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	Nota di contenuto	Preface -- pt. 1. The theories and why. 1. The emergence of holistic thinking. The scholastic paradigm. The Renaissance paradigm. The mechanistic world and determinism. The hegemony of determinism. The age of relativity and quantum mechanics. The systems age. Review questions and problems. 2. Basic ideas of general systems theory. GST and concepts defining systems properties. Cybernetics and concepts defining systems processes. General scientific and systemic concepts. Widely-known laws, principles, theorems and hypotheses. Some generic facts of systems behaviour. Review questions and problems. 3. A selection of systems theories. Boulding and the hierarchy of systems complexity. Miller and the general living systems theory. Beer and the viable system model. Lovelock and the Gaia hypothesis. Teilhard de Chardin and the noosphere. Taylor and the geopolitic systems model. Klir and the general systems problem solver. Laszlo and the natural systems. Cook and the quantal system. Checkland and the systems typology. Jordan and the systems taxonomy. Salk and the categories of nature. Powers and the control theory. Namilov and the organismic view of science. Bowen and family systems theory. Jaques and the

stratified systems theory. Review questions and problems. 4. Communication and information theory. Basic concepts of communication theory. Interrelations between time, place and channel. Shannon's classical theory. Basic concepts of information theory. Information, exformation and entropy. How to measure information. Entropy and redundancy. Channels, noise and coding. Review questions and problems. 5. Some theories of brain and mind. The need for consciousness. A hierarchy of memory. Brain models. A model perspective. Review questions and problems. 6. Self-organization and evolution. Evolution as self-organization. Basic principles of self-organization. Some rules of the game. The city. Climate and weather. The economy. Review questions and problems -- pt. 2. The applications and how. 7. Artificial intelligence and life. The Turning test. Parallel processing and neural networks. Expert systems. Some other applications. Artificial life. Computer viruses. A gloomy future. Review questions and problems. 8. Organizational theory and management cybernetics. The origin of modern trading corporations. The development of organizational theory. The non-avoidable hierarchy. Organizational design. Multiple perspectives of management cybernetics. A systems approach in ten points. Review questions and problems. 9. Decision-making and decision aids. Some concepts and distinctions of the area. Basic decision aids. Managerial problems and needs. Four generations of computer support. C[symbol]I systems. Some psychological aspects of decision-making. The future of managerial decision support. Review questions and problems. 10. Informatics. Electronic networks. Fibre optics, communication and navigation satellites, cellular radio. Internet. Virtual reality. Cyberspace and cyberpunk. Review questions and problems. 11. Some of the systems methodologies. Large-scale, soft and intertwined problems. Systems design. Breakthrough thinking. Systems analysis. Systems engineering. GLS simulation. Method versus problem. Review questions and problems. 12. The future of systems theory. Science of today. The world we live in. The need for change. Systems thinking as alternate and criticized paradigm. Systems thinking and the academic environment. How to write the instruction manual. Review questions and problems.

| Sommario/riassunto | Systems theorists see common principles in the structure and operation of systems of all kinds and sizes. They promote an interdisciplinary science adapted for a universal application with a common language and area of concepts. In order to solve problems, make recommendations and predict the future, they use theories, models and concepts from the vast area of general systems theory. This approach is chosen as a means to overcome the fragmentation of knowledge and the isolation of the specialist but also to find new approaches to problems created by earlier 'solution of problems.' This revised and updated second edition of General Systems Theory -- Ideas and Applications includes new systems theories and a new chapter on self-organization and evolution. The book summarizes most of the fields of systems theory and its application systems science in one volume. It provides a quick and readable reference guide for future learning containing both general theories and practical applications |