

Harnessing Knowledge – Redefining Strategic Insights for Effective Technology Transfer Models

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Abstract:

This study addresses the need to modernize technology transfer frameworks in evolving ecosystems. The research explores how theoretical and practical frameworks, such as the Stage-Gate Process, Technology Readiness Levels (TRL), and ISO standards, can create adaptive models. The research also evaluates guidelines from WIPO, the European Commission, and NIST.

Building on seminal works, including the Stage-Gate Process and TRL framework, the study incorporates perspectives from OECD and WIPO frameworks. A mixed-methods approach combines theoretical analysis with case studies from biotechnology, renewable energy, and artificial intelligence sectors. Empirical data evaluates NIST processes and ISO standards in innovation management.

Preliminary findings highlight the need to augment traditional models with adaptive methodologies. Integrating TRL with ISO standards enhances scalability and efficiency, while WIPO and OECD frameworks foster collaboration and commercialization. These findings underscore the necessity for hybrid models leveraging institutional guidelines and digital tools.

The study's scope is primarily developed economies, limiting applicability to emerging markets. Nonetheless, it offers actionable insights for policymakers, academia, and industry, emphasizing adaptive frameworks to drive innovation and growth.

Keywords:

Technology Transfer, Strategic Management, Open Innovation, Dynamic Capabilities, Ecosystem Models, Innovation Commercialization