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Vertical integration and R&D information flow: is there a need for 'firewalls'?

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Abstract

We examine the impact of R&D information flow on innovation incentives and welfare. In particular, we consider the case in which the information flows from a downstream nonintegrated firm to the downstream division of a vertically integrated firm via its upstream subsidiary. In a setting where both the integrated and nonintegrated firm engage in cost-reducing R&D and compete in the product market, we show that the impact of the R&D information flow on innovation, output, and profits is positive for the integrated firm, and negative for the nonintegrated firm. Unless information spillovers are high, goods are close substitutes, and R&D is very costly, 'firewalls' decrease welfare.

JEL classification: L22; L11; L49; K21

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1. Introduction

There has been a recent resurgence of interest in the potential anticompetitive effects of vertical mergers. The Antitrust Division of the Department of Justice (DOJ) and the Federal Trade Commission (FTC) of the United States have intervened in a series of vertical merger cases and issued consent decrees placing various behavioral restrictions on

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the postacquisition firms. These behavioral restrictions are motivated by the Antitrust Authorities' concern that the nonpublic information obtained by a vertically integrated firm could be used anticompetitively.[1]

Consider a market structure in which an upstream firm is supplying an intermediate good to a number of downstream firms and at the same time is vertically integrated with one of these downstream firms. In this setting, the Antitrust Authorities are concerned that the information derived by the upstream supplier through its vertical relations with its downstream customers will be shared with its downstream integrated subsidiary, leading to a reduction in innovation incentives and downstream competition.

These concerns become relevant when important information, particularly information about the technology, the design or the specific characteristics of the products must be shared between the upstream and the downstream firms. This is typical in R&D intensive industries, where the exchange of information about the upstream and downstream products, is necessary in order for the products to be compatible, to avoid extra costs of adjustment, and to increase functionality.

In practice, concerns regarding the effects of the information flow were raised in a series of vertical merger cases which took place in a number of different R&D intensive industry sectors: defense (Raytheon/Chrysler, Boeing/Rockwell, Alliant/Hercules, Lockheed/Loral), pharmaceuticals (Merc/Medco), telecommunications (AT&T/McCaw, MCI/BT), satellites (Boeing/General Motors, Martin Marietta/General Dynamics), and energy (PacifiCorp/Energy Group).[2] In all these merger cases, the upstream and downstream firms were working closely together, and the upstream division of the vertically integrated firm was receiving nonpublic information about the products of its downstream customers in its capacity as an upstream input supplier. Hence, the upstream division of the vertically integrated firm could transfer this nonpublic information to its own downstream subsidiary. In all these cases, the DOJ and the FTC assumed that such information transfer, among other things, would reduce competition and firms' innovation incentives. Thus, although they allowed the vertical mergers to take place, they required the establishment of a 'firewall' between the merging parties.

A 'firewall' is a behavioral requirement that prohibits the different divisions of a vertically integrated firm from communicating about nonpublic information received by one of the divisions from outside parties. In the implementation of a 'firewall', the upstream division of the integrated firm is asked to use the downstream competitor's proprietary information only in its capacity as its supplier, and not to provide it, disclose it or otherwise make it available to its downstream subsidiary. It is also asked to inform its nonintegrated downstream customers about this nondisclosure requirement before obtaining any information from them that is outside the public domain. Finally, the integrated firm is required to permit the authorized representatives of the Antitrust

[1] Nonpublic information in this context includes any information not available in the public domain. For example, information about design and technological specifications, private costs, bids, marketing strategies.

[2] FTC Docket N.C-3681, 9/1996; FTC File N.9710006, 12/1996; FTC File N.9410123, 11/1994; FTC Docket N.C-3685, 9/1996; Civil Action N.94-01555; Civil Action N.94-1317; FTC File N.9510097, 8/1998; File N.0010092, 9/2000; Martin Marietta Decree in 59 Federal Regulation; FTC File N.9710091, 2/1998.