



## Innovation, Evolution and Complexity Theory

By Koen Frenken



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The motivation behind this book is the desire to integrate complexity theory into economic models of technological evolution. By means of developing an evolutionary model of complex technological systems, the book contributes to the neo-Schumpetarian literature on innovation, diffusion and technological paradigms.

Recent advances in complexity theory provide a new understanding of technological innovation and complex problem-solving. This book offers an approach based on Stuart Kauffman's NK-model of complex systems to better understand and analyze search strategies that firms apply to develop new technologies. The models deal with a range of topics including bounded rationality, myopia, decomposability, modularity and the emergence of technological paradigms. Empirical applications include the evolution of early 18th century steam engine technology, 20th century aircraft and helicopter designs and recent innovations in personal computers. *Innovation, Evolution and Complexity Theory* makes excellent use of complexity theory and large datasets on technologies with which to complement the analysis.

The book will be of great interest to evolutionary and innovation economists and academics as well as scholars in the interdisciplinary field of complexity theory and industrial organization.



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Review

[T]his book will not fail to have an impact on the profession. . . this is a very valuable book that shows the long way evolutionary economics has come in the past fifteen years. --Andreas Reinstaller, *Journal of Evolutionary Economics* 

About the Author

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