ASIA-PACIFIC
PATENT LITIGATION REVIEW 2024

The *Asia-Pacific Patent Litigation Review* offers a wealth of expert knowledge and analysis for patent owners and litigators on the most urgent issues when it comes to taking intangible assets to court in the Asia-Pacific region. This first edition takes an expert eye to some of the most pressing issues facing those involved in litigation on both sides of the divide, with on-the-ground expertise from China, India, Japan, the Philippines, South Korea and Australia.

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Much-Needed Clarity on Software Patentability Boosts Protection and Enforcement in India

Manisha Singh and **Swati Mittal**

LexOrbis

In summary

The IP protection and enforcement standards of software lack universally accepted provisions and practices. Software or computer programs are per se not patentable in India as they are excluded under section 3(k) of the Patent Act; however, Indian courts have proactively comprehended the need to change how software patents are examined. This has led to clarity on the patentability of those inventions and changes in the examination guidelines. With measures in place for the successful protection of software patents, successful enforcement is now expected to be at pace with other countries.

Discussion points

- Patentability of software or computer-related inventions in India
- Evolution of the patentability criteria for software
- Judicial approach for the protection and enforcement of software patents
- Key points to consider for successful enforcement

Referenced in this article

- 2013, 2016 and 2017 CRI Guidelines
- Indian Patent Act 1970
- Delhi High Court
- Intellectual Property Appellate Board

Introduction

Every few years, the global digital landscape undergoes a makeover, and the industry is overhauled with improved hardware and software upgrades. With the advent of the metaverse and the rise in artificial intelligence (AI), machine learning, internet of things (IoT), blockchain and cognitive computing blockchain technology, the importance of protection and enforcement of software and computer-related inventions (CRI) has grown significantly; however, universally accepted provisions and practices to establish the IP protection and enforcement standard in relation to software is still lacking.

Software programs are protected as copyright subject matter and governed under the Berne Convention 1971 and article 10 of the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), which protect source code and object code as literary work. In India, software programs are protected under the Indian Copyright Act 1957. While copyright protects the code, it does not protect any idea or functionality of the software.

Patent law provides wider protection to software, particularly its technical process or functional aspects. Article 27 of the TRIPS Agreement does not differentiate between different fields of technology and lays down standard patentability requirements, including novelty, inventive step and industrial capability; however, there are different eligibility criteria for software or CRI as subject matters of patents under various jurisdictions.

Statutory protection of software in India

Under section 2(1)(j) of the Indian Patents Act 1970 (the Patent Act), '"invention" means a new product or process involving an inventive step and capable of industrial application'; therefore, products or processes, including computer-related inventions, that meet these requirements are considered patentable. Software or computer programs, however, are per se not patentable in India as they are excluded under section 3(k) of the Patent Act, which specifies that 'a mathematical or business method or a computer programme per se or algorithms' are not innovations and, therefore, not patentable.

The use of the term 'per se' was elucidated in the December 2001 Joint Committee Report, when the Patent (Amendment) Act 2002 was introduced. The Report stated '[t]his change has been proposed because sometimes the computer programme may include certain other things, ancillary thereto or developed thereon'. The legislative intent was not to deny patents in relation to all software or CRI but to only computer programs as such.

Inventive step is an important determinant for software or CRI patentability because even though inventions may be novel and have industrial applicability, the inventive step or non-obviousness criteria act as a barrier to their qualification.

The Patent (Amendment) Act 2005 changed section 2(1)(ja), resulting in a new definition of 'inventive step'. Under the new definition, any non-obvious invention is considered to pass an inventive step test if it has any technical advancement over the previous art or has economic significance, or both; therefore, the scope of CRI or software inventions is considered to have an inventive step if there is a technical effect or economic significance in addition to non-obviousness.

To clarify this position, several versions of the 'Guidelines for Examination of Computer Related Inventions' (the CRI Guidelines) have been published, such as those released in 2013, 2016 and 2017. The Guidelines defined major terms and focused on technical effect and technical advancement.

The 2016 CRI Guidelines allow a patent to be granted for software as long as it is 'claimed in conjunction with a novel hardware'. They also provide the following test to examine a software patent application: the examiner interprets the claim and its true contribution. If:

- the contribution of the claim is towards a mathematical method, business method or algorithm, the claim is denied; and
- the claim is directed towards a computer program, it must be examined considering the interplay between software and novel hardware and assessed against other patentability criteria.

The 2016 CRI Guidelines also provide a non-exhaustive list of examples to assess technical effects, including high speed, efficient data search, improved reception and reduced hard-disk access time.

The 2017 CRI Guidelines set aside all these tests, providing that the examiner must judge a claim on the substance and not the form of the invention, along with examples of patentable and non-patentable claims; however, although the Guidelines do not provide tests or determinants for CRI patentability, it must be established that the claim involves a technical advancement or a significant economic advantage, or both, compared to the prior art. Further, a claim must be taken as a whole, clearing it from exclusions under the Patent Act and CRI guidelines and rendering the invention patentable. Accordingly, if the software is related to an invention or constitutes its component, it can be patentable subject to its outcome. To overcome the objection under section 3(k) of the Patent Act, it must be demonstrated that the hardware, along with software or a computer program, is an integral aspect of the invention.

The 2017 CRI guidelines, the Manual of Patent Office Practice and Procedure and recent judicial precedents provide clear guidelines on the examination of CRIs; however, in practice, there is a lack of uniformity between controllers and patent offices. There is also inconsistency in the types of claims allowed in CRI-based patent applications: there are contradictory cases where controllers have preferred system claims over method claims, and vice versa. In some cases, the

applicants have been asked to delete the system-dependent claims and amend the system-independent claim to depend on the method-independent claim.

Further, for CRI-based patent applications, the persuasive value of claims allowed in other major jurisdictions, except Europe, is also relatively low.

Despite the CRI Guidelines, the controllers at the Indian Patent Office (IPO) still sometimes expect there to be novel hardware to allow system claims. In the case of *Microsoft Technology Licensing v Assistant Controller of Patents and Designs*,[1] the Delhi High Court addressed the objection received from the IPO on lack of novel hardware in the invention, clarifying it to be a misinterpretation of section 3(k) and emphasising the importance of the term 'per se' that follows 'computer program' in article 3(k).

Another objection often raised on non-patentability under section 3(m) records that the claims are a mere method of business or scheme and do not disclose apparatus or structural components carrying out the steps enlisted in the invention. This is more common when the patent claims lack mention of structural limitations in method claims.

Finally, the sufficiency and enablement requirements of an invention are universally standardised and can be a ground for objection if the patent application does not disclose sufficiently 'what the invention is' and 'how to perform it'. For instance, an invention will be considered sufficient if it relates to a software–hardware combination, and drawings are used to show the integration of hardware with software, pointing out every feature. If an invention relates to a method, the sequence of steps can be represented in a flowchart that shows the interoperability of different components of software and hardware.

While drafting the patent specification, the functionality must be clearly described through the best embodiment and alternatives, if any. If these crucial determinants are handled, the software and the CRI are considered patentable.

Considering that the IPO has been proactive in improving the overall IP framework in the past few years, it would be reasonable to expect the IPO to consider recent judgments to project predictability and a uniform approach in the examination process.

Judicial approach for protecting and enforcing software patents

Indian courts have proactively comprehended the need for change to how software patents are examined in India, leading to clarity on the patentability of those inventions. There have been numerous instances in which patent

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1   *Microsoft Technology Licensing, LLC v The Assistant Controller of Patents and Designs*, 2023 SCC OnLine Del 2772.

applications have been initially refused owing to non-patentability and, after appeal, they were remanded back, and the IPO granted the patent after being satisfied that the invention had a technical effect or contribution and was not merely an algorithm. In most cases, when the applicants emphasise how the invention provides a technical solution to a technical problem and has a technical advancement over the prior art, the IPO has granted the invention.

In *Ferid Allani v Union of India and Ors*,[2] the Delhi High Court observed that most modern technologies, such as automobiles, washing machines and refrigerators, depend on computer programs in some manner, and if a computer program is rejected only because section 3(k) prohibits patentability, current inventions will lose their protection. It observed that the patentability bar only applies to 'computer programs per se' and not all inventions based on computer programs. It further held that if computer programs are considered non-patentable, it would be a regressive perspective, and inventions based on AI, blockchain and other digital products would also not be patentable. The Court held that 'an invention is patentable if it displays a technological effect or contribution, even if it is based on a computer programme'.

In *Enercon India v Aloys Wobben*,[3] a similar order was passed by the erstwhile Intellectual Property Appellate Board (IPAB) in line with the landmark *VICOM* decision[4] by the Board of Appeal of the European Patent Office. The tribunal held that even if a patent claim merely contains some process steps to carry out a technical process or achieve a technical effect, it would not be amenable to objection under section 3(k) of the Patent Act.

In *Accenture v Assistant Controller of Patents*,[5] the invention claimed was a data document design system and design tools that addressed technical challenges faced by database systems. It was initially objected to on the grounds that the technical effect of data mapping cannot be recognised as a novel feature of an invention comprising a program without any special hardware adoption or modification. When the applicant appealed to the IPAB, the matter was remanded for reconsideration. The IPO then granted the patent, considering it not to be a stand-alone computer program; therefore, it became a rule of law that software patents do not require a special adaptation of existing hardware or any modification of such hardware.

In *Yahoo! v Controller of Patents and Rediff.com*,[6] it was held that where technical advances are only a manifestation of a core business method, the advances will not lead to a patent being granted. Consequently, software tools that are purely business methods will not be granted patents.

2   *Ferid Allani v Union of India and Ors*, 2019 SCC Online Del 11867.
3   *Enercon India Ltd v Aloys Wobben*, 2010 SCC OnLine IPAB 173.
4   *VICOM*, Case No. T 0208/84, 15 July 1986, ECLI:EP:BA:1986:T020884.19860715.
5   *Accenture Global Services Gmbh v Assistant Controller of Patents*, 2012 SCC OnLine IPAB 192.
6   *Yahoo! Inc v Controller of Patents and Rediff.com India Limited*, 2011 SCC OnLine IPAB 106.

Nevertheless, India has witnessed an increase in software patents in the past five to six years, with Google obtaining a patent for 'phrase identification in an information retrieval system' and Apple for a 'method for browsing data items with respect to a display screen associated with a computing device and an electronic device'. The Delhi High Court in *Telefonaktiebolaget LM Ericsson v Lava International,*[7] clarified that if a combination of hardware and software satisfies the patentability requirements and achieves a further technical effect while solving a technical problem, the invention is patentable. It held that section 3(k) of the Patent Act would be applicable when a patent application for an abstract formula, such as an algorithm that is theoretical, is made. Mere mention of an algorithm in a patent specification cannot be a ground to infer that the invention is only an algorithm.

In accordance with the 2017 CRI Guidelines, a patent application for software as a method must be judged on substance (ie, on the underlying substance of the invention, not the form in which it is claimed); therefore, greater importance must be placed on the novelty, industrial use and inventive step used in creating the software rather than on it being a computer program or algorithm. Similarly, in *Telefonaktiebolaget LM Ericsson v Intex Technologies*,[8] it was held that an invention showcasing a technical effect or giving a technical contribution is not merely a computer program per se and, therefore, is patentable.

In *Microsoft Technology Licensing v Assistant Controller of Patents and Designs*,[9] the Delhi High Court held that if a computer program was used in conjunction with hardware or resulted in a technical effect or solved a technical problem, it may be eligible for patent protection. It observed that the approach of the controller was misguided as the reason for refusal – that 'claims were implemented on a computer and were computer-executable instructions/algorithms performed on a general-purpose computing device' – was not correct.

Finally, in *Open TV v Controller of Patents and Designs and Anr*,[10] the Delhi High Court dismissed an appeal filed by a patent applicant whose application was rejected under section 3(k) of the Patent Act. It observed that the invention falls under the category of business method as it is purely a method of giving media as a gift, which is nothing but a method of selling media for gift purposes; however, the Court also noted that the Report 161 of the 'Review of the Intellectual Property Rights Regime in India'[11] provides that the provisions of both the Copyright Act and the Patents Act need to be reviewed to protect AI-generated works and AI-related inventions. The Report further recommended that the IPO should adopt a similar approach as that in the United States and the European Union, where

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7   *Telefonaktiebolaget LM Ericsson (Publ) v Lava International Ltd*, 2016 SCC OnLine Del 3715.
8   *Telefonaktiebolaget LM Ericsson (Publ) v Intex Technologies (India) Ltd*, 2015 SCC OnLine Del 8229.
9   *Microsoft Technology Licensing, LLC v The Assistant Controller of Patents and Designs*, 2023 SCC OnLine Del 2772.
10 *Open TV Inc v Controller of Patents and Designs and Anr*, 2023 SCC OnLine Del 2771 (*Open TV*).
11 Parliamentary Standing Committee on Commerce, 'Review of the Intellectual Property Rights Regime in India', Report 161, 23 July 2021.

the mathematical methods or algorithms linked to a tangible technical device, or a practical application are held patentable. The Delhi High Court expressed its concerns that:

> *a large number of inventions in emerging technologies including by SMEs, start-ups and educational institutions could be in the field of business methods or application of computing and digital technologies. There is a need to have a re-look at the exclusions in Section 3(k) of the Patents Act, 1970, in view of the growing innovations in this space. As the Parliamentary Committee Report . . . recommends, the need to consider the march of technology in the digital space, is an urgent one, so that patent law is not outpaced and patenting itself does not become irrelevant in the years to come.*[12]

Key considerations for successful enforcement

While appeals can be filed under section 117A of the Patent Act before the Delhi, Bombay, Calcutta and Madras high courts, infringement suits can also be filed before commercial district courts. Recently, the Delhi and Madras high courts have inaugurated IP divisions to hear IP matters, and the Calcutta and Bombay high courts are also likely to set up their own IP divisions.

The purpose of patents becomes moot if they are not commercialised and enforced as they give exclusive rights to prevent third parties from making, using, offering for sale, selling or importing the patented product or process without consent. Software is easily reproducible at low costs and in unlimited quantities; therefore, it poses a risk to the patent holders and makes enforcement crucial as an early intervention, especially since the life cycle of software is shorter and the creation of software and CRIs incurs high research and development costs and time.

Owing to an increase in filings and grants of software patents, it is likely that the enforcement of software patents will increase. For successful enforcement, the preparation starts long before filing a patent – with a patentability search to assess the prior art. The strength of a patent comes from the claims drafted, which in turn depend on the prior art search conducted to clearly distinguish the subject invention from the prior art. It is because although patents undergo substantive examination, the validity of a patent can always be challenged through opposition or invalidity proceedings. Invalidity is the key defence taken by infringers, which makes the prior art search pivotal to ensure the strength of the patent.

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12   *Open TV*, Paragraph 86.

Essential considerations for patent enforcement include:

- a prior cease and desist notice and claim chart analysis;
- the time taken by the court to give decision;
- the likelihood of obtaining a preliminary injunction;
- the court's technical experience in software inventions; and
- the possibility of invalidity counteraction and the likelihood of the court to stay the proceedings to confirm the validity of the asserted patent.

As a first step, a patent can be successfully enforced at the pre-litigation stage by sending a cease and desist notice to the infringer. If the infringer decides to settle, the litigation costs and time can be saved; a final court decision may take over four to five years, and if an injunction is not granted within the first few weeks, the matter may stretch further and not reap the desired results. Even at the commercial courts, where cases are heard promptly under a case management schedule, the matter may take more than the anticipated time owing to the backlog of cases.

Successful obtention of a preliminary injunction requires clear claim mapping with feature analysis and establishment that there is a prima facie case. Further, there is always a risk of counteraction of invalidity, which may halt the proceedings as courts are likely to decide on patent validity. Presently, Indian courts have limited software patent infringement jurisprudence, which is expected to change with the establishment of specialised IP courts.

Conclusion

With India emerging as one of the world's largest economies and moving towards fulfilling its goals of becoming a US$1 trillion digital economy by 2026, patent protection and enforcement of software and CRIs have gained tremendous importance. India envisions becoming a significant trusted player in the global value chains for digital products, devices, platforms and solutions. The progress is evident as India has become one of the fastest growing digital economies in the world, with the adaptation of novel software technologies, such as the Unified Payments Interface (UPI) for payments from any digital wallet or bank through a single UPI ID, CoWIN for covid-19 vaccination bookings and digit certificates, DigiYatra for entry to airports by face authentication and e-passports for paperless travel.

In conclusion, the trend of patent filings and grants in AI, software and CRIs in the fields of healthcare, image processing, transportation, edtech, IoT automation and fintech shows that the golden age for innovators in this space has arrived. With successful protection, successful enforcement is the next stop as courts have now embraced a pro-patentee and IP-friendly approach.

Manisha Singh

LexOrbis

Manisha Singh is the founder and managing partner of LexOrbis. She oversees and supervises all practice groups at the firm. Manisha is known and respected for her deep expertise in the prosecution and enforcement of all forms of IP rights and for strategising and managing the global patents, trademarks and design portfolios of large multinational and domestic companies. She is also known for her sharp litigation and negotiation skills for both IP and non-IP litigations and dispute resolution. She has represented companies in many IP litigations, with a focus on patent litigation covering all technical fields, particularly pharmaceuticals, telecommunications and mechanics.

Swati Mittal

LexOrbis

Swati Mittal is an attorney-at-law and holds an LLM in IP and technology law, an MTech in biotechnology and a postgraduate diploma in patents laws in India, the United States and Europe. She has diverse knowledge and expertise in handling patents, designs, trademarks, copyrights and other civil and commercial litigations. She regularly appears in litigation, revocation and opposition cases before the Delhi High Court, the Bombay High Court, the Calcutta High Court, the Supreme Court of India, the Delhi district courts and other judicial forums and tribunals. She has a thorough understanding of IP, technology and privacy laws and has been involved in strategising commercial disputes relating to the infringement of IP rights pertaining to patents, trademarks, designs, copyrights and passing off.

LexOrbis is a premier full-service IP law firm with over 260 personnel, including more than 150 attorneys at its three Indian offices in New Delhi, Bengaluru and Mumbai. The firm provides client-oriented and cost-effective solutions for the protection, enforcement, transaction and commercialisation of all forms of intellectual property in India and globally. The firm has been consistently ranked amongst the top 5 IP firms in India over the past decade and is well-known for managing global patent, designs and trademark portfolios of many technology companies and brand owners. The firm has dedicated teams to cater to the IP life cycle, including attorneys, engineers, scientists and specialists, to deal with patent, trademark and copyright filing, research, portfolio building and management, enforcement, protection, spotting, transacting, procurement and consultation.

The trademark practice group at the firm has over 30 attorneys experienced in partnering with brand owners and advising on the entire IP life cycle from selection to enforcement. The firm's patent practice group has over 100 patent attorneys with domain expertise in information and communication technology, computer science and software, including artificial intelligence and machine learning, internet of things (IoT), blockchain, big data, mechanical, electrical and electronics, chemical and pharmaceutical, biotechnology and energy management.

709/710 Tolstoy House
15–17 Tolstoy Marg
New Delhi 110 001
India
Tel: +91 11 2371 6565

Manisha Singh
manisha@lexorbis.com

Swati Mittal
swati.mittal@lexorbis.com

www.lexorbis.com