The Future of the European Requirement for an Invention (and with it of software, business method and biotech patents)

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- Patents reward inventions (*Lundbeck*).

  What is an invention?
  How are subject matter conceived as inventions?

- The requirement for an invention:
  1. Determines what is inherently patentable;
  2. Restricts the protection conferred by patents…

How well does the EPC requirement perform these functions?

1. The EPC requirement for an invention

Art 52(1): Patents shall be granted for any inventions, in all fields of technology, that are new, inventive and susceptible of industrial application.

Art 52(2): The following in particular shall not be regarded as inventions within the meaning of paragraph 1, to the extent to which a patent or application relates to it "as such" (Art 52(3)):

(a) discoveries, scientific theories and mathematical methods;
(b) aesthetic creations;
(c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;
(d) presentations of information.

- EPO (*Duns*):
  1. *De minimis* view of the requirement for an invention:
     - a requirement for a technical feature;
     - "essentially separate and independent of" the other Art 52(1) requirements.
  2. Cf only tech features count for novelty / inventive step.

  Contradictory and produces confusion; eg, *Amazon* 1-click method decision

- Lord Hoffmann (*Biogen*, *Merrell*, *Kirin-Amgen*, IPSANZ)
  1. *De minimis* view of the requirement for an invention:
     - "almost invariably academic";
     - excludes information / behaviour only

     (recall the EPO).
  2. Cf subject matter:
     - patentable / protected "under the description" of the invention;
     - Conceived having regard to Art 52(2) / the "social contract" effected by a patent (*contra* the EPO).

- Laddie J (*Fujitsu*):

  Art 52(2) categories = independent policy exclusions (*contra* Lord Hoffmann and the EPO).

- Mr Prescott QC (*CFPH*):
  1. Art 52(2) a spectrum of soft and hard exclusions (recall Laddie J);
  2. Subject matter patentable / protected "under the description 'invention'" (recall Lord Hoffmann).

- Pumfrey J (*Halliburton*):
  1. Art 52(2) categories "a heterogeneous collection" (recall Laddie J); (c) & (d) lack a clear policy basis.
  2. An invention is "tethered" to a specific industrial activity and directed to advancing the technical arts…
  3. Claims restricted to their tech field (recall the EPO).

- Jacob LJ (*Aerotel*):
  1. EBA guidance needed.
  2. Art 52(2) requires a contribution to an art of a tech nature, and not falling solely within an excluded category.

- Lord Neuberger (*Symbian*)
  1. EBA guidance needed.
  2. Art 52(2) requires a contribution that "can[] be characterised as 'technical'".

- Since *Duns* / *Symbian*:
  - litigation involving Art 52(2) continues.
  - the law remains depressingly uncertain (Lewison J, *AT&T*).

2. The Future of the EPC requirement for an invention

- Definition must reflect the role of the reqt (*Merrell Dow*).

- The invention is that for which a patent is granted (*Lundbeck*). Its role is to help mediate the contract effected by a patent (*Kirin-Amgen*).

How well does the EPC requirement perform this role?

- Art 52(2): subject matter "as such" not "inventions".
- EPO / Lord Hoffmann approach is difficult to accept…
  - Aesthetic creations not information. Methods are forms of human behaviour. Inventions are information.
  - Software has technical character. Excluded methods may involve "practical scientific application".

…and is really an argument for a *de minimis* approach.

- Laddie J / Mr Prescott QC view compelling, but what are the exclusions' policy rationales (Pumfrey J / Jacob LJ)?
  - Even the reason for excluding aesthetic creations is unclear: the © rationale is not convincing…
  - To make sense of Art 52(2), need an independent idea of what makes something suitable for a patent.
  - Little help from the EPC, so turn to history.

The "invention" as historically defined (in the UK)

- Subject matter of mechanical or chemical utility directed to advancing the industrial arts.
- Early 20th C: restricted to subject matter directed to advancing the manufacturing arts. Excluded:
  - Business methods and other "schemes";
  - Subject matter distinguished by its literary / artistic content;
  - Methods of treating / producing ephemeral subject matter (eg, light);
  - Methods of treating or producing biological matter? Methods of medical treatment?
- Post-*NRDC* (1959): any human action on the physical world producing an artificial end of practical – economic – significance.

The "invention" as actually intended by the EPC drafters

- Art 52(2) introduced to promote harmonization via consistency with PCT Rules 67.1 / 39.1.
- No clear understanding of Art 52(2), and uncertainty on:
  1. The relationship between the invention and technical character / technical progress / industrial character / public policy;
  2. The inherent patentability of computer programs, methods of medical treatment, and plant & animal varieties.
- Only the status of computer programs was resolved…

- The EPC drafters understood that:
  1. A new European jurisprudence would be developed.
  2. Inventions would be drawn from the technological arts – *contra*, that an invention would be any subject matter having "technical character";
  3. The central aim of the system was industrial growth;
  4. Art 52(2) was the only inherent patentability exclusion – *contra*, that all subject matter beyond its scope were "inventions".

- Sufficient basis for presuming an intent (*Oncomouse*)…

The "invention" as it ought to (and as the drafters presumptively intended that it?) be defined

…Arts 52(2) & (3) support (*contra*, resolve to) a positive definition of the invention as:

a purposive human method of working on the physical world to produce an objectively discernible (material) result directed to advancing the industrial arts.

= close to *NRDC* / *Rote Taube* but tethered to the industrial arts…

…*cf*, the practical, civil, political, fine, administrative or professional arts.

"Industry" defined –

- OED: "a particular form or branch of productive labour; a trade or manufacture".
- EPO/UK: includes "all manufacturing, extracting and processing activities of enterprises that are carried out continuously, independently and [whether or not] for commercial gain" (*Eli Lilly*).

- Raises difficult definitional / methodological issues.
- Restricts patentability, eg by:
  - excluding methods of cosmetic treatment, teaching, communication, navigation, vehicle operation, institutional governance, marketing, selling, administration, etc, regardless of tech character.
  - requiring that subject matter be conceived having regard to things other than their tech features.

- Is justified on the basis of:

  1. Its normative value (furthers the aims of the system);
  2. Its explanatory value (makes sense of jurisprudence);
  3. Its improvement of the system's coherence;
  4. Its support of Europeanization, and a law informed by the history and philosophy of technology and science.

- Consistent with 2., it is also not without EPO support.

1. The definition has normative value, in

…furthering the central aim of the system (to support industrial growth). See:

- Paris Convention;
- Analytical framework of the EPC drafters' ancestors;
- Premise of the Munich Conference debates (eg, chemical product patents);
- UK / EPO jurisprudence.

2. The definition has explanatory value, in explaining

- pre-1977 national exclusions;
- The European Committee of Experts on Patents views;
- many of the Article 52(2) exclusions, and potentially all other threshold (Art 53, IR) exclusions;
- contemporary TBA jurisprudence (*AgrEvo*, *Duns*, *Amazon*).

3. The definition improves the system's coherence, by…

…anchoring the system to its social function, and reducing the risk of doctrinal fragmentation and disproportionate protection.

4. *The definition is informed by the history and philosophy of technology and science… eg, it*

- reflects a philosophical / historical view of inventions;
- conceives inventions (in part) as technology, but replaces the EPO view of "technology" with one based on design / *techne*;
- accepts (as European states did in the 1950s) that "technology" is too opaque and elastic to be useful / appropriate;
- classifies subject matter wrt social function *in addition to* its parent science / technological field;
- supports the recognition of inventions as neither good nor bad, but equally not neutral.

… *and supports (an appropriate model of) Europeanization… eg, it*

- readjusts the fact / law content of the requirement, and limits the scope for unprincipled / inscrutable decision making;
- accommodates European patent traditions, and the European Committee of Experts' views;
- anchors the system to its original purpose, and supports its non-discriminatory operation;
- supports recognition of the invention's ethical content;
- supports principled and transparent divergent decision making, including on non-factual (legal) grounds.

Plus, closes the gap with US law (*In re Bilski*; *AMP v USPTO*)…

It is also not without contemporary EPO support… eg, it

- requires:
  - a human action on the physical world (*Sternheimer*);
  - a subject matter directed to advancing an art ("contribution" cases);
  - that subject matter be conceived wrt the constitutive properties of inventions (*AgrEvo*, *Duns*, *Amazon*);
- reflects a concern with ensuring the proportionality of patent protection having regard to the inventor's contribution to the art (*Exxon*).

The Remaining (non-Excluded) Art 52(2) exclusions…

…ought to be read on their face, or repealed / amended.

3. The categorization / conception of subject matter as inventions

- Informed by the constitutive properties of inventions:
  - The sequence of steps comprising its method;
  - The means by which the method achieves its result;
  - The advance on the art it is directed to make.

Computer programs as inventions

- Threshold exclusion due to Art 52(2)(c), not the nature of computer programs *per se*.
- Availability of copyright not a justification for 52(2)(c).
- In principle, programs more suited to patents than copyright…

Biotech subject matter as inventions

- No threshold exclusion exists, and none is justified.
- Cf for certain categories, eg isolated genes (*contra* IR Rule 29(2)?), plants & animals not covered by Art 53(b).
- Important issue is the proper conception of biotech subject matter as inventions… especially isolated / other products…

Business methods as inventions

- *Amazon* result correct, but on inherent patentability (*contra* inventive step) grounds.

Conclusion

- If inventions are the contribution for which a patent is granted, policy ought to inform their conception.
- In the UK it has (*Dann's Patent, Biogen, Kirin-Amgen*).
- The EPO *de minimis* approach creates a tension between expansive conceptions of inherent patentability and the requirement for proportionate grants.
- To resolve this, we need a more meaningful / robust definition of the "invention" than currently exists.