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# Summary

The 1998 *State Street Bank & Trust Co. v. Signature Financial Group, Inc.* case took American patent law into a new era. A method of doing business is no longer a valid ground for rejection of patent applications, and the words that “[v]irtually anything is patentable” echo in the legal and business societies. By rendering a data processing system configured for management of a mutual fund system as not merely the use of an unpatentable mathematical algorithm, but as a programmed machine that produced a “useful, concrete, and tangible result”, the Federal Circuit Court has created a storm of applications for patents on business methods, and moreover, a huge controversy. Further awareness of patents for business methods has been raised by high-profile patent disputes – such as the disputes involving Amazon.com’s patent for the 1-Click Internet ordering method and Sightsound.com’s patent for transmitting digital music files on the Internet.

In Europe, on the other hand, the law in relation to business method patents has not changed. A business method as such is still not patentable subject-matter, although a computer implemented business method might be providing that it claims a new, inventive, and technical method of implementing a business method.

This development, coinciding with the web-enabled explosion in e-commerce, has perhaps had its greatest impact on the Internet community. But applications for patents for business methods has not only been filed by software manufacturers and on-line merchandisers, but also by financial firms, traditional hardware manufacturers, and even agricultural companies. All eager to protect their ways of doing business, and perhaps assure a significant commercial advantage. As a result, patent strategies are becoming increasingly important.

This paper sets out to examine the possible impacts this development may have on the European patent system as it is structured under the European Patent Convention. As a stepping-stone, the theoretical justifications for property in general, and for intellectual property in particular is used. It is in this regard noted that one has to differ between the American patent system,

being a national system, and the European, being a system set out to harmonize several patent systems. A conclusion as to how to amend a system has to be in accordance with the theoretical underpinnings, otherwise it risks contradicting the goals the system is set out to achieve. The paper then moves to a closer look at the US and European patent laws as such, with special emphasis on the patenting of business methods. It is in this context concluded that the two systems differ on crucial points. Whereas the American system's driving force is to promote invention and innovation, with an underlying justification of utility, the European system is more concerned with inventions as such. This is made clear by a requirement for technical character in Europe. These differences are argued to make the European system more inclined to resist the patenting of abstract notions, such as business methods, and therefore would also not be subject to the same development as its American counterpart.

Furthermore, the problems and dangers of business method patents as they are perceived in the debate and in the literature are examined, followed by several views of how to amend the American patent system in particular, in order to deal with these kinds of patents. This paper holds that a method of doing business should not be patentable *as such* being, as it is, an abstract method, process, or idea, rather than a tangible result of invention or innovation. It is therefore argued that a requirement of technical character should be incorporated into the US Patent Act as it seems to be the alternative most fit to reject claims concerned with abstract notions. It is also in agreement with the theoretical justifications and it serves to internationally harmonize patent protection. Also, the implementation of the technical character should be combined with the adoption of a system of opposition as used in Europe and increased funding for the United States Trademark and Patent Office.

Finally, it is noted that due to the *State Street* decision and recent European decisions, applications for patents on computer-implemented business methods are increasing in Europe. US nationals are mostly attributed to this increase in applications. In order not to miss important business opportunities, European companies must increase their awareness as to the patentability of business methods and act so that their business methods are patented in so far as possible, or otherwise act so that no one else can patent their methods.

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# Abbreviations

EEA	European Economic Area
EPC	Convention On the Grant of European Patents (European Patent Convention)
EPO	European Patent Office
EU	European Union
PCT	Patent Cooperation Treaty
SME	Small and Medium Sized Enterprises
TRIPS	Agreement on Trade-Related Aspects of Intellectual Property Rights
USPTO	(PTO) United States Trademark and Patent Office
WTO	World Trade Organization

# 1. Introduction

“Virtually anything is patentable.”<sup>1</sup> These are the words that echo in the United States ever since the *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*<sup>2</sup> case was decided in 1998. For more than ninety years, inventors, lawyers and others concerned in the United States, believed and worked under the presumption that methods of doing business were not patentable subject-matter. The *State Street* case proved them all wrong. In this case the Federal Circuit Court considered a data processing system configured for management of a mutual fund system as not to be merely a use of an unpatentable mathematical algorithm, but rather as a programmed machine that produced a “useful, concrete, and tangible result”, thereby rendering it eligible for patent protection. Thus the business method exception is no longer a valid ground for rejection of patent applications under the American patent system. In response, software developers, on-line merchandisers, financial services firms, traditional hardware manufacturers, and even agricultural companies have produced a flood of patent applications intended to protect the methods by which they conduct business. Many of these applications are now emerging from the United States Patent and Trademark Office (USPTO) as issued patents, impacting stock prices and creating a huge controversy.

A patent covering a business method can help a company carve out an attractive niche or, in some cases, even bring competitors to their knees. A business method is, in this context, viewed as a method concerning a process that is involved in operating a business or that defines a product or service provided by a business. While not having to be literally a method of doing business, it shares the same quality of being concerned more with impersonal, societal and financing relationships, than with the stuff of engineering. The new status of business method patents has coincided with the web-enabled explosion in e-commerce technology. The development of allowing patents on business methods has therefore potentially had its greatest impact on the Internet community. Critics have expressed surprise and bewilderment at the issuance of many recent business method patents, worrying that the phenomenon may create legal disputes that slow further e-

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<sup>1</sup> *Hughes Aircraft Company v. United States*, 148 F.3d 1384, 47 U.S.P.Q. 2d 1542 (1998).

<sup>2</sup> 149 F.3d 1368 (Fed. Cir. 1998) [hereinafter *State Street*].

commerce innovation. Concerns are often expressed as to the quality of the patenting examination process, the sufficiency of standards for patentability, the lack of “prior art” recourses available, the obviousness of methods as such, and, of course, the scope of these patents. Critics are supported by the “open source movement”, a movement opposed of patents on software from the outset. Proponents, on the other hand, often argue that business method innovators merit reward for their labors no less great than that offered to other inventors. The debate has been lively, not only from a legal perspective, but from all parties concerned.

The issue of patents is becoming more and more important in business environment today. Analysts and investors sometimes seem to be fixated on the size of a company’s patent portfolio and react according to news of patent allowance and issuance. As a result, procurement of business method patents has become high priority for many companies. Even if a company is behind in the business patenting game, strategic patenting of its business process innovations could help the company to catch up with its competitors, or conversely, to bring them to their knees by monopolizing a part of the market.

The situation in Europe regarding business method patents is somewhat different from the one in the United States. Business methods are not patentable in Europe as such, although a patent can be granted for a computer-implemented business method. Thus, the topic of business method patents have not been debated to the same extent in Europe, even though it has been the subject of much consideration. Perhaps the most apparent effect of this difference is that US nationals seem to be far more willing to exploit the possible commercial advantage that a patent on a business method might include than their European counterparts are. The filings for computer implemented business method patents have increased recently in Europe, and much of this recent growth can be attributed to US nationals.

This paper sets out to investigate the possible impact that the patenting of business methods in the United States may have, or has had, on the European patent system. As a starting point, the basic justifications for property, and for intellectual property in particular, are reviewed. When assessing the validity of a patent system, or of certain kinds of patents, it is important to be aware of what the patent system is set out to achieve in the

first place. Otherwise, a conclusion might be made contrary to the theoretical underpinnings of the system as such, and thereby also useless from a practical point of view. The paper then turns to the patent law as it is structured in the United States and in Europe. Both sections include a specific description on how the patenting of business methods emerged and how the patent systems dealt with the issue. For natural reasons, the American section on the patenting of business methods is more extensive. The two following major sections are concerned with first, the problems and dangers of business method patents as perceived in the literature and in the debate and second, with policy considerations as to how the American patent system should deal with this issue. Finally, a section concerned with the attitude towards patents on business methods as it can be perceived in Europe is included.

In conclusion it is noted that the European patent system will not experience a similar development as in the United States. This is mainly due to the firmly upheld requirement of “technical character” as stated in the European Patent Convention. Furthermore, it is concluded that the patenting of business methods *as such* goes against the intentions of a modern patent system because a business method *as such* is more an abstract method, process, or idea, than it is a tangible result of invention or innovation. It is therefore argued that the American Patent Act should incorporate the notion of “technical character”, combined with the implementation of a system of opposition as used in Europe and increased funding to the USPTO. The incorporation of a requirement for “technical character” is concluded to be in agreement with the notion of utility as an underlying justification of the American patent system and furthermore in serving of international harmonization of global patent protection. Finally, it is pointed out that in order not to lose important business opportunities, European companies and their representatives must adopt a more aggressive approach to the patenting of business methods. It is important to either obtain those patents that possibly can be obtained, or to act such that no one else can patent them (provided of course that trade secret protection is not preferred in a particular case).

An issue of highly importance and interest in connection to this subject, however unfortunately not within the scope of this paper, is the

jurisdictional scope of business method patents, given the fact that the Internet is accessible on a global basis.

## 2. JUSTIFYING INTELLECTUAL PROPERTY

“Property institutions fundamentally shape a society.”<sup>3</sup> Justification of property, therefore, becomes an important part of the creation of society itself. The justification of ownership rights for physical objects is difficult enough, even harder is it to justify ownership rights for intellectual, or non-physical, objects. Should the same type of rights be granted to the owners of writings and inventions as to the owners of *e.g.* land and physical objects? This question becomes increasingly important as our society continuously moves towards a “post-industrial” society, in which the production and use of information increases in importance as compared to the traditional manufacture and manipulation of physical goods.<sup>4</sup>

To justify the granting of rights connected to the production of intellectual property one has to try to define intellectual property. An attempt of a universal definition is; “intellectual property...as non-physical property which stems from, is identified as, and whose value is based upon some idea or ideas. Furthermore, there must be some additional element of novelty.”<sup>5</sup> As to the kind of intellectual property that is eligible for protection it is generally recognized that “a fundamental principle common to all genres of intellectual property is that they do not carry any exclusive right in mere abstract ideas. Rather, their exclusivity touches only the concrete, tangible, or physical embodiments of an abstraction.”<sup>6</sup> This principle becomes somewhat problematic, as will be shown later, in the context of patenting computer software and computer implemented business methods. The right usually conferred upon the owners of intellectual property eligible for protection is the right to exclude others from certain uses of their intellectual

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<sup>3</sup> Edwin C. Hettinger, *Justifying Intellectual Property*, Intellectual Property: Moral, Legal, and International Dilemmas, Adam D. Moore, ed. at 17 [hereinafter Hettinger].

<sup>4</sup> *Ibid.* at 17 and Justin Hughes, *The Philosophy of Intellectual Property*, 77 *Georgetown Law Journal* 287 (1988) at 288 [hereinafter Hughes].

<sup>5</sup> Hughes *ibid.* at 294.

<sup>6</sup> *Ibid.* at 295, citing P.D. Rosenberg, *Patent Law Fundamentals*, § 1.03 (2d ed. 1985), also see section 3.

works. This right is given in return for public disclosure of the works, in order for the public to learn and build on the ideas of others.<sup>7</sup> One of the greatest differences between the rights conferred upon intellectual property, as opposed to other types of property, is the fact that the intellectual property right will eventually expire.<sup>8</sup>

Basic principles for justifying traditional property are usually also applied to justify intellectual property. One theory could be defined as the “fruit of the labor” theory, as developed by John Locke, which says that people are entitled to the fruits of their labor: “What a person produces with her own intelligence, effort, and perseverance ought to belong to her and to no one else.”<sup>9</sup> Another basic theory concerns itself, not with the “fruits of the labor” but rather of the “desert of labor.” This theory suggests that the laborer deserves the benefit from the labor as a result of natural law.<sup>10</sup> Yet another way of justifying property would be to view private property as a means to sovereignty. Property rights are here functioning as to provide privacy, security, and [a limited range of] autonomy.<sup>11</sup> Regarding these theories ability to properly justify intellectual property rights, it has been argued that they show significant shortcomings,<sup>12</sup> although they actually seem to be more appropriate to apply to intellectual property rights than to other property rights.<sup>13</sup>

The justification that seems to prevail in the context of intellectual property is a utilitarian argument. This argument sets out to promote incentives for the creation of valuable intellectual works, the argument being that such creation “requires that intellectual laborers be granted property rights in those works. Without the ...property protections, adequate incentives for the creation of a socially optimal output of intellectual products would not exist.”<sup>14</sup> Interesting to note is that this argument focuses on the users of the works, rather than the creator, but at the same time establishes an exclusive

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<sup>7</sup> See *e.g.* Hettinger *supra* note 2 at 21, see also section 3 on basic US patent law.

<sup>8</sup> See Hughes *supra* note 4 at 296 and American statutes regarding intellectual property and the duration of the right in question: Copyright 17 U.S.C. §§ 101-914 (1982 & Supp. IV 1986); Patents 35 U.S.C. §§ 1-376 (1982 & Supp. IV 1986); Trade Marks 15 U.S.C. §§ 1051-1127 (1982 & Supp. IV 1986); Trade Secret protection is left to state regulation.

<sup>9</sup> See Hettinger *supra* note 3 at 21, referring to and citing John Locke.

<sup>10</sup> *Ibid.* at 24-25.

<sup>11</sup> *Ibid.* at 28, also referring to Ronald Dworkin.

<sup>12</sup> *Ibid.* at 33. For a more extensive discussion see pages 21-30.

<sup>13</sup> Hughes *supra* note 4 at 365.

<sup>14</sup> Hettinger *supra* note 3 at 30.

right for the creator, although for a limited time. As will be elaborated below, the theory of incentive could be seen as to motivate invention on the one hand, and innovation on the other.<sup>15</sup> Invention refers in this context to the initial acts of creation and innovation to the process of bringing the creation to the market.<sup>16</sup> As will also briefly be elaborated below,<sup>17</sup> the utilitarian argument, in the form of patents, has been argued not to provide any significant incentive for research and innovative activity of large corporations in competitive markets, and also potentially barring the entry of new companies to new markets.<sup>18</sup> The latter argument, as we will see, seem to be highly applicable to the Internet commerce.

The basic justifications, and the controversy they imply, seem to apply mainly to national systems for protection of intellectual property though, whereas a system of protection as provided through the European Patent Convention,<sup>19</sup> in essence a unitary application system overlaying national systems, can be seen to have objectives which differ from those of purely national [patent] systems.<sup>20</sup> Thus a distinction should be made between the motives and justifications for a system of protection as such and the harmonisation of already existing systems.

Whereas the justifications for protection of intellectual property in a national setting is mainly concerned with how to spur and protect creation, innovation and invention, the harmonisation of such systems generally seems to be concerned with benefits residing in cost savings and efficiency and also uniformity and certainty of protection. So, when assessing the worth of harmonisation one has to assess these kinds of benefits rather than to concern oneself with the fundamental justifications of protection of intellectual property as such.<sup>21</sup>

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<sup>15</sup> See section 6.1.

<sup>16</sup> Jared E. Grusd, *Internet Business Methods: What Role Does and Should Patent Law Play?*, 4 Va.J.L. & Tech. 9 (Fall 1999) <<http://vjolt.student.virginia.edu/graphics/vol4/v4i2a9-grusd.html>> (2001-03-19) at 4 (page number referring to the Internet copy) [hereinafter Grusd].

<sup>17</sup> See section 6.1.

<sup>18</sup> Hettinger *supra* note 3 at 32 notes 40 and 41.

<sup>19</sup> Convention on the Grant of European Patents (European Patent Convention).

<sup>20</sup> See Robert Pitkethly, *The European Patent System: Implementing Patent Law Harmonisation*, Said Business School, Oxford University, 1999, <<http://www.oiprc.ox.ac.uk/EJWPi099.pdf>> (2001-09-11) [hereinafter Pitkethly].

<sup>21</sup> *Ibid.*



## 3. THE US PATENT SYSTEM

### 3.1 Basic US Patent Law

The basis for the US patent statute stems from Article I, Section 8, of the Constitution which provides Congress with the power to “promote the progress of science and the useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.”<sup>22</sup> As been mentioned earlier, the theory behind this granting of power is basically to encourage invention and innovation by providing inventors with a right to exclude others from making, using, selling, offering for sale, and importing a patented invention for a limited period of time<sup>23</sup> (note that this does not include a right for an inventor to use his patent *per se*, since it might infringe another patent). In return, the inventor has to provide the public with a description of the invention sufficient to enable the manufacture and use by others after the expiration of the patent term.<sup>24</sup> Such disclosure is also prompted by the patent laws to expedite public knowledge of the state of the art.<sup>25</sup>

US patent law begins in essence with the sections 101, 102 and 103 of Title 35, stating the basic requirements for patentability, and ends with section 271, which provides a cause of action for patent infringement. The PTO, when examining an application for patent, applies the *patentability* requirements as set out in sections 101, 102 and 103, whereas the courts will apply the same requirements when assessing the *validity* of a patent when contested under section 271.<sup>26</sup>

To be available for patent protection an invention has to be of the subject matter set out in section 101: “a new and useful process, machine,

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<sup>22</sup> U.S. Const., Art. I, § 8 as implemented in Title 35 §§ 1-376 (1982 Supp. IV. 1986).

<sup>23</sup> 20 years from application.

<sup>24</sup> As said in 35 U.S.C. § 112.

<sup>25</sup> See 35 U.S.C. § 102 and Fish & Richardson, P.C., “*Business Method Patents: Navigating the Sea of Controversy*” <<http://www.fr.com/publis/businessmethods.html>> (2001-03-19) [hereinafter Fish & Richardson] at 2.

<sup>26</sup> *Ibid.* at 2.

manufacture, or composition of matter, or any new and useful improvement thereof”. The term “process” is defined by law as a process, act or method, and primarily includes industrial and technical processes. The term “manufacture” refers to articles that are made, and includes all manufactured articles. The term “composition of matter” relates to chemical compositions and may include mixtures of ingredients as well as new chemical compounds.<sup>27</sup> Furthermore it has to fulfill the basic requirements of novelty and non-obviousness as set out in sections 102 and 103.

Section 101 thus sets out the basic subject matter of an invention in order to achieve patent protection. Special note should be made of the requirement of *utility*. It simply means that the invention must serve a useful purpose and actually work to some degree when constructed according to the patents.<sup>28</sup> If the invention has a well-established utility, such as hammers, the invention automatically satisfies the utility requirement. However, if the invention does not have a well-established utility, such as a new chemical composition, the applicant has the burden to explain to the PTO that the invention is useful.<sup>29</sup>

Section 102 sets out the basic requirements of *novelty* and a number of conditions for forfeiture of patent rights, known as bars to patent rights. An invention is unpatentable if it has been known or used by others. Also, if, prior to the inventor’s provable conception date, another has publicly disclosed the claimed subject-matter within the patent application, the inventor will be barred from receiving a patent. Furthermore, if the inventor or another publicly disclosed the claimed subject matter more than one year before the patent application’s filing date, he will be barred from receiving a patent.

Section 103 requires that the invention is *non-obvious*. To determine that the invention is not obvious, an analysis of the scope and content of the prior art, the differences between the invention and the prior art, and the level of skill of those persons working in that art, has to be made. With this information the PTO determines whether the invention as a whole would

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<sup>27</sup> See Michael S. Neustel, *Patent Law Primer*, <<http://www.patent-ideas.com/Xpatents.htm>> (2001-03-19) [hereinafter Neustel].

<sup>28</sup> Fish & Richardson, *supra* note 25 at 2.

<sup>29</sup> See Neustel *supra* note 27.

have been obvious to those of ordinary<sup>30</sup> skill in the art at the time the invention was made.<sup>31</sup>

Realizing the possible grasp of the patent system, courts have developed a number of doctrines to limit patentable subject matter under section 101. These doctrines, holding certain subject matter unpatentable *per se*, being; (i) perpetual motion machines, (ii) abstract ideas, (iii) laws of nature, (iv) naturally occurring substances, (v) physical phenomena, (vi) printed-matter, (vii) mathematical formulas and, until recently, (viii) business methods.<sup>32</sup> The basic rationale is that “an idea of itself is not patentable”,<sup>33</sup> and that such abstractions comprised “the basic tools of scientific and technological work”,<sup>34</sup> and are therefore too central to the process of technological development to be appropriate for patent protection. So, “while a scientific truth, or the mathematical expression of it, is not patentable invention, a novel and useful structure created with *the aid of knowledge of scientific truth* may be”.<sup>35</sup>

The exception regarding business methods represented an extension of the proscription of patenting abstract principles.<sup>36</sup> Since 1869 it has been the opinion that “it is contrary to the spirit of the law... to grant patents for methods of book-keeping”.<sup>37</sup> Courts in that century also ruled that “a method of transacting common business”<sup>38</sup> and “a mere contract”<sup>39</sup> was unpatentable. The case usually cited as finally establishing the business

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<sup>30</sup> Note that the level of skill is ordinary and not extraordinary. A person of ordinary skill is presumed to be one who thinks along the conventional lines of wisdom in the art, not one who undertakes to innovate. There are six factors considered in determining the level of “ordinary skill” in the art: (1) educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field. See Neustel *ibid.*

<sup>31</sup> Fish & Richardson *supra* note 27 at 2.

<sup>32</sup> See John R. Thomas, “Patenting the Liberal Professions”, 40 Boston College Law Review at 1144-1145 (1999) [hereinafter “Thomas”] and Neustel *supra* note 23.

<sup>33</sup> *Rubber-Tip Pencil Co. v. Howard*, 87 U.S. (20 Wall.) 498, 507 (1874) as cited by Thomas *ibid.* at 1145.

<sup>34</sup> *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972) [hereinafter *Benson*] as cited by Thomas *ibid.* at 1145.

<sup>35</sup> *McKay radio & Tel. Co. v. Radio Corp. of Am.*, 306 U.S. 86, 94 (1939) as cited by Thomas *ibid.* at 1145. [emphasis added].

<sup>36</sup> Thomas *ibid.* at 1145.

<sup>37</sup> *Ex Parte Abraham*, 1869 Dec. Comm’r Pat. 59, 59, as cited by Thomas *ibid.* at 1145.

<sup>38</sup> *United States Credit Sys. Co. v. American Credit Indem. Co.*, 53 F. 818, 819 (S.D.N.Y. 1893) as cited by Thomas *ibid.* at 1146.

<sup>39</sup> *In re Moeser*, 27 App. D.C. 307, 310 (1906) as cited by Thomas *ibid.* at 1146.

method exception is the *Hotel Security Checking Co. v. Lorraine Co.* from 1908.<sup>40</sup> As we will see in the following section this notion of business methods as not being eligible for patent protection drastically changed with the 1998 *State Street*<sup>41</sup> decision.

## 3.2. U.S. Case Law on Patents on Business Methods Before and After the State Street Case

### 3.2.1 The Fundamental Law of Business Methods

From its very beginnings, the patent system has struggled with the patentability of methods.<sup>42</sup> Particularly troubling with processes of different kinds is the difficulty of limiting the patentable subject matter in a reasonable way; “Seemingly any sort of communicable technique can be articulated as a series of steps, expressed in the style of a patent claim.”<sup>43</sup> With this in mind, in addition to the Supreme Court’s interpretation of the congressional intended statutory subject-matter as “[including] anything under the sun that is made by man [*sic*],”<sup>44</sup> it is easy to see how and why the doctrines of excluded subject matters referred to above were developed.

Patent law early recognized the difference between ideas and embodiments of ideas into tangible products.<sup>45</sup> Just as copyright law limits itself to

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<sup>40</sup> *Hotel Security Co. v. Lorraine Co.* 160 F. 464 (2d Cir. 1908) [hereinafter *Hotel Security*]. See *State Street supra* note 2 at 1368 and 1376 as noting that *Hotel Security* is usually cited that way.

<sup>41</sup> See *State Street ibid.*

<sup>42</sup> Thomas *supra* note 32 at 1143.

<sup>43</sup> Pamela Samuelson, *Benson Revisited: The Case Against Patent Protection for Algorithms and Other Computer Program-Related Inventions*, 39 Emory L.J. 1025, 1033 (1990) [as cited by Thomas *ibid.* at 1144.

<sup>44</sup> *Diamond v. Diehr*, 450 U.S. 175, 182 (181) (quoting S. Rep. No. 1979, 82d Cong., 2d Sess., 5 (1952); H.R. Rep. No. 1923, 82d Cong., 2d Sess., (1952) [as cited by Thomas *ibid.* at 1145.

<sup>45</sup> Richard H. Stern, *Scope-of-Protection Problems With Patents and Copyrights on Methods of Doing Business*, <<http://www.law.gwu.edu/facweb/claw/modbpap.htm>> (2001-03-21), also published in *Symposium: Intellectual Property Rights in Methods of Doing Business*, Fordham Intell. Prop. Media & Ent. L.J. (2000) at 6 (page number referring to the Internet copy) [hereinafter Stern].

protection of expression and permits an author's ideas to enrich the public domain, so too did the patent law concern the physical embodiment of technical knowledge rather than that of knowledge itself.<sup>46</sup> This notion, that patentability of a process is dependent on the presence of a "physical tangible facility,"<sup>47</sup> was upheld by the courts and the PTO in a number of decisions, starting with *O'Reilly v. Morse*.<sup>48</sup> After having developed the Morse Code and a system of transmitting signals via telegraph without having them engulfed, Morse claimed, *inter alia*, patent right for the use of electromagnetism, "however developed, for marking or printing intelligible characters, signs, or letters, at any distances."<sup>49</sup> The court held this claim invalid. The ruling might be read as saying that a claim is invalid if its purpose is to monopolize a product or a process without teaching the public how to make and use it.<sup>50</sup> Alternatively, it might be read as to rule that the patent claim is invalid if it is not directed to the kind of product or process the patent is set out to protect in the first place, *i.e.* an abstract subject matter not eligible for patent protection.<sup>51</sup>

Cases more explicitly concerned with patenting of processes are the already referred to *Hotel Security*<sup>52</sup> and the *Ex parte Turner*.<sup>53</sup> *Hotel Security* was concerned with a patent on a "method of and means for cash-registering and account-checking" designed to prevent fraud by waiters and cashiers. The system employed certain forms that tracked sales and ensured that waiters submitted appropriate funds at the close of business.<sup>54</sup> The court observed, with regard to the wording of the statute ("useful arts"),<sup>55</sup> that "in the sense of patent law, an art is not a mere abstraction. A system of transacting business disconnected from the means for carrying out the system is not, within the most liberal interpretation of the term, an art."<sup>56</sup> In a similar wording in *Ex parte Turner* the PTO stated that "a plan or theory of action

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<sup>46</sup> Thomas *supra* note 32 at 1145.

<sup>47</sup> *Rand, McNally & Co. v. Exchange Scrip-Book Co.*, 187 F. 984, 986 (7<sup>th</sup> Cir. 1911) as cited by Thomas *ibid.* at 1147.

<sup>48</sup> *O'Reilly v. Morse*, 56 U.S. (15 How.) 62 (1853).

<sup>49</sup> See claim number 8.

<sup>50</sup> This claim would for instance embrace television and fax machines, although the claim does not describe and enables them.

<sup>51</sup> See Stern *supra* note 45 at 6-7.

<sup>52</sup> *Supra* note 40.

<sup>53</sup> 1894 Dec. Comm'r Pat. 36, 38.

<sup>54</sup> See *supra* note 40 at 467-468, as cited by Thomas *supra* note 32 at 1146.

<sup>55</sup> See *supra* note 22.

<sup>56</sup> *Ibid.* at 469.

which, if not carried out into practice, could produce no physical results proceeding directly from the operation of the theory or plan itself is not an art within the meaning of the patent laws.”<sup>57</sup>

It can be noted though that the requirement for a physical embodiment is not an illogical one, since the courts, when assessing infringement, will presumably be far more ready to observe the market impact of manipulated objects than to trace the effect to the more subtle notions of processes.<sup>58</sup> This view was sorely tested by the rise of the computer technology however.

### 3.2.2 Computer-Implemented Methods

The longstanding demand for physical structure was questioned when the computer technology industry started to see the light of the day. Applicants in the computer arts urged that electronic circuits, and the software to command them, were as industrial in character as more traditional technologies.<sup>59</sup> These applications were looked upon with a sceptical eye by the PTO and the courts for a long time, since they feared that much of the precedent exempting abstract ideas from the patent system would be swept away if patents were issued for computers programmed to perform newly invented mathematical algorithms.<sup>60</sup> This section deals with the development of patents on software as such, before dealing more explicitly with business methods in the next section. Since the patents issued on business methods today normally concerns those that are embodied in software, this development is an important one to note.

One of the first cases concerned with this problem is the *Benson* case.<sup>61</sup> The Supreme Court had to decide upon the patentability of a method of converting numerals from binary-coded decimal to pure binary format.<sup>62</sup> The method, performed by a computer, comprised mathematical operations that

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<sup>57</sup> See *supra* note 53.

<sup>58</sup> At least this was the case. See Thomas *supra* note 32 at 1147.

<sup>59</sup> *Ibid.* at 1148.

<sup>60</sup> *Ibid.* at 1148, citing a lot of different works on the topic of patenting software.

<sup>61</sup> *Supra* note 34.

<sup>62</sup> *Ibid.* at 65

shuffled a sequence of bits in order to express appropriately a particular number.<sup>63</sup> The Court stated that “the mathematical formula involved here has no substantial practical application except in connection with a digital computer, which means that....the patent would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself.”<sup>64</sup> Thus, the Court held that computerization of mathematical equations could not shift them from the realm of ideas to that of industry.<sup>65</sup> This view was later reaffirmed several times by the PTO and the Courts.<sup>66</sup>

The initial resistance to grant patents on computer-related inventions faded over time though, and in the 1980 case of *Diamond v. Chakrabarty*,<sup>67</sup> the court opened the patent system to biotechnology. The case involved an application for the patent of an artificially generated micro-organism. The PTO argued that the patentability of such inventions, involving genetic technology, should be left to Congress on the basis that it could not be foreseen at the time the patent statute was drafted. The court disagreed and said, “a rule that unanticipated inventions are without protection would conflict with the core concept of the patent law that anticipation undermines patentability.”<sup>68</sup> The Supreme Court later relied on this case when holding in *Diamond v. Diehr*<sup>69</sup> that a process for operating a rubber-moulding press with the aid of a digital computer, using an equation to calculate the time required curing the rubber, was a valid subject matter for patent protection. The court said that the applicant did not “seek to pre-empt the use of that equation. Rather, they seek only to foreclose from others the use of that equation in conjunction with all of the other steps in their claimed process.”<sup>70</sup>

As applicants adopted to this new view and claimed newly formulated mathematical equations alongside some sort of physical manifestation, the Court of Customs and the Patent Appeals formed a test, the Freeman-

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<sup>63</sup> *Ibid.* at 65-67, as cited by Thomas *supra* note 32 at 1148.

<sup>64</sup> *Ibid.* at 71-71, as cited by Thomas *ibid.* at 1149.

<sup>65</sup> *Ibid.*

<sup>66</sup> See *f.i. In re Maucorps* 609 F.2d 481 (C.C.P.A. 1979) and *In re Meyer* 688 F.2d 789 (C.C.P.A. 1982) where the court once again stated that the “process recited is an attempt to patent a mathematical algorithm rather than a process for producing a product.”

<sup>67</sup> 447 U.S. 303 (1980).

<sup>68</sup> *Ibid* at 316, as cited by Thomas *supra* note 32 at 1151.

<sup>69</sup> 450 U.S. 175 (1981).

<sup>70</sup> *Ibid* at 187, as cited by Thomas *supra* note 32 at 1152.

Walter-Abele test,<sup>71</sup> to determine the validity of these claims. The test was described by the Court of Appeals for the Federal Circuit as:

It is first determined whether a mathematical algorithm is recited directly or indirectly in the claim. If so, it is next determined whether the claimed invention as a whole is no more than the algorithm itself; that is, whether the claim is directed to a mathematical algorithm that is not applied to or limited by physical elements or process steps. Such claims are non-statutory. However, when the mathematical algorithm is applied in one or more steps of an otherwise statutory process claim, or one or more elements of an otherwise statutory apparatus claim, the requirements of section 101 are met.<sup>72</sup>

This test was applied to both allow and reject applications. So the reasoning in *Benson*,<sup>73</sup> that just because you have a computer being instructed by software does not make the process statutory, was now, to some extent, set aside. That this was the case became apparent in *In re Alappat*.<sup>74</sup> The court here held a claimed apparatus useful for generating smooth and continuous lines for display on an oscilloscope by completing various mathematical calculations as “not a disembodied mathematical concept which may be characterized as an ‘abstract idea’, but rather a specific machine to produce a useful, concrete, and tangible result.”<sup>75</sup> The decision in *Alappat* has been criticized as difficult to reconcile with the rule set out in *Benson*. Both inventions concerned data transformations performed by a computer using mathematical calculations,<sup>76</sup> yet, the court in *Alappat* found that the invention produced a “useful, concrete, and tangible result.” While doing so, the court in *Alappat* does not state that *Benson* should have been overruled by later authority, but rather cites *Benson* several times for propositions forming part of the courts rationale.<sup>77</sup>

After *Alappat*,<sup>78</sup> patents could seemingly be obtained for nearly any data-processing technique, given that the claims were drafted so to “fit within the

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<sup>71</sup> *In re Freeman* 573 F.2d 1237 (C.C.P.A. 1978), *In re Walter* 618 F.2d 758 (C.C.P.A. 1980), and *In re Abele* 684 F.2d 902 (C.C.P.A. 1982).

<sup>72</sup> See *Arrhythmia Research Tech., Inc. v. Carazonix Corp.*, 958 F.2d 1053, 1058 (Fed. Cir. 1992).

<sup>73</sup> *Supra* note 34.

<sup>74</sup> 33 F.3d 1526 (Fed. Cir. 1994) (en banc).

<sup>75</sup> *Ibid.* at 1544, as cited by Thomas *supra* note 32 at 1154.

<sup>76</sup> See Thomas *ibid.* at 1154.

<sup>77</sup> See Stern *supra* note 45 at 10.

<sup>78</sup> *Supra* note 74.

strictures of the vitiated physicality standard.”<sup>79</sup> Only four years later the Federal Circuit would decide in the highly debated *State Street*<sup>80</sup> decision, that also methods of doing business were statutory subject matter for patentability, taking the opportunity to “lay this ill-conceived exception to rest.”<sup>81</sup>

### 3.2.3 Computer-Implemented Business Methods and the State Street case

Seeing the development towards patentability of software, it might seem natural to conclude that patenting of business methods was next to come. However, the fundamental problem with the determination of whether a business method reflects the creation of man or the product of nature still exists. Throughout the history of US Patent law the PTO and the courts have wavered in their treatment of business methods.<sup>82</sup> Thus, early decisions reflected the view that business methods were considered merely to be the products of nature or abstract ideas.<sup>83</sup> The line between man-made and product of nature, therefore, came to rest upon the presence of some physical or tangible mechanism for practicing a technique.<sup>84</sup>

Since the *Hotel Security*<sup>85</sup> case, inventors, lawyers, the PTO, and the courts all operated under the assumption that the subject matter question concerning business methods had been resolved. Such an assumption proved to be wrong though. But, since *Hotel Security* was ultimately decided on novelty, and not subject matter,<sup>86</sup> this was said to cause confusion in subsequent cases as to the role of the subject matter requirement in deciding business method patent claims. This led a scholar to note that:

To date [1998], no court has ever held a step-by-step method that incorporated a novel and nonobvious physical means to accomplish

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<sup>79</sup> Thomas *supra* note 32 at 1154-55.

<sup>80</sup> See *supra* note 2.

<sup>81</sup> *Ibid.* at 1373.

<sup>82</sup> Grusd *supra* note 16 at 4.

<sup>83</sup> See *f.i. Ex parte Abraham supra* note 37 and *Hotel Security supra* note 40.

<sup>84</sup> Grusd *supra* note 16 at 4.

<sup>85</sup> *Supra* note 40.

<sup>86</sup> Thus, section 102 rather than 101 in today’s statute.

that method was *per se* unpatentable simply because the method was directed to a way to conduct business rather than a way to make or manufacture.<sup>87</sup>

Thus, there was a presumption for almost 90 years that business methods was not proper patent subject matter, if not embodied in some tangible form, without such a presumption being formally endorsed by the courts.<sup>88</sup>

Then, in 1998 came the *State Street*<sup>89</sup> decision, in which the Federal Circuit seems to give the rule against patenting methods of doing business its *coupe de grace*.<sup>90</sup> The patent at suit was held by Signature Financial Group and was titled “Data Processing System For Hub and Spoke Financial Services Configuration.” It was a processing system for managing a partnership of pooled funds in accordance with certain provisions of the Internal Revenue Code and implementing regulations,<sup>91</sup> - thus, a means for complying with tax law as to pooling funds.<sup>92</sup> Notable is that the invention did not mark any advance in computer technology or mathematical calculations. The basis for patentability was the uniqueness of the investment package Signature claimed in its patent.<sup>93</sup>

The district court first found, applying the *Freeman-Walter-Abele* test, that since the invention simply involved transformation of numbers, “this could be performed, albeit less efficiently, by an accountant armed with pencil, paper, calculator, and a filing system.”<sup>94</sup> The court then went on to find, using the business method exception, that the effect of the claim was “to foreclose virtually any computer-implemented accounting method necessary to manage this type of financial structure”<sup>95</sup> and that to patent such “an accounting system necessary to carry on certain type of business is tantamount to a patent on the business itself.”<sup>96</sup> It finally concluded, “such abstract ideas are not patentable.”<sup>97</sup>

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<sup>87</sup> Rinaldo Di Gallo, *Are Methods of Doing Business Finally Out of Business as a Statutory Rejection?*, 38 IDEA 403-404 (1998) as cited by Grusd *supra* note 16 at 5.

<sup>88</sup> Grusd *ibid.* at 5.

<sup>89</sup> *Supra* note 2.

<sup>90</sup> See Stern *supra* note 45 at 8.

<sup>91</sup> See *State Street supra* note 1 at 1370.

<sup>92</sup> Stern *supra* note 45 at 9.

<sup>93</sup> Thomas *supra* note 32 at 1157, referring to U.S. Patent No. 5,193,056.

<sup>94</sup> *State Street supra* note 2 at 502-504.

<sup>95</sup> 927 F. Supp. 502, quoted in *State Street ibid.* at 1377.

<sup>96</sup> *Ibid.*

<sup>97</sup> *Ibid.*

The Federal Court reversed on both the grounds given by the district court. As to the algorithm ground, the court held that the patent claim did not claim an abstract idea. The exception for patentability concerning algorithms did not apply since the calculations in questions constituted a practical application of an algorithm. In fact, according to the court, it concerned a programmed machine that produced a “useful, concrete, and tangible result,”<sup>98</sup> namely a price figure accepted and relied upon for regulatory purposes and other business purposes as well.<sup>99</sup> That the patent claim merely claimed a calculation did not make it unpatentable, according to the court, even though “under *Benson*, this may have been a sufficient indicium of nonstatutory subject matter.”<sup>100</sup>

The court then turned to the rejection based upon the business method exception and took, as mentioned above, “the opportunity to put this ill-conceived exception to rest.”<sup>101</sup> In doing so, the court noted that none of its earlier decisions holding patents invalid had been based upon the business method exception, but rather upon grounds of novelty and obviousness.

The *State Street*<sup>102</sup> decision has caused a lot of debate and commentary. It has been seen as an important effort to clarify the proper status of business methods under the Patent Act<sup>103</sup> and as such putting the emphasis on the analysis of the scope, novelty, utility and obviousness of a claim, rather than whether it is a product of nature or not.<sup>104</sup> Others have viewed it in a more critical way. The critique usually comprises opinions of how the decision treats precedents,<sup>105</sup> that the court misinterpreted the final claim and therefore put too much emphasis on the issue of methods than needed,<sup>106</sup> and furthermore, that the decision treats the requisite of utility as to “collapsing the subject matter inquiry into another patentable requisite” and thereby dramatically reinterpreting the statute.<sup>107</sup> The bottom line of the

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<sup>98</sup> *Ibid.* at 1373, quoting *Allapat supra* note 74 at 1544.

<sup>99</sup> Stern *supra* note 45 at 9.

<sup>100</sup> *State Street supra* note 2 at 1375.

<sup>101</sup> *Ibid.* at 1375.

<sup>102</sup> *Ibid.*

<sup>103</sup> 35 U.S.C. §§ 1-376 (1982 & Supp. IV 1986).

<sup>104</sup> Grusd *supra* note 16 at 6.

<sup>105</sup> See Stern *supra* note 45 at 10 and Thomas *supra* note 32 at 1159-60.

<sup>106</sup> See Thomas *ibid.* at 1158-59, 1160.

<sup>107</sup> *Ibid.* at 1160.

critique is, as will be examined more closely in the next section, that the subject matter of business methods is not appropriate for patenting. As John R. Thomas points out, “one need only to recall the techniques of the Hanseatic League or the theory of merchantilism to realize that such methods are far older than the patent system itself.”<sup>108</sup> The Supreme Court denied *certiorari* in January 1999, and thereby apparently leaving the *State Street* decision as the law of the land.

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<sup>108</sup> See *Hughes Aircraft Company v. United States*, *supra* note 1 and *ibid.* at 1162.

## 4. THE EUROPEAN PATENT SYSTEM

The term “European Patent System” could of course be used for the national European patent systems collectively, but is better used to define the patent system established under the European Patent Convention (EPC),<sup>109</sup> advocated by the Council of Europe already in 1949 and signed in Munich 1973.<sup>110</sup> The membership of the EPC today is made up of 19 European countries, compared with the 15 that comprise the European Union (EU). The EPC is thus separated from the EU but has developed close links with Brussels, and the vision of closer harmonization and expansion is a shared one.<sup>111</sup>

Created by the EPC,<sup>112</sup> the European patent system aims to make the protection of inventions in the Contracting States easier, cheaper and more reliable by creating a single European procedure for the granting of patents on the basis of a uniform body of substantive law.<sup>113</sup> The European Patent Office (EPO) grants patents conferring on its proprietor, in each of the Contracting States for which the application was designated and granted, the same rights as would be conferred by a national patent granted in that State. Thus, the EPC merely provides a “unitary application procedure providing on grant a bundle of national patents effective in each of the up to 19 states designated in the application.”<sup>114</sup> National law deals with any infringement of a European patent, which is valid for twenty years from filing of the application.

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<sup>109</sup> See *supra* note 19.

<sup>110</sup> Munich Diplomatic Conference on European System of the Grant of Patents European Patent Convention (EPC) signed by 16 of the 21 participating countries.

<sup>111</sup> Pitkethly *supra* note 20. Also note that the prospects for a Community patent seem to be greater than ever. For a description of events leading up to the renewed drive for a Community patent see *the Green Paper on the Patent System in Europe*, <[http://europa.eu.int/comm/internal\\_market/intprop/indprop/8682en.pdf](http://europa.eu.int/comm/internal_market/intprop/indprop/8682en.pdf)>.

<sup>112</sup> See *supra* note 19.

<sup>113</sup> The European Patent Office’s *Guide for applicants I*, at A. II. s. 6, <<http://www.european-patent-office.org>> (2001-09-11).

<sup>114</sup> Pitkethly *supra* note 20.

When applying for a patent in Europe, the applicant thus has a choice of whether to seek patent protection in one or more EPC Contracting States, between the national procedure in each State for which he desires protection, and the European route which, in a single procedure, confers protection in all Contracting States which he has designated.<sup>115</sup> Reference should also be made to the option for an applicant to apply for a patent via the Patent Cooperation Treaty (PCT)<sup>116</sup>, then called the Euro-PCT route, as opposed to the direct European route. A part of the procedure would then be governed by the PCT (the international phase). This aspect of international patent law is, however, outside the scope of this paper.

The EPC is regarded to be highly successful. Applications are today over the 100,000 pa level. Surveys also show that applicants in general stress as advantageous a single procedure with a centralized examination, the possibility of European-wide protection, cheaper applications than four individual applications, and a smooth and simple procedure. Some disadvantages seem to exist though. Primarily, they seem to be concerned with the fact that any changes to the EPC are difficult to arrange, the system is too expensive, and that there are extensive costs of translations and national fees on grant.<sup>117</sup>

## 4.1 Basic European Patent Law

The patentability of an invention under the EPC system is decided mainly under Articles 52-57 and Rules<sup>118</sup> 23, 27 and 29 of the EPC. Article 52 states that “European patents shall be granted for any inventions which are susceptible of industrial application, which are new and which involve an inventive step.”<sup>119</sup> Furthermore, in accordance with Rules 27 and 29 EPC, in order to be patentable, an invention must be of a technical character.

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<sup>115</sup> See the EPO’s guide for applicant I, *supra* note 113, A. IV. s. 10-12.

<sup>116</sup> Patent Cooperation Treaty, Washington June 19, 1970.

<sup>117</sup> See Pitkethly *supra* note 20 footnote 18 citing R. Berger *Utilisation of patent Protection in Europe*, EPO Script 3 (1994). Also note that regarding the stated disadvantages there seem to be conferences on revision forthcoming.

<sup>118</sup> *Implementing Regulations to the Convention On the Grant of European Patents*.

<sup>119</sup> Article 52 (1) EPC.

Article 52 does not define the term “invention” but does instead include a non-exhaustive list of subject-matter and activities that are deemed not to be inventions, or as inventions that are not susceptible of industrial application or expressly excluded from patentability. These are the following: (1) discoveries, scientific theories and mathematical methods; (2) aesthetic creations; (3) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers, and (4) presentation of information. However, claims to these kinds of subject-matter are denied only insofar as they relate to excluded subject-matter *as such*.<sup>120</sup>

In this paper particular attention will, naturally, be paid to the exception to patentability of computer programs and business methods. Concerning computer programs and business methods, they are not regarded as inventions to the extent they are claimed *as such*. However, if the subject-matter claimed adds a contribution of a technical character to the known art, a patent should not be refused simply because a computer program or a business method is involved. This means that, for example, machines, processes of manufacture, or control processes controlled by a computer program may be patented.<sup>121</sup>

As to *novelty*, an invention is considered to be new if it, according to Article 54 (1), does not form part of the state of the art.<sup>122</sup> Note though that the definition of the state of the art in the EPC amounts to absolute novelty, *i.e.* “the state of the art is held to comprise everything made available to the public by means of a written or oral description, by use, or in any other way, before the date of filing of the European patent application.”<sup>123</sup> Such an earlier disclosure is not prejudicial, however, if it occurs no earlier than six months preceding the filing of the European patent application and was due to an evident abuse in relation to the applicant or to display at an official or officially recognized exhibition falling within the terms of the *Convention on International Exhibitions*.<sup>124</sup> Apart from these two cases, any disclosure of the invention before the date of filing, whether or not by the applicant

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<sup>120</sup> EPC Article 52 (3).

<sup>121</sup> See the EPO’s *Guide for Applicants I*, *supra* note 113 B. I. s. 29-30.

<sup>122</sup> Compare to the requisite in US patent law concerning the prior art.

<sup>123</sup> EPC Article 54 (2).

<sup>124</sup> EPC Article 55. *The Convention of International Exhibitions* signed in Paris on 22 November 1928 and last revised on 30 November 1972.

himself, may be invoked against him as being comprised in the state of the art.<sup>125</sup> Furthermore, also note that the whole content of an earlier application as filed is prejudicial to novelty.<sup>126</sup>

As to the requirement of an *inventive step*, Article 56 states that an invention will be regarded as involving such a step if, having regarded the state of the art, it is not obvious to a person skilled in the art.<sup>127</sup> The inventive step requirement is intended to prevent exclusive rights forming barriers to normal and routine development.<sup>128</sup>

Article 57 finally states that an invention shall be susceptible of *industrial application* if it can be made or used in any kind of industry including agriculture.

The European patent system includes some apparent differences from the US patent system. One of them is the system of opposition as pronounced in Articles 99 and 100. Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the EPO of opposition to the European patent granted. Opposition may be filed on the grounds that (a) the subject-matter of the European patent is not patentable within the terms of Articles 52-57; (b) the European patent does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art; or (c) the subject-matter of the European patent extends beyond the content of the application as filed, or, if the patent was granted on a divisional application or on a new application filed in accordance with Article 61, beyond the content of the earlier application as filed.

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<sup>125</sup> The EPO's *Guide for Applicants I*, *supra* note 113 B. II. s. 34.

<sup>126</sup> *Ibid* at s. 35.

<sup>127</sup> *Ibid* at s. 37.

<sup>128</sup> Compare to the requisite in US patent law of non-obviousness.

## 4.2 Technical Character and the Patenting of Computer Implemented Inventions

Another major difference, of great importance in the context of business method patents, is the above-mentioned requirement of *technical character* of the invention. An invention, in order to fulfill the condition of inventive step, must be of a technical character to the extent that it must relate to a technical field, be concerned with a technical problem, and have technical features in terms of which the matter for which protection is sought can be defined in the patent claim.<sup>129</sup> Thus an invention may be an invention within the meaning of Article 52 (1) if, for example, a technical effect is achieved by the invention or if technical considerations are required to carry out the invention.<sup>130</sup> The technical character of an invention is of central importance for patentability in European patent law. Determining what lends the application a technical character, especially concerning computer programs and business methods, is often very difficult though. The official position in Europe seems to be to look at the substance of the claim as a whole.<sup>131</sup>

On the one hand, the fact that an invention uses a computer program will not by itself exclude it from patentability.<sup>132</sup> In fact, the EPO has stated that when examining computer-implemented inventions, "...the claimed subject-matter, which by definition includes elements such as a computer or code which is intended to run on a computer, is presumed, *prima facie*, not to be excluded from patentability by Articles 52 (2) and (3) EPC."<sup>133</sup> The subject-matter of the claim, the EPO goes on, "...is therefore to be examined for novelty and inventive step. In particular, in the examination for inventive step the objective technical problem solved by the invention as claimed

<sup>129</sup> See EPO press release, *Patentability of methods of doing business* <[http://www.european-patent-office.org/news/pressrel/2000\\_08\\_18\\_e.htm](http://www.european-patent-office.org/news/pressrel/2000_08_18_e.htm)> (2001-09-30).

<sup>130</sup> See *Pension Benefit Systems Partnership/Improved pension benefits system* T0931/95 – 3.5.1 [2000] at 9, referring to *Case Law of the Boards of Appeal of the European Patent Office*, 3<sup>rd</sup> ed. 1998, chapter I.A.1; Guidelines for examination in the European Patent Office, Chapter C-IV.2.2.

<sup>131</sup> See *Vicom/Computer-related invention* [1987] 1 OJEP 14 (T208/84), *Koch & Sterzel/X-ray apparatus Decision* (T/26/86) [1988] 1-2 OJEP 19, Guidelines for Examination in the European Patent Office, *ibid.* and Michal Likhovski *et al.*, *The First Mover Monopoly: A Study on Patenting Business Methods in Europe*, Olswang and Oxford Intellectual Property Research Centre, Oxford University, at 33 [hereinafter Likhovski].

<sup>132</sup> *Ibid.*, as cited by Likhovski *ibid.* at 33.

<sup>133</sup> *Report on Comparative Study Carried Out Under Trilateral Project B3b* Appendix 6 at 5 <<http://www.european-patent-office.org/tws/appendix6.pdf>> (2001-09-16).

considered as a whole when compared with the closest prior art is to be determined. If no objective technical problem can be determined, the claim is to be rejected on the ground that its subject-matter lacks an inventive step.”<sup>134</sup> On the other hand, the mere use of a computer does not, by itself, give an invention the necessary technical character;<sup>135</sup> “claims for programs on their own when run on conventional computers and method claims masked as apparatus claims will not possess the requisite technical character.”<sup>136</sup> As a rule, “claims to a program will be allowed where the program produces a technical effect when run on a computer such that claims to the computer programmed in this way would be allowed.”<sup>137</sup>

The *Vicom*-case,<sup>138</sup> a claim to a mathematical method for image processing, set out the principles governing the patentability of computer-implemented inventions. Even if the idea underlying an invention may be considered to reside in a mathematical method, a claim directed to a technical process in which the method is used does not seek protection for the mathematical method *as such*. A claim directed to a technical process carried out under the control of a program (whether by means of hardware or software) cannot be regarded as relating to a computer program *as such*. A claim which can be considered as being directed to a computer set up to operate in accordance with a specified program (whether by means of hardware or software) for controlling or carrying out a technical process cannot be regarded as relating to a computer program as such. In *Vicom* the method did not merely add information, but it produced a technical result by applying particular digital image processing methods, for example enhancing and restoring images. Therefore the claim was allowed. This approach was later affirmed in the next leading case of *Koch & Stertzel*,<sup>139</sup> concerning an X-ray apparatus incorporating a data processing unit that operates in accordance with a routine. The Board of Appeal held that an invention must be assessed as a whole. If it made use of both technical and non-technical means, the use of

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<sup>134</sup> *Ibid.* at 5.

<sup>135</sup> See e.g. *IBM/Computer program product II* T/0935/97 6.2-6.3. (cited by *inter alia* Likhovski *supra* note 131 at 34 and Paul Cole, *Patenting Business Methods in Europe: Opportunities and Difficulties*, Patent Cafe International, Wednesday, October 25, 2000 [http://www.cafezine.com/index\\_article.asp?Id=250&deptid=6](http://www.cafezine.com/index_article.asp?Id=250&deptid=6)), at 2.

<sup>136</sup> Likhovski *supra* note 131 at 34, citing *IBM/Text Processing* [1990] EPOR 181 (T65/86), *Genentech Inc's Patent* [1989] RPC 147, 240, *IBM/Document abstracting and retrieving* [1990] 1-2 OJEP 12 (T22/85), *Gale's Application* [1991] RPC 305.

<sup>137</sup> *Ibid.* at 34.

<sup>138</sup> *Supra* note 131.

<sup>139</sup> *Supra* note 131.

non-technical means did not detract from the technical character of the overall teaching. The EPC thus does not prohibit the patenting of inventions consisting of a mix of technical and non-technical elements. If the invention defined in the claim used technical means, its patentability is not ruled out by Article 52 (2) (c) and (3) and it can be protected if it meets the requirements of Articles 52 to 57. This view has later been reaffirmed several times by the EPO and the Board of Appeal.

A later case is the 1995 *Sohei*-case,<sup>140</sup> concerning changes to the internal function of a computer caused by a program. The Board of Appeal here seem to give weight to the fact that before programming began, technical concerns for implementing the claimed user interface by which input data would be processed had to be taken into account. According to the Board this implies the occurrence of a technical problem to be solved and the technical features for solving the problem; “implicit technicality therefore seems to be sufficient to avoid the exclusions from patentability under Article 52 (2).”<sup>141</sup>

### 4.3 The Patenting of Business Methods

Since the European patent system explicitly includes an exclusion to patentability for methods of doing business the approach to this issue can be more straightforward than in the US context. As has been shown above, methods of doing business are, according to Article 52 (2) EPC, not to be considered to be inventions and therefore not patentable subject-matter. Although not explicitly stated, this exclusion is also considered to apply to a wide range of subject-matters which, while not literally methods of doing business, share the same quality of being concerned more with impersonal, societal and financing relationships, than with the stuff of engineering – for example, valuation of assets, advertising, teaching, choosing among candidates for a job, etc. The term “business methods” has become a generally used shorthand for all of these areas.<sup>142</sup>

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<sup>140</sup> *Sohei* (T/769/92) [1995] 1995 OJEP 525.

<sup>141</sup> See Likhovski *supra* note 131 at 35 and T0931/95 at 12.

<sup>142</sup> See *supra* note 133 at 3. The terms “method claims” or “method patents” are also often used.

Claims for business methods under the EPC can be divided into the following three groups:<sup>143</sup>

- (1) *Claims for a method of doing business in abstract, i.e. not specifying any apparatus used in carrying out the method.*

According to the EPO the following approach to examination are to be applied in these following cases: claims to abstract business methods should be rejected on the grounds that they are excluded by Articles 52 (2) and (3) EPC, since they are methods of doing business *as such*.

In the recent decision T1173/97 (OJ 1999, 609)<sup>144</sup> the Board of Appeal of the EPO noted that a computer program is considered to have a technical character, ...”if it causes, when run on a computer, a technical effect which may be known in the art but that goes beyond the ‘normal’ physical interactions between program and computer. Such effect may, for example, be found in the control of an industrial process as in the internal functioning of the computer itself.” In this case it was possible to argue by analogy with the discussion of “programs for computers” that a claim directed to an abstract business method itself was not necessarily for a business method “as such”. In relying on the intimate relationship between program and computer it was in this case possible to argue that programs, even in abstract, can show a “technical effect”. Such reasoning is not, however, according to the EPO, applicable to abstract business methods in general.

- (2) *Claims that specify computers, computer networks or other conventional programmable digital apparatus for carrying out at least some of the steps of the business method (“computer-implemented business methods”).* The majority of applications currently pending would fall into this group.

Approach: Claims for computer-implemented business methods should be treated in exactly the same way as any other computer-implemented invention.

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<sup>143</sup> *Ibid.*

<sup>144</sup> *IBM/Computer Program Product*, T1173/97 (OJ 1999, 609).

This conclusion is in line with the *Sohei* case,<sup>145</sup> which also deals with a computerized business method. The claims were directed to a computer system for handling two sorts of information, namely, financial and inventory management information and furthermore a method for operating the system. The Board attached no importance to the end use of the system. It concentrated on the technical problem of handling files containing different types of information and did not ascribe any weight to the fact that the system would be used as a business management tool; “In effect this solution should mean that if implementation of a business method calls for solution of a technical problem, it will pass muster.”<sup>146</sup>

- (3) *Claims that specify other apparatus (perhaps in addition to computers) e.g. mobile telephones.*

Approach: claims for other implementations of business methods should be treated using the same scheme for examination as for computer implementations.

Note that there is no other approach for examining “non-computer implementations” than for computer-implemented inventions, even the examination for a “technical contribution to the art” is included. A change in approach should, according to the EPO, be avoided since it would undoubtedly lead to confusion and accusations of inconsistency.

The leading case on business methods today is the *Improved Pension Benefits System*-case.<sup>147</sup> In this case the Board of Appeal rejected a claim for a “method for controlling a pension benefits program by administrating at least one subscriber employer account” by saying that:

All the features of this claim are steps of processing and producing information having purely administrative, actuarial and/or financial character. Processing and producing such information are typical steps of business and economic methods. Thus the invention as claimed does not go beyond a method of doing business as such and, therefore, is excluded from patentability under Article 52 (2) (c) in

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<sup>145</sup> *Supra* note 140.

<sup>146</sup> See Likhovski *supra* note 131 at 35-36.

<sup>147</sup> *Supra* note 130.

combination with Article 52 (3) EPC; the claim does not define an invention within the meaning of Article 52 (1) EPC.<sup>148</sup>

The Board pointed out that “if the method is technical or not, in other words, has a technical character, it still may be a method for doing business, but not a method for doing business as such.”<sup>149</sup> The Board went on by noting that:

...the mere occurrence of technical features in a claim does thus not turn the subject-matter of the claim into an invention within the meaning of Article 52 (1). Such an approach would be too formalistic and would not take due account of the term “invention”.<sup>150</sup>

The Board hereafter concluded that:

Methods only involving economic concepts and practices of doing business are not inventions within the meaning of Article 52 (1) EPC.<sup>151</sup>

In conclusion, the case law and commentary from the EPO suggests that computer-implemented business methods are to be treated in the same way as other computer implemented inventions. As said in the *Report on Comparative Study Carried Out Under Trilateral Project B3b*<sup>152</sup>, “insofar as the scheme for examination is concerned no distinctions are made on the basis of the overall purpose of the invention, *i.e.* whether it is intended to fill a business niche, to provide some new entertainment, etc.” Thus, in the scheme outlined above, the overall purpose of the invention is not considered material. This might be so because the EPO anticipates that the exclusion of software from patentability will be struck in the near future.<sup>153</sup> But since the test for finding an inventive step ensures that patents will only be granted if there is an objective technical problem that has to be overcome because of and the fact that there is no intention of getting rid of the “technicality” requirement, that means that claims directed towards an

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<sup>148</sup> *Ibid* at 10.

<sup>149</sup> *Ibid* at 9.

<sup>150</sup> *Ibid* at 11.

<sup>151</sup> *Ibid.*

<sup>152</sup> *Supra* note 133 at 4.

<sup>153</sup> See Likhovski *supra* note 131 at 36 and Philip Shiskin, *EU considers business practices patents*, 20 Jan 2000.

abstract method of doing business will still be outside the realm of patent protection.<sup>154</sup>

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<sup>154</sup> Likhovski *ibid.* but with the exception of situations as the one in *IBM/Computer Program Product*, T1173/97 (OJ 1999, 609) *supra* note 144.

## 5. EMPHASIZING THE MAJOR DIFFERENCES IN US AND EUROPEAN PATENT LAW

In order to fully appreciate the development in the US of the patenting of business methods and the following discussion of the perceived problems and dangers with these kind of patents, the arguments in favour of this development, and furthermore, the more restrained view in European patent law, it is important to be aware of the major differences in this respect between the two systems.

As stated above, the US patent system takes as its stepping stone Article I, Section 8, of the Constitution providing Congress with the power to “promote the progress of science and the useful arts”,<sup>155</sup> thereby encouraging invention and innovation. This approach leads to a quite differentiated view of what a patent actually is. Hence, the US patent system issues different patents for different types of “inventions.” A patent in the US system literally means a written “letter.” The actual patent is thus, in practice, the proof that protection is granted for the claim sought. This approach, in addition to the fact that the US Patent Act does not include any explicit exceptions from patentability but only requisites for patentability, leads to a practice more open to new forms of patentable subject-matter.

The European system, on the other hand, is a more closed one. It takes as its basic approach the patenting of “inventions”.<sup>156</sup> By taking this approach it does not include a list of what constitutes an invention, but rather includes a list of what does not constitute an invention. This approach naturally leads to a more restrictive view of what is or should be patentable, or at least it may result in such a view. The EPC is also a system, as the US, comprised of case law, but the EPO and the Board of Appeal has emphasized the requirement of technical character in order for an invention to be an

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<sup>155</sup> *Supra* note 22.

<sup>156</sup> See Article 52 (1) EPC.

invention within the meaning of Article 52 (1) EPC, and thus maintained the more restrictive basic approach.

The consequence of these differences is that the European patent system does and will find it easier to resist the patenting of abstract notions, such as methods of doing business.

## 6. PERCEIVED PROBLEMS WITH PATENTING BUSINESS METHODS

With the basic differences between the US and European patent systems in mind, it is easy to understand that the debate as to the appropriateness in allowing patents for methods of doing business is more evident in the US than in Europe. The American patent system seems to be wide open to claims for business method patents since *State Street*,<sup>157</sup> and this has spurred both a storm of applications relating to business methods as well as a lively debate, both from a business and a legal perspective. This section and the next is mostly concerned with the problems and dangers of the patenting of business methods as they are perceived in the US. The reasoning is mostly a legal perspective of why business methods may be something unwanted and how the patent system should deal with this issue.

There is a European debate on the issue, though not as evident as the American. This might be because the European system, as pointed out above, seems to be better equipped to handle this issue. Arguments used in Europe in favour or against these patents do, however, very much resemble the ones put forward in the US.

So, where does the *State Street*<sup>158</sup> decision leave us as to the actual scope of patentability in the US? As we have seen above, after *State Street*, section 101 in the Patent Act could be said to virtually allow any application for patent.<sup>159</sup> This development -of expanding the subject matter for patentability as to include also business methods- is that really a good one? Given the fact that this legal status seems to be the one to consider in the US, and to some extent in Europe, can we perceive any problems or dangers in regard to this development?

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<sup>157</sup> *Supra* note 2.

<sup>158</sup> *Ibid.*

<sup>159</sup> Thomas *supra* note 32 at 1160.

As any business method of any significance today needs to be carried out in part by means of a programmed computer,<sup>160</sup> it is not surprising that the *State Street*<sup>161</sup> decision has had its greatest impact on the Internet community. Today, patents includes, *inter alia*, the following patents: Internet-based “reversed auctions”;<sup>162</sup> a pay-per-view advertising method;<sup>163</sup> certain aspects of playing three-dimensional games on the Internet;<sup>164</sup> a secured real-time payment method using debit and credit cards;<sup>165</sup> methods that employ on-line frequent buyer programs;<sup>166</sup> and methods that use proprietary billing and cataloguing processes,<sup>167</sup> all providing the patent holders with the potential right to eliminate competition within each patented area. Add to this the fact that many companies today are “dusting off “ old patents, claiming patent right over the very core elements of the Internet,<sup>168</sup> it becomes apparent that the question (of whether the granting of patent rights to business methods is a desirable development) is a valid one.

Proponents of the business method patent often argue that an exclusion is, or would be (depending on which system they are referring to), unjust. They claim that business innovators merit reward for their labors no less great than that offered to other inventors.<sup>169</sup> In addition, they often argue that business method patents are economically desirable in that they spur innovation in important sectors of economic activity<sup>170</sup> by pointing to the growing phenomenon of patent incubators, or licensing shops.<sup>171</sup> Proponents of an exclusion tend to be less sanguine about the economic benefits and often argue that patents on business methods (and software also for that matter) function as an impediment to economic growth. Below follows a more in-depth analysis of the more pronounced arguments against patents on business methods. In short, this section sets out to clarify some of the problems of patentability of business methods as perceived in the literature

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<sup>160</sup> Stern *supra* note 45 at 12.

<sup>161</sup> *Supra* note 2.

<sup>162</sup> See Priceline.com.

<sup>163</sup> See Cybergold.

<sup>164</sup> See Slashdot.org.

<sup>165</sup> See Open Market.

<sup>166</sup> See Netcentives, Inc.

<sup>167</sup> See Netdelivery.

<sup>168</sup> See *inter alia* SightSound.com that maintains the patent right for every sale of any digital audio or video recording over the Internet and British Telecom, claiming a patent for the very hyperlink.

<sup>169</sup> Compare to the early debate on the patentability of software.

<sup>170</sup> See *inter alia* Likhovksi *supra* note 131 at 30.

<sup>171</sup> See for instance WalkerDigital.

and commentary. By doing so, it takes as a starting point the for patent law fundamental aspects of defining the “useful arts” (US patent law) and the scope of patentable subject matter. It then turns to the question of whether business methods should be viewed as obvious and concludes with a brief comment regarding the implications for those who have chosen trade secret protection for their business methods in compliance with the traditional view.

## 6.1 Useful v. Liberal Arts

One problem that might be perceived with patents on business methods is that such methods, like music and painting, are part of the “liberal arts” rather than part of the “useful arts,”<sup>172</sup> and are therefore inappropriate subject matters of patents. This perceived problem has been dismissed on the ground that there is no way to reach agreement on what is a useful art and what is not.<sup>173</sup> Attempts have been made to define the term “useful arts,” often involving the application or utilization of technology, and thus equating the useful arts with “technological arts.”<sup>174</sup> With regard to this notion it has been argued that business methods engage economic principles rather than the laws of physics, chemistry or biology, and therefore, do not comprise technology and should thus not be within the grasp of the patent system.<sup>175</sup> Doubts have been expressed, however, whether this kind of reasoning would resolve the problem of definition since “technological arts” is not really well defined either,<sup>176</sup> and would merely shift the analysis to a different level, namely to that of whether the invention is part of the “technological arts” instead of the “useful arts.” Furthermore, since any business method of significance today needs to be carried out in part by means of a programmed computer, and “the concept of the technological arts is so inclusive in today’s society that it amounts to a universal class,” it

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<sup>172</sup> See U.S Const., Art I, § 8, Cl. 8.

<sup>173</sup> Stern *supra* note 45 at 11.

<sup>174</sup> For case law see *f.i. In re Musgrave*, 457 F.2d 997, 1003-04 (CCPA 1972) as cited by Stern *ibid*. See also discussion in Thomas *supra* note 32 at 1163-1185 and section 7.3 in this paper. Thomas suggests the adoption into US regulation of European and Japanese patent law’s requirement of capability of industrial application.

<sup>175</sup> Thomas *supra* note 32 at 1181 and section 7.3 in this paper.

<sup>176</sup> See the attempt in Thomas *ibid*. though.

has been argued to be useless as a tool of legal analysis.<sup>177</sup> The debate is an ongoing one though.

## 6.2 The Scope of Patentable Subject Matter

Another side of the discussion above is the question of the scope of protection a patent should grant. The scope is important as the underlying medium to achieve the goals with the patent system as such. One will want to provide the inventor with enough incentive, but at the same time maintain sufficient competition as well as disclosure to society. With more traditional inventions, such as ordinary machines, compositions, articles of manufacture, and industrial processes, patent law has been fairly successful in distinguishing between unprotectable abstract ideas and protectable physical embodiments of ideas. But in regard to computer-implemented inventions, patent law has had more difficulty in resolving the scope problems. This is so, as we have seen above, because the patenting of a process using an algorithm or a method could perceivably be extended to any end use to which the algorithmic process or method can be put.<sup>178</sup> While this is often the case with algorithms, it does not necessarily have to be the case with business methods though. Often, as was the case in *State Street*,<sup>179</sup> the scope of the patent will not preempt anything else but the actual process in question.<sup>180</sup> Thus, the problem of preempting end uses, in regard to business methods, will depend on the ambition of the individual who drafts the claim, and of course the granting authority's (*i.e.* the PTO or the EPO) policy.<sup>181</sup> In addition to the fear of business method patents potentially preempting all end uses, arguments are often made to the extent that business methods are too abstract at the outset to enable the law to limit the patent monopoly so as to properly balance rewards for innovation and the demands of free competition.<sup>182</sup>

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<sup>177</sup> See Stern *supra* note 45 at 12.

<sup>178</sup> *Ibid.* at 12-13.

<sup>179</sup> *Supra* note 2.

<sup>180</sup> Fund pooling partnerships in order to comply with tax regulations in *State Street*.

<sup>181</sup> See Stern *supra* note 45 at 13.

<sup>182</sup> Likhovski *supra* note 131 at 30.

Another underlying issue is whether the patent should provide the first inventor with a broad right to also include future improvements, thereby limiting the competition, or if it should create a more competitive environment by limiting the first inventor's protection as to mainly embrace the pioneer invention. The literature concerned with patent law is filled with comments on this matter and the opinions seem to be somewhat divided.<sup>183</sup> An interesting aspect that has been argued is that the scope of protection has different influences on the development of technology depending on the following two characteristics: the relationship between technical advances in the industry, and the extent to which firms license technologies to each other.<sup>184</sup> The issue of competition is obviously important since it might be inefficient, from society's point of view, to grant one patentee exclusive rights to the method or techniques. If Internet business methods only varies from each other in subtle ways, the patent monopoly may exclude the implementation of too many useful business methods.<sup>185</sup> It seems to be a bit too early to advance an opinion in this respect about the effect of broad patents on the Internet community. But, as many debaters also point out, the technological development in Internet commerce has flourished up to date, absent of patent protection, thus giving incentive for the question: are patents on business methods necessary to promote invention and innovation on the Internet? Many argue that they are not. Add to this that proponents of an exclusion of business method patents often point to the high social costs connected to such patents. Admittedly, all patents have costs. They make products and services more expensive and more scarce than they would have been otherwise. Patents also raise costs of cumulative inventions. However, it is argued that the costs of business patents are higher than for other patents. They are said to stifle competition by directly restraining the conduct of competitors, create barriers to entry, and might impose crippling multiple royalty fees on business. Given the difficulty in limiting the scope of computerized business method claims and the inability of competition law to deal promptly with egregious anti-competitive behaviour, business

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<sup>183</sup> See *f.i.* Robert P. Merges and Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 Colum. L. Rev. 839 [hereinafter Merges and Nelson] arguing for an attempt to favor a competitive environment for improvements without extensively reducing the pioneers incentives; and Kitch, *The Nature and Function of the Patent System*, 20 J.L. & Econ. 265 (1977) taking the opposite standpoint and thus argues for an extensive protection of the pioneers right to improvements [as cited by Merges & Nelson].

<sup>184</sup> Merges & Nelson *ibid.* at 2.

<sup>185</sup> Grusd *supra* note 16 at 1.

method patents are often said to be more likely to impede competition than to aid it.<sup>186</sup> These are questions we will come back to in the next section.

A broad scope of the patentable subject matter also raises concerns not only about the proper scope of the technology, but also about the range of professionals who might seek the protection of the patent system. The contemporary society includes knowledge held by many professions. A broad view of patentable subject matter might put certain characteristics of the “liberal arts” (for example, law, medicine, teaching and the ministry) within the scope of patentability.<sup>187</sup> The possibility of patentability extending to these areas, *e.g.* patenting legal methods, is, for obvious reasons, not a desirable one. Even if this is already a fact in the medical field (medical practitioners have obtained patents on methods of medical treatment ranging from administrating insulin to treating cancer),<sup>188</sup> it remains to be seen with regard to business methods. Concerning the granting of patents in the medical field, the US Congress reacted by amending the Patent Act<sup>189</sup> as to deprive patentees of remedies against medical practitioners engaged in infringing “medical activity”.<sup>190</sup> A possibility would be to create “patent-free spheres” as to business methods by further amendments by the US Patent Act and the EPC. This, however, does not seem to be a viable solution, not for practical reasons, but for legal ones. The TRIPS Agreement states that, “patents shall be available and patent rights enjoyable without discrimination as to...the field of technology”.<sup>191</sup> Exception is only given as to patenting “diagnostic, therapeutic, and surgical methods for the treatment of human or animals”.<sup>192</sup> A final reflection in respect to this discussion of the impact of a broad view of scope of patentability is that the *State Street*<sup>193</sup> decision actually permits the patentee to command payment of royalty (or in principle to have the right to an injunction against infringement) where federal law imposes penalties on

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<sup>186</sup> Likhovski *supra* note 131 at 31.

<sup>187</sup> Thomas *supra* note 32 at 1175-76.

<sup>188</sup> *Ibid.* at 1176.

<sup>189</sup> See *supra* note 18.

<sup>190</sup> See 35 U.S.C.A. § 287 (c).

<sup>191</sup> *Agreement on Trade-Related Aspects of Intellectual Property Rights*, April 15, 1994, as implemented by the *Marrakesh Agreement Establishing the World Trade Organization*, Annex 1C, *Legal Instruments – Results of the Uruguay Round* vol 3. 31;33 I.L.M. 81 (1994) [as cited by Thomas, *supra* note 32 at 1177].

<sup>192</sup> *Ibid.* art. 27.

<sup>193</sup> *Supra* note 2.

those who fail to comply with the requirements.<sup>194</sup> It cannot have been the intention with any patent system to provide a monopoly for a method (even though computer implemented) to act in compliance with the law.

### 6.3 Non-obviousness

Furthermore, in addition to the discussion of the scope problem, it has been argued that Internet business methods should be rejected simply on the ground of obviousness. As set out in sections 3 and 5, the requirement of nonobviousness prevents inventors from monopolizing an invention that could have been created by any person skilled in a given art: “As such, this requirement promotes efficiency by leaving common knowledge and skills in the public domain”.<sup>195</sup> Thus, the courts should not allow patents for Internet business methods that merely apply traditional business methods to the Internet. “Employing traditional methods of commerce to the Internet may be new and useful, but it is also obvious.”<sup>196</sup> It might be added that in a practical context today, an infringer would have to persuade a US court that it is obvious to computerize the procedure in question. This has been proved to be difficult in recent years. The infringer must provide “clear and convincing evidence” that the motivation existed in the art to combine all elements of the claimed combination.<sup>197</sup>

### 6.4 Business Methods as Trade Secrets or Patents?

Finally, a brief remark should be made on *State Street's*<sup>198</sup> possible effects on inventors who have opted for trade secret protection in the US, rather than patent protection for their business methods. Under the rule in

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<sup>194</sup> See Stern *supra* note 45 at 14 for a more in debt analysis.

<sup>195</sup> Grusd *supra* note 16 at 14.

<sup>196</sup> *Ibid.*

<sup>197</sup> See Stern *supra* note 45 at 17, referring *inter alia* to *C.R. Bard, Inc., v. M3 Systems, Inc.*, 1998 WL 709330 (Fed. Cir. 1998) and *In re Chu*, 66 F.3d 292 (Fed. Cir. 1995).

<sup>198</sup> *Supra* note 2.

*Metallizing Eng'g Co. v. Kenyon Bearing & Auto Parts*,<sup>199</sup> “a firm that put a business method into commercial practice for more than one year, but maintained the method as a trade secret, is barred from obtaining a patent on the invention.”<sup>200</sup> This may have the unpleasant effect that those American firms that followed the traditional view, that business methods was not patentable, might be turned into infringers.

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<sup>199</sup> 153 F.2d 516 (2d Cir. 1946).

<sup>200</sup> Thomas *supra* note 32 at 1163 note 178.

## **7. POLICY CONSIDERATIONS**

As we have seen above, the issue of patenting business methods gives rise to a lot of questions and, in some respect, even apprehension. Interesting suggestions to deal with this new situation have been developed, and this section deals with some of them. As a starting point, a view that suggests other means of incentives than patents will be presented. We then move to a comparison with copyright law in order to see if patent law could and should incorporate copyright doctrines such as *scènes à faire*, given the fact that the patentability of business methods seems to be here to stay. Next is the implementation of a requirement of “technical character” advocated, followed by proposals of an extended use of intellectual property doctrines as the “doctrine of analogous art” and the “doctrine of equivalents”, and an implementation of a new patent regime providing a *sui generis* patent for a limited time with mandatory licensing. Then is a note of a more practical view included, taking a more procedural perspective of how to avoid “poor-quality patents”. Once again, due to the different situations in regard to patenting business methods in US and Europe, this section mainly focuses on how to amend the US patent law. The section concludes with an analysis of the proposals put forward in this section. In conclusion it is argued that the US patent system should be advised by the requirement of “technical character” as used in the EPC, implement a system of opposition, and increase the USPTO’s recourses as to the examination of these kinds of applications. This is argued to be in line with the American patent system’s underlying notion of utility and the strive for harmonization of international patent protection given the international character of the markets today.

### **7.1 Invention and Innovation Theories v. Other Market Incentives**

Economics have noted that patents can serve the three different functions of promoting invention or innovation or both. In this context, “invention” is distinguished from “innovation” as invention refer to initial acts of creation while innovation refers to the process of bringing the product to the market.<sup>201</sup> This section relates to how these standard economic justifications of patent law apply to the context of Internet.

The *invention motivation theory* assumes patents to motivate useful invention would not occur absent patent protection. By assuming this, the theory implies that there is no need to issue patents on inventions that would have been invented if patent protection were unavailable. This leads to a central question of whether patents are a necessary incentive that leads to the particular invention in question.<sup>202</sup> Jared E. Grusd states in his article, “*Internet Business Methods: What Role Does and Should Patent Law Play?*”,<sup>203</sup> that this question is particularly relevant in the Internet context because in many cases, patents are simply not necessary to encourage the invention of new Internet business methods. This is so for two reasons: first, there are other mechanisms (*e.g.* head start advantage, trade secrets, and promotional values) that provide enough incentive for inventors to invest in the creation of new and useful business inventions; and second, the market provides enough incentive for these kinds of inventions.<sup>204</sup>

The head-start advantage may be even more significant in the on-line world than in traditional commerce, suggests Grusd. This would be so due to the fact that the barriers to entry into the market are significantly lower for on-line than off-line firms. This leads, in turn, to many competitors and a situation where consumers would turn to the first firm entered the market.<sup>205</sup>

In respect of patents there are enormous costs associated with patent prosecution and litigation. This causes small firms and start-up firms to rely

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<sup>201</sup> See Grusd *supra* note 16 at 9 referring to Roberto Mazzoleni and Richard Nelson, *Economic Theories About the Benefits and Costs of Patents* (1996) [hereinafter Mazzoleni and Nelson].

<sup>202</sup> Grusd *ibid.* at 9.

<sup>203</sup> *Ibid.*

<sup>204</sup> *Ibid.*

<sup>205</sup> *Ibid.* at 10, he gives among others the example of Amazon.com which have enjoyed a head-start advantage over its competitors as a result of being the first company to sell books over the Internet and investing in its trademark development.

on trade secret protection rather than patent protection.<sup>206</sup> Add to this the fact that there has been enormous growth and development in Internet commerce over the past decades and it seems that there are substantial incentives to conduct business on the Internet in the absence of patent protection: “Competition provides a market-driven incentive to develop superior business methods.”<sup>207</sup> Thus, it does not seem to be clear that the invention motivation theory leads to the conclusion that patents on business methods are necessary. In fact, it seems that “the market and other mechanisms provides adequate incentives, leaving patents to make sense only if they provide something beyond these mechanisms.”<sup>208</sup>

According to the *innovation theory* the purpose of patent law is not to stimulate invention, but rather to stimulate innovation. This is achieved by three main functions. First, patents advertise the presence of inventions. Second, patents facilitate the licensing of inventions. Third, patents enable patent holders to go to capital markets to get development financing.<sup>209</sup>

With reference to the two first parts, this theory suggests that firms are likely to be more willing to advertise and license their business methods under a patent regime than under a non-patent (presumably trade secret) regime.<sup>210</sup> However, Grusd points out that there might be substantial costs resulting from increased innovation. These costs may be divided into four points. First, *competition blocking*, that may occur due to the fact that the patenting of business methods “may signal the end of barrier-free entry to commerce that has been the hallmark of the Internet.”<sup>211</sup> Not only may it bar entrance, but ultimately also existing parties from the market. Second, patenting of business methods may *impede the bridging of gaps between disparate industries*. This might be so because of the fact that “businesses that seem completely different in the physical world may not be that different in the on-line world.”<sup>212</sup> This may lead firms to be less likely to license their

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<sup>206</sup> Grusd *ibid.* at 10, refers in this context to a Harvard Business School study, conducted by Josh Lerner.

<sup>207</sup> *Ibid.* at 10.

<sup>208</sup> *Ibid.* at 11.

<sup>209</sup> *Ibid.* at 11, once again referring to Mazzoleni and Nelson, *supra* note 201, and pointing out that some commentators prefer to divide the theory into four parts. This is a matter of organization rather than of substance though he says.

<sup>210</sup> *Ibid.* at 11-12.

<sup>211</sup> *Ibid.* at 12.

<sup>212</sup> *Ibid.*

business methods to other firms competing on the Internet than to firms competing in the physical world. Third, the costs associated with patents on business methods may *decrease the number of start-up firms*. In addition to the price of achieving and protecting patents, already established companies may also develop patent litigation strategies in order to combat competition.<sup>213</sup> Finally, patents on Internet business methods may result in the “*tragedy of the anticommons*.”<sup>214</sup> This occurs when the various underlying patents needed to create a further invention are held by many different entities. This leads to high transaction costs related to searching and bargaining and may ultimately lead to the underdevelopment of various business methods.<sup>215</sup> Ultimately, business method patents are justified, according to Grusd, “only if the gains associated with increased innovation outweigh the costs associated with reduced competition in the industry in which a patent exists.” Since this is not the case, according to this analysis, another justification for Internet business method patents needs to be found.<sup>216</sup>

Grusd points out that many people argue that this other justification can be found in the third function of patents under the *innovation theory*. Under this theory, patents enable the patent holder to go to capital markets for development financing. He concludes, however, that “although a patent regime may facilitate funding for firms that possess patents, it may also lead to less funding for firms that do not possess patents but that would have received funding in the absence of a patent regime.”<sup>217</sup> This might be so because venture capital firms may be reluctant to fund start-up firms that have profitable, but not yet patented ideas, that in addition may be preempted by another firm’s patent. He concludes by saying that:

patents do not seem necessary to foster invention or innovation in this context. The market or other appropriability mechanisms provide adequate incentives for invention. Additionally, the costs associated with competition blocking and restricted venture capital

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<sup>213</sup> *Ibid.* referring to Andrew Katz, *State Street May Place Start-Ups in Peril*, N.Y.L.J., Supplement: Tech Trends, Jan. 19, 1999 at C.

<sup>214</sup> *Ibid.* referring to the work of Michael A. Heller and Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 *Science* 698, May 1, 1998.

<sup>215</sup> *Ibid.* Note the suggestion that cross-licensing schemes will mitigate the tragedy of the anticommons.

<sup>216</sup> *Ibid.* at 13.

<sup>217</sup> *Ibid.*

availability seem to outweigh the benefits associated with innovation.<sup>218</sup>

The thoughts presented by Grusd certainly demands consideration. However, in order to be fully accepted, they seem to need the support of empirical evidence. Perhaps should they also be viewed from a different perspective, namely that of the underlying justification of a patent system as such, rather than in the context of whether a specific type of patent should be issued or not.

## 7.2 Preemption of *Scènes à Faire*

When reviewing the issue of patents on business methods perceivably extending to such areas of society that might be seen as common to everybody, or even required of everybody, it can be noted that such patents will affect those areas differently. While *State Street*<sup>219</sup> could be said to preempt a portion of federal tax law, another patent might easily be substituted for another, *e.g.* a patent on a security or financial product.<sup>220</sup> Still, the question of to what extent a patent should be allowed to monopolize such features of our society that might be referred to as common knowledge, or of common use, is a valid one.

Copyright law has developed a doctrine that “recognizes that certain genres require certain elements, or at least almost utilize them”.<sup>221</sup> This is the doctrine of *scènes à faire*. It might be compared to information that is considered to be in the public domain. The public domain understood as “not the realm of material that is undeserving of protection, but as a device that permits the rest of the system to work by leaving the raw material of authorship available for authors to use.”<sup>222</sup> The doctrine of *scènes à faire* is

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<sup>218</sup> *Ibid.*

<sup>219</sup> *Supra* note 2.

<sup>220</sup> See *f.i.* the *Merrit Forbes & Co. Inc. v. Newman Inv. Securities Inc.*, 604 F.Supp. 943 (S.D.N.Y. 1985). A copyright case about a security product (a Tender Option Program). Such a product might be appropriate after the *State Street* case but would obviously still provide a multitude of other new securities products on the same time. See Stern *supra* note 45 at 4-6 and 14 for a more extensive discussion.

<sup>221</sup> Stern *ibid.* at 16.

<sup>222</sup> Jessica Litman, *The Public Domain*, 39 Emory Law Journal 4 (1990).

often used in the context of plots for films and literature.<sup>223</sup> As an example of another applicability of *scènes à faire* it can be mentioned that it has been extended to “aspects of computer programs that necessarily result from hardware standards and mechanical specifications software standards and compatibility requirements, computer manufacturer design standards, programming practices, and practices and demands of an industry being served.”<sup>224</sup> In fact, the doctrine of *scènes à faire* has been “extended to practices and demands of any industry being served, so that the concept of expression is now defined or circumscribed in terms of business functionality.”<sup>225</sup>

Patent law, however, does not have a comparable doctrine.<sup>226</sup> But perhaps copyright law in the context of patenting business methods could instruct patent law, since the rationale with the doctrine of *scènes à faire* is that “exclusivity over *scènes à faire* is a substantial impediment to the expressions of other people (and the public’s enjoyment of such expressions).”<sup>227</sup>

Richard H. Stern argues in his paper “*Scope-of-Protection Problems With Patents and Copyrights on Methods of Doing Business*”<sup>228</sup> for the incorporation of the doctrine of *scènes à faire* into US patent law. He does not address the question of whether business methods should be subject to patentability or not; rather, he deals with the issue of how to treat them as part of patentable subject matter. He does not believe that sections 103 and 112 are able to cope with the issue of obviousness of business methods and points out that that leaves it a matter of statutory subject matter under section 101 or nothing, unless *scènes à faire* or something like it is understood as a part of it.<sup>229</sup>

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<sup>223</sup> See *f.i. William v. Crichton*, 84 F.3d 581, 583 (2d Cir. 1996) and *Walker v. Time Life Films, Inc.*, 784 F.2d 44 (2d Cir.), *cert. denied*, 476 U.S. 1159 (1986), as cited by Stern *supra* note 45 at 15.

<sup>224</sup> Stern *ibid.* at 15.

<sup>225</sup> *Ibid* at 16, referring to *Engineering Dynamics, Inc., v. Structural Software, Inc.*, 46 F3d 408, 410 n.2 (5<sup>th</sup> Cir. 1995).

<sup>226</sup> *Ibid.* at 15.

<sup>227</sup> *Ibid.* at 16.

<sup>228</sup> *Supra* note 45.

<sup>229</sup> Stern *ibid.* at 17.

In arguing for such an incorporation he recognizes the difficulties in doing so as to the fact that “copyright laws preferred mode of addressing scope of protection as a function of creative contribution is to concede copyrightability in principle to a work and then adjust the scope of protection”, while patent law, in contrast, “operates much more on an all-or-nothing basis. Either the subject matter is unpatentable and gets no protection or it is patentable and gets the full protection specified in the claims.”<sup>230</sup> Such a difficulty of incorporation should not be insurmountable though, he points out.

He proposes to let patent law embrace *scènes à faire* by merely letting the doctrine inform the court’s interpretation of section 101. The least obtrusive manner to achieve this would be to “[revisit] the issues of State Street in another business-method patent infringement case.”<sup>231</sup> The legal rule should, in essence, state that “the doctrine of *scènes à faire* applies when those wishing to engage in the affected business cannot, as a practical matter, engage in the business without infringing the patent.”<sup>232</sup>

### 7.3 Implementing the Industrial Application

Perhaps one of the most practical and most feasible suggestions on how to determine the appropriate subject-matter for patenting, and thereby to properly respond to the present situation of extensive patenting of business methods in the US, comes from John R. Thomas. In his paper “*The Patenting of the Liberal Professions*,”<sup>233</sup> he takes as his focus patentable processes and, in particular, the business methods addressed in the *State Street*<sup>234</sup> decision. He concludes that the patent eligibility inquiry has been reduced to one of mere utility and that we only recently have come to understand that such techniques as represented by business methods lie within the reach of the [US] patent system.<sup>235</sup> He continues by studying the basic philosophy of technology to present a definition of technology as such,

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<sup>230</sup> *Ibid.* at 18.

<sup>231</sup> *Ibid.* at 20.

<sup>232</sup> *Ibid.*

<sup>233</sup> Thomas *supra* note 32.

<sup>234</sup> *Supra* note 2.

<sup>235</sup> Thomas *supra* note 32 at 1141.

serving his proposed amendment of the US Patent Act. In conclusion, he suggests an implementation of the industrial application, as used in Europe and Japan, to restrict patentable advances to the “repeatable production or transformation of material objects and excluding subject-matter founded upon the aesthetic, social observation or personal skill.”<sup>236</sup>

Thomas notes that “if the only remaining restraints upon patentable subject-matter are the lenient strictures of novelty or utility, then the pretensions of the patent system have expanded vastly beyond its traditional province of industrial technology.”<sup>237</sup> He states that “we have good reasons to doubt whether such innovations [as business methods] lie within the ‘useful Arts’, the constitutional stricture concerning patentable subject-matter”, but continues by noting that, “articulation of a useful topology between technology and other aspects of human culture has proven exceptionally difficult.”<sup>238</sup> After reviewing leading scholars on the philosophy of technology,<sup>239</sup> he states that technology as such may be characterized as “knowledge that is applied toward material enterprise, guided by an orientation to the external environment and the necessity of design.”<sup>240</sup>

This definition should, according to Thomas, inform the adoption by Congress of the requirement of industrial applicability into US patent law. The touchstone of industrial application would exempt from the patent system matters of social observation or human behavior. Along with:

techniques from economics, psychology and social sciences, methods of doing business would also fail to meet the requirement of industrial applicability. Business methods may be amenable to reasoned analysis and intended to make business practices more efficient, but they are not transformative in character. They do not manipulate physical forces to achieve the production or transformation of material objects. Business methods engage economic principles rather than the laws of physics, chemistry or biology. They do not comprise technology and should not be within the grasp of the patent system.

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<sup>236</sup> *Ibid* at 1143.

<sup>237</sup> *Ibid* at 1163.

<sup>238</sup> *Ibid* at 1164-1165.

<sup>239</sup> See reference to *inter alia* Robert E. McGinn, *Science, Technology and Society* (1991); Paul W. DeVore, *Technology: An Introduction* (1980); Carl Mitcham, *Thinking Through Technology: The Path Between Engineering And Philosophy* (1994).

<sup>240</sup> Thomas *supra* note 32 at 1175.

The industrial application standard would also remove matters of aesthetics or personal skill from the patent system. They do not involve the creation or transformation of material objects and are not repeatable in an industrial sense.<sup>241</sup>

Not only does this touchstone parallel much of the teachings of contemporary thought concerning technology, it would also provide a proven criterion that already affect the majority of the world's issued patents. In addition, the TRIPS Agreement expressly allows signatories to impose this requirement,<sup>242</sup> and its adoption would move the US further in the direction of global patent harmonization.<sup>243</sup> However, Thomas analysis does not stand uncontended. As been noted above, his suggestion has been said to merely shift the analysis to a different level, from the concept of “useful arts” to another of “technological arts”.<sup>244</sup> Comparing to the European system though, it does seem quite clear that European patent law finds it easier to meet the expanded view of patentability, given the all underlying requirement of “industrial application”, or “technical character”.

## 7.4 Further considerations

Other suggestions on how to deal with business method patents have also been developed. In connection to the note that business methods should be rejected simply on the ground that they are obvious, a proposal urging the US courts and the USPTO to adopt a broad concept of analogous art have been put forward. Professor Bagley argues in her article *“Internet Business Models Patents: Obvious By Analogy”*<sup>245</sup> that part of the problem of Internet business model patents is the narrow view of analogous art employed by judges and USPTO examiners which largely excludes relevant “real-world” prior art in the determination of the non-obviousness criteria. Consequently,

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<sup>241</sup> *Ibid* at 1181.

<sup>242</sup> The TRIPS Agreement *supra* note 191 Article 27 (1).

<sup>243</sup> Thomas *supra* note 32 at 1184, also citing Harold C. Wegner, *Patent Harmonization* (1993) (noting efforts to harmonize the definition of patentable subject-matter via international agreement).

<sup>244</sup> See Stern *supra* note 45 and section 6.1 on the “Useful Arts v. Liberal Arts” in this paper.

<sup>245</sup> Margo A. Bagley, *Internet Business Model Patents: Obvious By Analogy*, 7 Mich. Telecomm. Tech. L. Rev. 253 (2001) at 258 [hereinafter Bagley].

she notes, part of the solution lies in helping courts and the USPTO to properly define analogous art for a particular invention. This is best done according to Bagley by “appropriately define the scope of Internet business model patent claims by proper application of existing patent law doctrines, to wit, the doctrine of analogous art and the doctrine of equivalents.”<sup>246</sup> Under the doctrine of analogous art, only art in the same field of endeavor as the inventor or reasonably pertinent to the problem facing the inventor can be considered in determining whether a given invention meets the Patent Act’s requirement of non-obviousness. Under the doctrine of equivalents, an accused device or method that does not literally infringe the claims of a patent may still be deemed to infringe if it performs substantially the same function in substantially the same way to achieve substantially the same result, or if there are insubstantial differences between the accused device or method and the claimed invention.<sup>247</sup> Potential abuse of the doctrine of equivalents in the Internet business method context is mainly, according to Bagley, consisting of a lack of properly trained business method examiners, and a lack of business method and software prior art readily available to examiners to consult in assessing the patentability of such methods.<sup>248</sup> Bagley’s proposal has been criticized on the grounds that the doctrine of analogous art is difficult to apply and that the doctrine inherently is arbitrary in defining the applicable scope. This is so because the extent of technology fields from which to cite will depend on how the problem is defined. With a broadly defined problem, the examiner or court can cite from every reference from different fields of technology. In contrast, references from different fields of technology are excluded from the examination of non-obviousness when the problem is narrowly defined.<sup>249</sup> Defining an appropriate measure for assessing the non-obviousness of business model patents or Internet patents might rather require the redefining of the hypothetical person of ordinary skills in the relevant art, properly reflecting real life inventive activities, than applying arbitrary doctrines.<sup>250</sup> US patent law today presumes a single person as inventor, whereas in Europe it is

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<sup>246</sup> *Ibid.*

<sup>247</sup> *Ibid.* and footnote 19.

<sup>248</sup> *Ibid.* at 259.

<sup>249</sup> See Toshiko Takenaka, *Commentary: International and Comparative Law Perspectives on Internet Patents*, 7 Mich. Telecom. Tech. L. Rev. 423 (2001) at 427 [hereinafter Takenaka].

<sup>250</sup> *Ibid.*

more appropriate to think in terms of a group of persons inventing and innovating.

Yet another proposal, though more concerned with non-computer implemented methods, comes from Vincent Chiappetta.<sup>251</sup> He argues for a new patent regime for what he calls the “competitive arts,” that is, claims directed solely to pure competitive arts without computer implementation. He notes that protecting even novel and non-obvious methods of doing business, “and especially the means of competing [the ‘competitive arts’], fits poorly within the doctrinal, historical and policy foundations of traditional patent law and should be avoided.”<sup>252</sup> He recognizes that the “[E]lectronic Age’s disruption of the market’s normal ‘first-to-move lead time’ incentive (through the ease and speed of recognizing, identifying and replicating advances in competitive means) justifies, however, some more modest intellectual property protection.”<sup>253</sup> By noting this, he argues for a new regime providing a *sui generis* protection for competitive art innovation, with a shorter protection time [perhaps one year] and mandatory licensing. This should, according to Chiappetta, be accomplished by melding aspects of patent law and copyright law, creating an “independent ‘competitive arts regime’ designed expressly, and exclusively, to supplement the reduced lead-time incentive while minimizing interference with desirable market forces.”<sup>254</sup>

Chiappetta’s suggestion, to exclude pure competitive arts from patent eligible subject-matter, is in line with the EPC. However, considering that the United States has extensively criticized former proposals of *sui generis* protection and compulsory licensing,<sup>255</sup> it seems likely that such a proposal will face strong objections from the US industry. Furthermore, it has been argued that when Chiappetta interprets “all fields of technology” in the TRIPS agreement, he does this narrowly in order to exclude competitive arts (since the TRIPS Agreement states that patents shall be available and patent rights enjoyable without discrimination as to [any???] field of

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<sup>251</sup> Vincent Chiappetta, *Defining the Proper Scope of Internet Patents: If We Don’t Know Where We Want to Go, We’re Unlikely to Get There*, 7 Mich. Telecomm. Tech. L. Rev. 289 (2001) [hereinafter Chiappetta].

<sup>252</sup> *Ibid.* at 290.

<sup>253</sup> *Ibid.*

<sup>254</sup> *Ibid.*

<sup>255</sup> See Japanese suggestion on *sui generis* protection for computer software proposed by Japan’s Ministry of International Trade and Industry.

technology).<sup>256</sup> This narrow interpretation may give room to developing countries to refuse traditional intellectual property protection for new types of technology that may be developed in the future. It can be argued that, in contrast, the benefit of protecting new types of subject-matter through a traditional intellectual property regime such as patents is obvious. Once competitive arts are incorporated as patent-eligible subject-matter, the duty to provide patent protection on them will automatically be imposed on all WTO member countries. This will effectively serve as a means for international harmonization. With that in mind, and “considering the borderless nature of Internet and e-commerce,” it has been said to be “senseless to introduce a *sui generis* protection scheme, which would require renegotiation of TRIPS.”<sup>257</sup>

Other commentators have also suggested the creation of a lower type of patent protection specifically for Internet business methods and other “low tech” innovations. Key features of such a system do often also include a shorter patent protection term (ranging from 1-5 years), and furthermore, an expedited examination process and a variety of proposed additional features.<sup>258</sup>

## 7.5 Suggestions of procedural nature

Another way of looking at this issue would be to not look at the perceived problems with patents on business methods as such, but to focus on the problems concerned with the actual process of issuing patents. This is not an unimportant aspect of the whole issue of patents on business methods, considering the increased volume of patent applications stemming from the

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<sup>256</sup> Takenaka, *supra* note 249 at 3 and TRIPS, *supra* note 191 Article 27.

<sup>257</sup> Takenaka, *ibid.*

<sup>258</sup> See for instance Bagley, *supra* note 245 at 286 referring to *inter alia* Ann Bartow, *Separating Marketing Innovation Form from Actual Invention: A Proposal for a New, Improved, Lighter, and Better Tasting Form of Patent Protection*, 4 J. Small & Merging Bus. L. 1 (2000); Jeffrey Bezos, *An Open Letter From Jeff Bezos on the Subject of Patents*, <http://www.amazon.com/patents>.

*State Street*<sup>259</sup> decision. In fact, many argue that this development has pushed the US patent system into a crisis.<sup>260</sup>

Robert P. Merges<sup>261</sup> is one scholar who has concentrated on how the patent process could lower the risk of issuing “poor-quality patents,” as in patents that are likely to be held invalid by the courts upon examination. Such prevention can best be achieved by revamping the actual patent examination system in the PTO, he argues. In essence, he calls for “policies that will efficiently coordinate the efforts of both groups to achieve the socially desirable end, which is an appropriate expenditure to determine patent validity.”<sup>262</sup> This should be achieved by a number of reforms involving restructuring jobs and incentives in the PTO in general,<sup>263</sup> and incorporating a system of patent opposition as used in Europe in particular.<sup>264</sup> The idea with such an incorporation would be to efficiently coordinate the efforts of both the PTO and private parties concerned with patents: “[t]he parties that suffer most if a company receives an invalid patent are the company’s competitors. These parties also tend to have the best information about patent validity. Therefore, it is manifestly logical that they participate in the process as early and as thoroughly as possible.”<sup>265</sup> In comparing the European system of opposition with the American one of reexamination,<sup>266</sup> he notes that the system of “opposition” allows for the introduction of physical evidence as well as the testimony of inventors and experts, and occurs early in the patents’ life (an opposition must be filed within nine months of issuance of the patent).<sup>267</sup> The reexamination system only allows reexamination if, in the opinion of the examiner, it raises “a substantial new question of patentability.”<sup>268</sup> That the European system results in a higher rate of patents being revoked, roughly 33% versus 12% in the US,<sup>269</sup> he takes as a valid ground to argue for the incorporation of a similar system. He

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<sup>259</sup> *Supra* note 2.

<sup>260</sup> See *f.i.* Robert P. Merges, *As Many as Six Impossible Patents Before Breakfast: Property Rights For Business Concepts and Patent System Reform*, 14 *Berkeley Technology Law Journal* 577 (1999) at 590-91 [hereinafter Merges].

<sup>261</sup> *Ibid.*

<sup>262</sup> *Ibid.* at 577.

<sup>263</sup> *Ibid.* at 600-609. That view is also supported by Grusd *supra* note 16 at 14.

<sup>264</sup> *Ibid.* at 610-615.

<sup>265</sup> *Ibid.* at 615.

<sup>266</sup> Reexamination can be demanded by anyone under 35 U.S.C. §§ 301-07.

<sup>267</sup> *Ibid.* at 611 note 93.

<sup>268</sup> See 35 U.S.C. § 303(a).

<sup>269</sup> Merges *supra* note 160 at 613.

concludes by noting that we would not be able to decide whether patents for business methods make sense or not until such reforms have been implemented.

## 7.6 Comments in Conclusion

Interesting to note in connection to the commentary and proposals on how to view patents on business methods and how to deal with them, is that all US commentators examining the issue do so from the viewpoint that such patents are here to stay. Thus, it is not longer a question of how to, if possible, avoid them, but of how to deal with them. The situation is not quite like that in Europe, as have been mentioned several times earlier. Business methods are to some extent patentable in Europe, but the patentable subject matter seem to rest firmly on the requirement for technical character and does not seem likely to develop in the same way as the situation in the United States. Europe has not had any equivalent to the *State Street*<sup>270</sup> case.

As to what reasonably should be done with respect to the patenting of business methods in the US an obvious solution is of course not easy to pinpoint. There are, in this respect, a number of issues to consider. First, regarding the patenting of an abstract business method as such, there seems to be a general consensus as to the unpatentability of such subject-matter. This does not really seem to demand much further consideration. It becomes more difficult in the context of computer-implemented business methods, and then especially in the Internet context.

One side of a seemingly endless debate insists that software and business methods are the subject of copyright law rather than of patent law. But today, they are to a large extent a part of patent law, a fact that should give some value to the proposal of the incorporation of the doctrine of *scènes à faire*, or something like it. This is so, because the information that forms the basis of software and business methods often could be considered to already be a part of the “public domain”, since they are often comprised of parts of

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<sup>270</sup> *Supra* note 2.

already existing developments, and therefore available to everybody. One can certainly ask if the patenting of software and business methods in particular is a good development. To adopt old solutions and methods of doing business, like auctions, to the contemporary technology, does this really make them new? In many cases useful for certain, but hardly new. Would it not make more sense to view methods of doing business as a part of our common knowledge? The trick is obviously to argue that the adoption of the method in question into the technology cannot be perceived as obvious since the technology did not exist before. Amazon.com's "one-click" patent, for instance, would not have been possible without the existence of Internet. But the argument that these methods are obvious for one skilled in the art does still seem valid, or at least important, to put forward. Just because the technology was not anticipated does not make the ideas new and it could perhaps be argued that any new technology could adopt the same ideas. The *State Street* decision seems to preempt adoption into all future technologies of business methods patented today.

The question of novelty and obviousness lies of course in the prior art. The more information regarding prior art to a claim, the greater chance of the claim being rejected on grounds of non-novelty or obviousness. Of course the opposite goes for a claim with none or a small amount of prior art related to it. One of the problems the patent offices are facing concerning applications for business methods is that the amount of information concerned with prior art is just not enough yet, given that these patents are of a fairly new type. The American PTO is then often forced to issue a patent. A fundamental problem seems to exist in the question of what kind of prior art to search. A solution to the problem may just be to provide the examiners and the courts with a greater amount of information. But if this should be done by the implementation of a doctrine like the one of analogous [and equivalent] art does not seem clear, given its arbitrary result as to the prior art to be searched. Proposals concerned with this issue do have a lot to them, but they often seem to be unable to reach the whole way. To implement a doctrine like *scènes à faire* may very well work as a bar to claims to business methods on the ground that they are already part of the common knowledge or common use and therefore not patentable subject-matter at the outset. But then again, this does not seem to deal properly with the fundamental issue of what to compare them to. Such a doctrine could of course be structured as to automatically bar all methods of doing business

from patentability, but it seems obvious though that this could be circumscribed with clever drafting of the claims.

Better then to implement a requirement that is able to deal with all kinds of claims at the outset. The requirement of “technical character” clearly appears to be a reasonable threshold capable of restricting the patent system from unwanted claims not concerned with technical solutions or “inventions”. Granted technology has to be defined in the light of the “useful arts”, but this seem to be the most reasonable way to proceed, for a number of reasons. First, it would provide a sound basis for what can be viewed as patentable subject-matter and furthermore provide a fairly easy way of disregarding claims to abstract methods or processes. Not to mention that the requirement as such has been proven in other systems. Second, it seems to be in harmony with the fundamental notion of utility upon which the American patent system largely rests. Finally, it would be a step towards harmonization between the largest patent systems of the world, a notion that is becoming more and more important considering the global marketplaces of our time. The requisite for technical character should furthermore be combined with a system of opposition similar to the one in EPC, and increased resources to the USPTO in order to make it more ready and able to examine these special and often very complex applications and the prior art related to them.<sup>271</sup>

An element of a more practical nature is the possible effects on the Internet commerce in terms of barred market entrance and reduced competition. Even if a requirement of technical character, or something else to impede this development was implemented, patents on business methods still have been issued and will be issued until that happens. Can the Internet, as it is perceived today, remain a free and open market, open to practically everyone if broad patents on business methods are issued? Or put in a more economic terminology, are the gains to society, in the form of enhanced invention and innovation, exceeding the costs stemming from limited competition and market access? If not, are patents really possible to defend? Arguments to the extent that patents do not provide the incentive for

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<sup>271</sup> A process that in fact seem to be ongoing with the USPTO hiring increased numbers of examiners with relevant business experience and implementing procedures in order to improve examination quality. See USPTO White Paper, *Automated Financial Management Data Processing Methods (Business Methods)*, United States Patent and Trademark Office, July 19, 2000.

invention and innovation they are supposed to in certain business environments, and especially in the Internet context, certainly demands consideration. But such reasoning seems to belong more to the fundamental reasoning concerning justification of the patent system in the first place, rather than in a discussion as to whether certain kind of patents should be allowed or not. The constant research and debate, as to whether the patent system fulfills the aims it sets out to fulfill is of course a good one. But the reasoning and conclusion in this case, that other types of incentives should be created to promote the Internet, seems to result in the creation of a “patent-free sphere”. Such a result does not, however, seem to be in agreement with the TRIPS Agreement.<sup>272</sup>

This section therefore concludes that the patenting of business methods *as such* definitely goes against the intentions of a modern patent system because a business method *as such* is more of an abstract method, process, or idea, rather than a tangible result of invention or innovation. Furthermore, such a method should be considered patentable subject-matter only if it holds a technical character, such as expressed in the EPC. This notion is in agreement with the underlying justifications of the American patent system and also serves to enhance international patent harmonization. It should also be combined with the implementation of a system of opposition in the United States and increased resources for diligent patent examination.

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<sup>272</sup> The TRIPS Agreement *supra* 191.

## 8. THE EUROPEAN PERSPECTIVE

Regarding the patentability of business methods, the US patent system is far more open than the European one. This being said, one should be aware that the patenting of business methods in Europe is an issue and that it has been the subject for much consideration. Perhaps the best understanding of the general view of the matter in Europe is provided by a recent consultation made by the European Commission.<sup>273</sup> The aim of the consultation was to seek the views of interested parties, the public at large, and the Member States [of the EU] in order to help the European Commission formulate a policy that strikes the right balance between promoting innovation through the possibility of obtaining patents for computer-implemented inventions and ensuring adequate competition in the market place.<sup>274</sup> In doing so, the Commission made available on its website a consultation paper inviting comments on the preferred scope of the harmonization outlined above. The paper included a number of proposed “Key Elements” for a harmonized approach to the patentability of computer-implemented inventions in the European Community.<sup>275</sup> A total of 1447 responses were received, from individuals in all EU and EEA member states apart from Liechtenstein, various CEEC countries, the United States, Australia and South Africa.

Almost all of the responses fell into one of two distinct groups. (1) *The Restrictive Approach* was opposed to most software patents. The members of this group - students, academics, engineers, and start-up companies - expressed fears as to threats to the open-source movement and SMEs (small and medium sized enterprises), lack of patenting resource and expertise, fear of litigation, and negative impact on standards for interoperability. They proposed to severely restrict the patentability for software. The other group, (2) *The Liberal Approach* wanted to apply traditional criteria to computer-implemented inventions. The group, consisting of lawyers, established industry players, and government agencies, was concerned with the

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<sup>273</sup> European Commission, *The Results of the European Commission Consultation Exercise on the Patentability of Computer Implemented Inventions*, (Oct. 19, 2000) <[http://www.europa.eu.int/comm/internal\\_market/en.indprop/softpaten.htm](http://www.europa.eu.int/comm/internal_market/en.indprop/softpaten.htm)> (2001-09-17).

<sup>274</sup> See *ibid.* at 3.

<sup>275</sup> See *ibid.* for a more in-depth view of the specific questions asked.

protection of development investment, equality with the United States, and the opening up of global markets. They advocated harmonization of the application of EPO practice and the application of patentability criteria to software that was slightly more liberal than those proposed in the Commission consultation paper. It was clear that the group opposed to software patents numerically dominated the response (91%). It could be argued though that an “economic” majority was in favor of patents on computer-implemented inventions. Ultimately, the weighting of the two points of view is a political matter.<sup>276</sup> Interesting though is to notice that both groups counseled extreme care with patenting business methods.

That European players caution care regarding the patenting of business methods might explain a development that perhaps will prove to Europe’s disadvantage. It seems that due to the *State Street*<sup>277</sup> decision and the storm of applications and issued patents following it, US citizens (or rather US-based companies) are much keener in applying for patents on business methods than their European counterparts. Studies show that US nationals have filed 52% of all applications for computer-implemented business methods in Europe.<sup>278</sup> However, between 1996 and 1999, US nationals only filed around 28% of all EPO applications. Even though the referred study above is not very recent, it shows that American companies, for a variety of reasons (not least differences between American and European patent law) are taking advantage of a business opportunity that European companies may be missing.<sup>279</sup>

The growth in the number of business method applications made to the EPO coincides with the rise of the Internet as a commercial medium. Since 1996 the increase in patent filing has been slow but steady. It makes sense though for US companies to seek corollary protection in Europe when they file applications in the US. That the patent law relating to business method patents is not the same in Europe as in the US does not seem to have stopped US nationals from making applications in Europe. The US applications may have been made on the basis that patents are granted for this subject-matter in the US and therefore at least some protection should

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<sup>276</sup> *Ibid.* at 4.

<sup>277</sup> *Supra* note 2.

<sup>278</sup> Survey of the EPO covering patents published between 15 July 1998 and 31 July 2000, see Likhovski, *supra* note 131 at 7 and 41.

<sup>279</sup> Likhovski, *ibid.* at 7.

also be available in Europe (rather than making an application solely on the basis of whether it is likely to proceed to grant).<sup>280</sup> In addition, it can be argued that the existence of a patent application in itself puts third parties on notice of potential rights and so has an influence on the market place.<sup>281</sup> As it can take years for an application to proceed to grant, this influence can be significant even if the patent is never granted. This should be especially the case in a volatile market such as the Internet. The low share of applications by European based companies might suggest that they are not aware of the possibilities of patenting new and inventive business methods. In fact, this is stated in the survey mentioned above along with anecdotal evidence suggesting that companies also are concerned with the costs related to a patent application and about revealing information that would otherwise have been kept secret.<sup>282</sup> This discrepancy in attitude of filing for patents on business methods might as said prove to Europe's disadvantage from a commercial viewpoint. By securing a monopoly over a business method, the holder might be assured a significant commercial advantage. With that in mind, especially the lack of knowledge in relation to the patentability of business methods is important to remedy in Europe. European companies must act so to not let American players gain commercial advantages on their expense. This can only be combined with the combined effects of the sharing of knowledge and the adoption of a more aggressive approach towards the patenting of business methods.

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<sup>280</sup> Michael Molineaux and Paul Stevens, *Business Method Patents: Europe Falls Behind the US*, Global Counsel, November 2000, at 25 [hereinafter Molineaux].

<sup>281</sup> *Ibid.*

<sup>282</sup> See *supra* note 278 and Molineaux, *supra* note 180 at 25.

## 9. CONCLUSIONS

That the *State Street*<sup>283</sup> decision ushered the view of patentable subject-matter in the United States into a new era is unquestionable (even if the Court actually argued that the business method exception never really existed). A company that develops a new way of conducting business (especially e-commerce) may today be able to prevent others from using it for almost two decades. The USPTO experienced somewhat of a boom in applications for patents on different methods, and the legal journals have been flooded with commentaries on the subject, even the press has given extensive room for the debate. The situation is infected, with one side utterly opposed to this sort of patenting, wanting all software related inventions to be part of the common knowledge -“the open source movement”- and the other side proposing this development, seeing new achievements as the result of labor equally worthy of protection as that offered to other inventors. Companies today often find themselves having to either apply for patent, even if they originally are opposed of patents on software and business methods,<sup>284</sup> or to publish their solutions, *e.g.* on the Internet, in order to make them unpatentable for everybody else. The legal debate on the subject of patenting business methods has been lively, resulting in what seems as a general consensus that patents on business methods are here to stay in the United States and that they, in general, are of subject-matter that should not be patentable. The reasons are ranging from the view that business methods are “obvious” as such, that such patents impede development rather that promote it, that they are capable of preempting any end use to which they can be put, to the high social costs that are supposed to be connected to them, resulting in a variety of legal proposals on how the patent system should deal with business methods. Such proposals include the incorporation of copyright law’s doctrine of *scènes à faire*, a more extensive use of the doctrines of analogous art and equivalents, the creation of a new patent regime providing a *sui generis* protection for non-computer implemented methods (“the competitive arts”) with a shorter period of protection, and the incorporation of a requirement for “technical character” equivalent to the criteria used in the EPC. This paper concludes that abstract

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<sup>283</sup> *Supra* note 2.

<sup>284</sup> See for instance the reasoning in Jeff Bezo’s open letter, *supra* note 258.

methods of doing business should not *as such* be patentable subject-matter. It is therefore argued that the latter criteria of “technical character” should be incorporated into US patent law since it seems to be the requirement best equipped to deny patentability to methods of an abstract character. It is in line with the underlying justifications of the American patent system and also serves to enhance harmonization of patent law from an international perspective. Furthermore, such incorporation should be combined with the adoption of the system of opposition as used in the EPC and with increased resources to the USPTO.

The overall question this paper set out to examine is how, if at all, the *State Street* decision and the subsequent change of attitude towards the patentability of business methods, will affect, or has affected, the European patent system. It is argued that the European system has not been, and will not be, subject to a development of patenting business methods as seen in the United States. This is so mainly because of the fundamental requirement of “technical character” embodied in the EPC. Even though the explicit exception for business methods in Article 52(c) EPC may be removed in a near future, this does not seem to change the unpatentability of business methods *as such*.

It remains to point out that although abstract business methods may not be monopolized in Europe, the patentability of new technological implementations of both novel and existing business methods is bound to raise the same vexing questions facing American policy makers today. Affected parties in Europe should be aware of the issues involved and see to it that any debate on the subject is an informed one, as initiated by the European Commission. Furthermore, lawyers dealing with these issues, and companies with perhaps patentable business methods, should adopt a more aggressive stance on the matter. Even though a business method cannot be patented under the EPC *as such*, there are certain methods that can be. It is important that European companies, and their representatives, are aware of the extent and the limitations of patentable subject-matter under the EPC so as to not let go of business opportunities due to lack of patent strategy and knowledge.

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