Hepworth Browne

SCP/37: AI PATENTABILITY

TRIPS, Technology and Technical Effect
in the Context of AI and Other Fields of Commerce

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Geneva, 5 November 2025

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Patentable Inventions: WTO Requirements

Art.27(1) TRIPS:

"Subject to the provisions of paragraphs 2 and 3, ***patents shall be available for any inventions***, whether products or processes, ***in all fields of technology***, provided that they are new, involve an inventive step and are capable of industrial application…"

but interpreted by national case law

The "***all fields of technology***" should encompass AI innovations. But

- AI innovation technically complex AND can be misunderstood, even though
- Specific applications solve problems AND are extremely useful to society,
- Requires objective assessment of "invention" at the right level of generality
  - Guidance, education and understanding
  - Implications potentially broader

The Impact of Patents

The common objective of patentability:

> '*the promotion of economic wellbeing through technological innovation and the transfer and dissemination of technology' in exchange for the grant of limited monopoly rights*
>
> - Section 2A Australian Patents Act, no.83, 1990

The Economic Impact:

- 2025 Nobel Prize for Economics:
  - *"Creative Destruction" – Joel Mokyr et al*
  - *"technology being the basis for sustained economic growth, which results in a better standard of living, health and quality of life for people around the globe."*
  - Patents are balanced Trade-Off

Statutory Exclusions: The same but different

- **PCT** Rules 39 and 67 and PCT/GL/ISPE/13 Guidelines:
  - 9.02-9.15: Excluded Subject-Matter
  - 12: Novelty
  - 13: Inventive Step

- **EPO/EPC** and **UK** "*as such*" [Art.52 EPC, Section 1(2) UKPA]
  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*; or
  d. presentations of information.

- **Australia:** "*manner of manufacture*" language [section 18(1A)]
  - based on language in the 1623 Statute of Monopolies!

- **New Zealand:** Patents Act 2013, section 11
  - "*manner of manufacture*" + express computer program exclusion "*as such*"

Statutory Exclusions: The same but different

- **USA** and USPTO 35 U.S.C. §101
  - Non-patent eligible inventions relating to '*laws of nature, natural phenomena, and abstract ideas* (like mathematical formulas and certain business methods)'
- **ARIPO** contracting states/**Harare Protocol**, section 8 "*as such*"
  - Reflects TRIPS and EPC requirements
- **Indian** Patents Act, Chapter II, Section 3
  - Not dissimilar to the EPC's exclusions, but…

General Principles of Statutory Exclusions

- General historic national beliefs are common on what is protected by patents
  - But, results in practice frequently different!
  - Why?

- **Is there a question about what also *could or should* be protected?**
  - Why?
  - What are the justifications?
  - Collective discussion required

Patentable Assessment of AI Inventions

- *Did legislators consider and understand the nature of AI at the point when statute was being drafted or revised?*
  - Societal impact and ubiquitous use
  - 1970s computing:
    - Moon shot re-entry computers
    - TV Pong
    - Basic desktop calculators

- **There are no express patentability rules for the assessment of AI-based inventions**
  - Traditionally dealt with under existing statutory exclusions and substantive assessment approaches
    - Mathematical Methods and Computer Programs
  - ***Is this appropriate or sufficient?***
    - ***If not, why not?***

Guidance & Harmonization

Obtaining international harmonization on assessment of patentable invention is not simple… but likely desirable

- Legal certainty
- Reduced costs for Applicant in a simplified approach
- International consistency and economic collaboration
- Fairness and objectivity

- Requires high-level guidance at multiple levels on multiple topics
  - How National Offices approach assessment of patentable invention and exclusions to patentability, particularly
    - AI
    - Future technologies with societal impact
  - Consensus on the nature of AI inventions
  - Technical consensus on how AI systems function
    - What and why is AI different to programs and mathematical methods

Legal Evolution & Why

- Approaches to assessing patentability are interpretations of national law.

- Question that arise include
  - TRIPS and what is "technology"?
  - Fundamental concepts of what is excluded and why?
  - What is a mathematical method?
  - What amounts to a computer program?

- How is inventive step *objectively* assessed?

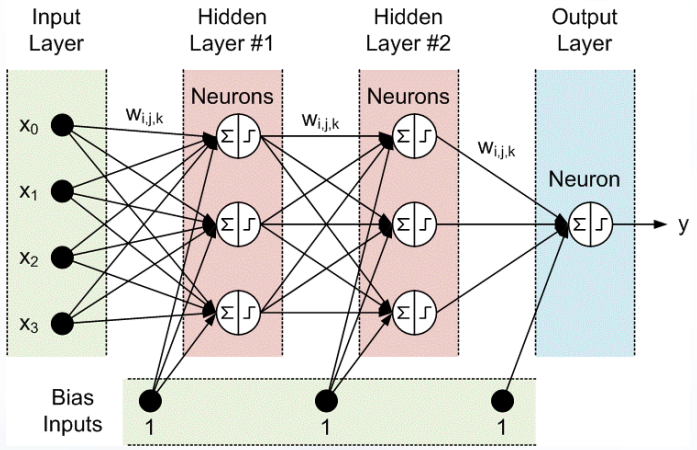
Legal Evolution & Why

The practical reality is that legal decisions are:

- Not always helpful for new technologies and may constrain economic advancement
  - National statutes typically decades old
    - Conceptually out-of-date
  - Generalised concepts?
    - Potentially misapplied
    - What amounts to both a computer and a computer program?
      - "a machine for processing information" [*Emotional Perception*]
      - "a set of instructions for a computer to do something" [*Emotional Perception*]
    - Adage: *bad cases make bad case law*
- Unchallengeable without an Applicant's conviction
  - *Emotional Perception's Application* at the UK Supreme Court
  - Global implications arising from influence of this decision

Relationship between AI and ANNs

Artificial neural networks "ANNs" are the basic building blocks for AI technology



Complicated? Perhaps… but they are just a NETWORK of components performing a function…

- ANNs require a conceptual training regime
  - But this can also realise basic automation of a process

Circuits or Excluded?

- Applied AI to solve a technical problem in the real-world generally patentable,…

but what about AI's building blocks?

- Emotional Perception UK High Court and Court of Appeal:
  - The neurons are components, like resistors and capacitors, interconnected by wires
  - And the Court of Appeal: '*the weights and biases of each neuron, on aggregation across the network, amount to a computer program…*'
  - **Current rationale and definition of a computer and a computer program [in the UK] applies to existing circuits and the values [resistance/capacitance/impedance] of those known components in conventional circuits!**
    - Implemented Jan 2025 change in the UK Manual of Patent Practice "MOPP"
    - Is this right?
    - What will the UK Supreme Court decide?

Perception of Neural Networks in AI in IP

ANNs frequently viewed as a computer program or a mathematical method, BUT…

- not everywhere (and even then, not consistently!)
  - ➢ USA and Japan *vs* UK, Brazil, India and other countries

- Is assertion correct?
- **Is there an arbitrary and discriminatory distinction being drawn and applied to AI?** *Is this a problem?*
  - Motion of levers and cogs can be described mathematically
  - Digital filter can be modelled as a mathematical method
  - Training of a digital filter analogous to an ANN!
  - ASICs now potentially a computer program [*Emotional Perception*… again in the UK at CoA and the UK MOPP, but… UKSC]
  - Quantum processors now potentially a computer program [*Emotional Perception*… again in the UK at CoA and the UK MOPP, but… UKSC]
  - Wider implications for existing companies and their international portfolios

Technology and Technical Effect

The underlying issues [likely/arguably] arise from a lack of guidance and/or a lack of a harmonized approach on

- What is <u>meant to be</u> excluded, i.e. non-patent eligible
  - Extent of Art.27(1) TRIPS
  - Art.33(5) PCT "criteria described above merely serve the purpose of IPER"
  - Rule 39 PCT "no ISA shall be required to search… [essentially provisions of exclusion of the EPC]"
  - National interpretation at office and court levels

Technology: What is it?

What amounts to a meaningful technical effect or contribution in the context of *Technology*

- In 2010: EBA G3/08, 9.2: "*We do not attempt to define the term "technical". Apart from using this term in citing the case law… It is to be hoped that readers will accept these assertions without requiring a definition of exactly what falls within the boundaries of "technical".*"

Technology, according to various dictionary definitions is "*the branch of knowledge dealing with the mechanical arts and applied sciences; … [t]he application of such knowledge for practical purposes*", "*the practical, especially industrial, use of scientific discoveries*", "*the practical application of knowledge especially in [engineering]*", and "*creations in engineering and technology …. practical scientific applications*"

Technology: What is it?

At its core, perhaps *Technology is* just the

the practical application of scientific or engineering knowledge?

Again, is some express guidance required?

Thoughts & Concerns

If technology is the practical application of scientific or engineering knowledge, does the correct application of TRIPS for patentable invention not just require:

- **a practical application of any technical approach**
  - **in any and all fields?**
- **consideration of the technical steps undertaken by the claimed invention and not consideration of the end result?**
  - Avoids distorting the nature of the invention
  - Supports AI and ANN technologies
    - Applied and Generative
    - Other business sectors making use of innovative technical approaches
- Objectivity to be applied in determining the technical contribution and interactions during the "obviousness/inventive step" assessment of the claimed invention
  - Emphasises the point about misapplication and required guidance
    - Avoids distorting the nature of the invention
  - Allows national courts to maintain individual approaches to the assessment of inventive step

Thoughts and Concerns

Should patentability only be excluded when

- the invention as claimed simply:
  - **Seeks to impose behavioural control?**
  - **Is an automation of a known process** [which is already the case]?

  - **Are words like "*as such*"**
    - **Actually being thought through in context?**
    - **Intended to highly limit the statutory exclusions** [having taken all the feature that define and contribute to an invention into account and not just the result]
    - the EPO's EBA decision G1/19 [to an appreciable extent]

- Is there actually a problem?
- Do variations at a national level matter?

Thank you!

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Bruce is a shareholder at Hepworth Browne and is responsible for CIIs, AI, communications, and business technologies.

He has over 30-years of private practice and industrial practice experience both in the UK and internationally, securing leading decisions in litigation in Germany and other European countries.

He continues to represent Emotional Perception and many other CII and AI-centric companies, and was responsible both for drafting Emotional Perception's application and developing the arguments before the UKIPO, High Court, Court of Appeal and U.K. Supreme Court