, burdening existing products and potentially reducing future innovation. Depending on the portfolio of such a patent fund, it also makes it more prone to other anticompetitive behaviour.

Neither form of aggregator has so far fully exploited the potential of sleeping patents. How to promote the potential pro-competitive effects of patent aggregators on patent valorisation to fully exploit the potential of sleeping patents by making sure through monitoring and

⁷⁹ The scope of what is called a patent fund varies widely, from a focus on patent application cost and the aggregation and holding of patent rights to financing various stages from patent filing to start-ups or market introduction. Depending on their focus, various categories of patent funds can be distinguished; they can also be considered a specific class of intermediaries. The expression 'patent fund' can therefore denote differently designed funds that give financial assistance to activities related to patents, be it filing or various exploitation activities. The expression appears therefore to be used in reality in a broader sense than the one introduced here.

⁸⁰ See paragraph 213 of Commission Notice 2004/C 101/02 *Guidelines on the application of Article 81 of the EC Treaty to technology transfer agreements*.

regulatory safeguards that the negative effects and risks associated with this activity could be avoided merits consideration.

Public support for patent aggregators could affect competition, even if patent aggregators are non-profit entities. Such support must therefore be appropriate in the sense that no less distortive policy measure could have delivered the desired results. The transactions of such an appropriately supported instrument, in particular the acquisition and subsequent transfer of patents, would be designed to ensure the effectiveness of public spending and prevent market distortions, such as transferring patents below market rates, crowding out private funding, creating ineffective market structures or preserving inefficient firms. Hence, such transactions would be with a commercial logic, bearing in mind the instrument's overall objective to effectively transfer patents for productive use.

Commission departments could therefore look into whether a patent valorisation instrument can be devised to stimulate pro-competitive arrangements to transfer these patents for productive use. With the help of experts, they would develop terms of reference with a view to launching, in case of positive conclusions by the experts, a call for proposals or expression of interest. One or more pilot projects could then possibly be launched under the equity facility for research and innovation driven enterprises.

3.2.4. Improving access to funding to commercialise patents

(h) Incentivising early-stage investment in SMEs

Under Horizon 2020, the Commission has proposed an equity facility for research and innovation (R&I) that is focused on funds which invest in seed and early-stage SMEs and small midcaps. It will succeed the current GIF-1. Improving the market in intellectual property is one of its specific objectives. A start-up window within the proposed facility is under consideration, supporting equity investments in intellectual property assets as well as platforms for the exchange and trading of intellectual property rights⁸¹.

(i) Valorising patents that are the result of research and innovation projects funded by the EU

Monitoring of the results of research funded by the EU could be improved so that citizens can see the impact of EU resources on the economy. Monitoring does not need to stop once an application is made for a patent or a patent is granted. It should also cover the commercial exploitation of the results of projects funded by the EU, including patents.

The evaluation of proposals and projects funded by the EU, especially when they provide support for activities closely related to the market and innovation, could include the assessment of the plan for the commercial exploitation of expected results.

The 2012 work programme of the FP7⁸² strengthens many aspects related to innovation while promoting actions for a smooth transition towards Horizon 2020⁸³. In particular, stronger

⁸¹ Proposal for a Regulation of the European Parliament and of the Council establishing Horizon 2020 — The Framework Programme for Research and Innovation (2014-2020), COM(2011) 809 final, 30.11.2011. Annex I, Part II, Section 2. [http://ec.europa.eu/research/horizon2020/pdf/proposals/com\(2011\)_809_final.pdf](http://ec.europa.eu/research/horizon2020/pdf/proposals/com(2011)_809_final.pdf).

⁸² 'FP7' is short for the EU funding programme for research, technological development and demonstration activities for the period 2007–13, Decision No 1982/2006/EC.

emphasis is placed on the market uptake of innovation. Several themes under the Cooperation Programme place increasing emphasis on activities such as prototyping, testing and demonstrating. Some themes pay particular attention to the translation of FP7 project results into innovative applications and some have included support measures for promoting technology transfer and intellectual property management. Such measures will be reinforced under the 2013 work programme. This is expected to lead to better commercialisation of research results, including the valorisation of patents⁸⁴.

The Commission services would also analyse the results obtained from the recently created European network of technology transfer offices. Known as the TTO Circle it brings together major public research organisations in Europe. It is exploring new avenues for the exploitation of the IPR portfolios of the main European public research organisations by creating strong links between their technology transfer offices. It is expected that this pilot project will provide inspiration for more wide-ranging initiatives.

3.3. Possible actions in the longer term

Commission departments expect that the entry into force of the unitary patent package, comprising the unitary patent and unified jurisdiction, will significantly reduce the fragmentation of the European patent market. Acting on (some of) the options outlined in section 3.2 by the European Union and by its Member States would also help improve the patent market in the EU. Other policy options might be discussed but their effect on better exploiting unused patents for growth and jobs must first be gauged.

1) Operational implementation of projects to valorise unused patents. If the results of pilot projects that Commission departments and Member States could conduct to put dormant patents to productive use are satisfactory (see 3.2.2.c above), they could lead to the rollout of an operational measure in support of commercially exploiting unused patents. The system of incentives identified could then be mainstreamed and implemented in the EU in line with the subsidiarity principle.

2) European patent instrument. Such an instrument (see the last paragraph of 3.2.3.g) could bring benefits, e.g. reducing the cost of transactions by aggregating sleeping and complementary patents needed for a technological solution and assisting in their commercialisation. It could also involve risks though, e.g. by incentivising abusive patent strategies or introducing disincentives to exploiting unused patents.

Such an option was considered by the Commission's expert group on patent valorisation⁸⁵. The group's 2012 recommendations in this regard left open a number of concepts other than such an instrument taking the form of a licensing fund that would focus solely on the acquisition and commercialisation of titles to patents. However, should the exploration of a policy instrument to stimulate the aggregation of sleeping patents by private enterprise result in the identification of a policy instrument that would tilt the balance in favour of the potential benefits of patent aggregators while avoiding their pitfalls, further steps towards the

⁸³ Horizon 2020 is the programme the Commission has proposed to fund research and innovation in the period 2014–20. See footnote 82.

⁸⁴ This must not be confused with the provision of the rules governing the dissemination of results generated under the FP7 or Horizon 2020, regarding the possibility that the Commission or another funding body take ownership of results and protect them adequately under the conditions laid down by these rules.

⁸⁵ See footnote 28.

development of a suitable instrument might be decided upon. Such an instrument could rely on the means of the proposed equity financial instrument.

3) Patent trading exchange. Such a system could be a step forward towards an efficient market for patents (see 3.2.3.b above). Patents could be traded with more confidence and reduced transaction costs across Member States and other countries, if there were a critical mass of patents of fairly homogenous quality that can be valued in a transparent, replicable way. Such a patent market would be a basis for a financial market based on patent assets⁸⁶.

Commission departments could observe and analyse experiences related to trading patents and other IPR worldwide, and monitor global developments related to financial IPR markets. If conditions for a patent market improve sufficiently, the question of a patent exchange at European level might be revisited⁸⁷.

4. CONCLUDING REMARK

This Staff Working Document presents evidence of potential for economic growth to be tapped by better exploiting patents. It outlines the reasons behind obstacles to better exploitation and presents several options to address those obstacles.

It points out that a political choice among the options implies trade-offs that impinge on the development of the innovation system in the single market to benefit from the Europe 2020 growth strategy. Such a political choice would not be pre-empted by this document in any way and it would be laid out in an adequate manner in due time.

The implementation of any option would comply with the state aid and competition rules and be subject to the dispositions in matters of impact assessment.

⁸⁶ For a more detailed analysis of the conditions for an effective internal patent market, see footnote 37.

⁸⁷ See also footnote 28, op. cit. p. 51.