

# Capacity Optimization for Innovating Firms

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## Abstract

In case of a product innovation the firms start producing a new product. While doing so, such a firm should decide what to do with their existing production process after the firm has innovated. Essentially it can choose between replacing the established production process by the new one, or keep on producing the established product so that it produces two products at the same time.

Aim of this paper is to design a theoretical framework to analyze this problem. Due to technological progress the quality of the newest available technology, and thus the quality of the innovative product that can be produced by this technology, increases over time. The implication is that a later innovation enables the firm to produce a better innovative product. So, typically the firm faces the tradeoff between innovating fast that enlarges its payoff soon but only by a small amount, or innovating later that leads to a larger payoff increase, the drawback being that the firm is stuck with producing the established product for a longer time.

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