

Protect and Share Innovative Service as a Commons

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ABSTRACT

This paper examines the ideal intellectual property right (IPR) that can promote service innovation. Patenting services often does not benefit the public, because the diffusion of the service is delayed. Furthermore, economic efficiency is generally propelled when companies are allowed to implement and improve innovations developed by others. Therefore, a new type of IPR that can help in more efficient protection and sharing of service innovations must be designed. This paper investigates how to promote service innovation by striking a proper balance between controlling it by law and sharing it as a commons. To foster service innovation, I propose a new type of IPR that I call "Originators' right" based on the principle of commons. The right reduces the search cost for an originator, whereby the originator can enjoy a greater first-mover advantage. The right could protect inventions of service, promote the sharing of the innovative service, restrict free riding, and provide minimum incentives for inventions and investment.

Keywords: service innovation, intellectual property right, business-method patent, commons, first-mover advantage

1. INTRODUCTION

This paper examines the ideal intellectual property right (IPR) that can promote service innovation. Since productivity of service industries in Japan is lower than that in other developed countries, promoting service innovation is a major issue for Japan. If a patent is granted, the assignee obtains a strong monopolistic advantage. However, the service industry is sometimes inappropriate for monopoly business. Patenting services often does not benefit the public, because the diffusion of the service is delayed. In addition, the patent system itself has some fundamental problems. Therefore, a new type of IPR that can help in more efficient protection and sharing of service innovations should be designed.

Economic efficiency is propelled when companies are allowed to implement and improve innovations developed by others. Therefore, this paper investigates how to promote service innovation by striking a proper balance between controlling it by law and sharing it as a commons.

2. PROBLEMS ON THE PATENT SYSTEM

In this section, I survey the problems with the existing patent system.

The patent system has some fundamental problems. For example, problems related to patent trolls have surfaced over the past decade. Patent trolls do not manufacture products using their patent. Instead, they negotiate licensing fees with infringers. Thus, patent trolls sometimes discourage the sharing of innovations.

Is the current intellectual property rights (IPR) system the best solution for the creation and application of innovations? Is the current level of protection of patent rights too strong? Economists and jurists have raised questions such as the following in this regard:

McMillan [9]

A patent is a compromise solution to a problem that admits no ideal solution. It is an officially sanctioned monopoly. Offering the prospect of monopoly profits, a patent is a powerful incentive to innovate.

But the patent system has a downside.

Patents successfully generate innovations while inhibiting their use. (p.34)

Lessig [8]

In such an age, the real questions for law is not, how can law aid in that protection? but rather, is the protection too great? (p.175)

Boyle criticizes the enclosure movement of IP [2].

The argument of this book is that we are in the middle of a second enclosure movement. While it sounds grandiloquent to call it "the enclosure of the intangible commons of the mind," in a very real sense that is just what it is. (p.45)

Fundamentally, it is waste of effort to develop different mechanism to avoid patent infringement, and patent infringement litigations are fruitless. Boldrin and Levine criticize intellectual monopoly and point out that there are many ways to profit from the first-mover advantage [1]. I agree that monopoly is sometimes unnecessary when the first-mover advantage is strengthened by a new type of IPR.

In 2007, the European Patent Office (EPO) published a compendium "Scenarios for the Future" that predicted the worldwide IP status in 2025 and investigated four scenarios. The third scenario, "Trees of Knowledge," was illustrated as follows:

In the year 2025, patents have survived only in some traditional fields such as mechanical and chemical engineering.

The fourth scenario, "Blue Skies," was described as follows:

The kind of IP available has also evolved. There are now two distinct kinds of patent: a soft patent for complex technical fields, such as the ICT, and classic patent rights for areas such as the pharmaceutical sector. 'Soft patents' no longer offer completely exclusive rights and this means that innovation is no longer held up by blocking rights. The 'soft patents' foster collaborative innovation, e.g. open innovation networks and patent-pooling.

These EPO's scenarios are very shocking, and we should rethink the future of IP from scratch. We should be freed from the exclusive rights system. The implementation and improvement of innovations by other companies propels economic efficiency. A new type of IPR that can help in protecting and sharing innovations more efficiently must be designed.

Scotchmer aims to investigate whether there are other mechanisms that are superior to the patent system. She examines targeted prizes, blue-sky prizes, and patent-buyouts [12]. However, these mechanisms need more governmental effort than the current patent system. In A2K3 conference¹, they discussed prizes as alternative for patent.

We need to consider the fundamental reform of IPR. Scotchmer, for example, makes the following suggestion [12].

Intellectual property should be designed to achieve the right balance of protection for innovators, protection for consumers, and opportunity for rivals to make improvements. (p.261)

Boyle suggests the following [2]:

It is not an overstatement to say that intellectual property rights are designed to shape our information marketplace. (p.7)

National and international policy makers are keen to set the "rules of the road for the digital age." (p.37)

The principle of commons is an important idea in structuring the future of IP. Mitchell proposes the concept of "Intellectual Commons" on the basis of natural rights or moral rights [10]. Hess & Ostrom introduce the concept of "knowledge commons," a new way of looking at knowledge as a shared resource, which is a complex ecosystem that falls in the category of commons [6].

Lessig comments as follows [7]:

The aim of an economy of ideas is to create incentives to produce and then to move what has been produced to an intellectual commons as soon as can be.

The extreme protections of property are neither needed for ideas nor beneficial. (p.116)

Open source software is already well known for providing peer production ways freed from IPR. Furthermore, open source hardware and open source biotechnology are emerging recently.

Weber points out that the open source process reframes the problem of free riding and property [13].

Open source turns what would have been called free riders into contributors to a collective good. (p.216)

Open source radically inverts this core notion of property. Property in open source is configured fundamentally around the rights to distribution, not the right to exclude. (p.228)

A new type of IPR for service innovation should be designed with reference to the mechanism of the open source process. In this paper, I will propose a more concrete mechanism based on the principle of commons.

3. PROMOTING SERVICE INNOVATIONS

Inventions of service are protected to a lesser degree by patents than are those of manufacturing. Because patenting services often does not benefit the public, adopting a pro-patent policy in service industries is inappropriate today.

Business-method patents, a type of patent for the service innovations, are usually issued when the technological aspects of business method are patentable and not issued for the business model. In Japan, inventions that include human decision or action at any stage of the process of invention are not recognized as eligible for patent. The patent grant rate of business-method patents in Japan is very low (around 8%: from 2003 to 2006).

For example, QB House, a major barbershop chain in Japan, takes blue ocean strategy² and provides innovative service that almost automated except for haircutting. Using the system, QB House was able to reduce the price of a haircut to 1,000 yen, while raising the hourly revenue earned per barber nearly 50 percent, QB Net that operates QB House applied a patent for the overall process of QB House (Japanese Patent Publication No.2002-117180). However, the patent application was rejected, because the process was interpreted as an artificial arrangement. Instead of human barbers, if robots cut hairs automatically, QB House's process probably would be patented. Do you want to get your hair cut by a robot? I believe that innovative services such as QB House's process should

¹ A2K3 2008 (Third Access to Knowledge Global Conference) Panel "Alternatives to Monopolies: Prizes," <http://www.law.yale.edu/intellecualife/7117.htm>

² Kim, W. C., R. Mauborgne, *Blue Ocean Strategy: how to create uncontested market space and make competition irrelevant*, Harvard Business School Press, 2005. pp.70-71

be given some kind of IPR although they may include human action or decision.

Similarly, in the United States, the patent eligibility of business models was recently denied in the *Bilski* case: moreover, Parikh studies it in the tax strategy patents case [11].

Such a difficulty of obtaining rights seems to be one cause of the present e-Business oligopoly, because many Internet startup companies can not get enough investment by that reason.

Not only business-method patents but also other types of inventions of service have potential problems. For example, medical procedures cannot be patented exceptionally in many countries. Therefore, patenting more service does not seem to be appropriate. However, in order to increase the incentive to invent innovative services and to increase investment in venture companies that introduce innovative services, there should be some kind of IPR that protects the organization introducing the innovative service.

Inventions of service are usually market-pull ones. Since such inventions do not entail huge amounts of R&D costs, monopoly is not necessary. Instead, they merely need some kind of operational advantages. Hence, I suggest the formulation of an IPR that strengthens first-mover advantage in order to facilitate the protection and sharing of service innovations.

Figure 1 shows the rate of diffusion of service innovations in three cases. These cases differ in the level of protection they offer. In cases 2 and 3, the dotted line represents the total diffusion of an originator and the followers.

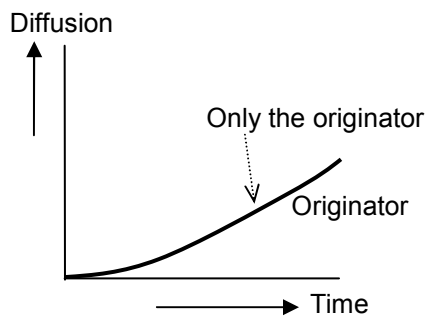
Case(1) Protection with the right to exclude. In this case, only the originator can offer the service.

Case(2) No right. In this case, a follower can implement the same service and might surpass the originator.

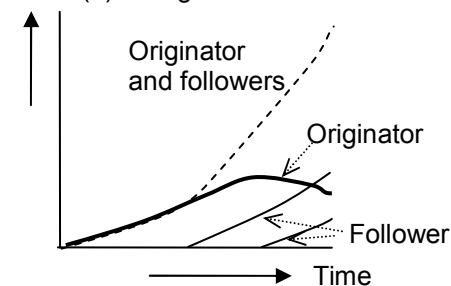
Case(3) Protection with a right that only strengthens the first-mover advantage. In this case, although a follower can implement the same service, the originator is able to maintain dominance for a certain period of time. This case is most desirable for the creation and efficient use of innovative services.

IP policy for service innovations should exclude patent owners who do not implement the patented invention, because licensing is inappropriate for the service industry. Instead, total support systems (e.g., franchising) are suitable for the service industry. The exclusion will enable the elimination of patent trolls.

Case (1) Protection with right to exclude



Case (2) No right



Case (3) Protection with right that only strengthens the first-mover advantage

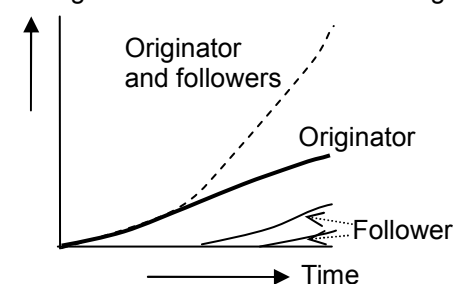


Figure 1: Three cases of protection of services

4. PROPOSAL OF NEW IPR FOR SERVICE

This section examines the ideal IPR that can promote service innovation. Here, I will propose a new IPR that promotes service innovation. Although holders of the proposed right will be able to neither monopolize the market nor collect a license fee, the right would give inventors an effective incentive to develop innovative services. That is, I investigate how service innovation can be promoted by striking the right balance between controlling it by law and sharing it as commons. If a patent is granted, the assignee obtains a strong monopolistic advantage. However, patenting services often does not benefit the public, because the diffusion of the service is delayed. Thus, an intellectual commons is essential for the service industry.

A new type of IPR for service innovation should be designed with reference to utility models. The requirements for acquiring a utility model are less

stringent than for patents. The requirement of "non-obviousness" may be much lower or absent. The term of protection for utility models is shorter than for patents. Utility models are primarily used for mechanical innovations.³

Similar to utility models, I believe that weaker right is desirable to protect service innovation. Figure 2 shows the positioning of patent, utility model and new IPR for service innovation.

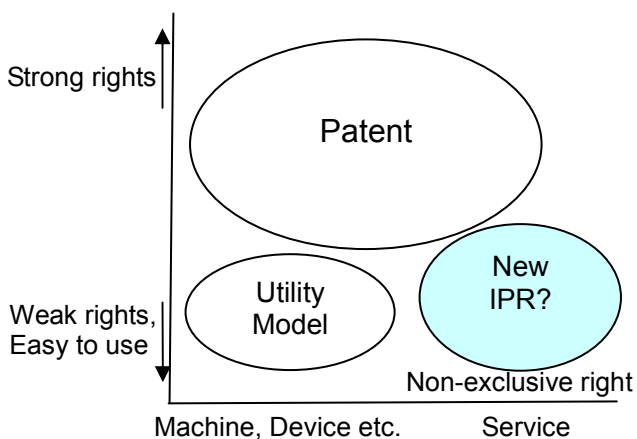


Figure 2: Examples of Web pages of the originator and follower

I propose a new intellectual property right that I call "Originators' right" (*Ganso-ken* in Japanese) to protect innovative services and share them as commons [3] [4]. *Ganso* means "originator" in Japanese and implies that an originator advances further than followers, and *ken* means right. Although right holders will be able to neither monopolize the market that the invention covers nor collect a license fee, the right gives inventors an effective incentive to develop innovative services.

The proposed right makes it obligatory for followers that conflict with the right of an originator to display the originator's name on the follower's brochure and Web page. Further, it obliges the followers to add a link to the originator's Web page from their Web page. Sunstein⁴ also proposes use of Web link in regulation whose purpose is entirely different from IP. The Internet is not only a subject of regulation but also a potential means of providing incentives. Hence, IP laws should utilize the Internet more effectively.

Figure 3 shows an example of the Web pages of the originator and a follower, when the proposed right is enforced. As a result, some of the prospective customers

³ WIPO "Protecting Innovations by Utility Models" http://www.wipo.int/sme/en/ip_business/utility_models/utility_models.htm

⁴ C. R. Sunstein, *Republic.com*, Princeton University Press, 2001

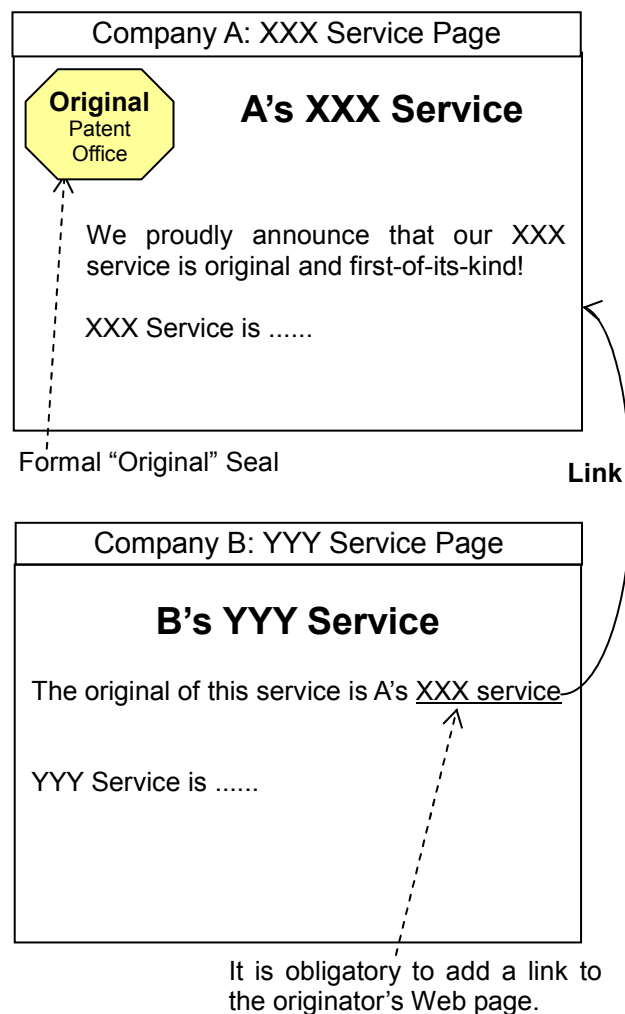


Figure 3: Examples of Web pages of the originator and follower

of the follower will choose to switch to the originator. Today, Web page marketing is already widely practiced. Companies are eager to attract customers to their Web page through search engine optimization or pay-per-click search engine advertisements. Consumers do not usually look for services in shops; instead, they gather information about the service from Web pages. Therefore, making it obligatory for a follower to include a link to an originator's Web page could bring a certain level of incentive to the originator. This mechanism reduces the search cost for an originator, whereby the originator can enjoy a greater first-mover advantage. The transaction cost of the follower decreases as no license negotiation is required in such a system.

If a follower infringes the right (that is, if it does not provide a Web link to the originator's Web page), the originator can file a damages suit but cannot file lawsuit for injunction against the follower. The amount of damage will be calculated by predicting the number of the lost users of the originator who could come from the follower's Web page. The prediction will be based on the number of page views of the infringing follower's

Web page. Importantly, "Originators' right" seems to be a type of natural right or moral right in the meaning that followers must pay respect to originators.

This right is granted only when the service is in business operation. Thus, the right strengthens originator's first-mover advantage. The right alone can not be transferred, while business with its right can be traded. This prevents patent trolling in the service industry. The proposed right assesses non-obviousness with regard to the business model as well as technological aspects, that is, the right is granted when the originator has an innovative business model and uses the technology at any stage of the process of invention. The duration of the proposed right should be much shorter than that of a patent (e.g., six years). Applications of the invention should be published immediately after filing.

The proposed IPR does not allow monopoly business but gives a relative advantage to originators of innovative services. The right will give inventors a weaker incentive than the existing patent law. However, the simple mechanism would turn a free rider into an advertising tower for the originator. Especially if a big firm imitates the service, the originator can enjoy huge consumers from the Web site of the big one. Thus, the service of the originator would be protected, and the incentive to develop innovative services would increase.

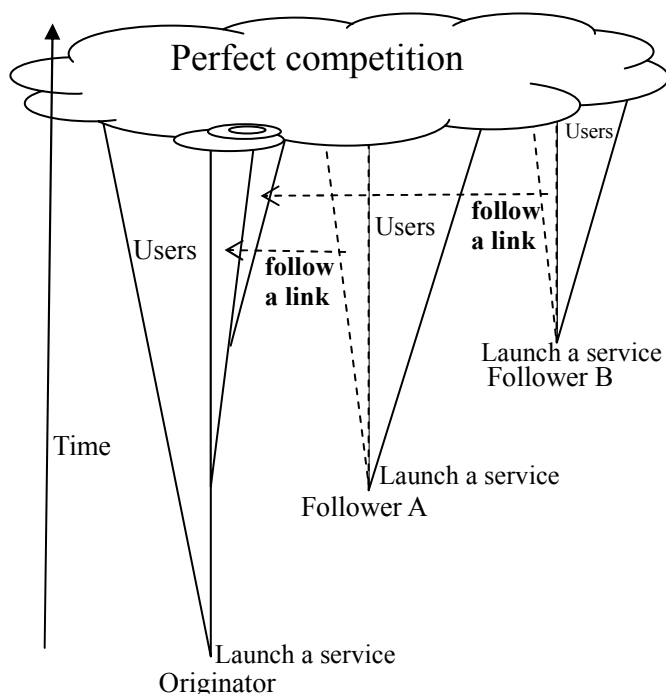


Figure 4: Competition between originator and followers

Figure 4 shows the anticipated number of users of the originators' and followers' service after they commence business. As the users of the followers' service increase, some portion of them will choose to switch to the originator. However, when most innovators and early-adopters (in the categories of adopters by Rogers) have fully adopted, the service market will move closer to perfect competition, because majority users in the categories of adopters usually decide preferences through word-of-mouth reputation.

Although the market will eventually move closer to perfect competition, the originator will continue to serve as an alternative for a user even if a strong follower enters the market, because the originators' right will be protected under the proposed IPR. Importantly, unlike under exclusive rights system, an originator will have to advance further or improve its service in order to maintain a competitive leadership and to survive the competition. Therefore, innovation will never stop.

Followers can enter the market without concerns about the originator's exclusive right. Users of the service can enjoy higher quality or cheaper service as a result of the competition.

5. CLOSING REMARKS

In this paper, I proposed a new intellectual property right that I call "Originators' right" to protect innovative services and share them as commons. Such a right should be discussed more actively, because service innovation is a big issue today.

The proposed IPR is still only an abstract idea. However, it should be considered as an alternative to the existing patent system, because it could place many inventions into the sphere of the commons, which is ideal for the creation and efficient use of inventions.

Furthermore, I propose a new IP system that can completely substitute the existing patent system from the long-term perspective of open innovation and open source movement [5]. The new IP system will be based on the principle of commons and will consist of knowledge-sharing infrastructure, a mechanism of reward distribution to contributors (inventors), and a mechanism of strengthening fast-mover advantages. It seems to be very difficult, however, I believe it is possible to legislate those mechanisms. I believe that a combination of these mechanisms could, in the future, serve as a substitute for the current patent system.

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