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Autore	Hadlock Charles Robert
Titolo	Six sources of collapse : a mathematician's perspective on how things can fall apart in the blink of an eye / / Charles R. Hadlock [[electronic resource]]
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ISBN	1-61444-514-1
Descrizione fisica	1 online resource (xiv, 207 pages) : digital, PDF file(s)
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Nota di bibliografia	Includes bibliographical references (p. 189-199) and index.
Nota di contenuto	Introduction -- Predicting unpredictable events -- Group behavior: crowds, herds, and video games -- Evolution and collapse: game playing in a changing world -- Instability, oscillation, and feedback -- Nonlinearity: invitation to chaos and catastrophe -- It's all about networks -- Putting it all together: looking at collapse phenomena in "6-D."
Sommario/riassunto	Beginning with one of the most remarkable ecological collapses of recent time, that of the passenger pigeon, Hadlock goes on to survey collapse processes across the entire spectrum of the natural and man-made world. He takes us through extreme weather events, technological disasters, evolutionary processes, crashing markets and companies, the chaotic nature of Earth's orbit, revolutionary political change, the spread and elimination of disease, and many other fascinating cases. His key thesis is that one or more of six fundamental dynamics consistently show up across this wide range. These six sources of collapse can all be best described and investigated using fundamental mathematical concepts. They include low probability events, group dynamics, evolutionary games, instability, nonlinearity, and network effects, all of which are explained in readily understandable terms. Almost the entirety of the book can be understood by readers with a minimal mathematical background, but even professional mathematicians are likely to get rich insights from

the range of examples. The author tells his story with a warmly personal tone and weaves in many of his own experiences, whether from his consulting career of racing around the world trying to head off industrial disasters to his story of watching collapse after collapse in the evolution of an ecosystem on his New Hampshire farm.