

ABSTRACT

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INNOVATION, INTELLECTUAL PROPERTY RIGHTS, AND CONCENTRATION IN A NASCENT INDUSTRY: U.S. NEWSPRINT INDUSTRY, 1889-1913

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Concentration in technology based industries can be expected to have significant effects on the dynamics of innovation. Rapid structural change often characterizes emerging industries, and is particularly evident when firms recognize first mover advantages and adopt aggressive strategies of growth. In such a case the behavior of firms and dynamics of subsequent industry evolution can be shaped importantly by the organization of technological learning. These processes are extremely complex, and of vital importance as they potentially facilitate or impede economic progress. This presentation illustrates such dynamics at play during the nascent phase of modern newsprint industry between 1889 and 1913, and considers managerial and policy implications.

A sustained wave of technological learning in sulphite digesters triggered rapid growth and structural change in the U.S. newsprint industry in the 1890's. The American Sulphite Pulp Company obtained a patent for revolutionary sulphite digester in 1889. However, the patent's value was diminished by the preceding intense patent race and rivals' ability to imitate, and new entrants flooded the newsprint industry where the technology was most potent. American Sulphite responded by acquiring competing patents, and aggressive infringement litigation. These efforts peaked in 1897 with an Appeals Court ruling that granted the company a virtual monopoly on sulphite digesters in the U.S.

The ruling increased immediately the price of licenses, but rival firms with pre-existing capabilities in sulphite technology had now also increased incentives for imitation. The American Sulphite Pulp Company responded by creating a vast and moderately priced license network. Moreover, its managers merged in 1898 twenty New England companies into newsprint giant that controlled over 60% of U.S. markets, the International Paper Company. International took over also the sulphite patents, and invested heavily into new sulphite pulp capacity.

The combination of rapid diffusion of innovation and patent monopoly undermined the incentives for all U.S. pulp and paper firms to innovate in sulphite technologies. Such effects were amplified by the public policies that affected the industry leader. Antitrust authorities prevented the formation of a competing national newsprint giant in 1905, and induced International to diversify production capacity from newsprint into more specialized products. The changed incentives quickly disintegrated focused efforts to

improve the basic wood pulping processes with radical technological departures that had characterized the industry for almost half a century.