



Confederation of European Computer User Associations

Confédération Européenne des Associations d'Utilisateurs des Technologies de l'Information

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Patentability and Innovation today

Innovation is one of the Information Society drivers and a very important one. Without innovation there will be no progress. But innovation has to benefit all stakeholders: the industry, the Governments and the user. With user I mean the computer user, the information technology consumer and the citizen in general. It has to be a win-win-win situation for everybody. Therefore, CECUA welcomes the attention and broad discussion on innovation and patent-ability as a promising way to ensure that the perspectives and interests of all stakeholders are included.

A handwritten signature in black ink, appearing to read 'Jon Thorhallsson'.

Prof. Dr. Jon Thorhallsson
CECUA President

Patentability and Innovation today

Introduction

A patent, the monopoly granted to inventors in return for making their invention public, are increasingly important today as a means of protecting the rights (and income) of inventors whilst at the same time making their knowledge publicly available to stimulate further innovation.

However, new types of invention and discovery in the form of genetic sequences, computer software and business processes are creating difficulties for Patent Offices because of the lack of precision in current legislation.

A recent paper, “**LES INVENTIONS DE DEMAIN - Biotechnologies, logiciels et méthodes d'affaires**” written under the direction of Professor Michel Vivant from the University of Montpellier and Jean-Michel Bruguière of the University of Avignon makes proposals on how to tackle the problem by examining the question as to whether the definition of patentability needs updating.

CECUA considers this paper to be a very important contribution to the debate on the law and intellectual property and has prepared this short article to bring their opinion to the notice of a wider audience.

Does the definition of patentability need updating?

What is a “patentable invention?”

There is a lack of clarity in the definition of an invention, and yet it is essential to be able to identify an invention to decide whether it can have a patent!

According to whom you ask, an invention is either a process leading to innovation or the innovation itself. Is the process or the result of that process which can have a patent?

A major problem is that the law does not provide an clear answer to this very basic question. It does however, provides some definition of what cannot be patented – but this does not help much in practice.

So what is an invention?

A definition could be that “an invention is a process or the act of inventing or the result of the act of inventing”. However, this definition is far too wide and covers almost anything and everything!

Going back to the spirit of the law, patents were originally granted by a monarch or ruler to provide a monopoly to protect the ideas of the inventor provided that he made his ideas public. However, it is not sufficient today to grant a patent on the judgement (or whim) of an individual. There is a need for rules to guide this judgement, and these rules need to be consistent, fair and equitable. Furthermore, the rules need to be precise to avoid confusion and flexible to cope with the rapid changes in knowledge these days.

Inventions versus discoveries

At first sight, the difference between an invention and discovery is obvious – an invention is man made and a discovery is finding something that already exists! However, life is not that simple. Is the mathematical model of the universe an invention or a discovery? This is a deep philosophical debate and as Roubier states: “there is no reason to distinguish between invention and discovery”, and indeed the distinction between invention and discovery is still confused in law.

Duality of the concept of invention in law

There are two aspects of an invention:

- 1 it must be novel
- 2 it must be disclosed

French lawyer Paul Roubier states that an invention is a “productive¹” innovation and this is the basis of American patent law (and French intellectual and commercial property law). This definition is not very useful as almost everything is useful or potentially useful and thus almost everything can be protected.

Further difficulties arise because there is no definition over the range of what is and what is not patentable. Then should the definition also include a clause that patentability is restricted to innovation arising from hard science?

The definition now becomes:

“Invention occurs when the intellectual process, of no matter what sort, leads to the attainment of innovation based on a knowledge of hard science, and possibly regardless of the nature of the effect produced”.

This leads to two practical implications:

- 1 when the invention lies in the relationship between product and result, the patent can reasonably only applied to the result
- 2 the new application of the relationship between the existing product and the result does not have to be an dependent relationship.

Innovation today

Invention and genetic sequences

Applying this definition to genetic sequences, the genetic sequence itself is not patentable, but a genetic sequence which is the subject of a disclosed or concrete application ought to be patentable.

Invention and computer software

Computer software has two aspects, the code as written and the function of the code.

The actual code, as is now universally accepted, is protected by copyright law. The functionality of the software can be considered under patent law. However, there are several questions. Can a “process type” patent protect software? Is there a problem because of the co-existence of copyright and patent law, especially since the conditions for obtaining protection are very different?

Invention and business methods

Business methods raise the same issues as computer software. The method as such cannot be patented. However, if the definition is accepted that an invention is an innovation based on knowledge derived from hard science regardless of the effect produced, then a process for commercial purposes must be patentable.

Common law – a law open to patentability

¹ Criterion of utility.

There seems to be nothing that prohibits a patent being granted for these new innovations.

It is essential to recognise that invention exists and can be identified by patent law, once an intellectual process, whatever it might be, leads to innovation based on a knowledge of hard science, and which demonstrates a material effect resulting in a transformation of nature, or indeed no matter what the produced effect is.

This reasoning applies perfectly to a genetic sequence and also to innovations "relating to computers" to which European authorities have referred.

Part 2 - The invention to be patented : the deciding factors

It is not enough to re-iterate that an invention has to be claimed and described, that it should be new and "not obvious". Putting these requirements into practice is not always straightforward when applied to genetic sequences or computer software.

Whilst there are advantages by having a "flexible law" which overcome the vagueness of the law, there are also advantages in setting clear rules.

For example, -

- in terms of the content of the claim: to decide on the need for the claim to show the precise function of a genetic sequence. to decide on the purpose of the claim for a software programme.
- in terms of the description: to "canonise" the presentation of sequences and perhaps to set length limits so that the patent really does fulfil its informative role; to decide on the requirement to disclose, or not, the source code of the programme-
- in terms of novelty and inventive activity: to state the on-going nature of legal requirements.

Conclusion

In conclusion, the paper gives seven recommendations as guiding principles.

1. Refining the definition of the invention

The paper identifies the need to refine the definition of the term invention, and recommends the following definition:

"Invention occurs when the intellectual process, of no matter what sort, leads to the achievement of innovation based on a knowledge of hard science, no matter what the nature of the effect produced. Just as long as the effect is "produced".

Two comments need to be made regarding this definition.

Firstly, in no way does this definition invalidate the traditional approach. Quite the contrary. Based on pre-conceived practice as regards patent issues, it's a question of admitting the inadequacy of traditional interpretation, of moving beyond this, and evaluating the invention -in any field whatsoever - under its inherent, yet often ignored, twofold nature:

1) inasmuch as the invention has an "operating/functioning" property, or if preferred, that it is capable of producing a practical end-result;

2) inasmuch as the end-result is the outcome of an action (a process) which, as we said, can be described as being "exposed or revealed".

Secondly, this definition is flexible and avoids being over restrictive -and this feature must be precisely (and preciously) safeguarded, as is clearly shown by the need to conduct the current research.

Nevertheless, it is important to be absolutely clear that the criterion used in US law of "being useful" must be discarded, as it really is anything but a criterion.

2. Measuring dependency

From the above, it is clear that the inter-dependency of patents must be thought through differently - and without reference to all pre-conceived ideas.

3. Recognising a principle of domain irrelevance

As regards defining the areas of what is patentable, the author's opinion is that where the invention covered by patent law is one that has an "operating" character, it must follow that there is no "natural field" for the potentially patentable invention.

Very specifically, this means that where it is possible to identify a technical effect from an innovation, we must accept that we are in the domain of patentability.

The legal principle of domain irrelevance, but -except for any special ethical or economic non-legal considerations that have to be evaluated in the political debate -proprio sensu -the ultimate responsibility for determining the norms for patents as for any other issue, lies with the political authority which alone is competent (at least in a democratic society) to decide what these should be.

4. Applying common law

Returning to "pure" law, this is largely concerned with highlighting the view that common law alone should justifiably have the final say.

This is the best way of guaranteeing that patent law is applied as objectively as possible, as well as of avoiding the risk of jumping from of a policy of patent refusal on principle to one of non-critical acceptance.

In these general policy terms, it is appropriate to take into consideration those innovations in the sectors examined which have been identified as inventions, such as:

- a patentable product producing a certain result² , as in the case of genetic sequences;
- a process, under the guise of a programme, as in the case of computer programmes;

² For instance, a genetic sequence coding for a specific protein

- finally, possibly another process, in an area which is not really technical, such as the business field (on the condition that the invention can be considered as simply a technical solution to a problem, be it technical or not).

As for the rest, whether it concerns the substance or the form, the appreciation of novelty, of inventive activity, drafting claims, or the description, common law should always be brought into play. There is absolutely nothing to justify any other approach.

This however does not exclude certain specific requirements being demanded.

And from some of the suggestions made above the paper reiterates that it is undoubtedly appropriate to:

- review the state of technology and especially to challenge the way of handling purely visual disclosures;
- standardise the presentation of genetic sequences and perhaps set size limits so that the patent can actually fulfil its informative function;
- state whether it is necessary to provide the source code of software programmes

5. Refusing all "manipulations"

Taking the above arguments further, it is clear that the "manipulation" of patent subject-matter must be banned.

For the authors, examples of manipulation would be:

- as regards genetic sequences, any claim calculating the functions of genetic sequences that is "constructed" simply as a result of statistical studies, simulation, analogy or extrapolation and with no actual supporting proof;
- -as regards computer programmes, claims for products where no one has identified the concrete example or structure to which they refer.

6. Standardising applications?

The question of standardising patent applications must be considered very carefully, particularly in the areas that are open to the risk of abuse.

7. Granting funds to Offices

Patent Offices must be given the financial, human and technical resources in order to meet the challenge.

Acknowledgment

This article has drawn heavily on this paper (**Summaries**), and the references to the full text can be found below

PROTEGER LES INVENTIONS DE DEMAIN
Biotechnologies, logiciels et méthodes d'affaires
Collection « Propriété Intellectuelle »
INPI (Institut National de la Propriété Industrielle)
La Documentation française Paris 2003 ³

Etude menée en 2003 ⁴

sous la direction de Michel Vivant professeur à l'université de Montpellier,
directeur de l'équipe de recherche « Créations immatérielles et droit » ,
docteur honoris causa de l'université d'Heidelberg,

et Jean-Michel Bruguière, maître de conférences à l'université d'Avignon

Avec l'appui des études réalisées par

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* David Vaver, professeur à l'université d'Oxford,

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qui figurent en seconde partie

³ French version with Summaries in English.

⁴ Published before european resolution dated september 24, 2003 called 'Proposal for a
DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
on the patentability of computer-implemented inventions'

About CECUA:

Founded some 30 years ago in 1983, CECUA was set up as a non-profit distributing organisation under the law of 25th October 1919 in Brussels. The Statutes laid down that any national computer user association operating in any of the member states of the Council of Europe is eligible for membership. Encouraged by the European Commission, CECUA was set up to enable European Computer users to work together and share information so that the interests of “European Computer Users” could be formulated and promoted mainly by the European Commission.

In the early days, computer users were generally large corporate organisations or computer professionals and the activities centred on standards, model forms of contract for purchasing hardware, software and computing services, Data protection and Human resources.

During the 1980s, the personal computer became increasingly popular with the result that in the early 1990s, it was quite common for PCs to be used in the office and in the home. Thus the term “computer user” evolved to include private citizens as well as professional users and corporate bodies. Further, governments were adopting the use of information services for communicating with its citizens. So the range of issues changed direction. Maintenance, reliability and standards were no longer major issues of concern. Data Protection, privacy, security, child pornography and other areas were becoming more relevant, and in order to start the ball rolling, CECUA with the support ISPO and DG XIII of the European Commission, ran a major Conference in 1998 in Brussels entitled “The Citizen and the Global Information Society”.

This proved to be ground breaking development and a pivotal stage of the evolution of CECUA. As a direct result of this Conference CECUA published a “Proposed Bill of Rights for Citizens in the Global Information Society” which for the first time set out to address the major fears, concerns and needs of Citizens within Europe (see www.CECUA.org) in order that European citizens could work and play in a safe and secure Information Society. This “Bill of Rights” raised many fundamental issues which are at long last being recognised by European Bureaucrats and politicians after some 5 years of very hard lobbying by CECUA. The “Bill of Rights” was conceived both as guidelines and standards of user demands in the process of formulating directives and regulations for the EU. And in the discussion on Innovation and patent-ability CECUA will be guided by the same principles.