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Analysis of Qris Application as a Patented Computer Program Based on Patent Law

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Abstract: Discusses the analysis of the Quick Response Code Indonesian Standard (QRIS) application as a computer program from the perspective of Law Number 13 of 2016 concerning Patents. This study aims to examine whether QRIS can be qualified as an object of patent protection or is included in the category excluded by patent law in Indonesia. The research method used is a normative juridical approach by examining the provisions of laws and regulations, legal doctrine, and the concept of intellectual property protection for computer programs. The results of the analysis show that QRIS is essentially a digital payment system and standard that emphasizes methods, protocols, and interoperability between payment service providers, so it does not meet the qualifications as a patentable technical invention. The computer program that is part of QRIS is more appropriate to obtain legal protection through the copyright regime or other protection mechanisms outside of patents. The conclusion of this study confirms that although QRIS has innovation value and significant contributions to the national payment system, patent protection for QRIS still has legal limitations based on the provisions of patent law in force in Indonesia.

Keywords: QRIS, Computer Program, Patent, Patent Law, Intellectual Property Protection

INTRODUCTION

Technological advancements have had a significant impact on a nation's development, particularly in the face of a phase where global communities can easily connect with one another in all aspects of life, including culture, law, economics, politics, technology, and the environment, or what is commonly referred to as the current era of globalization. As a developing nation, there are certainly many future development agendas, particularly in the field of technological innovation, to bring prosperity to the community.

Technology is the result of intellectual work discovered by humans in a particular form or function. Involving labor, time, and costs, technology has economic value or benefits. Protection for technology itself is provided in the form of rights known as Patents. Patents themselves are granted with the aim of motivating inventors or initiators of related technologies to make other discoveries or inventions so that technology in a country can progress rapidly in line with the times. In addition, patent protection creates the right for inventors to use their own discoveries or grant permission to others who wish to use their discoveries or inventions. Patents are intellectual works of humans where intellectual works are assets that contain economic value because the owner is given monopoly/exclusive rights to control the use of protected intellectual works. The Intellectual Property System is private, exclusive rights granted by the State to individual actors of intellectual property, namely inventors.

In general, IPR is divided into 2 (two) parts, namely:

1. Copyright
2. Industrial Property Rights, which include Patents; Industrial Designs; Trademarks; Geographical Indications; Integrated Circuit Layout Designs; Trade Secrets.

The significant role of technology in industrial growth can raise public awareness of the importance of technological discoveries. Technological discoveries that impact human life are related to technological programs supported by computers. Computer technology is related to hardware and software. Software includes all commands used to process information. Software can be a program or procedure that contains a collection of commands understood by the computer. The word computer was originally used to describe a person whose job is to perform arithmetic calculations, but modern computers are used for tasks unrelated to mathematics. A computer can be defined as an electronic device consisting of several components, which can work together with each other to produce information based on existing programs and data.

A computer program is a tool used to process data according to predetermined procedures. Legally, computer programs are now considered a type of property, like other tangible objects. Therefore, the owner of a computer program has the right to prohibit others from using or exploiting their computer program without their permission.

Based on the International Data Cooperation (IDC) April 2012, Indonesia ranked 11th with the number of pirated software circulation amounting to 86 percent, with a loss value of 1.46 billion US dollars or Rp 12.8 trillion. If seen from the characteristics of patent protection, that patent registration is first to file, meaning a patent granting system that adheres to a mechanism where someone who first submits an application is considered the patent holder, if all requirements are met. Patents are granted for new inventions and contain inventive steps and can be applied in industry. An invention is said to contain an inventive step if the invention is something new or something that could not have been predicted before according to people who have certain expertise in the technical field.

Generally, computer programs are given legal protection regarding copyright. There are 2 (two) regulations regarding computer programs in Indonesia, namely regulated in Article 40 Paragraph (1) letter S of Law Number 28 of 2014 concerning Copyright, which states that computer programs are one of the protected copyrights. However, with the birth of Law Number 65 of 2024 concerning the Third Amendment to Law Number 13 of 2016 concerning Patents, computer programs are also included in patent protection. In patent rights, computer programs are included in technology and are therefore included in the object of protection. However, regarding patent protection, there are conditions that must be met, according to the explanation of Article 4 letter D of Law Number 65 of 2024 concerning the Third Amendment to Law Number 13 of 2016 concerning Patents, which reads:

"What is meant by "rules and methods that only contain computer programs" is a computer program that only contains programs without having characters, technical effects, and problem solving, but if the computer program has characters (instructions) that have technical effects and functions to produce problem solving, both tangible and intangible, it is an invention that can be patented."

RESEARCH METHOD

An analysis of the QRIS application as a patented computer program under the Patent Law shows that QRIS is essentially a QR code-based payment system standard that functions as an integration of digital transaction services, not simply a stand-alone computer program. From the perspective of patent law in Indonesia, as stipulated in Law Number 13 of 2016 concerning Patents, computer programs are explicitly excluded from patent objects if they only contain abstract rules and methods. QRIS is more appropriately understood as an innovation in the realm of payment business systems and methods that rely on interoperability, security, and transaction efficiency, so that its legal protection

tends to be more relevant through copyright regimes, trade secrets, or national standards established by the relevant authorities. Thus, although QRIS has innovative value and a significant contribution to the digital payment ecosystem, its application as a patent object still faces normative limitations due to its characteristics that emphasize system functions, protocols, and operational standards rather than technical inventions that meet the requirements of novelty, inventive step, and applicability in industry.

RESULT AND DISCUSSION

In 1470, Venice, Italy, for the first time incorporated patent regulations into intellectual property law. Caxton, Galileo, and Gutenberg were listed as new inventors of the time and monopolized their inventions. This patent law was then adopted by the English kingdom during the Tudor era in the 1500s, with the birth of the first patent law in England, namely the Act of Monopolies (1623). At that time, the patent system of European countries continued to develop along with the rapid development of trade between countries, resulting in patents from one country being infringed by patents from another country, because other countries did not have patent protection, meaning patent protection was only within the regional scope of the country of origin. This is one of the reasons why the Paris Convention for the Protection of Intellectual Property Rights was signed in 1883. The convention provides more detailed rights to inventors who discover new production methods and materials. The provisions of the Paris Convention apply internationally to its member countries.

The Indonesian government implemented the Paris Convention (London Act) on December 24, 1950, and ratified the amendments to the Paris Convention, namely Articles 13-30 of the Stockholm Act of 1967 on December 18, 1979, and implemented it simultaneously with the Patent Law No. 10 of 1967. The Paris Convention is an open convention that can be easily followed by countries around the world. This means that countries that wish to participate only need to declare unilaterally in the form of accession. Other participating members do not have the right to reject new members. The implementation of the Paris Convention has an impact on the recognition of priority use, namely the date of acceptance by the country of origin is the priority date for the destination country that is a member of the Paris Convention.

Besides the Paris Convention, another international treaty influencing the formation of national patent systems is the Patent Cooperation Treaty (PCT). The PCT regulates patent management standards for PCT member countries. Indonesia acceded to the PCT by ratifying Articles 1 to 12 of the Stockholm Law of 1967 and implemented both treaties into its domestic law through the enactment of Law Number 13 of 1997 (regarding amendments to Patent Law Number 6 of 1989).

The growing awareness of intellectual property as an economic asset was marked by the birth of the TRIP (Trade-Related Aspects of Intellectual Property Rights) Agreement in 1994, Annex 1-C of the Marrakesh Agreement signed in Marrakesh, Morocco. TRIP sets minimum standards for intellectual property regulations for its member countries. The agreement also regulates the implementation of TRIP, compensation and dispute resolution by WTO members. The nature of the TRIP Agreement is directly binding on all countries that ratify the Agreement Establishing the World Trade Organization. With the implementation of the TRIP agreement, priority also applies to all WTO members, and the implementation of TRIP also has an impact on the term of patent protection which is changed from 20 years to 20 years.

Criteria for patentable computer programs under the Patent Law

Law Number 13 of 2016 concerning Patents has been amended through Law Number 65 of 2024 concerning the Third Amendment to Law Number 13 of 2016 concerning Patents, specifically regarding patentable computer programs. Before the amendment, software was not an object of patent protection but was protected by copyright based on Article 40 of the Copyright Law. After the amendment to the Patent Law, Article 4 states that software can be patented provided that the software must be able to solve a problem and provide a clear solution, in accordance with the provisions stipulated in Article 4 letter d of the amended Patent Law. Patent registration for software is carried out more strictly, where only computer programs that meet certain criteria and can provide solutions to specific problems can be registered and obtain exclusive rights as an invention. Basically, an invention, including those based on computer programs, can be patented by meeting three main criteria:

1. Novelty
2. Inventive Step; and
3. Industrially Applicable

The initial understanding of this change was that it had the potential to provide opportunities for computer programs to be patented more directly, as long as the computer program met the requirements of an invention (new, inventive, and industrially applicable) and was not simply an abstract idea or mathematical algorithm without technical application.

This indicates that the focus of patents on computer programs is no longer solely on "inventions using computer programs," but may also be on the computer program itself if it is capable of producing certain innovative technical effects, rather than merely as a depiction of a business idea or mental method. It is important to note that, nevertheless, computer programs as literary works, namely source code, remain protected by copyright. Patent protection will focus on the innovative functional and technical aspects of computer programs that solve technical problems.

Ms. Triayu Ratna Dewi argues that QRIS is an innovation in payment methods that offers practicality, enabling cashless transactions. With this convenience, QRIS not only simplifies the payment process but also has the potential to be patented as a modern solution in the financial world. Meanwhile, Mr. Tommy's view, QRIS is a problem-solving invention because its inventive step that connects scanning with automatic bank account deductions, directly highlights the essence of patents: namely the solution of technical problems through an invention. Similarly, Mr. Antario Terryandana strengthens this definition by stating that a patentable computer program must be related to hardware, have a technical effect that goes beyond collecting and displaying data, where the data must first be processed to determine the results. This clearly emphasizes the requirement of "additional technical or non-technical effects beyond the standard function of the computer program" as stated in Article 4 letter d. This means that a computer program that only performs computations or displays information without producing any real effect or change on other systems or processes will not meet the criteria for patentability.

Mr. Faisal, as the Patent Examiner for the Electrical Engineering Division, provided crucial legal and technical clarification. He explained that the DJKI would no longer grant "overlapping protection" to purely expressive computer programs, which is essentially the domain of copyright. The key point is that it is not the computer program itself that is protected by patents, but the invention itself. His example of Gojek is illustrative: the algorithm that allows the app to find nearby drivers is a patentable invention because it provides a specific technical solution, while the source code or interface of Gojek falls

under copyright. This emphasizes that a patentable computer program must have a specific, innovative technical function and produce a tangible effect (e.g., increased efficiency, accuracy, or new capabilities) when implemented in hardware. This distinguishes it from a computer program that simply performs basic computational operations without significant additional technical effects.

Based on the interview results outlined above, the primary criterion for a patentable computer program is its ability to manifest as an invention that provides a technical solution to a problem, not simply as a simple computing program. Patent protection is not granted to the source code or expressive aspects of a computer program, but rather to the functional and technical innovations behind it.

The Qris application meets the criteria for a patentable computer program

QRIS (Quick Response Code Indonesian Standard) is a national QR code standard for facilitating digital payments through QR code-based payment applications. QRIS enables interconnection between various payment applications, both from banks and non-banks, so consumers only need to use one QR code for all transactions. This aims to create a more efficient, secure, and inclusive digital payment ecosystem in Indonesia.

20) RI Patent Application

(19 I	**(11 Announcement No.: 2024/03163**	**(13**

(51 I.P.C : G 06Q 30/06,G 06T 7/33,H 04L

(21 Patent Application No.: **(22 Patent Application Receipt Date:** 0 Jun202 **(30 Priority Data:** (31 (32 (33 Negara **(43 Patent Announcement Date:** 2 202	**(71 Name and Address of Submitting Application Paten** Alex Surya JL. Ambengan No 85, Kec. Tambaksari Tambaksari , Surabaya 60136 **(72 Inventor Name:** Alex Surya **(74 Name and Address of Patent Consultant:**

(54 Title Invention: QRIS Online Registration Method as an E-Marketplace

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Abstract :

The invention regarding the QRIS Online Registration Method as an E-Marketplace allows users to choose the desired PJSP and monitor all transactions from their business through just one platform. With the convenience of this invention, it greatly supports the program to advance MSMEs launched by the Government in Indonesia.

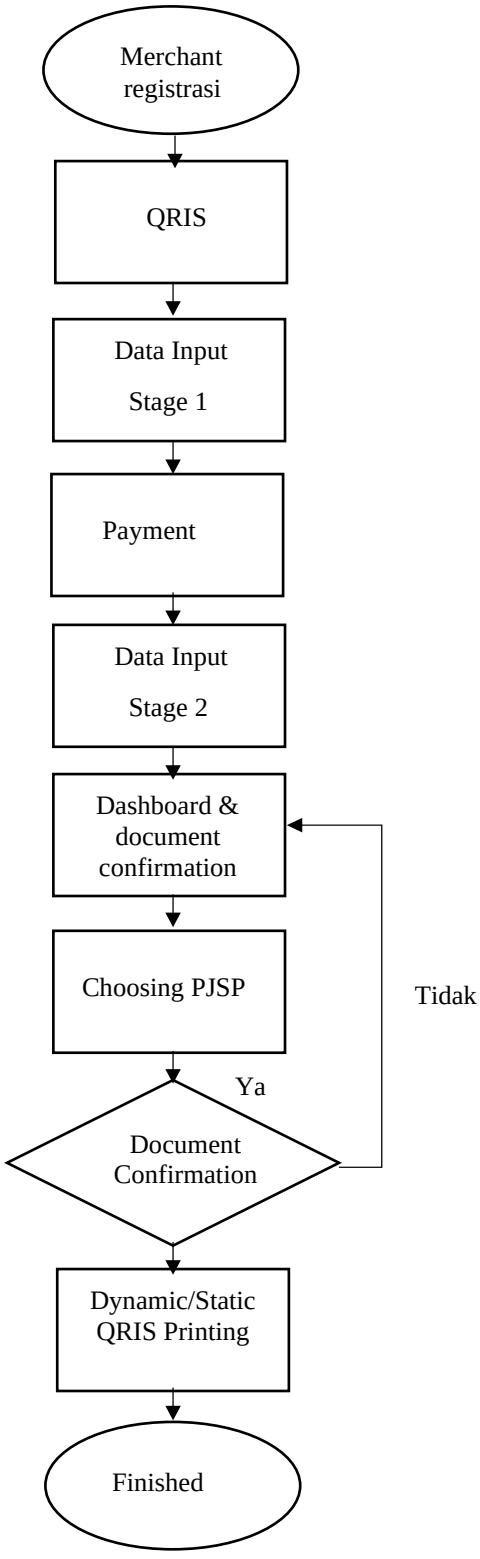

Figure 1. Registration Flow

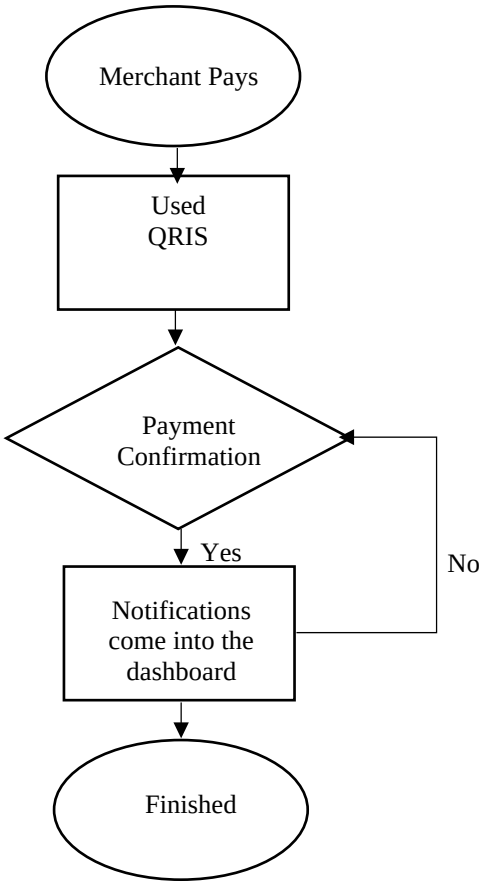

Figure 2. Transaction Flow

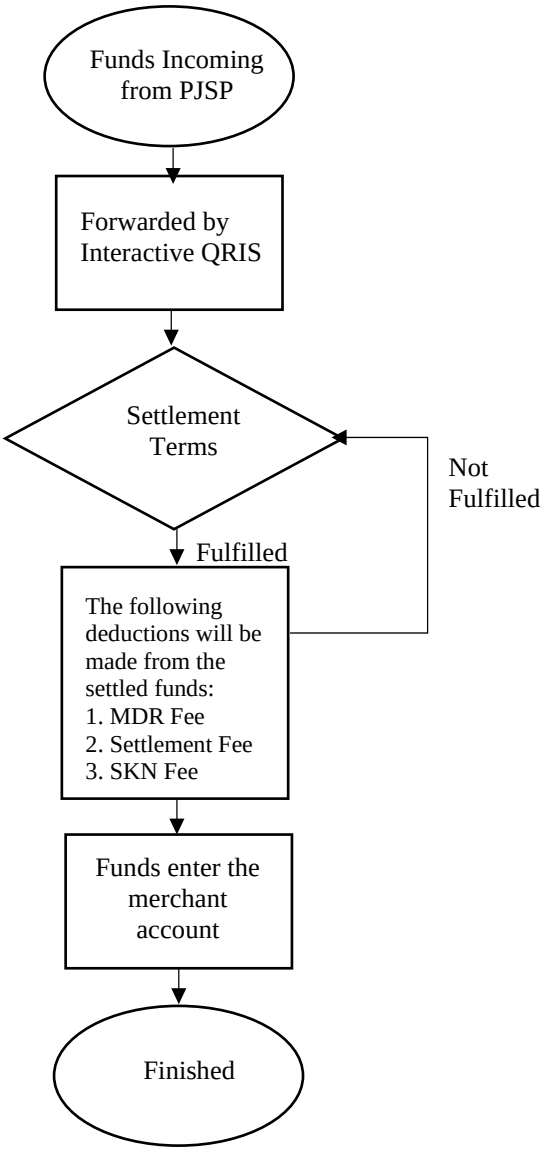

Figure 3. Alur Flow Settlement

This study aims to analyze whether the QRIS application meets the criteria for a patentable computer program based on Article 4 letter d of Law Number 65 of 2024 concerning the Third Amendment to Law Number 13 of 2016 concerning Patents. Data were collected through interviews with Mr. Faisal Narpati as the Patent Examiner of the Electrical Section of the Directorate General of Intellectual Property (DJKI). He said that computer programs alone cannot be patented. This is because computer programs that are expressive in nature, namely visible in the form of source code or appearance, are protected by Copyright, not Patents. Mr. Faisal emphasized that Article 4 letter d of the Patent Law is intended to prevent the public from misinterpreting, where computer programs purely fall under the realm of Copyright while the focus of patent protection is on the invention, not on the computer program itself.

Based on an interview with Mr. Faisal Narpati, QRIS has several aspects that are potentially patentable, even though the QR Code itself is owned by Denso Japan and has already been patented. These aspects include:

1. Innovative QR Code Reading Methods: If there are innovations in QR code reading methods, such as special reading equipment or methods that allow QR

codes to remain legible even when slightly bent, these could constitute patentable inventions. This relates to how the QRIS system ensures transactions continue to run smoothly even under less than ideal scanning conditions.

2. Process Behind the Scan (Interconnection and Payment Flow): A highly patentable aspect of QRIS is the process behind the scan. When a QR Code is scanned, a series of processes occur behind the scenes, such as interconnection between banks and payment flows that ensure funds are immediately transferred without the need to re-enter the amount. This invention can include an algorithm or method for connecting data to a payment server that is efficient and secure. An example of an application like Gojek, where the patented invention is the process for finding the nearest driver, not the source code or interface of the application. Similarly, in QRIS, the relevant invention is the process behind the payment system after scanning.
3. Computer Implementation: QRIS is a computer-implemented invention because it uses a computer program and the computer program's own apparatus. This indicates that even though the source code is protected by copyright, innovations in the systems and processes operated by the computer program can be patented.

The QRIS application as a whole, as a computer program alone, cannot be patented but is protected by copyright. This aligns with the principle of intellectual property protection in Indonesia, which separates expression (source code and interface) from invention (idea or technical process).

However, this study found that certain innovative aspects of the QRIS system have patentability potential. Patentable inventions are novel technical processes underlying QRIS functionality, not its source code or interface. Examples of potentially patentable inventions in QRIS include:

a. A new method or algorithm for more robust QR code reading (e.g., the ability to read damaged or bent codes), which represents an improvement on the reading apparatus or optical process. This represents a technical solution to an existing problem.
b. An efficient and secure interbank interconnection system architecture or method that enables instant payments without re-entering data. This is a process carried out by a computer program to produce a technical effect, namely smooth transactions.
c. An innovative payment verification and authentication algorithm or system that enhances transaction security and speed. This demonstrates specific and novel technical steps in data processing.

CONCLUSION

The criteria for patentable computer programs under the Patent Law, especially after the amendments stipulated in Law Number 65 of 2024, can be concluded that for a computer program-based invention to be patented, it must meet three main criteria: novelty, inventive step, and industrial applicability. The amendments in Article 4 letter d indicate that a computer program can be patented if it produces an innovative technical effect and is not merely an abstract idea. Patent protection is not granted to expressive aspects such as source code, but rather to functional and technical innovations that solve specific problems. This emphasizes the importance of focusing on the technical solutions produced by the computer program, not just the program itself.

QRIS (Quick Response Code Indonesian Standard) is a patent-protected software because it contains innovative technical effects and is not just an abstract idea as defined by the

Patent Law, namely increased efficiency, accuracy, or new capabilities when implemented with hardware, not source code or its appearance. QRIS has several innovative aspects that can be submitted for patent protection, such as an innovative QR Code reading method, an efficient interconnection process and payment flow, and the technical implementation that underlies its operation. The claims submitted in this study demonstrate novelty and inventive steps that can provide broad benefits to the community and business actors, especially in creating a more efficient and inclusive digital payment ecosystem.

Thank-you note

To encourage innovation in information technology, it is recommended that software developers and researchers better understand the applicable patent criteria. They should focus on developing inventions that are not only novel but also have a clear inventive step and industrial application. Furthermore, it is crucial for intellectual property stakeholders to provide more in-depth education on the differences between copyright and patents so that innovators can protect their work appropriately.

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