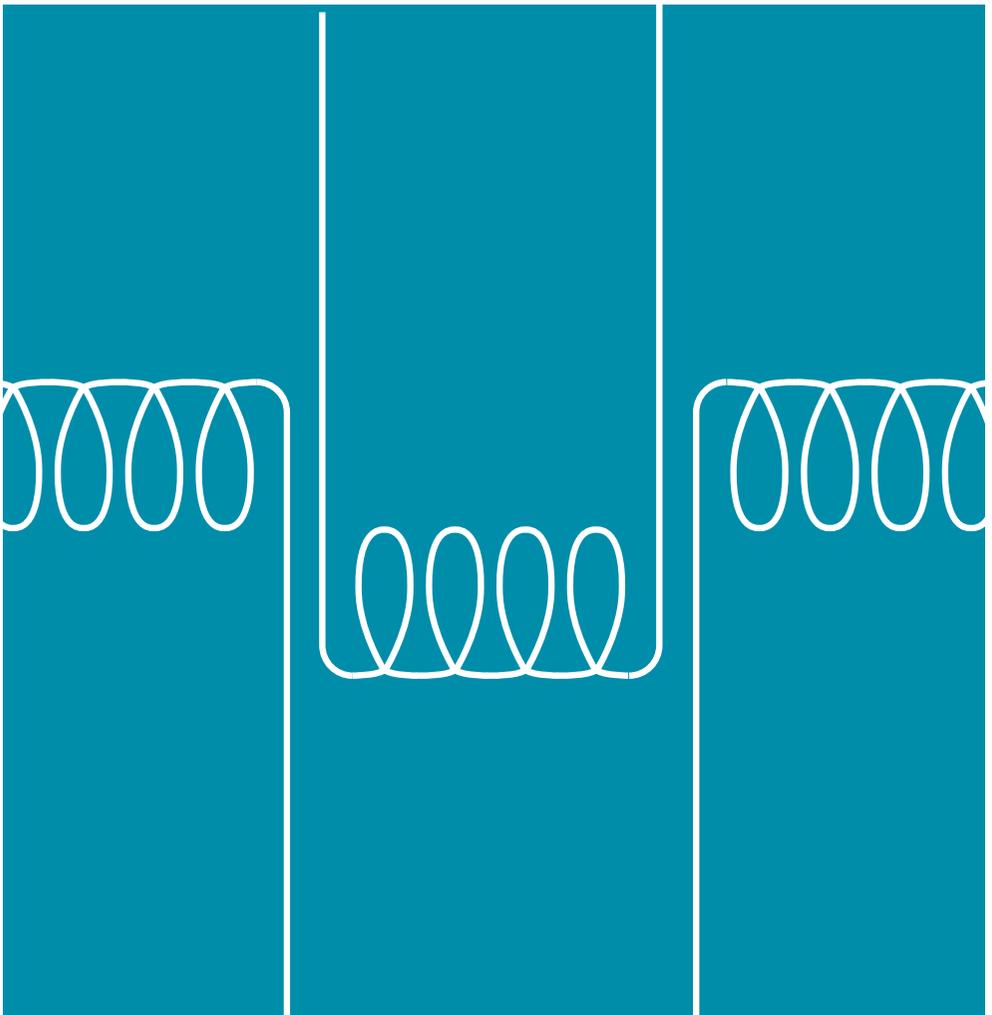




PROFITING FROM NON-TECHNOLOGICAL INNOVATION: THE VALUE OF PATENTING BUSINESS METHODS

NOVAK DRUCE CENTRE INSIGHTS

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'ONE FINDING ABOVE ALL COMES ACROSS CLEARLY FROM THIS STUDY: BUSINESS METHOD PATENTS GENERATE SIGNIFICANT VALUE FOR INNOVATORS'

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Based on the research paper, 'Profiting from Non-Technological Innovation: Business Method Patents as Mechanisms of Appropriability' by George Chondrakis, available at www.sbs.oxford.edu/novakdrucecentre/techinnovation.

INTRODUCTION: AN UNEXPLORED AREA

The question of who benefits from innovation preoccupies academics and practitioners alike. Studies that tried to understand the role of patenting in the innovation process have found that the strength of intellectual property protection and the resulting opportunity to profit from patenting varies greatly between technological areas and industries.

Most of these studies, however, have focused on patenting in the technological domain. This may have been warranted when manufacturing was the key driver of productivity and growth but this is no longer the case. Modern economies are increasingly dominated by services, and advances in management practices are seen as key contributors to long-term firm success. Yet there have been very few attempts to study the link between innovation and performance outside the traditional industrial setting.

We also know very little about the mechanisms of property in the non-technological domain. This lack of knowledge is even more problematic at a time when major changes in the regulatory environment are taking place. A 1998 ruling by the US Federal Court of Appeals found that business methods can be subject to patenting. These patents now provide competitive protection for both service and management innovations and non-technological innovators can rely on formal intellectual property protection mechanisms in addition to other advantages such as secrecy or lead-time. However, as yet no study has explicitly considered the effectiveness of business method patents or provided estimates of their value.

THERE HAVE BEEN FEW ATTEMPTS TO STUDY THE LINK BETWEEN INNOVATION AND PERFORMANCE OUTSIDE THE TRADITIONAL INDUSTRIAL SETTING

PATENTING NON-TECHNOLOGICAL INNOVATION

Until recently, patent offices worldwide rarely granted patents for service or management innovations. Given that such innovations have little or no technical component, patent offices have been reluctant to provide competitive protection to firms for introducing novel service elements or business methods. Although there is usually no explicit requirement for a method to be tied to a machine or physical transformation, in practice most jurisdictions do not consider pure business methods as patentable subjects.

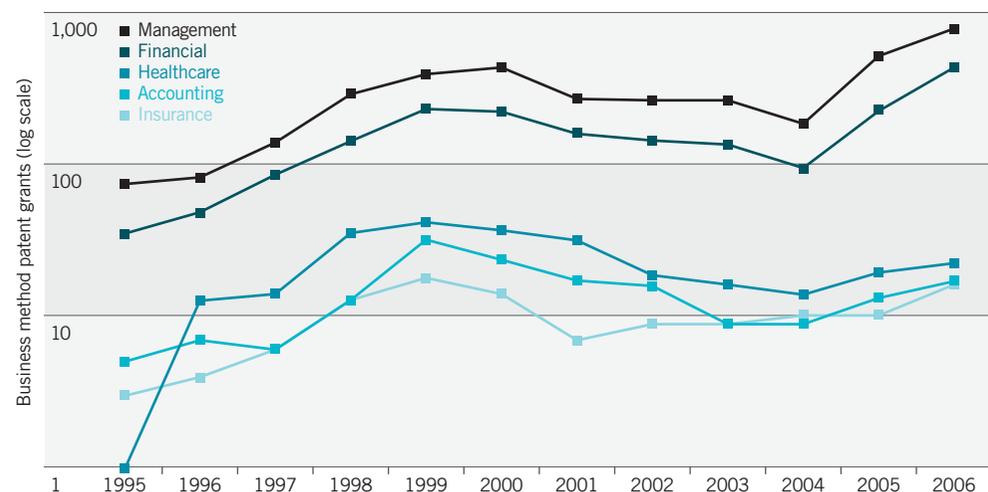
The weak regime of property in the non-technological domain was, however, challenged in the late 1990s by court rulings that heralded a change of policy in the US Patent and Trademark Office (USPTO). A 1998 Court of Appeals for the Federal Circuit (CAFC) ruling on the *State Street vs. Signature* case that found that Signature's patent (a purely mathematical algorithm) was eligible for protection, and that in general business methods were potentially patentable. This had major implications for innovators as it highlighted the 'business method claim' as a viable form of patent protection. In fact, the USPTO had been

indicating approval of business method patents throughout the 1990s by introducing class 705 claims to cover data processing, financial, business practice, management or cost and price determination, and gradually shifting to a significantly more favorable view of software-related inventions, which are often combined with business method innovations.

Although it is hard to define precisely the subject matter of business method patents, they are used to protect both service and management innovations. While some of the 705's subclasses relate to innovations in specific service industries such as computer systems, insurance policies and claim processes in insurance, others cover management innovations not tied to a specific industry such as 'resource planning, allocation or scheduling for a business operation'.

Not surprisingly, applications for business method patents to the USPTO have increased dramatically since 1998, and many firms operating in the non-technological domain are developing patent portfolios as part of their innovation strategy (see Figure 1):

FIGURE 1: USPTO BUSINESS METHODS PATENTS, 1995 – 2006



MOST JURISDICTIONS DO NOT CONSIDER PURE BUSINESS METHODS AS PATENTABLE SUBJECTS

This surge does not necessarily mean that service or management innovators have suddenly become more productive: many organizations simply patented business methods already in use. It does demonstrate, however, that firms are increasingly considering patents as a method of protecting their non-technological inventions. This is evident in the large increase in the number of business method patents granted by the USPTO in the last years.

Nevertheless, since 1998 the regulatory environment in the US has been in constant flux and there is continuing uncertainty over the validity of business method patents. In 2004 and 2005 the USPTO examiners once again started requiring recitation of 'technology' in pending claims from business method patent applicants. However, the USPTO has recently released guidelines indicating that a claim falls within a statutory class when it produces a 'useful, concrete and tangible result' – in other words, a 'real world result' not limited to a specific machine or apparatus. The final episode in this saga occurred in 2010 when the US Supreme Court rejected the Federal Circuit's holding that the 'machine or transformation' test was the only test for the patentability of a method, and in so doing supported a broader interpretation of patent eligibility.

It also remains unclear how valuable such patents are for individual firms. As yet, no study has considered what specific factors contribute to their effectiveness as ownership mechanisms. With innovators able to choose from a range of

IP protection methods, answering this question has become vital for the strategic design of organizational innovation.

Firms should bear in mind that patents do not work equally well in all technological fields. The differences spring from several factors: the nature of the underlying technology and whether it is complex or discrete, the dynamics of competition and the ease of licensing and enforcement. It is much easier to identify infringers when the patented invention is a new product (such as a new drug) as compared to a new process such as a manufacturing method that is not easily identifiable in the final product. Ease of technology transfer is also a factor. Patents can act as bargaining chips rather than exclusion mechanisms, with firms using patents to extract licensing fees or negotiate cross-licensing agreements.

Business method patents can cover either service or management innovations. But the diffusion of management innovations is slower and more haphazard than that of other innovations with similar cost-reducing potential. Management innovations are relatively difficult to observe and define and are open to more subjective interpretation. They are not easily transferable because they are embedded in their organizational context. Infringement is not easily identifiable, and it is consequently harder for the patent assignee to have successful recourse to litigation. Patents protecting management innovations are therefore less valuable overall than patents protecting service innovations.

THERE IS CONTINUING UNCERTAINTY OVER THE VALIDITY OF BUSINESS METHOD PATENTS

PATENTING EXPERIENCE MATTERS

There are important differences in the individual firms' ability to use patents as mechanisms of property. For example, large firms are better able to protect their intellectual property rights because they have comparatively low litigation costs, and firms with intermediate levels of specialization in IP-related functions have higher patent grant success rates.

In the case of business method patents, assignees face increasing regulatory uncertainty and a lack of clear guidelines in the definition of patentable subjects. This is reflected in the disproportionate number of lawsuits relating to the validity of business method patents. For these reasons assignees will benefit more from business method patents if they develop their skills to define their IP rights strategically and manage - or avoid - patent litigation.

However, such skills are closely related to assignees' experience in the patenting process. Firms engaged in patenting are more likely to understand patent litigation and have in-house expertise in IP management. Frequent patentees can rely on internal corporate patent counsel – a far more economical option. Experienced patentees are also more likely to have the skills and capabilities required to negotiate technology transfer agreements and so access external knowledge and generate value through the cross-licensing of technologies.

'COMPLEMENTARY ASSETS' COUNT

In order to increase profits from innovation, innovators need access to 'complementary assets' such as marketing and competitive manufacturing skills and after-sales support as well as patenting experience. Such assets are usually part and parcel of an entire production system or value chain involving the innovation. Innovators, therefore, that have 'vertically-related' assets are better placed to gain value from innovations.

A recent study found that a firm's ownership of specialized complementary assets, has a large and positive impact on its economic performance. This is borne out by experience in manufacturing industries. Established pharmaceutical firms have taken advantage of their complementary assets in the face of radical technological change, and in the typesetting industry incumbents have managed to sustain high levels of commercial performance despite their technological disadvantages.

Possessing specialized complementary assets, therefore, enhances the value of patent protection. This is because an innovator with specialized complementary assets can profit more from a market unencumbered by similar substitutes – due to patent protection – than one without such assets. Thus, patenting and complementary assets work together in getting returns from innovation.

FINDINGS OF THE STUDY

An event study was used to measure the stock market's reaction to the granting of business method patents. It analysed a sample of patents awarded to US-listed companies by the USPTO following CAFC's 1998 decision regarding business method patent eligibility.

The results provide solid support for the view that there is a strong positive relationship between patent protection and an increase in the assignee's market value. The economic impact of patent grants, calculated as the product of cumulative 'abnormal' returns and firm market capitalization two trading days prior to the grants, is substantial. In this sample of business method patents the mean total patent value was \$65.50 million and median total patent value approximately \$2.37 million.

The study detected a substantial increase in the market value of innovative firms when the grant of a business method patent is announced. Business method patents, therefore, can significantly enhance firms' ability to profit from non-technological innovations but less so when the subject matter is a management innovation, where the use of patents for cross-licensing purposes is problematic and the identification of patent infringement more difficult.

The study also found:

THE POSITIVE IMPACT ON AN INNOVATIVE FIRM'S VALUE RESULTING FROM THE GRANT OF A BUSINESS METHOD PATENT IS LOWER WHEN THE SUBJECT IS A MANAGEMENT INNOVATION

THE INNOVATIVE FIRM'S EXPERIENCE OF PATENTING INCREASES THE POSITIVE IMPACT ON ITS VALUE RESULTING FROM THE GRANT OF A BUSINESS METHOD PATENT

THE INNOVATIVE FIRM'S ACCESS TO SPECIALIZED COMPLEMENTARY ASSETS INCREASES THE POSITIVE IMPACT ON ITS VALUE RESULTING FROM THE GRANT OF A BUSINESS METHOD PATENT.

Although previous frameworks have indicated that business method patents can work together with complementary assets to obtain returns from innovation in a number of manufacturing industries, this is one of the first studies to highlight the importance of complementary assets in the non-technological domain. Lastly, the findings indicate that the value captured by the assignee firm is correlative to the number of patents granted to the assignee prior to the grant of a business method patent, confirming the view that firms with experience in patenting are able to capture more value from business method patents.

PATENTING AND COMPLEMENTARY ASSETS WORK TOGETHER IN GETTING RETURNS FROM INNOVATION

THERE IS A STRONG POSITIVE RELATIONSHIP BETWEEN PATENT PROTECTION AND AN INCREASE IN THE ASSIGNEE'S MARKET VALUE

THE IMPLICATIONS

While the increase in the patenting of business methods in recent years has drastically altered the organizational and competitive landscape, little consideration has been given to the implications of such changes. The findings of this study have significant implications for the design and delivery of organizational innovation.

Property regimes in the non-technological domain appear to be strengthening as the number of business method patent grants increases. Despite the difficulty of enforcing property rights in such settings, the results of this study indicate that significant value can result from the patenting of business methods, and, given this, service and organizational innovators need to develop the skills and capabilities necessary to manage their patent portfolios effectively.

Indeed the ability to define intellectual property rights strategically and deploy cross-licensing contracts will be essential in future to reduce the dangers of hold-ups and to ensure freedom of operation in situations crowded with multiple holders of vertically-related patents. As organizations grapple with the threat of increasing numbers of patented or patentable business methods, the strategic management of patent development and protection will be a crucial factor ensuring success.

Given the strengthening of formal protection mechanisms for innovation in service industries, imitators will find it increasingly hard to keep pace with the latest developments in terms of service offering and design. At the same time, first mover advantages in services are likely to consolidate, as other 'isolating mechanisms' are combined with those of patenting. The results of this analysis highlight the need for service innovators to combine their innovative efforts with investments in complementary assets in order to gain a larger share of the value generated by innovation.

Nevertheless, firms need to be aware of the continuing regulatory uncertainty. Successive decisions of the CAFC and the USPTO have changed the criteria for granting business method patents, and the findings of this study will need to be interpreted in the light of the prevailing regulatory conditions especially in the US. By contrast, outside the US only a handful of jurisdictions officially grant business method patents and the European patent office still refuses to recognize business methods as patentable subjects.

LESSONS FOR REGULATORS

The findings also have important implications for the ongoing debate on the patentability of business methods. Ever since the CAFC characterized the exception of business methods from patent protection as 'ill-conceived', legal scholars and economists have argued both in favour and against widening the scope of patentable subjects. Advocates of business method patents argue that in modern economies a restrictive view of patentable processes reduces the incentive to invest in innovation in new fields. Their opponents, however, argue that business method patents are often low quality, overbroad and indeed invalid, and stifle innovation instead of fostering it.

In a sense these contrasting views repeat an older, more general debate about the costs and benefits of having a patent system. Bearing in mind the effect of patents on the economy, it has been argued that we should consider closely the specific characteristics of management processes and services before deciding whether the competitive protection of business methods is justified.

One finding above all, however, comes across clearly from this study: business method patents generate significant value for innovators. The implications of this, simple as it sounds, is still contested by critics of business method patents. According to these critics, business method patents are vague and of poor quality and only increase the systemic costs of intellectual property rights protection without producing any benefits for the economy. Yet, the study suggests that the significant value that capital markets attach to business method patents in itself will strengthen incentives to innovate in the non-technological domain.

It is important to emphasize though that this is not a call for IP regulators to reinforce the patenting of business methods regardless. Other issues also need to be taken into account. Firstly, it is not clear whether business method patents will necessarily create additional incentives to innovate given that factors like lock-in, network effects, lead-time and customer loyalty also protect the returns from innovation. Secondly, the rapid and open diffusion of management innovations encourages advances in the productivity and governance of corporations, thus generating substantial benefits to the economy as a whole. Thirdly, when innovations are incremental and several different innovations have to be combined to create a useful product – as is often the case with business methods – it is less obvious that the benefits of extending the patent system outweigh its costs. Therefore, although this study provides strong arguments in favour of business method patents, a more holistic approach is required to determine their overall usefulness to the economy.

THE ABILITY TO DEFINE INTELLECTUAL PROPERTY RIGHTS STRATEGICALLY AND DEPLOY CROSS-LICENSING CONTRACTS WILL BE ESSENTIAL IN FUTURE

THE VALUE THAT CAPITAL MARKETS ATTACH TO BUSINESS METHOD PATENTS WILL STRENGTHEN INCENTIVES TO INNOVATE

LOOKING TO THE FUTURE

Property regimes in the non-technological domain appear to be strengthening as business method patents are found to increase the market value of innovators significantly. Intellectual property is becoming ever more important for competition, and excluding business methods per se from patentability is not really feasible despite the difficulty of defining them. Indeed, business method patents are here to stay – and non-technological innovators should take note.

Non-technological innovators, however, need to develop the necessary skills and capabilities to manage patent portfolios in order to increase their share of value captured from innovation. Moreover, service innovators need to invest in complementary assets as these assets work synergistically with business method patents. Experience in patenting increases the value of business method patents, suggesting that experienced patentees are better able to manage the patenting process and deal with the regulatory uncertainty surrounding business method patents.

Some researchers have emphasized the unique characteristics of service and organizational innovations and resisted attempts to treat innovation processes in the technological and non-technological domain on the same basis. However, the findings of this study suggest that there are some concepts or frameworks originating from the study of innovation in manufacturing (such as the value of complementary assets) which are equally applicable to non-technological innovations. Although services and organizational processes differ from those for manufacturing products, the mechanisms of value creation and the ownership of innovation seem to be similar regardless of the characteristics of the underlying invention. Thus, there is a strong case that research into innovation will benefit from closer integration between theories of technological and non-technological innovation.

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AND NON-TECHNOLOGICAL INNOVATORS SHOULD
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