

A Comparative Analysis of Innovation Maturity Models: Towards the Development of a Technology Management Maturity Model

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Abstract : Strategic technology management has emerged and evolved parallelly with strategic management paradigms. It focuses on the opportunity for organizations operating mainly in technology-intensive industries to explore and exploit technological capabilities upon which competitive advantage can be obtained. As strategic technology management involves multifunction within an organization, requires broad and diversified knowledge, and must be developed and implemented with business objectives to enable a firm's profitability and growth, excellence in strategic technology management provides unique opportunities for organizations in terms of building a successful future. Accordingly, a framework supporting the evaluation of the technological readiness level of management can significantly contribute to developing organizational competitiveness through a better understanding of strategic-level capabilities and deficiencies in operations. In the last decade, several innovation maturity assessment models have appeared and become designated management tools that can serve as references for future practical approaches expected to be used by corporate leaders, strategists, and technology managers to understand and manage technological capabilities and capacities. The aim of this paper is to provide a comprehensive review of the state-of-the-art innovation maturity frameworks, to investigate the critical lessons learned from their application, to identify the similarities and differences among the models, and identify the main aspects and elements valid for the field and critical functions of technology management. To this end, a systematic literature review was carried out considering the relevant papers and articles published in highly ranked international journals around the 27 most widely known innovation maturity models from four relevant digital sources. Key findings suggest that despite the diversity of the given models, there is still room for improvement regarding the common understanding of innovation typologies, the full coverage of innovation capabilities, and the generalist approach to the validation and practical applicability of the structure and content of the models. Furthermore, the paper proposes an initial structure by considering the maturity assessment of the technological capacities and capabilities - i.e., technology identification, technology selection, technology acquisition, technology exploitation, and technology protection - covered by strategic technology management.

Keywords : innovation capabilities, innovation maturity models, technology audit, technology management, technology management maturity models

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