A comparative analysis of the patentability of software in the U.S. and Europe

Author: Tina Mazalin
Supervisor: Professor Sean S. Wooden

Bibliography

a) Books

- Haedicke M. and Timmann H., Patent Law "A Handbook on European and German Patent Law", published by Verlag C.H. Beck oHG, Munchen, Germany, 2014.

- Kur A., Dreier T. European Intellectual Property Law, published by Edward Elgar Publishing Limited, 2013.

- Letsas, G. European Journal of International law, volume: 2, Strasborough interpretative ethics: Lessons, for the international lawyer, August 2010, DOI: https://doi.org/10.1093/ejil/chq056

- Mueller M. Janice, Patent law, Fifth edition, published by Wolter Klower in New York, 2016.

- Blind K., Edler J., Friedewald M., Software Patents Economic Impacts and Policy Implications, published by Edward Elgar, Chleltenham, UK, Northampton, MA, USA, 2005

- Šimundić S., Pravna informatika, Sveučilište u Splitu, Split, Pravni fakultet 2007

- Stobbs, A.G., Software Patents Worldwide, Volume 1, published by Kluwer Law International, 2008.

b) Legislation

- The United States Constitution
- The Charter of Fundamental Rights of the European Union
- The European Convention on Human Rights (ECHR) (formally the Convention for the Protection of Human Rights and Fundamental Freedoms)
- Directive (EU) No. 2015/2436 of the European Parliament and of the Council of 16 December 2015 to approximate the laws of the Member States relating to trade marks
- COUNCIL REGULATION (EC) No 207/2009 of 26 February 2009 on the Community trade mark

- Regulation (EU) 2015/2424 of the European Parliament and of the Council of 16 December 2015 amending Council Regulation (EC) No 207/2009 on the Community trade mark and Commission Regulation (EC) No 2868/95 implementing Council Regulation (EC) No 40/94 on the Community trade mark, and repealing Commission Regulation (EC) No 2869/95 on the fees payable to the Office for Harmonization in the Internal Market (Trade Marks and Designs) (Text with EEA relevance)

- Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

- DIRECTIVE 2009/24/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 April 2009 on the legal protection of computer programs
- The European Patent Convention (EPC), also known as the Convention on the Grant of European Patents of 5 October 1973
- The Code of Laws of the United States of America

c) **Case law**
- *Alice Corp. v. CLS Bank International, 573 U.S. __, 134 S. Ct. 2347 (2014)*
- *BASCOM Global Internet Services, Inc. v. AT&T Mobility LLC, No. 15-1763 (Fed. Cir. June 27, 2016)*
- *Brown v. Entertainment Merchants Association, 564 U.S. 786 (2011)*
- *Bilski v. Kappos, 561U.S. 593 (2010)*
- *Credit Acceptance Corp. v. Westlake Services 16-2001. (Fed. Cir. 2017)*
- *DDR Holdings, LLC v. Hotels.com, L.P., 773 F.3d 1245 (Fed. Cir. 2014)*
- *Enfish, LLC v. Microsoft Corp., 2016 U.S. App. LEXIS 8699, 2016 WL 2756255 (Fed. Cir. May 12, 2016).*
- *Electric Power Group LLC, v. Alstom, S.A., 830 F.3d 1350 (Fed Cir. 2016)*
- *Intellectual Ventures I LLC v. Symantec Corp., 838 F.3d 1307, 1313 (Fed. Cir. 2016).*

- *Mayo Collaborative Services, Mayo Medical Laboratories, et al. v. Prometheus Laboratories, Inc.132 S. Ct. 1289 (2012),*

- *McRO, Inc. v. Bandai Namco Games America, Inc., No. 15-1080 (Fed.Cir.Sept. 13, 2016).*

- *OIP Technologies, Inc. v. Amazon.com, Inc. No. 12-1696 (Fed. Cir. June 11, 2015),*

- *Thales Visionix Inc. v. United States, No. 15-5150 (Fed. Cir. Mar. 8, 2017)*

- *RECOGNICORP LLC v. Nintendo CO LTD, Nintendo of America INC. No. 2016-1499 (Fed. Cir. April 28, 2017)*

- *In re Yamamoto, 740 F.2d 1569, 1571 (Fed. Cir. 1984)*

- *In re. Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989)*

- *Williamson v. Citrix 792 F.3d 1339*

- *In re Packard, 751 F.3d 1307 (Fed. Cir. 2014)*

- *C-05/08-Judgment of the Court (Fourth Chamber) of 16 July 2009. Infopaq International A/S v Danske Dagblades Forening.*

- *C-275/06-Judgment of the Court (Grand Chamber) of 29 January 2008, Productores de Música de España (Promusicae) v Telefónica de España SAU.*

- *C-360/10-Judgment of the Court (Third Chamber), 16 February 2012, Belgische Vereniging van Auteurs, Componisten en Uitgevers CVBA (SABAM) v Netlog NV*

- *C-70/10-Judgment of the Court (Third Chamber) of 24 November 2011., Scarlet Extended SA v Société belge des auteurs, compositeurs et éditeurs SCRL (SABAM)*

- *C-145/10 Order of the Court (Third Chamber) of 7 March 2013. Eva-Maria Painer v Standard VerlagsGmbH and Others.*

- *C-201/13-Judgment of the Court (Grand Chamber), 3 September 2014, Johan Deckmyn and Vrijheidsfonds VZW v Helena Vandersteen and Others*

- *C-160/15-Judgment of the Court (Second Chamber) of 8 September 2016, GS Media BV v Sanoma Media Netherlands BV and Others*

- *Akdeniz v. Turkey-Case of Akdeniz v. Turkey – (application no.25265/94)*

- *Özturk V. Turkey-Case of Özturk v. Turkey (application no. 22479/93)*

- *Kirin-Amgen, Inc. v Hoechst Marion Roussel Ltd.[1], House of Lords of England and Wales. 2004, UKHL 46*

- *T-1279/04-ECLI:EP:BA:2007:T127904.2007092*

- *T-1534/12-ECLI:EP:BA:2015:T153412.20151021*

- *T-154/04-ECLI:EP:BA:2006:T015404.20061115*

- *T-1173/97-ECLI:EP:BA:1998:T117397.19980701*

- *T-424/03-ECLI:EP:BA:2006:T042403.20060223*

- *T-0641/00-ECLI:EP:BA:2002:T064100.20020926*

- *T-1358/09-ECLI:EP:BA:2014:T135809.20141121*

- *T-1505/05-ECLI:EP:BA:2008:T150505.20080725*

- *T-0447/08-ECLI: EP: BA: 2010: T044708.20100209*

- *T-1670/07-ECLI:EP:BA:2013:T167007.20130711*

- *T-0894/10-ECLI:EP:BA:2016:T089410.20160513*

- *T-1370/11-ECLI:EP:BA:2016:T137011.20160311*

d) Articles, Guidelines, Handbooks, Commentaries, Panels

- Discussion Should Patent Law Be a First Amendment Issue? Stanford Law School, April 17, 2017. https://www.youtube.com/watch?v=mXAONV_Eets

- WIPO Intellectual Property Handbook, WIPO PUBLICATION No. 489 (E) ISBN 978-92-805-1291-5 WIPO 2004 Second Edition

- M. Borella, G.Lyons, «Intellectual Venturees I LLC v.Symantec Corp.— Judge Mayer on the First Amendment», October 24, 2016., http://www.patentdocs.org/2016/10/intellectual-ventures-i-llc-v-symantec-corp-judge-mayer-on-the-first-amendment-.html

- EDITH T. PENROSE, The economics of the international patent system 40 (1951).

- Meyer S.P.; Mayer's Concurrence in IV shows the Problem with Judicially Created Exceptions, The Fenwick & West Bilski Blog, 10.10.2016. http://www.bilskiblog.com/blog/2016/10/judge-mayers-concurrence-in-iv-shows-the-problem-with-judicially-created-exceptions.html

- M.Nullet, J.Cox., The coupling of § 101 and § 112, and what it means for patent practitioners, http://www.ipwatchdog.com/2017/03/14/coupling-101-112-patent-practitioners/id=79258/

- R. Wallace, Parable of a patent troll and its prodigal software patent, December 2016, https://www.law360.com/articles/869357/parable-of-a-patent-troll-and-its-prodigal-software-patent
- European Commission, "The trends and current practices in the area of patentability of computer implemented inventions within the EU and the U.S." 2016
- Guidelines for Examination of European Union trade marks, EUIPO, February 2017.
- Guidelines for Examination in the European Patent Office, November 2016
- G 0003/08 (Programs for computers) of 12.5.2010
- Protocol on the Interpretation of Article 69 EPC of 5 October 1973 as revised by the Act revising the EPC of 29 November 2000
- Case Law of the Boards of Appeal of the European Patent Office Board-EPO Board of Appeal, 8th edition, July 2016
- Manual of Patent Examining Procedure (MPEP), Ninth Edition, Revision 07.2015, Last Revised November 2015

e) Class notes
- Husovec, M., European IP law lecture slides, EULISP, Leibniz Universität Hannover, November 2016.
- Wooden, S.S., US IP Law lecture slides, EULISP, Leibniz Universität Hannover, December, 2016.

Table of content

Abbreviations *(as in the main text and its footnotes)*

1. **Case law of the Board of Appeal**-Case Law of the Boards of Appeal of the European Patent Office Board-EPO Board of Appeal, 8th edition, July 2016.

2. **Copyright Directive**- Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonization of certain aspects of copyright and related rights in the information society

3. **CTMR**- Council Regulation (EC) No 207/2009 of 26 February 2009 on the Community trade mark

4. **EU**- The European Union

5. **ECHR**- The European Convention on Human Rights

6. **ECtHR**- The European Court of Human Rights

7. **EU Charter of fundamental rights**- The Charter of Fundamental Rights of the European Union

8. **EPO**-European Patent Office

9. **EPC**-The European Patent Convention

10. **EPO Examination Guidelines**-Guidelines for Examination in the European Patent Office, November 2016

11. **EUTMR**- Regulation (EU) 2015/2424 of the European Parliament and of the Council of 16 December 2015 amending Council Regulation (EC) No 207/2009 on the Community trade mark and Commission Regulation (EC) No 2868/95 implementing Council Regulation (EC) No 40/94 on the Community trade mark, and repealing Commission Regulation (EC) No 2869/95 on the fees payable to the Office for Harmonization in the Internal Market (Trade Marks and Designs) (Text with EEA relevance)

12. **G 0003-08**-G 0003/08 (Programs for computers) of 12.5.2010

13. **Interim Guidance 2014**-The 2014 interim guidance on patent subject matter eligibility (link is external) (2014 IEG), USPTO

14. **IPRs**-Intellectual Property Rights

15. **Mayer's Concurrence**-Intellectual Ventures I LLC v. Symantec Corp., MAYER, Circuit Judge, concurring

16. **MPEP**-Manual of Patent Examining Procedure (MPEP), Ninth Edition, Revision 07.2015, Last Revised November 2015

17. **Protocol on the Interpretation of Article 69**-Protocol on the Interpretation of Article 69 EPC of 5 October 1973 as revised by the Act revising the EPC of 29 November 2000

18. **U.S.**- The United States of America

19. **U.S. Constitution**- The United States Constitution

20. **USPTO Memo 2016**- Formulating a Subject Matter Eligibility Rejection and Evaluating the Applicant's Response to a Subject Matter Eligibility Rejection, May 4, 2016.

21. **USPTO**-The United States Patent and Trademark Office

22. **WIPO Handbook**-WIPO Intellectual Property Handbook, WIPO PUBLICATION No. 489 (E) ISBN 978-92-805-1291-5 WIPO 2004 Second Edition

23. *Deckmyn*-*C-201/13 Deckmyn, Judgment of the Court (Grand Chamber), 3 September 2014, Johan Deckmyn and Vrijheidsfonds VZW v Helena Vandersteen and Others.*

24. *GS Media*-*C-160/15, Judgment of the Court (Second Chamber) of 8 September 2016, GS Media BV v Sanoma Media Netherlands BV and Others.*

25. *Infopaq*-*C-05/08, Judgment of the Court (Fourth Chamber) of 16 July 2009. Infopaq International A/S v Danske Dagblades Forening.*

26. *Painer*-*C-145/10 Order of the Court (Third Chamber) of 7 March 2013. Eva-Maria Painer v Standard VerlagsGmbH and Others.*

27. *Promusicae*-*C-275/06, Judgment of the Court (Grand Chamber) of 29 January 2008, Productores de Música de España (Promusicae) v Telefónica de España SAU.*

28. *Sabam Netlog*-*C-360/10,Judgment of the Court (Third Chamber), 16 February 2012, Belgische Vereniging van Auteurs, Componisten en Uitgevers CVBA (SABAM) v Netlog NV*

29. *Scarlett Extended*-*C-70/10,Judgment of the Court (Third Chamber) of 24 November 2011., Scarlet Extended SA v Société belge des auteurs, compositeurs et éditeurs SCRL (SABAM)*

30. *Akdeniz v. Turkey*-*Case of Akdeniz v. Turkey – (application no.25265/94)*

31. *Özturk V. Turkey*-*Case of Özturk v. Turkey (application no. 22479/93)*

32. *Alice Corp.*-*Alice Corporation Pty. Ltd. v. CLS Bank International, et al.*

33. *Bascom*-*BASCOM Global Internet Services, Inc. v. AT&T Mobility LLC*

Introduction

Subject matter eligibility of 'software patents' has been subject of debates both in US and in Europe for many years. While patentability of computer-implemented inventions in Europe has been more or less legally regulated by the statutory and case law of EPO, in the last couple of years U.S. patent law experienced remarkable changes regarding subject matter eligibility of software patents and that followed Supreme Court decisions in *Mayo Collaborative Services v. Prometheus Laboratories, Inc*. and *Alice Corp. v. CLS Bank International*.

On September 30, 2016. Federal Circuit ruled in *Intellectual Ventures I LLC v. Symantec Corp*. and held that all three patents at issue are patent ineligible under 35 U.S.C. § 101. However, Circuit Judge Haldane Robert Mayer, while agreeing that all claims in the given case fall outside of 35 U.S.C. § 101, wrote concurring opinion stating two main points, "1. Patents constricting the essential channels of online communication run afoul of the First Amendment, and 2. Claims directed to software implemented on a generic computer are categorically not eligible for patent". [1]

Mayer's concurrence was one of the reasons why Intellectual Ventures filed for a rehearing *en banc* stating that Mayer "openly revolts against the more careful efforts of this Court to prevent Section 101 from swallowing all software patents." [2] Throughout his opinion, Judge Mayer elaborated why software patents should not be eligible for patent protection. Mayer claimed that "most of the First Amendment concerns associated with patent protection could be avoided if this court were willing to acknowledge that *Alice* sounded the death knell for software patents" [3]

Focus of this paper is the analysis of patentability of software in relation with arguments made by Judge Mayer in his concurring opinion in *Intellectual Ventures I LLC v. Symantec Corp*., and compared with legal system in the U.S. and Europe. This

---

[1] Mayer's concurrence, page 1

[2] R. Wallace, Parable of a patent troll and its prodigal software patent, December 2016, https://www.law360.com/articles/869357/parable-of-a-patent-troll-and-its-prodigal-software-patent

[3] Mayer's concurrence, page 6

comparative analysis will *not* elaborate relevant legal systems of individual countries in Europe but it will *focus on EU legislation and EPC*. While there are some differences in the interpretation and application of patent laws across Europe, specifically in UK and Germany, this paper will focus on the subject matter eligibility of computer-implemented inventions as applied by the EPO. This is because most of the national patent laws of Member States of the EU are consistent with EPC and its interpretation by EPO.

Chapter 1
Freedom of speech/expression and software patents

In relation with *Intellectual Ventures I LLC v. Symantec Corp,* Judge Mayer stated that "patent covering method for identifying characteristics of data files ('050 patent), patent for system and method that enables control over internal distribution of email ('142 patent) and patent for screening a communication for viruses and other harmful content at intermediary before reaching the final destination ('610 patent) have potential to disrupt or even derail large swaths of online communication"[4]. Judge Mayer supported his argument stating that asserted claims speak in "vague, functional language with broad elasticity to reach a significant slice of all email traffic"[5]. Judge Mayer made comparison of subject matter eligibility of software patents with limitations in trademark and copyright law.

Mayer claims that balance between right to First Amendment and IPRs can be achieved only with limitations in IPRs subject matter eligibility. To support his claim he gave an example of 'trademark limitations', thus not being able to register mark with language that is merely descriptive. Mayer also noted that copyright law is balanced with First Amendment issues because it is limited only to expressions and not ideas itself. Mayer claims that balance between First Amendment issues and patent protection should be achieved with similar restrictions within subject matter eligibility in patent law, thus rejecting patents that are according to Mayer constricting

---

[4] Mayer's Concurrence, page 2
[5] Mayer's Concurrence, page 2

the essential channels of online communication, i.e. software patents, and to ensure the constitutional bounds regarding freedom of speech.

Chapter I includes analysis of Mayer's arguments regarding First Amendment issue, and this authors personal opinion on whether right to freedom of speech/freedom of expression is valid legal justification for categorical exclusion of software patents from patent protection. Chapter 1 also includes discussion on whether limitations in trademark and copyright law may serve as examples for exclusion of software patents from patent protection based on right to freedom of expression in EU.

1.1.   IPRs and freedom of speech in U.S.

1.1.1. Legal basis

The First Amendment of the U.S. Constitution guarantees safeguards of liberty and prohibits obstruction of certain individual freedoms. Freedom of speech is one of the freedoms that is guaranteed by First Amendment. Article I, Section 8, Clause 8 is a grant of congressional power to *"promote the Progress of Science and useful Arts by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries"*[6]. This is also called the Intellectual Property Clause of the U.S. Constitution that is also the primary source of U.S. Patent law.

In his concurrence, Mayer claims that software patents run afoul First Amendment because they are constricting essential channels of online communication. He than cites, "the basic principles of freedom of speech and the press, like the First Amendment's command do not vary when a new and different medium for communication appears."[7] First problem that arises from this argument is that Mayer made a comparison between First Amendment issues and patent law by stating that asserted claims "...claims at issue here...have the potential to disrupt or even derail large swaths of online communication"[8] but later he expanded his opinion to software patents in general. Mayer claims that, "essential First Amendment freedoms are abridged when the Patent and Trademark Office is permitted to balkanize the Internet, granting patent owners the right to exact heavy taxes on widely used conduits for

---

[6] U.S. Constitution, Article I, Section 8, Clause 8
[7] *Brown v. Entm't merchs. Ass'n*, 564 U.S. 786, 790 (2011)
[8] Mayer's Concurrence, page 2

online expression"[9] and implies that Section 101 itself is unconstitutional because it creates "patent free zone" that makes abridgment of free speech rights possible, "restrictions on subject matter eligibility can be used to keep patent protection within constitutional bounds. Section 101 creates a patent free zone..."[10]

Professor Dan L. Burk, Wendy Seltzer and Robert Sachs participated in the Panel Discussion: Should Patent Law Be a First Amendment Issue hosted by Stanford Law School in April 2017. In the opinion of professor Burk[11], "patent law includes large spectrum of inventions and it seems that Mayer is concerned with those that directly regulate free speech while on the other hand there are inventions that only involve and promote free speech."[12] However, in his concurrence, Mayer concluded that all software patents run afoul First Amendment. Several issues arising from Judge Mayer statement are discussed in following paragraphs.

1.1.2.   IPRs and freedom of speech according to U.S. Constitution
"While the State may grant patent rights, it does not automatically enforce them, and it is up to the owner of a patent to bring an action, usually under civil law, for any infringement of his patent rights. The patentee must therefore be his own 'policeman.'"[13]

Following Mayer's Concurrence, some commentators claimed, restriction of freedom of speech, and that may arise because of patent protection, are matter of concern between private parties and such restriction is not that of the government. This is because only laws and acts of government entities can put limits on freedom of speech and violate First Amendment rights, and patent is neither a law nor an act.[14] In the opinion of others, this is not a valid point if we acknowledge that patenting system

---

[9] Mayer's Concurrence, page 3
[10] Mayer's Concurrence, page 4
[11] Dan L.Burk, Discussion Should Patent Law Be a First Amendment Issue? Stanford Law School, April 17, 2017. https://www.youtube.com/watch?v=mXAONV_Eets
[12] Dan L.Burk, Discussion Should Patent Law Be a First Amendment Issue? Stanford Law School, April 17, 2017. https://www.youtube.com/watch?v=mXAONV_Eets
[13] WIPO Handbook, page 17, p.2.4
[14] M. Borella, G.Lyons, *«Intellectual Venturees I LLC v.Symantec Corp.—Judge Mayer on the First Amendment»*, October 24, 2016., http://www.patentdocs.org/2016/10/intellectual-ventures-i-llc-v-symantec-corp-judge-mayer-on-the-first-amendment-.html

is a form of government regulation[15], and patents are granted and enforced by the government. Therefore, any act of restriction of freedom of speech, arising from software patents, is only legally possible if predicted by law. One might claim that restriction is not directly imposed by an act or law, still it is a result of enforcement of patent rights arising from patent law. In that case, this approach would imply that patent law itself is unconstitutional. In the opinion of this author, some technology patents might restrict communication channels, and thus limit freedom of speech, but whether such interference is according to the law or not is further discussed below.

1.1.3. Balance between pros and cons in patent law

From Mayer's concurrence one might conclude that patent law only provides restrictions on certain rights, such as interference with freedom of speech, and does not provide any rights to patent owner or to the public. It is unquestionable that software patents indeed may cause restrictions on communication technology. However, patent law is far more complex and there are other impacts that must be assessed.

Underlying rationale of patent law is to offer a time-limited control over a certain invention to the patent owner as a necessary reward for innovative effort. In return, patent owner makes a disclosure of his invention to the public. Goal of patent law is to incentivize development as stated in U.S. Constitution Article I, Section 8. As explained in WIPO Handbook, "*Although patents are frequently referred to as 'monopolies', a patent does not give the right to the inventor or the owner of a patented invention to make, use or sell anything but only the right to take action against any person exploiting the patented invention in the country without his agreement. This constitutes the patent owner's most important right, since it permits him to derive the material benefits to which he is entitled as a reward for his intellectual effort and work, and compensation for the expenses which his research and experimentation leading to the invention have entailed.*"[16]

---

[15] Dan L.Burk, *Discussion Should Patent Law Be a First Amendment Issue*? Stanford Law School, April 17, 2017. https://www.youtube.com/watch?v=mXAONV_Eets
[16] WIPO Handbook, Page 18, 2.3.

Accepted rationale for patent law is that such temporary *'monopolies'* are in balance for what inventor discloses to the general public. Whether patent law really provides incentives for technology development has been subject of debates and disagreements for years. However, in the opinion of this author and according to the current legal system, that rationale should be interpreted equally in every industry.

According to Section 35 U.S.C. § 101 patent law applies to *any* invention, with certain exceptions to Section 101, and it is not limited to specific industries under justification of freedom of expression. Thus, rising number of patents in the field of technology should not be a reason *per se* to exclude software patents in general from patent protection as held by Mayer.

In his concurrence Judge Mayer did not provide arguments that would support his opinion that public benefits coming from disclosure of software invention are not in balance with the exclusive right given to the inventor, and also cause for possible disruptions of communication technology.

Repercussions of technology patents should be closely followed and analyzed, and maybe sometime in the future, impacts from software patents will cause disproportion between rights of patent owners and benefits for general public, of such magnitude that certain type of industries will need to be excluded from patent protection in general, "if national patent laws did not exist, it would be difficult to make a conclusive case for introducing them; but the fact that they do exist shifts the burden of proof and it is equally difficult to make a really conclusive case for abolishing them."[17]

However, in the opinion of this author, Judge Mayer did not provide sufficient justifications to support such categorical exclusion at this moment. On contrary, Mayer limited his own statement by saying that there is only a *'potential'* to disrupt or derail large swaths of online communication in the asserted claims. Apart from the statement that software patents violate freedom of speech, and following analogies

---

[17] E. T. PENROSE, The economics of the international patent system 40 (1951).

with other IPRs, Mayer's concurrence lacks examples and more in-depth explanation for such reasoning.

1.1.4. Does technology patent really impact freedom of speech

One might ask whether patents in technology industry, particularly patents on inventions that facilitate communications, actually impact ones freedom of speech? In the opinion of Robert Sachs, First Amendment is about the content of speech and not the physical mechanisms of speech. He claims that software patent regulates use of the invention and not speech itself."[18] On the other hand, professor Burk criticized Sachs understanding of First Amendment and has taken the opposite view. Burk claims that technology patents do impact freedom of speech, but whether such impact is in accordance with the First Amendment rights, that depends on the level of scrutiny taken.[19]

1.1.5. Software patents and communication technologies

Judge Mayer claims that all software patents are running afoul First Amendment because they are restricting communication technologies. Mayer cites Benson, *"online communication has become a basic tool of modern life...",* and "building blocks of human ingenuity are patent ineligible."[20]. However, if we look at claims at issue we can see that these inventions include the following: a) method for identifying characteristics of data files, b) system and method which allow control of internal email distribution, c) and screening a communication for viruses or other harmful content.[21] Do these patents really restrict communication? If for example we compare representative claim of '050 patent and compare it with "long-prevalent practice for people receiving paper mail to look at an envelope and discard certain letters, without opening them"[22] should that 'non-computerized' practice also be considered as restriction of communication that should be prevented?

---

[18] Robert Sachs, Discussion Should Patent Law Be a First Amendment Issue? Stanford Law School, April 17, 2017. https://www.youtube.com/watch?v=mXAONV_Eets

[19] Dan L.Burk, Discussion Should Patent Law Be a First Amendment Issue? Stanford Law School, April 17, 2017. https://www.youtube.com/watch?v=mXAONV_Eets

[20] Mayer's concurrence, page 4, citation: Benson 409 U.S. at 47

[21] *Intellectual Ventues I LLC v. Symantec.*

[22] *Intellectual Ventures I LLC v. Symantec.*, page 10

1.1.6. Other technology patents

It is not completely clear whether Judge Mayer considers asserted *inventions* as constriction of communication channels, or only patents to such inventions? As held by Federal Circuit, many softwares lack capability of being patent eligible on the grounds that some inventions are well known practices and ideas and just because they are being adapted and performed on computer does not amount to abstract idea becoming patent eligible.[23] Those patents have not been rejected/invalidated because they are restricting communication but because of the concept of pre-emption. Therefore, we can ask ourselves, whether same criteria would be applied to offline world?

In his concurrence, Judge Mayer limited his concern about patents on communication channels that are only related to software and he did not take in consideration other industries. If compared to patents in other industries, and that also might restrict communication channels, should the same rationale apply to patents related to radio, TV or phone services? Robert Sachs also elaborated on this problem saying that Judge Mayer eliminated other industries from free speech concerns, such as patents related to television and radio. Sachs notes there were more than 10,000 patents issued on these communication technologies between 1920s and 1960s. Sachs is of the opinion that Mayer does not understand the fundamental aspects of technology nor he understands how does technology creates conduits of expression.[24] As said by Stuart P. Meyer; "Changing only couple of words, he could similarly condemn patents directed toward printing, radio and television systems." [25]

Mayer did not refer to any positive impacts that software patents might have to communication channels. One could argue, if we look at claims at issue, that aim of these inventions is not to restrict channels of communication and to impose fees on its use, but to the contrary, to implement technological safeguards similar to firewalls

---

[23] *Intellectual Ventures I LLC v. Symantec.*
[24] Robert Sachs, Discussion Should Patent Law Be a First Amendment Issue? Stanford Law School, April 17, 2017. https://www.youtube.com/watch?v=mXAONV_Eets
[25] Meyer S.P.; *Mayer's Concurrence in IV shows the Problem with Judicially Created Exceptions,* The Fenwick & West Bilski Blog, 10.10.2016. http://www.bilskiblog.com/blog/2016/10/judge-mayers-concurrence-in-iv-shows-the-problem-with-judicially-created-exceptions.html

and other filtering technology. "Despite Judge Mayer's concern for preservation of the open Internet architecture, communication restriction technologies have served to make the Internet safer for speech, business, research and e-commerce. "[26] Similarly, professor Burk held it is unquestionable that patent law interferes with communication channels. However, such interference might not necessarily be bad, because government has decided that patents promote technology and investments and that is consistent with First Amendment. [27]

1.1.7. Internet's open architecture

Judge Mayer argued that restriction on software patents will safeguard free speech that is necessary for preservation of Internet's open architecture. It seems that Judge Mayer does not acknowledge the existence of different types of software patents. As said by Robert Sachs, "Judge Mayer confuses patents on software and patents on communications on the Internet. The vast majority of software in the world has nothing to do with Internet. Software is embedded in everyday devices such as cars, ovens, cameras and Mayer does not understand the greater world of software. The notion that patents are going to cover notion of expression is no more so than patents on telephones or routers."[28] On the other hand, for situations where software patents might become an issue of Internet open architecture, Mayer does not suggest what other type of property protection, or financial reward he would suggest for the inventor. While there are pros and cons for open Internet architecture, before imposing statutory and judicial exclusion of software patents, pros of open architecture should significantly prevail.

While both Wendy Seltzer and professor Burk agreed that further decisions on software patents should be left to Congress itself, Burk held that application of fair use as seen in copyright, and as proposed by Judge Mayer is unlikely to be

---

[26] M. Borella, G. Lyons III,m Int Venture. I LLC symantec Corp, .—*Judge Mayer on the First Amendment»*, October 24, 2016, http://www.patentdocs.org/2016/10/intellectual-ventures-i-llc-v-symantec-corp-judge-mayer-on-the-first-amendment-.html

[27] Dan L.Burk, Discussion Should Patent Law Be a First Amendment Issue? Stanford Law School, April 17, 2017. https://www.youtube.com/watch?v=mXAONV_Eets

[28] Robert Sachs, Discussion: Should Patent Law Be a First Amendment Issue? Stanford Law School, April 17, 2017. https://www.youtube.com/watch?v=mXAONV_Eets

introduced. Rather, Burk held that possible solutions might be found in compulsory licensing and that freedom of speech and access to communication channels does not need to be free, but rather it should be available.[29]

1.2. IPRs and freedom of expression in Europe

1.2.1. ECHR

Right to freedom of expression and information in Europe, i.e. 47 member states of Council of Europe, is guaranteed by Article 10 ECHR. According to the case law of ECtHR, protection of IPRs falls under Article 1 of Protocol no.1.ECHR

1.2.2. EU Charter of fundamental rights

When it comes to protection of fundamental rights in the European Union, Article 11(1) of Charter of fundamental rights of the EU states that: "*1.Everyone has the right to freedom of expression. This right shall include freedom to hold opinions and to receive and impart information and ideas without interference by public authority and regardless of frontiers.*"[30] Moreover, Article 17 has enshrined protection intellectual property. Thus, both freedom of expression and right to intellectual property are established rights in the ECHR and in EU Charter of fundamental rights. Logically, this may lead to problems in the cases where these two rights interact in conflicting manner.

1.2.3. Conflict of fundamental rights in ECtHR and CJEU

In relation with protection of fundamental rights and that may come into interference with each other, and particularly regarding *enforcement* of IPRs, CJEU has held that fundamental rights enshrined in Charter of fundamental rights of the EU are not absolute. As decided by CJEU in *Promusicae* when reconciling the protection/enforcement of different fundamental rights both shall have equal legal value and neither shall be categorically absolute. This means that EU Member States and courts must ensure to strike fair balance between different fundamental rights, *"the Member States must, when transposing the directives mentioned above, take care*

---

[29] Discussion: Should Patent Law Be a First Amendment Issue? Stanford Law School, April 17, 2017. https://www.youtube.com/watch?v=mXAONV_Eets
[30] EU Charter of fundamental rights, Article 11(1)

to rely on an interpretation of the directives which allows a fair balance to be struck between the various fundamental rights protected by the Community legal order.[31]

Requirement for striking fair balance between fundamental rights was later confirmed by CJEU in *Sabam Netlog* and *Scarlett Extended, "the protection of the fundamental right to property, which includes the rights linked to intellectual property, must be balanced against the protection of other fundamental rights...in the context of measures adopted to protect copyright holders, national authorities and courts must strike a fair balance between the protection of copyright and the protection of the fundamental rights of individuals who are affected by such measures."*[32]

Judge Mayer proposed to impose new limitations to eligibility of patent subject matter in U.S., based on the need to protect right to freedom of expression. However, similar statutory provision in EU, would ultimately limit ones right to protection of intellectual protection. Above examples analyze confliction of different fundamental rights regarding *enforcement* of IP. We may assume that similar approach should be taken in *granting* IP protection when there is an interference with freedom of expression.

According to ECtHR case law, court held that freedom of expression applies not only to the *content* of information but also to the *means* of dissemination, since any restriction imposed on the means necessarily interferes with the right to receive and impart information.[33] (note that ECtHR understanding of freedom of expression is to the contrary of that of the Robert Sachs when explaining his understanding of US First Amendment.)

ECtHR case law affirms need to balance IP rights and freedom of expression, with wide margin of appreciation when it comes to protection of IP rights. In *Akdeniz v. Turkey (2014)* court held that the imposed blocking measure for copyright protection is not a violation of freedom of expression of the applicant enshrined in Article 10 ECHR. One of the reasons is, the claimant had only been deprived of *one* source of

---

[31] *C-Promusicae,* para. 68
[32] *Sabam Netlog,* para. 42,43 and Scarlett Extended para. 44, 45
[33] ECtHR *Case of Özturk v.Turkey,* (application no. 22479/93), para 49

communication channel: "the mere fact that the applicant – like the other Turkish users of the websites in question – had been indirectly affected by a blocking measure against two music-sharing websites could not suffice for him to be regarded as a "victim" for the purposes of Article 34 of the Convention. He could thus without difficulty have had access to a range of musical works by numerous means without this entailing a breach of copyright rules."[34]

If we would apply same understanding to patent law, we could argue that one can not categorically claim violation of freedom of expression, because of the patent on communication channels, since there might be other alternatives to such communication channels. This seems logical since not every inventor will apply for software patent, nor would every software invention be granted a patent. In todays very competitive market and increasing technology development, it is very likely that one could easily find an alternative to the software that is patented.

In the given case, ECtHR also held that applicant's interests, namely his right to freedom of expression, must be balanced against the right to property of copyright since both are protected by Convention. ECtHR held that blocking measure in the given case, due to copyright, is *targeted*. According to ECtHR and CJEU case law, restriction of rights, such as imposing a blocking measure, is possible only in *targeted cases* and not in general manner. This is to ensure necessary balance between different fundamental rights protected both by ECHR and EU Charter of fundamental rights.

If the same 'targeting rationale' were to be applied in patent law, one might claim that patents also 'target' only specific, *a) types of software* (CII/only those that are abstract idea with significantly more) and *b) only if cumulative conditions for patent protection are fulfilled.* Thus, freedom of expression is *not generally* affected, with the *mere existence* of software patents. It has already been decided in *Alice Corp.* that patent protection is possible only for subject matter that is 'abstract idea with significantly more'. Therefore, 'significantly more' might be balance made between patent protection and possible restrictions of other fundamental rights.

---

[34] ECtHR *Case of Akdeniz v.Turkey*, (application no. 20877/10)

ECtHR has embraced the idea of ECHR as a "living instrument that must be interpreted in the light of present conditions therefore allowing the meaning of fundamental rights not to be frozen in time."[35] This is especially important for technology industry. Technology will continue to develop in high speed and principle exclusion of the protection for targeted industries might have significant impacts in technology development.

1.3.   Trademarks and freedom of expression in EU

To support his statement that further limitations should be imposed on subject matter eligibility in patent law, in his concurrence Mayer refers to trademark law and notes that descriptive trademarks are excluded from trademark protection in order to ensure the safeguards of First Amendment. Following paragraphs will discuss how Mayer's argument might be interpreted according to trademark law in EU in relation with EPC.

1.3.1.   Trademark law in EU

Dual system of protection and registering trademarks in EU provides possibility to register trademark at national level or at EU level. Trademark law in EU includes Trademark Directive and CTM Regulation (CTMR). The latest EU trademark reform includes new *Directive (EU) 2015/2436 of the European Parliament and of the Council of 16 December 2015 to approximate the laws of the Member States relating to trade marks* that enters into force on 14 January 2019, and the new European Union Trademark Regulation (EUTMR) that entered into force on 23 March 2016 with some exceptions that enter into force on 1 October 2017.

1.3.2.   Subject matter eligibility and descriptive trademarks

Conditions for assessment of subject matter eligibility in EU trademark law require that a) trademark must be eligible as a sign, b) it must be of distinctive character and c) non-excluded.

---

[35] Letsas, G. *European Journal of International law, volume: 2, Strasborough interpretative ethics: Lessons, for the international lawyer*, August 2010, DOI: https://doi.org/10.1093/ejil/chq056

Article 7 CTMR provides absolute grounds for refusal of registering trademarks that are of descriptive character. These trademarks are both excluded from protection and of non-distinctive character. Article 12 EUTMR provides limitation of the impact of the EU trademark. Accordingly, descriptive and in general non-distinctive signs are not eligible for trademark protection.

Underlying rationale for exclusion of descriptive terms[36] is that descriptive signs are meant to be used by public and/or other traders. According to the EUIPO Guidelines, when assessing what is descriptive term reference is made to dictionary entries, Internet websites and to general understanding of specific sign. However, when making a final conclusion, ordinary and plain meaning of a sign is assessed. For the sign to be considered as descriptive it is sufficient that relevant public understands that sign as a description of goods or services for which protection is sought. Notion of descriptiveness *is assessed* taking into consideration whether given sign is descriptive in any of the EU languages or non-EU languages but understood by a relevant public of EU. Descriptive signs indicate signs that themselves represent type or nature of goods or services for which protection is sought, or they refer to their quality, quantity, intended purpose, values, geographical origin or other characteristics of given goods and services.

Recital 21 EUTMR for the first time specifically provides need to ensure right to freedom of expression in trademark law; *"Use of a trade mark by third parties for the purpose of artistic expression should be considered as being fair as long as it is at the same time in accordance with honest practices in industrial and commercial matters. Furthermore, this Regulation should be applied in a way that ensures full respect for fundamental rights and freedoms, and in particular the freedom of expression."*[37]. It is yet to be seen how courts will interpret this recital and specific references to freedom of expression in trademark infringement. However, from the recital we may conclude that freedom of expression criteria must be taken in account when assessing

---

[36] Guidelines for Examination Union of European Union trade marks, EUIPO, Part B, Examination of 1 February 2017, Section 4, Absolute grounds for refusal, Chapter 4, Decsriptive trademarks, Article 7 (1c) EUTMR, , The notion of descriptivness, page 3.
[37] EUTMR, Recital 21

whether there has been an infringement of trademark or not and that is in accordance with recent CJEU case law.

1.3.3. Comparison of descriptive trademarks and software patents

From the EUIPO guidelines we can clearly see that right to freedom of expression is taken in consideration when assessing subject matter eligibility in registration of trademarks, namely descriptive trademarks. This author is of the opinion that Judge Mayer reference to limitation of trademark protection of descriptive marks is a valid example of protection of freedom of expression in trademark law.

However, neither CTMR nor EUTMR make exhaustive list of categories of what should be understood as descriptive trademarks. That is why trademark limitation should not be a supporting argument for *categorical exclusion* of software patents as mentioned by Mayer. Whether specific sign is descriptive trademark is decided by IP registration office from case to case basis, based on the abovementioned criteria. This is important because both freedom of expression and right to trademark protection are enshrined in basic provisions of ECHR and EU Charter of fundamental rights. Moreover, trademark applicant should also be guaranteed right to freedom of expression in the addition to exclusive right to use his sign.

1.4. Copyright and freedom of expression in EU

In his concurrence, Mayer argued need for exclusion of software patents by making comparison with limitations in copyright law[38]. He notes that the power to issue copyright is circumscribed by the First Amendment because copyright law allows only *expressions* to be protected and not *ideas* itself, *"Just as the idea/expression dichtonomy and the fair use defense serve to keep copyright protection from abridging free speech rights, restrictions on subject matter eligibility can be used to keep patent protection within constitutional bounds."*[39] Following paragraphs will explain relation between Mayer's argument and copyright and patent law in Europe.

---

[38] Mayer's Concurrence, page 3
[39] Mayer's Concurrence, page 4

1.4.1. Copyright law in Europe

Copyright in EU is not a unitary right. Copyright in EU includes several directives and is harmonized only to the extent that is covered by those directives. Thus, copyright law consists of national laws that often differ due to different implementation options and statutory languages. National laws in Member States are not allowed to grant less or more protection than granted by Directive unless said otherwise. Harmonization of national laws does not affect principle of territoriality which means that national rules govern copyright subject matter within the territory of a given Member State. Unlike other IPRs, copyright requires no formalities to come in existence. As in US legal system, copyright protection is possible only to the expression and not the ideas.

1.4.2. Subject matter eligibility in copyright law

EU law stipulates that copyright protection may be applicable to *works,* but it does not provide autonomous definition of what is considered to be *work*. Notion of *work* supports the rationale that copyright subject matter must be in a form of expression and therefore excludes the possibility to protect ideas. Although no formal process is required for copyright protection to come in existence, copyright protection is not unconditional. Condition for copyright protection is that *work* must be original, i.e. *authors own intellectual creation*. [40] Thus, subject matter of copyright protection includes notions of *work* and notion of *author's own intellectual creation.*

Another factor that should be taken in consideration, when drawing parallels with limitations in subject matter eligibility in copyright law and patent law, is copyright comes in existence merely by creation of *work*, without the need to submit work through any registration or administration process. Since there is no administrative process to acquire copyright protection, whether *work* in question is *original* will not be assessed until occurrence of alleged copyright infringement.

Freedom of expression is one of the reasons why copyright does not protect ideas itself, but only their expression. Categorical exclusion of protection of ideas in copyright law is necessary to ensure freedom of expression, but also to ensure that

---

[40] *C-Infopaq*

protected works are in fixed form. In this regard, it remains possible for other people to have the same or similar idea but to express it in different way and thus have copyright on their work.

1.4.3. Comparison of idea/expression dichotomy and subject-matter eligibility in patent law

As explained above, Mayer makes valid point about idea/expression dichotomy in copyright as defense of freedom of expression. However, in the opinion of this author, if subject matter eligibility of copyright is being compared to subject matter of patent law, it would be more appropriate to say that copyright protection is possible for protection of *works,* as patent protection is possible for *inventions.*

Apart from underlying rationale that idea must be in a form of expression, there is no unique definition of *work* in copyright law. In similar way, EPC does not provide definition for *invention*, rather it makes a non-exhaustive lists of what should *not* be considered as invention. Differentiation between *works* and *ideas* is rather simple and convenient for copyright protection. On the other hand, differentiation of what should or should not be considered as an *invention* is far more complicated.

Article 52(2) EPC provides list of subject matter that is not to be regarded as patentable inventions within the meaning of EPC. Article 52(2)(c) states that programs for computers are not to be regarded as patentable inventions within EPC. *"The reasons for the exclusion of this subject matter have to do with the fact that for the innovative and economic reasons monopolization does not seem desirable in a particular field of innovative activity, partly because in solving technical problem, an activity only addresses the human brain and describes mental acts, but does not involve the use of forces of nature. "*[41] This rationale and exclusion of certain subject matters for the reasons of innovation and monopoly might be supported with freedom of expression argument as said by Mayer. To the contrary of what Mayer claims, in the opinion of this author, categorical exclusions might also limit inventive processes. This was probably also recognized by European legislators and courts and therefore

---

[41] A.Kur, T.Dreier, *European Intellectual property Law (2013)*, Edwar Elgar Publishing Limited, 2013. page 108

according to Article 52(3) EPC, patentability of computer programs is only excluded to the extent to which subject matter or activities are related *as such*.

Idea/dichotomy rationale as proposed by Mayer is a valid example as one of the safeguards for freedom of expression in copyright, but can not be equally compared to limitations in subject matter eligibility in EPC patent law. This is because, copyright law does not provide *exceptions/limitations* to idea/expression rule. On the other hand, patent law according to EPC already provides categorical exclusion of computer programs *as such,* similar as proposed Mayer. Limitations set to subject matter eligibility in patent law and its exclusion of computer programs refers only to the inventions that *claim* a computer program. Thus, unlike ides/expression dichotomy in copyright law, ECP provides bounds to subject matter limitations. Accordingly, patent protection is possible for inventions that *contain* a computer program.

Further, Mayer states that copyright law applies a *''fair use''* principle. EU Copyright Directive implements *"fair use"* principle in Article 5, therefore providing exceptions and limitations to copyright and safeguarding right to freedom of expression.[42] Freedom of expression has become an important tool when analyzing notion of 'communication to the public' and exceptions in 'quotation' and 'parody'.[43] However, in infringement cases courts still must decide whether exceptions and limitations were applied as prescribed by law. Similarly, according to EPC, it is decided on case-by-case basis whether invention *claims* a computer program or *contains* computer program. In parallel, U.S. legal system, on case-by-case basis decides whether claim amounts to significantly more than *abstract idea* itself.

It is the opinion of this author that underlying rationale for *fair use* principle can more appropriately be compared with proposed limitation on subject matter eligibility regarding freedom of expression, than with idea/expression dichotomy in copyright law. As exceptions and limitations in copyright law are statutory safeguards of freedom of exception, existing limitations in EPC subject matter eligibility, and limitations imposed by 'abstract idea + significantly more' in U.S., should be

---

[42] Copyright Directive, Recital 31
[43] *C-Painer, C-Deckmyn, C-GS Media*

sufficient in safeguarding freedom of expression, without imposing categorical exclusion of software patents.

Chapter 2
Vague and functional language in software patent claims

In his concurrence, Mayer said that *"patents constricting the essential channels of online communication running afoul of the First Amendment."* Judge Mayer began his argumentation saying that *asserted* claims are in vague, functional language and are disrupting free speech.[44] This might be the case with given claims, however Mayer claims that software patents in general should be excluded from subject matter eligibility and to ensure protection within constitutional bounds, "software patents typically do not include any actual code developed by the patentee, but instead describe, in intentionally vague and broad language, a particular goal or objective."[45] Following paragraphs will discuss stages of patent examination and patent registration in EPO and USPTO, in which language of claims is examined. Depending on the stage of the examination, language might be assessed for various different reasons. In the end, if invention is granted a patent, one may conclude that language of patent application has met different standards during patent examination and registration procedure.

Both U.S. patent law and EPC recognize substantive patent law that includes a) patent eligible subject matter and b) conditions for patent protection. According to the Article 52(1) EPC *"European patents shall be granted for any inventions, in all fields of technology, provided that they are new, involve an inventive step and are susceptible of industrial application."* Article 52(2) EPC provides list of what should not be regarded as *invention* in the meaning of Article 52(1) EPC.

According to 35 U.S.C. § 101, *"Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and*

---

[44] Mayer's Conncurence, page 2
[45] Mayer's Conncurence, page 9

requirements of this title. " It is important to remember that there is a difference between *patent eligible subject matter* and *conditions for patent protection* in both U.S. and EPC patent law.

2.1. EPC and patent language

Even if subject matter is *invention* within the meaning of Article 52(1) EPC (i.e. it is not excluded within Article 52(2) EPC), such invention still must fulfill conditions of *novelty* in Article 54 EPC, it must involve *inventive step* as set in Article 56 EPC and it must be *susceptible of industrial application* as set in Article 57 EPC, to be granted a patent.

2.1.1. Inventive step and language of a claim

Main agenda of this requirement is to ensure that the invention is not obvious in the sense that ''it does not go beyond the normal progress of technology".[46] Whether the invention lacks the inventive step is assessed based on the criteria if the invention is obvious *to the person skilled in the art*.

According to EPO Examination Guidelines, person skilled in the art is a skilled practitioner in the relevant field of technology and who possesses an average knowledge and ability and is aware of what was common general knowledge in the art at the relevant date.

From the above we can clearly conclude that, whether invention is inventive might depend on the circumstances and context of examination. This actually implies that person skilled in the art will assess whether invention has an inventive step based on the language used in the claim. If we look at the language of a claim something that might seem inventive to a regular person, might clearly be rejected by the person skilled in the art. Thus, indirectly, person skilled in the art will examine language of the claim in the process of deciding if the invention is a common general knowledge, and overbroad language might be the reason why claim does not communicate inventiveness in the relevant art.

---

[46] EPO Examination Guidelines, Part G-Chapter VII4.

Test that is being used in UK to determine the extent of protection according to Article 69 EPC is *Kirin Amgen test*. Although it explains the UK approach to claim construction regarding the extent of protection it also explains the importance of distinction between skilled person and general public. As noted above, inventive step is assessed with the knowledge of the skilled person, and language of the claim has an important role in every step of patent examination; *"The question is always what the person skilled in the art would have understood the patentee to be using the language of the claim to mean. And for this purpose, the language he has chosen is usually of critical importance. "[47]*

As it will be seen in Chapter 3, although requirement of inventive step is part of the conditions for patentability and not subject matter analysis, according to the EPO case law and EPO Examination Guidelines, inventive step examination also serves in achieving fair balance between low threshold of subject matter eligibility and conditions for patent protection. That is because only technical features of a claim are examined for inventive step according to problem-solution approach.

2.1.2. Industrial application and language of a claim

For the invention to be susceptible of industrial application according to EPC, it must be made or used in any kind of industry. According to EPO Examination Guidelines, "The description should indicate explicitly the way in which the invention is capable of exploitation in industry, if this is not obvious from the description or from the nature of the invention".[48] Similar to the patent law in U.S. that invention must be *specific*, EPO requires that invention must be *explicit.* This implies that description of the invention must be in functional language that will enable to determine the exploitation in the industry.

2.1.3. Clarity of the claim and language of disclosure of the invention

Judge Mayer raised his concern about software patent claims being intentionally vague and broad. It is important to note that both Article 83 of EPC and Article 84 EPC are suppose to ensure that patent claims are written in clear language and that

---

[47] Kirin-Amgen, Inc. v Hoechst Marion Roussel Ltd.[1] is a decision by the House of Lords of England and Wales. 2004, UKHL 46
[48] EPO Examination Guidelines, Industrial application

patent applications discloses necessary information. In addition, Article 69 determines the scope of protection granted.

In the process of patent registration, invention must be disclosed according to Article 83 EPC, "The European patent application shall disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art." This is to ensure that inventor will provide description of at least one way how to put his invention in practice.

According to Article 84 EPC claim must be clear and concise. If it is found that claim lacks clarity under Article 84 of EPC, this may lead to the application of Rule 63 where applicant is called to file a statement indicating the asserted subject-matter in the given deadline.

According to the EPO Examination Guidelines, in T-539/09 Board of Appeal held that notion of clarity within Article 83 of EPC is not the same as notion of clarity within Article 84 of EPC. Distinction between clarity of what is being *disclosed* and clarity of what is being *claimed* means that just because something is not being claimed in a clear language it does not necessarily mean that disclosure is unclear as well, and *vice versa*. Thus, both language and content of a claim, and language and content of disclosed information are examined separately and in different instances that helps prevent the potential of patent being overbroad and/or vague.

2.1.4. Scope and language of the claim

In relation with Article 83 EPC and according to Article 69 EPC, extent of the protection is determined by claims, while description and drawings are used to interpret the claims. To avoid two extremes, of reading the claims only as guidelines, or reading the claims in the strict and literal meaning of the wording of claims, according to the Board of Appeals, for the purposes *of infringement proceedings*, Article 69 EPC is to be interpreted "as defining a position between these extremes which combines a fair protection for the patent proprietor with a reasonable degree of legal certainty for third parties."[49]

---

[49] Protocol of the Interpretation of Article 69

On the other hand, for the purposes of *examination proceedings* and *opposition proceedings*, claims are interpreted in "strict definitional approach" according to the Board of Appeal in T-1279/04. "Any isolated, artificial, technically meaningless interpretation out of this context was to be carefully avoided."[50] This means that, if necessary, claim should be amended to ensure future legal certainty rather than being left open for different argumentative approaches.

According to the Board of Appeal in T-1534/12, strict definitional approach is applied when assessing the vocabulary of a claim that "had to be construed from the standpoint of a skilled person reading the specification with a mind desirous to understand the intention behind it. The description and the drawings created the context and cast a light on the meaning to be reasonably attributed to the vocabulary employed in the claims."[51]

As seen, there are two different approaches for the interpretation of claims. First approach is applicable in the cases where it is necessary to ensure that fair scope of protection is given to the patent owner. On the other hand, strict definitional interpretation of wording of the claim is necessary in the examination and opposition proceedings to avoid overbroad and vague language of the claim that would leave the possibility of different arguments and uncertainty for the third parties.

According to *Kirin Amgen* test and UK approach regarding application of Article 69 EPC and clarity of claims, "the conventions of word meaning and syntax enable us to express our meanings with great accuracy and subtlety and the skilled man will ordinarily assume that the patentee has chosen his language accordingly. It must be recognized that the patentee is trying to describe something that, at any rate in his opinion, is new; which has not existed before and of which there may be no generally accepted definition. There will be occasions upon which it will be obvious to the skilled man that the patentee must in some respect have departed from conventional use of language or included in his description of the invention some element which he did not mean to be essential. But one would not expect that to happen very often."

---

[50] T-1279/04
[51] T-1534/12

2.1.5. Conclusion

Patentability conditions must be cumulatively fulfilled for invention to be granted a patent. From the above we can see that in the examination procedure and registration procedure, language of the claim is analyzed from different standpoints to ensure that all of the information is given in clear and acceptable manner. Since all of these steps ensure that claims do not speak in overbroad, vague and functional language, in the opinion of this author, it is unnecessary to discuss language issues, to the extent of categorical exclusions, within subject matter eligibility question, and as proposed by Mayer. As said above, patentability conditions are separated from patent eligible subject matter, however EPC inventive step requirement is balanced with low threshold of subject matter eligibility.

2.2.   U.S. Code-Title 35 and patent language

Similar to EPC, conditions for patent protection are set in of 35 U.S.C. § 102 requiring that invention must be *new*, *non-obvious* requirement is set in of 35 U.S.C. § 103, and *utility* requirement is set in of 35 U.S.C. § 101. In addition to conditions for patentability, patent application must fulfill disclosure requirements of of 35 U.S.C. § 112 for the claimed invention, otherwise it will not be granted a patent.

Section 35 U.S.C. § 101 stipulates eligible subject matter. Question of overbroad claims may arise with both subject matter eligibility and conditions for patent protection. In his concurrence, Mayer claims that all software patents should be rejected as not being eligible subject matter because software claims are overbroad, vague and functional. Regarding issue of claims being overbroad this may come into relevance with subject matter eligibility, scope of patent protection and utility requirement. On the other hand, functional claims may raise problems with novelty, non-obvious requirement and disclosure requirements in patent application.

2.2.1. Relation between 35. U.S.C. §101 and §112

Software related claims may be structured in overbroad and vague language. Thus, according to *Bilski*, claim might pre-empt all uses of fundamental principles. This might happen where claim would cover basic fundamental principle rather than only

specific application of that principle. [52] *Mayo/Alice* limitation in Section 35 U.S.C. § 101 safeguard against such overbroad claims and rejects them as not being eligible subject matter. On the other hand, 35 U.S.C. § 112 also provides safeguard against claims with overbroad language. Specifically, where claims do not provide enough disclosure and ensuring that patentee does not have more rights than he is entitled to[53]. Judge Mayer claims that, categorically, all software patents should be held as non-eligible subject matter under of 35 U.S.C. § 101, due to overbroad language. This would mean that all software claims are not patent eligible because their overbroad language would cover a basic fundamental principle. Primary concern with that approach is the fact that his interpretation would cover all software related claims.

2.2.2. The utility requirement and language of a claim

Requirement for the patent invention to be useful, or susceptible of industrial application is one of the fundamental requirements that commonly exist around the world. According to the MPEP, invention must "show that it has *substantial and specific* utility or *disclose enough information* about the invention *to make its usefulness immediately apparent* to those familiar with the technological field of the invention"[54] Requirement that invention must be specific and disclose enough information is suppose to ensure that claims are not overbroad but sufficiently restricted to specific matter.

2.2.3. Scope and language of the claim

According to the MPEP, to reduce the possibility that the claim, once issued, is interpreted more broadly than justified, during patent examination, PTO determines the scope of claims giving them broadest reasonable construction.[55] This implies that claim language will be assessed according to the customary meaning of the terms that is consistent with the specification and drawings and consistent with the interpretation

---

[52] *Bilski*

[53] M.Nullet, J.Cox., The coupling of § 101 and § 112, and what it means for patent practitioners, http://www.ipwatchdog.com/2017/03/14/coupling-101-112-patent-practitioners/id=79258/

[54] MPEP, USPTO, 2100 Patentability, R-7-2015.

[55] *In re Yamamoto*, 740 F.2d 1569, 1571 (Fed. Cir. 1984); *In re. Zletz,* 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989) ("During patent examination the pending claims must be interpreted as broadly as their terms reasonably allow."), Claim Interpretation, MPEP 2015 November.

of person skilled in the art, or if available, according to the inventors definition of the term set forth in the specification. If the claim language is overbroad, the applicant must amend such claim to make it more clear and precise.

2.2.4. Prior art and non-obviousness in functional claim

Necessity of the invention to be *specific* is demonstrated in determination whether a computer-implemented functional claim limitation is patentable according to the prior art under 35 U.S.C. § 102 and § 103. According to the MPEP Guidelines a problem that may arise with broad functional claim limitations is when specific terms such as 'computer' is not modified by other claim terms or clearly defined in specification, and is given the broadest reasonable interpretation by the person skilled in the art. Thus, if the prior art discloses a device that can inherently perform the claimed function, patent will be rejected.[56] Non-obvious requirement, according to the MPEP Guidelines, should be understood as 'reasonably obvious for person skilled in the art', when functional claim implements known function on a computer and only replaces manual function with computer technology without new result.[57]

2.2.5. Disclosure requirements and functional claim in § 112

According to 35 U.S.C. § 112, the specification of patent application must fulfill three components of disclosure: enablement, written description and best mode. "The specification shall contain a written description of the invention, and of the manner and process of making and using it, in *full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains,* or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention."

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention." [58] Standard for assuring that claim language is not overbroad or vague is that "claims are required to be cast in clear—as opposed to ambiguous, vague,

---

[56] MPEP 2100, page 57
[57] MPEP 2100, page 58
[58] 35 U.S.C. §112, para a),b)

indefinite—terms," and a "claim is indefinite when it contains words or phrases whose meaning is unclear."[59]

35 U.S.C. § 112(f), provides that claim language may be functional and explain the feature of invention as what does software *do* instead of explaining what software *is*. Regarding possible problems with boundaries of functional claim, an issue that was also raised by Mayer in his concurrence, as an occurring problem with software problems, the standard taken in assessing whether a claim term invokes of 35 U.S.C. § 112(f), is "whether the words of the claim are understood by person skilled in the art to have a sufficiently definite meaning as the name for structure"[60]

The problem arises with computer-implemented inventions when the specification does not identify *in sufficient manner* how the function of invention is achieved. According to the MPEP Guidelines, whether disclosure requirements have been met, depends based on the disclosure of the hardware and disclosure of the software, given that they are co-dependent. According to the MPEP Guidelines, disclosure requirement will be met if person skilled in the art will be able to program the disclosed computer, based on the given algorithm and thus conclude that the inventor invented the claimed subject matter.

2.2.6. Conclusion

From the above we can see that both U.S. patent legal system and EPC have different tools in assessing the language of the claims and its possible implications. Nonetheless, from Mayer concurrence we can conclude that either a) *all software patents are in vague and functional language* and thus we shall exclude them from eligible subject matter without going into assessment of conditions of protection, or b) all claims that are in vague, overbroad, functional language should be rejected as being *not eligible subject matter,* and not because they do not fulfill other patentability requirements.

Either way, repercussions of both interpretations would be to broad and contrary to law. Person skilled in the art makes an analysis of patent language in all stages of

---

[59] MPEP 2173, (*Packard, 751 F.3d at 1313)*
[60] *Williamson v. Citrix 792 F.3d 1339*

patent examination. Deciding in advance that all software patents are not eligible subject matter, because they are in vague, overbroad and functional language would be based on presumption that sometimes may be incorrect. Mayer claims that one of the problems is the "scope that is generally vastly disproportionate to their technology disclosure",[61] and that software patents have no concrete borders and "an applicant has the right to obtain a patent only if he can describe with reasonable clarity, the metes and bounds of his invention".[62] However, as seen above, there are number of relevant articles in both EPC and 35 U.S.C. that are meant to deal with the possible problem of scope of a claim, vague and broad language, and patent boundaries.

CHAPTER 3
SUBJECT MATTER ELIGIBILITY OF SOFTWARE PATENTS/EPC

3.1. Statutory basis for software patents according to EPC

3.1.1. Computer program and computer implemented invention

Terms such as, 'computer program', 'software' and 'computer implemented invention' are sometimes misunderstood and wrongly applied. However, it is very important to clearly understand and distinguish between these terms, especially in relation with IP protection. For the purposes of Directive 2009/24/EC on the legal protection of computer programs, also known as "Software Directive", "the term 'computer program' shall include programs in any form, including those which are incorporated into hardware. This term also includes preparatory design work leading to the development of a computer program provided that the nature of the preparatory work is such that a computer program can result from it at a later stage."[63] Accordingly, Software Directive provides copyright protection for computer programs, including their source or object code and preparatory design material. However, possibly innovative algorithm expressed in the code is not protected by copyright protection for computer programs. According to patent law, algorithm itself can not be protected either. On the other hand, algorithm within technological context,

---

[61] Mayer's Concurrence, page 9
[62] Mayer's Concurrence, page 12
[63] Directive 2009/24/EC on legal protection of computer programs, recital 7

and implemented on device may be subject to patent protection as computer implemented invention (hereinafter: CII). While "software" and "computer programs" may be understood as synonyms, it is important to clearly differ those from CII when related to patent law.

Article 52(2c) EPC excludes 'computer programs' from patent eligible subject matter. On the other hand, Article 52(3) EPC limits such exclusion only to 'computer programs as such'. Thus, EPO Boards of Appeal introduced notion of 'computer implemented invention'. According to EPO guidelines "the expression 'computer-implemented invention' (CII) covers claims which involve computers, computer networks or other programmable apparatus, whereby prima facie one or more of the features of the claimed invention are realized by means of a program or programs"[64]

Even though patent claim may be directed towards the invention *involving* computers, and not directed to computer programs as such, to be patent eligible subject matter it still needs to solve a technical problem. In addition, for patent to be granted, it also must be novel and non-obvious.

From all of the above we can conclude that there is a great difference between computer programs excluded from patentability under the assumption that they should be considered as non-technical process [65], and inventions involving computer. Underlying rationale for the exclusions provided in Article 52(2) EPC is that these subject matters lack technical character and thus lack the implicit requisite of the invention.[66]

Key notion in determine whether something is patent eligible subject matter is in defining the term *invention*. Underlying rationale for patent protection, arising from TRIPS agreement and implemented in EPC, is that inventions *in all fields of technology* have the right to patent protection. That is why it is necessary to understand what does the term *invention* imply. *Invention* is not precisely defined by

---

[64] EPO Guidelines 3.9. Claims directed to CII
[65] T. Dreier, A. Kur, European Intellectual Property Law, 2013. Published by Edward Elgar Publishing Limited, 2013.,Patents: page 139,
[66] T-154/04 - 3.5.01, para.8)

EPC, however from the Case law of Board of Appeal we may conclude that basic requirement for the invention is to have a *technical character*. While Article 52(2) EPC provides list of non-inventions (due to their lack in technical character), we may conclude that *invention* with a *technical character* that might be *implemented* in a computer program is not excluded from patentability according to Article 52(2c) EPC, but is subject to Article 52(3) EPC and called CII.

3.2. Subject matter eligibility according to EPC

3.2.1. CII and technical effect

According to the Case law of Boards of Appeal, technical character of the invention is the implicit requisite of the patent subject matter eligibility and is assessed separately from the remaining conditions for patentability, such as novelty and inventive step. Therefore, even if subject matter is related to the list of the exclusions in Article 52(2c) EPC, presence of technical character may transform the excluded matter to patent eligible subject matter. [67] Requirement of technical character includes "instruction addressed to a skilled person, as how to solve a particular technical problem using particular technical means. It is on this understanding of the term "invention" that the patent granting practice of the EPO and the jurisprudence of the Boards of Appeal are based. The same considerations apply to the assessment of computer programs.[68]

Case law of Board of Appeal shows that EPO assessment of technical character has a very low threshold. CII claim "can avoid exclusion under Art. 52(2)(c) and (3) EPC merely by expressly reciting the use of a computer, a computer network or a computer readable storage medium, because these elements have technical character."[69] This is the exact opposite of US approach in assessment of patent subject matter eligibility issues, since in Supreme court's decision in *Alice Corp.*, court held that "mere requirement for generic computer implementation was not enough to transform the abstract idea of intermediated settlement into a patent-eligible invention."[70]

---

[67] Case law of the Boards of Appeal, 9.1.1 Technical character
[68] T-154/04 - 3.5.01, para.8(4)
[69] European Commission, *"The trends and current practices in the area of patentability of computer implemented inventions within the EU and the U.S."* 2016, page 16
[70] *Alice Corp*, 134 S.Ct. at 2357

In May 2010, Enlarged Board of Appeal issued an opinion, regarding patentability of programs for computers under the EPC and held that, "No exposition of this position would be complete without the remark that it is also quite clear from the case law of the Boards of Appeal, since T 1173/97, if a claim to program X falls under the exclusion of Articles 52(2) and (3) EPC, a claim which specifies no more than "Program X on a computer-readable storage medium," or "A method of operating a computer according to program X," will always still fail to be patentable for lack of an inventive step under Articles 52(1) and 56 EPC. Merely the EPC article applied is different. While the Enlarged Board is aware that this rejection for lack of an inventive step rather than exclusion under Article 52(2) EPC is in some way distasteful to many people, it is the approach which has been consistently developed since T 1173/97 and since no divergences from that development have been identified in the referral we consider it not to be the function of the Enlarged Board in this Opinion to overturn it, for the reasons given above (see point 7.3.8)"[71]

3.2.2. Computer programs and further technical effect

Case law of Board of Appeal distinguishes between a) computer programs *as such* that are excluded from patentability, b) CII where "method claim to a CI invention does not directly recite a computer program, but whose steps are or can be carried out by a computer, or a computer readable medium storing a computer program, which when executed by a processor, carries out a certain functionality"[72] and thus have direct technical effect, and c) patent claims directed to computer programs where there is 'indirect' or *further technical effect.*

Indirect technical effect implies potential to produce further technical effect that derives from the execution of the instructions given by the computer program.[73] According to the case law when the patent claim is directed to a computer program "the computer program must be "capable of bringing about, when running on or loaded on a computer, a *further technical effect* going beyond the 'normal' physical

---

[71] G 0003-08

[72] European Commission, *"The trends and current practices in the area of patentability of computer implemented inventions within the EU and the U.S."* 2016, page 16

[73] Case law of Board of Appeal, 2.4.3. a) Further effects of programs for computer

interactions between the program (software) and the computer (hardware) on which it is run."[74]. That is because in T 1173/97, Board held that while all computer programs might have technical considerations, merely by the fact that there is a method performed on a machine, this is not enough to confer technical character to the invention but there must be a further technical effect.

In T 0424/03, Board clearly distinguished between computer programs as such, CII claims and claims directed to computer programs where there is further technical effect. In T 0424/03 Board held that CII claims must be distinguished from computer claims: "Claim 1 relates to a method implemented in a computer system that represents *a sequence of steps actually performed and achieving an effect*, and not a sequence of computer-executable instructions (i.e. a computer program) which just have the potential of achieving such an effect when loaded into, and run on, a computer. Thus, the Board holds that the claim category of a computer-implemented method is distinguished from that of a computer program. Even though a method, in particular a method of operating a computer, may be put into practice with the help of a computer program, a claim relating to such a method does not claim a computer program in the category of a computer program."[75]

In T 0424/03 Board also held that computer claims are those that consist of *computer executable instructions,* but are also possible to provide further technical effect: "Claim 5 is directed to a computer-readable medium having computer-executable instructions (i.e. a computer program) on it to cause the computer system to perform the claimed method. The subject-matter of claim 5 has technical character since it relates to a computer-readable medium, i.e. a technical product involving a carrier. Moreover, the computer executable instructions have the potential of achieving the above-mentioned further technical effect of enhancing the internal operation of the computer, which goes beyond the elementary interaction of any hardware and software of data processing. The computer program recorded on the medium is

---

[74] European Commission, *"The trends and current practices in the area of patentability of computer implemented inventions within the EU and the U.S."* 2016, page 16
[75] T-0424/03, para 5.1.

therefore not considered to be a computer program as such, and thus also contributes to the technical character of the claimed subject-matter."[76]

3.2.3. CII and inventive step

Just because there is a relatively low threshold in assessing whether there is a technical character of the invention in CII claims, this does not mean that subject matter eligibility is easily acquired.

EPO introduced requirement of correlation between inventive step and subject matter eligibility analysis in the following way; "any non-technical feature of the invention, in other words, any feature of the invention that is excluded from patentability under Article 52(2) and (3) EPC, is not to be taken into account in assessment of inventive step unless there is some interaction between technical and non-technical features in solving a technical problem". That is why, for the applicant it is crucial to understand the exact meaning of technical and non-technical features of the invention.

In deciding whether claimed subject matter fulfills the requirements of inventive step, EPO uses problem-solution approach consisting of; "(a) identifying the "closest prior art", (b) assessing the technical results (or effects) achieved by the claimed invention when compared with the "closest state of the art" established, (c) defining the technical problem to be solved as the object of the invention to achieve these results, and (d) examining whether or not a skilled person, having regard to the closest state of the art within the meaning of Art. 54(2) EPC, would have suggested the claimed technical features in order to obtain the results achieved by the claimed invention."[77]

a) Mixed inventions

Claimed subject matter of CII are often comprised of technical and non-technical features. Such mixture of features is legitimate no matter what type of feature dominates, as decided in T-0641/00, and T-0154/04. Here it is necessary to differentiate between *non-technical features that contribute* to the technical character of the invention and non-technical features that even when related to invention and

---

[76] T-0424/03, para 5.3.

[77] Case law of the Boards of Appeal, Problem-solution approach

other technical features, *do not contribute* to the technical effect and technical character of the invention.

b) Non-technical feature "as such" and non technical feature

It is necessary to distinguish between non-technical features 'as such' and non-technical features that *interact* with the technical features. This is important because non-technical features 'as such' are not assessed in novelty and inventive step requirements.

As decided in T-0154/04 whether non-technical feature contributes to the technical character of the invention it depends on whether non-technical feature interacts with technical feature in a way that *resolves a technical problem.*

Moreover, in T-1358/09 Board held, when "the determination of the claim features which contribute to the technical character of the invention is made, at least in principle is *without reference to the prior art.*"[78] In the same decision, Board also held that efficiency aspects of an algorithm, may also contribute to technical contribution if they are particularly suitable for being performed on a computer and if such aspects goes "beyond merely finding a computer algorithm to carry out some procedure".[79]

c) (Non)Technical problem

In T-1505/05, claimed subject matter was the "implementation of a suitable functionality for selecting options that define possible arrangements of pictures and text on a printing paper. However, Board held that these options may meet aesthetic standards and likings but certainly *do not solve any technical problem*. Therefore such non-technical ideas and features do not contribute to inventive step."[80]

In T-0447/08, appellant claimed "protection for a method for the creation of a database used for preparing the various financial statements of an enterprise occasioned by legal and accounting practice. "[81] This method has been characterized

---

[78] T-1358/09, para 5.4.
[79] T-1358/09, para 5.5.
[80] T-1505/05, para 8.
[81] T-0447/08, para 2.2.

as business method and Board held that implementing such method on the computer does not change the business character of the method. This is because there is no technical contribution, *no direct causal link between method steps and technical solution of a technical problem.*[82] In T-0447/08, Board also held that neither the advantages that result from the computer implementation of such business method *per se* do not confer technical character. Therefore requirement of inventive step is not satisfied.

Moreover, for the future applicants it is necessary to note difference between types of problems that are being solved by technical and/or non-technical features of the claim. This is because, in T-0447/08 Board acknowledged the fact that claimed method does solve particular accounting problems, however "method steps and activities included even if automated do not play any role in the technical solution of a technical problem."[83]

An example where interaction of non-technical elements with technical elements is still not enough to provide to technical contribution was seen in T-1670/70. Claim subject matter was a "system that show on a mobile device available products as a shopper moves around the shop and based on the relative location can find a single vendor to fulfill a customers order"[84]. Board held that feature of providing a list of vendors based on location is not technical. Although the applicant argued that non-technical feature, such as information on vendors, interacts with technical feature of a server to produce list of vendors that should be considered as technical effect, Board rejected that argument and held that this is an example, of *'technical leakage fallacy'*. Board held that transmission of the selection itself is not technical and thus selection of vendors is not technical effect. As explained by Board, this is an example "in which the intrinsic technical nature of the implementation leaks back into the intrinsically non-technical nature of the problem".[85]

---

[82] T-0447/08, para 2.2.
[83] T-0447/08, para 2.2.
[84] T-1670/70, para. 1
[85] T-1670/70, para. 9

In the same case Board also held that producing an itinerary is not technical but *behavioral concept*. Another interesting point is that Board held that this invention includes logistics of navigation system that only indicates options and does not involve *physical elements* of navigating to a particular place and thus also is not technical.[86]

Further, Board also mentioned notion of *"broken technical chain fallacy"* explaining situations where technical effect depends on the reaction of a user. Board held that, "the possible final technical effect brought about by the action of a user cannot be used to establish an overall technical effect because it is conditional on the mental activities of the user".[87]

In summary, in T-1670/70, Board concluded that the invention does include technical elements such as mobile device and server, and non-technical elements such as information of vendors, and information on availability of goods in a shop. However, invention *solves non-technical problem*, such as producing systemized list of vendors, therefore *displaying status of non-technical features*, rather than status of technical features of the invention. [88]

More recent example of non-technical features and technical character was seen in T-0894/10. Applicant claimed a computer system executable method for processing a work item, stored in a database of work items. The question was whether claimed workflow management system has technical character and technical effects. The invention allows 'new rules' to be stored if they are consistent with the hierarchical structure of the management system, thus the effect is preventing the storage of rules that are not consistent. [89] Board held that *"idea of modeling and manipulating representation"* of data is non-technical and essentially aspect of either a business method or an algorithm. Board also held that *deciding* whether to store some data or not is an administrative decision that does not contribute to inventive step. Another interesting point is that the applicant argued that point of the invention is not the

---

[86] T-1670/70, para. 10
[87] T-1670/70, para. 11
[88] T-1670/70, para 12.
[89] T-0894/10, para 4, 5

decision on whether to keep and use data but *conditional storage* of data that allows a more efficient and secure operation on the workflow system. [90] However, Board rejected that argument and held that thing being improved is still non-technical because "it is comparable to saying that an improvement in a data processing algorithm results in a more accurate answer."[91]

Another example of technical problem was seen in T-1370/11. Applicant claimed a computer-implemented method for managing properties of objects, i.e. software applications. In assessment whether there is a technical contribution, interesting question arose and was decided by the Board. Relevant question was, whether reduction in computing time is a technical problem? Board held that *improved speed by itself is not a technical contribution* to the art. That is because "any computer program implementing that method will, of necessity, need a particular amount of computing resources, in particular time. This is merely a consequence of the 'normal' physical interactions between program (software) and computer (hardware). According to established jurisprudence of the Board of Appeal, the computer program would thus be found not to comply with Article 52(2)(c) and (3) EPC for lack of a "further" technical effect. And because the computing time does not contribute to the technical character of the computer program, it could not support the presence of inventive step of a corresponding computer-implemented method"[92] Board also held, if the improvement in computing time was to be seen as technical contribution, than "the exclusion of computer implemented methods under Article 52(2) and (3) EPC would become meaningless, because for any given computer program a less efficient one is either known or conceivable." [93]

---

[90] T-0894/10, para 9, 10
[91] T-0894/10, para 10
[92] T 1370/11, para 10.3.
[93] T 1370/11, para 10.4.

Chapter 4

SUBJECT MATTER ELIGIBILITY OF SOFTWARE PATENTS IN US

4.1. Software patents and patentable subject matter in U.S.

4.1.1. 35 U.S.C. § 101

"Whoever invents or discovers any new and useful process, machine, manufacture or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title. "[94]

Process, machine, manufacture and composition of matter are four statutory of categories of patentable subject matter. For the purposes of claim it is not important to precisely identify the category, although category might be explicitly stated or clear from the claim. However, subject matter of the claim must be within one of the category or it will be rejected.

4.1.2. Judicial exceptions

Judicial exceptions to 35. U.S.C. § 101, are "laws of nature, natural phenomena and abstract ideas"[95] that are not eligible for patent protection. Underlying rationale in the U.S. patent system is that given exclusions might preempt and block others from innovations since they "represent basic tools or building blocks of science and technology, and the patent laws must not allow their future use to be improperly tied up."[96]

In relation with EPC, judicial exceptions might be compared with the exclusions provided in Article 52(2) EPC. EPC refers to those exclusions as 'subject matter and activities that are considered as 'non-inventions' and thus are not fulfilling the requirement of Article 52(1) that provides that patent shall be granted only for an invention. According to the EPO case law, underlying rationale for the exclusions is not the pre-emption and possible blockage of others from innovating as it is in U.S.

---

[94]Section 35 U.S.C. §101

[95] *Mayo*, page 1

[96] Mueller M. J., Patent law, published by Wolter Kluwer, 2016, page 460, footnote; Alice Corp, 134 S.Ct. at 2354

patent law, but the lack of technical character in these subject matter and activities and that is required for the invention to be patentable. However, EPO case law implies that exclusions from Article 52(2) EPC should not be given to broad a scope of application. [97] That is why EPC also provided a clear statutory rule in Article 52(3) EPC limiting the interpretation of exclusions from Article 52(2) EPC only to " the extent to which a European patent application or European patent relates to such subject-matter or activities *as such*.[98]" as was already discussed in Chapter 3.

On the other hand in U.S. patent law, "in applying the §101 exception, this Court must distinguish patents that claim the 'buildin(g) block(s)'of human ingenuity, which are ineligible for patent protection, from those that integrate the building blocks into something more" [99].

Justification for limitations set in Article 52(3) EPC is that European legal tradition provides patent protection for all inventions in all fields of technology for the inventions that have technical character and thus neither subject matter and activities under Article 52(2) shall be excluded from patentability if they have technical character and are not "subject matter or activities as such'[100]. As discussed in Chapter 3 technical character of the invention related to the exceptions of patentable subject matter, implies that 'non-technical features' i.e. exceptions under Article 52(2) EPC, provide to 'technical contribution' of an invention. This might be compared to U.S. approach and the 'integration of building blocks', i.e. exceptions to Article 101, 'into something more' as held in *Mayo* by the Supreme Court.

4.1.3. Mayo/Alice framework

When it comes to judicial exceptions to 35. U.S.C. Article 101, the exact meaning and scope of 'abstract idea' had been a real obstacle for both courts and practitioners. While the Federal Circuit rejected "the useful, concrete and tangible result" test *In re Bilski*, the Supreme Court rejected "machine or transformation" test in *Bilski v. Kappos*, in 2010., as applicable test for determining patent-eligible subject matter

---

[97] Case law of Board of Appeal, page 2.
[98] EPC, Article 52 (3),
[99] *Alice Corp*. page 1
[100] Case law of Board of Appeal, Technical character of the invention, page 3

under § 101. In the given case, the Supreme Court rejected Bilski's application claims and held that the application at issue is abstract idea that is unpatentable and thus falls outside of Article 101.[101] However, Court did not provide definition nor clear explanation of what construes 'abstract idea' and that would suffice as guidance for future references.

In 2012, the Supreme Court set a framework for deciding on subject matter eligibility for all the judicial exceptions to § 101; "In *Mayo Collaborative Servs. Prometheus Labs* we set forth a framework for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts."[102] and thus clearly opened the door for the limitations to judicial exclusions.

First step of two-step framework according to *Mayo*, is to determine "whether the claims at issue are directed to one of those patent-ineligible concepts"[103], and if the answer is yes, than we proceed to the step two of the framework, which asks "what else is there in the claims before us"?[104]

Step two of the two-step framework, court has described as a search for an 'inventive concept' "an element or combination of elements that is "sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the (ineligible concept) itself." Id., at ___(slip op., at 3). "[105]

In 2014, the Supreme Court decided in *Alice Corp.* where patented invention was computerized scheme for mitigating settlement risk and the "claims are designed to facilitate the exchange of financial obligations between two parties by using a computer system as a third-party intermediary."[106] Court applied *Mayo* framework and held that regarding step 1 there is no meaningful distinction between risk hedging

---

[101] *Bilski v. Kappos.*
[102] *Alice Corp.* page 7
[103] *Alice Corp.* page 7
[104] *Alice Corp.* page 7
[105] *Alice Corp.* page 7
[106] *Alice Corp.* page 2

as in *Bilski* and intermediated settlement as in the given case and thus both are abstract ideas [107]and satisfy step 1 of Mayo framework.

Court than proceeded to step 2, asking 'what else is there in the claims before us' and looked for an "inventive concept sufficient to transform the claimed abstract idea into a patent eligible application" [108] emphasizing that claim must have additional features that will ensure that claim does not monopolize the abstract idea.

Court stressed that "in applying the §101 exception, we must distinguish between patents that claim the "'buildin[g] block[s]'" of human ingenuity and those that integrate the building blocks into something more, Mayo, 566 U. S., at ___ (slip op., at 20), thereby "transform[ing]" them into a patent-eligible invention, id., at ___ (slip op., at 3)."[109]

In the given case, court concluded that generic computer implementation of an abstract idea is not such 'additional feature'. Court held that elements of the claims in the given case, looked at individually and in combination, were purely conventional and generic, "well understood, routine and conventional previously known to the industry. "[110] Court also held that claims "do not improve the functioning of the computer, nor do they effect an improvement in any other technology or technical field"[111] but there is only instruction to *apply* abstract idea on the computer and "mere requirement for 'generic computer implementation' was not enough to transform the abstract idea of intermediated settlement into a patent-eligible invention."[112]

Although decision in *Alice Corp*. and the application of *Mayo/Alice* framework to software patents drastically limited number of software patents, thus effected high number of patent invalidations and made it much more difficult to grant a software patent, it certainly did not *categorically exclude software* from patent protection as implied by Judge Mayer in his concurrence.

---

[107] *Alice Corp.* page 10
[108] *Alice Corp.* page 14
[109] *Alice Corp.* page 9
[110] *Alice Corp.* page 15
[111] *Alice Corp.* page 18
[112] *Alice Corp.* page 3

4.1.4. Abstract ideas

"A claimed concept is not identified as an abstract idea unless it is similar to at least one concept that the courts have identified as an abstract idea"[113] According to the case law of U.S. Supreme Court and Federal Circuit and MPEP, following concepts are considered to be abstract ideas[114].

a) Fundamental (foundational) economic practices including financial transactions, legal obligations and contractual obligations.

b) Certain methods of organizing human activity including managing relationships or transactions between people social activities, human behavior, satisfying or avoiding legal obligations, advertising, marketing and sales activities and managing human mental activity;

c) An idea of itself such as an idea standing alone that can be performed in the human mind such as, comparing data, organizing information, displaying advertising.

d) Mathematical relationships/formulas including mathematical concepts, relationships, formulas and calculations.

4.1.5. Significantly more

According to the MPEP, "additional elements" must amount to significantly more than the judicial exception, otherwise application will be rejected. In the assessment whether there is significantly more than ineligible concept *itself*, additional elements must be assessed individually and in combination and *result as a whole to significantly more*. Therefore, "new combination of steps in a process may be patent eligible even though all the steps of the combination were individually well known and in common use before the combination was made."[115]

If additional elements provide 'inventive concept' this means there is significantly more than the exclusion itself, sufficient to transform the abstract idea into a patent

---

[113] USPTO, July 2015 Update, Subject matter eligibility, page 3
[114] USPTO, June 2015 Update, Subject matter eligibility
[115] USPTO Memo 2016, Question b, page 3

eligible invention. On the other hand, if it is assessed that additional elements, as individual and in combination, result to a whole that is "well understood, routine, conventional activity (or elements) to those in the relevant field"[116], it will be concluded that there is no significantly more to the exclusions itself and application will be rejected. We may conclude that term '(ineligible concept) *itself*' in U.S. patent law corresponds to '(subject-matter or activities) *as such*' in EPC.

Although not exclusive, nor meant to be limited, possible important clues that should be find in the claim with judicial exception and serve as an implication that there is 'significantly more' are: "improvement to the functioning of the computer itself or effect an improvement in technology or technical field *(Alice)*, applying the judicial exception with, or by use of, a particular machine *(Bilski),* effecting a transformation or reduction of a particular article to a different state or thing *(Diehr)*, adding a specific limitation other than what is well-understood, routine and conventional in the field, or adding unconventional steps that confine the claim to a particular useful application *(Mayo),* other meaningful limitations beyond generally linking the use of the judicial exception to a particular technological environment *(Alice).* "[117]

One significant difference between U.S. and EPC approach is that according to the EPO case law and G-3/08 Opinion on CII patentability "a claim in the area of computer programs can avoid exclusion under Articles 52(2)(c) and (3) EPC merely by explicitly mentioning the use of a computer or a computer-readable storage medium." [118] On the other hand, in the *Alice Corp*, the Court concluded that "merely requiring generic computer implementation fails to transform that abstract idea into a patent-eligible invention. "[119] Therefore, according to EPO case law it is relatively easy to pass the subject matter eligibility test, but CII will still have to satisfy the inventive step requirement in Article 56 EPC, where it should be remembered that only features providing to technical contribution will be assessed according to the problem-solution approach as discussed in Chapter 3. To the contrast, it seems that U.S. approach of categorical exclusion of generic computer implementations is meant

---

[116] USPTO Memo 2016, Question b, page 3
[117] Interim guidance 2014, page 7
[118] G 0003/08, page 40
[119] *Alice Corp*.

to ensure that there is a presence of inventive concept *already within subject matter eligibility analysis.* Although it seems that both U.S. and EPC approach aim for the presence of non-obviousness/inventive step, EPC problem-solution approach is more precise and systematic. That is especially because it does not confuse question of subject matter eligibility and requirements for patentability, but follows long-standing approach of patent examinations, unlike U.S. approach where *Mayo/Alice* framework introduced criteria of 'inventive concept' in already unclear concept of 'abstract idea.'

4.2. Post-*Alice* case law

Following paragraphs will summarize the most notable cases from *post-Alice* patent era. However, these summaries do not intend to provide in-depth analysis of claim construction, but shortly explain most significant justifications for subject matter eligibility and signify understandings of notions, 'abstract idea' and 'significantly more'.

4.2.1**.** In ***DDR Holdings, LLC v. Hotels.com (2014)*** *(eligible)* at issue were "patents directed to systems and methods of generating a composite web page that combines certain visual elements of a "host" website with content of a third-party merchant."[120]. Federal circuit held that claims at issue are neither directed to mathematical formula nor fundamental economic or long-standing commercial practice. Federal Circuit also held that sometimes it might be *difficult to address step 1* of *Mayo/Alice* framework and precisely characterize abstract idea, but the more relevant question is *whether step 2 has been satisfied and the search for inventive concept.*

This case provided us with important clues that satisfying the inventive concept might be where *"claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks."*[121] Nonetheless, Federal Circuit made a parallel opinion with decision made in *Ultramercial* and emphasized that although addressing challenges particular to the Internet might be a clue for eligible subject matter, claims still must "recite an invention that is not merely the routine or conventional use of the Internet."[122]

---

[120] *DDR Holdings* page 3
[121] *DDR Holdings,* page 20
[122] *DDR Holdings,* page 23

4.2.2. **In *OIP Technologies, Inc. v. Amazon, Inc.(2015),*** Federal Circuit held that concept of 'offer based pricing' is similar to other fundamental economic concepts such as concept of 'intermediated settlement' in *Alice,* 'risk hedging' in *Bilski v. Kappos* etc. that have already been found as abstract ideas.

Federal Circuit held that, claims "describe the automation of the fundamental economic concept of offer-based price optimization through the use of generic-computer functions"[123] and thus fail step 2 of *Mayo/Alice* framework being not sufficient to transform the abstract idea into patent eligible subject matter. Federal Circuit also held that *"relying on the computer to perform routine tasks more quickly or more accurately is insufficient to render a claim patent eligible"[124]*, nor does gathering statistic data provide "limitation on the abstract idea".[125]

4.2.3. In ***Enfish LLC v. Microsoft Corp, (2016)*** (eligible) we can see possible confusion and overlapping between two steps of *Mayo/Alice* framework. Federal Circuit elaborated on that problem, and while some courts decided to skip the step 1 and focus on step 2, when there is a close correlation between the steps, in *Electric Power Group LLC, v. Alstom*, Federal Circuit held that step 1 analysis should be made on the *focus of the claim and its character*, and step 2 search should be made as *looking more precisely at additional elements* and whether they identify inventive concept. [126]

In the given case, Federal Circuit held that neither all improvements to computer technology are inherently abstract, nor all claims directed to software are abstract.[127] Thus, in the first step of *Mayo/Alice* framework it should be asked whether *focus* of the claim is on the "specific asserted improvement in computer capabilities (i.e., the self-referential table for a computer database) or, instead, on a process that qualifies as an "abstract idea" for which computers are invoked merely as a tool"[128] Federal

---

[123] *OIP Techno. v. Amazon,* page 7
[124] *OIP Techno v. Amazon,* page 8
[125] *OIP Techno,v. Amazon,* page 8
[126] *Electric Power Group LLC, v. Alstom,* page 6
[127] *Enfish LLC v. Microsoft Corp*
[128] *Enfish LLC v.Microsoft Corp*, page 11

Circuit held that claims are directed to *specific*, *self-referential* and not *any* type of storing tabular data. Federal Circuit held that claims are directed to an *improvement of existing technology* such as "increased flexibility, faster search times and smaller memory requirements".[129] Also, physical improvement does not necessarily have to be referenced to 'physical' components nor the claims recite generic use of a computer, thus, claims at issue are not directed to abstract idea. [130]

4.2.4. In ***Bascom Global 6 Internet v. AT&T Mobility LLC (2016)*** *(eligible)*, claims were directed to a system for filtering Internet content. Federal Circuit held that "filtering content is an abstract idea because it is a longstanding, well-known method of organizing human behavior, similar to concepts previously found to be abstract"[131].

Regarding step 2, Federal Circuit stressed the *importance of analyzing elements of claim both individually and in combination*, since in combination, otherwise individual and already well known elements, may construe an inventive concept. From the case we can note that reciting a 'specific implementations of abstract idea' and 'particular arrangements of elements' might *result to a technical improvements* and thus satisfy the search for inventive concept of step 2.[132]

4.2.5. In ***McRo, 2 Inc. v Bandai Namco Games America (2016)*** *(eligible)*, Federal Circuit emphasized in detail step 1, where it is necessary to decide whether the claims at issue are directed to one of those patent-ineligible concepts, in this case abstract idea. Federal Circuit stressed that it is necessary to look "whether the claims in these patents focus on a *specific means or method that improves the relevant technology* or are instead *directed to a result or effect* that itself is the abstract idea and merely invoke generic processes and machinery."[133]

Another important concept is "the incorporation of the claimed rules, not the use of the computer, that "improved (the) existing technological process"[134]. Federal Circuit

---

[129] *Enfish LLC v.Microsoft Corp*, page 15
[130] *Enfish LLC v. Microsoft Corp*, page 18
[131] *Bascom*, page 12
[132] *Bascom*, page 16
[133] *McRo*, page 23.
[134] *McRo,* page 24.

noted that *specific structure of the rules can prevent broad pre-emption* and claims at issue are limited to *rules with specific characteristics* and thus "we must be careful to avoid oversimplifying the claims" by looking at them generally and failing to account for the specific requirements of the claims."[135] This is important especially because Federal Circuit held that in the given case, because of the "limited rules in a process specifically designed to achieve an improved technological result in conventional industry practice"[136] given claim is not directed to an abstract idea.

4.2.6.   In ***Intellectual Ventures I v. Symantec Corp. (2016)*** according to the Federal Circuit, claims of the patent '050 are directed to *filtering emails* that has unwanted content, and include receiving emails, characterizing email and communicating that characterization. Federal Circuit compared this with "*long-prevalent practice* for people receiving paper mail to look at an envelope and discard certain letters, without opening them, from sources from which they did not wish to receive mail based on characteristics of the mail"[137] and held this being abstract idea. Regarding step 2, Federal circuit stated that *'novelty' is of "no relevance in deciding on subject matter eligibility* and while claims might be non obvious and not anticipated in relation with prior art, this does not make them any less routine, conventional or abstract".[138]

As held by District Court and Federal Circuit, claims of patent '142 are directed to "[a] system, method and various software products . . . for automatic deferral and review of e-mail messages and other data objects in a networked computer system, by applying business rules to the messages as they are processed by post offices."[139] Federal Circuit accepted District Courts analogy to a corporate mailroom and held that this is the *application of business rules to the correspondence* and taking the actions based on such business rules, "claimed systems and methods of screening messages are abstract ideas, "fundamental . . .practice[s] long prevalent in our system" and "method[s] of organizing human activity."[140]. This, this is abstract and conventional business practice. Regarding step 2, Federal Circuit stressed that the

---

[135] *McRo,* page 21.
[136] *McRo,* page 27.
[137] *Intellectual Ventures v. Symantec,* page 10
[138] *Intellectual Ventures v. Symantec*, page 10
[139] *Intellectual Ventures v. Symantec*, page 16
[140] *Intellectual Ventures v. Symantec*, page 17

question is not "*whether conventional computers already apply,* for example, well-known business concepts..." as argued by IV, and held that there is no more than generic application of computer.[141]

Patent '162 was directed to the "use of well knows virus screening software within the telephone network or the Internet"[142] Once more, Federal Circuit stressed that *use of the Internet is not sufficient* to save otherwise abstract claims from ineligibility under § 101."[143] It is important to note that providing *generic environment limitation* for the performance of the abstract idea does not make this concept any less abstract. Federal Circuit held that there is no improvement in computer technology, nor overcoming a problem particular to the Internet, but only "*move of existing content filtering technology from local computers to the Internet*"[144]. Federal Circuit held there should be *improvement to the conventional* virus screening software. Federal Circuit held the solution of shifting virus screening is conventional and concluded that this is a use of generic technology without inventive solution.

4.2.7. In ***Amdocs (Israel) Ltd. V. Openet Telecom, Inc (2016)*** *(eligible),* Federal Circuit compared claim 1 of '065 patent to those in *Bascom* and *DDR Holdings* and held that *enhancing limitation* of a claim requires *generic components* that in *unconventional manner* achieve *technological improvement* and thus is eligible under §101. Similarly, representative claim of '510 patent, is directed to collection, filtering, aggregating, and completing in unconventional manner, thus with some generic and some unconventional limitations, reciting a technological solution to a technological problem and thus eligible under §101. As for representative claim of '984 patent, it is also eligible for similar reasons as in previous patents, and components of representative claim of patent 797, "describe a specific unconventional technological solution narrowly drawn to withstand preemption concerns, to a technological problem and is eligible under §101. "[145]

---

[141] *Intellectual Ventures v. Symantec,* page 18
[142] *Intellectual Ventures v. Symantec,* page 20
[143] *Intellectual Ventures v. Symantec,* page 21
[144] *Intellectual Ventures v. Symantec,* page 23
[145] *Amdocs (Israel) Ltd, v. Openet Telecom, Inc.*

4.2.8.   In ***Intellectual Ventures I LLC v. Capital One (2017)***, claims were directed to system and method for editing XML documents. Federal Circuit held that *organizing, manipulating* and *displaying data* is abstract idea. Federal Circuit held that given limitation of applying invention to specific XML documents does not make it less abstract, rather only *limits abstract idea to technological environment*.[146]

Regarding step 2, Federal Circuit held that merely *reciting functions of the claim without particularity* is not enough to transform abstract idea into patentable subject matter. Federal Circuit also provided examples of generic computer functions without particularity such as; "i.e., organizing, mapping, identifying, defining, detecting, and modifying data". From the given case it is notable to remember that plain *reciting of functions is not enough* to overcome generic implementation of computer functions but rather claim must *indicate what steps are undertaken to overcome a problem*, and claim language must not be only result oriented with insufficient detail how computer accomplishes such result.[147]

4.2.9.   In ***Thales Visionix Inc v. U.S. (2017)*** *(eligible),* patent at issue disclosed an 'inertial tracking system for tracking the motion of an object relative to a moving reference frame.' Federal Circuit stressed that for step 1 of *Mayo/Alice*, "it is not enough to merely *identify* a patent-ineligible concept underlying the claim; we must determine whether that patent-ineligible concept is what the claim is *'directed to'*."[148] As comparable examples, Federal Circuit named *Rapid Litigation Management Ltd. v. CellzDirect, Inc., Enfish LLC v. Microsoft Corp., Diamond v. Diehr* and held that "these claims are not merely directed to the abstract idea of using "mathematical equations for determining the relative position of a moving object to a moving reference frame," as the court found. Thales, 122 Fed. Cl. at 252. Rather, the claims are "*directed to systems and methods that use inertial sensors in a non-conventional manner* to reduce errors in measuring the relative position and orientation of a moving object on a moving reference frame"[149] and thus emphasized that the application of physics can create improved techniques for measuring movements. Instead of

---

[146] *Intellectual Ventures I LLC v. Capital One,* page 14
[147] *Intellectual Ventures I LLC v. Capital One,* page 17
[148] *Thales Visionix Inc v. U.S.* page 10
[149] *Thales Visionix Inc v. U.S.* page 10

"claiming the equations themselves, the claims seek to protect only the application of physics to the unconventional configuration of sensors as disclosed,"[150] and thus are not directed to abstract idea.

4.2.10. In ***RecogniCorp LLC v. Nintendo Co. (2017)*** Federal Circuit decided on subject matter eligibility of a claim directed to method and apparatus for *encoding and decoding messages* which aim is to avoid decrease in image quality when image is being compressed. Federal Circuit held that given method is standard encoding and decoding and abstract concept "long utilized to transmit information"[151]. Federal Circuit compared this with "Morse code, ordering food at a fast food restaurant via a numbering system, and Paul Revere's "one if by land, two if by sea" signaling system all that exemplify encoding at one end and decoding at the other end."[152]

Federal Circuit held, although mathematical formula might be subject to patentability when performing a function which is subject to patent law, in the given case, "*adding one abstract idea (math) to another abstract idea (encoding and decoding)* does not render the claim non abstract."[153] Further, Federal Circuit did not accept RecogniCorp argument that given claim is being mischaracterized, but they held that given claim is only using computers as a tool and "claim 1 does not claim a software method that improves the functioning of a computer."[154] Federal Circuit argued their standing explaining that given claim is *directed to organizing and combining data*.

Regarding step 2b, Federal Circuit held there is no inventive concept because claims are directed to the process of encoding and decoding, that is abstract, in addition with mathematical formula, that is also abstract, and that changes data in other forms does not make it eligible. [155]. In the given case, although construction of claim might be unsatisfying it seems rather strange that Federal Circuit did not discuss on the technological improvement in the given case. This might be because they also held

---

[150] *Thales Visionix Inc v. U.S.* page 11
[151] *RecogniCorp LLC v. Nintentdo Co.* page 7
[152] *RecogniCorp LLC v. Nintendo Co.* page 7
[153] *RecogniCorp LLC v. Nintendo Co.* page 8
[154] *RecogniCorp LLC v. Nintendo Co.* page 8
[155] *RecogniCorp LLC, v. Nintendo Co.* page 9

that given *claim does not even require the use of a computer but can be practiced verbally or with telephone.*

4.2.11. In **Credit Acceptance Corp v. Westlake Services (2017)** we can see another example of fundamental economic practice long prevalent in system of commerce. Federal Circuit held that claim directed to *application for financing a purchase,* is abstract idea with no improvement in computer technology. In the present case focus of the claims" is on the method of financing, and the recited generic computer elements "are invoked merely as a tool."[156]

Regarding step 2, Federal Circuit cited *Alice* and held that "The use and arrangement of conventional and generic computer components recited in the claims—such as a database, user terminal, and server—do not transform the claim, as a whole, into "significantly more" than a claim to the abstract idea itself." Federal Circuit also compared this case to *Alice*, reminding that claims must do 'more than instruct the practitioner to take the abstract idea and implement it on computer'.[157]

---

[156] *Credit Acceptance Corp.* page 19
[157] *Credit Acceptance Corp.* page 19

Chapter 5

Conclusion

Both right to freedom of expression and right to protection of intellectual property are fundamental rights enshrined in European Convention on Human Rights, EU Charter of fundamental rights and in U.S. Constitution. Very often it may occur that these rights interfere with each other in the process of protection or enforcement. Therefore, it is necessary to carefully analyze and examine the relation between those fundamental rights in the specific circumstances and possibilities for restricting one of those rights on the expense of another. Balancing fundamental rights is a very complex process and serious consideration should be taken into account if we were to impose statutory provisions, or interpret precedential law in a way where some aspects of fundamental right would be categorically excluded or limited from protection, as proposed by Mayer for software patents in U.S.

From Chapters 3 and 4 we can clearly conclude that both patent law in U.S. and EPC patent law already provide substantive limitations on subject matter eligibility of software/computer programs. However, neither did categorically exclude software from patent protection. Both legal systems only excluded patent protection from inventions claiming computer programs that lack of technical character according to EPC, and inventions that are claiming patent protection for abstract ideas that only use computer as a tool, with no additional elements that would result to significantly more than the abstract idea itself.

We can also conclude that both in U.S. patent law and EPC, main focus is the *inventiveness* of the claimed invention. As U.S. patent law introduced 'search for inventive concept' in subject matter eligibility criteria, EPC balanced low threshold of subject matter eligibility with the inventive step requirement.

It is the opinion of this author, that EPC criteria for subject matter eligibility is more clear and precise. It seems that both U.S. patent law and EPC focus their search on technological problem and technological solution. However, EPC search for the inventive step is more formalized, because problem-solution approach has been long

acknowledged practice as valid approach in the assessment of inventive step requirement of EPC. As seen through this comparative analysis, Federal Circuit case law is also focused on the 'technological improvements' and 'technological solutions' in the assessment of whether there is 'significantly more' to the abstract idea itself. Comparably, the inventive step requirement of EPC is focused only on *technical elements* of the invention, as search for the inventive concept focuses only on *non-abstract elements* of the claim.

Thus, we may conclude, although *Alice* decision did significantly limit the scope of software that might be eligible for patent protection, it certainly did not mean the 'death knell' for software patents as claimed by Mayer. To the contrary, *Mayo/Alice* framework and generic computer implementation that fails to transform abstract idea into eligible subject matter, also deals with another problem raised by Mayer, and that is the 'sheer number of patents'.[158]. However, this is not to the point of categorical exclusion of software patents. In the opinion of this author, *Mayo/Alice* framework, although still very unclear and confusing, to the contrary of what Mayer claims, does provide incentives in software technology to the higher degree than exclusion of software patents would. This is because 'generic computer implementation' limitation, raised an assessment bar to the point where not every 'non-inventive' invention is granted a patent.

Assessment of subject matter eligibility according to 35 U.S.C. §101 is now more similar to the approach taken by EPO. However, both EPO and USPTO systems lack of clarity and still involve high degree of legal uncertainty, especially when concerned with the understanding of further technical character in EPC. Regarding *Mayo/Alice* framework, while there is some understanding of the notion of abstract ideas, problem still arises with the understanding of *inventive solutions*. While we do know that inventive solution should not be "well understood, routine, conventional", problem arises with the different interpretations of what practices are 'routine' or 'conventional', especially in the Internet and computer environment.

---

[158] Mayer's concurrence, page 11

The resistance to define and/or formalize in more detail, requirements for patentability of CI inventions, in both EPO and USPTO procedures, is usually explained as necessary due to rapid developments in computer technology. However, current lack of legal certainty and unreliability, especially in U.S. patent law, might cause economical and political concerns in technology industry, and that might have even more undesirable and critical consequences than complete and categorical exclusion of software from patent protection.