
Cornhusker Economics

The Impact of Organized Activism on Technology Sharing

Environmental and social issues such as climate change, resource depletion, food insecurity and food safety are complex, multi-dimensional, and challenging to address. The collective and public nature of these issues requires not only that a technology/innovation that can address the problem is developed but also that a critical mass of firms adopt the technology for the issue to be successfully addressed. Patent licensing is an important element of firm conduct and the most common form of technology transfer from innovating firms to other market participants (Gallini, 1984; Katz and Shapiro, 1985; Rocket, 1990; Fauli-Oller and Sandonis, 2002). Besides generating an additional source of revenue for the innovating firm/patent holder in the form of royalties, fixed fees, or a combination of both, the transfer of superior technology from the innovator to other firms in the market enables the improvement of technology used at the industry level. In this context, patent licensing can improve firm profitability, economic efficiency, productivity growth, and social welfare.

What factors influence a firm's decision to share its technology with competitors? While patent licensing has received considerable attention in the literature, studies have typically focused on the optimal licensing contract for product and process innovations in various market settings. A key finding of this literature is that the optimal licensing strategy depends on the type of the patentee; that is, whether the patentee is a producer in the market (insider patentee) or not (outsider patentee). Little attention has been given, however, to the role the general public can play on firms' incentives to share their innovations through licensing contracts and on the type of contracts that will be chosen. Research shows that the public is concerned about socie-

tal and environmental issues and expects firms to play an active role in addressing them, even when they are not relevant to the firm's business practices (Falck and Heblich, 2007; Cone Communications, 2017). Stakeholders pressure firms to engage in innovation that align with their social and environmental interests that goes beyond firms' business practices (Frooman, 1999). Moreover, an interesting externality is associated with new technologies that address complex environmental and societal issues. A case in point is a technology that increases food safety in the market. Food safety has become an important food quality attribute due to the prevalence of foodborne illness outbreaks. The public nature of the food safety issue creates the following externality. While the adoption of a new food safety-enhancing technology solely by the innovating firm increases the safety of only this firm's product, its adoption also improves the overall food safety in the market, as perceived by consumers, through the reduction of the number of foodborne illness outbreaks. The externality includes benefits realized by rival firms due to this increase in the overall food safety level that accrue in addition to the usual positive knowledge spillovers. The adoption of the new food safety enhancing technology by the innovating firm will reduce the likelihood of having a food recall in the future, therefore reducing the probability of incurring profit losses not only for the patentholder but also for all the firms in the market. Similarly, the adoption of the new technology by competitors generates benefits for the innovator in addition to royalties and other licensing fees associated with the licensing of her innovation.

In addition to competitors, consumers, through organized activism, can play an important role in shaping a firm's decision to share new technologies, even for technologies where the patent holder would naturally want to

keep competitors out of the market. Consumers are willing to pay more for products and services that they perceive as being environmentally and socially superior and would like firms to contribute to addressing social and environmental issues beyond generating wealth for shareholders. Baron (2001) finds that firms may choose to be involved in Corporate Social Responsibility (CSR) activities due to consumer demand side pressures (i.e., strategic CSR). Therefore, consumer advocacy can play a role in whether and how a new technology is shared, especially when the technology addresses environmental and social issues.

Organized activism has been playing an increasingly important role in food markets (Deka, 2022). Examples of activist organizations that have been active in the food sector include, but are not limited to, the Changing Markets Foundation (CMF), the Organic Consumer Association, Greenpeace, and People for the Ethical Treatment of Animals (PETA). PETA, the largest American NGO for animal welfare, launched the “McCruelty” and “Kentucky Fried Cruelty” campaigns to pressure McDonald’s and KFC, respectively, to improve the living conditions of chickens used in food products (Waldron et al., 2022). “Carting Away the Ocean” is a Greenpeace campaign against US retailer stores (e.g., Costco, Trader Joes, Walmart) to remove unsustainably harvested seafood and adopt purchasing policies that preserve marine ecosystems. CMF launched the “Busting the Myth” campaign to drive Nestlé to remove false and misleading claims and harmful content from their products (Deka, 2022).

Research in the Department of Agricultural Economics at the University of Nebraska-Lincoln examines the role of consumer advocacy in determining optimal licensing behavior in the presence of food safety externalities. Specifically, the research determines the potential impacts of organized activism on the feasibility and the desirability of fixed fee licensing, royalty licensing and two-part tariff licensing contracts while accounting for the likelihood of a food recall. The research develops a model that includes the following players: two food firms competing in a vertically differentiated market – a patent holder of a food safety-enhancing technology that supplies a high-quality food product (the potential licensor) and a firm that supplies the low-quality product (the potential licensee) – a continuum of heterogeneous consumers, and an activist. The products supplied by the two firms differ in two distinct characteristics: a quality attribute and a food safety attribute. The strategic interaction between the firms (i.e., the licensing game) is modeled as a two-stage sequential game. In stage one, the patent holder chooses between licensing its food safety enhancing technology and not licensing. If the patent holder decides to license, it further chooses the type of licensing contract, that is, whether it

will offer a fixed fee contract, a per-unit royalty contract, or a two-part tariff contract. In this model, the objective of the activist is to enhance the welfare of consumers whom they serve as an advocate for; that is, consumers who lend their support to the activist’s cause. Given that consumers are better off when the likelihood of a recall is reduced, the activist is better off when the food safety enhancing technology is adopted by both firms, that is, for the activist licensing is superior to no licensing. Consequently, both firms are subject to potential pressure by the activist when licensing does not occur. When the potential licensee does not find it optimal to accept the offered licensing contract (i.e., the licensing contract is not feasible), the activist could launch a campaign against them. On the other hand, when no licensing is superior to licensing for the patent holder, the activist could launch a campaign against them. The activist, through credible social pressure, can cause reputational harm to firms and increase their costs.

The research provides some key insights on activist-driven licensing. It shows that, when the activist targets the potential licensee, both firms can benefit as long as the inflicted reputational harm leads to greater product differentiation with respect to firms’ reputation, weakening price competition and increasing market prices and profits for both firms. On the other hand, when the activist targets the patent holder, the reputational harm caused by the activist reduces the degree of product differentiation between the two firms which results in decreased prices and profits. As a result, the presence of the activist can lead the innovating firm choosing licensing when the reputational harm and the reputation cost repair are high for the innovator.

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