US SOFTWARE AND BUSINESS METHOD PATENTS: STIMULUS TO INNOVATION OR LITIGATION?

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ABSTRACT
In the US continued and increased issuance of software and business method patents is criticized by many. Some argue that software and business method patents do not stimulate innovation but impede software development and encourage patent litigation. Beyond anecdotal evidence, no systematic study of the extent of patent litigation due to the new software and business method patents is available. Data is obtained from various databases and is analyzed to ascertain if there is a connection between patent litigation and these new classes of patents.

KEYWORDS
Patents, software, business methods, litigation, Intellectual property, patent infringement.

1. INTRODUCTION
In the United States, recognition of the importance for the creation of temporary monopolies to stimulate invention and innovation dates back to the U.S. Constitution (U.S. Constitution, Article I, Section 8.) Patents in the United States are governed by the Patent Act (35 U.S. Code). US Patent law provide exclusive rights through patents for twenty years to inventors of processes, machines, articles of manufacture, and compositions of matter. To be patentable, the object of invention must be novel, useful and non-obvious.

Technological innovation is recognized as a major source of economic growth. Each succeeding generation is materially better off, primarily due to improved products, processes and technologies. Solow (1957) has shown that technological change is the major contributor to nonfarm productivity growth between 1909 and 1949. A shocking revelation (for economists at that time) of Solow’s findings is that increased capital intensity contributed very little (about 12.5%, later revised to 19%) to productivity growth. In contrast, technological progress and improved labor force accounted for the remainder of the productivity growth. With the understanding of extent of dependence of economic growth on technological innovation, the importance of research and development (R&D) became obvious.

Innovation, in many ways, is a “public good.” An innovation created by one firm can be copied or imitated by other firms at little or no cost. No firm is willing to undertake R&D to create innovation since R&D is often very expensive and imitation or copying is nearly costless. Incentives for undertaking R&D is provided by patents which offer the innovating firm temporary monopoly, allowing that firm to recover its R&D costs. Many agree that patents, despite attendant inefficiencies of monopolies, are perhaps the best system to provide incentives for innovation.

The need for granting patents to foster inventive activity and to induce higher levels of R&D outlays is firmly entrenched into economic and business thinking. The US Supreme Court’s decision in Gottschalk v. Benson in 1972 led many to believe that algorithms and hence software are not patentable (McDonald (1998)). During the ensuing years, in order to obtain a software patent, it was necessary to incorporate with
either a tangible machine, product, or process. Disguising software components within a tangible object in order to patent software was a popular patenting strategy. For instance, Cohen and Lemley state (2001, p. 9), “Under this approach, software was patentable subject matter, but only if the applicant recited the magic words and pretended that she was patenting something else entirely.”

By the middle of the 1990’s the views of the US courts began changing to allow patentability of software inventions. In 1994 Microsoft was found to infringe on data compression software patented by Stac Electronics and fined $120 million. By 1996 US Patents and Trademark Office (USPTO) issued examination guidelines for computer-related inventions.

2. SOFTWARE AND BUSINESS METHOD PATENT CONTROVERSIES

Granting of software patents is not without controversy. The Open Source Software (OSS) community is opposed to software patenting claiming that it victimizes software developers and obstructs development of software. The Foundation for a Free Information Infrastructure (FFII) presents a strong case against software patents giving examples of how software patenting hinders development (FFII, 2003.) Even more controversial than the software patents are the new class of business methods patents. These patents are also referred to as “Class 705” patents. In 1998, the Federal Circuit Court sided with patentability of software-based inventions in its’ State Street Bank decision. This opened the doors for very broad class of patents involving Internet in business operations. Often, the underlying business method itself may be well known to all, but the company that obtains the patent applying this method to Internet gains the patent protection. Many of the business method patents are too broad and potentially every one of us infringe on one or more patents every time we are connected to the Internet. For instance, British Telecom owns the patent on hyperlinks (US Patent No. 4,873,662,) DE Technologies has patented technology to manage international trade (US Patent No. 6,460,020,) and Teledyne obtained patents for gathering information over the world wide web (US patents 5,883,940 and 6,097,792.)

Software patents and business method patents, due to their broad and far-reaching claims are subject to interpretation. DE Technologies patents can be (and some times is) interpreted to cover any international transaction over the Internet. With this confusion about the scope of the patents, intellectual property rights litigations have increased. The Recent British Telecom cases illustrates the vast potential for litigation. Conventional wisdom suggests that the hyperlink metaphor is a part of the WWW, and hence an open standard. However, British Telecom believed it held the patent on all hyperlink technologies. British Telecom had contacted Prodigy and 16 other ISPs, including America Online to license their hyperlink patent. When they refused, British Telecom pursued Prodigy as a test case. In August 2002 the U.S. District Court dismissed British Telecom’s claim.

An inventor that did not obtain a patent for an invention can be sued by another firm or individual that later patented that invention. This apparent injustice led many firms to patent every potential patentable invention, however minor it might be. Many dubbed this dash to patent all the potential inventions as “patent race,” (Ignatius, 2000.) The vocabulary of patent races is reminiscent of nuclear arms race – terms including patent disarmament, patent non-proliferation and offensive use of patents were coined. To reduce patenting of trivial inventions and subsequent litigation thereof, the patent laws of the United States were amended by the American Inventors Protection Act of 1999, (AIPA). An important provision of AIPA is the First Inventor Defense. This defense against patent infringement can be raised when the invention is in use for one year or more before a patent application is filed for the invention.

3. POTENTIAL PATENT ABUSE

In the recent years the patent process has come under sharp criticism. Patents are alleged to have been used not just to protect intellectual property but to achieve goals not foreseen by the patent laws. Some alleged ways in which patents have been used in unethical fashion are listed below:
3.1 Use of Patents for Extortion

PanIP, a technology development company based in San Diego, sent notices to 50 small electronic retailers (located outside California) at a time threatening to sue in California if licensing fee of $5,000 is not paid for its standard e-commerce credit check patents. Few of the electronic retailers paid the license fee knowing that court costs will be higher than the license fee. Many (Sloat, 2002) equate selective enforcement of questionable patents on smaller companies that cannot afford legal costs as high-tech extortion.

3.2 Use of Patents to Silence Critics

Gregory Aharonian is an outspoken critic of US patent system, especially software and business method patents, runs a patent news letter. He is frequently critical of TechSearch, LLC, a intellectual property management company. TechSearch filed a patent infringement suit against Aharonian (Thomas, 2002.) The company claims he is infringing on its’ remote query communication system patent. In reality, every user of a webservice is in violation of this questionable patent. Harassing a critic with patent infringement that potentially applies to any web user is definitely not what is intended by patent laws.

3.3 Use of Patents for Tax Avoidance

Many companies have donated patents with estimated values in the hundreds of millions of dollars. These donations qualify for tax deductions and generate sizable savings on income taxes. These tax incentives can give rise to the donation of worthless patents at inflated values. For example, SBC Communications donated patents covering virus screening valued at $7.3 million to the University of Texas. The patent is not expected to generate any revenue for the university, but it surely will reduce SBC Communications’ tax liability.

3.4 Use of Patents as a Defense in Future Patent Litigations

In section 2 we have discussed that many companies are patenting inventions that they would not normally patent for defensive purposes. The prior use defense of AIPA may protect companies to some extent from patent infringement law suits, yet patenting of innovations for defensive purposes appears to be prevalent.

4. PATENT LITIGATION

Anecdotal evidence suggests that in the US the patent infringement litigation is increasing. There is no systematic study to indicate if in fact the above observation is valid. In this research we study the trends in patent litigation and test if software and business method patents are systematically different from other patents in terms of claims for monetary damages, judgments and chances of winning patent infringement claims.

4.1 Research Questions

Our research questions are:
1) Is there an increasing incidence of patent litigation over time?
2) Do software and business method patents have higher rates of patent litigation than all other patents?
3) Are the requested monetary damages of software and business method patents, on the average, higher than all other patents? and
4) Are the probabilities of obtaining favorable judgment in patent litigation systematically different for software and business method patents and all other patents?
4.2 Data

As previously mentioned, software was combined with a tangible machine, product or process to qualify for a patent. Consequently, it is difficult to ascertain which patents are software patents. The Organization for Economic Cooperation and Development (OECD) classifies the following US patent classes: 345, 701-704, 706, 707, 716 and 717 as software patents. Three different sources of US patent data are utilized: 1) United States Patent and Trademark Office (USPTO) data available on CD-ROM, 2) patent database available online at www.uspto.gov, and 3) CASSIS database available at patent and trademark depository libraries (SIBL of New York Public Library is one such depository library.) The litigation information is obtained from Westlaw database of Thomson West. Westlaw contains patent litigation decisions at all federal courts and Supreme Court of the US. Admittedly, the court decisions do not cover full range of patent litigation. In particular, it does not include pending litigation and the law suits yet to be decided. To capture the full extent of litigation a broader set of databases including Lexis/Nexis will be searched at a later stage to scan the business wire and public relations wire.

4.3 Preliminary Results

The Table 1 shows preliminary results obtained from Westlaw database about the number of all patent cases and patent infringement cases. All patent litigation includes not only patent infringement, but also litigation regarding validity of patents, licensing disputes, ownership and other issues. This table also includes patent totals of all patents, software patents and “705” patents.

<table>
<thead>
<tr>
<th>Year</th>
<th>All Patents</th>
<th>Software Patents</th>
<th>“705” Patents</th>
<th>All Patent Cases</th>
<th>Patent Infringement Cases</th>
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<tbody>
<tr>
<td>1990</td>
<td>90,421</td>
<td>2,164</td>
<td>161</td>
<td>152</td>
<td>113</td>
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<tr>
<td>1991</td>
<td>96,561</td>
<td>2,281</td>
<td>161</td>
<td>159</td>
<td>124</td>
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<td>1992</td>
<td>97,473</td>
<td>2,385</td>
<td>157</td>
<td>156</td>
<td>111</td>
</tr>
<tr>
<td>1993</td>
<td>98,385</td>
<td>2,828</td>
<td>250</td>
<td>173</td>
<td>138</td>
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<tr>
<td>1994</td>
<td>101,695</td>
<td>3,240</td>
<td>268</td>
<td>202</td>
<td>161</td>
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<tr>
<td>1995</td>
<td>101,432</td>
<td>3,620</td>
<td>203</td>
<td>242</td>
<td>180</td>
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<tr>
<td>1996</td>
<td>109,654</td>
<td>4,494</td>
<td>274</td>
<td>230</td>
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<tr>
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<td>112,019</td>
<td>4,858</td>
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<td>147,574</td>
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<td>2002</td>
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<td>883</td>
<td>477</td>
<td>370</td>
</tr>
</tbody>
</table>

5. CONCLUSIONS

Preliminary analysis indicates a greater growth rate in 705 and software patents. From 1990 to 2002 there was a 15% growth rate in software and “705” patents compared to at 5.4% growth rate in all other patents. Patent infringement and litigation cases grew at a rate of 11%; over two times the patent growth rate. Further analysis is necessary to determine the statistical relevance of this data. To reach precise conclusions case by case analysis is necessary to discern if the cases litigated are software, “705”, or non-software.

REFERENCES

Available upon request.