



Unit 2702-04, 27th Floor
9 Queen's Road, Central
Hong Kong
Telephone: (852) 3144 8300
Facsimile: (852) 2537 1188

www.qualcomm.com

1st June 2016

Intellectual Property Arrangements

Productivity Commission
GPO Box 1428
Canberra City ACT 2601
AUSTRALIA

Qualcomm Incorporated, on behalf of itself and its subsidiaries (collectively, "Qualcomm") appreciates the opportunity to provide input to the Productivity Commission's April 2016 Draft Report April 2016 on Intellectual Property Arrangements ("the Report"). Qualcomm is a world leader in 3G, 4G and next-generation wireless technologies. Our ideas and inventions have driven the evolution of wireless communications, connecting people more closely to information, entertainment and each other. Qualcomm Technologies, Inc., a wholly-owned subsidiary of Qualcomm Incorporated, is the world's largest fabless semiconductor producer and the largest provider of wireless chipset and software technology, which powers many wireless devices commercially available today. Qualcomm is a recognized world leader in advanced wireless technologies and continues to bring enhancements to market that increase network capacity and performance.

Qualcomm invests billions of dollars in R&D and takes significant risks to invent technologies that advance the mobile industry. R&D investments usually start well ahead of commercialization e.g. Qualcomm began R&D on OFDM, a cornerstone component of 4G/LTE technology roughly 10 years before significant commercial roll out.

Qualcomm has a large and diverse portfolio of United States and foreign patents, and we continue to pursue patent applications around the world. Our patents have broad coverage in many countries, including Australia, New Zealand, China, Japan, South Korea, Europe, Brazil, India, Taiwan and elsewhere. Our patents and patent applications cover all aspects of mobile communications and computing. Many of Qualcomm's patents are implemented as embedded software in Integrated Circuits. Indeed Qualcomm CDMA Technologies (QCT), a division of Qualcomm, is the world's largest supplier of wireless chipsets. QCT has helped lead the diversification of mobile broadband into many new types of mobile broadband enabled devices, ranging from smartphones, PC cards and USB dongles to embedded laptops, netbooks, and a wide variety of pocketable computing devices with mobile broadband capability. These types of devices are already used today by millions of wireless users and provide low-cost, mobile access to the Internet and to broadband applications.

Qualcomm's extensive patent portfolio allows it to broadly license its technology to manufacturers around the world that make infrastructure equipment, handsets and other consumer devices and develop applications based on the 3G and 4G/LTE air interfaces. Using a horizontally integrated business model, Qualcomm fosters innovation and enables new businesses around the world.

As a holder of a significant number of Australian patents, Qualcomm is supportive of the work of the Australian Government to improve and modernize intellectual property arrangements. Steps that improve patent quality and provide greater consistency with international norms are valuable and serve to lower barriers towards, and create opportunities to doing business in Australia and its major trading partners.

Whilst we provide general comments on intellectual property arrangements to the Report, the bulk of the submission is directed toward; section 3 "How does the system fare?", section 6 "the patent system: focusing on the fundamentals" and section 8 "business methods and software patents".

Mobile has grown faster than any other industry in history, but it is still in its early days. 5G is coming, bringing with it a variety of new mobile capabilities. Some have already begun: the Internet of Things has the potential to revolutionize consumer's interactions with nearly every industry. For mobile to continue its upward trajectory, conditions must remain ripe for innovation. Policy conditions for innovations focus on three goals: incentivizing investment and innovation, expand access to services and devices, and promote adoption and use of mobile technologies.

1. The patent system: focussing on the fundamentals

a. Incentivizing Investment and Innovation

Technological innovation is research intensive. In order to innovate, compete, and drive the next generation of mobile technologies, companies must invest enormous sums in research and development. Much of this investment is poured into technologies that never reach the market. For those technologies that do, it is critical to have a predictable and market-driven process for licensing IP. The Boston Consulting Group publication "The Mobile Revolution" (January 2015) notes that mobile players invested an aggregate of \$1.8 trillion in capex and R&D from 2009 through 2013 and are expected to invest approximately an additional \$4 trillion between 2014 and 2020. Such heavy, sustained, up-front expenditures require patience, confidence, and a significant assumption of risk.

Policymakers may support these tremendous private investments by ensuring that a robust IP framework is in place to protect patent rights and facilitate market-driven licensing. Weakening patent protection would reduce the incentives currently motivating innovators to develop technologies essential for transition to 5G and beyond. These protections help safeguard hard-won innovations and enable companies to obtain a return on their investment in innovation.

b. WTO's Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)

The WTO's TRIPS Agreement is an attempt to narrow the gaps in the way intellectual property rights are protected around the world, and to bring them under common international rules. It establishes minimum levels of protection that each government has to give to the intellectual property of fellow WTO members. In doing so, it strikes a balance between the long term benefits and possible short term costs to society. Society benefits in the long term when intellectual property protection encourages creation and invention.

As a signatory, Australia should adhere to its basic principles of the TRIPS agreement when considering amending its intellectual property arrangements, namely the principles of; national treatment (treating one's own nationals and foreigners equally), and most-favored-nation treatment (equal treatment for nationals of all trading partners in the WTO). In return, Australian firms can expect at least the same basic IPR protection for their filings in other nations who are signatories to TRIPS.

In response to draft recommendation 6.2

The Australian Government should incorporate an objects clause into the Patents Act 1990 (Cth) (Patents Act). The objects clause should describe the purposes of the legislation as being to enhance the wellbeing of Australians by providing patent protection to socially valuable innovations that would not have otherwise occurred and by promoting the dissemination of technology. In doing so, the patent system should balance the interests of patent applicants and patent owners, the users of technology — including follow-on innovators and researchers — and Australian society as a whole.

The Australian Government should amend the Patents Act such that, when making a decision in relation to a patent application or an existing patent, the Commissioner of Patents and the Courts must have regard to the objects of the Patents Act.

Qualcomm believes the suggestion to include an objects clause would be extremely hard to implement, and would cause problems with the Australian Patent Office and the courts, as it will be difficult to determine if an innovation is socially valuable, and whether it would not have otherwise occurred but for the existence of patent protection. Furthermore, if the objects clause places the wellbeing of Australians above that of foreigners it will inherently violate the TRIPS agreement.

In response to draft recommendation 6.3

The Australian Government, with input from IP Australia, should explore the costs and benefits of using higher and more pronounced renewal fees later in the life of a standard patent, and making greater use of claim fees to limit the breadth of patent protection and to reduce strategic use of patents.

The Australian Government should seek international cooperation on making greater use of patent fees to help ensure that patent holders are not overcompensated and to limit the costs of patent protection on the community.

Obtaining and enforcing a patent over its lifetime may incur significant costs to the patentee and adding to this burden by using even higher more pronounced renewal fees and greater use of claim fees may dissuade inventors and stifle innovation by creating additional financial barriers that will need to be factored in when applying for a patent and for determining contractual terms for subsequent licensing of that patent.

In response to Information request 6.1

The Commission is seeking further information from participants on the likely costs and benefits from reforming patent filing processes. Would there be any unintended consequences from requiring applicants to construct their claims in the two-part form that applies in Europe or articulating why their invention is non-obvious? Are there better approaches available?

In addition to the extra information requirements and the burden that a two-part form would impose on applicants the requirement for applicants to articulate why their invention is non-obvious may lead to estoppel issues. A better approach may be to have the Examiner make a prima facie case of obviousness and then let the patent applicant overcome that case.

2. Business Methods and Software Patents

Qualcomm believes the statement on page 233 of the report

“There is a clear case to exclude business methods and software (BM&S) from patentable subject matter” and

Draft recommendation 8.1

“The Australian Government should amend s. 18 of the Patents Act 1990 (Cth) to explicitly exclude business methods and software from being patentable subject matter”

Both represent a significant deviation from the present norms of the industrialized countries and is not compliant with the TRIPS agreement, which requires that all fields of technology be protected by patents.

In response to information request 8.1 *What approaches or tests could be used to differentiate between inventions where the contribution of embedded software is trivial and inventions where the contribution of embedded software is genuinely deserving of patent protection? Should such tests be implemented in law or patent examination practices?*

Qualcomm believes that not all computer programs should be excluded from patentability, because a computer program could pass the novelty or inventive step test. It is this existing inventive step test that Qualcomm believes is sufficient to differentiate between the trivial and where software is deserving of patent protection.

In the semiconductor industry the decision to implement innovative and patentable functionality in hardware or software is one of design choice, and there are very sophisticated tools to render the inventive function into hardware or software implementations. Thus, the form of implementation doesn't dictate the level of inventiveness; it is the innovative function itself that dictates the level of inventiveness. Based on the fact that a function can be implemented in hardware or software, a logical extension of the open source movement's argument, would also result in an erroneous conclusion that inventions implemented in hardware should be excluded from patentability because they always invariably build on existing hardware or software!

The purpose of patent law, which is to give inventors limited periods of exclusivity, in return for the public dissemination of the technical information related to the invention so that the public can access that information and build upon it to make new inventions. There are millions of patents around the world that cover improvements to existing technology or that invariably build upon existing inventions or products, including software. One just needs to look at the hundreds of thousands of patent claims related to software inventions that have been granted in the United States and Europe. The United States uses the novelty and nonobviousness (similar to inventive step) tests and Europe uses the novelty and inventive step tests. Patent Offices around the world, applying the test of inventive step, have time and time again determined that computer programs possess the inventive attributes to merit patent protection.

Adoption of intellectual property arrangements that favor the open source business model should be avoided because it neglects proprietary software business models that rely on patent protection for their software products, as well as business models that use both proprietary and open source software, but still rely on patent protection for their proprietary software.

Although there is a place for open source software, it cannot be to the exclusion of proprietary software, and it must respect the innovations and patents that cover those innovations. Thus, a one size fits all solution that supports only the open source business model may have negative implications to other business models and the growth of business, both new and existing. Qualcomm provides open source license to some of its products. The issue is to be able to choose.

[a. Strong Patent Protection Fosters Innovation and Enables Claims of Direct Infringement](#)

We believe that software patents incentivize innovation and are an invaluable asset to facilitate ongoing R&D which results in new products that continue to benefit all of society.

In order for innovators that develop and commercialize software products to realize the full value of their innovations, it is imperative that they be able to protect their inventions in a way that provides the most effective and efficient form of enforcement against infringement. This will enable them to either prevent others from diminishing their market share, or alternatively receive reasonable compensation (or other quid pro quo) for their innovations by way of patent license agreements. If they cannot, then they will be discouraged from protecting their inventions and enforcing their patents, resulting in erosion of their markets, product prices and return on investment. This will in turn stifle further R&D, stagnate further innovation and negatively impact economic growth.

The most efficient and effective form of enforcement begins with the granting of patents that allow the patent holder to make a claim of direct infringement against the infringer. A computer program product claim is one that provides protection for a computer program in combination with the media on which it is stored or transmitted. Examples include programs on floppy disks, CD's or DVD's, and programs downloaded either over wired or wireless connections. Method claims and embedded software claims may allow the patent holder to make a claim of indirect infringement against the software manufacturer. However, indirect infringement claims are fraught with uncertainty and unpredictability which are undesirable in a strong patent system that fosters innovation and competition. A strong patent examination and enforcement system provides certainty and predictability to the patent holder, as well as users of the patents.

[b. The Semiconductor Industry Has Called For Stronger Patent Protection For Software](#)

As an example, the World Semiconductor Council, which is composed of the Semiconductor Industry Associations in China, Chinese Taipei, Europe, Japan, Korea and the US, recognizes the critical importance of adequate patent protection for inventions implemented in software. At the 11th WSC annual meeting in Geneva, Switzerland, on May 24, 2007, the WSC issued a Joint Statement that stated:

"As semiconductor devices become more highly integrated and operate at significantly faster speeds, more and more of the complex functionality of such devices is implemented in software. It thus becomes imperative for all countries to provide meaningful patent protection for software inventions so that they receive the same level of patent protection as inventions implemented in hardware. The WSC asks its members to discuss with their governments and authorities, if said meaningful patent protection for software is not available, the possibility of expanding the scope

of protection to allow the software invention patent owner to enforce its patent against all types of infringers, including software manufacturers and distributors."

The practical objective of this request is to ensure that as a minimum, all of the world's Patent Offices grant adequate patent protection for inventions implemented in software that as a minimum includes computer programs on medium. This will enable the semiconductor companies to enforce their patents against, or negotiate reasonable patent license agreements with, software manufacturers that are manufacturing and distributing infringing software.

c. Survey of EPO, JPO and USPTO Practices Regarding Computer Implemented Inventions

A survey of the current state of protection for inventions implemented in computer programs in the United States, Europe and Japan is helpful to illustrate the state of patent protection for computer programs in some of the major industrialized countries.

We begin with a discussion of EPO practice first. Under EPC law, Articles 52(1), 52(2) and 52(3) provide exclusions from patentability. Although Article 52(2) (c) states generally that programs for computers shall not be regarded as inventions under Article 52(1), and are therefore excluded from patentability, Article 52(3) establishes an important limitation as to the scope of the exclusion. Namely, the exclusion only applies to patent applications for computer programs "as such". Therefore, patentability may be allowed for computer programs that are not considered to be programs for computers as such. Computer programs "as such" are construed to mean that such programs are mere abstract creations, lacking in technical character. Thus, programs for computers must be considered inventions when they have a technical character. Therefore, a computer program (or a computer program product in computer readable medium) is not excluded from patentability under Article 52, if when it is run on a computer, it produces a technical effect which goes beyond the normal physical interactions between the program and the computer. In other words, it does not matter whether the computer program is claimed by itself or as a record on a carrier, as long as the program is of a technical character and has a technical effect when it is run on a computer.

It should also be noted that the EPO Board of Appeal, in interpreting the EPC law in the manner stated above, also stated that the object and purpose of the EPC is the grant of patents for inventions and thus to promote technical progress by providing proper protection for such inventions. With this in mind, the Board arrived at its interpretation in light of developments in information technology. They concluded that this technology tends to penetrate most branches of society and leads to very valuable inventions.

Unlike the EPC patent laws, the Japanese and US patent laws do not expressly exclude patentability of computer programs per se or computer programs as such. Under Japanese law, the claimed invention is only required to be a creation of technical ideas utilizing a law of nature. For software, this requirement is satisfied when information processing by software can be concretely realized by using hardware resources. The JPO thus grants patent protection for both computer programs and computer programs on medium that meet the foregoing requirement. It should be noted that computer programs that perform mere mathematical calculations or some other functions exemplified in the Japanese Examination Guidelines are not patentable.

The USPTO takes a different position as to whether or not a particular computer program constitutes patentable subject matter. If the computer program imparts functionality when employed as a component of a computer, it can be considered to be patentable subject matter. However, the computer

program can only be protected as recorded on some computer-readable medium, since then it becomes structurally and functionally interrelated to the medium. It will be considered patentable subject matter in most cases since use of technology permits the claimed function to be realized. Mere mathematical algorithms, music, literary works, and a compilation or mere arrangement of data are deemed not to be patentable subject matter.

d. Use of Copyright for protecting software inventions

On page 245, the Report notes that “other forms of IP, such as copyright or trademarks, can also be used to protect BM&S innovations” however, as noted in Chapter 4 of the Report, Copyright protects “the original expression of literary, dramatic, musical and artistic works, as well as published editions, films, recordings and broadcasts”, it does not protect inventions. So relying solely on copyright would not prevent others from copying the invention and implementing using a different software code, or even in hardware.

3. In Summary

An Improved, smooth-functioning patent regime in Australia will assist in incentivizing innovation by assisting the provision of strong IP rights that assure invention companies and their investors that if their inventions succeed in the marketplace, they will be protected and rewarded i.e. receive a fair return on their investment. A strong IP framework should incorporate patent protection for innovations implemented in software if those inventions exhibit an inventive step.

Qualcomm appreciates the opportunity to provide input to the Productivity Commission’s April 2016 Draft Report April 2016 on Intellectual Property Arrangements. Should you desire more detail on Qualcomm’s views relating to the Report or Australia’s patent framework, please do not hesitate to let me know.

Sincerely

Alex Orange
Director, Government Affairs, Southeast Asia & Pacific

cc: Julie Welch, Senior Director and Head, Government Affairs, South East Asia & Pacific