

## Bilski restricts business method, software, diagnostics patenting

### In brief

- The new US ruling on business methods in *Bilski* has rejected the previous 'useful, concrete and tangible result' as inadequate, and reinvigorated the Supreme Court's 'machine-or-transformation' test.
- The machine-or-transformation test significantly narrows the scope for method patents, and holds many uncertainties.
- The *Bilski* decision does not just apply to business method patents; it is broad enough to impact on other big business sectors such as software and diagnostics.
- The decision will certainly have an impact on Australian innovators who hold US patents, posing new questions of invalidity and risks of revocation. Moving forward, it may also affect Australian patenting activity in the US.
- It now appears that Australian law on patenting processes is broader than the US, although the Supreme Court may ultimately overturn this most recent ruling.

The recent United States Court of Appeals decision in *Bilski and Warsaw*<sup>1</sup> has attracted remarkably little attention here in Australia, but it may have a significant impact on Australian innovators in business methods, as well as software and medical diagnostics.

Most Australian inventors in these areas do not just patent here - the US is considered the 'holy grail' of patentability. Being able to corner the US market with the aid of a patent can be extremely lucrative. For smaller Australian innovators, obtaining a patent monopoly in the major jurisdictions, including the US, can be the only way to compete in a tough market.

In fact, a survey of European companies released this week shows 79% of participants in the technology, life sciences/pharmaceutical, media and retail sectors believe that intellectual property is even more important in the current downturn than might otherwise be the case.<sup>2</sup>

However, business method patents in particular have long been a contentious issue. This alert examines the position on business method patenting here and in the US in light of *Bilski*.

### The Australian position on business method patents

Part of the reason why *Bilski* may currently be flying under the Australian radar is that it may be thought not too dissimilar to our own Federal Court decision in *Grant v Commissioner of Patents*.<sup>3</sup> Yet a consideration of both shows that *Grant* arguably provides more guidance and is broader than the new US position.

### Background

Section 18(1)(a) of the Patents Act is the Australian patentability provision. For inventions to be eligible for a patent they must be a 'manner of manufacture'. This test also applies to innovation patents (section 18(1A)(a)). This endearingly resilient test (originating in the Statute of Monopolies 1623) at first glance appears obscure, but is imbued with a rich case history that has proved its ability to flexibly accommodate and assess new technology.

Some subject matter, such as laws of nature, has always failed to qualify as a manner of manufacture since it must remain free for all to use. So far as method or process patents are concerned, mere 'intellectual information' and 'working directions' (such as a method of operating a jet engine to reduce takeoff noise)<sup>4</sup> have a long history of failing the manner of manufacture test. Methods of calculation, theoretical schemes (including business schemes) and abstract plans are treated similarly.<sup>5</sup>

However, the High Court's decision in *NRDC*<sup>6</sup> decided that a process invention would qualify if it created an 'artificial state of affairs' which was useful in a 'field of economic endeavour'. The result or end product of the process, ie. the 'something' in which the new and useful effect could be observed:

*'... need not be a 'thing' in the sense of an article; it may be any physical phenomenon in which the effect, be it creation or merely alteration, may be observed.'*<sup>7</sup>

The court held that the proper question was not to ask whether the invention was a manner of manufacture, but whether it was a proper subject of letters patent under the principles stemming from the Statute of Monopolies.<sup>8</sup> Otherwise, there was a risk of getting caught up in semantics, and it

was important to remember that the Statute of Monopolies was designed to encourage innovation which, even at that point, was ‘excitingly unpredictable’.<sup>9</sup>

The NRDC decision laid the foundation for the Federal Court in the *Welcome Real-Time* case<sup>10</sup> to uphold a patent on a business method, albeit incorporating a chip card, the memory space on that card, various computer programs, readers, printers and coupons, to operate familiar customer loyalty and incentive schemes.

### Grant v Commissioner of Patents in the lower court

The innovation patent in *Grant* involved a business method for structuring a financial transaction to protect assets from creditors.<sup>11</sup> Claim 1 read:

*‘1. an asset protection method for protecting an asset owned by an owner, the method comprising the steps of:*

*(a) establishing a trust having a trustee,*

*(b) the owner making a gift of a sum of money to the trust,*

*(c) the trustee making a loan of said sum of money from the trust to the owner, and*

*(d) the trustee securing the loan by taking a charge for said sum of money over the asset.’*

Initially, the applicant argued before the Delegate of the Commissioner of Patents that the method was patentable because it satisfied the test set down by our High Court in *NRDC*.<sup>12</sup> That is, the method created an artificial state of affairs, which was of economic utility in practical affairs. The Delegate noted that the concept of manner of manufacture consistently involved the discovery of laws of nature or application of technology based on laws of nature, not ‘a discovery in relation to the laws of Australia’. While the invention may have had economic utility, laws were not an artificially created state of affairs as a result of the invention, and it was inappropriate to grant a monopoly over aspects of them. The innovation patent was revoked.<sup>13</sup>

On appeal in the Federal Court Branson J held that while the invention was of economic utility to those adopting it ‘and possibly ... their professional advisers’, the invention was not of economic utility to the country. Its social benefit did not outweigh its cost, and it failed the *NRDC* manner of manufacture test. The Delegate’s decision was upheld.<sup>14</sup>

### Grant v Commissioner of Patents in the full federal court

The unanimous decision of Justices Heerey, Kiefel and Bennett reached the same result but applied a very different reasoning. Branson J’s public interest approach was not relevant. The court found that *Grant*’s method was unpatentable because it did not:

*‘... produce any artificial state of affairs, in the sense of a concrete, tangible, physical, or observable effect.’<sup>15</sup>*

Putting it another way,

*‘A physical effect in the sense of a concrete effect or phenomenon or manifestation or transformation is required.’<sup>16</sup>*

Under these broad tests *Grant*’s method was a mere scheme, abstract idea - mere intellectual information. The simple step of documenting the scheme by computer was not sufficient to save it.<sup>17</sup>

The court distinguished the *Welcome Real-Time* case as it involved physical components like smart cards, point of sale terminals, and it produced tangible results in the writing of new information to a behaviour file and printing of a coupon. There was no physically observable end result in the form of a tangible product, but part of the invention involved applying and operating the method in a physical device, and this qualified it as an artificially created state of affairs under *NRDC*. The court compared *Welcome Real-Time* with other US authority<sup>18</sup> that upheld business methods, and concluded these methods all involved:

*‘...a component that was physically affected or a change in state or information in a part of a machine. These can all be regarded as physical effects.’<sup>19</sup>*

While the court did not seek to authoritatively define what a physical effect might be, it included examples which assist. These are summed up in the Australian Patents Office Manual of Practice and Procedure (**MPP**):

- ‘using certain chemicals to eradicate weeds from certain kinds of crops’ on a tract of land *National Research Development Corporation v Commissioner of Patents* (1959) 102 CLR 252
- ‘the operation of steps (that carry out an algorithm of the method) by computers to achieve an end in the production of an improved curve image.’ *International Business Machines Corporation v Commissioner of Patents* (1991) 33 FCR 218
- ‘the retrieval [by a computer] of graphical representations of desired characters for the assembly of text.’ *CCOM Pty Ltd v Jiejing Pty Ltd* (1994) 51 FCR 260
- ‘the transformation of data by a machine through a series of mathematical calculations to provide a share price fixed for recording and reporting purposes.’ *State Street Bank & Trust Co v Signature Financial Group Inc* 149 F 3d 1368 (1998)
- ‘the writing of new information to [a] Behaviour file and the printing of [a] coupon’. *Welcome Real-Time SA v Catuity Inc* [2001] FCA 445.<sup>20</sup>

While the decision in *Grant* relates to a business method, the generality of the tests for process or method patents impacts on the area of software patents.

Yet most software patenting is not really threatened by the decision, especially given that a method resulting in a change in state or information in a part of a machine can qualify as eligible patent subject matter. As the MPP notes, the following will 'almost always' qualify under NRDC and the authoritative Australian software patentability case, *CCOM v Jiejing*<sup>21</sup>:

- source code for patentable computer software,
- executable code for patentable computer software, which is in a machine readable form, and
- a computer, when programmed to achieve any result which has utility in the field of economic endeavour.<sup>22</sup>

Interestingly, the Patents Office does not appear to view Grant as adversely impacting on method patents in the area of medical diagnostics, unlike the position which may be emerging in the US as discussed below. The MPP simply notes:

*'At one time it was Patent Office practice to treat methods of testing as not being manners of manufacture (based on Hartridge's Application, (1945) 62 RPC 149). However since the NRDC case, IBM v Commissioner, 22 IPR 417 and CCOM v Jiejing, 28 IPR 481 have all latterly affirmed that:*

*"a process, to fall within the limits of patentability,.....must be one that offers some advantage which is material, in the sense that the process belongs to a useful art as distinct from a fine art..... - that its value is in the field of economic endeavour,"*

*A claim to a method of testing, being useful in the field of economic endeavour, is now not objectionable for being a method which does not produce a vendible product.*

*Similar considerations apply to methods of observation and measurement.*<sup>23</sup>

On the side issue of whether an 'application of science or technology' is required for patentability - as suggested by the Delegate in Grant and also by the Deputy Commissioner in *Re Peter Szabo*<sup>24</sup> - the full court in Grant court simply stated it was 'not sure that this is correct.' It risked the very kind of stifling semantics eschewed by the High Court in *NRDC*.<sup>25</sup>

In any event, the court found that while legal discoveries may be an area of economic importance, they were not patentable inventions. Legal advices, schemes, arguments and the like did not qualify under NRDC. Laws of nature were also unpatentable, although in contrast they could 'become patentable when applied to produce a particular practical and useful result'.<sup>26</sup>

While the case undoubtedly provides some helpful legal certainty, its main practical consequence has arguably been to encourage business method claim drafting that recites performance on a processing system or involves software or physical elements.

Not surprisingly, the Australian Advisory Council on Intellectual Property (ACIP) is now inquiring into

the efficacy of the manner of manufacture test, in light of concerns over its ready application to business methods, software, medical methods and biological and genetic material. This follows a previous review specifically into business method patenting, which recommended no changes to Australian law.<sup>27</sup>

## The US position on business method patents

Title 35 USC (the US Patents Act), §101, is the US patentability provision. For method inventions to be eligible for a patent they must be a 'new and useful process'. Process is further defined in §100(b) as 'process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.'

The Court in *Bilski* found the definition 'unhelpful' given its somewhat tautological nature. Instead, they turned to Webster's dictionary, which states a process is a 'series of actions, motions, or operations definitely conducting to an end, whether voluntary or involuntary.' To this definition they imposed the restraints that have historically been attached by US case law: patent-eligible processes must not claim laws of nature or natural phenomena. More relevantly to the case at hand, processes must not claim abstract ideas - intellectual concepts, mental processes, or systems that depend for their operation on human intelligence alone. The court summed up this non-patentable subject matter as 'fundamental principles'.<sup>28</sup>

In addition to the broad considerations of non-patentable subject matter as typified by the discussion in the *Bilski* court, up to 1998, some US courts applied a so-called 'business method exception' to exclude the patenting of processes in the business arena.

The US Court of Appeals in the *State Street Bank* case then decisively rejected this exception.<sup>29</sup> *State Street Bank* and subsequent significant caselaw<sup>30</sup> applied a broad and flexible test for the patentability of processes, including business methods: they must produce a 'useful, concrete and tangible result.' The case has been very influential in other jurisdictions and, as noted above, informed our Full Federal Court's 'concrete, tangible, physical, or observable effect' test.

However, the very breadth and flexibility of the *State Street Bank* caused widespread concern at the influx of process patents.<sup>31</sup> Many have cited the US patent granted for a method of making a 'sealed crustless sandwich' the high water mark of the *State Street Bank* legacy.<sup>32</sup>

The Federal Circuit subsequently attempted to stem the tide of applications for business method patents in 2007, in *In Re Comiskey*.<sup>33</sup> There, the court held that business systems depending solely on the use of mental processes were not patentable subject matter. A chief concern was that patent claims must not wholly pre-empt fundamental principles. Rather than applying the

State Street Bank test, it reinvigorated the Supreme Court's machine-or-transformation (MOT) test from *Diamond v Diehr*<sup>34</sup>: a process must be (1) tied to a machine or (2) create or involve a composition of matter or manufacture (including transforming or reducing an article 'to a different state or thing'), in order to qualify as patent-eligible subject matter.

### In re Bilski and Warsaw en banc decision

Eleven days after the Comiskey decision, a Federal Circuit panel heard oral argument in the Bilski appeal, but before the decision was handed down the court ordered a full review by all 12 judges. In the majority judgment, written by Chief Judge Michel, the court considered Bilski and Warsaw's broad first claim:

*'A method for managing the consumption risk costs of a commodity sold by a commodity provider at a fixed price comprising the steps of:*

*(a) initiating a series of transactions between said commodity provider and consumers of said commodity wherein said consumers purchase said commodity at a fixed rate based upon historical averages, said fixed rate corresponding to a risk position of said consumer;*

*(b) identifying market participants for said commodity having a counter-risk position to said consumers; and*

*(c) initiating a series of transactions between said commodity provider and said market participants at a second fixed rate such that said series of market participant transactions balances the risk position of said series of consumer transactions.'*

As in Comiskey, Judge Michel's majority decision in the Full Court focused on whether the claim would wholly pre-empt substantially all use of a fundamental principle, and applied the 'definitive' Diehr Supreme Court MOT test for process claims<sup>35</sup>:

*'A claimed process is surely patent-eligible under § 101 if: (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing.'*

Further, the court imposed what one dissident called a 'complex spider-web' of sub-tests.<sup>36</sup>

It stated that the machine or transformation must impose 'meaningful limits' and must not represent a mere attempt at circumvention by 'insignificant extra-solution activity'. Yet the court did not helpfully expand on these concepts. Field-of-use limitations on a claim that would otherwise wholly pre-empt a fundamental principle under the machine-or-transformation test will similarly not suffice.<sup>37</sup>

The court then rejected the State Street 'useful, concrete and tangible result' as inadequate, along with other tests, including the 'technological arts' test that had been raised (as in our Grant case) by the Patents Office.<sup>38</sup>

Applying the MOT test, the Bilski claim did not involve a machine, and it did not involve the transformation of any physical object or substance or an electronic signal representative of any physical object or substance.<sup>39</sup> Having failed the test, it was not patentable subject matter.

While claiming to 'clarify' the law,<sup>40</sup> Bilski has really raised more questions than it answered. And while the decision relates to business method patents, the generality of its tests apply to all processes and methods, so it directly impacts on industries such as software and medical diagnostics.

### The first prong of the MOT test and the software industry

On the first prong of the test, what will qualify as a 'particular machine'? Since the Bilski claim admittedly involved no apparatus or machine, the court expressly left this issue for another day, leaving open the circumstances when 'recitation of a computer suffices to tie a process claim to a particular machine.'<sup>41</sup>

This has left the software industry atwitter, as it is unclear whether recitation of a general purpose computer will be sufficient as a particular machine or whether a specialised computer will be required. A further issue is whether multiple physical components will be acceptable. In any event, while simply reciting a business method involving transactions which are then settled by general purpose computer may or may not tie the method to a particular machine under the first prong, it may nevertheless fall outside §101 eligibility by failing to impose a meaningful limitation or constituting insignificant extra-solution activity.

No doubt further cases will test patent attorneys' best drafting efforts.

### The second prong of the MOT test and software

On the second prong of the test, the court required that the transformation be 'central to the purpose of the claimed process', although again here guidance is lacking.<sup>42</sup>

The most obvious questions under this prong are what will qualify as a 'transformation'? A 'particular article'?

While the court discussed these issues at length, again it really provided little in the way of substantial guidance. It held that transformations of physical objects and substances were self-evidently eligible. However, the big unanswered question from the software industry's point of view is when a transformation of data or electronic signals will qualify. The court cites one case where the transformation of raw data into a particular visual depiction of a physical object on a display was held acceptable,<sup>43</sup> and sums the position up thus:

*'So long as the claimed process is limited to a practical application of a fundamental principle to transform specific data, and the claim is limited to a visual depiction that represents specific physical objects or substances, there is no danger that the scope of the claim would wholly pre-empt all uses of the principle.'*<sup>44</sup>

So there are now serious questions surrounding transformations of subject matter such as price data, user input data, entirely machine-generated data, and application software programs that manage data originating from analog signals.<sup>45</sup> In fact, the dissentients go so far as to opine that all information-based and computer-managed processes and software may now be ineligible for patentability.<sup>46</sup>

One certainty is that the majority decisively rejected the transformation of concepts 'even more abstract', such as legal obligations, organisational relationships, and business risks (as our Federal Court did in *Grant*).<sup>47</sup>

### The second prong of the MOT test and the life sciences

So far as the life sciences are concerned, the MOT test can prove inconclusive rather than definitive. For example, a claim to something akin to photosynthesis would represent an eligible transformation of physical substance but nevertheless would wholly pre-empt a fundamental principle or natural phenomenon. Further unresolved questions, then, are what will qualify as a fundamental principle or natural phenomenon in the biological field, and what will it mean to pre-empt one?<sup>48</sup>

Bilski also presents another and perhaps more pressing difficulty. Many medical diagnostic method patents involve claims that are directed to data gathering and then performing a diagnosis based on observation of natural phenomenon. The observation may be categorised as a process involving no relevant transformation but simply 'mental steps', while the data gathering may be 'insignificant extra-solution activity'. If there is no tie to a particular machine, the patent may be suspect.

If this is true, as Holman points out,<sup>49</sup> then claims such as Myriad Genetics' diagnostic claims in relation to the BRCA1 gene may be vulnerable. One relevant claim in US Patent 5,753,441 reads:

*'... method for screening germline of a human subject for an alteration of a BRCA1 gene which comprises comparing germline sequence of a BRCA1 gene . . . with germline sequences of wild-type BRCA1 gene . . . , wherein a difference in the sequence of the BRCA1 gene . . . of the subject from wild-type indicates an alteration in the BRCA1 gene in said subject.'*

The impact of Bilski on areas such as diagnostics, pharmacogenomics and personalised medicine awaits clarification.

### Impact on Australian business

While one may be tempted to dismiss Bilski as a decision with little impact on Australian innovation, one need only think of the significant effort that Australian businesses go to in order to win over the American market, and this includes patenting.

Australian innovators need to be aware of the new Bilski limitations on process patenting and how Bilski might affect their present patent portfolio. A consideration of Bilski should certainly inform any decision to enforce patents in the US, given the increased risks of revocation that may come with the MOT test rather than the useful, concrete and tangible result test. Further, in this tough economic climate patenting involves considerable capital investment, so the uncertainties of Bilski may prompt a re-think of many companies' patent application programs, at least in the US.

On the other hand, Australian innovators with US operations hampered by the existence of competitors' business method, software or diagnostic patents may find that these monopolies are increasingly vulnerable to challenge.

We may well see the Bilski restrictions influence the recommendations of the upcoming ACIP report on patentable subject matter. It remains to be seen whether, given our Federal Court's tendency to closely examine and often adopt reasoning from US case law, the Bilski backlash ultimately makes its way into Australian law.

However, Bilski has created many serious uncertainties, and this may tempt the US Supreme Court to grant certiorari and issue an authoritative edict. For now, it seems the US position on patentability of processes, including not just business methods but software and diagnostics, is narrower than our own.

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