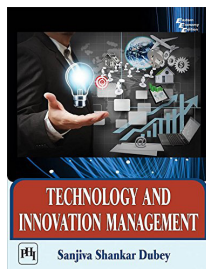


# Technology and Innovation Management

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The book “Technology and Innovation Management” has been written by the author having three decades of experience in the area. The coverage of this book, has been aptly chosen as presently this is the key emerging discipline and is able to provide insight into the subject. The book is divided into eleven chapters and addresses all areas from conceptual foundation to examples of technology led innovation projects. The book is written in a simple and easy to read manner and is designed to equip its readers to implement a concept quickly and effectively before any technology/innovative idea becomes old or irrelevant.

Chapter 1 of the book lays a comprehensive foundation of the subject. It explains the terms Technology and Innovation and their impact on the Society and Business. The chapter also elaborates the increasing effectiveness of technology and Innovation for managers and how they can lead to enhanced Strategy. The chapter presents a conceptual framework of Management of Technology (MOT). The chapter concludes by defining the role of Chief Technology Officer (CTO) in driving the Technology and Innovation process within an Enterprise.

Chapter 2 illustrates the Technology Strategy, the importance of adoption of new technologies

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for gaining corporate advantage and therefore the importance of outlining technology strategy for firms. Technology brings about new process, new product and helps the process development through Innovation. The Chapter links technology, development and competition and explains the process of managing Research and Development and Intellectual Property Rights thereby defining strategic direction of Organizations.

Chapter 3 lays foundation for the remaining chapters. It describes the core principles of technology management, its components and how to choose the right management strategies for technology.

Chapter 4 discusses TIM i.e. Technology Innovation Management. It starts with defining the meaning of Innovation and creativity, sources of Innovation and the Innovation Process. It explains the types and patterns of technological innovation, S-Curve and segment zero principle. The chapter further explains the factors that drive innovation and the impact of intellectual property management on innovation. It further describes the market structures that yield innovation and why some countries are poor and some rich. The chapter concludes by describing the impact of economic regulations on innovation and the process for choosing the right Innovation Projects.

Chapter 5 explores the ever-changing nature of technology and circumvents the methodology for technology forecasting and assessment. It elaborates the various forecasting methods and also the methods used for tracing technological evolution in various contexts such as industry, organizational and strategic. The chapter explains various technology monitoring processes and steps for doing the technology morphological analysis

and drawing mission flow diagrams. The pros and cons of making technology choice through either leadership or followership is also explained. The chapter also deals with the tools for technology planning, analysis and tracing trajectories. The chapter details various topics with suitable examples and case studies. Acquisition of technology leads to establishment of alliances; the chapter discusses the issues surrounding the national and international alliances. The chapter concludes by discussing the strategic reasons for mergers and acquisitions and their various types.

Chapter 6 is about the role of technology in Product and Process development. It starts with defining the various stages of the product life cycle and building an understanding of developing new-product ideas and continues it to explaining how companies run new-product development process. The chapter presents an overview of how should Organizations manage New Product development teams, Research & Development, Intellectual Property and protect Innovation. Finally, it defines Product Deployment strategy and approach for process development and the role of technology in this process.

The next chapter focuses on building concept around technology and business model, since technology has penetrated across boundaries and new innovative business models are needed to conduct business. The chapter begins by defining a business model and why it is important in the modern businesses. It further explains the different types of business models and how to choose the most suitable. The role of technology in formulating business models and building sustainable business models is further explained. The chapter concludes by explaining how to appraise business models and grow and maintain them over time.

The next chapter i.e. Chapter 8 focusses on implementation of Technology and Innovation. It explains the Implementation process and the

responsibility and accountability. The most crucial concept i.e. selection of timings of technology intervention is discussed at large. Finally, the chapter suggests how to measure the success of implementation of the technology.

Chapter 9 presents an overview of the existing and emerging technology used across industries, especially in the business management area. Chapters covers essentials of ERP, MIS, DSS, SCM, Data Warehousing/Mining and CRM, followed by E-Business, E-Commerce, B2B, B2C, Mobile Computing, 3D printing, IOT, big data and social media analytics and other emerging technologies.

Chapter 10 explores the human aspects and social issues in technology management. The chapter stresses the fact that human spirit must prevail over technology and not let it damage the basic fabric of society. The chapter discusses issues that arise due to integration of people and technology focussing on the organizational and psychological factors, organization structure and need to ensure technological change management and maintain Industrial relations.

The concluding chapter emphasizes the relationship of technology and sustainability and how to ensure that the world's ecological resources are maintained and preserved by technology and not damaged.

The book has been designed in a very reader friendly manner, describing all concepts in detail and supporting them with case studies and examples from the Industry. Each chapter has a concluding summary and review and discussion questions to help students gain a complete understanding of the concept and its application.

The book is suitable for all students planning to join industry from B-Schools (MBA/PGDM) or Engineering Institutes (B.Tech/M.Tech) by providing them complete understanding of Technology and Innovation Management.