Patents of computer program: technical contents and no human mind involved

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ABSTRACT

Computer program is not patentable. With the inclusion of technical contents patent is granted. All in all, European Patent Office is flexible in granting patent to computer programs. The courts in England argue otherwise. Common-Wealth countries have the tendency to accept the decision of UK courts when it comes to patentability of computer programs. There are two main issues surmounting the court when it comes to the question of patentability, that is, technical contents and non-involvement of human minds. In U.S, if there is mathematical involvement, patent is not granted, however, it is not going to change such legal principles in U.K courts after the Brexit. Court cases are analysed in the context of computer program patentability. From the analysis, courts in UK and countries once under the British rule, patentability of computer program follow the precedent set by U.K common being remains the same works must have element of technical contents and without human mind interference.

Introduction

Previously, patentability only applies to the medical, science, engineering and technological innovations. Patents have been granted in the domain of medical, science and technological inventions. Since computer program became popular, many researchers are not sure whether program language comes within the intellectual property rights. Moreover, computer program falls under the copyright, but the current development of program with sophisticated technical contents are patentable. For a lay man, computer programme is machine codes. However, invention which is programmed to function is patentable. Although, software or programming alone is not patentable, invention in which it is operated by an algorithm becomes patentable due to the evidence of technological elements. Precisely, algorithm falls under copyright, patent, on the other hand, is more specific to invention protection in the domain of computer technological inventions (Alain & Utku, 2016).

Besides, patents are granted by most countries and procedures are similar across the global. Customarily, the method of application of patent is alike such as the inventor or the corporation submits the application with full details of diagram and argued it is something novel before granting patent. It is justified that patent is granted to computer program provided that it works together with technical contents such as machine which produces images of 3-D of human organ after scanning or in another situation where program controls or releases the precise amount of fluid to the manufacturing process. It is worked by algorithms' which occupies the main subject of patentability of computer related inventions.

According to the Article 27.1 of the TRIP agreement states that 'patents shall be granted in all fields of technology'. The position of European Patent Office included the above under the Article 52(1).

The doctrine of patentable inventions under the EPO

According to the 2008 Commission Report, Study of the effects of allowing patent claims for computer-implemented inventions, was concerned about the seriousness of adopting low threshold in granting patent to computer related inventions (Alain & Utku, 2016). The aforesaid report cautioned that granting patents to computer related technology would cause the stagnation

growth of innovations, unwarranted monopolies on 'interface standard, affect the open-source software, overflow of patents seemingly granted to inventors would result in slow growth of technological innovation and litigations (Alain & Utku, 2016).

Alain and Utku (2016) questioned that policy and recommendations of the aforesaid report provided strong 'soft based economy'. In the past, granting of patentability to computer related innovation was much stricter in Europe than U.S. The innovation on computer related technology is more advance in U.S as compared to Europe as for example corporations like Microsoft, Amazon, Google, Facebook and Apple are leading giants at the global stage (Alain & Utku, 2016). They argued that having stricter policy on granting patents to computer related technology would not retard the growth of innovation in computer related technology (Alain & Utku, 2016).

Besides, the present rules governing patentability of computer related technology in Europe is not refine as compared to U.K. The prospective applicant may file the application at the patent office in Europe Member States and supporting with evidence that granting of patent is justified. It is up to the member States want to validate the patent granted by ECA. However, if the Patent Office refuses the matter is filed in the court. The requirements of EPC (European Patent Convention) spelled in Articles 52(1) namely 'European patent shall be granted for any inventions, in all field of technology, provided that they are new, involve an inventive step and are susceptible of industrial application'. According to Article 52(2) states that patent would not be granted if there are aesthetic creations, presentations of information, performing mental acts and so on.

Additionally, the courts look for technicality for the purpose of granting patentability for computer program. In the IBM/Document abstracting and retrieving , the claim was about the abstracting of documents which were stored. Board correctly found that a document abstracted and stored was not manipulated by technical mechanism. The decision gives importance to 'technical features', and one of the main requirements of EPC is to have technical character. In contrast,

Hitachi/Auction method in which the Technical Board of Appeal argued that it had technical invention. The Board explained that technical mechanism working along with computer program can be considered to be novelty, inventive step and such contribution benefits industrially (Bainbridge, 2018).

Chirs (2011) clarified that there are two issues which must be addressed when it comes to the question of technical content, notably, technical content and contributions. EPO developed contribution approach which hinges onto the technical contents and other one is based on court decisions. The Board or the court wants the real contributions which must have technological elements. In the case of Koach & Sterzel/X-ray apparatus , the applicant contended that X-ray machine was designed and built to disperse the power to the X-Ray tube which had a longer life span as compared to the previous model. It was exorbitant to change the tube and new method of having a longer life span was cost saving. Undoubtedly, the disperse of current to the tube was manipulated with the aid of software it was an invention which warranted patentability. The court viewed that it was new method of controlling the tube in which there was software in operation.

Consequently, the Board favoured to grant patent provided there was evidence of technical contents working with program. In Microsoft Corporation to the Board of Appeal, the clipboard formats transferred non file data operated by the software application. The decision of the Board adopted Hitachi/Auction method and stressed that it was invention which contributed to industrial application because of technical and structured memory and therefore it is clarified as:

The Board is aware that its comparatively broad interpretation of the term ínvention' in Article 52(1) EPC will include activities which are so familiar that their technical character tends to be overlooked, such as the act of writing pen and paper. Needless to say, however, this does not imply that all methods involving the use of technical means are patentable. They still have to be new, represent a non-obvious technical solution to technical problems and be susceptible of industrial application' .

According to the Board, the process cleverly solved the technical problems through technical

ways through functional data structures which processed independently operated by complexed computer programmes. Bainbridge (2018) concluded the current positions at the Boards of Appeal of the EPO in relation to computer-processed inventions are as follows:

To seek technical problem which the invention intends to address.

To find out the problem in the invention

Presuming it solves the technical problems, it becomes patentable.

If otherwise, it is not patentable.

The competent court may not favour in upholding patent when it comes to the internal operation of computers. In IBM/Data processor network, the claim was data processing composed of data processors which formed the communications network. Also, system worked differently upon the request of one transaction mode to another causing to split from one node to another node whereby it was not operated by computer program to achieve the result. The TBA decided that' the coordination and control of internal communication between programs and data files held at different processors in a data processing system…is to be regarded as solving a problem which is essential technical'. Contrarily, the case of Bosh/Electronic Computer Components was a 'device for monitoring computer components' had the potential capacity to reset the computer's processor. Whilst deriving the decision, computer flexible memories were compared to non-flexible memories to find out whether computer was reset. It was caused by the manual reset circuit in which the reset process was held to contain technical content.

Technical contents in EPO cases

Since technical contents are the main component of granting patent, courts developed effective way of identifying technical contest. The leading case on patentability of computer programs case was VICOM/Computer related invention heard before the Technical Board. In that leading case, the computer program operated the operation system in the computer to produce digital images which was computed by mathematical calculation. As such, it was the nexus coordination and function of technical parts in operation and the Board of Appeal remarked (at p.80):

….. a claim directed to a technical process which process is carried out under the control of a program (be this implemented in hardware or software), cannot be regarded to a computer program as such within the meaning of Article 52(3), EPC, as it is the application of the program for determining the sequence of steps in the process for which in effect protection is sought, Consequently, such a claim is allowable under the Article.

Bainbridge (2018) questioned that although the invention was not based on mathematical method, but it was the claim on technical process in which mathematical method used. However, the technical contribution failed to enlighten whether there was technical invention. Based on the cases above, it is rather difficult to predict what are the general test that could be used in assessing technical contents. Following the decision of Vicon, it is noted that text and images are not patentable, but the steps taken to create data which are sophisticated and intelligently processed by means of program are more likely to be patentable.

Another case Walker/Test processing was about the method used for text presentation based on reader parameters with the inclusion of folding rules. Although there was lack of technical involvement, it was found that there was involvement of technical solution to replace human participation. Lately, it was found that there was evidence of technical involvement in graphic and design interface.

Scenario in U.K on computer program patentability and issue of mental act

To date there is cloud of uncertainty of Brexit, it is possible the decision of EPO may influence decision in UK to lesser degree. The Patent Office in UK may accept the decision of EPO but courts in UK have long standing legal principles which would result in not accepting EPO decision. It is for sure courts in UK wants the prospective applicant to establish that there are technical contents to grant patent. This means to say that jurisprudence of granting patent in relation to computer programs must have technical effect which falls within the other exception contained in Article52(2) EPC (including Article 52(3). Courts

are particular to find out the involvement of human mind, if such involvement is apparent the chances of getting patent is unlikely.

This often called as the mental doctrine in which computer programs worked with human mind. It is excluded by section 1(2) UK Patent Act. Despite the fact computer program operate independently without the manipulation of human mind, it does not guarantee that the invention becomes patentable. This was illustrated in Re Wang Laboratories Inc's Application , the court held (at 472):

The fact that the scheme, rule of method is part of a computer program and is therefore converted into steps which are suitable for use by a person operating the computer does not matter…. The method remans a method for performing a mental act, whether a computer is used or not. The method may well be different when a computer is used, but to my mind it still remains a method for performing a mental act, whether or not the computer adopts steps that would not ordinarily be sued by the human mind,

The relevant section 1(2) of the Patent ACT 1977 excludes Article 52(2) EPC as well as Article 52(3). Although EPC came into effect in 2000, the words 'in all areas of technology' were left out in section1 of the Patent Act 1977. However, the courts have the jurisdiction when it comes to the application. As for instance, the Chancery Division the court held that computer generated system used to identify vessels fall within the exception in section 1(2)(c) of the Patents Act 1977 . The system manipulated by computer depicting vessels or ships on different distance were detected by digital imaging contained in the database of the computer. It is merely the application which was relevant for computer which performed far superior to the normal human mind.

In Fujitsu Limited Application, the aforesaid applicant developed the software to produce images which were graphical. It created selection crystal structures of known chemical displayed on the computer monitor. Unfortunately, the clam was rejected as the court compared the legal authority of Vicom. Although, the chemical engineer created 'new components with a desired functionality' and later the Patent Office concluded that the application failed to comply

technical contents because of the performance of mental act within the section 1(2)(c). This judgement passed by Laddie J of the Court of Appeal concluded that the application was merely a computer program.

It was noted there were ample evidence of human activities manipulated the program. As for instance, plastic model was fixed in the past but programmed just automated the phenomenon (Bainbridge, 2018; Zukauskas, Andriukaitiene, & Vveinhardt, 2018) The central attention of courts in UK is to look for the technical contents and inadequate human mind interference.

The current position of patentability of computer program in UK

Section 78 of Patents Act provides that courts in UK must interpret EPC provision. In UK, lawyers and judges treat the patent differently and such difficulty is expressed in the judicial judgement. For one thing sure, judges in UK prefer to follow the contribution approach' but to date refused to accept the 'hardware approach'. It is seen in the case of Merrill Lynch's Application , machine operated by computer program for market security to the Court of Appeal in held that 'an invention was not excluded simply because the novelty lay in an excluded thing and that the claim had to be looked at as a whole'(Chirs, 2011). Aldous J made a point to consider the 'method for performing a mental act' exclusion, he was at one with Technical Boards to find that 'Methods for performing mental acts which means methods of the type performed mentally, are unpatentable unless some concept of technical contribution is present'.

In UK, cases on patentability of computer program are increasing, currently the courts prefer to follow the landmark case of VICOM/Computer-related invention. The court has the inherent jurisdiction under the Section 91 of the Patents Act 1977 to have judicial notice of any cases heard in the Appeal Board. Additionally, the case of VICOM/Computer-related was once again distinguished in the case of Merrill Lynch's Application and Gale's Application. Aldous LJ in Fujitsu Limited Application remarked (at 614):

……However, it is and always has been a principle of patent law that mere discoveries or

ideas are not patentable, but those discoveries and ideas which have a technical aspect or make a technical contribution are. Thus, the concept that what is needed to make an excluded thing patentable is a technical contribution is not surprising. That was the basis for the decision of the Board in Vicom. It has accepted by the court and by the EPO and has been applied since 1987. It is heart of the patent law.

Jacob LJ in the Aerotel Ltd v Telco Holdings Ltd said that the test patentability is "the technical effect approach with the rider" and introducing technical contribution and technical effects. According to Jacob LJ commented that 'a technical contribution to the known art and to add the rider that novel or inventive does not include technical contribution'. Based on subsequent court cases, the meaning of technical effects and technical contribution appears to be same. Consequently, the court in the case of HTC v Apple adopted the approach of Aerotel, that is, technical contribution. In UK courts initiated 'signposts' to find out whether there is evidence of technical effect, introduced from AT & T which was tuned in Court of Appeal decision of HTC v Apple. The 'signposts' comprising of processing, technical effects which operate the system of computer, operation of computer operates, increase in speed and finally whether technical effect addresses the previous problems.

In Lantana Ltd v The Comptroller General of Patents, Design and Trademarks , the applicant case is about the extraction and transfer of data between two computers located in different countries. It is operated by the internet and request is made from one computer to another. The computer possesses documents on the distant computer which is retrieved by the local computer. It is argued by the applicant that the effectiveness lies on saving connectivity from distant computer to the computer located in London and chances of hacking is less likely. However, the Comptroller General of Patents failed to raise novelty or inventive steps but argued that there was no invention under the section 1(2) of the Patent Act 1977. The Court of Appeal remarked that there is no invention, the system of communication is not new and lack of technical contribution.

Lewison J in the case of Autonomy Corporation v Comptroller General of Patents, Designs and Trademarks laid down the current position in England as per follow:

Computer program is not about the instructions, but it includes the CD ROM or floppy disc which permits the computer to carry out its program (Aerotol) or a programmed computer (Cappellini). If a claim concern about computer program it can qualify patentability (Astron Clinica).
If a computer program is excluded from patentability due to the program 'as such', then it is necessary to consider the claim invention (Capellini).
In case the claim prevails independently, and technical process is involved outside the computer, then is lack of contribution by computer program (Gale; Raytheon).
The only way of doing thing is by computer (Raytheon).
It is not the computer program if it requires hardware or to solve technical problem 'in the functionality of a computer' (Aerotel; Raytheon).
Having new hardware does not justify newness of computer program. In Aerotel, judge commented on Gale (Bainbridge, 2018);
In Bloomberg, storage of data on a computer is not the contribution which exists independently (Bainbridge, 2018);

According to Bainbridge (2018) argued that decision of Aerotel was not correct. This is because the decision was based on old legal principles which is now no longer stands. Undoubtedly, the decision of EPO could be acceptable with current trend of software development, but such decisions are not amenable in UK.

In Symbian Ltd v Comptroller General of Patent , sophisticated method of processing data from library link to the invention which operated instantaneously and efficient. Despite the innovation, patent was not granted. According to Patten J, held that process was fast and look inventive. It was appealed to the Court of Appeal by the Comptroller General. Lord Neuberger noted that there was difficult to draw a line between technical and not technical. However, he asserted that patentability requires technical contents and without human mind interferences.

According to the judge, the invention which used the device to process fast and effectively was not caught under the exclusion. The court acknowledged that such invention would be used in camera and other electronic products with processors and programmed computer went on to comment that:

 Finally, the court in Symbian case followed the approach laid down in the case of Aerotel as stated below:

To construe the claim.

To find out the actual contribution'

To find out whether it 'falls solely within the excluded subject matter.

To find out whether the contribution is technical.

Conclusion

It should not be construed that computer program does fall within the intellectual property. Computer program is a literary work and if it is novel then it is possible to get the copyright, but patentability is totally different. In different continent, Australia requires to have useful effect and application; and New Zealand clearly provides in the Patent Act 2013 that computer program is not patentable.

According to section 13(1) Patent Act 1983 of Malaysia has no provision for computer program is patentable. The aforesaid Act is similar with UK with modifications. With the advent of artificial intelligence, the government set up a special body so-called MYIPO which provides guidelines which are similar to UK namely the issue of technical contents (Azlina, Yen Yen, & Goh., 2018). India is not the exceptional when it comes to patentable of computer program, the patent law explicitly provides that if a computer program generates the technical application can be patented (Garima, 2010).

All in all, the precedents from UK courts namely technical contribution and technical effects would be followed in Malaysia courts.

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