

Applicability of the Term As Such While Protecting the Computer Programs: An Outlook for European Law

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Abstract

‘The automatic bar on patent protection for computer programs ‘as such’ in section 1(2) of the Patents Act 1977 is unduly restrictive and out of step with modern information technology-based innovation. This exception to patentability should be removed from the Act so that any program meeting the basic requirements of novelty, inventive step, etc. is patentable like any other invention.’ The current paper aims to analyse section 1(2) of the Patents Act 1977 and its relation with article 52(2) EPC. It further tries to establish the differences between the two approaches. The aim remains to analyse why EPO changed its approach for a narrower interpretation of ‘as such’ and why the UK refuses to follow. The essay will show that the English interpretation of ‘as such’ in section 1(2) is not suitable for the computer programming market reality of today concerning the economic and industry changes in size and structure. The attempt has been made to focus on showing that section 1(2) is too restrictive considering the type of businesses and innovations and a broader interpretation of ‘as such’ effects. The UK’s law had expressed intentions to remain in harmony with the EPO, ‘collocation’ as an alternative solution to following the ‘any hardware approach’ and the lack of benefit the total removal of section 1 (2) would bring.

Keywords: Patents, Computer Programs, European Patent Convention.

I. Introduction

This essay will argue that the current interpretation of Section 1(2) of the Patents Act 1977 is not fit for modern technology and needs to be more relaxed. As a solution, instead of removing section 1(2), the essay proposes that the UK should follow the ‘any hardware’ approach established by the EPO. The essay will start by analysing section 1(2) of the Patents Act 1977 and its relation with article 52(2) EPC. After establishing the differences between the two approaches, the essay will analyse why EPO changed its approach for a narrower interpretation of ‘as such’ and why the UK refuses to follow. Then the essay will show that the English interpretation of ‘as such’ in section 1(2) is not suitable for the computer programming market reality of today concerning the economic and industry changes in size and structure. The next part will show that section 1(2) is too restrictive considering the type of businesses and innovations and a broader interpretation of ‘as such’ effects. The last chapter will consider the UK’s expressed intentions to remain in harmony with the EPO, ‘collocation’ as an alternative solution to

following the ‘any hardware approach and the lack of benefit the total removal of section 1 (2) would bring.

II. of section 1(2) Patents Act 1977 and article 5(2) European Patent Conventions

The Patents Act 1977 incorporates Article 52 of the European Patent Convention (EPC) into the UK¹ law to follow, which contains the same rules in Article 52(1) and limits on the subject matter ‘as such’ in Article 52(2). Section 1(1) of the Patents Act (PA) 1977 defines that for an innovation patent to be granted, the innovation needs to be new, involve an inventive step, and be capable of industrial application.² A further condition is that the subject matter of the patent should not be part of section 1(2) PA 1977 exclusion clause referred to ‘as such’.³ Computer programs are included in Section 1(2) and Article 52(2).⁴ Article 52(2) analysis shows that the European Patent Office (EPO) never intended to exclude all computer programs.⁵

The history and the current differences between Section 1(2) and Article 52(2) are clear through case law analysis. In VICOM⁶ and followed in IBM⁷ and IBM 2, EPO decided that patent claims for computer programs are not part of the ‘as such’ if ‘technical contribution’ is found.⁸ The ‘Technical’ effect can be derived from the behaviour of the hardware as a result of the computer program if it produces an effect beyond the average effect of an interaction between a computer and a program.⁹

In Merrill Lynch,¹⁰ the English court decided following Viacom that a computer program ‘as such’ cannot avoid the exclusion clause unless it makes a technical contribution.¹¹ The court noted that for a successful claim, the technical should be considered a matter of substance (effect), not form (on a computer or a carrier).¹²

Gale’s Application followed Merrill Lynch.¹³ Initially, the Patents Courts held that a Read-Only-Memory (ROM) was a computer program.¹⁴ The Patents Court decision was based on the idea that the computer program did not alter ROM’s structure and that it should have altered the ROM’s¹⁵ structure to

¹ JohnP Sumner and Dianne Plunket, 'Copyright, Patent, and Trade Secret Protection for Computer Software in Western Europe' [1987-1988] 8(4) Computer/LJ <<https://heinonline.org/HOL/LandingPage?handle=hein.journals/jmjcala8&div=25&id=&page=>> accessed 27 April 2020.

² Patents Act 1977

³ Patents Act 1977

⁴ Patents Act 1977

⁵ Marcus Turle and David Knight, 'Recent developments in the patentability of software in the UK' [2008] 24(5) Computer Law & Security Review <https://www.researchgate.net/publication/240914722_Recent_developments_in_the_patentability_of_software_in_the_UK> accessed 27 April 2020

⁶ VICOM System Inc [1986] T 0208 ECLI 84 (European Patent Office, Board of Appeal)

⁷ IBM Corp [1999] ABI EPA 609 (European Patent Office, Board of Appeal)

⁸ Tanya Aplin, 'Patenting Computer Programs: A Glimmer of Convergence' [2008] 30(9) European Intellectual Property Review <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2424830> accessed 27 April 2020

⁹ Supra 6

¹⁰ Merrill Lynch Inc [1989] 4 WLUK 219 (England and Wales)

¹¹ James Boon, 'UK software patents – Get with the program' [2009] 25(4) Computer Law & Security Review 367-371

¹² SusanJ Marsnik and RobertE Thomas, 'Drawing a Line in the Patent Subject Matter Sands: Does Europe Provide a Solution to the Business Method and Software Patent Problem?' [2010] 1066 Boston College International and Comparative Law Review <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1676898> accessed 27 April 2020

¹³ Supra 9

¹⁴ Supra 13

¹⁵ Id

escape section 1(2). The Court of Appeal rejected this idea saying that the ROM was just a different kind of carrier for the computer program,¹⁶ again rejecting the prioritisation of form.

In Pension Benefits System Partnership¹⁷ (2000), EPO changed its approach¹⁸ by departing from the ‘technical character’ approach and prioritising the form of the claim over the substance.¹⁹

Hitachi²⁰ and Microsoft followed Pension Benefits saying that the technical contribution can be ‘conferred to a non-technical activity by the use of technical means’.²¹ The Board of Appeal agreed with the Hitachi approach holding that the presence of a server in the claim was enough to show a technical feature and prevent the claim from being part of ‘as such’.²² In Microsoft, the EPO held that according to ‘any hardware approach,’ simply putting a computer program on a carrier or a ‘physical apparatus’²³ was enough to fall outside Article 52(2).²⁴ The prioritisation of form over substance meant that article 52(2) was interpreted more narrowly.²⁵

In Aerotel, the English court refused to follow the Pension Benefits, Hitachi, and Microsoft trilogy.²⁶ The discrepancies between the three cases made them think it is still early to change their approach.²⁷ Justice Jacob said the ‘any hardware approach’ was related to something ‘abstract and intangible’.²⁸ The court said that a practical element²⁹ is needed. It established the four-step approach: ‘properly construe the claim’, ‘identify the actual contribution’, ‘ask if it falls solely within excluded subject matter’ (if it does, it cannot be a technical contribution) and ‘check whether the contribution is technical as a matter of substance. The first three steps should answer whether there is a technical contribution, and the fourth question checks whether it is an excluded invention in the ‘as such category’.³⁰

The approach in Aerotel shows the differences between how EPO and English courts interpret ‘as such’,³¹ which is problematic.³² EPO criticised Aerotel for excluding a computer program that makes a technical contribution because it is run on a carrier.³³ In response, Kitchin J said that the four-step

¹⁶ Id

¹⁷ R v PBS Partnership/Pension Benefit Systems [2002] 1 OJ EPO 441 (Technical Board of Appeal)

¹⁸ Supra 6

¹⁹ Id

²⁰ Hitachi, Ltd [2004] OJ EPO 574 (European Patent Office, Board of Appeal)

²¹ Supra 9

²² Supra 6

²³ Id

²⁴ Supra 9

²⁵ Cristina Ionita and Sanna Wolk, ‘Software Patentability in Europe: The Rise of the Inventive Step Requirement’ [2017] 1(1) Master Programme in Intellectual Property Law Master’s Thesis (30 ECTS) <<http://www.diva-portal.se/smash/get/diva2:1115042/FULLTEXT01.pdf>> accessed 28 April 2020

²⁶ Tanya Aplin, ‘Patenting Computer Programs: A Glimmer of Convergence’ [2008] 30(9) European Intellectual Property Review <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2424830> accessed 27 April 2020 and SusanJ Marsnik and RobertE Thomas, ‘Drawing a Line in the Patent Subject Matter Sands: Does Europe Provide a Solution to the Business Method and Software Patent Problem?’ [2010] 1066 Boston College International and Comparative Law Review <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1676898> accessed 27 April 2020

²⁷ Supra 9

²⁸ Supra 13

²⁹ Supra 9

³⁰ Astron Clinica Ltd v Comptroller-General of Patents, Designs and Trade Marks [2008] 125 Reports of Patent, Design and Trade Mark Cases 339-355 (European Patent Office, Board of Appeal)

³¹ Supra 13

³² Supra 6

³³ IBM Corp [1999] AB1 EPA 609 (European Patent Office, Board of Appeal) and Tanya Aplin, ‘Patenting Computer Programs: A Glimmer of Convergence’ [2008] 30(9) European Intellectual Property Review <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2424830> accessed 27 April 2020

approach in Aerotel did not stop claims for computer programs on a carrier as long as it satisfied the 'technical contribution' requirement.³⁴

The English courts followed Viacom and IBM's decisions and said the 'any hardware approach' could not satisfy the technical effect requirement.³⁵ The English Court of Appeal expressed concerns that 'any hardware approach' focuses on form over substance, allowing claims for any computer program'.³⁶ This idea was rejected in 2005 when a patentability directive tried to restrict all computer programs regardless of the carrier due to worries that the 'any hardware' approach allows programs 'as such' to be patented. It was rejected by a majority of 648 to 14 votes.³⁷

The English court followed IBM³⁸ in *Oneida Indian Nation*³⁹ but commented that the Hearing Officer⁴⁰ should not directly exclude computer programs⁴¹ or programs on a 'carrier' if the claim satisfies the technical contribution requirement.⁴²

In *Aston Clinica*, in the UK, the court allowed patents on a carrier if the patent for the computer program used is patentable.⁴³ The court placed the substance (effect) of the claim over the form (on a computer or a carrier).⁴⁴ Critics of the English approach called it 'convoluted', saying that section 1(2) should be treated as a self-contained filter.⁴⁵ Some described the 'technical effect' requirement as an 'undue level of exclusion'. At the same time, the EPO 'any hardware approach' includes any computer program by being part of a physical computer.⁴⁶

The 'technical contribution' approach by Lord Justice Jacob in *Aerotel* was criticised based on the meaning of the 'old law'⁴⁷ and that a 'good-faith' interpretation of the EPC does not fit with the 'technical contribution'.⁴⁸ The English Court of Appeal said that section 1(2) was meant to exclude the computer programs lacking 'practical and operable form' and that the narrow interpretation of Article 52(2) did not achieve that.⁴⁹

Article 52(3) is a bar on giving the non-exhaustive list of excluded matters 'as such' a too broad interpretation.⁵⁰ Lord Justice Jacob's 'technical effect' approach is based on the layman's ordinary understanding of the term invention, which is inconsistent with the EPO law.⁵¹ The 'technical

³⁴ Supra 9

³⁵ Supra 9

³⁶ Id

³⁷ Supra 4

³⁸ Supra 9

³⁹ Supra 12

⁴⁰ Supra 9

⁴¹ Id

⁴² Supra 6

⁴³ Emma Barraclough, 'UK IP Office in Software Patent U-Turn' [2008] 177(12) *Managing Intell Prop* <<https://heinonline.org/HOL/LandingPage?handle=hein.journals/manintpr177&div=8&id=&page=>> accessed 28 April 2020

⁴⁴ *Astron Clinica Ltd v Comptroller-General of Patents, Designs and Trade Marks* [2008] 125 Reports of Patent, Design and Trade Mark Cases 339-355 (European Patent Office, Board of Appeal)

⁴⁵ Supra 13

⁴⁶ Id

⁴⁷ *Duns Licensing Associates, LP* [2008] OJ EPO 46 (European Patent Office, Board of Appeal)

⁴⁸ Supra 13

⁴⁹ Id

⁵⁰ Supra 48

⁵¹ Id

contribution' approach should be abandoned as EPO did many years ago.⁵² The correct approach is to narrowly view the excluded subject matter 'as such'.⁵³

In *Symbian* (2008), although the English court acknowledged the EPO approach, it did not follow it.⁵⁴ *Symbian* was about a claim for patent protection for dynamic link libraries in a computer device.⁵⁵ This system aimed to save the normal system's time spent and unreliability.⁵⁶ UKIPO denied the claim because it was based on a computer program and categorised it 'as such'.⁵⁷ The English courts said that S1(2) of the Patents Act 1977 did not stop computer programs that provide a 'technical contribution'⁵⁸ and granted a patent using the *Aerotel* approach. On a Practice Note in 2008, the UK IPO questioned how *Symbian* supports greater consistency with the 'any hardware approach'.⁵⁹ Some believe that *Symbian* just created uncertainty regarding what test should be applied.⁶⁰

Because hardware and software are often interchangeable, the grating patent for hardware interpretation but not for the software interpretation (computer program) 'borders on ridiculous'.⁶¹ Criticism of the 'technical contribution' approach described it as 'unduly draconian'.⁶² The 'any hardware approach' was described as 'easily sidestepped'.⁶³

III. Inadequate for the modern technology

The US used the monopoly awarded by the patents to stimulate growth in the computer programming sector.⁶⁴ The US software sector grew by 15 billion dollars more than it did in Europe in the same period.⁶⁵ This trend is expected to continue,⁶⁶ and according to the quote in the title of this essay, section 1(2) is 'out of step with modern information technology-based innovation'. The number of computer program patent applications increased significantly over recent years.⁶⁷ The software industry changed dramatically since computer programs were included in the excluded subject matter list.⁶⁸

⁵² Id

⁵³ Id

⁵⁴ Supra 13

⁵⁵ Supra 12

⁵⁶ SusanJ Marsnik and RobertE Thomas, 'Drawing a Line in the Patent Subject Matter Sands: Does Europe Provide a Solution to the Business Method and Software Patent Problem?' [2010] 1066 Boston College International and Comparative Law Review <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1676898> accessed 27 April 2020

⁵⁷ Supra 13

⁵⁸ Supra 6

⁵⁹ Supra 9

⁶⁰ Supra 6

⁶¹ RobertJ Hart, 'The case for patent protection for computer program-related inventions' [1997] 13(4) Computer Law & Security Review <<https://www.sciencedirect.com/science/article/pii/S0267364997888541>> accessed 26 April 2020.

⁶² Sigrid Sterckx and Julian Cockbain, 'The Patentability of Computer Programs in Europe: An Improved Interpretation of Articles 52(2) and (3) of the European Patent Convention' [2010] 13(3) J World Intell Prop 366

⁶³ Id

⁶⁴ Jansen Gregg, 'The United States Moves ahead of the European Union in Patent Protection for Computer Software' [1995-1996] 6(3) Ind Int'l & Comp L Rev 741

⁶⁵ Id

⁶⁶ Supra 13

⁶⁷ Gerald Dworkin, 'Copyright, Patents and/or Sui Generis: What Regime Best Suits Computer Programs' [1996] 1(1) Int'l Intell Prop L & Pol'y <<https://heinonline.org/HOL/LandingPage?handle=hein.journals/inteproyl&div=27&id=&page=>> accessed 16 April 2020

⁶⁸ Erica Fraser, 'Computers as Inventors – Legal and Policy Implications of Artificial Intelligence on Patent Law' [2016] 13(3) Scripted

An academic paper drew a parallel with the pharmaceutical industry in the 1950s in Europe.⁶⁹ The focus was on the creation of novel chemical compounds which were protected.⁷⁰ The second inventive use of that chemical substance was not protected.⁷¹ Later patent calls were made for new inventive properties of existing chemical compounds.⁷² Some argue it is the same with computer programs that solve new problems using existing hardware.⁷³ The status quo now is to support patent protection⁷⁴ and that the EPC approach is better suited for the modern-day.⁷⁵

The software industry has grown so much without powerful patent protection.⁷⁶ Since the patent laws for computer programs were made when the market was embryonic,⁷⁷ the supposed growth resulting from the lack of patents does not justify a lack of patent protection in today's market.⁷⁸ For example, due to improvements in reverse engineering technology, trade secrets do not offer as much protection for computer programs as they used to.⁷⁹

In a service-dominant economy (80% of the GDP in 2016),⁸⁰ supporting the computer programs industry, which is growing 2.6 times faster than the economy,⁸¹ should be encouraged.⁸² More data manipulation occurs now in computer programming, and the Merrill Lynch approach is too restrictive.⁸³ The UK is pressured to liberalise the patents for computer programs from businesses.⁸⁴ The increasing number of patent claims for computer programs in the UK was found to be partly because businesses got similar patents in the US, and they need to get the rights everywhere before the competition does.⁸⁵ The worldwide number of AI patent applications was three times higher in 2016 than 2012.⁸⁶ Artificial Intelligence (AI) is growing three times faster now than 5 years ago and is learning faster each time it is

⁶⁹Supra 62

⁷⁰Id

⁷¹ Nicholas Fox, 'But You Can't Patent Software!' (*Ipeg In European Patent Litigation*, Simmons & Simmons, 2013) <<https://www.ipeg.com/but-you-cant-patent-software/>> accessed 28 April 2020

⁷² Robert J Hart, 'The case for patent protection for computer program-related inventions' [1997] 13(4) Computer Law & Security Review <<https://www.sciencedirect.com/science/article/pii/S0267364997888541>> accessed 26 April 2020.

⁷³ Id

⁷⁴ Pamela Samuelson, 'Benson Revisited: The Case Against Patent Protection For Algorithms and Other Computer Program-Related Inventions' [1990] 39(4) Emory L J 1025-1154

⁷⁵ Supra 6

⁷⁶ Supra 75

⁷⁷ Garikai Chimuka, 'Impact of artificial intelligence on patent law Towards a new analytical framework – [the Multi-Level Model]' [2019] 59(1) World Patent Information

⁷⁸ Supra 13

⁷⁹ Supra 75

⁸⁰ Ogl, 'Economic Output and Productivity' (*Office for National Statistics*, 2nd April 2019) <<https://www.ons.gov.uk/economy/economicoutputandproductivity/output/articles/servicessectoruk/2008to2018>> accessed 28 April 2020

⁸¹ Karl Flinders, 'UK tech sector growing 26 times faster than overall economy' (*Computer weeklycom*, 17 May 2018) <<https://www.computerweekly.com/news/252441282/UK-tech-sector-growing-26-times-faster-than-overall-economy>> accessed 28 April 2020

⁸² ASamuel Oddi, 'An Uneasier Case for Copyright Than for Patent Protection of Computer Programs' [1993] 72(2) Nebraska Law Review 351

⁸³ David S Olson, 'Taking the Utilitarian Basis for Patent Law Seriously: The Case for Restricting Patentable Subject Matter' [2019] 82(1) Temple Law Review 181-240

⁸⁴ Sigrid Sterckx and Julian Cockbain, 'The Patentability of Computer Programs in Europe: An Improved Interpretation of Articles 52(2) and (3) of the European Patent Convention' [2010] 13(3) J World Intell Prop 366

⁸⁵ Sigrid Sterckx and Julian Cockbain, 'The Patentability of Computer Programs in Europe: An Improved Interpretation of Articles 52(2) and (3) of the European Patent Convention' [2010] 13(3) J World Intell Prop 366

⁸⁶ Hidemichi Fujiia and Shunsuke managib, 'Trends and priority shifts in artificial intelligence technology invention: A global patent analysis' [2018] 58,(6) Economic Analysis and Policy 60-69

put to work.⁸⁷ AI changes the original computer program code to prepare itself for future situations.⁸⁸ The recent AI innovations determined academics to create a case for re-examining patent protection for computer programs.⁸⁹ For example, a computer program created by Engineoud Software created original improvements to a jet engine.⁹⁰ If a third-generation computer program makes a ‘technical improvement’ to something that now belongs to the public directly, the extent to which patent protection is needed for computer programs needs reconsideration.⁹¹

Harmonisation between the English and EPO approach to interpreting the ‘as such’ exclusion of subject matter can help provide the much-needed certainty of patent licensing and litigation enforcement.⁹²

IV. Unduly restrictive

Some consider computer programs too much like mathematical formulas⁹³ and need to be sufficiently technical.⁹⁴ The lack of technical contribution is why the code of computer programs is not patentable.⁹⁵ Others argue that a computer program is an implementation of an algorithm, and it is, therefore, different from a mathematical formula.⁹⁶ Article 52(2) limits patents for computer programs ‘as such’ only so far as they represent abstract ideas independently.⁹⁷ EPC is prepared to protect the technical aspects of a computer program with an increasingly restrictive interpretation of S52(2), which the UK should follow.⁹⁸ Critics say that due to the differences between EPC and the UK, there is no clear and logical line on how the law will be applied.⁹⁹

Some argue that the ‘any hardware’ approach will result in too many patents awarded and licenses needed.¹⁰⁰ Given that much of the innovation is made by small developers, the expensive patents and cost of licenses, and the risk of price restrictions and tie-in sales or exclusive grant backs¹⁰¹ will put them out of the market.¹⁰² Critics of this view say that the assumption about small businesses is wrong

⁸⁷ ColinR Davies, 'An evolutionary step in intellectual property rights – Artificial intelligence and intellectual property' [2011] 27(6) Computer Law & Security Review 601-619

⁸⁸ ColinR Davies, 'An evolutionary step in intellectual property rights – Artificial intelligence and intellectual property' [2011] 27(6) Computer Law & Security Review 601-619

⁸⁹ Erica Fraser, 'Computers as Inventors – Legal and Policy Implications of Artificial Intelligence on Patent Law' [2016] 13(3) Scripted

⁹⁰ ColinR Davies, 'An evolutionary step in intellectual property rights – Artificial intelligence and intellectual property' [2011] 27(6) Computer Law & Security Review 601-619

⁹¹ RobertJ Hart, 'The case for patent protection for computer program-related inventions' [1997] 13(4) Computer Law & Security Review <<https://www.sciencedirect.com/science/article/pii/S0267364997888541>> accessed 26 April 2020

⁹² Erica Fraser, 'Computers as Inventors – Legal and Policy Implications of Artificial Intelligence on Patent Law' [2016] 13(3) Scripted

⁹³ Supra 75

⁹⁴ Jansen Gregg, 'The United States Moves ahead of the European Union in Patent Protection for Computer Software' [1996] 6(3) Ind Int'l & Comp L Rev 741

⁹⁵ Supra 75

⁹⁶ Supra 95

⁹⁷ Jansen Gregg, 'The United States Moves ahead of the European Union in Patent Protection for Computer Software' [1996] 6(3) Ind Int'l & Comp L Rev 741

⁹⁸ Gerald Dworkin, 'Copyright, Patents and/or Sui Generis: What Regime Best Suits Computer Programs' [1996] 1(1) Int'l Intell Prop L & Pol'y <<https://heinonline.org/HOL/LandingPage?handle=hein.journals/inteproy1&div=27&id=&page=>> accessed 16 April 2020

⁹⁹ Id

¹⁰⁰ Supra 75

¹⁰¹ ASamuel Oddi, 'An Uneasier Case for Copyright Than for Patent Protection of Computer Programs' [1993] 72(2) Nebraska Law Review 351

¹⁰² Supra 75

and that inventing around a current patent when a solution to the problem has already been found¹⁰³ takes money away from research on fundamental issues.¹⁰⁴

Patents stimulate growth in other industries, and the same should be for computer programming.¹⁰⁵ The CEO of Polaroid advocates for patent protection to protect the investments they make in developing computer programs.¹⁰⁶ Research shows that computer program developers want a predictable type of protection.¹⁰⁷ Bringing the interpretation of Section 1(2) in line with the ‘any hardware’ approach will provide more stability.

The cost of getting and maintaining patents weeds out the small inventions.¹⁰⁸ The patented revolutionary inventions are not stimulated by the non-patent induced incentives (e.g. desire for fame, head start in the market).¹⁰⁹

V. Solutions

Brexit will not affect the UK’s level of harmony with EPC patent laws.¹¹⁰ The UK expressed clear intentions to remain part of the EPC and harmonise the patent protection laws for computer programs with the EPO because numerous benefits derived from being part of the EPC,¹¹¹ such as efficiency gains and incentivised creative sector.¹¹²

Pressure from programmers and investors resulted in an increasingly narrower interpretation¹¹³ of subject matter ‘as such’.¹¹⁴ Some consider the broader interpretation of ‘technical character’ in the ‘any hardware’ approach confusing.¹¹⁵ For developers in the UK, the situation is worse because the confusion resulting from the ‘any hardware approach’ compounds with the uncertainty related to the UK’s response to it.¹¹⁶

An analysis of how EPO decided to change its approach from the Vicom rule (followed by English courts in Merrill Lynch) to the ‘any hardware approach’ (that the UK refused in Aerotel) shows that EPO’s position shift is due to the legal ambiguities and differences in implementation of computer software patent law between member states¹¹⁷ at the time.

¹⁰³Id

¹⁰⁴Supra 6

¹⁰⁵Supra 13

¹⁰⁶ RobertJ Hart, 'The case for patent protection for computer program-related inventions' [1997] 13(4) Computer Law & Security Review <<https://www.sciencedirect.com/science/article/pii/S0267364997888541>> accessed 26 April 2020.

¹⁰⁷Supra 75

¹⁰⁸Supra 102

¹⁰⁹Id

¹¹⁰GraemeB Dinwoodie and RochelleCooper Dreyfuss, 'Brexit and IP: The Great Unraveling?' [2018] 39(3) Cardozo Law Review 967-996

¹¹¹Id

¹¹²Gerald Dworkin, 'Copyright, Patents and/or Sui Generis: What Regime Best Suits Computer Programs' [1996] 1(1) Int'l Intell Prop L & Pol'y <<https://heinonline.org/HOL/LandingPage?handle=hein.journals/inteproyl&div=27&id=&page=>> accessed 16 April 2020

¹¹³Trevor Cook, 'EC draft patent directive: ‘I wouldn’t start from here if I were you’ — Intellectual Property protection for computer software in Europe and the proposed new directive on computer-implemented inventions' [2002] 18(3) Computer Law & Security Review 197-200

¹¹⁴Trevor Cook, 'EC draft patent directive: ‘I wouldn’t start from here if I were you’ — Intellectual Property protection for computer software in Europe and the proposed new directive on computer-implemented inventions' [2002] 18(3) Computer Law & Security Review 197-200

¹¹⁵Id

¹¹⁶Supra 13

¹¹⁷Supra 115

In the UK, the Department of Trade and Industry had a similar meeting where similar conclusions were drawn, and intervention was needed.¹¹⁸

The Green Paper¹¹⁹ decided that the 'any hardware approach' was the maximum they could do without conflicting with the established practices of¹²⁰ EPO.

One academic considers 'the 'as such' requirement of an article of 52(3) EPC serves to exclude non-interacting combinations of excluded and non-excluded subject matter'.¹²¹ A mixed media claim (one excluded feature with one non-excluded feature which causes the subject matter not to be excluded and where the two features independently are not inventions) is allowed by Article 52(2) only if the two features do not function independently.¹²² The non-excluded features, in combination with the excluded ones, are part of an invention that proves an inventive step.¹²³

'Collocation' is a rule forbidding patents for a combination of non-interacting features that independently are not inventions due to a lack of inventive steps.¹²⁴ Then a patent is granted if the carrier passes a novelty test.¹²⁵

'Collocation' is believed to lead to the same outcome as the technical contribution test set out by Justice Jacob in *Aerotel*.¹²⁶ This rule can be how the English courts will stick to underlying reasons for the 'technical approach' while ensuring the law is in harmony with the EPC law.

Removing section 1(2) will not lead to all computer programs being able to get a patent because the standard requirements for patents will exclude claims that need to be more technical. Article 52(2) implemented in S1(2) is only affirming something that could be deducted from Article 52(1), namely that in the absence of an explicit exclusion, the computer programs could still not be patentable if they do not satisfy the basic patent requirements.¹²⁷ Even without s1(2) still, similar inventions to the ones under the more liberal EPO¹²⁸ 'any hardware approach' will be granted because, many times, a program code cannot satisfy the normal patentability criteria.¹²⁹

VI. Conclusion

In conclusion, this essay found that the English courts refused to interpret Section 1(2) of the Patents Act 1977 according to how Article 52(2) EPC was interpreted after *Pension Funds* ('any hardware

¹¹⁸Id

¹¹⁹JulioAñoverosTríasde Bes, 'On the Green Paper on the Community patent and the patent system in Europe: Promoting innovation through patents' (*European Parliament*, 28 October 1998) <<https://www.europarl.europa.eu/sides/getDoc.do?reference=A4-1998-0384&type=REPORT&language=EN&redirect#top>> accessed 28 April 2020

¹²⁰Supra 115

¹²¹Sigrid Sterckx and Julian Cockbain, 'The Patentability of Computer Programs in Europe: An Improved Interpretation of Articles 52(2) and (3) of the European Patent Convention' [2010] 13(3) *J World Intell Prop* 366

¹²²Id

¹²³Supra 115

¹²⁴Supra 13

¹²⁵Supra 122

¹²⁶Supra 6

¹²⁷Gerald Dworkin, 'Copyright, Patents and/or Sui Generis: What Regime Best Suits Computer Programs' [1996] 1(1) *Int'l Intell Prop L & Pol'y* <<https://heinonline.org/HOL/LandingPage?handle=hein.journals/inteproyl&div=27&id=&page=>> accessed 16 April 2020

¹²⁸RobertJ Hart, 'The case for patent protection for computer program-related inventions' [1997] 13(4) *Computer Law & Security Review* <<https://www.sciencedirect.com/science/article/pii/S0267364997888541>> accessed 26 April 2020.

¹²⁹Ron Mcquaker, 'Patent protection in UK and Europe for computer program related inventions' [1996] 18(1) *World Patent Information* <[https://doi.org/10.1016/0172-2190\(96\)84646-1](https://doi.org/10.1016/0172-2190(96)84646-1)> accessed 28 April 2020

approach’) and chose to keep using the old interpretation of Article 52(2) given in Merrill Lynch (‘technical contribution’).

While the ‘any hardware approach’ still has some inconsistencies, the analysis found that it is better than the ‘technical contribution’ approach. The English court’s approach in Merrill Lynch and Aerotel is unsuitable for the modern-day computer programming industry when considering the parallel with the pharmaceutical industry and the technological advancements. The current English approach is found to be too restrictive given that the analysis showed that patents would support the smaller businesses (where much of the innovation comes from) and that usually, the type of computer programs patented are more likely to be radical innovations with a big impact on the economy.

The ‘collocation’ alternative identified in this paper is an interesting proposal but given that the UK wants to keep the patent protection for computer programs in harmony with the EPO approach and removing 1(2) would not result in dramatic improvements from the current situation under the ‘any hardware approach’, interpreting S1(2) according to EPO’ view of ‘as such’ using the ‘any hardware approach’ is a legitimate solution.

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