

A Theoretical Framework for Managing the New Product Development Portfolio: When and How to Use Strategic Buckets

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Developing the “right” new products is critical to firm success and is often cited as a key competitive dimension. This paper explores new product development (NPD) portfolio strategy and the balance between incremental and radical innovation. We characterize innovative effort through a normative theoretical framework that addresses a popular practice in NPD portfolio management: the use of *strategic buckets*. Strategic buckets encourage the division of the overall NPD resource budget into smaller, more focused budgets that are defined by the type of innovative effort (incremental or radical). We show that time commitment determines the balance between incremental and radical innovation. When managers execute this balance, they are often confounded by (i) environmental complexity, defined as the number of unknown interdependencies among technology and market parameters that determine product performance; and (ii) environmental instability, the probability of changes to the underlying performance functions. Although both of these factors confound managers, we find that they have completely opposite effects on the NPD portfolio balance. Environmental complexity shifts the balance toward radical innovation. Conversely, environmental instability shifts the balance toward incremental innovation. Risk considerations and implications for theory and practice are also discussed.

Key words: new product development; NPD portfolio strategy; incremental innovation; radical innovation; strategic buckets; complex systems; evolutionary systems

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