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THE SCOPE OF A PATENT

Patent length is, however, only one aspect of patent protection. Another important trade policy question is: What is the optimal *scope* of patent protection? The scope of patent includes considerations of patent breadth. For example, the inventor of the oversized Prince tennis racket[64] was granted U.S. patent protection for 85 to 130 square inch rackets[65]. Competitors were forced to produce outside this range. But other countries may choose to enforce narrower patent widths than the U.S. The allowable breadth of claims is determined by patent examiners and the judiciary. Indeed, Prince failed to obtain useful patent protection in England, Germany or Japan.

Wider patents reduce consumers' freedom to substitute competitively marketed, unpatented varieties of the product. Narrow patents reduce profits that an innovator can appropriate. In providing adequate profit reward to the innovator at the least social cost, there emerges a trade-off between patent width and patent length. Depending on market demand, long-lived and narrow, or short and wide patents can be optimal.[66]

If a patent is given a narrow interpretation, the innovator's competitors will have an easy time "inventing around" an existing patent and still will not be penalized for patent infringement. Imitators will incur the cost of reverse engineering and come out with a product variety similar to that of the innovator. Consumers will have the choice of lots of variety and the imitators will bite into the innovator's rents. Thus, narrow patents reduce profits that an innovator can appropriate. Wider patents reduce consumers' freedom to substitute competitively marketed, unpatented varieties of the product, and can preserve most of the rents for the patentee.

This Paper argues that the scope of a patent can be exploited by some countries given that patent terms have converged among industrialized countries. Consider an

[64] Howard Head of Prince Manufacturing, see Paul Klemperer, "How broad should the scope of patent protection be?", *RAND Journal of Economics*, Spring 1990: 114.

[65] The conventional racket face at the time was 70 square inches.

[66] Richard Gilbert and Carl Shapiro, "Optimal Patent Length and Breadth", *RAND Journal of Economics*, 21(1), Spring 1990: 106-112.