



Why do firms give away their patents for free?



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A B S T R A C T

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Within the trend of increasing patent commercialisation and open innovation, a recent phenomenon where firms give away their patents free of charge can be observed. This seems contradictory to the original intention of the patent system (enabling firms to create temporary monopolies to appropriate returns from their R&D investments). Consequently, this paper explores why firms make their patents available for free and which benefits they may gain from this behaviour. Adopting the open source software phenomenon as a background and using firm data from 26 patent release cases, we identify a typology consisting of four motives of 'free patent release approaches': *profit making*, *cost cutting*, *innovation catalysing*, *technology providing*. Further, we discuss the motives of these firms to offer their patents as 'open source'. We find that firms may obtain valuable technological input for subsequent innovations as well as social benefits in return for their free patent release.

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1. IP management in the open innovation paradigm

The open innovation paradigm in which firms increasingly share know-how and resources has reached many industries [1]. Prominent examples for open innovation in practice are Philips with its open innovation park, Siemens' open innovation program, or Bayer's Creative Center. Also Microsoft and SAP have initiated decentralised research labs to increase the absorption of external knowledge [2]. Many firms have recognised that internal idea development is only one part of successful innovation and that many valuable ideas are whirring outside of the firms' boundaries. In addition to the *outside-in* approach, open innovation also implies *inside-out* activities where firms externalise know-how to obtain monetary or strategic benefits in return [2,3]. This also impacts the firms' IP strategy, which traditionally focuses on protecting know-how and retaining freedom to operate. From an IP strategy perspective, opening up the innovation process means also to consider using IP, and especially patents, as a means to exchange and share knowledge. Extant literature on open innovation emphasises that IP should be considered as an enabler of open innovation instead of a disabler [4]. Out-licensing, cross-licensing, and selling of patents are the most prominent forms of how to use the IP portfolio in open innovation systems [5,6]. These external patent exploitation forms actively make use of the patent right system by

demanding a contractually fixed compensation for the use of the patented technology. In recent years, however, the scholarly debate has evolved around the question how patents can be effectively used other than by licensing or selling [7–9]. Also in practice one can observe cases where firms apply another form of external patent exploitation: they donate patents or make patents freely available either to the public or a specific community. At first sight, this behaviour stands in contrast to the original idea of the patent system. So the question arises why firms release technologies in which they have invested R&D resources and which they have protected through patents? Consequently, this article aims to answer this question by exploring why firms give their patents away for free.

While literature on open IP approaches mainly focuses on the software industry discussing the open source software (OSS) phenomenon [10,11], there has been, to our knowledge, no comprehensive discussion on providing IP free of charge in other industries. Furthermore, OSS is mainly based on copyrights, and the perspective of releasing patents is a new perspective on open IP strategies. Patent *release* or *give away for free* means that in contrast to classic licensing and cross-licensing agreements, there is no contractual definition of compensation from the receiving end to the original patent holder. Instead, the benefits for the original patent holder are either obtained indirectly through tax benefits in the case of donation, or they are highly uncertain, difficult to quantify, or based on a long-term perspective.

The article is structured as follows. Section 2 provides a theoretical background by reviewing extant literature related to open IP

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strategies and presents selected non-commercial patent pools. Section 3 describes the method used. In section 4, a typology of patent release approaches is developed and illustrated by 26 case studies. Finally, Section 5 discusses the findings.

2. Background

2.1. Motives for open IP strategies: evidence from open source software

In the software industry, the success of open innovation strategies through open sourcing is widely known and acknowledged. The open source approach to create software innovations has become a vital alternative to in-house developments for many firms. In fact, in OSS projects, the major innovations come from the users, the open source community [11]. Open source communities consist of people who voluntarily contribute to the OSS development by writing software code and sharing their modifications with the community and the original software supplier [11]. OSS projects are mostly based on copyright licenses. Historically, software was not patentable prior to the 1970s. Today, only the US and Japan allow software to be generally protected through patents. Some other countries such as China or the UK allow software patents under certain conditions, e.g., including a visible technical contribution [12]. However, in most IP regimes software patenting is not possible but falls under the copyright protection. Why firms contribute to OSS developments by releasing their software code and related IP rights to the public has been discussed during the last decade. OSS literature distinguishes between three major areas of motivations for participating in open source development: *economic, technological, social reasons* [13,14]. These three areas of motivations are briefly presented in the subsequent paragraphs.

2.1.1. Economic reasons

Commercial firms are driven by maximising profits, thus the economic perspective behind releasing innovations free of charge is an important, although counterintuitive, aspect. Literature emphasises the selling of complementary services as a dominant strategy of firms to appropriate returns through OSS activities [14–16]. Complementary products and services such as installation, training, maintenance, consultancy, and certifications play a major role for firms to achieve competitive advantage [10]. Cost savings are an additional economic reason. By using the community in addition to internal development efforts, firms can lower internal R&D costs [17,18]. Without receiving any monetary compensation in return, developers from the community identify and report bugs and test the software [16,19].

2.1.2. Technological reasons

By opening the innovation process to the open source community, firms can profit on the technology side through comments, ideas, and further developments [19]. Through this, firms can improve quality and applicability of their technologies [13]. Moreover, the open source concept allows the developers to base their developments and contributions on an already existent basis of technology [20]. Also, promoting a technological standard can be a reason for firms to freely release their software [13].

2.1.3. Social reasons

Literature also points to social reasons to contribute to open source developments. On the one hand, firms aim to conform to the social norms of the open source community and feel a moral obligation [10,13]. On the other hand, due to rising public interest and attention to open source, firms have recognised that participating in this movement can enhance corporate reputation [13]. In a study on open innovation practices of firms in the UK, Holmes and Smart [21] analyse partnerships between firms and non-profit

organisations and find that firms commit themselves to cooperation, that is not purely economic-driven, but driven by social responsibility. Firms share their innovations voluntarily with non-profit organisations in exchange for social legitimacy [21].

2.2. Patent donation

Some studies exist regarding patent donation as a form of patent release. Patent donations are especially common in the US and are based on the concept that patent owners donate patents to non-profit organisations such as universities and other research institutions. For the patent donation, the original patent owner transfers the entire patent right including all obligations to the receiving party. By donating a patent, the original patent owner can gain both tax benefits and cost reductions, e.g., by reducing yearly patent maintenance expenses. On the side of the receiver, the donated patent is integrated in the research and development process with the aim to generate a new product; the patent donation is representing a potential source of income [9]. Additionally, both sides can benefit from strengthening their research network through cooperating during the patent donation process and subsequent collaboration [22]. While patent donations have been possible in the US since 1954, firms only began during the 1990s to recognise the potential benefit and to make use of it increasingly. At that time, the tax benefits were calculated based on the patent's fair market value. Because of increasing cases of abuse in which donors have overestimated their patents significantly, the law regarding patent donations was changed in 2004. Under the new law, tax benefits are now defined by the lower amount of either the patent's fair market value or its cost basis [23]. In a study with 36 US based firms, Carlsson et al. [24] analyse the role of patent donations within the firms' IP process. They find that generating good will, profiting from tax deductions and other financial benefits, and philanthropy were motives of the firms to donate their patents [24].

2.3. Non-commercial patent pools

Non-commercial patent pools are alliances in which patent owners license one or more patents on a royalty-free basis to an organisation that manages the patent pool. By doing this, the licensed patents are available for other members of the pool as well as non-member research institutions. In return, the patent owners are granted access to all patents within the pool, can initiate new research and business collaborations, reduce development costs and risks through shared efforts, and generate good will by serving society [25]. To shed light on how such non-commercial patent pools work and why firms participate, four non-commercial patent pools and their purposes are presented here.

2.3.1. Eco-Patent Commons

Eco-Patent Commons is an initiative providing an online repository of patents covering environmental friendly technologies that are provided by firms, without a need to license or to purchase. The Eco-Patent Commons patent pool was launched in January 2008 by the World Business Council for Sustainable Development (WBCSD) and a consortium. The objectives of the Eco-Patent Commons are to foster the sharing of technologies that help protect the environment. The patents included in the Eco-Patent Commons have to provide an environmental benefit and are selected by their International Patent Classification (IPC) class. Currently, thirteen firms¹ have joined the Commons and released

¹ Bosch, Dow, Dupont, Fuji Xerox, Hewlett–Packard, Hitachi, IBM, Nokia, Pitney Bowes, Ricoh, Sony, Taisei, Xerox.

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