Renato Nazzini

After outlining the purposes underlying the organisation of the Innovation Economics Conference Renato Nazzini introduced the topics of the discussion: standard-essential patents (SEP); their role in new communication technologies; the Internet of things; fair, reasonable and non-discriminatory (FRAND) and reasonable and non-discriminatory (RAND) terms; licensing; label discrimination. In relation to the participation of competition authorities in the work of standard-setting organisations, Mr Nazzini wished for guidance rather than direct intervention.

“IN RELATION TO THE PARTICIPATION OF COMPETITION AUTHORITIES IN THE WORK OF STANDARD-SETTING ORGANISATIONS, GUIDANCE SHOULD BE BETTER THAN DIRECT INTERVENTION.”
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Monica Magnusson

Monica Magnusson started by giving the audience some contextual information, presenting 5G as the new radio developed in 3GPP. While telegraphs and telephones have enabled us to connect places and mobile telephones to connect persons, the Internet of things has enabled us to connect things creating value. Those connections can be wireless or not. In any event, the things to connect need to speak the same language, that is, to be interoperable. This raises the need for standardization. Ms. Magnusson defined and specified the differences between standard setting (e.g. the size of the paper sheet and mechanical and safety requirements for electrical plugs) and standard
development, that is, the selection of the actual technology used in mobile communications. Ms. Magnusson then explained the role of patents, which enable the joint development of technology.

To create a technology for the system that can live up to the specified performance requirements, numerous technological problems need to be solved. To decide which technological solution will be used to build the standard, there is a consensus-based process to ensure that the solution is optimal considering the entire system. Ms. Magnusson stressed that technology is owned by numerous contributors to its development. All will have applied for patents before revealing their research. If those patents are granted, they will be licensed. She also emphasised that 5G new radio was developed with the express intention to develop the Internet of things. Finally, Ms. Magnusson noted that the FRAND requirement is a contract that the patent holder has signed with the standard bodies in question. The intellectual property policy within the contract gives the meaning of FRAND. She presented some of the standard bodies for particular industries, concluding that there is no one-size fits all FRAND in the Internet of things.

Kirti Gupta

Kirti Gupta elaborated on the need for different policies for different technologies. If 2G to 4G technologies are regarded as creating the foundations for connecting people, 5G is creating the foundations for connecting everything everywhere. It is not just about the traditional challenges in the science to wireless communications to enhance mobile broadband; 5G add another layer of complexity, connecting everything everywhere. It is not just about the traditional challenges in the science to wireless communications to enhance mobile broadband; 5G add another layer of complexity. The development of the critical infrastructure requires services such as strong security, ultra-high reliability, ultra-low latency and extreme user mobility. Ultra-low energy, ultra-high density, deep coverage and ultra-low complexity also allow for the massification of the Internet of things within a diverse set of industries (smart homes, smart cities, wearables, etc.).

Ms. Gupta stressed that the science and engineering that makes wireless communications possible is encapsulated in 5G technology standards, that is, the technical documents that define the design of how 5G works. She then focused on the fundamentals in valuing technology for investment—risk/reward profile—noting that cellular connectivity technology is created through a 10+ year process. The first stage of the development comprises early R&D, prototyping and patenting for the most efficient communications, encoding, encryption, etc. The second stage is that of industry-wide global collaboration and competition with iterative R&D; the optimal technology is selected. Finally, one new technology is created, it is made available to all manufacturers to implement and develop projects. The risk in investing in technology depends on the advancement in developing it.

Ms. Gupta also emphasised the innovator/implementer divide in creating standards. According to her, because of commercial interests interfering in technology development, the value created by cellular technologies is not found in the revenues from licensing but in the price that consumers are willing to pay for it. She suggested to let the market decide, noting that bilateral negotiations are key.
Douglas Lahnborg

Douglas Lahnborg, who noted that his views did not necessarily represent those of Orrick's, started his intervention with a few key points. He first highlighted the difference between SEPs and non-SEPs. The market power of SEPs arises directly from a voluntarily FRAND commitment; failure to comply with the voluntarily FRAND commitment creates market distortion to the potential detriment of consumers. Also, although FRAND violations can be remedied by contract principles, contract law is not the exclusive remedy. FRAND is a voluntary waiver of certain patent rights in return for the benefit of being included in the standard. It is a tool to balance the interests of patent holders and licensees. To determine the scope of the waiver, the irrevocable, enforceable contractual promise that has been made, or the intellectual property policy, must be considered.

Then, Mr Lahnborg stressed that standardized technologies will become a more common feature of everyday life. 5G promises to bring the benefit of connectivity to a wide range of products. The importance of FRAND compliance will increase.

Mr Lahnborg expressed concerns over the fact that history suggests that some SEP-holders licensing 5G for the Internet of Things are likely to prioritize seeking above FRAND royalties over the widespread adoption of the standard, for example, because they face disruptive competitors, or they do not produce IoT products. Also, according to him, SEP-holders should not be permitted to collectively decide at what level of the supply chain they license. Finally, Mr Lahnborg stated that SEP-holders ought to do more to increase transparency and predictability in licensing.

Kadambhari Prasad

Kadambhari Prasad proceeded with the economic perspective. She first focused on the meaning of “fair and reasonable” and “non-discriminatory” in economic terms for the licensing of 2G / 3G / 4G patents. She also elaborated on the royalty structure (lump sums and predetermined periodic payments) and valuation methods.

Dr Prasad then highlighted additional challenges raised by the 5G technology and the Internet of things related to the wide range of specifications and different use of the patents. She argued that in 5G there is likely to be a wide range of products and verticals where the value of the same technology may be different, which has an impact on how the magnitude of the royalty due irrespective of the level at which the royalty is charged and the structure of the royalty payment.

Dr Prasad explained that there are two opposing views on the meaning of fair and reasonable in relation to 5G products: one that argues that the value of the technology must be the same irrespective of the product that uses it, and the other argues that the incremental value of the same technology across products can be different. She argued that the latter is the economically sound view. She also specified that the optimal valuation methods for 5G patents and the Internet of things might be based more on the present value-added rather than based on comparable licences, a top-down approach, statements from intellectual property holders on aggregate royalties which were the norm for 2G/3G/4G. The present value-added approach, which according to Dr Prasad is the most relevant, consists of calculating the value of the technology using the FRAND principles and allocating it to the various stakeholders. The incremental value can be calculated on the basis of the increase in the consumers’ willingness to pay, estimated directly using an estimation of the demand or indirectly using and estimation of an increase in price. This value is then apportioned among stakeholders (IP holders, implementers and consumers) using industry allocations and by reference to the costs and risks borne by each stakeholder. The share of the incremental value attributed to IP holders represents the aggregate royalty, which is apportioned across all individual IP holders depending on the strength of IP portfolios and contributions.
David Matthew

Finally, David Matthew focused on 5G regarded not only as of the new mobile broadband for consumers but also as a platform that will potentially transform entire areas of the economy using wireless connectivity. He mentioned the technical characteristics of 5G. Mr Matthew then specified that different business models (from public network to to private network) will be required to deliver the proper solutions, which differ depending on the business operations that are concerned. Mr Matthew noted that different requirements (performance requirements, deployment requirements, data and network security requirements) may open up opportunities for new business models and technologies.

Furthermore, he explained that setting IP licence fees for different users can be complicated especially where there is a large number of different users and significant varieties between them.

Questions & Answers

Answering to a question on competition concerns arising from the fact that IP holders may become gatekeepers, Ms Gupta reminded that this is to avoid competition issues that standard-setting organisations have adopted FRAND terms in the first place, to make sure that there is a balance between the accessibility to the technology and the opportunity for a return on investment.

Douglas Lahnborg then replied to a participant on the issue of whether contract law, antitrust law or fraud law is the right tool. He stressed that regulation is not possible. Standard-setting organisations have a role to play by enhancing transparency and predictability. According to him, competition law is not the most adequate tool.

Another question related to the impact of 5G on markets and especially market entries, Ms Magnusson noted that there is some room for different business models and that new operators will have a role to play. Ms Prasad added that history reveals that standardization has enabled diversification and fostered entries.