

1 July 2009

## **SUBMISSION on the Patents Bill**

To the Commerce Committee

### **Introduction**

Submission from David Lane and Robert Fraser on behalf of Egressive Limited, an open source software company based in Christchurch. Robert and David are the owners and directors of Egressive.

We have worked in the software industry professionally for 14 and 22 years respectively.

We wish to appear before the committee to speak to our submission.

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We wish that the following also appear in support of our submission:

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### **1 Summary**

- 1.1 The Patents Bill has not sufficiently considered the negative impact patents on computer software will have on consumers and businesses in New Zealand.
- 1.2 Computer software is covered by Copyright law. Article 10 paragraph 1 of TRIPs<sup>1</sup> allows for this.
- 1.3 All computer software development builds on previous software development.
- 1.4 Computer software patents would be detrimental to building an innovative software development industry in New Zealand. Because all software builds on other software, computer software patents create substantial liabilities, which translate to untenable costs to computer software development businesses. This has negative downstream effects on all industry in New Zealand, given that all industry in New Zealand relies on computer software.
- 1.5 Computer software patents are neither necessary nor desirable.
- 1.6 Computer software patents should be explicitly excluded from the Patents Bill.

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<sup>1</sup> WTO's Agreement on Trade-Related Aspects of Intellectual Property Rights

## **2 Insufficient consideration of computer software**

- 2.1 14 submissions were received in 2002 on Business Methods and Software<sup>2</sup>, which were not sufficient, not comprehensive and, due to the technology industry's rate of change, are now outdated.
- 2.2 The bill mentions "computer software" only once where it states that "Contentious issues including ... computer software and business methods, will be dealt with in Stage 3 of the review". However stage 3 of the review does not appear to have considered computer software, and there is no mention of software in the proposed Act.
- 2.3 In the first reading of 5 May 2009, computer software was only mentioned only once, by Green party MP Kevin Hague<sup>3</sup>. Kevin Hague understands the negative impact that patents have on computer software and we quote his speech later in this submission.
- 2.4 We could not find any other points where computer software has been considered in the eight-year review of the Patents Act. Clearly either more work needs to go into the bill on this issue before it can be passed, or software should be explicitly excluded. The bill itself states that computer software needs special consideration in the review, which does not appear to have happened. We would prefer that computer software patents be explicitly excluded in the bill.

## **3 Negative impacts of computer software patents**

- 3.1 Software patents inhibit innovation<sup>4</sup>. A summary of some general issues that commonly result from computer software patents follows:
- 3.2 Software patents make it too easy for patent-owners to monopolise a market, which is anti-competitive, and always bad for consumers. Overseas precedents show that even the unsubstantiated threat of patent infringement proceedings is enough to thwart investment in otherwise compelling software development projects. This is becoming a strategy for some dominant software corporations to discourage competitors<sup>5</sup>.
- 3.3 Software patents make it easy for patent-owners to manipulate and bully customers or competing organizations. An example is the LZW patent awarded to Unisys. After quietly holding the patent until it was in widespread use, Unisys then aggressively began pursuing fees against developers and users of software that made use of the LZW algorithm.<sup>6</sup>
- 3.4 Software patents make it difficult or impossible for standards to be authored and implemented.
- 3.5 Software patents discourage software interoperability, such as opening or creating files in formats of a different software vendor, and can even make it difficult or impossible.
- 3.6 Software patents lower competition, which lowers quality of software and raises prices to consumers.
- 3.7 Software innovation is cheap, but software patents are expensive, putting them out of reach of small and medium-sized businesses.
- 3.8 Few people have skills to assess software patents. This affects the ability of Patent offices around the world to effectively assess software patent (a good example is the infamous

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2 Summary of 14 submissions in 2002 [http://www.med.govt.nz/templates/MultipageDocumentPage\\_\\_\\_\\_\\_1443.aspx](http://www.med.govt.nz/templates/MultipageDocumentPage_____1443.aspx)

3 MP Kevin Hague on computer software at the first reading [http://theyworkforyou.co.nz/bills/patents/2009/may/05/first\\_reading#green\\_9](http://theyworkforyou.co.nz/bills/patents/2009/may/05/first_reading#green_9)

4 SWPats.org, End Software Patents wiki <http://swpat.org/>

5 Microsoft's Steve Ballmer claims that open source Linux operating system violates numerous Microsoft patents: <http://blog.seattlepi.com/microsoft/archives/108806.asp>

6 <http://everything2.com/title/submarine%2520patent>

Amazon “One Click” patent<sup>7</sup>, which despite being both trivial and a business method, was awarded a patent in more than one jurisdiction and is described in more detail below). This scarcity of expertise also increases the cost of applying for patents, and therefore the downstream cost of licensing a patent.

### 3.9 Green party MP Kevin Hague sums it up well:

"I will begin by looking briefly at software. The bill proposes that software should be patentable; the opposite direction to that being pursued by the European Union. This is a very bad idea. The foremost theorist in this area is Richard Stallman<sup>8</sup>. Stallman eloquently argues that the use of software patents stifles creativity, massively reduces efficiency, and can lead to whole areas of software usefulness remaining unexplored. Software patents are a substantial cause of software incompatibility, for example. He draws an analogy with the composition of a symphony. Suppose someone had patented particular chord progressions, sequences of notes, or combinations of instruments playing at the same time. What sort of problem would Beethoven have had? We regard him as a brilliant and innovative composer, but he wrote symphonies using a musical vocabulary comprised of very many musical ideas developed by multiple composers. Stallman argues that even a genius software programmer must draw on a standard vocabulary of programming ideas. If software patents are permitted, then the programmer cannot draw on such ideas without infringing patents. The consequences are that whole areas of software development are avoided lest software developers breach patents, and in other areas inefficient or otherwise unsatisfactory programs remain in use because it is not technically feasible to develop better options because of this restriction. In this area patents are clearly a brake and a hindrance on innovation.

"Stallman also makes some other points. He points out that the 20-year duration of patent coverage may be reasonable for a new mousetrap, but is effectively forever for a software idea—think back to the software that we were using in 1989. He also notes that it is effectively impossible for somebody developing a new program to be aware of all the patents that may apply to her or his area of work. In the United States there are over 100,000 software patents—possibly as many as 200,000. It is hard to count because they keep growing and growing at a faster and faster rate. It is not possible to be aware of all the patents that may apply, and, in general, it is not feasible to research the matter."

- 3.10 One solution to the issues of software patents might be to significantly lower the validity of software patents. However this would be a complicated law to control and not solve the core problem of computer software patents. Computer software is already covered by Copyright law, and there is no need for patents on software.

## 4 **Non-technical Analogy**

- 4.1 For the purposes of illustrating the implications of computer software patents on New Zealand society, please consider the following imaginary scenario:

The publishing industry uses a number of technologies and conventions. Imagine that somehow, the following writing and publishing devices were patented by a single multinational corporation:

- "printing" – the process of using ink to make markings on paper, which in turn is bound together to comprise a complete work of literature or non-fiction
- the "index" – a list of words and page numbers allowing a book reader to identify all the

<sup>7</sup> see <http://v3.espacenet.com/publicationDetails/biblio?CC=US&NR=5960411A&KC=A&FT=D&date=19990928>

<sup>8</sup> see [http://en.wikipedia.org/wiki/Richard\\_Stallman](http://en.wikipedia.org/wiki/Richard_Stallman)

occurrences of a word or phrase in a printed work

- the "bullet list" to denote a series of elements related to a single topic, and
- the process of building the exhaustive description of a procedure or set of procedures which fully specifies what does and does not comprise that procedure.

Imagine that every entity – commercial, governmental, or educational – who is a publisher, or who develops tools for publishers, is contacted by the multinational corporation and told that they must enter into an agreement with the corporate patent holder or be sued for patent infringement. In that negotiating that agreement, the patent holder holds all the cards because they have a *government granted monopoly* on those four procedures.

- 4.2 All would-be publishers would either be forced to pay the royalty required by the corporate patent holder, or would have to cease their publishing activities.
- 4.3 At the very least, this arrangement would give the patent holding corporation the ability to effectively tax all consumers of published goods for 20 years, and would have the ability to completely control the publishing industry to maximise their profit simply by varying terms in their license agreements with publishers and publishing tool providers. They could hobble any would-be competitors with hugely unfavourable terms.
- 4.4 Government, educational institutions and businesses would be seriously affected as the licence fees would increase printing costs. Competition would be limited, further increasing prices. Innovation in printing would be inhibited due to the requirement to pay royalties to the patent holder for improvements that are covered by the patent. If the patent holder decided that the improvements could result in competition for their products, they could revoke or withhold licences.
- 4.5 Downstream effects could include poorer decision making by government and affect the entire democratic process, as communications between politicians, government agencies and with voters would be limited by cost constraints.
- 4.6 Education levels would decline if there are limits on books or papers that could be published. Businesses would have to reduce the amount of advertising they could do, resulting in fewer sales. The only entity that profits is the patent holder.

## 5 The Implications of Software Patents

- 5.1 The scenario outlined above certainly sounds ridiculous, and *it is...* yet this is exactly the sort of scenario that awaits the New Zealand software industry, particularly smaller more innovative businesses, if software patents are not explicitly excluded from the Patents Bill.
- 5.2 "Trivial" and "obvious" aspects of software development – no less fundamental to software developers than the publishing devices described above - have been successfully patented in the US by multinational corporations. Well known examples in the US include Amazon's infamous "One click" patent<sup>9</sup>, and the recent "hotspot" patents awarded to Acacia Technologies<sup>10</sup> and more recently to Boingo<sup>11</sup>. Acacia Technologies exists for the single purpose of "licensing technologies" – they do not innovate – it would appear that they simply a) police the marketplace for possible infringements of patents in their portfolio, and b)

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9 see <http://en.wikipedia.org/wiki/1-Click>

10 see <http://www.acaciatechnologies.com/>

11 Boingo was awarded a patent for "*accessing wireless carrier networks by mobile computing devices*" – see <http://www.muniwireless.com/2009/06/23/boingo-awarded-patent-for-hotspot-access/>

For ramifications of previous obvious hotspot patents, see for example:

[http://wifinetnews.com/archives/2004/10/hotspot\\_operators\\_face\\_new\\_patent\\_fee\\_demand.html](http://wifinetnews.com/archives/2004/10/hotspot_operators_face_new_patent_fee_demand.html) or

[http://wifinetnews.com/archives/2004/01/new\\_license\\_fee\\_may\\_face\\_operators.html](http://wifinetnews.com/archives/2004/01/new_license_fee_may_face_operators.html)

collect royalties from would-be innovators who find paying a licensing agreement to be the most cost effective form of protection from patent infringement litigation.

- 5.3 Many of these obvious patents are ultimately overruled because they fail the tests of obviousness and/or prior art, however their validity is only determined when they are challenged by a non-patent holder with sufficient resources to see through the required legal proceedings. For example, in the US the Amazon "One click" patent was subsequently overturned<sup>12</sup> for failing obviousness and prior art tests and this reversal triggered a call for software patent reform in the US<sup>13</sup>.
- 5.4 Although obvious or non-innovative patents should not be granted to begin with, the fact is that *they are granted*. The examples cited above are only the tip of the iceberg. In most cases, the mere threat of patent infringement litigation by a major corporation is sufficient to keep small businesses from enter entire market areas, *despite the likelihood that they would lose a challenge due to the weakness of the patent applications*. Alternatively, they pay a settlement to the patent holder rather than challenge the patent. A recent example of this is the infringement suit that Microsoft brought against Tomtom<sup>14</sup> – despite the fact that most pundits believed that Microsoft's patent would be overturned by the US courts<sup>15</sup> as it was previously in the German court system, for being non-innovative.
- 5.5 By allowing computer software patents the Patents Bill would *without a doubt* hamper innovation among New Zealand businesses as multinational corporations would rush to patent all manner of trivial software processes and devices in the New Zealand jurisdiction – as of 2005, 90% of NZ patents were held by overseas corporations<sup>16</sup>. It would be impossible for New Zealand's almost exclusively tiny, busy, and successful software developers to monitor and counter the many thousands of trivial patent applications: the cost to the industry would be catastrophic.

## **6 Software patent abuse has already occurred in New Zealand**

- 6.1 The precedent for multinational corporations "trying on" trivial computer software patents has already been set in New Zealand. One patent application that made a mockery of the entire process is described below – the thought that there are likely to be many similarly trivial patents that we *did not catch at the application stage* is frightening.
- 6.2 In July 2005, the US-based Microsoft Corporation submitted a patent application for "word processing document[s] stored in a single XML file that may be manipulated by applications that understand XML"<sup>17</sup>. It would appear that the IPONZ assessors did not realise that the storage of word processing (and many other sorts of data) in single XML files, manipulated by applications understanding XML is in fact used by *most* software applications – there are reams of prior art. Yet this was missed, and this patent would have been approved if not for the fact that someone stumbled upon the application and submitted a challenge.
- 6.3 Given the shortage of skilled people in the software development industry, it is highly unlikely that the IPONZ patent officers assessing patent applications would have sufficient understanding of software development practices to identify "trivial patents" or those with prior art. That appears to have been the case here. *Note that Microsoft submitted their patent*

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12 see <http://figdmlgd.blogspot.com/2007/10/amazon-one-click-patent-rejected-by-us.html> – a private individual submitted a challenge to this obvious patent, and was able to have it overruled on the basis of extensive prior art.

13 see [http://oreilly.com/news/amazon\\_patents.html](http://oreilly.com/news/amazon_patents.html)

14 see [http://news.cnet.com/8301-13860\\_3-10206988-56.html](http://news.cnet.com/8301-13860_3-10206988-56.html)

15 see <http://itmanagement.earthweb.com/osrc/article.php/3812891/Bruce-Perens-Microsoft-and-TomTom-Settle-Justice-and-Linux-Lose.htm>

16 As of 2005, 90% of patents granted in NZ are held by overseas entities – see point 8. in

[http://www.med.govt.nz/templates/MultipageDocumentPage\\_\\_\\_\\_\\_1343.aspx](http://www.med.govt.nz/templates/MultipageDocumentPage_____1343.aspx)

17 Microsoft's patent challenged by the NZOSS - Computerworld NZ, 28 August 2006 -

<http://computerworld.co.nz/news.nsf/0/E6D44C4600041E39CC2571D4007DF1C8?OpenDocument>

*application in New Zealand after similar applications were denied by the US, Europe and South African, and Japan patent offices for being obvious and due to prior art*<sup>18</sup>.

- 6.4 Had this patent been granted in its original form, it would have meant that many software developers in NZ would have been open to legal action from Microsoft for the patent infringement of existing products. More than likely, due to the prohibitive cost of defending oneself against a multinational corporation, any small software business accused of patent infringement by Microsoft would have discontinued its development activities rather than fight the charge.
- 6.5 Microsoft's XML patent would have been granted had it not been for the heroic efforts of volunteers working with the NZ Open Source Society (NZOSS - an organisation advocating the use of free and open source software within NZ). The NZOSS also spent thousands of dollars of its very limited resources to fund the challenge to the patent. Luckily, the volunteers were able to find numerous instances of prior art which forced Microsoft to alter (and specialise) the patent application so substantially that it was no longer "trivial" and subject to ample prior art.

## **7 Further Threats**

- 7.1 As shown above, software patents are already a threat to domestic software developers. In our industry, we are keenly aware that, at any moment, we might get a patent infringement notice from a patent holder. Unfortunately, we cannot realistically anticipate infringements as doing so would require us to assess every line of code we write against the entire catalogue of existing software patents. That would require each software development business to employ a trained team of patent analysts – probably similar in size and qualifications to our development teams – to vet each software application we write, line by line.
- 7.2 In other patent jurisdictions, like the US, corporations like Microsoft have already demonstrated a willingness to use *the mere threat* of patent infringement action – *without even specifying which patents it believes are being infringed upon* – to stifle competition<sup>19</sup>. Microsoft's CEO has explicitly stated that the Linux operating system – which our business along with hundreds of others in New Zealand - uses as a component of all of its software development activities – violates Microsoft-owned software patents, although he refused to identify the patents in question. As a result, any user of Linux software in the US risks being sued for infringing on one or more of Microsoft's software patents and would have to either cease and desist, pay a monopoly rent, or have sufficient resources to fight a protracted legal battle against Microsoft's legal team. This move by Microsoft and other corporations, like Acacia Technologies, who stockpile computer software patents has already had a chilling effect on entire segments of the US software development industry with international implications.

## **8 Recommendations**

- 8.1 In Section 15 of the bill, under "Other exclusions", add a clause *explicitly excluding computer software from patents*.

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18 Microsoft's XML patent denied in US, Europe, and Japan... but not NZ. See <http://computerworld.co.nz/news.nsf/UNID/F68C4D35A4AE5DD5CC257038000F4A24>

19 Microsoft's Steve Ballmer claims that open source Linux operating system violates numerous Microsoft patents: <http://blog.seattlepi.com/microsoft/archives/108806.asp>