

Computer Implemented Inventions in the UK and European Patent Offices

By Steven Gross¹

Introduction

Computer implemented inventions (CII), often referred to as “software patents” or “business method patents,” are the source of a considerable amount of argument and confusion amongst applicants, patent practitioners, and examiners. This confusion is compounded by the variation in approach to CII by different national and regional offices. This article is spawned by my experience over a number of years examining applications in the UK Patent Office that could be considered to be CIIs (typically classified under G06F and G06Q of IPC8).

UK Law related to Computer Implemented Inventions

A CII will often attract a number of objections from the examiner. Of course, if good citations are available an objection will be made under Section 1(1) that it is lacking novelty or inventiveness. The primary objection, however, is likely to be made under Section 1(2) of the Patents Act 1977:²

Section 1(1)

A patent may be granted only for an invention in respect of which the following conditions are satisfied, that is to say -

- a) the invention is new;*
 - b) it involves an inventive step;*
 - c) it is capable of industrial application;*
 - d) the grant of a patent for it is not excluded by subsections (2) and (3) below;*
- and references in this Act to a patentable invention shall be construed accordingly.*

Section 1(2)

It is hereby declared that the following (among other things) are not inventions for the purposes of this Act, that is to say, anything which consists of -

- a) a discovery, scientific theory or mathematical method;*
 - b) a literary, dramatic, musical or artistic work or any other aesthetic creation whatsoever;*
 - c) a scheme, rule or method for performing a mental act, playing a game or doing business, or a program for a computer;*
 - d) the presentation of information;*
- but the foregoing provision shall prevent anything from being treated as an invention for the purposes of this Act only to the extent that a patent or application for a patent relates to that thing as such.*

It is important to note that the categories listed above in Sections 1(2)(a)-(d) are not a rigid list of exclusions. In particular, the phrase “among other things” allows the examiner a relatively wide scope to interpret the list. Further, the application does not have to fall clearly into one single category. An examiner will often object to any and all categories that may apply.

¹ Steven Gross is a former Patent Examiner at the UK Patent Office. The opinions contained in this article are not those of the UK Patent Office.

² <http://www.patent.gov.uk/patentsact1977.pdf>

Interpretation

The primary tool an examiner will use to interpret the law in examining applications for CIIs is the Manual of Patent Practice,³ which contains an in-depth discussion of the law, as well as recent case law used to interpret the law. Below is a rather simplified summary of some of the leading cases that have formed the basis for current thinking on CIIs in the UK Patent Office.

For a long time Fujitsu Limited's Application⁴ (1997) was the leading case in the field that was used to guide examiners. Fujitsu is notable for codifying two major concepts, namely "substance over form" and "technical contribution," that had been considered in a number of previous cases, with Aldous LJ stating:

"..Fox LJ was making it clear that it was not sufficient to look at the words of the claimed monopoly. The decision as to what was patentable depended upon substance not form....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."

Therefore, the examiner would generally ignore any preamble to the claim and look at the specific features of the claim. But what is meant by the term "technical" in the above quotation? The example most often cited is that of *computer* assisted braking. Such an improved braking system is clearly a non-excluded (i.e., patentable) technical contribution. In more general computing environments, the technical contribution is often harder to identify beyond the use of a computer itself. This is where the Fujitsu case failed, where Aldous LJ said:

"...a computer set up according to the teaching in the patent application provides a new 'tool' for modelling crystal structure combinations which avoids labour and error. But those are just the sort of advantages that are obtained by the use of a computer program."

Very few appeals were made following Fujitsu's decision until CFPH LLC's Application,⁵ which despite being a lower court decision, prompted a slight change in policy. In simple terms, the CFPH decision redefined "technical contribution" as an advance in a non-excluded field. Claiming the invention on a physical carrier, or as a computer system is not considered to be such an advance. As Peter Prescott QC states in CFPH LLC's Application:

"For those and other reasons it is not surprising that in, this instance, the exclusion is 'harder'. You are not allowed to get round the objection — that you are attempting to patent a computer program — by claiming it as a physical artifact, a mere change of form. You cannot patent 'A computer disk when storing my computer program' or 'A computer when programmed to function according to my program'. For if that were allowed you would get a monopoly to the use of your computer program, defeating the policy of the law."

Computers obviously speed up operations, but as stated in Fujitsu that is exactly what one would expect. On the other hand, if the speed increase is a result of changing the "technical" way in which

³ <http://www.patent.gov.uk/patent/p-decisionmaking/p-law/p-law-manual/p-law-manual-practice.htm>

⁴ <http://www.bailii.org/ew/cases/EWCA/Civ/1997/1174.html> (Fujitsu Limited's Application [1997] RPC 608)

⁵ CFPH LLC's Application, 2005 EWHC 1589 (Pat)

the computer operated, it may well be considered an advance (see the Hearing decisions in ARM Limited's Application BL O/066/06 which optimized the compilation process, and Sun Microsystems Inc.'s Application BL O/057/06 which allowed the use of a reduced instruction set).

A common question is whether the addition of a "product step" would provide a technical advance sufficient to elevate the invention to the status of patentable subject matter, as is often suggested for applications that relate to design methods. Obviously, if the product itself is new and novel, a claim to that product by itself is likely to be allowed. If, however, the product would be indistinguishable from a product designed by any other method, there is likely to be an objection, unless it can be shown that, for example, the design process is considerably improved, say by removing a complete prototyping stage. Macrossan's Patent Application attempted this line of argument by printing out a legal contract formed by the computer system of the invention. The "product step" was rejected by Mann J⁶ and this was upheld by the (UK) Court of Appeal when it was considered again in *Aerotel/Macrossan*⁷.

The latest Court of Appeal decision to affect Office practice is *Aerotel/Macrossan*, where Jacob LJ held that the requirements for patentability should be considered using a "four step approach," as follows:

1. *Properly construe the claim;*
2. *identify the actual contribution;*
3. *ask whether it falls solely within the excluded subject matter; and*
4. *check whether the actual or alleged contribution is actually technical in nature.*

The Court held that this four step approach was consistent with previous decisions, and was a reformulation of previous tests.

To understand the impact of this change on past decisions, the Patent Office made a number of case studies available.⁸ From these studies, it is clear that many patent applications (especially those for "pure" business methods) fall at the third step, and no consideration of the technical nature of the contribution need be made.

An interesting question is: "What role does prior art play in the examiner's decision?" Questions of novelty and obviousness should be considered separately; however, due to the nature of the questions above, it is sometimes inevitable that they are rolled into one. For example, in many cases the individual components of a system, such as servers and communication systems, will be known. Such known components may be arranged in a variety of configurations well known in the art. That there may not be a citation specifically illustrating a particular claimed configuration is somewhat moot if the system is being directed merely at an excluded business method.

EPO Law

EPO Law is very similar to the UK Patents Act, since they were both written at the same time and with the intention of having the same effect. In fact, many UK Judges will refer to EPC Article 52⁹ in

6 Macrossan's Patent Application [2006] EWHC 705 (Ch)

7 *Aerotel Ltd v Telco Holdings Ltd* (and others) and *Macrossan's Application* [2006] EWCA Civ 1371

8 <http://www.patent.gov.uk/patent/p-decisionmaking/p-law/p-law-notice/p-law-notice-subjectmatter/p-law-notice-subjectmatter-test.htm>

9 <http://www.european-patent-office.org/legal/epc/e/ar52.html>

preference over Section 1(2) of the Patents Act. One major difference between the UK and EPO, however, is in the way the EPO treats the decisions of the Technical Boards. In the UK, Hearing decisions are considered to be binding precedent. In contrast, the EPO does not consider its decisions to be binding. The UK Patent Office will therefore consider EPO decisions to be merely persuasive and not binding.

In some respects, the EPO's approach is similar to that of the UK. For example, consider this quote from IBM/Text Processing¹⁰ (referring to Vicom/Computer-related invention¹¹):

"..... even though it could be carried out by known hardware suitably programmed, because it makes a contribution in a field not excluded from patentability, namely a more efficient restoration or enhancement of the technical quality of an image. Similarly, in T26/86 [Koch & Sterzel]¹² the claimed apparatus is patentable, even though the X-ray apparatus without the computer program was known, because it makes a contribution in a field not excluded from patentability, namely controlling the X-ray tubes so that optimum exposure is obtained with adequate protection against overloading of the X-ray tubes."

Note how the consideration of the X-ray apparatus as a technical entity in itself compares favorably to previous discussions surrounding computer controlled brake systems.

The leading approach of the EPO is now embodied in Hitachi/Auction Method,¹³ which took the view that the presence of any technical means at all will allow a claimed invention to escape the exclusions. The application is then considered under inventive step, considering only technical features. The Board also stated that:

"...steps consisting of modification to a business scheme and aimed at circumventing a technical problem rather than solving it by technical means cannot contribute to the technical character of the subject-matter claimed."

The Hitachi decision contrasted with earlier decisions, in particular Pension Benefits,¹⁴ which took the view that:

"The board notes that the mere occurrence of technical features in a claim does thus not turn the subject-matter of the claim into an invention within the meaning of Article 52(1)."

Generally, it seems that the EPO has taken a lighter tone compared to the UK Office. The two laws are drafted to have the same effect and generally my experience is that, on average, the result will be the same, even if the reasoning is different.

Conclusion

In considering CII inventions as possibly constituting excluded subject matter in the UK and EPO, it is

10 IBM/Text processing (T65/86)

11 Vicom/Computer-related invention [1987] 1 OJEPO 14 (T208/84)

12 Koch & Sterzel/X-ray apparatus [1988] 1-2 OJEPO 19 (T26/86)

13 Hitachi/Auction Method [2004] 12 OJEPO 575, [2004] EPOR 55 (T 258/03)

14 Pension Benefits Systems Partnership [2001] 10 OJEPO 441, [2002] EPOR 52 (T 931/95)

difficult to generalize on what is and isn't excluded, and only by submitting an application can you really find out. Certainly, there do not appear to be any hard and fast rules. This is mainly due to the fact that each case is different. Because each application is considered on a case by case basis, the argument that other similar cases have been granted will not be considered persuasive. However, there is much to be gained by looking through past Hearing decisions and Boards of Appeal decisions (see under Further Reading, *infra*) for pointers on what will and will not work. For example, pure business methods, e.g., selling things over the Internet, or using a computer to automate previous manual accounts, will be excluded. Mathematical methods that are claimed purely in the abstract will also be excluded. However, if the same mathematical method is limited to being used to model an oil reservoir and thus improve oil extraction, or to control a brake system, then there is a chance it may be allowed. Using a general purpose computer to automate, speed up or otherwise control a process would generally be excluded, unless the end result goes beyond what one would normally expect from using a computer. So in conclusion, it is worth looking for that which takes your application beyond just computerization and trying to emphasize that in the claims.

Caveat

None of the above should be considered legal advice. The law in this field is constantly evolving and, although the primary barriers are likely to remain in place, the gray areas can be extremely murky.

Further Reading

Manual of Patent Practice (available online, is a fluid text subject to regular updates):

<http://www.patent.gov.uk/patent/p-decisionmaking/p-law/p-law-manual/p-law-manual-practice.htm>

Current Practice notices of the UK Patent Office are published online:

<http://www.patent.gov.uk/patent/p-decisionmaking/p-law/p-law-notice.htm>

Case studies applying the current law to past decisions can be read online:

<http://www.patent.gov.uk/patent/p-decisionmaking/p-law/p-law-notice/p-law-notice-subjectmatter/p-law-notice-subjectmatter-test.htm>

UK Patent Office Hearings (essentially the court of first instance for patentability matters) are published online:

<http://www.patent.gov.uk/patent/p-decisionmaking/p-challenge/p-challenge-decision-results.htm>

EPO Technical Boards of Appeal decisions are available online:

http://legal.european-patent-office.org/dg3/search_dg3.htm