



Should good patents come in small packages? A welfare analysis of intellectual property bundling[☆]

Richard J. Gilbert, Michael L. Katz^{*}

University of California, Haas School of Business, Berkeley CA 94720-1900, United States

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Abstract

Intellectual property owners often hold the rights to several patents, each of which is essential to make or use a product. We compare the welfare properties of package licenses, under which a licensee pays the same fee regardless of the number of technologies licensed, with component licenses, under which each technology is licensed separately and there is no quantity discount. A central finding is that a long-term package license can induce incentives to invent around patents and invest in complementary assets that are closer to their socially optimal levels than are those induced by a long-term component license. We also identify settings in which a short-term license is a partial substitute for a package license and a prohibition on package licensing induces parties to adopt contracts that result in less efficient complementary investment because of hold-up.

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1. Introduction

It is common for an intellectual property owner to hold several patents covering technologies that are valuable only if used together. Although it would seem natural to offer the rights to

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^{*} Corresponding author.

E-mail address: katz@haas.berkeley.edu (M.L. Katz).

use these patents under a single license, such “package licensing” has long been greeted with skepticism under antitrust policy.¹ Two common objections to package licensing are claims that the practice: (a) forces licensees to purchase intellectual property rights that they do not want or need, and (b) discourages attempts to innovate around specific patents or have specific patents declared invalid, not infringed, or unenforceable, because eliminating the need to license a single patent would not change the package price for the remaining patents in the bundle.²

The first argument against package licensing is readily dismissed given that the overall exchange between the licensor and licensee is voluntary and the marginal costs of including additional patents in a license are zero or nearly so. The flaws in the second argument are more subtle and are the subject of the formal analysis below.

Antitrust concern with the packaging of two or more distinct products comes up in other settings, under names such as bundling, tying, and block booking. It is helpful to identify what distinguishes package licensing in our model from these other practices and the related literature. Package licensing is of particular interest for a number of reasons:

- Package licenses often contain patents that are strongly complementary in the sense that the underlying intellectual property covered by each patent can be put into application only if one also makes use of the intellectual property covered by the other patents. In these instances, there is no sense in which users have separate valuations of the different patents. Thus, the motive to use bundling or block booking to “average out” valuations across different units does not arise.³
- The technologies covered by patents in a package often are used in fixed proportions. Consequently, packaging complementary patents is not motivated by metering or Ramsey pricing considerations that may arise with other goods.⁴
- The inclusion of additional patents in a package license typically has near-zero incremental cost. From a purely static perspective, even small transaction costs associated with licensing individual patents can make combining patents in a package both socially and privately desirable.
- A licensee may desire a package license to reduce the potential for hold-up. Separate licensing on a patent-by-patent basis exposes a licensee to high royalties for any additional patents that are necessary to produce a commercial product after the licensee has agreed to pay fees for the rights to an initial subset of the necessary patents. A package license that covers all present and future patents owned by a given licensor can reduce this hold-up risk.

¹ See, e.g., U.S. Department of Justice and Federal Trade Commission, *Antitrust Guidelines for the Licensing of Intellectual Property*, April 6, 1995, §5.3, which also observe that “[p]ackage licensing can be efficiency enhancing under some circumstances.” Some courts have found package licensing unlawful where the licensor refused to license separate patents. See, e.g., *Hazeltine Research v. Zenith Radio*, 388 F.2d 25, 33–35 (7th Cir. 1967), 395 U.S. 100 (1969). These issues also have been addressed by the European Commission. See, e.g., *Guidelines on the application of Article 81 of the EC Treaty to technology transfer agreements*, ¶222(d) (available at http://www.europa.eu.int/comm/competition/antitrust/legislation/entente3_en.html).

² Critics of package licensing sometimes assert that a package license containing many patents overwhelms potential licensees’ abilities to evaluate whether they would infringe most or all of the component patents. This is not a bundling issue: the same problem would arise under sequential licensing of the patents.

³ See, e.g., *Adams and Yellen* (1976), *McAfee et al.* (1989), and *Stigler* (1963).

⁴ For an early discussion of using tying to facilitate metering-based price discriminating, see *Bowman* (1957). For an early (and under-appreciated) discussion of tying to facilitate Ramsey pricing, including the tying of unrelated goods, see *Burstein* (1960).

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