1. Record Nr. UNINA9910580176503321

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Titolo	Technology Roadmapping and Development : A Quantitative Approach to the Management of Technology / / by Olivier L. De Weck
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2022
ISBN	9783030883461 9783030883454
Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (660 pages)
Disciplina	600 658.4062
Soggetti	Industrial management Production management Industrial engineering Production engineering Automatic control Economics Dynamics Nonlinear theories Industrial Management Operations Management Industrial and Production Engineering Control and Systems Theory Applied Dynamical Systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Chapter 1. What is Technology? -- Chapter 2. Technological Milestones of Humanity -- Chapter 3. Technology and Nature -- Chapter 4. Quantifying Technological Progress -- Chapter 5. Patents and Intellectual Property -- Chapter 6. Case 1: The Automobile -- Chapter 7. Diffusion and Disruption of Technology -- Chapter 8. Technology Roadmaps -- Chapter 9. Case 2: The Aircraft -- Chapter 10. Technology Strategy and Competition -- Chapter 11. Systems Modeling

and Technology Sensitivity -- Chapter 12. Technology Infusion Analysis -- Chapter 13. Case 3: The Deep Space Network -- Chapter 14. Technology Scouting -- Chapter 15. Knowledge Management and Technology Transfer -- Chapter 16. R&D Portfolio Management -- Chapter 17. Technology Valuation and Finance -- Chapter 18. Case 4: DNA Sequencing -- Chapter 19. Impact of Technology on Industrial Ecosystems -- Chapter 20. Military and Intelligence Technologies -- Chapter 21. Aging and Technology -- Chapter 22. The Singularity: Fiction or Reality?

Sommario/riassunto

This textbook explains Technology Roadmapping, in both its development and practice, and illustrates the underlying theory of, and empirical evidence for, technologic evolution over time afforded by this strategy. The book contains a rich set of examples and practical exercises from a wide array of domains in applied science and engineering such as transportation, energy, communications, and medicine. Professor de Weck gives a complete review of the principles, methods, and tools of technology management for organizations and technologically-enabled systems, including technology scouting, roadmapping, strategic planning, R&D project execution, intellectual property management, knowledge management, partnering and acquisition, technology transfer, innovation management, and financial technology valuation. Special topics also covered include Moore's law, S-curves, the singularity and fundamental limits to technology. Ideal for university courses in engineering, management, and business programs, as well as self-study or online learning for professionals in a range of industries, readers of this book will learn how to develop and deploy comprehensive technology roadmaps and R&D portfolios on diverse topics of their choice. Introduces a unique framework, Advanced Technology Roadmap Architecture (ATRA), for developing quantitative technology roadmaps and competitive R&D portfolios through a lucid and rigorous step-by-step approach; Elucidates the ATRA framework through analysis which was validated on an actual $1 billion R&D portfolio at Airbus, leveraging a pedagogy significantly beyond typical university textbooks and problem sets; Reinforces concepts with in-depth case studies, practical exercises, examples, and thought experiments interwoven throughout the text; Maximizes reader competence on how to explicitly link strategy, finance, and technology. The book follows and supports the MIT Professional Education Courses "Management of Technology: Roadmapping & Development," https://professional.mit.edu/course-catalog/management-technology-roadmapping-development and "Management of Technology: Strategy & Portfolio Analysis" https://professional.mit.edu/course-catalog/management-technology-strategy-portfolio-analysis .