

*Should you be more active in protecting software and  
computer-implemented inventions in Europe?*  
**J A Kemp**

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## International

# Protecting software and computer-implemented inventions in Europe

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A patent is generally considered to be the gold standard of intellectual property, potentially offering true monopoly protection for a broad inventive concept. Although copyright is also important for software, its value has been reduced by recent European Court of Justice judgments that copyright does not extend to ‘look and feel’ or command syntax.

However, the apparent prohibition on patenting computer programs in Europe has often discouraged the pursuit of patent protection for software and computer-implemented inventions. According to our research, in spite of the increasing penetration of software into all parts of technology, the percentage of granted European patents that involve software has increased by only about 8% to 9% (see Figure 1).

It is clearly possible to obtain patent protection for many software and computer-implemented inventions in Europe. Case law at the European Patent Office (EPO) is now settled and, as a result, it is possible to make an early realistic judgement of patentability.

Under the EPO’s now settled practice, it is necessary to consider both whether an invention is excluded from patentability and whether it has an inventive step (ie, sufficient innovation to merit patent protection). The inventive step must be technical – business, administrative or abstract features are ignored. A pure business method is therefore not patentable in Europe and a computer-implemented method must have some invention in the technical aspects of the implementation.

### History

The European Patent Convention (EPC), originally agreed in 1973, excluded certain

categories of invention from patentability, in particular:

- discoveries, scientific theories and mathematical methods;
- aesthetic creations;
- schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers; and
- presentations of information.

However, this was only to the extent that the invention related to these things ‘as such’.

The term ‘as such’ has over time been used to diminish the prohibition to such an extent that it is now routinely possible to obtain patent protection for many computer programs. In the test for patentability, it is what the computer program does that determines whether protection is available.

The meaning of these provisions was first considered in a famous 1986 case called *Vicom* (T 0208/84). The decision noted that the categories listed in the EPC as being excluded had in common the fact that they were all “non-technical”. It was therefore concluded that an invention was not excluded

**Figure 1: Granted European patents involving software in their implementation as a percentage of all grants**



from patentability if it made a “technical contribution”, meaning that it had an effect in the real world or related to something technical – in this case a digital image.

Following this decision, a number of cases pushed the boundaries of what is patentable. However, in 2000 the relevant Board of Appeal started to develop a new approach to software and computer-implemented inventions which involve a mix of technical and non-technical features. Following criticism by the UK Court of Appeal, the new approach was endorsed by the Enlarged Board of Appeal in Opinion G3/08 in 2011.

### EPO's current approach

The EPO's current approach to software and computer-implemented inventions can be summarised as follows:

- A pure business or abstract method, containing no technical features at all, is excluded from patentability, even if it is novel and has an inventive step.
- If an invention involves any technical feature, however known or trivial, it cannot be excluded.
- When considering the novelty and inventive step of such a mixed invention (ie, an invention containing a mixture of technical and non-technical features), all of the non-technical features are disregarded.

In other words, you need to isolate the technical features and determine whether they are new and inventive in order to determine patentability.

### How it works in practice

In a patent application, the claims define the steps of the method or the features of the system that are to be protected. Features are often defined by specifying function and the features alone determine patentability.

A pure business method claim is one that sets out only business or administrative steps, without even specifying that they are carried out by a computer or other technical system. Such claims are relatively rare in the EPO and are routinely rejected.

It is more common for a business method to be claimed in terms of a computer system or means for carrying out steps of the

method, but with no details of the computer or other means. For example, a claim might specify “a processor for determining the price of a contract”. In such a case, the step of determining the price of a contract is considered to be non-technical and disregarded. The claim feature is therefore reduced to “a processor”, which is not new.

### Recent examples

Some examples of cases in which objections based on non-technical subject matter were not upheld on appeal include the following:

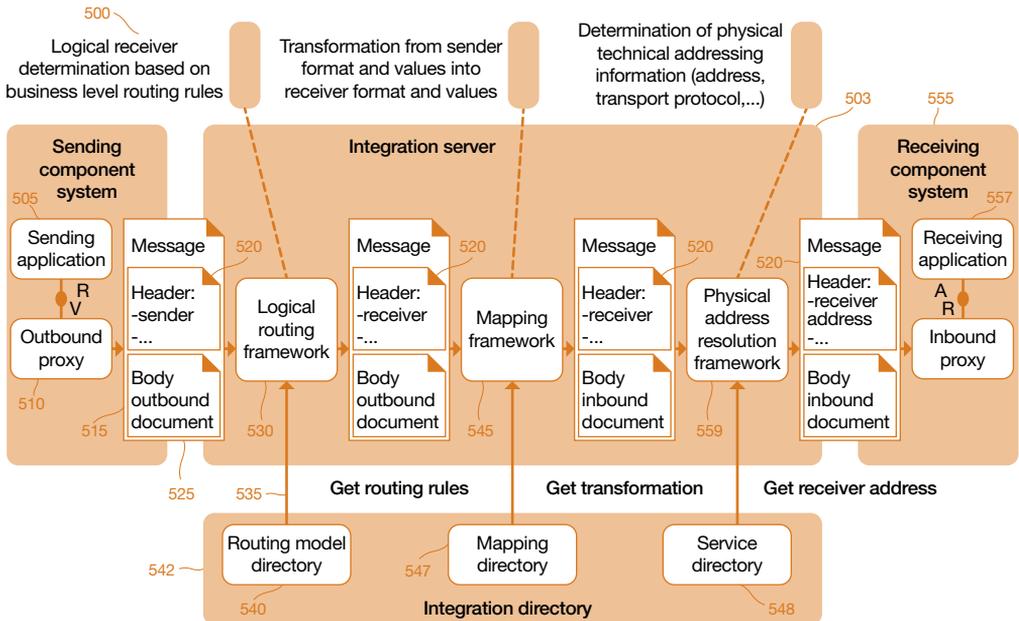
- *SAP/Fulfilment Coordination* (T 0964/12) related to a system for tracking fulfilment of orders to a company, but went into details of the content and routing of messages in the system (as can be seen from Figure 2), which were considered to be technical.
- *Network Appliance* (T 0743/11) related to allocating space for files in a storage system, which was clearly technical.

Some recent examples of cases rejected by the EPO Boards of Appeal include the following:

- *Deutsche Börse* – three cases (T 0907/09, T 2078/08, T 2061/08) relating to valuation of futures contracts based on a basket of credit default swaps were rejected as lacking any inventive technical features. Even claims specifying details of the algorithm used were rejected, as “the algorithm serves an economic or financial purpose without any technical relevance. Accordingly, the algorithm does not enter into the examination for an inventive step”.
- *Ricoh* (T 0972/07) claimed a computer system for managing the exchange between different manufacturers of goods that had been collected for recycling and brought to a central exchange facility. Again it was concluded that the computer system had no inventive features after the administrative features had been disregarded.
- *Microsoft/Bayesian Scoring* (T 1281/10) related to Bayesian techniques applied to scoring of player skill in online multi-player computer games. This was held to be a game rule, not a technical matter.

The definition of ‘technical’ is uncertain and the Boards of Appeal have resisted calls

**Figure 2: SAP/fulfilment coordination**



for its meaning to be clarified. They take the view that they recognise technical subject matter when they see it.

**National patent offices in Europe**

The patent statutes of the member states of the European Patent Office are harmonised with the European Patent Convention. Therefore, the different patent offices ought to take the same approach as the EPO. Although the German Patent Office has sometimes been said to be stricter than the EPO, the main dissident is the UK Intellectual Property Office (UKIPO).

The UKIPO’s general approach, following UK case law, is to identify what further contribution the invention makes over the prior art (relevant inventions previously disclosed), and then decide whether that contribution is technical. This could be seen as simply a reordering of the EPO approach (which is to identify technical features, then determine whether they are inventive), and UK courts have said that it ought to give the same result. However, the UKIPO takes a narrow view of what is a technical contribution,

rejecting many cases that the EPO would likely have allowed.

**Rest of the world**

Patents are inherently territorial and definitions of what can be protected are harmonised only to a limited extent. An international business must bear in mind the position in all significant markets and those of its competitors. Most countries restrict or prohibit patents for business methods and other forms of abstract invention, but the criteria applied vary from country to country. A detailed analysis of the position in other countries is beyond the scope of this chapter.

It is worth briefly mentioning the situation in the United States. The *State Street Bank* case of 1998 was widely seen as throwing open the doors of patentability to any method. A flood of business method patents followed, with some ludicrous examples. The doors were closed substantially by the *Bilski* case, decided by the US Supreme Court in 2010, and the Court of Appeals for the Federal Circuit’s judgment in *CLS Bank v Alice*. However, there remains a lack

of clarity over the exact test for patentability. Currently, the rate of grant for business method patents in the United States is less than 10%, compared with about 50% overall.

### Identifying patentable software inventions

Many innovative companies have effective procedures for identifying innovations that are potentially patentable and evaluating whether it is worthwhile applying for patent protection. However, the prejudice that ‘software is not patentable’ often hinders reporting of software-related inventions.

One approach to countering that prejudice is to ask engineers and developers to concentrate more on what is done than on how it is done. In principle, a good idea should not be deprived of patent protection merely because it is implemented in software.

Even many inventions that relate to the operation of the computer itself, rather than to some external process, are prime candidates for patent protection. These include anything that makes the computer a better computer (eg, by virtue of operating faster, more reliably or with fewer resources, or by virtue of being easier to use or program). In the recent UK Court of Appeal judgment in *HTC v Apple*, Apple’s invention relating to handling multi-touch user inputs was held to be patentable because a device using the invention “is, in a real practical sense, an improved device. This is not because it now runs different application programs but because it is, as a device, easier for programmers to use”.

In general, anything in the following areas should be regarded as potentially patentable:

- data communications and networking;
- data encoding, encryption and compression;
- data storage and retrieval;
- design, simulation and optimisation of real-world products and processes;
- image, including video, and audio signal processing;
- error detection and correction in processing and communications; and
- user interface techniques, such as gesture recognition.

On the other hand, areas where there are frequent rejections include:

- financial schemes, especially for valuing

derivatives or avoiding tax;

- payment schemes using mobile phones;
- inventions whose novelty is in the meaning of data being stored or processed;
- logistic schemes;
- analysis of business or financial information;
- transaction or trading systems; and
- game rules.

Some areas that might go either way are:

- data indexing and searching;
- presentation of information; and
- game displays.

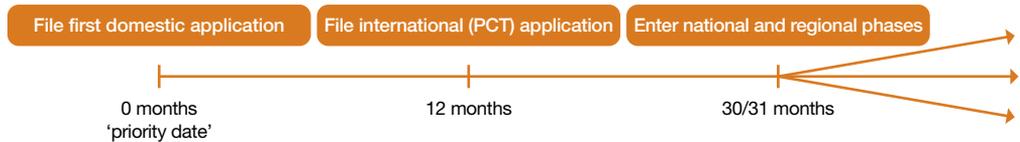
### Patent application process

A common approach to obtaining patent protection in a number of countries is to make a first filing in the applicant or inventor’s home country to establish an early priority date. Then, within one year, an international patent application is filed, effectively as a marker that protection in other countries is required. Separate applications are sometimes also made in countries that are not part of the international system, notably Taiwan. Within approximately two and a half years (30 months), the international patent application must be converted into separate applications in the countries or regions of interest (a process called ‘entering the national and regional phases’).

There is no particular reason to diverge from this approach for software and computer-implemented inventions. Sometimes the international phase can be dispensed with if protection in only one or two countries (eg, the United States) is desired.

If protection in Europe is desired, it is important to emphasise the technical aspects of the invention at the drafting stage. An objection that an invention is not sufficiently technical can be hard to refute, so it is best to prevent it from arising in the first place. We often find that applications drafted with US standards in mind, especially pre-*Bilski*, promote the business or financial aspects of an invention over the technical aspects. This invites objections in Europe that could have been avoided with a different emphasis in the application.

It is sometimes said that the rapid pace of development in many software fields means that patents, which can take four or five years to be granted, are not useful. However, new

**Figure 3: Outline of patent application process**

products often build upon old ones, rather than replacing them. By the time that a patent is granted, it might be that the idea it embodied is no longer cutting edge, but it may still be in use. It is possible to have a patent granted swiftly for a good software invention if you are proactive.

Additionally, with the spread of so-called 'Patent Box'-type legislation through Europe (eg, which allows companies in the United Kingdom to pay a lower rate of corporation tax on profits generated through sale of patented products), there are more reasons for applying for patent protection than the traditional reason of seeking to exclude competitors from the marketplace.

### Enforcement

In Europe, patents are enforced at national level. This may change if the European patent with unitary effect and the Unified Patent Court are introduced. Most patent litigation in Europe occurs in specialist courts in the United Kingdom and Germany. The relevant courts in both countries have much experience in software and computer-implemented inventions and often enforce such patents.

Two concerns over enforcement of patents for software are occasionally raised. One is that a competitor could make use of the invention without actually infringing the patent if some or all of the invention was carried out on servers located outside the jurisdiction. This risk can be mitigated by careful drafting. Also, the UK Court of Appeal has held (*Menashe v William Hill*) that there is still infringement of a UK patent if a server outside the United Kingdom is used by a person located within the United Kingdom.

The second concern is that for certain inventions, it may not be possible to detect infringement because either source code is not available or the invention is used internally.

In such case the UK disclosure procedure (a controlled process of discovery) can often provide the necessary evidence while keeping costs down.

### Conclusion

The time may be right for companies to reappraise their approach to protecting software and computer-implemented inventions. Many such inventions can be protected by patents and then successfully enforced in Europe. It is now easier to predict accurately the likelihood of success in applying for a patent so that applicants can be surer at the outset that their investment in a patent application will be worthwhile. Additionally, tax incentives such as the Patent Box-type legislation in place in various countries extend the benefits of patent protection beyond those of a monopoly. They can be seen more readily and clearly on the bottom line. **iam**

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A London-based partner of J A Kemp, John Leeming has over 24 years' professional experience and currently heads the company's designs group. He prosecutes patent applications in the optical, electronic and software fields, with particular expertise in semiconductor device manufacturing equipment and processes. Mr Leeming is experienced in litigation and enforcement matters, often achieving resolution of disputes without recourse to litigation. He has specialist expertise in recovering lapsed patents and applications, with clients ranging from multinationals to start-ups.

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A London-based partner of J A Kemp, Martin Jackson focuses his practice on the electrical, software, manufacturing and engineering fields. He is responsible in the firm for UK Patent Box matters and developments in UK patent law. Dr Jackson is highly experienced in contentious proceedings before the European Patent Office. His client base ranges from multinationals to start-ups, with major clients concentrated in Japan, the United Kingdom and Europe.

Clients consider that Dr Jackson is "efficient, courteously critical when needed and has an excellent technical grasp".