Study Guidelines

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2017 – Study Question

Patentability of computer implemented inventions

Introduction

1) This Study Question concerns the issue of patentability of computer implemented inventions (***CII***).

2) For the purpose of this Study Question:

   a) The abbreviation ***CII*** refers to an invention which involves the use of a computer, computer network or other programmable apparatus, where one or more features are realised wholly or partly by means of a computer program;

   b) The term ***patentability of CII*** refers to the question of whether CII may properly be the subject of a patent claim.

3) This Study Question examines the contribution to the state of the art the claimed CII makes, as well as the application of specific claim drafting requirements.

4) Patentability of CII has been hotly debated since the 1960s in many countries. National/regional laws and practices have significantly evolved over time. However, the development of the various practices has not been linear at all, creating a dynamically changing and scattered landscape as to patentability of CII, which has created a high degree of confusion and frustration among users of the patent system and practitioners.

5) Practices even diverge on the question of how to name inventions which involve the use of a computer, computer network or other programmable apparatus, where one or more features are realised wholly or partly by means of a computer program. For example, the European Patent Office (***EPO***) uses the term “CII”, the Korean Intellectual Property Office (***KIPO***) uses the term “computer-related invention”, the Japanese Patent Office (***JPO***) uses the term “software-related invention”, the State Intellectual Property Office of the People's Republic of China (***SIPO***) uses the term “invention relating to computer programs”, and the US Patent and Trademark Office

(***USPTO***) refers to “software or computer-related technology”. These divergences in terminology should not however distract from the fact that the respective laws and practices apply to the same subject matter.

Previous work of AIPPI

6) AIPPI's Resolution on Q57 - “Protection of computer programmes - Protection of computer-software” (San Francisco, 1975), resolved that:

> *1. Inventions otherwise satisfying the criteria of patentability according to national laws, should not be denied patent protection or protection by inventors' certificates merely because software, especially a computer programme, is involved, or because the subject matter can or is intended to be put into effect by using or programming data processing equipment.”*

7) This Resolution was confirmed at AIPPI's Executive Committee Meeting in Sydney in 1988 (taking further positions related to copyright protection of computer software).

8) The Resolution on Q133 - “Patenting of computer software” (Vienna, 1997) resolved that:

> *2. Computer software should be considered patentable provided that the claimed subject matter meets the traditional patentability requirements of novelty, inventive step (non-obviousness) and utility or industrial applicability.*
>
> *3. The technical character of computer software should be generally acknowledged and its industrial applicability should be construed in a broad manner so as to embrace the concept of enabling a useful practical result.*

9) Further, the Resolution on Q158 - “Patentability of Business Methods” (Melbourne, 2001) resolved that:

> *1. Inventions including methods used in all fields of industrial, commercial and financial activities, …, should be entitled to patent protection provided that the invention as defined in the claims has a technical content.*
>
> *2. If such an invention as a whole has a technical content, that should be sufficient for patentability even though the point of novelty and inventive step (non-obviousness) does not lie in the technical content.*

10) This Resolution was confirmed in Q132 - “Computer Software, Information Networks, Artificial Intelligence and Integrated Circuits” (Lucerne, 2003) which resolved that “*computer-implemented inventions should be eligible for patent protection and should not be treated more restrictively than other inventions*”.

11) In 2006, the AIPPI Standing Committee on Information Technology and Internet (formerly Special Committee Q132) prepared a Study Paper titled “Patent Protection for Computer Software Related Inventions” giving an overview of the then situation

regarding patentability of computer software related inventions. The Committee concluded that the earlier AIPPI resolutions on computer software patents (Q133) and on business method patents (Q158) (hereinafter referred to as the ***Resolutions on Q133 and Q158***) were consistent with the then analysis of the Committee and should therefore be reaffirmed.

12) In 2009, AIPPI submitted an amicus curiae brief in the case G3/08 pending before the Enlarged Board of Appeal of the EPO. The opinion expressed in that amicus curiae brief is in line with the Resolutions on Q133 and Q158.

13) In 2016, the AIPPI Standing Committee on Information Technology and Internet issued a report on the current situation around the world on the protection of CII (hereinafter referred to as the ***AIPPI Report 2016***). This very comprehensive report sets out the different approaches to patentability of CII in various jurisdictions worldwide, and shows the urgent need for harmonization in the field of patentability of CII.

14) At the 2016 AIPPI World Congress in Milan, a panel session explored the subject matter of this Study Question, which further demonstrated the need for harmonization in this area of law.

Discussion

15) The current practices of the EPO and the USPTO, suggest that AIPPI's position in the Resolutions on Q133 and Q158 has failed to prevail in at least those major jurisdictions.

16) Under current EPO practice, a claim in a patent application passes the requirement of an invention "in a field of technology" under Article 52 of the European Patent Convention (***EPC***) if the claim includes technical means (see T258/03[1]), for example it recites the physical hardware with which the computer program interacts (e.g. storing data on storage means). These technical means neither need to be inventive nor new (the so-called "further technical effect requirement"). This test under Article 52 EPC is therefore generally in line with the position in the Resolutions on Q133 and Q158. However, at least since the decision of the Enlarged Board of Appeal of the EPO in G3/08[2], it is established practice that the EPO applies a modified inventive step test under Article 56 EPC, according to which only those features that contribute to the technical character of the invention are considered when assessing inventive step. Features which cannot be seen to make any contribution, either independently or in combination with other features, to the technical character of the invention cannot support the presence of an inventive step. It is noted that such a technical solution does not necessarily need to result from a physical element, but may result from the performance of an algorithm. Accordingly, a solution in a non-technical field (e.g. insurance mathematics) – no matter how innovative – would fail to serve as basis of an inventive step under Article 56 EPC. This practice clearly contradicts the position of AIPPI as stated in the Resolutions on Q133 and Q158.

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[1] Decision of Technical Board of Appeal 3.5.1 dated 21 April 2004 (Auction method/HITACHI).

[2] Opinion of 12 May 2010 (Programs for computers).

17) In the US, recent decisions of the Supreme Court and the Federal Circuit present a new impediment to the patentability of CII. Based inter alia on the decision of the US Supreme Court *Alice Corporation v. CLS Bank* 134 S. Ct. 2347 (2014), a “two-part analysis” must be applied to determine whether the claimed subject matter is eligible for patent protection under 35 USC 101. First, it must be determined whether the claim is directed to a “law of nature, a natural phenomenon, or an abstract idea”, i.e. the judicial exceptions established by the US Supreme Court. If the claim is directed to one of those judicial exceptions, the question is then whether the claimed subject matter is patentable or the basis that the claim as a whole amounts to “significantly more” than the exception. “Significantly more” may refer, e.g. to improvements to the functioning of a computer itself. A contribution to the state of the art which qualifies as an “abstract idea” (e.g. a computer-implemented method of hedging risks) will not pass the “two-part analysis” no matter how advanced the contribution is, unless it is accompanied by a further contribution outside the field of the judicial exceptions and this contribution qualifies as “significantly more”. Beyond eligibility, for a claim to be patentable, it must also be novel under 35 USC 102 and inventive “as a whole” under 35 USC 103 and satisfy other requirements including written description and enablement under 35 USC 112. The “two-part analysis” also contradicts AIPPI's position as stated in the Resolutions on Q133 and Q158.

18) In contrast, under Japanese practice, CII is deemed patentable subject matter if the patent claim concretely describes how the software is processed using hardware resources (e.g. CPU, memory). In other words, the claim must describe concretely the interaction between the software and hardware resources. Merely reciting hardware resources (such as a CPU or ROM) is not sufficient. This approach lacks the further restrictions of current EPO or US practice, and therefore seems more in line with the Resolutions Q133 and Q158. However, the current Japanese approach seems to impose claim drafting requirements in relation to the description of the interaction between the software and hardware resources which go beyond the requirements regarding sufficiency of disclosure and enablement which generally apply to all inventions. In any case, it seems clear that such requirements cannot limit the scope of patentable subject matter, but rather relate to other questions of patent law, such as sufficiency of disclosure, enablement, and claim drafting requirements.

19) These three examples show that it is time to revisit AIPPI’s position on patentability of CII, exploring whether it is possible to agree on revised, harmonized rules regarding patentability.

20) As a starting point, based on the AIPPI Report 2016, there seems to be worldwide consensus that patentability of an invention should not be denied purely on the basis that it involves the use of a computer. The main source of controversy is rather the fact that a computer can – in theory – perform any task: e.g. controlling the brakes of a car, encrypting a message, or determining the optimal sales price for an article in an online store. Should all these CII be deemed to be patentable subject matter?

21) There have been many previous attempts to seek patent protection for inventions derived from various areas of human activity not limited to engineering and natural sciences: e.g. bookkeeping techniques, advertising techniques, games, risk hedging techniques, insurance mathematics etc. However, from the foundation of modern

patent law until the 1960s there has been – at least in Europe and in the US – an implicit consensus that the availability of patent protection should be limited to achievement in certain areas of human endeavour. Consequently, achievements in all other areas of human endeavour are excluded , no matter how advanced they may be (but which may however be protected by other IP rights, such as copyright or designs).

22) Attempts to articulate this consensus in a sound legal doctrine have failed in most cases. There is an inherent challenge in providing a definition of the areas of human endeavour which qualify as sources of patentable subject matter. On one view, a "static" definition would frustrate the ultimate purpose of patent law, namely to provide protection for unforeseen, non-obvious subject matter. However, attempts to find a “dynamic” or “open” definition of the scope of patentable subject matter which takes account of this purpose often fail to provide the necessary limitations or boundaries.

23) Being confronted with patent applications covering achievements coming from various areas of human endeavour, patent offices and courts have attempted to apply this implicit consensus without a workable doctrine to underpin the reasoning for their decisions. In the pre-computer age, this did not cause major challenges in practice as the nature of the claimed invention usually gave guidance as to whether it came from an accepted area of human endeavour. For example, a new and inventive layout for an account book simply “looked” as if it should not be the subject matter of patent protection, whereas a new and inventive valve control did not raise such concerns.

24) However, with the availability of computers, this intuitive approach of distinguishing between patentable and non-patentable inventions was bound to fail: every computer is a “machine” and consumes energy, so every computer program “looks” as if it is a new machine. At that time, a new view emerged according to which every computer program is an algorithm (which is per se correct) and algorithms belonging to the sphere of mathematics are generally excluded from patentability, no matter what the concrete computer program is doing. This approach disappeared over the time, as it became accepted that “software” is merely an embodiment of an invention, and therefore does not give any indication as to whether the claimed invention comes from areas of human endeavour which are outside the accepted sources of patentable inventions.

25) In the light of the above, AIPPI's position in the Resolutions on Q133 and Q158 may look workable and sound, i.e. generally to allow patentability of CII irrespective of the area of human endeavour to which the respective software contributes. However, as noted above, this approach is increasingly unlikely to enjoy worldwide consensus – rather, to the contrary.

26) If this approach is abandoned, challenging questions arise. Some of these will be addressed in the below questionnaire, the answers to which will form the basis for a new AIPPI resolution. It may be that the only viable alternative to AIPPI’s position in the Resolutions on Q133 and Q158 is a contribution-based examination of the patentability of the CII in question, i.e. a test of whether the CII contributes to areas of human endeavour which is accepted as a source of patentable inventions. If so, it is highly desirable for AIPPI to provide a non-exhaustive list of areas of human

endeavour which are accepted as sources of patentable CII, taking into account the ultimate purpose of patent law (protecting unforeseen, non-obvious subject matter).

27) Another 2016 Study Question - “Protection of graphical user interfaces" (***GUIs***) addresses, amongst other things, the question of patentability of GUIs specifically. That Study Question is purposely confined to one particular type of human endeavour. Neither Study Question aims to find a general definition of the areas of human endeavour acceptable as sources of patentable inventions.

You are invited to submit a Report addressing the questions below. Please refer to the 'Protocol for the preparation of Reports'.

Questions

I. Current law and practice

1) Does your current law contain any statutory provisions which specifically apply only to CII?

No (but see next answer)

2) Please briefly describe the general patentability requirements in the written statute based law of your jurisdiction which are specifically relevant for the examination of the patentability of CII.

According to the Examination Guidelines, a computer program claimed by itself or as a record on a carrier is not patentable, irrespective of its content, as it does not meet the definition of an invention under Section 12 of the Patents Act.

> Section 12. Meaning of “invention”.
>
> (1) An invention means an idea of an inventor which permits in practice the solution to a specific problem in the field of technology.

If, however, the subject-matter as claimed makes a technical contribution to the prior art, patentability should not be denied merely on the ground that a computer program is involved in its implementation.

3) Under the case law or judicial or administrative practice in your jurisdiction, are there rules which specifically apply only to CII? If yes, please explain.

Yes, See answer to Q2. We are not aware of any local case law on the matter.

4) Please briefly describe the general patentability requirements under the case law or judicial or administrative practice of your jurisdiction which are specifically relevant for the examination of the patentability of CII.

See answer to Q2

5) Exclusion of non-patentable subject matter per se

a) Do the statutory provisions, case law or judicial or administrative practice (hereinafter collectively referred to as ***Law / Practice***) in your jurisdiction exclude any particular subject matter relating to CII from patentability per se?

In this context, "per se" means that the non-patentable subject matter is identified without any implicit or explicit examination of the contribution to the state of the art the claimed CII makes.

If yes, please answer questions 5)b) and c) below. If no, please go to question 6).

No, as examination of the contribution is required

b) Please describe the subject matter excluded from patentability per se and explain in detail how it is identified in practice.

c) If there is any subject matter identified in a patent claim relating to CII that is excluded from patentability per se, is it possible to overcome a rejection of the patent claim by adding other subject matter to the claim?

If yes, please answer questions 5)d) and e) below. If no, please go to question 6).

d) Does the "other subject matter" need to have a certain quality, e.g. does it need to be inventive?

e) Can you describe the areas of human endeavour the "other subject matter" needs to relate to? If yes, please explain.

6) Requirement of a contribution in a field of technology

a) Does the examination of the patentability of CII in your jurisdiction implicitly or explicitly involve an examination of the contribution the claimed CII makes to the state of the art (such examination may be part of a general "patentability" test or part of the novelty and inventive step/non-obviousness test)?

If yes, please explain and then answer questions 6)a) – d). If no, please go to question 7).

Yes

b) Does this test implicitly or explicitly involve excluding contributions from areas of human endeavour which are not deemed to be sources of patentable inventions? In other words, does patentability of CII implicitly or explicitly require a contribution from areas of human endeavour which are deemed to be sources of patentable inventions (e.g. engineering, natural sciences)? If yes, please explain.

A technical contribution (or technical effect) is required, but no excluded sources appear to be defined

c) Does this test also implicitly or explicitly require that the relevant contribution the CII makes to the state of the art qualifies as inventive/non-obvious? This

additional test may be integrated into the general inventive step / non-obviousness examination, or may be a stand-alone test. If yes, please explain.

No

d) Is there an implicit or explicit consensus in your jurisdiction as to the areas of human endeavour which are accepted as sources of patentable CII? If yes, are these areas of human endeavour defined, and if so how?

No

7) Does the Law / Practice in your jurisdiction contain any specific claim drafting or other formal requirements which are applicable to CII, i.e. which deviate from the Law / Practice applicable to inventions which are not CII? If yes, please explain.

According to the Examination Guidelines, where patentability depends on a technical effect, the claims must be so drafted as to include all the technical features of the invention which are essential for the technical effect.

8) Does the Law / Practice in your jurisdiction contain any specific requirements as to sufficiency of disclosure and/or enablement which are applicable to CII, i.e. which deviate from the Law / Practice applicable to inventions which are not CII? If yes, please explain.

No

9) Do courts and administrative bodies in your jurisdiction apply the Law / Practice for patentability of CII in your jurisdiction in a harmonized way? If not, please explain.

Unknown. However, the Malaysian courts generally follow UK case law, which may actually be slightly more restrictive than suggested by the Examination Guidelines.

II. Policy considerations and proposals for improvements of your current Law/Practice

10) Is the current Law/Practice in your jurisdiction regarding the patentability of CII considered by users of the patent system and practitioners to be understandable and workable? If not, please explain.

While the Examination Guidelines are useful, it would be helpful to have further examples of different CII to ensure consistency and aid understanding during prosecution thereof.

11) Does the current Law/Practice in your jurisdiction regarding patentability of CII provide appropriate outcomes, in particular from an economic perspective? If not, please explain.

ICT is strong in Malaysia, so it is considered beneficial to minimise patentability exclusions thereof

12) In your jurisdiction, is copyright protection of CII regarded as sufficient from an economic standpoint? Please state why in either case.

No, as it is possible to decompile/rewrite software into a form which does not infringe copyright.

13) Alternatively, is there an explicit or implicit consensus that patent protection of CII is required to ensure sufficient reward on investments made into the development of CII? If yes, please explain.

No

14) In your jurisdiction, is there an implicit or explicit consensus that availability of patent protection should be limited to contributions from certain areas of human endeavour, excluding contributions from all other areas of human endeavour, no matter how advanced these contributions? If yes, please explain.

No

III. Proposals for harmonisation

15) Do you consider that harmonisation regarding patentability of CII is desirable?

If yes, please respond to the following questions without regard to your Group's current Law/Practice.

Even if no, please address the following questions to the extent your Group considers your Group's current Law/Practice could be improved.

Yes

16) Exclusion of non-patentable subject matter per se

a) Should there be any exclusion from patentability per se of subject matter relating to CII?

In this context, "per se" means that the non-patentable subject matter has to be identified without any implicit or explicit examination of the contribution to the state of the art the claimed CII makes.

If yes, please answer questions 16)b) and c). If no, please go to question 17).

No

b) Please describe the subject matter that should be excluded from patentability per se and explain in detail how it should be identified in practice.

c) If there is subject matter identified in a patent claim related to CII you consider should be excluded from patentability per se, should it possible to overcome a rejection of the patent claim by adding other subject matter to the claim?

If yes, please answer questions 16)d) and e). If no, please go to question 17).

d) Should such "other subject matter" be required to have a certain quality, e.g. should it need to be inventive? Please state why in either case.

e) If yes to question 16)d) above, please describe the areas of human endeavour to which such "other subject matter" should relate.

17) Requirement of a contribution in a field of technology

a) Should the examination of subject matter eligibility of CII involve an examination of the contribution the claimed CII makes to the state of the art? If not, please explain.

If yes, please answer questions 17)b) and c). If no, please explain why and then go to question 18).

Yes

b) Should such examination be made under a test specific to CII, or should it be part of the usual novelty and inventive step/non-obviousness test? Please state why in either case. Please state why in either case.

Examination should be part of the usual novelty/inventive step tests. However, for practical reasons it may be helpful to have a supplementary procedure to help the examiner when the invention is considered to be a CII.

c) Under this test, should patentability of CII require a contribution from areas of human endeavour which are deemed to be sources of patentable inventions (e.g. engineering, natural sciences)? In other words, should contributions from areas of human endeavour which are not deemed to be sources of patentable inventions be disregarded? If not, please explain.

If yes, please answer questions 17)d) and e). If no, please go to question 18).

This is a difficult question to answer because of the way it is positively phrased. The first sentence requires the consideration of whether the contribution comes from specifically defined sources of patentable inventions (defined under the Act as a 'solution to a specific problem in the field of technology'). The second sentence relates to the same thing i.e. if they are not specifically defined sources of patentable inventions, should they be disregarded? [Meaning 1]

However the question does not appear to consider the possibility of subject matter which is specifically excluded (which would be the case if the 'not' of the second sentence was after 'deemed' instead of before) e.g. a business method. [Meaning 2]

We are of the view that if the contribution is derived from a specifically excluded area of patentability (which is not necessarily an area of human endeavour which is not deemed to be a source of patentable inventions), it should be disregarded from patentability.

d) Should this test also require that the relevant contribution the CII makes to the state of the art qualifies as inventive/non-obvious? This additional test may be integrated into the general inventive step / non-obviousness examination, or may be a stand-alone test. Please state why in either case.

No, it should be sufficient that the claimed invention as a whole is inventive, as per Resolution Q158.

e) Should there be a non-exhaustive list of areas of human endeavour which are accepted as sources of patentable CII, taking into account the ultimate purpose of patent law (protecting unforeseen, non-obvious subject matter)? If yes, please provide such a list. If not, why?

No, because new technology not on the list may still be excluded as a result

18) Should there be any specific claim drafting or other formal requirements which are applicable to CII, i.e. which deviate from the rules or practice applicable to inventions which are not CII? Please explain why in either case.

No, CII should not be treated more restrictively than other inventions

19) Should there be any specific requirements as to sufficiency of disclosure and/or enablement which are applicable to CII, i.e. which deviate from the rules or practice applicable to inventions which are not CII? Please explain why in either case.

No, CII should not be treated more restrictively than other inventions

20) Please comment on any additional issues concerning patent protection of CII your Group considers relevant to this Study Question.

We believe current Malaysian practice for CII is actually broadly in line with Resolutions Q132 and Q158. For interest, section 3.6 of the Examination Guidelines is set out in full below:

Programmes for computers

A computer program is a set of instructions for controlling a sequence of operations of a data-processing system. It closely resembles a mathematical method. It may be expressed in various forms and may be presented in a format suitable for direct entry into a particular computer or may require transcription into a different format. It may be presented in terms either of software or in combination with hardware. A data-processing operation can be implemented either by means of a computer programme or by means of special circuits and the choice may have nothing to do with the inventive concept but be determined purely by factors of economy or practicality. With this point in mind, examination in this area should be guided by the following approach:

A computer programme claimed by itself or as a record on a carrier is not patentable, irrespective of its content. The situation is not normally changed when the computer programme is loaded into a known computer. If, however, the subject-matter as claimed makes a technical contribution to the prior art, patentability should not be denied merely on the ground that a computer programme is involved in its implementation. This means, for example, that programme-controlled machines and programme-controlled manufacturing and control processes should normally be regarded as patentable subject-matter. It follows also that, where the claimed subject-matter is concerned only with the programme-controlled internal working of a known computer, the subject-matter could be patentable if it provides a technical effect. As

an example, consider the case of a known data-processing system with a small fast working memory and a larger but slower further memory. Suppose that the two memories are organised under programme control, in such a way that a process which needs more address space than the capacity of the fast working memory can be executed at substantially the same speed as if the process data were loaded entirely in that fast memory. The effect of the programme in virtually extending the working memory is of a technical character and might therefore support patentability. Where patentability depends on a technical effect, the claims must be so drafted as to include all the technical features of the invention which are essential for the technical effect.

Where patentability is admitted then, generally speaking, product, process and use claims would be allowable.

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