

# **Legal uncertainty under EU *acquis* for the author of Graphical User Interface design**

**A new *sui generis* protection needed?**

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Bachelor's Thesis in Business Law

HARH10

Fall 2013

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# **Summary**

This thesis is about the legal protection of the Intellectual Property (IP) of the design of the graphical user interface (GUI) for computer programs aka software. The research into this matter of law was done by finding out and analysing how this protection is provided through international treaties, statutory law and case law. It concludes that there is a certain amount of legal uncertainty within the area researched and that full harmonization of IPRs within EU most probably would remove this issue and thereby benefit the individual author. This thesis takes the reader on a journey where we will explore the dimension where law and technology meet and merge.

# **Sammanfattning**

Denna uppsats behandlar rättsskyddet under Immateriella Rättighets lagstiftning för designen av det grafiska användargränssnittet (GUI) för datorprogram s.k. mjukvara. Forskningen inom detta juridiska område kommer att initieras med sökandet efter och analyserandet av hur detta skydd tillhandhålls genom internationella avtal, rättshandlingar och domstols avgöranden. Slutsatsen är att det förekommer ett visst mått av juridisk osäkerhet inom det undersökta ämnesområdet. Samt att en full harmonisering av de immaterialrättsliga skyddet inom EU med stor sannolikhet skulle lösa problemet och vara till fördel för den enskilde upphovsmannen. Uppsatsen tar med läsaren på en resa där vi utforskar det gränslandet där lag och teknologi möts och sammanfaller.



# **Foreword**

The work with this thesis has been extensive, reaching far beyond what is actually presented here. This has provided me, the author, with an opportunity to extend my understanding of the complexities not only of the protection of Intellectual Property, but also of EU *acquis* and its complicated relationship to international law and treaties. In this I have had the tacit and insightful support from my supervisor, Jonas Ledental, LL.D, of the department of Business Law at Lund University, as well as practical perspective and insights provided by Fredrik Engfeldt, LL.M, of Advokatbyrån Gulliksson in Malmö, Sweden.



# Abbreviations

## *International (non EU)*

CONTU	Commission on New Technological Uses of Copyrighted Works (USA)
US/USA	United States of America
USPTO	United States Patent and Trademark Office
WIPO	World Intellectual Property Organization
WTO	World Trade Organization

## *The European Union (EU)*

acquis	acquis communautaire (the accumulated legislation, statutory law, and court decisions which constitute the body of European Union law)
ECJ	European Court of Justice
EU	European Union
TEU	Treaty of the European Union
TFEU	The Treaty on the Functioning of the European Union

## *Intellectual Property rights (IPR)*

IP	Intellectual Property
IPR	Intellectual Property Rights
TRIPS	Trade-Related aspects of Intellectual Property rights (WTO)
WCT	WIPO Copyright Treaty

## *Information Technology (IT)*

GUI	Graphical User Interface
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## *General*

Ch.	Chapter
p	Page
pt.	Point
R&D	Research and Development

# 1. Introduction

## 1.1 Background

*“May we live in interesting times!”<sup>1</sup>*

In today's high-tech society where more and more corporate value is locked up in intellectual rights such as copyrights and patents the issue of ownership and access to inventions are growing in importance.<sup>2</sup> Microsoft has spent about US\$ 4.8 billion over the past decade in order to license other companies' patents, mostly for software.<sup>3</sup> As in the United States of America (USA) these days it is the possible to actually get a patent for software.<sup>4</sup> This patenting of software is rising in popularity from 503 in 2008 to 964 in 2012<sup>5</sup>. While in Sweden for instance, that possibility is limited by the Swedish Patent and registration Office who state; *“Program code or pure business methods cannot be patented in Sweden.”<sup>6</sup>*

Intellectual Property Rights (IPR) has recently gotten a serious look by the European Commission. In their 2011 communication “A Single Market for Intellectual Property Rights” they say that the different forms and shapes of IPRs are key assets of the EU economy.<sup>7</sup> EU has still not settled on a single market solution for this issue,<sup>8</sup> though an EU patent has been implemented, and the lack of an EU standard for IPRs is in of itself a technical barrier to trade and a hindrance to the free movement of Intellectual Property (IP).<sup>9</sup>

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<sup>1</sup> Supposedly a translation of an ancient Chinese proverb/curse, but currently lacks source for its origin.

<sup>2</sup> Levin, 2011, Ch. 1 The development and basic structure of laws on intellectual property rights. (author translation).

<sup>3</sup> Smith & Gutierrez, 2011, Microsoft's New Patent Agreement with Compaq

<sup>4</sup> Harvard University Office of Technology Development, 2013, Copyrighting vs. Patenting of Software

<sup>5</sup> U.S. Patent and Trademark Office, 2013, Class 717 DP: Software Development, Installation, and Management (Data Processing).

<sup>6</sup> PRV-The Swedish Patent and Registration Office, 2013.

<sup>7</sup> European Commission, 2011, p 4 Ch. 2 Opportunities and challenges for a Single Market for IPR.

<sup>8</sup> European Commission, 2011, p 3 Ch. 1 Introduction.

<sup>9</sup> Triaille (ed.), 2013, p 21, Notion of territoriality and Selected legal issues.

IPR legislation is about the individual author's (creator's) rights to his/her own invention or creation, i.e. the IP. In EU's Charter of fundamental rights of the European Union (the Charter) IP is protected under Article 17 (2), Right to property, "*Intellectual property shall be protected.*" This right can be traded, inherited and protected from infringements etc.<sup>10</sup> IPR inter alia covers copyrights, patents and trademarks. A core factor of IPRs is the possibility for the owner of the IPR to deny licenses for production of and/or selling of products protected by IPR legislation<sup>11</sup>, as well as the possibility for the author to market and profit from their invention or creation.<sup>12</sup> This type of protection is important as it provides the inventor or author the means of being able to reap the rewards of his/her invention or creation.

Professor of Law and Information Management Pamela Samuelson<sup>13</sup> and Professor of Law Peter S. Menell<sup>14</sup> have written and published extensively within the areas of copyright, software protection and cyberlaw. In 1984 and 1989 respectively they approached the issue of a need for *specific* IP protection of computer programs by questioning if copyright was the right type of protection for so called machine code. Menell also questioned the viability of copyright protection for user interfaces over time, related to the recovery of R&D costs.

A key aspect in our choice of for instance mobile phone, pad or computer is the look and feel of the product and an important part of this is how we interact with the device. This is often these days based on what we see on the screen, the so called graphical user interface (GUI). The GUI is an output of the software solution provided with the device and a lot of research and development is put into the development of it, so it would appear to be logical that the author of a GUI should be able to properly protect his/her creation through IPRs.

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<sup>10</sup> Levin, 2011, p 22.

<sup>11</sup> C-238/87 AB Volvo v. Erik Veng, 1988.

<sup>12</sup> European Union, 2004/48/EC Directive on the enforcement of intellectual property rights, 2004, Preamble (2).

<sup>13</sup> Pamela Samuelson is the Richard M. Sherman Distinguished Professor of Law; Professor of School Information; Co-Director, Berkeley Center for Law & Technology, USA.

<sup>14</sup> Peter S. Menell is a Professor of Law at the University of California at Berkeley School of Law (Boalt Hall), as well as co-founder and a Director of the Berkeley Center for Law & Technology, USA.

## **1.2 Purpose and research question**

The purpose of this thesis is to clarify potential issues with *current law* regarding the IP protection of GUIs offered by EU *acquis*. With the 28 current Member States of the Union lacking a common platform for these IPRs there is a general possibility for legal uncertainty.<sup>15</sup> This thesis will explore this possibility specifically with focus on the author's right, as a citizen of an EU Member State, to IP protection for his Graphic User Interface (GUI) design (the subject matter). The effect of such a legal uncertainty for the author is potentially time-consuming with additional legal costs due to issues with cross-border transactions, i.e. need for reregistration of IPRs or IPR infringement suits in other EU countries.

If we perceive this to be the situation we will have to extend the research to include the potential need for an EU wide standard for IPRs to remove this legal uncertainty for the author of the subject matter. The research question is therefore twofold;

- *Does current EU law extend legal certainty to the author's IP protection for the subject matter?*
- *Is the current combination of patents, copyrights and trademarks the right way for IP protection of the subject matter?*

In order to be able to answer the second question we must first find an answer to the first.

## **1.3 Delimitations**

A key aspect of this thesis is to research if and how EU's international treaties and the current EU *acquis* extend IP protection for the authors of a GUI design. Therefore after careful consideration;

Based on who the intended target audience for this thesis is; peers, other researchers and practitioners within the field of IP law for the IT market, it is assumed to a point that the issue being studied, IP and IPRs under International

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<sup>15</sup> European Commission, 2011, p 3, 2<sup>nd</sup> paragraph, "...the true Single Market for intellectual property that is currently lacking in Europe.".

treaties and EU *acquis* in conjunction with software solutions, as well as the related technical terminology used is already mastered by potential readers.

Note that we will strive to stay within international treaties; statutory law and court cases that directly or indirectly affect or are affected by EU *acquis* regarding the individual author's IPRs. This is the baseline and any expansion of the research outside of this limitation will be handled on a case-by-case basis and the need for this extension clarified when utilized. EU provisions that may affect the implementation of EU Directives on IPRs, most specifically article 18 TFEU on the Principle of Non-discrimination, article 28 and 56 TFEU on the Freedom of Movement of Goods and Services and article 101 and 102 TFEU on the Agreements with Anticompetitive Potential and Abuse of Dominant Position, will only be mentioned when and if they influence the focus area of this thesis.

Due to the intellectual property rights construct of monotheistic ownership there is at times a need to keep other laws in mind when looking at relevant regulations for the construction of protection of these rights within EU. Despite this any analysis of the areas of Human Rights law, Contractual law, Competition law and national law, e.g. Swedish, is left out. These will only be referred to when it has an effect on the subject matter of the thesis.

The technological components of this thesis are by necessity simplified to stay within what is relevant to establish the subject matter within the legal framework. The terms “*computer program*” and “*software*” are used interchangeably. Databases, which are covered by their own *specific* IP protection<sup>16</sup>, and other forms of output besides the GUI, are not researched in particular.

The situation of IP ownership to software developed while hired by an employer is not approached where it is regulated by regulations and contracts for employment and thereby fall outside the scope of this thesis.

Most of the court cases used in the research for this thesis are from the USA, since there is not enough EU *jurisprudence* to cover all possible aspects of the issue related to the subject matter. The US cases do have an influence on the

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<sup>16</sup> European Union, 96/9/EG On the legal protection of databases, 1996.

development of IP legislation, as can be seen by the US-EU cooperation through the shared “*TransAtlantic IPR Portal*”.<sup>17</sup> The legal analysis and suggested improvements presented here reflects the author’s own understanding of the relevant international agreements, EU *acquis* and associated intellectual property rights, and are not necessarily established or supported by others.

## 1.4 Method and materials

This thesis looks at international *law that exists* for the protection, in the shape of international treaties and EU law, for IP and IPRs utilizing a combination of EU legal method<sup>18</sup> and international doctrine. The goal is to create an academic analysis of the underlying legislation and its implementation in practice for IP protection for GUI design. It will strive to assess and clarify if the international treaties and EU *acquis* in the area are sufficient for a consistent application of IP protection under the law in practice, to avoid any legal uncertainties for the individual author in a cross-border situation. This cross-border distinction is important since EU law does not apply to purely internal situations within the EU member states.

This thesis focuses on if the application of current EU *acquis* and international treaties leads to inconsistent IP/IPR protection for authors of GUI design.

Therefore the next step is to research and clarify

the relevant available legal sources and how they interact and affect the individual

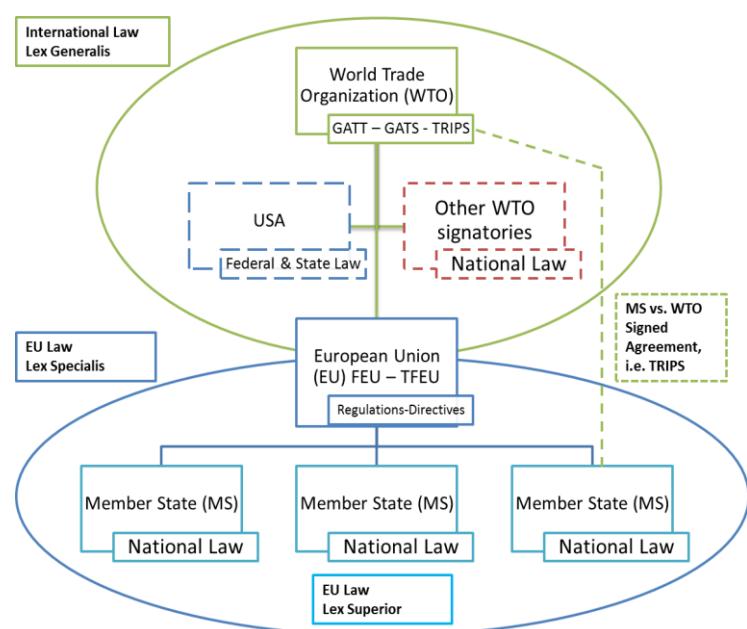


Figure 1 WTO - EU and member states

<sup>17</sup> European Commission, 2013, FAQ.

<sup>18</sup> Hettne, 2011. Assessment of current law (*de lege lata*) is based on Primary Law, Secondary Law and jurisprudence from the EU Courts. Even some preparatory legal acts are investigated when and if they are deemed important to the subject.

author. Internationally; EU is a signatory of the World Trade Organization (WTO) treaty, a multilateral contract between states and the WIPO Copyright Treaty (WCT)<sup>19</sup> of the World Intellectual Property Organization (WIPO), an agency of the United Nations.

The WTO rules are legally binding for EU through *pacta sunt servanda*, and thus binding its Member States to TRIPS and the WCT treaties through EU law. WTO rules do not provide legal remedies for individual rights. The member states only agree to keep their trade policies within specifically agreed limits and thus the WTO treaty influences the laws, which are binding for its members, e.g. the EU and the US. With the ECJ denying direct effect<sup>20</sup> the WTO treaty has an indirect effect on EU legislation.

EU law is based on the primary law; the Treaties establishing the European Union (TEU/TFEU and the Charter) and secondary law; based on the Treaties, constituting Regulations, Directives, Decisions, opinions and recommendations as tools for harmonization.<sup>21</sup> EU law constitutes *lex specialis*<sup>22</sup> in regard to EU's internal relations and International law, and constitutes *lex superior*<sup>23</sup> for the Member States. In *Kadi*<sup>24</sup> the ECJ refused to implement measures adopted by the United Nations Security Council that did not comply with EU's own standard for the protection of the individual's rights.<sup>25</sup> Therefore TRIPS, the WTO-agreement that covers IP affects indirectly the individual IP holder's rights through EU *acquis*. EU *acquis* has a vertical direct effect on the individual author's IPRs.<sup>26</sup>

Currently important parts of the regulations relating to IPRs within EU are still in the hands of the respective Member State with the lack of a true single market for

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<sup>19</sup> WIPO, WIPO Copyright Treaty (WCT), 2013.

<sup>20</sup> C-414/11 Daiichi & Sanofi v. DEMO, 2013, paragraph 60.

<sup>21</sup> WTO, Understanding the WTO: The Agreements, 2013.

<sup>22</sup> C-402/05 P and C-415/05 P Yassin Abdullah Kadi and Al Barakaat International Foundation v. Council & Comission, 2008.

<sup>23</sup> C-6/64 Costa vs. ENEL, 1964, Nature of Union law, direct applicability and primacy of Union law.

<sup>24</sup> C-402/05 P and C-415/05 P Yassin Abdullah Kadi and Al Barakaat International Foundation v. Council & Comission, 2008.

<sup>25</sup> de Burca, 2010, p 48 Conclusions.

<sup>26</sup> C-41/74 Yvonne van Duyn v Home Office, 1974 and C-271/91 M. Helen Marshall v Southampton and South-West Hampshire Area Health Authority, 1993, Direct applicability and freedom of movement.

IPRs within Europe.<sup>27</sup> And an individual citizen of EU may only bring a lawsuit to the national courts who in turn may decide to take the case before the ECJ for a ruling.

The current jurisprudence<sup>28</sup> for this thesis is based on the classification, analysis and explanation of the international treaties to which EU and its Member States are signatories, as well as the EU *acquis* governing the protection of IP and case law. The goal for this study is to achieve a clearer view and better understanding of any potential need for change in *current law* for IP protection for the GUI author, the micro level, or if there is need for more *specific* legal IP protection to achieve legal certainty on an international level, the macro level. Two respected and relevant authorities that have been utilized in this thesis, within the area of legislation on IPRs for software, are Professor Pamela Samuelson<sup>29</sup> and Professor Peter S. Menell<sup>30</sup>. Their perspective spans the very early days of copyright for computer programs up until current times, both of them having published materials relating to the subject from the mid-1980 up until today.

Comparative methodology, though used, is only presented here to provide an overview of similarities between different jurisdictions in application of the legislation, and is not the focus of the thesis. Also, due to the heavy influence of the US on the area of IT, which forms the background for GUI design, only the United States (US) and European Union (EU) will be used for the comparative parts to demonstrate effects and to keep the focus of this paper.

This paper is written in English based on the fact that it is the language of origin of most international treaties and doctrine on the subject, so as to avoid any important and valuable details being lost in translation. That could create a distortion of any literal interpretation which is the most common way to interpret international public Law.

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<sup>27</sup> European Commission, 2011, p 3 Ch. 1 Introduction and Triaille (ed.), 2013, p 9.

<sup>28</sup> Oxford University Press, 2103, from the Latin term *juris prudentia*, which means "the study, knowledge, or science of law".

<sup>29</sup> Richard M. Sherman Distinguished Professor of Law; Professor of School Information; Co-Director, Berkeley Center for Law & Technology, USA.

<sup>30</sup> Koret Professor of Law; Co-Director, Berkeley Center for Law & Technology, USA.

## **1.5 Disposition**

Chapter two explains the terminology behind and the unique position of the GUI and its design as an object to be extended IP protection on its own merits within the overall software solution. Chapter three takes the research to relevant doctrine, international agreements and the *current law* within the area of copyright and the definition of IP and IPRs. Chapter four looks at relevant court cases, both from the US and EU, to illustrate issues faced in IP protection of GUI design using the *current law*. Chapter five ties it all together with relevant conclusions and remarks drawn from research into the subject matter and the related *current law* for his thesis and looks at possible *future law* as well as suggestions for further research.



## 2. The Graphical User Interface

### 2.1 Introduction

A valid starting point for and a key aspect of this thesis is that different components, also known as layers i.e. database, code and functions etc., of a computer program may or may not be extended separate types of IP protection.<sup>31</sup> In the World Trade Organization's (WTO) agreement on Trade-Related aspects of Intellectual Property rights (TRIPS) Article 10 (1) there seems to be agreement with this sentiment as it provides that computer programs, whether in the form of source code (text) or object code (machine readable), will be protected as literary works in accordance with the Berne Convention for the Protection of Literary and Artistic Works (Berne Convention)<sup>32</sup>. Thereby separating them objectively, i.e. seeing them as having separate existences, but in the case of code providing the same type of protection for both, copyright.

In 1980 the US Congress added their definition of computer program to the Copyright Act §101 as “*...a set of statements or instructions to be used directly or indirectly in a computer in order to bring about a certain result.*”<sup>33</sup> This interpretation is echoed in the current EU Directive 2009/24/EC where computer programs as the object of copyright protection consist of; “*programs*”, “*design work*” and “*preparatory work*” leading up to its existence.<sup>34</sup> This leaves us with the European Court of Justice's (ECJ) and Advocate General's directions for interpreting the Directive as stopping short of extending IP protection, i.e. copyright, beyond the computer program's code (source and/or machine) for the author.<sup>35</sup> To be able to identify this issue with the Directive we have to be able to

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<sup>31</sup> Samuelson, CONTU Revisited: The Case against Copyright Protection for Computer Programs in Machine-Readable Form, 1984.

<sup>32</sup> WIPO, Berne Convention for the Protection of Literary and Artistic Works, 2013.

<sup>33</sup> Menell, Envisioning Copyright Law's Digital Future, 2002, p 77, 2<sup>nd</sup> Paragraph.

<sup>34</sup> European Union, 2009/24/EC Council Directive on the legal protection of computer programs, 2009, p 16, pt. 7.

<sup>35</sup> C-393/09 Bezpecnostni Softwarova Asociace v Svak Softwarove Ochrany, 2010, p 1, pt.2.

tell the difference between different layers of a software solution, i.e. what is it that we want to protect?

In industrial design, form has traditionally played a secondary role to function when it has come to motivating technological purchases. In the case of Apple Inc.'s success, which has been achieved largely based on the look-and-feel of the product, this situation has often been reversed in case of the consumer's purchase pattern. These days appearance rivals technical capabilities in the choice of product which has led to the value of design patents in the US, and design rights in EU, increasing and becoming more and more prominent. These cover the appearance, rather than the behaviour or function of the product and have increased in prominence as an IP asset.<sup>36</sup>

To be able to define potential extension of IP protection to GUI design based on "*originality*" (what makes it unique) we have to define what we are looking for to protect. This thesis focus for IP protection is the design of the GUI, i.e. what a user sees on the computer screen or other type of display (i.e. mobile phone, microwave oven, stove etc.) A step-by-step definition of the object (subject matter) to extend IP protection to is needed. This means separating the GUI design from the layers of source and machine code, and their functions, which lies behind it. We therefore have to define some basic terms to distinguish these components from each other.

In 1989 Professor Menell writes about copyright for computer programs and points out that recent developments in the field of human-computer interaction has forced programmers to apply a number of new criteria to their development processes based on human factor goals, including but not limited to the layout and scheme of graphical interfaces. This has led to developers dedicating R&D resources to this field generating special guidelines and criteria in the field of GUI design.<sup>37</sup>

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<sup>36</sup> Slater & Frank, 2012, p 37.

<sup>37</sup> Menell, An Analysis of the Scope of Copyright Protection for Application Programs, 1989, p 1053-1054.

## 2.2 Computer programs

A key term that is often used in the literature is “*computer program*”, a generic term for an unambiguous, structured and ordered sequence of computational instructions, necessary to achieve a solution to a problem.<sup>38</sup> The computer uses different programs to perform necessary tasks to solve a specific problem. There is no precise specification of the different types of output (results) of these tasks given. I.e. output like the GUI is apparently seen as a separate part or component from the computer program as is data and information (databases). The term “*computer program*” can be separated into source code and machine code (object code)<sup>39</sup> which are in a different layer of a software solution from the GUI.

The term “*computer program*” for the most part implies both source and machine code and if it is incorporated in some invention, it may be patent-protected. Source code is the form of code readable by a human (text) that describes the GUI and functions of a computer.

The source code gets copyright protection, once written down if original.<sup>40</sup>

Machine code is the compiled and executable code translated from the source code by the computer.

It gets protected by copyright as an extension of the source code, analogue to a translation of literature.<sup>41</sup>

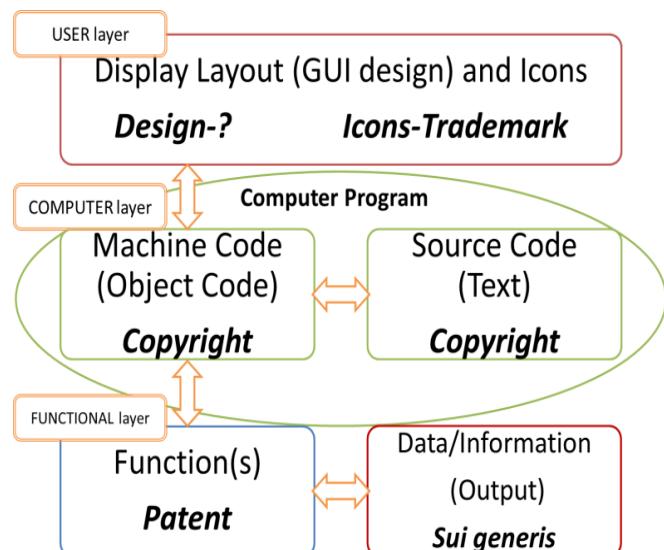


Figure 2 GUI design falls outside current law?

Within the scope of this thesis source code is readable, usually text, and used to write the computer instructions. It is translated to machine code or interpreted by a

<sup>38</sup> Oxford University Press, 2103, programme, noun pt. 4, verb pt. 1.

<sup>39</sup> Samuelson, CONTU Revisited: The Case against Copyright Protection for Computer Programs in Machine-Readable Form, 1984, p 683.

<sup>40</sup> Samuelson, Vinje, & Cornish, Does copyright protection under the EU Software Directive extend to computer program behaviour, languages and interfaces?, 2012, p 3.

<sup>41</sup> Handig, 2013m p 5-6.

specific module in the computer that then performs the instructions.<sup>42</sup> This triggers activities, also called functions, within the computer (black box). It is extremely important to distinguish between the different layers to understand what we would like for the law to protect the subject matter.

The GUI is the actual look and feel of the graphical representation of the underlying code whether functional or not i.e. what is displayed to a user. It may be patented as part of an invention if tied to a function, but not necessarily given copyright protection on its own as a unique design. This separation of the layers is to a certain extent supported by the Advocate General's' Opinion and the ECJ's preliminary ruling in the case of *BSA v. Czech Ministry of Culture*.<sup>43</sup>

## 2.3 The Graphical User Interface (GUI)

During my MSc studies on Human Computer Interaction at the Lund University in 2009 GUI design was a very specific scientific subject dealing with what you see on the display in front of you. Graphical user interface is the term for the interface that uses the graphic capabilities of a device (phone, pad, computer etc.) to make a program easier to use by helping the person using it (the user) to avoid using complex command languages to make the computer perform different tasks.

When a user applies a pointer, i.e. cursor, finger, pen etc., to an icon on the screen he/she activates some functionality hidden in the machine code behind the GUI. The average user never sees or interacts directly with the source code or has to write a tedious text strings to activate any functions of it but only interact through the GUI. Examples of this are Apple's GUI developed for their Macintosh, which originated from a GUI developed by Rank Xerox at Xerox Parc (Palo Alto Research Center Incorporated) in the 1970's. Another example is Microsoft Windows. Common GUI features these days are icons and pointers shown on the display, as well as the capability to run many applications at the same time using "windows" to divide the screen.

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<sup>42</sup> Oxford University Press, 2103. Computer programming language.

<sup>43</sup> C-393/09 Bezpecnostni Softwarova Asociace v Svaz Softwarove Ochrany, 2010.

For the purpose of this thesis the graphic design of a GUI consists of two major components. On one hand there is the overall layout of the display i.e. where things are located, colour schemes, backgrounds etc. this is the more static part of the GUI design, i.e. they lack functionality (no special purpose or task) and can be seen as ornamental. Then within this framework different components are added, windows, icons, bars etc. creating the functional (interactive) component for the user, these may or may not be rooted in a specific function but that does not necessarily imply anything about their graphic design (look), i.e. they may be ornamental in their design, but also activates functions underneath (inside the computer). Most GUI designs consist of a mix of functional and non-functional components which lead to different approaches for the extension of IP protection for each component on the display.<sup>44</sup>

Modern authors of GUIs have occasionally obtained design patent protection for creative software displays a realm previously limited to copyright.<sup>45</sup> The difference in protection is important because design patents do not traditionally allow the same defences, like fair use, associated with copyright. Apple's nearly billion dollar judgment against Samsung, which included a GUI patent with associated trademark registrations, brought this issue to the forefront.<sup>46</sup>

At this stage it is important to establish the difference in between the terms functional and non-functional, as well as functionality, in order to understand the reasoning behind the need for specific IP protection for GUIs. A dictionary's explanation with relevance here for different forms of "*function*" is;

- Functional-1 of or having a special activity, purpose, or task: 2 designed to be practical and useful, rather than attractive.<sup>47</sup>
- Functionality-1 the quality of being suited to serve a purpose well; practicality: 2 the range of operations that can be run on a computer or other electronic system:<sup>48</sup>

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<sup>44</sup> 11-CV-1846-LHK Apple vs Samsung - Lawsuit filing, 2011 and 11-CV-1846-LHK Apple vs Samsung - Amended verdict, 2012 & Handig, 2013, p 6.

<sup>45</sup> Anzurens & Chaudhri, 2009, US Patent office – Design Patent D604,305 S, owned by Apple Inc.

<sup>46</sup> 11-CV-1846-LHK Apple vs Samsung - Amended verdict, 2012.

<sup>47</sup> Oxford University Press, 2103, Functional.

<sup>48</sup> Oxford University Press, 2103, Functionality.

- Non-functional-1 not having any particular purpose or function: 2 not operating or in working order:<sup>49</sup>

A function or functionality indicates an activity or, in the case of computers, an operation of some kind. With computer programs the functions and/or operations are not necessarily related to the GUI. A GUI design has several non-functional aspects, like a nice background for an application like the static game environment in a computer game.

One of Apple's key strengths is the integration of hardware, software and the GUI. The customers feel that the Macintosh key users appeal is in its ease of use, as in pointing at symbols, divide the screen into windows etc.<sup>50</sup> This is the look-and-feel of all Apple's products that they invest heavily in research and development (R&D) to develop, nurture and try to provide IP protection for through their Trade Dress (unique overall look-and-feel) registrations.

For IP protection, as we can see from the doctrine used for this thesis, to be extended though the question arises; Is the design a result of the function/code or the function/code a result of the design? The answer depends very much which approach is chosen. The doctrine for this thesis points to a technology approach based on functionality, so it is important to remember that all the functions of a computer program are performed inside the computer by the machine code. Thus the GUI is only a representation of, and possibility for a user to interact with, these underlying functions. For instance “clicking/pushing” on an icon on the display may trigger a function, or just moving an icon or “window” on the display activates a simple function. The look and feel, the design, of the GUI can and may be designed largely without any consideration for the underlying functionality, i.e. computer games.

An interesting US case supporting this separation is *Stern Electronics Inc. v. Kaufman*<sup>51</sup>, where the judge noted the difference between static (constant) and interactive components in the graphic display. Though there is no conclusion

<sup>49</sup> Oxford University Press, 2103, Non-functional.

<sup>50</sup> Pollack, 1990, p 1, Paragraph 7.

<sup>51</sup> 669 F.2d 852 Stern Electronics, Inc. v. Kaufman, 1982, at 885.

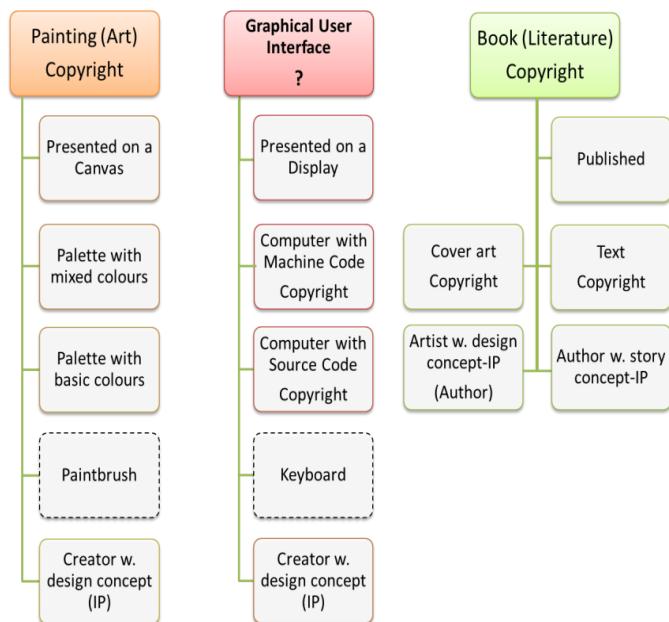
regarding the GUI design as a separate entity for IP protection the presiding judge, Newman, ruled that due to its repetitive form of sights and sound the game was qualified as an audiovisual work for copyright protection, fulfilling the US Copyright Acts requirements for “*originality*” and “*fixedness*” in form.<sup>52</sup> As we shall see the need for a definition of originality is relevant for this thesis, while the fixedness is a point of particular interest to a *specific* law on IP protection for the subject matter.

## 2.4 The Graphical User Interface is art

As we have seen computer programs have been defined as copyrightable and extended copyright protection, in 167 states across the world, as literature according to the Berne Convention.

I would argue, using the following basic analogue devised by me, that the process of creating a GUI design bears closer similarity to art than literature. My analogue shows the difference

between the process of creating a work of literature and a work of art compared with GUI design. Though it carries similarities to both, the design of a GUI interface bears more resemblance to that of a piece of art than literature. This analogy points to copyright being the correct



form of protection for the IP of GUI design. But there are some issue with this as copyright only protects original works (output) of authorship, not the ideas like a design concept.

Another issue to consider is that the GUI design, once showing on the display, should by itself be able to get extended IP protection under copyright. But if the

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<sup>52</sup> 669 F.2d 852 Stern Electronics, Inc. v. Kaufman, 1982, at 885.

same GUI design is used on a different display it may look different due to physical or other limitations in the display device. Even though there is no actual change implemented to the GUI design, what happens then?

## 2.5 Summary and Conclusions

Copyright is defined as the relevant type of IP protection for software. As we can see in this chapter a software solution contains several interacting components, of which the computer program is one, that are provided different types of IP protection. The technically simplified model used in this chapter shows a clear distinction between these layers of components; the user layer with the GUI, the computer layer within the computer programs and the functional layer. This shows that functionality is not necessarily an intrinsic part of GUI design, i.e. the graphic design displayed for a function is not necessarily an expression of the underlying function. The GUI is a graphical representation, rather than using text, used for human-computer interaction, and to be considered essentially non-functional (design) or ornamental.

GUI design today is a well-developed science for graphic creation and is only the graphical expression (output) of the author's IP through the media of computer programs and displays. There is a significant amount of R&D and creative effort put into the GUI design as part of a software solution. Samsung for instance have recently announced that they will shift more of their US\$ 10.4B<sup>53</sup> R&D spending into their software development.<sup>54</sup> It is technically and should legally be treated as a separate entity; the distinct features of GUI design should be sufficient to show the need for the extension of legal certainty for its author's IP protection.

While there must be a "*tangible article*" to enjoy copyright protection within EU<sup>55</sup>, it does not matter whether the form serves a functional purpose or not, that's the beauty of art. This leads us into the current *law* an author has to deal with and the IP protection it offers.

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<sup>53</sup> Lockford, 2013, Samsung ranks second in R&D spending for 2013.

<sup>54</sup> Hinks, 2013, Samsung criticises own software with big investment planned.

<sup>55</sup> European Union, 2001/29/EC Directive on the harmonisation of certain aspects of copyright and related rights in the information society, 2001, p 12 (28)

### **3. Legal protection of Graphical User Interface design**

#### **3.1 Introduction**

These days copyright is generally widely accepted in most countries as the IP protection of choice for computer programs and partially harmonized through international treaties. There is no similar harmonization regarding the use of patents for software.<sup>56</sup> The Berne Convention of 1971; originating in Berne Switzerland in 1886 and latest amended in Paris in 1979 is a core document. It governs copyrights and is the basis for later international treaties from WIPO<sup>57</sup> and WTO<sup>58</sup>. It is based on the principle of automatic mutual recognition of copyrighted works among its signatories.<sup>59</sup> According to of the Berne Convention, which 167 of the world's states have signed<sup>60</sup>, there is no limitation on the "*mode or form of expression*" of the "*literary and artistic*" works to be protected against plagiarism. It also includes the scientific domain which would seem a logical definition for GUI design.<sup>61</sup>

Both the WIPO and WTO treaties and EU Directives on IPRs for computer programs state that they shall be treated as literature<sup>62</sup> under the Berne Convention., which largely limits IP protection to copyright. The major difference between copyright and patent is that the copyright only protects the original work in its tangible form, i.e. the written text as published, not the underlying concept

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<sup>56</sup> EU Copyright Office, Is computer software protected by copyright?, 2014.

<sup>57</sup> WIPO, WIPO Copyright Treaty (WCT), 2013, p 2, art 1.

<sup>58</sup> WTO, WTO legal texts - TRIPS, 2013, p 321, art 1 (3)

<sup>59</sup> WIPO, Berne Convention for the Protection of Literary and Artistic Works, 2013, Article 2 pt. 6.

<sup>60</sup> WIPO, WIPO-Administered Treaties, 2013.

<sup>61</sup> WIPO, Berne Convention for the Protection of Literary and Artistic Works, 2013, Article 2 pt. 1.

<sup>62</sup> WTO, WTO legal texts - TRIPS, 2013 Article 10(1) and WIPO, WIPO Copyright Treaty (WCT), 2013 Article 4 and C-393/09 Bezpecnostni Softwarova Asociace v Svaz Softwarove Ochrany, 2010 and European Union, 2009/24/EC Council Directive on the legal protection of computer programs, 2009 .

or idea; whereas the patent protects the inventive concepts as well as its practical application.<sup>63</sup>

The WIPO defines IP as the “*...creations of the mind: inventions; literary and artistic works; and symbols, names and images used in commerce.*”<sup>64</sup> They divide IP into two sub-categories; Industrial Property including patents and trademarks and Copyright covering literary works, films, music, artistic and architectural design.<sup>65</sup>

The WTO their background material Chapter 24, page 24.3 on TRIPS, defines IPRs as, “*Intellectual property rights are the rights given to persons over the creations of their minds.*” While EU considers IPRs to consist of property rights related to industry, patents, trademarks, designs and copyrights,<sup>66</sup> with the individual’s right to intellectual property recognized as a fundamental right in Article 17(2) of the Charter.

### **3.2 The US Trade Dress option**

Trade Dress is very important in recent court cases in the USA and used to protect the overall look-and-feel of a product. The concept of Trade Dress is currently only applied in certain jurisdiction; primarily the U.S.<sup>67</sup> It provides protection under trademark law; if a product is distinctive and easily recognizable so as not to be confused with other products with similar appearance, ignoring function, by the average consumer, i.e. Apples i-products. This is the key for products like the Apple iPod; iPhone and iPad.

Trade Dress is a derivate of the trademark. Trademarks are handled by the US United States Patent and Trademark Office and by EU’s Office for Harmonization in the Internal Market (OHIM). The Trade Dress originated in the USA with the Lanham Act of 1946 which later became the US Trademark Law.<sup>68</sup> The concept is for the Trade Dress to be a source identifier, same as a trademark, and it can be

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<sup>63</sup> EU Copyright Office, How is a copyright different from a patent or a trademark?, 2013.

<sup>64</sup> WIPO, What is Intellectual Property?, 2013, p 2.

<sup>65</sup> WIPO, What is Intellectual Property?, 2013, p 2.

<sup>66</sup> European Commission, 2011, p 3.

<sup>67</sup> WIPO, Beyond Tradition: New Ways of making a Mark, 2004, Trade Dress.

<sup>68</sup> Government, 2013, Trademark Act of 1946, as amended.

registered as a trademark. This covers the visual image or appearance of a product; design and materials of packaging for a product, but also the design, shape and configuration of the product itself can be considered as forms of Trade Dress.<sup>69</sup> Within EU a patchwork of different possibilities exists for its registration *inter alia* trademark, design and copyright law.<sup>70</sup> EU currently has no plans to implement one coherent Trade Dress regulation.

### 3.3 EU and the Member States

IP is, as can be seen in the WIPO and WTO descriptions, considered a construct in the mind of the author, i.e. an intellectual rather than physical manifestation of the same. It is also important to know that the US and EU Copyright offices agree *ad verbum* with one another on the difference between copyright, patents and trademarks;

“Copyright protects original works of authorship, while a patent protects inventions or discoveries. Ideas and discoveries are not protected by the copyright law, although the way in which they are expressed may be. A trademark protects words, phrases, symbols, or designs identifying the source of the goods or services of one party and distinguishing them from those of others.”<sup>71</sup>

As we saw in the previous chapter copyright seems to be the best suited form of *current law* to use for the subject matter of this thesis. EU Directive 2001/29/EC, about copyright in the information society, tell us that EU strives for harmonisation of the legal framework for copyright. Since the decision in *Football Association Premier League (a.k.a. Murphy)*<sup>72</sup> a uniform harmonisation is more likely. The ECJ stated the European Union’s legal order’s requirement for unity means that “... *the concepts used by that body of directives must have the same meaning, unless the European Union legislature has, in a specific legislative context, expressed a different intention.*”<sup>73</sup> The purpose is to provide legal

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<sup>69</sup> Cornell University Law School, 2010, Trade Dress.

<sup>70</sup> Committee, 2007, p 4-5.

<sup>71</sup> EU Copyright Office, How is a copyright different from a patent or a trademark?, 2013 and US Copyright Office, 2013.

<sup>72</sup> Football Association Premier League Ltd v QC Leisure, 2011

<sup>73</sup> Handig, 2013, p 2

certainty and a high level of protection of intellectual property.<sup>74</sup> The Directive also clearly states that the inventor has a right to a return of investment through appropriate reward for the use of their work, and that adequate legal protection of IP shall be provided to ascertain that such reward is guaranteed.<sup>75</sup> This leads to our question on IP protection for the subject matter.

Article 1 Directive 2009/24/EC, on the legal protection of computer programs, states that it will protect computer programs as a literary work under copyright protection. The Directive's Article 1, pt. 1 makes it clear that EU defines *copyright* as the means of IP protection for "*computer programs*" based on the international treaties, in particular the Berne Convention, and that the term "...*'computer programs'* shall include their preparatory design material."<sup>76</sup> This line extending copyright protection to the preparatory design material is important as it creates a potential legal loophole. The preparatory materials for a GUI design may be extended copyright protection, but not necessarily to the graphical expression on the display. I.e. different software displaying similar GUI gets copyright protection for the code alone, while similar software displaying dissimilar GUI may get copyright protection for the GUI.

The formulation of Article 3, Directive 2009/24/EC "...under national copyright legislation as applied to literary works" creates a certain level of uncertainty regarding who and what is to be the beneficiary of the extended copyright protection. EU allows each Member State the right to decide how to extend the copyright protection within its own national legislation as long as they stay within the framework of the EU Directive's definitions, with interpretation of the definitions being handled by the ECJ under TFEU Art 267.<sup>77</sup>

This provides EU Member States the possibility of creating their own interpretations of what fits under the Directive using national copyright legislation. It aligns with EU Directive 2001/29/EC, p 12 (21), in which EU state

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<sup>74</sup> European Union, 2001/29/EC Directive on the harmonisation of certain aspects of copyright and related rights in the information society, 2001, Preamble (4).

<sup>75</sup> European Union, 2001/29/EC Directive on the harmonisation of certain aspects of copyright and related rights in the information society, 2001, Preamble (10), see also and Art 2-4 and Art 8.

<sup>76</sup> European Union, 2009/24/EC Council Directive on the legal protection of computer programs, 2009, Article 1.

<sup>77</sup> C-393/09 Bezpecnostni Softwarova Asociace v Svaz Softwarove Ochrany, 2010, Paragraph 47.

that implementation in accordance with EU *acquis* shall ensure legal certainty within EU's internal market by using a broad definition of the relevant acts. Thus causing the possibility of a varied legal interpretation of which literary and artistic works copyright protection should be extended to.

As we have seen previously in this thesis GUI design is for the most part not considered part of the computer program definition and may therefore seem to lack IP protection through copyright. Copyright protection however applies the moment the design is “*...created and fixed in a tangible form that it is perceptible either directly or with the aid of a machine or device*”<sup>78</sup> like a computer display. Copyright is also automatic once the work is recorded in any form.<sup>79</sup> This tells us that copyright, as an IPR, applies the second an original work has been recorded, as in created and fixed, in the US, and tangible, for US and EU, form, directly or using a machine (computer) or device (keyboard). The word “*fixed*” currently only relevant in the US is important and creates an issue for interpretation of the copyright protection for today’s modern and technically flexible GUI design.

### 3.4 What are the criteria for the extension of copyright protection?

In order to get something defined as IP, which can be protected by the IPRs of copyright, there has to be some threshold criteria for what can be protected. This in many ways reflects the thinking behind patents and other forms of IP; “*originality*”, i.e. what sets the invention/creation to be protected apart from other similar creations.

The rules relating to international IPRs outside EU are bound by

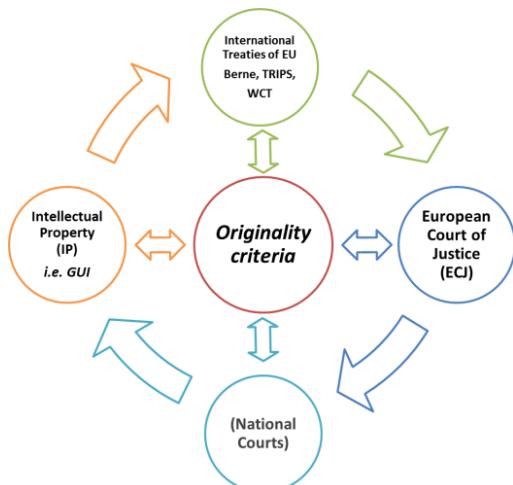


Figure 4 Originality, the common factor

<sup>78</sup> US Copyright Office, 2013, FAQ When is my work protected?

<sup>79</sup> EU Copyright Office, How is a copyright different from a patent or a trademark?, 2013, Copyright and Related Rights.

treaties. The international copyright treaties do not specify a definition of “*originality*”.

Even though there is a lack of a true single market for IPRs within Europe,<sup>80</sup> there are at least three EU Directives that require the resulting work to be the author’s own intellectual creation, without applying any other criteria to determine its eligibility for protection.<sup>81</sup> This leaves the burden of proof on the author regarding both ownership and originality.

The purpose of Directive 2001/29/EC (InfoSoc) is to provide a legal framework for copyright and related rights that is harmonized to increase legal certainty. It should also provide the author with a high level of IP protection.<sup>82</sup> However the Directive failed to properly address the definition of the subject matter, the most important aspect of copyright protection.<sup>83</sup>

We also deal with jurisprudence from the national courts outside and inside of EU as well as ECJ mentioned in the literature. These provide an insight into how the judiciaries, the system of courts that interprets and applies the law, apply the definition of “*originality*” in IP protection in the settlement of disputes.

In the case *C-5/08 Infopaq*<sup>84</sup> concerning the interpretation of Directive 2001/29/EC, the ECJ ruled that it uses the same criteria for “*originality*” as would be used in any other Directive specifying this. Another ECJ case that expands on EU’s perspective on originality is C-393/09 BSA<sup>85</sup>, though it leaves it up to the national court to decide the criteria for this.

ECJ’s current view on the criteria for originality can be interpreted as; the creation shall be original in the sense of being the author’s intellectual creation, presented through an individualistic expression. “*Originality*” was also the key to the US

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<sup>80</sup> European Commission, 2011, p 3, Ch. 1 Introduction.

<sup>81</sup> European Union, 2009/24/EC Council Directive on the legal protection of computer programs, 2009, p 3 article 1(3) and European Union, 2006/116/EC Directive on the term of protection of copyright and certain related rights, 2006, p 13, pt. (16) and European Union, 96/9/EG On the legal protection of databases, 1996, Preamble (16).

<sup>82</sup> European Union, 2001/29/EC Directive on the harmonisation of certain aspects of copyright and related rights in the information society, 2001, Preamble (4).

<sup>83</sup> Mazzotti, 2008, p 52

<sup>84</sup> C-5/08 Infopaq v Danske Dagbladets Forening, 2001, 27§.

<sup>85</sup> C-393/09 Bezpecnostni Softwarova Asociace v Svaz Softwarove Ochrany, 2010.

case Feist Publications, Inc., v. Rural Telephone Service Co., 499 U.S. 340 (1991) where Feist had simply copied Rurals telephone listings and included them in their own, after Rural had declined to license the information.

The US Supreme Court established that information in itself cannot be protected by copyright without a minimum of original creativity. It is highly possible that this reasoning is based on the notion that facts cannot be subject to copyright, since the implication of that would be that anytime a person uses facts found in books, papers etc. it would be infringement of copyright. Copyright would therefore prevent spreading of information or learning.

The older US case Burrow-Giles Lithographic Co. v. Sarony, 111 U.S. 53, 60 (1884) interestingly enough seems to reflect the Feist doctrine of a minimal originality requirement. Both cases seem to point to a single originality threshold. And by upholding this threshold the Court makes it a constitutional requirement for obtaining copyright protection.<sup>86</sup> That being said, there are other venues for protection of informational works failing to pass the Feist-based minimal threshold including contracts or torts<sup>87</sup>. In Europe *specific* legislation has been enacted to establish “*intellectual creation*” as a criteria for copyright protection.<sup>88</sup>

This all goes to show that there seems to be an underlying consensus among both Common<sup>89</sup> and Civil Law<sup>90</sup> courts that for an author’s work to get extended copyright protection, like patents, it needs a certain amount intellectual effort. This may become a bridge to begin an international harmonization between these two major copyright systems.<sup>91</sup>

### **3.5 IP protection for computer programs in doctrine**

Extensive discussions regarding whether copyright, patent or a *specific* law was to be used to extend protection for computer programs were ongoing during the

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<sup>86</sup> Gervais, 2002, p 3-4.

<sup>87</sup> In Common Law - a civil wrong which unfairly causes someone else to suffer loss or harm resulting in legal liability for the person who commits the act. (Author’s note).

<sup>88</sup> Gervais, 2002, p 4.

<sup>89</sup> Which is also sometimes referred to as case law, USA and UK (author’s note).

<sup>90</sup> Which is codified and represented by the Roman and Germanic based laws, France, Germany et al (author’s note)

<sup>91</sup> Gervais, 2002, p 2.

1970's and 1980's. The general principle was accepted that copyright should be extended to the computer's software while the computers themselves or software related inventions should be extended patent protection.<sup>92</sup>

In 1984 Professor Samuelson wrote that there are three key choices regarding the dealings with copyright and computer programs;<sup>93</sup>

- Let courts evolve new rules for copyright doctrine and discard old ones
- Amend current copyright law to avoid conflict with established doctrine
- Devise entirely new IP law specifically for machine readable computer programs

Her thoughts were based on the fact that the western world's copyright laws originated with the intention of protecting the author's rights to the printed copies of their creations when the printing presses were invented in Europe in the mid-15<sup>th</sup> century.<sup>94</sup> But that as always when times and norms change so does the law, including the laws for IP protection. Professor Samuelson criticized the recommendation that copyright protection should be extended to machine code versions of computer programs, as was suggested in the Final Report of the National Commission on New Technological Uses of Copyrighted Works (CONTU), USA. She stated that she felt that the CONTU did not understand the scope of computer technology. Professor Samuelson recommended that a specific form of IP law for machine code, a *sui generis*, should be developed since the goal of the older patent and copyright laws was based on the concept of disclosure of protected content, and machine code does not disclose its content but is purely utilitarian. And as she states both case law and the statute makes it clear that utilitarian works are not copyrightable.<sup>95</sup>

This commentary by Professor Samuelson, insightful as it is, still does not separate the question about protection for *all* the layers of the whole software

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<sup>92</sup> EU Copyright Office, Is computer software protected by copyright?, 2014.

<sup>93</sup> Samuelson, CONTU Revisited: The Case against Copyright Protection for Computer Programs in Machine-Readable Form, 1984, p 762, Ch. VI.

<sup>94</sup> Samuelson, CONTU Revisited: The Case against Copyright Protection for Computer Programs in Machine-Readable Form, 1984, p 671.

<sup>95</sup> Samuelson, CONTU Revisited: The Case against Copyright Protection for Computer Programs in Machine-Readable Form, 1984 Abstract.

solution and specifically the graphical output, which separately may fall under the scope of different IPRs and use different criteria for establishing the right to IP protection. This has to be seen in the perspective of the development stage of GUIs at the time. For instance Microsoft launched its first Windows (1.0) November 20, 1985. There is also the issue that machine code can be reverse engineered to establish its functionality today, so there is no way to ascertain that machine code will not yield its content. CONTU's decision seems to have become more forward-thinking than was originally perceived at the time.

Professor Menell has published extensively in a broad range of legal issues. Several of these publications are concerned with the area of IPR in today's age of technology.<sup>96</sup> In 1989, Professor Menell published an article in the Stanford Law Review where he approached the issue of separation between the copyrightable expression of computer programs and the un-copyrightable processes that they implement".<sup>97</sup> He states that due to the expressive form of GUI's in combination with their utilitarian form and the practical aspect of certain standardization for ease of use provides issues with the use of the current *law* for IP protection.

In 1989, Professor Menell wrote that since different application (computer) programs can produce the exact same display, copyright protection for the program does not ensure protection of the screen that it generates.<sup>98</sup> He concludes that the principal components of application programming, including computer-human interface design are largely based on functional considerations and supports the idea of a *specific* law for IP protection of application programs. This was based on the idea/expression merger doctrine,<sup>99</sup> in which once these two are merged they cannot be protected by copyright.<sup>100</sup> This doctrine based on the concept of copyright supposes that the ideas that are the outcome of the author's labour goes into the public domain while the author's particular expression of the idea; how it is displayed, remains the author's to control. It leaves the prevailing

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<sup>96</sup> UC Berkeley School of Law, 2013. Peter S. Menell.

<sup>97</sup> Menell, An Analysis of the Scope of Copyright Protection for Application Programs, 1989.

<sup>98</sup> Menell, An Analysis of the Scope of Copyright Protection for Application Programs, 1989, p 1089, Copyright.

<sup>99</sup> Menell, An Analysis of the Scope of Copyright Protection for Application Programs, 1989, p 1103, 3<sup>rd</sup> and 4<sup>th</sup> paragraphs-

<sup>100</sup> Samuelson, The Uneasy Case for Software Copyright revisited, 2011, p 1766, 2<sup>nd</sup> Paragraph.

issue of variable definitions for software solution components used in the courts to undermine a meaningful distinction between “*...the ideas underlying a program and the expression of those ideas*”, as in the case of the design concept and the GUI design.<sup>101</sup>

In 1994, Professor Samuelson in cooperation with Professor in Law J. H. Reichmann and two information technology (IT) *sauve* people, Mr M D Kaptor, founder of Lotus® Corporation and Professor of Computer Science R Davis wrote a manifesto on legal protection of computer programs.<sup>102</sup> The stated goal was to perform a normative analysis of the need for legal protection for computer programs. They identified five so called “*entity dimensions*” within a software “*product*” as a whole; program code, program compilations, subcompilations, algorithms and features.<sup>103</sup> GUI or its design are not brought up as a separate entity; the prevailing attitude being that programs are industrial in character based on engineering processes and with an incremental development based on already existing elements.<sup>104</sup> Despite this limitation a key conclusion is that a new legal regime for IP protection is still needed.<sup>105</sup>

The same year Professor Menell wrote and published “*The Challenges of Reforming Intellectual Property Protection for Computer Software*”<sup>106</sup>. He is critical to some of the Manifesto’s simplifications and suggestions for *specific* IP protection for software, mainly due to the almost insurmountable magnitude of the task than any issues with the concept per se.<sup>107</sup> Professor Menell focuses on the socio-economical approach to copyright protection and the right for an author to recoup R&D costs vs. the common good, i.e. solutions for fair use and licencing.

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<sup>101</sup> Ogilvie, 1992, p 527, 3<sup>rd</sup> Paragraph and Mazziotti, 2008, p 71.

<sup>102</sup> Samuelson, Davis, Kaptor, & Reichmann, 1994 A manifesto concerning the legal protection of computer programs.

<sup>103</sup> Samuelson, Davis, Kaptor, & Reichmann, 1994, p 2379.

<sup>104</sup> Samuelson, Davis, Kaptor, & Reichmann, 1994, p 2399.

<sup>105</sup> Samuelson, Davis, Kaptor, & Reichmann, 1994, p 2421, 1<sup>st</sup> Paragraph.

<sup>106</sup> Menell, *The Challenges of Reforming Intellectual Property Protection for Computer Software*, 1994.

<sup>107</sup> Menell, *The Challenges of Reforming Intellectual Property Protection for Computer Software*, 1994, p 2646.

In 2011, Professor Samuelson is still actively writing on the subject, publishing an article on copyright for as late as 2011.<sup>108</sup> She notes that the decision to protect software through copyright by the US Congress' has been vindicated, and that it has become the international legal norm for IP protection of computer programs through TRIPS based on the Berne convention.<sup>109</sup> Professor Samuelson tells us that it is of significant importance for authors to be able to recover their software R&D investment particularly with the development of internet access and embedded software in all types of hardware (cell phones, pads, cars etc.).<sup>110</sup> She argues that the copyright form of IP protection may have lost some of its value as the entrepreneurs within software development focus more on first-mover advantage than copyright for competitive advantage.<sup>111</sup>

### **3.6 Summary and Conclusions**

The current EU *acquis* as well as the international treaties on the subject matter all fall back in the Berne Convention from 1886, with its latest update in 1979.

We also briefly looked at the definitions of the three key types of IP protection available; copyright-for original work of authorship, patent-for inventions and trademarks-for words/phrases/symbols or design that uniquely identifies its source. Copyright does not protect any underlying ideas or concepts, only their expression, i.e. a painting or graphic display. In regards to copyright protection it is no major stretch of the imagination to equate originality with creativity. Basing its meaning on the word “*original*” in the sense of originating with a specific author removes its intrinsic value and thereby fail to reflect the emerging consensus that originality is the presence of some sort of creative choice by the author in the creation of a work and that that is the only adequate test for determining its right to copyright protection.<sup>112</sup>

It is important to know that EU Directive 2001/29/EC gives the individual author the right of protection to the benefits related to the economic exploitation of

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<sup>108</sup> Samuelson, The Uneasy Case for Software Copyright revisited, 2011.

<sup>109</sup> Samuelson, The Uneasy Case for Software Copyright revisited, 2011, p 1747, 3<sup>rd</sup> Paragraph.

<sup>110</sup> Samuelson, The Uneasy Case for Software Copyright revisited, 2011, p 1776-1777.

<sup>111</sup> Samuelson, The Uneasy Case for Software Copyright revisited, 2011, p 1780-1781.

<sup>112</sup> Gervais, 2002, p 5 and 13.

his/her IP through an extension of IPRs. This includes copying, broadcasting, distribution etc. The burden of proof for copyright infringements is on the author regarding both ownership and originality.

Doctrine has consistently, from 1984 and forwards, pointed at a possible need for *specific* legal IP protection for computer programs. There is consistent support for separation and understanding of the layers of a software solution to provide the right form of IP protection and the implicit right of the individual author to benefit economically from his/her IP. If this thesis concludes that GUI design deserves a *specific* IP protection it also is clear that an unambiguous definition of “*originality*” for GUI’s will have to be defined. The “*fixed*”, in the US and “*tangible*”, in both the US and EU, form is required for copyright and need specification both now and in a possible future *sui generis* law for IP protection. So how do the international courts apply *the law that exists* in regards to the protection of GUI design? That question will be answered in the next question.

## **4. Case law**

### **4.1 Introduction**

The selection of cases for this thesis was done by looking at those that best relate to relevant aspects of the GUI's technical development over time, and to the usage of relevant terminology for the definition of the legal subject.

Court cases around computer programs can roughly be divided into two distinct time periods; the first phase dealt primarily with the copyright protection of computer programs in various formats which eventually lead to a consensus that programs are protectable independent of their form, for instance copyright for source and machine code. This was largely due to the undeveloped science of GUI design at the time. More recent are primarily concerned with the scope of copyright, trademark (Trade Dress) and patent protection related to the modern day complex combinations of software and hardware solutions.

GUI design and development has its foundation at Xerox PARC in the 1970's and still the question regarding which similarities between GUI's constitute an infringement is open.<sup>113</sup> The interpretation of what may be protected by copyright from the perspective of the international treaties and the US and EU authorities can and is in principle be given a broad interpretation. Case based circumstances, like licence agreements, may also affect the scope of effectiveness of the protection.<sup>114</sup> Unfortunately the courts in the early days of the development of computer program design often avoided solving the issue of IP protection for the actual GUI design<sup>115</sup>, putting focus on the utilitarian (functional) aspect of the computer programs<sup>116</sup>, leading to complications that still show up in court today. It would most likely have been to the long-term benefit to the development of legal practices on GUI development and the legislation surrounding it if the courts

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<sup>113</sup> Pollack, 1990, p 1, para 8.

<sup>114</sup> 35 F.3d 1435 Apple Computer Inc v. Microsoft Corporation, 1994.

<sup>115</sup> C-89-4428-VRW Xerox Corporation vs. Apple Incorporated Inc., 1990.

<sup>116</sup> 49 F.3d 807 Lotus Dev. Corp. v. Borland Int'l, Inc., 1995.

had, at a minimum, tried to establish some legal framework for the evaluation of IP protection infringements for GUI design at this early point in time.

## 4.2 Apple Computer Inc. v. Microsoft Corp

**Case:** 1994 US - 35 F.3d 1435 - Apple Computer Inc. v. Microsoft Corp<sup>117</sup>

This was about infringement on Apples copyright for audiovisual work. The question before the Court concerns the interpretation of the agreement between the parties, which is a question of law. Microsoft had licensed the use of certain visual displays produced by computer programs for GUI from Apple. Apple later sued Microsoft for copyright infringement by usage of the licenced products outside the scope of the licence agreement.<sup>118</sup> The court concluded that Microsoft did not infringe on Apple's copyright as the license agreement did cover Microsoft usage of the licenced products.

This was an appeal of a 1988 case Apple v. Microsoft and Hewlett-Packard, where the court upheld the original decision, was a case of limitations based on circumstances. It was the first time a US court had to address the GUI, within the boundaries of copyright protection “...with a claim of copying a computer program's artistic look as an audiovisual work instead of program codes registered as a literary work.”<sup>119</sup> The courts wording supports the separation of GUI from underlying code in the case of copyright. Apple was trying to protect the “look-and-feel” of its software solution as a whole under copyright defining it as an audiovisual subject matter.<sup>120</sup> Apple claimed that the individual components of the GUI design were less important than the overall experience. Microsoft on the other hand used a “car dashboard” comparison claiming that “functionality” drove the look and therefore was not copyrightable.<sup>121</sup>

The court agreed with Microsoft and concluded that for those parts that were unlicensed, Apple's copyrights had to be interpreted narrowly due to external

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<sup>117</sup> 35 F.3d 1435 Apple Computer Inc v. Microsoft Corporation, 1994, 35 F.3d 1435 (9th Cir. 1994).

<sup>118</sup> 35 F.3d 1435 Apple Computer Inc v. Microsoft Corporation, 1994, p 1.

<sup>119</sup> 35 F.3d 1435 Apple Computer Inc v. Microsoft Corporation, 1994, p 2, 3<sup>rd</sup> Paragraph.

<sup>120</sup> 35 F.3d 1435 Apple Computer Inc v. Microsoft Corporation, 1994, p 2, 1<sup>st</sup> Paragraph.

<sup>121</sup> Menell, The Challenges of Reforming Intellectual Property Protection for Computer Software, 1994, p 1763, 1<sup>st</sup> Paragraph.

limitations, based on the limited number of ways available to express a GUI, such as the importance of standardization for the consumers and lack of originality which put them in the public domain.

The court correctly from a copyright point of view pointed out that a patent-like protection for the idea behind a GUI or even using a “*desktop metaphor*” that originated with Xerox could not be extended. The court admitted the fact that Apple did creatively put those ideas together “...with animation, overlapping windows, and well-designed icons;”<sup>122</sup> fulfilling the criteria for originality needed for copyright. But due to the licensing of the visual display which was the result, the copyright claim versus the licensee was removed. I.e. the license agreement covered most of the complaints on the list that Apple had provided. The court also put the burden of proof on the shoulders of Apple to show that they owned a valid copyright and that Microsoft had copied unlicensed and protected elements of its copyrighted audiovisual works.<sup>123</sup>

This case established that many of the separate elements in a GUI design are provided limited IP protection under copyright law through the application of the limiting functionality doctrines and the court does define a sort of legal definition for the “*originality*” threshold criteria for the copyright of GUI design.

### 4.3    **Lotus v. Borland**

**Case:** 1995 US - 49 F. 3d 807 - Lotus Development Corp. v. Borland Intern., Inc.

Borland was accused of Infringement on Lotus’ copyright for user interface. This appeal requires the court to decide whether a computer menu command hierarchy is copyrightable subject matter, which is a question of law. Borland had copied Lotus’ command hierarchy, from Lotus 1-2-3, into their own Quattro and Quattro Pro software solutions. The court concluded that the Lotus command hierarchy for their menus was not copyrightable subject matter and there was no infringement through Borland’s copying of it as it was seen as utilitarian.

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<sup>122</sup> 35 F.3d 1435 Apple Computer Inc v. Microsoft Corporation, 1994, p 6, 3<sup>rd</sup> Paragraph.

<sup>123</sup> 35 F.3d 1435 Apple Computer Inc v. Microsoft Corporation, 1994, p 5, 3<sup>rd</sup> Paragraph.

This case is generally seen as a key trial and landmark decision in trying to define the limits of copyright protection for software. As it specifically states in this case it deals only with copyrightability of the menu command hierarchy, a.k.a. its structure, standing on its own “... (*I.e. without other elements of the user interface, such as screen displays, in issue*)”<sup>124</sup>, and therefore lands a bit outside the scope of this thesis. The court’s reasoning for their decision however is interesting for us. The court found, by comparing with the intention of copyright protection for literature, that one has to be careful to not provide too much protection for software, i.e. like patents, as in regards to their utility this would limit other author’s ability to provide a solution to perform a task in the most efficient manner. The court also rejected a previous finding as they did not see Lotus menu structure to be copyrightable as an expression just because you could exchange the actual words used in the menus to achieve the same result, “*a method of operation*”.<sup>125</sup>

#### **4.4 BSA v. Czech Ministry of Culture**

**Case:** 2010 ECJ - C-393/09 - Bezpečnostní softwarová asociace—Svaz softwarové ochrany v. Ministerstvo kultury

This case concerned EU Directives 2001/29, 91/250, Art. 1(2)<sup>126</sup> and 2001/29, Art. 3(1). A Member States national court asked for a preliminary EU ruling on if Article 1(2) of Council Directive 91/250/EEC (1) of 14 May 1991, on whether the interpretation of the legal protection of computer programs is; for the purposes of the copyright protection of a computer program as a work under said Directive, does the phrase ‘*the expression in any form of a computer program*’ also includes the GUI of the computer program or part thereof? <sup>127</sup> The ECJ did not consider the GUI as a form of expression of a computer program within the current definitions of EU Directive 91/250/EEC. Therefore the GUI is not provided copyright

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<sup>124</sup> 49 F.3d 807 Lotus Dev. Corp. v. Borland Int’l, Inc., 1995, at 814.

<sup>125</sup> 49 F.3d 807 Lotus Dev. Corp. v. Borland Int’l, Inc., 1995, at 811 and 815.

<sup>126</sup> EU Directive 91/250/EEC has since been repealed by EU Directive 2009/24/EC (codified).

<sup>127</sup> C-393/09 Bezpecnostni Softwarova Asociace v Svaz Softwarove Ochrany, 2010, p I-14002, The First Question pt. 28.

protection under this Directive.<sup>128</sup> It does however state that copyright for the GUI may be available under Directive 2001/29/EC if it is the author's own intellectual creation. ECJ leaves it to the national court to decide if this is so. The cross-border component was that it was about television broadcasting of a graphic user interface.

The Advocate General Bot in his Opinion<sup>129</sup> on this case stated;

*“...whatever the form of expression of a computer program, that form must be protected from the moment when its reproduction would engender the reproduction of the computer program itself...”<sup>130</sup>*

The Advocate General interpreted this as the intention and meaning of Article 1(2) of Directive 91/250. This would indicate that only if the underlying functionality of the GUI could be reproduced through knowledge of the GUI alone would the GUI be extended copyright protection. The ECJ applied the Advocate General's point of view on copyright protection for the GUI in their ruling. Referring to TRIPS<sup>131</sup> and current EU legislation the court stated that under Directive 91/250/EEC Article 1(2) a GUI is “*...not a form of expression of a computer program*”<sup>132</sup> And since in the courts opinion it “*...does not enable the reproduction of that computer program, but merely constitutes one element of that program by means of which users make use of the features of that program.*”<sup>133</sup> So there is no protection of the GUI as a computer program under this Directive. A possible way to derive copyright protection for the GUI design according to ECJ would be through Article 2(a) Directive 2001/29; this Article focuses on the author's reproduction rights.<sup>134</sup> To establish that right of authorship has been

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<sup>128</sup> This Directive has since been repealed and replaced by EU Directive 2009/24/EC with identical text in Article 1(2).

<sup>129</sup> C-393/09 Opinion of Advocate General Bot, 2010.

<sup>130</sup> C-393/09 Opinion of Advocate General Bot, 2010, p I-13984, pt. 61.

<sup>131</sup> WTO, WTO legal texts - TRIPS, 2013, article 10(1).

<sup>132</sup> C-393/09 Bezpecnostni Softwarova Asociace v Svaz Softwarove Ochrany, 2010, p 1, pt. 2.

<sup>133</sup> C-393/09 Bezpecnostni Softwarova Asociace v Svaz Softwarove Ochrany, 2010, p I-14004, pt. 41.

<sup>134</sup> European Union, 2001/29/EC Directive on the harmonisation of certain aspects of copyright and related rights in the information society, 2001, p 16, Ch. II.

ascertained and the “*originality*” criterion met, taking into consideration all the components that form part of the GUI, is left to the national court in this case.<sup>135</sup>

Here “*originality*” is a requirement. It is important and interesting to note, particularly for the purpose of this thesis, that both the Advocate General<sup>136</sup> and the ECJ<sup>137</sup>, following the Advocate General’s opinion, clearly state that in regards to the “*originality*” requirement for the GUI components, any technical functions dictating the “*expression*” of those components removes the possibility for copyright protection based on the author’s creativity. This in turn supports the concept of separating the GUI design from its functionality in order to avoid legal uncertainty, while still providing it copyright protection.

## 4.5 Apple v. Samsung

**Case:** 2012 US - 11-CV-1846-LHK - Apple Inc. vs. Samsung Electronics Co., LTD and its US subsidiaries

This case was initially brought to a US court and is about Trade Dress and Trademark infringements, unfair business practices and unjust enrichment<sup>138</sup>. The outcome was that Samsung was found to infringe all the Utility Patents and the four Design Patents asserted by Apple in the lawsuit filing as part of their Trade Dress. Samsung was ordered to pay US\$1.05 billion in damages to Apple.

Here we analyse the US case, based on the original lawsuit filing to establish the issue with the current need for having for the use of a legal minefield to establish legal rights to IP related to product design including GUI for an author. It highlights the issue with insufficient IP protection for the author of a GUI design unless seen as a component of the overall design. IP protection for source or machine code was not part of the case but the Apple iOS 6.0 is registered US Copyright No. TX0007685323 in 2013.<sup>139</sup>

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<sup>135</sup> C-393/09 Bezpecnostni Softwarova Asociace v Svaz Softwarove Ochrany, 2010, p I-14005, pt. 48.

<sup>136</sup> C-393/09 Opinion of Advocate General Bot, 2010, p I-13986, pt. 75 -76.

<sup>137</sup> C-393/09 Bezpecnostni Softwarova Asociace v Svaz Softwarove Ochrany, 2010, p I-14006, pt. 49-50.

<sup>138</sup> 11-CV-1846-LHK Apple vs Samsung - Lawsuit filing, 2011, p 25-33 1st-6th claim.

<sup>139</sup> US Copyright Office, 2013, Public Catalog, Apple iOS.

The reason for this case being of interest for this thesis, despite its focus on patent infringements is that it is recent. Another interesting fact is that it was extended into several countries outside the US, with lawsuits filed in Germany and Netherlands inside EU among others, with different outcomes from the US case due to application of different grounds for the lawsuits, i.e. patents. This highlights the issue with a current lack of *specific* legal IP protection within the area of integrated software and hardware solutions.

In the German case Apple claimed that Samsung had infringed on their EU patent EP2098948 (B1), for touchscreen technology based on multitouch technology.<sup>140</sup> At first the court in Düsseldorf filed an injunction against Samsung in September 2011 putting up a sales ban on their Galaxy Tab 10.1 pad.<sup>141</sup> This ban was later rescinded by a Mannheim court in the German case filing; LG Mannheim, 21.09.2012 - 7 O 337/11. The Oberlandesgericht München (Munich Higher Regional Court) later, in July 2012, also affirmed a ruling from a Munich regional court denying an injunction against Samsung for infringement. The court's in Munich also added that there were doubts about the validity of the Apple's EU patent in question.<sup>142</sup> This possibility, for an author to lose the opportunity to rightfully benefit economically from his/her IP while a competitor profits due to different interpretations of the same EU patent registration by national courts, is a concern for any individual author.

In the USA Apple Inc. applied for patents with the US Patent Office (USPO) in 2007 for their iPhone GUI and filed 193 GUI images with the office. Apple received patent for one specific GUI image through US Patent D604,305 (D'305), which was granted November 17 2009, this patent was a key element in the 2012 Apple vs. Samsung Trade Dress case.<sup>143</sup> This patent is for a specific "*Graphical user interface for a display screen or portion thereof*"<sup>144</sup>, with the claim for protection reading;

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<sup>140</sup> Apple Inc., 2011, EU patent EP2098948 (B1) Description.

<sup>141</sup> Jin & Gupta, 2011.

<sup>142</sup> Mueller, 2012.

<sup>143</sup> Anzurens & Chaudhri, 2009, Asignee: Apple Inc.

<sup>144</sup> Anzurens & Chaudhri, 2009, p 1 (54).

“The ornamental design for a graphical user interface for a display screen or part thereof, as shown and described.”<sup>145</sup>

It is important to notice that this is for this specific layout in a static mode; there is no protection provided once the GUI design, i.e. layout, is changed. This ephemeral status of GUI design will be important to address in any *future law on IP protection* for the subject matter.

Of the original ten patent infringement claims in the lawsuit<sup>146</sup> seven where brought to the jury for decision, including design patent D’305,<sup>147</sup> the rest where three utility patents and three design patens, all to protect Apple’s unique Trade Dress. This is a key feature of Apple products, that their technical features (function) and design (look & feel) combines to make a unique product and on which Apple spends significant resources both for technical research and design development. It is a key differentiator for Apple products compared to their competition in the market.<sup>148</sup>

In their complaint for this case Apple referred to seven different Utility Patents<sup>149</sup>, with four of these being related to GUI functions<sup>150</sup>, i.e. patents for *functional* components, and not the GUI design itself since the Utility Patents expressly cover function and behaviour. In the final 20-page verdict form given out to the jury only Utility Patents ’381, ’915 and ’163 (not in the original lawsuit)<sup>151</sup> where brought up. The jury found Samsung guilty of wilfully violating all three of the utility patents.<sup>152</sup> In their complaint for this case Apple also referred to three (3) different Design Patents, i.e. patents for *non-functional* components.<sup>153</sup> Of these

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<sup>145</sup> Anzurens & Chaudhri, 2009, p 1 (57), for case version see Appendix 1.

<sup>146</sup> 11-CV-1846-LHK Apple vs Samsung - Lawsuit filing, 2011, p33-36 7th-16<sup>th</sup> claim.

<sup>147</sup> 11-CV-1846-LHK Apple vs Samsung - Amended verdict, 2012.

<sup>148</sup> 11-CV-1846-LHK Apple vs Samsung - Lawsuit filing, 2011, p 24 pt. 69.

<sup>149</sup> 11-CV-1846-LHK Apple vs Samsung - Lawsuit filing, 2011, p 7 pt. 24 Apple’s Utility Patents, lines 2-15.

<sup>150</sup> 11-CV-1846-LHK Apple vs Samsung - Lawsuit filing, 2011, p 7, US Patents No.7,669,134, No.6,493,002, No.7,469,381, and No.7,853,891.

<sup>151</sup> 11-CV-1846-LHK Apple vs Samsung - Verdict Form, 2012, p2, 3, 4, 5, 9.

<sup>152</sup> 11-CV-1846-LHK Apple vs Samsung - Amended verdict, 2012, p 5.

<sup>153</sup> 11-CV-1846-LHK Apple vs Samsung - Lawsuit filing, 2011, p 7 pt. 25 Apple’s Design Patents, lines 24-27.

only one (D'790) refers to what is displayed on the screen of the hardware; “*Graphical User Interface For a Display Screen or Portion Thereof*”<sup>154</sup>

In the final verdict Design Patents D'677, D'087, D'305 and D'899 are brought up for the jury to consider, with Samsung being found to infringe on Apple patents D'677 and D'305, but not D'087 and D'889. This depended to a certain extent on which Samsung products Apple had brought up as infringing on their respective patent. In the case of D'899 for example there were only two Samsung products included.

Apple owns several other patents and trademarks related to their products like the iPhone and which is shared with the iPod and iPad. These all share common design features so are not made product specific. For this thesis the trademark (Trade Dress) registration 3,470,983 which is used as the ground for Apple's second claim for relief is interesting. It contains a reference to the actual layout of the display; “..., and the display of sixteen colorful icons.”<sup>155</sup> This is the closest reference in the original lawsuit claim to any form of GUI design.

Apple tried two paths in this case to achieve a better IP protection; first through their Trade Dress registration where the GUI design is a component of the whole unique look-and-feel of their products, secondly through a minefield of trademarks for a number of graphically designed icons on their patented display. Each one separately through trademark registration, related<sup>156</sup> to a patent, i.e. effectively making them “*children*” of and connected to the main patent. Those trademarks were, according to Apple, also exposed to infringements by Samsung in their lawsuit filing.

The verdict of wilful infringement on Apple's patents did not extend to those Trade Dress claims that were unregistered by Apple, and even so the focus was the possible dilution of Trade Dress for both the registered and unregistered versions. Though the legal processes continue around the world, the overall verdict is a form of endorsement for the legal strategic focus of Apple in using

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<sup>154</sup> 11-CV-1846-LHK Apple vs Samsung - Lawsuit filing, 2011, p 7 lines 24-25.

<sup>155</sup> 11-CV-1846-LHK Apple vs Samsung - Lawsuit filing, 2011, p12 pt. 38 and p 27 pt. 87.

<sup>156</sup> 11-CV-1846-LHK Apple vs Samsung - Lawsuit filing, 2011, Ex. 14-19; Trademarks No.3,886,196, No.3,889,642, No.3886,200, No.3,889,685, No.3,886,169 and No.3,886,197.

IPRs for distinctive industrial design and most importantly, software platforms and user interfaces to create what some call “*Apple’s unique user experience unification*”<sup>157</sup>, to maintain its unique Apple brand identity through its Trade Dress. But the verdict also points to the issue when a trademark becomes diluted enough to be seen as generic and not considered unique enough to be extended IP protection as in the case of the unregistered trademarks in particular.

## 4.6 Summary and Conclusions

In the *Apple vs. Microsoft*<sup>158</sup> case we note that for those parts that were unlicensed Apple’s copyrights was interpreted narrowly due to external limitations, based on the limited number of ways to express a GUI available. Especially since, as we have mentioned earlier in this thesis, copyright protection applies even without registration the moment it “...is created and fixed in a tangible form that it is perceptible either directly or with the aid of a machine or device”<sup>159</sup> In this case that interpretation would have to be through some form of “*originality*” criteria, i.e. is there sufficient intellectual effort behind the unlicensed parts to qualify for the extension of IP protection.

This aligns with the Advocate General’s and ECJ’s interpretations of the EU Directives in the case of *BSA v. Czech Ministry of Culture*<sup>160</sup>. It implies that the ECJ’s approach to the “*originality*” definition in the case of GUI design is that; a locally specified threshold of originality has to be met and any underlying technical function is neither applicable nor sufficient as a baseline for originality. I.e. if the components are not differentiated by technical function, but the design is particularly clear, simple and understandable, i.e. user-friendly, copyright protection may be extended by the national authorities under national law. The *Lotus v. Borland*<sup>161</sup> case also enforces the concept that a design driven by technological concerns is not copyrightable. While in the *Apple Inc. vs. Samsung*<sup>162</sup> case, Apple has not been able to protect their GUI design on its own

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<sup>157</sup> Gassée, 2012, from The Guardian’s online version.

<sup>158</sup> 35 F.3d 1435 Apple Computer Inc v. Microsoft Corporation, 1994.

<sup>159</sup> US Copyright Office, 2013, FAQ When is my work protected?

<sup>160</sup> C-393/09 Bezpecnostni Softwarova Asociace v Svaz Softwarove Ochrany, 2010.

<sup>161</sup> 49 F.3d 807 Lotus Dev. Corp. v. Borland Int’l, Inc., 1995.

<sup>162</sup> 11-CV-1846-LHK Apple vs Samsung - Amended verdict, 2012.

merits neither by patent, copyright or trademark (Trade Dress), despite the fact that one of Apple's strongest selling points has been its extremely user-friendly GUI design.

A solid and unified legal protection for a software solution, including the GUI design, would most likely have provided better legal protection. I would argue that if Apple would have had their unique GUI design investment protected under its own *specific* legal IP protection a lot of uncertainty regarding what is actually protected could have been avoided. This would also have avoided the cross-referencing of different forms of IP protection in a disjointed minefield of legal solutions.

## 5. Summary and conclusions

To reiterate where we began; in the Charter - Intellectual property is protected under article 17 (2) - “*Intellectual property shall be protected.*”, but;

***Does current EU law extend legal certainty to the author's IP protection for the subject matter?***

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Based on the research done for this thesis and the interpretations of those findings the answer is; Most probably not.

In chapter 2 we defined the GUI and its design as a separate entity, subject matter. We verified that currently copyright seems to be the most logical legal form for IP protection. We also concluded that the GUI design does not by necessity have to be connected to any “*functionality*” in a technical sense. GUI design today is a well-developed science for graphic creation and is only the graphical expression (output) of the author’s IP through the media of computer programs and displays. GUI design is technically, and should legally be treated as, a separate entity; thereby giving the individual author a possibility to protect the benefits related to the economic exploitation of his/her IP through an extension of IPRs.

In chapter 3 we found that current EU *acquis* and the relevant international treaties on the subject matter start from the Berne Convention from 1886, with its latest update in 1979. We also determined that under EU Directive 2001/29/EC the author has a right under the law to benefit economically from his/her IP through its use and/or distribution. We clarified that the international treaties EU is a signatory to only has an indirect effect for the author inside EU and that EU *acquis* is applicable to the subject matter. And that EU *acquis*, in line with the international treaties, provide a broad definition of IP. We found that currently the EU Directives only provides a broad framework for national legislation in the implementation regarding what subject matter should be extended copyright protection. We took notice of the fact that copyright only protects the expression

of an idea or concept, i.e. graphic display layout. But it does not protect the underlying design idea or concept.

Under EU acquis copyright protection demands some form of “*originality*” on the behalf of the author in the creation of the subject matter. Copyright in addition to this also demands a “*tangible*” form of the subject matter. In *Apple v. Microsoft* we saw that the burden of proof of ownership and “*originality*” is generally on the author claiming the copyright protection. An interesting find was that doctrine, going back as far as 1984 has been supportive of *sui generis* IP protection of the subject matter, based on the issue with separation of components within a software solution.

In chapter 4 we follow case law and find that IP protection for GUI design is not easy to achieve. In the US case *Apple v. Samsung* we find a minefield of different forms of IP protection being used to create an overall protection including the GUI design. It highlights the issue with a lack of sufficient IP protection for the author of a GUI design unless it is seen as a component of the overall design. In the US case *Apple v. Microsoft* the wording of the court clearly supports the separation of GUI from underlying code in the case of copyright and we also find this in the EU case *BSA v. Czech Ministry of Culture* with a separation of the GUI, in regards to IP protection, from the software and functionality behind it.

As we could see in the US case of *Lotus v. Borland* a GUI design cannot be protected by copyright if its design is driven by technical considerations, i.e. “*functionality*”. The protection of the original IP under the law may also be severely restricted for derivate designs of a GUI licensed through an agreement.

With noticed in chapter 3 that there are only broad guidelines in the Directives for copyright protection. The *BSA v. Czech Ministry of Culture* case matches our findings in chapter 3 regarding the EU giving leeway in the implementation of the Directives on copyright in national law. In this case we also see the ECJ leaving it up to the national court to decide what may achieve copyright protection under Directive 2001/29/EC, i.e. it shows “*originality*” and is in the right “*fixed*” format et al.

The Berne Convention, from 1886 and last amended in 1979 is by necessity broad in its definitions based on when it was written. Therefore the EU has implemented a series of Directives regarding copyright in the area of the so called information society based on the Convention. EU's Member States though are then dependant of the ECJ's interpretation of these Directives, with a foundation in the Convention, for application by the national courts.

The fact that national legislation is given leeway in their implementation of the EU definitions of what to extend the copyright protection to, defined as what is seen as "*original*", provides uncertainties for the author in how the GUI and its design may and will be provided protection in different national courts of EU.<sup>163</sup> This issue covers any cross-border transaction and may include legal fees for local registrations as well as infringement lawsuits.

The need for a minefield of different IPRs as in the *Apple v. Samsung*<sup>164</sup> case to achieve IP protection for the subject matter can in this author's opinion not contribute towards legal certainty. Within EU the lack of a unified EU standard for IPRs causes legal uncertainty for the author of copyrightable IP. The GUI's actual design, the concept behind it and the expression cannot always be copyrighted and often fall outside existing law since it is not currently seen as an intrinsic part of the often used specification of "*computer program*" which is copyrightable.

The possibility, seen in *Apple v. Samsung* in Germany, for an author to lose the opportunity to rightfully benefit economically from his/her IP for a time while a competitor profits due to different interpretations of the same EU patent registration by national courts, is a concern for any individual creator. Therefore we have reason to question the legal certainty an author of a creative new GUI design faces in cross-border transactions within EU through the lack of a legal standard. This goes against the stated aim of the EU Directives.<sup>165</sup> Perhaps Professor Samuelson is right when she argues that the copyright form of IP

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<sup>163</sup> Mazzotti, 2008, p 53.

<sup>164</sup> 11-CV-1846-LHK Apple vs Samsung - Lawsuit filing, 2011.

<sup>165</sup> European Union, 2004/48/EC Directive on the enforcement of intellectual property rights, 2004, Preamble (2).

protection may have lost some of its value, as the entrepreneurs within software development focus more on first-mover advantage than on copyright for competitive advantage.<sup>166</sup>

***Is the current combination of patents, copyrights and trademarks the right way for IP protection of the subject matter?***

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Based on the outcome of the primary question for this thesis the answer is; most probably not. In a Community governed by the rule of law it is of outmost importance that the ECJ's judgements are complied with by the Member States, otherwise legal certainty, individual's rights, market conditions and equal treatment among the Member States may be called into question.

My understanding from the BSA v. Czech Ministry of Culture case is that interpretation of the EU Directives is the prerogative of the ECJ, so as to provide a unified application within the EU.<sup>167</sup> A general EU level legal complication affecting the subject matter of this thesis is that while the Directives are by necessity broad in scope, the ECJ works on a case-by-case basis and is more case specific. We can see that the separate Directives as such do provide a framework for the national courts. It is however clear that this framework is to be given a broad interpretation and there is a clear statement to the effect of letting the national legislation provide the tools of evaluation for what will be extended copyright protection.<sup>168</sup> This is supported by the ECJ's ruling in BSA v. Czech Ministry of Culture.<sup>169</sup> The inherit risk with this broad framework and national development of tools for evaluation provides an author of a GUI design with an uncertain legal environment for his/her IP.

In this author's opinion, based on the understanding of the research performed for this thesis, the EU and ECJ are currently working with an outdated legal model for the subject matter. IT technology develops at a fast pace, leaving the

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<sup>166</sup> Samuelson, The Uneasy Case for Software Copyright revisited, 2011, p 1780-1781 .

<sup>167</sup> C-393/09 Bezpecnostni Softwarova Asociace v Svaz Softwarove Ochrany, 2010, Summary of the Judgment, p 1, pt. 1 referring to Art. 267 TFEU.

<sup>168</sup> Mazzotti, 2008, p 53 and p 67.

<sup>169</sup> C-393/09 Bezpecnostni Softwarova Asociace v Svaz Softwarove Ochrany, 2010.

development of suitable and relevant legislation to play catch-up.<sup>170</sup> The courts remedy has been to adjust and apply *current law*, often on a case-by-case basis and using different forms of IP protection for the different components making up a whole, without applying a more overall approach. Directives 2001/29/EC, 2006/116/EC and 2009/24/EC EU did not implement full harmonisation. Under Article 114 TFEU which is the basis for most of EU's harmonisation directives, this could have been an option.

There is an international consensus around traditional copyright and what it protects. In the fast paced global development of IT technology, as with the subject matter, and its integration in software as well as hardware solutions, *current law* does not seem to provide the courts with adequate tools for unified IP protection for its author. As we can see from the doctrine and *current law* on IP protection, different components of a software solution are already provided different types of IP protection<sup>171</sup>, i.e. functions, computer programs and to a limited degree the subject matter. But also databases which, just like the GUI is an output from the functions of a computer program (software), already has its own *specific* IP protection.<sup>172</sup>

In this author's opinion based on the admittedly limited findings from the research done for this thesis; a more consistent and specific protection for software solution IPRs, including its output in the form of databases and GUI, should be created to ascertain legal certainty for the author of the subject matter. It can be argued that to protect the individual's right to economic benefits of their own IP in accordance with the intentions of the international treaties and EU *acquis* the subject matter should be provided *sui generis* IP protection. Thus avoiding potential conflict between national courts in the implementation of the EU Commission's Directives based on the ECJ's interpretation and instructions for the same. Currently the ECJ's interpretations and instructions from a preliminary ruling<sup>173</sup>, asked for by the national court, can take years to achieve. This leaves

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<sup>170</sup> Mazziotti, 2008, p 70.

<sup>171</sup> 11-CV-1846-LHK Apple vs Samsung - Verdict Form, 2012 and C-393/09 Bezpecnostni Softwarova Asociace v Svaz Softwarove Ochrany, 2010.

<sup>172</sup> European Union, 96/9/EG On the legal protection of databases, 1996.

<sup>173</sup> European Union, Court of Justice of the European Union, 2014, Preliminary ruling procedure.

the author of the subject matter literally hanging in a legal limbo, preventing the author from benefitting of the intellectual creation as is the author's right under the law.

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