UNIVERSIDAD CARLOS III DE MADRID

WORKING PAPERS

Working Paper
Business Economic Series
WP. 17-04 March, 2018
ISSN 1989-8843

Instituto para el Desarrollo Empresarial.
Universidad Carlos III de Madrid
C/ Madrid, 126
28903 Getafe Madrid (Spain)
FAX (34-91)6249607

Grant Agreement No.731940

Research and Innovation Action

Call: H2020-ICT-35-2016

CIFRA: Challenging the ICT Patent Framework for Responsible Innovation

D4.4: Policy Paper on potential new framings, identifying needs for changing the current IPR regime relevant for ICT industries

Revision 23.03.2018

Work Package	WP4
Task	4.2
Dissemination Level	PU - Public
Deliverable Lead	Telefónica Investigación y Desarrollo (TID)
Authors	Eduardo Fullea (Telefónica) Antonio López-Carrasco (Telefónica) Knut Blind (Fraunhofer) Esmeralda Florez Ramos (Fraunhofer) Andrea Fosfuri (Bocconi) Ester Martínez Ros (UC3M) Silvana Alvarez (UC3M)

Disclaimer

The information, documentation and figures available in this deliverable, is written by the CIFRA project consortium under EC grant agreement Grant Agreement No.731940 and does not necessarily reflect the views of the European Commission. The European Commission is not liable for any use that may be made of the information contained herein.

The conclusions and recommendations of the CIFRA project included in this paper may not represent the individual or collective views of the CIFRA consortium partners, being the Fraunhofer-Gesellschaft, Telefónica Investigación y Desarrollo SA, Università Commerciale Luigi Bocconi or Universidad Carlos III de Madrid, nor from any of the experts from those partners involved in the project.

Instead, the conclusions and recommendations in this paper are the result of the educated interpretation by the CIFRA consortium partners' experts of the results of the literature review, the interviews and subsequent survey conducted as part of the CIFRA project to a broad range of experts across the whole ICT value chain.

This document as well as any propositions included herein are without prejudice to the recognized state of the law and binding international and intergovernmental treaties and norms.

INDEX

This document is the outcome of the work of the CIFRA project (Challenging the ICT Patent Framework for Responsible Innovation), conducted under EU H2020 programme. Under said project the currently existing issues in the ICT patent ecosystem have been studied with a methodology that comprises a review of specialized literature, an empirical analysis of patent databases and a series of interviews to leading experts followed by a broader survey. More detail information on the evidences and basis for the recommendation in this paper can be found in the set of documentation produced by the project, available at: http://www.cifra-h2020.eu/results/

PREFACE – ABOUT SISTER PROJECTS

Social Sciences and Humanities (SSH) do not usually take a preeminent role in technical research projects. Sister projects arise as part of Horizon 2020 Framework Programme as a way to address this historical constraint and to allow SSH make a meaningful contribution to the shaping of the research agenda. To this regard, Sister projects are created to go beside the mainstream research in order to challenge existing biases in the research agendas and trying out more daring alternatives through the widening of imaginaries and by taking into account the SSH perspective.

CIFRA, as a Sister project, does not take the current status quo in the ICT patent ecosystem for granted, but on the contrary, explores the impact that potential new framings could have in ICT innovation and the value they could provide to the society.

1 INTRODUCTION

Patents have a crucial role in technology markets, and can be even considered the main currency for technology, that is, the tool used for technology appropriation and exchange between different actors in the value chain. From that viewpoint, and taking into account the huge size of the technology market in ICT (Information and Communications Technology), it can be understood that the patent ecosystem is subject to frictions and tensions among entities with different business models, and occupying different places in the ICT ecosystem. Thus, some of them may be interested in keeping the status-quo whilst others may tend to favour changes in one or the other direction.

This paper results from the CIFRA project (Challenging the ICT Patent Framework for Responsible Innovation), conducted under EU H2020 programme. The CIFRA project has analysed the current issues in the ICT patent framework as well as potential solutions, from a neutral standpoint, and following an academic, empirical, consultative, and unbiased approach. Therefore, the content of this paper is not meant to reflect the position of the CIFRA consortium as a whole, nor the position of any of its member companies and member experts.

2 METHODOLOGY

The project has followed a three-step methodology. On a first instance, the existing scientific literature on this field was reviewed.[1] Taking as input the issues and potential solutions identified in the literature for the ICT patent[2] ecosystem, a set of over 30 interviews were conducted with experts from the whole range of concerned stakeholders.[3]

Taking both the literature review and the interviews as a basis, a survey was elaborated, and distributed to a broader set of experts belonging to the same set of stakeholders. 839 responses were received between June and August 2017. 167 respondents completed the questionnaire from the beginning to the last set of questions, despite its length and complexity. These 167 responses cover organizations with different types of business models and positions in the ICT value chain. Thus, our analysis below covers a large set of different stakeholders in the industry.[4]

The survey allows to discriminate the responses depending on whether the respondents own patents or not, or depending on their business model, what allows to study the influence of these characteristics on the different topics consulted.

3 INSIGHTS

A first insight from the project is the verification that IP policies is highly sensitive topic. CIFRA team faced strong resistance from some actors to publicly express their opinions on the raised questions. This can have multiple interpretations, one of them being that companies tend to make very meditated declarations on this topics, to avoid that unfiltered declarations by their employees do not exactly match the companies' official positions and/or are misinterpreted and have a negative impact for the firm, for instance in ongoing litigation or licensing negotiations.

In general, there are significantly different views about the problems of the ICT patent ecosystems among those entities owning patents and those not using them actively, which is a quite expected finding. However, there is very little difference in the perception about

[1] See CIFRA project documents D2.1 "State of Art, Literature Review" and D2.2 "Empirical Evidence on ICT Patents", available at http://www.cifra-h2020.eu/results/

[2] We have a very broad understanding of ICT patents following OECD (2017) including both traditional telecommunication technologies, but also Internet related technologies and the various applications, incl. electronic payment systems, imaging and sound technologies, but also gaming. Furthermore, we consider also patents on computer-implemented inventions (CII). http://www.oecd-ilibrary.org/science-and-technology/ict-a-new-taxonomy-based-on-the-international-patent-classification_ab16c396-en?crawler=true

[3] European Commission, research organisations, patent offices, ICT patent owning companies, ICT patent implementing companies, telecom operators, patent pools, academic experts, Open Source Software (OSS) community, SME organisations, patent attorneys, IP support services, a consumer organization and the OECD.

[4] A detailed description of the results of the interviews and survey can be found in CIFRA project document D3.2 "Report on Assessment of Impact of proposed new Framings", available at http://www.cifra-h2020.eu/results/

the potential solutions for both sets of organizations, which is more surprising and worth mentioning.

Despite the acceptance and support of the proposed measures are in general moderate, there are some proposals and tools which seem to have a better endorsement or alternatively to still be less known by the industry, which denotes that their potentials may have not yet been fully exploited. Thus, both types of measures deserve especial attention.

Effectiveness of ICT Patents

The assessment of the interviewees related to the general effectiveness and efficiency of the patent system for ICT is highly dependent on the stakeholder group they belong to. Naturally, there is a much better perception of the overall value of patents by patent-owning entities, especially with the aim of securing their freedom-to-operate, as bargaining chips in negotiations and as a way to obtain a return on R&D investment. Patents are also positively considered in terms of enhancing the reputation of the patenting companies.

There seems to be not much emphasis among patent holders on patents as a tool to block competitors, which clashes with the perception from entities not owning patents, which see this aspect as the only one for which patents are effective.

The role of ICT patents to generate licensing revenues is perceived in general as rather limited, probably linked to challenges that the market for licensing faces.

Assessment of the Challenges of ICT patent ecosystem

Almost all challenges that were raised, in the areas of patent application, prosecution, enforcement and implementation, were considered significantly relevant by the different experts. However, patent owners appeared to be less concerned, whilst Small and Medium Enterprises (SMEs) stand out as the type of entities with a mostly critical viewpoint about these challenges.

Among the different challenges of the ICT patent ecosystem confronted with the experts, the bigger concerns in the area of patent prosecution were related to the too broad scope of patents and their limited quality, phenomena that were specially criticized by the companies not owning patents. Furthermore, the criteria for patents on Computer-Implemented inventions (CII) are not be specified enough and heterogeneous between patent offices. Finally, the patent protection period is considered to be too long.

In relation to patent enforcement, the most relevant challenge is – despite the still low number of court cases in Europe in comparison to the United States – clearly the legal uncertainty caused by Patent Assertion Entities (PAEs), which is highlighted by both patent owners and non-owners. The high expected legal cost for resolution of conflicts regarding ICT patents was the concern following the list. Another sensitive aspect is the difficulties

caused by ICT patents for the use of Open Source Software, which, unsurprisingly, is stressed by the independent software developers.

Assessment of levers to alleviate the problems affecting ICT patent ecosystem

The results of the consultation revealed a common interest shared among all different actors in high-quality standards for patents, in terms of the required novelty and inventing step. This may denote the significant overhead caused by licensing negotiations and eventually by litigation for both licensors and prospective licensees, which could be reduced by relying on patents with proven quality. This ratifies the appropriateness of the efforts by the European Patent Office to conduct rigorous and high-quality patent examinations. Special emphasis is placed by some actors on raising the requirements to obtain patents on computer-implemented inventions (CII).

With Patent Assertion Entities (PAE) perceived as a rising problem in Europe like already existing in the United States by all different types of stakeholders, the search for mitigation measures for the issues caused by these entities faces the problem of coming to an appropriate definition of PAEs in the first place. Therefore, the widely accepted proposal to rely on regulations to restrict their activities should be focused not on a specific type of company, but instead to limit their most harmful practices. Consequently, the majority of the experts promote restricting PAEs' options to ask for injunctive reliefs as well as to shop around in different courts to achieve injunctions. However, concerns were raised that the latter might end up being possible in Europe once the Unified Patent Court is put in place. Finally, it is proposed to let PAEs take the burden of the court costs, and avoid their practice of creating ad-hoc companies for each lawsuit, which in case of losing it, declare bankruptcy to avoid paying the court costs.

It is worth noticing that despite the high level of support for patent pools, other types of licensing programmes and defensive patent aggregators, public policies supporting them are not endorsed, especially by entities without patents, alleging that public intervention could create a bias in the markets.

In order to facilitate the licensing of patents, there is some support, especially from the side of the implementers, the non-patenting respondents and the SMEs, to promote the publication of bilateral licensing terms. This would improve transparency for the licensing market and provide more ground for creating a corpus of cases, thus lowering overhead. The specific profile of respondents raising this point may be related to a lower negotiation power by small firms and by companies not able to cross-license, which cause that for a specific patented technology the licensing terms may vary depending on the type of prospective licensee. Others, specifically patent owners, are less convinced about the effectiveness of making details of licensing agreements public.

The promotion of specialized courts, which deal only with patent disputes including both questions of patent validity and infringement, is widely supported by the experts, but more heavily by patent owners.

In addition, there is a great support to having infringement and validity issues regarding ICT patents tried together before the same court. Therefore the bifurcated system existing in some jurisdictions such as Germany, where it is possible to decide on infringement and validity in different courts, is perceived as creating higher costs and risks, especially for SMEs. Taking into account that a significant share of patents may subsequently be declared invalid by courts, then the risks created and the resources needed for decisions on infringement could be saved within one court case. However, according to the Agreement on a Unified Patent Court, this bifurcation will also be possible on a European level in the future. In case bifurcation is not avoided, then at least a very effective and efficient interface between the two courts should be established.

Patent pledges, i.e. voluntary commitments by patent holders to give up some of the rights associated with the patent (e.g. grant permission for commercial use without any direct compensation, no injunctions, FRAND -fair, reasonable, and non-discriminatory- licensing commitments, etc.), are not well known to the majority of the interviewed experts. The informed experts confirm the effectiveness and efficiency of the instrument, and thus it is advisable to investigate it more in-depth and – in case of support of our findings – to promote initiatives to raise their public awareness, especially in combination with the promotion of specific technologies and eventually with Open Source.

The license of right (L.O.R.), i.e. the declaration of willingness to grant a license for commercial use to anyone, seems to be also quite unknown to many experts. Nevertheless, it raises serious concerns among the majority of the interviewees about its usefulness, specially taking into account the challenges related to FRAND, as a specific form of license of right.

Overall, mediation and arbitration are perceived by the experts as effective and efficient approaches to conflict resolution, which requires sufficient expertise by mediators and arbitrators, but also resources and trust. However, the majority has no or only a little experience with these approaches, which suggests that further measures to increase the awareness about them could be helpful.

Another aspect where educational initiatives would be positive, especially for SMEs, is about the interactions between open source software (OSS) and patents, where a limited expertise has been spotted, which may lead to some concerns about the usage of OSS due to the unclear implications.

The responses by SMEs, which reveal much more often that they are not able to assess both the relevance of the challenges and the effectiveness of the proposed measures, demonstrate they are probably the weakest players in the patent ecosystem. Along these lines, further support for SMEs in patent application and implementation, but also in court disputes, in addition to existing programmes, is suggested by many experts. However, there are also concerns about the need and the effectiveness of such SME-specific measures. What seems clear is the appropriateness to raise their awareness and understanding of the whole ICT patent ecosystem starting from R&D projects, but also including the opportunities and challenges of OSS.

Regarding patent law, a reluctance to any change has been made evident. For instance, there is scepticism against the effectiveness of changing application, renewal and even court fees. Reducing the protection period and the time to grant ICT patents, for instance by means of early certainty programs by the patent offices, are slightly more convincing to the experts. In fact, the requirement to grant ICT patents within five years is generally supported by the patent-owning respondents. However, the protection period is regulated by TRIPS[5] and therefore difficult to change.

Assessment of Responsible Research and Innovation dimensions regarding ICT patents

According to the European Commission, "Responsible research and innovation (RRI) is an approach that anticipates and assesses potential implications and societal expectations with regard to research and innovation, with the aim to foster the design of inclusive and sustainable research and innovation." In practice, RRI is implemented as a package that includes five dimensions: public engagement, open access, gender, ethics, and science education.

Very limited awareness of the interviewed experts of the responsible research and innovation dimensions has been identified, together with a low perception of their relevance in comparison with other aspects having a more direct economic impact.

Open access to scientific results is deemed to be the RRI dimension with a more direct impact on the ICT patent ecosystem. Indeed, it is expected that the unrestricted access to research results will both reduce the likelihood of patents to be granted and increase the chances of invalidity cases. Additionally, the open and easy access to scientific contents might push innovation, according to some experts. Moreover, companies implementing ICT patents mentioned that the results of publicly funded research should be available for society.

The majority of experts perceive little ethical issues related to ICT patents, in comparison to the intensive discussion about patents in the biotech sector, partly because they relate ICT in general, not with life-threatening technologies. Telecom operators in particular mention that the telecommunication infrastructure is in the public interest, which has an ethical dimension. On this basis, they defend the limitation of injunctions in patent infringement cases. Therefore, patents should be not misused neither to restrict the access nor to block the functioning, including the security, of networks

The other dimensions of responsible research and innovation, i.e. engaging society, gender aspects, and promoting (in)formal science education, are not very interlaced with the ICT patent ecosystem according to the responses from the experts. Only, the strong gender bias in ICT sector is observed, but perceived as difficult to change.

[5] "Trade-Related Aspects of Intellectual Property Rights" an international legal agreement between all the member nations of the World Trade Organization (WTO).

4 LEARNING FROM THE OPEN SOURCE SOFTWARE PARADIGM

Over the last decades the open source software movement has proven to be a suitable model for plenty of organizations and individuals, who have found incentives to contribute to open source projects and/or to use products based on them. These incentives are economic, utilitarian and/or reputational, depending on the case. For example, some companies have proven to be able to build sustainable and profitable business models around open source software, e.g. by selling professional services related to free OSS products.

Patent pledges, that is, a formal declaration on the intention to give up some of the rights conferred by certain patents, can be considered the analogy to OSS in the realm of patents. There are also some success stories around patent pledges, specially the patent pledges in the Intellectual Property policies that govern the contribution to technological standards.

Patent pledges facilitate the access to patented technologies to different extents depending on their characteristics. These facilities may range from a willingness to grant licenses instead of retaining the exclusivity, to a completely free access to the patent protected technology. In that regard, patent pledges have a positive effect in terms of societal welfare through a by a wider diffusion of knowledge and technology.

However there is still some room for improvement, in terms of gaining a broader adoption of patent pledges, especially in realms different form standardization. One of the action points to increase its adoption is the normalization of a set of licenses that, in a few years, could become as well-known, proven and trustable as the most relevant OSS licenses. Nevertheless, there are intrinsic barriers, that diminish the value of patent pledges in comparison with OSS. Whereas open source software is an asset that can be consumed by the community with relatively low effort, patents remain more abstract. Patents can be seen as recipes, and the beneficiary of a patent pledge still need to invest the effort on implementing the technology following that recipe. Thus there is still a significant barrier for the consumption of the technology by the community

5 CONCLUSIONS AND RECOMMENDATIONS

Despite the opposed standpoints of different stakeholders in the value chain, and the fact that no recommendation was considered a panacea by the respondents to our consultations, a few potential levers stand out among the rest. Regulators, legislators, patent offices and any other entity with influence on any of these aspects are invited to take this paper into consideration.

One important challenge to address is assuring the patent quality. Whereas raising the bar was asked for by the vast majority of the stakeholders, sources from the EPO points to the requirement of stability in the examination process in order not to raise the uncertainty in the patent system. The general recommendation for patent offices is to strive to reach the

level of excellence in the examinations processes that top patent offices such as the EPO already present.

One of the aspect that deserves more attention and should be definitely tackled by regulators and legislators is the limitation of those practices usually conducted by PAEs that are considered to have a predominantly negative impact on the ecosystem. Firstly, injunctions should be limited whenever there are alternatives, and should be reserved just for those cases in which it does not cause a worse effect than the one it tries to avoid, for instance in terms of public interest, and as a last resort against clearly unwilling prospect licensees. Secondly forum shopping should be limited, for instance by considering imposing even stricter rules in the selection of a court by plaintiffs in patent cases or seeking a wider convergence among the criteria and processes in different courts. Specifically in the process to establish the Unitary Patent Court system, it should be paramount to avoid internal competition among local divisions. Another relevant aspect related to PAEs is securing their ability to take the court costs whenever they are legally bound to it. This can be done by requiring beforehand the appropriate guarantees to cover the maximum amount that could be owed at the end of the process, and making parent companies liable in case a subsidiary goes bankrupt.

Incentives to promote a more transparent licensing market, such as publications of bilateral licensing terms, whenever this does not affect competition, should be considered by regulators and legislators, especially as a tool to address a potentially discriminatory behaviour towards small licensees, and thus levelling the playing field.

With regards to ICT patent enforcement, recommendations gathering strong support by the experts consulted in the frame of the CIFRA project are the promotion of specialized courts and the avoidance of bifurcated patent litigation systems. Legislators are encouraged to take this recommendations into account, and favour that infringement and validity cases are dealt with together by the same court, specially in those cases where both options are supported by legislation, and there is some room to select one or the other mode. This will be the case of the Unitary Patent Court, which will leave some room for decision about the potential bifurcation on a case-by-case basis. The reform of those systems that nowadays follow a strict bifurcated system, is acknowledge to be tougher in the short-mid term, but it is something that should not be ruled out.

A need has been identified to promote education on different aspects of the ICT patent framework, especially aimed at actors such as SMEs. This need has been derived from the relatively large number of questions that respondents from SMEs did not respond, which has been interpreted as they not having enough knowledge about, or exposure to, the issues at stake to assess the relevance of the challenges and the effectiveness of the proposed measures. These awareness and educational actions are advised to address also less known tools and practices, which could be useful to overcome certain issues of the ecosystem, for instance on patent pledges, on the interplay between OSS and patents, and on alternative dispute resolution mechanisms. Different entities may promote or get actively involved in these educational actions. On one hand some incentives may be put in place by states or supranational bodies such as the EU, to promote these initiatives. Also,

organizations such as patent offices, standard development organizations, open source communities and even law firms may conduct awareness and educational actions which are aligned with their interests.