1. Record Nr. UNINA9910960838203321

Titolo The Positive sum strategy: harnessing technology for economic growth // Ralph Landau and Nathan Rosenberg, editors

Pubbl/distr/stampa Washington, D.C.,: National Academy Press, 1986

ISBN 9786610222063
9781280222061
1280222069

1280222001 1280222069 9780309567985 030956798X

Edizione [1st ed.]

Descrizione fisica 1 online resource (656 p.)

Altri autori (Persone) LandauRalph

RosenbergNathan <1927->

Disciplina 338.9/26

Soggetti Technological innovations - United States

United States Economic conditions Congresses

Lingua di pubblicazione Inglese

Formato Materiale a stampa

Livello bibliografico Monografia

Note generali Sponsored by the National Academy of Engineering and others.

Nota di bibliografia Includes bibliographies and index.

Nota di contenuto The Positive Sum Strategy -- Copyright -- Introduction -- WHY

DIALOGUE IS NEEDED -- Why Should Technologists Be Concerned About Economics? -- Why Should Economists Be Concerned About Technology? -- THEMES OF THIS VOLUME -- Contents -- Editors'

Overview -- ECONOMIC GROWTH-THE BASIS FOR ANY SOCIETY'S HOPES FOR THE FUTURE -- THE BASIC FACTOR IN ECONOMIC GROWTH: TECHNOLOGY (EMBODIED AND DISEMBODIED) -- INSIDE THE BLACK BOX OF TECHNOLOGY -- THE INNOVATIVE PROCESS AND ITS PROPER

CLIMATE -- The Technological and Entrepreneurial Climate -- The Financial Climate -- OBSTACLES TO U.S. GROWTH: SUMMARY -- COMPETITIVENESS: THE FIRST PRIORITY FOR FUTURE AMERICAN PROSPERITY -- The Impact of Technological Innovation: A Historical

View -- THE LIMITATIONS OF THE EXPERT -- TECHNOLOGICAL CHANGE AND UNEMPLOYMENT -- CONCLUSION -- NOTES -- Macroeconomics, Technology, and Economic Growth: An Introduction to Some Important Issues -- ISSUES IN MACROECONOMICS RELATED TO TECHNOLOGY -- CHANGING VIEWS ON A CHANGING ECONOMY: ALLEGED CRISIS IN

ECONOMICS -- Economic Events of the 1970s -- Economic Schools of Thought -- RECENT ECONOMIC POLICY -- CONCLUSION AND PARTIAL RESEARCH AGENDA -- REFERENCES AND BIBLIOGRAPHY --Microeconomics and Productivity -- GROWTH AND PRODUCTIVITY --ENDOGENOUS PRODUCTIVITY GROWTH -- GROWTH PROSPECTS --CONCLUSION -- NOTES -- REFERENCES -- Dynamic Competition and Productivity Advances -- MOTIVATED COMPETITION -- STATISTICAL RESULTS -- NEED FOR LONGER-RUN ADJUSTMENTS -- CONCLUSIONS -- NOTES -- The Effect of Recent Macroeconomic Policies on Innovation and Productivity -- Macrorealities of the Information Economy -- SHIFTS IN OUTPUT AND EARNINGS -- INFORMATION WORKERS AND THE INVESTMENT RESPONSE -- A COMMON THREAD --PRODUCTIVITY IMPLICATIONS -- A DARK SIDE -- REALITIES OR VISIONS? -- Harnessing Technology for Growth. Technology and Its Role in Modern Society -- REVIEW OF AMERICA'S TECHNOLOGICAL POSITION -- ROLE OF THE NATIONAL ACADEMY OF ENGINEERING -- CONCLUSION -- National Science Policy and Technological Innovation -- HISTORIC ROLES OF GOVERNMENT IN SCIENCE AND TECHNOLOGICAL INNOVATION -- The Growing Role of Government -- Government and Basic Science -- The Watershed of World War II -- THE POSTWAR ERA AND THE NEW SOCIAL CONTRACT BETWEEN SCIENCE AND SOCIETY -- "Science the Endless Frontier" --Trends in R&amp -- D Expenditures -- THREE EPOCHS IN POSTWAR SCIENCE POLICY -- The Cold War Period: 1945-1965 -- The Social Priorities Period: 1965-1978 -- The Period of Emphasis on Innovation Policy -- COMPARATIVE INDICATORS OF U.S. PERFORMANCE IN SCIENCE AND TECHNOLOGY -- Inputs -- Outputs -- Other Indices of Competitive Erosion -- RELATIVE ROLES OF PUBLIC AND PRIVATE SECTORS IN GENERATION AND COMMERCIALIZATION OF NEW TECHNOLOGY -- Areas of Consensus on Federal Responsibility --Areas of Consensus on Inappropriateness of Government Role -- Areas of Controversy -- Other Public Policies for Innovation -- OUTLOOK AND PROSPECT: CAN THE U.S. DECLINE BE REVERSED? -- REFERENCES -- The Role of the Legal System in Technological Innovation and Economic Growth -- THE LEGAL SYSTEM AS FACILITATOR -- EFFECTS OF TECHNOLOGY AND ECONOMIC ORGANIZATION ON LAW --CONSTRAINING ASPECT OF LAW -- Tort Doctrine of Negligence-Interface With Transportation -- Negligence and Nuisance-Interface With Environmental Protection -- Strict Products Liability -- Judicial Fact-Finding -- CONCLUSIONS -- RELATED ISSUES -- REFERENCES --The Bhopalization of American Tort Law -- TORT LAW, OLD AND NEW -- Bipolarity -- Timeliness -- The World in the Oyster -- The Driving Force -- CAN THE LEGAL SYSTEM COPE? -- Regressive Incentives --Inefficient Compensation -- Kindling the Flames -- The Writing on the Wall. THE AGENCIES AND THE COURTS -- Institutional Competence --Deferring to the Experts -- Compensating Victims -- PUBLIC RISKS AND POLITICAL LEGITIMACY -- NOTES -- From Understanding to

THE AGENCIES AND THE COURTS -- Institutional Competence -Deferring to the Experts -- Compensating Victims -- PUBLIC RISKS AND
POLITICAL LEGITIMACY -- NOTES -- From Understanding to
Manipulating DNA -- THE DOUBLE HELIX -- THE CENTRAL DOGMA -THE GENETIC CODE -- THE ENZYMOLOGY OF DNA SYNTHESIS -- RULES
FOR GENE EXPRESSION -- A PAUSE WITHIN THE GOLDEN AGE -- THE
UNANTICIPATED DISCOVERY OF RESTRICTION ENZYMES -- THE MAKING
OF THE FIRST RECOMBINANT DNA MOLECULES -- PRODUCTION OF
FOREIGN PROTEINS BY RECOMBINANT DNA-BEARING PLASMIDS -EXTENSION OF RECOMBINANT DNA METHODS TO CELLS OTHER THAN
BACTERIA -- DECREASING BUT STILL HARMFUL REGULATION OF
RECOMBINANT DNA -- POTENTIAL TO DO SCIENCE FAR EXCEEDS
CURRENT FINANCIAL BASE -- BIBLIOGRAPHY -- The Physical Sciences

As the Basis for Modern Technology -- CHRONOLOGY OF THE PHYSICAL SCIENCES -- APPLIED SCIENCE SUPPORT FOR INNOVATION AND TECHNOLOGY -- Crystals and Glasses -- Phase Rule Applications -- Hydrocarbons -- Surface Technology -- Nuclear Science and Radioisotopes -- SCIENCE SUPPORTING MEASUREMENT AND SYSTEMS -- Technological Education -- TECHNOLOGICAL EDUCATION IN THE UNITED STATES -- TECHNOLOGICAL EDUCATION IN JAPAN -- FUTURE DIRECTIONS -- Basic Research in the Universities: How Much Utility? --WHY NEW UNIVERSITY-INDUSTRY RELATIONSHIPS ARE DEVELOPING --THE QUALITY-UTILITY DEBATE -- CONSIDERATIONS IN FORMULATING RESEARCH POLICIES -- What Growth and Cost Features Must Be Considered? -- How Is Quality To Be Recognized and Measured? --How Is Utility To Be Recognized and Measured? -- Are Commercial Incentives Good Devices for Generating Utility From Quality? --CONCLUSION -- NOTES -- An Overview of Innovation --INTRODUCTION -- CHARACTERIZATION OF INNOVATION -- MODELS OF INNOVATION -- The Linear Model -- The Chain-Linked Model --UNCERTAINTY IN INNOVATION -- ECONOMICS OF INNOVATION. Rising Development Costs -- Resistance to Radical Innovation --Financial Risks -- Coupling the Technical and the Economic --CONCLUSIONS -- REFERENCES AND BIBLIOGRAPHY -- Microeconomics of Technological Innovation -- RELATIONSHIP BETWEEN R&amp -- D AND PRODUCTIVITY GROWTH -- SOCIAL AND PRIVATE RETURNS FROM SPECIFIC INNOVATIONS -- BASIC RESEARCH AND PRODUCTIVITY --CENTRAL ROLE OF IMITATION COSTS AND TIMES -- Patents and Imitation Costs -- Imitation Costs, Entry, and Concentration --PATENTS AND THE RATE OF INNOVATION -- PRICE INDEXES FOR R&amp -- D INPUTS -- THE DIFFUSION OF INNOVATIONS -- INTERNATIONAL TECHNOLOGY TRANSFER -- EFFECTS ON OTHER COUNTRIES OF THE OUTFLOW OF U.S. TECHNOLOGY -- CONCLUSIONS -- NOTES --REFERENCES -- Macroeconomics and Microeconomics of Innovation: The Role of the Technological Environment -- OVERVIEW --IMPORTANCE OF THE TECHNOLOGICAL ENVIRONMENT -- COMMENTS ON CHAPTERS BY JORGENSON AND MANSFIELD -- REFERENCES --Technical Change and Innovation in Agriculture -- THE CONTRIBUTION OF RESEARCH TO PRODUCTIVITY GROWTH -- PUBLIC AND PRIVATE SECTOR GENERATION OF AGRICULTURAL TECHNOLOGY -- Recent Trends in Public and Private Sector Research -- Perspective -- INDUCED TECHNICAL CHANGE IN AGRICULTURE -- Mechanical Processes --Biological and Chemical Processes -- INDUCED TECHNICAL CHANGE: THE UNITED STATES AND JAPAN -- IMPLICATIONS AND LESSONS --NOTES -- REFERENCES -- Technology Adoption: The Services Industries -- TECHNOLOGY, ECONOMICS, AND ENTREPRENEURSHIP -- CREATIONS OF THE MIND -- INNOVATION -- THE SERVICES INDUSTRIES --Productivity Versus Manufacturing -- Support Services Industries --Medical Care Services -- TOTAL IMPACT -- Technology Diffusion, Public Policy, and Industrial Competitiveness -- THE ADOPTION OF NEW TECHNOLOGIES AND THE DOG THAT DID NOT BARK -- THE NEW MICROECONOMICS OF TECHNOLOGY DIFFUSION-AN OVERVIEW. Key Demand Factors in Technology Diffusion -- Key Supply Factors in Technology Diffusion -- CONCLUDING PERSPECTIVES ON PUBLIC POLICIES -- ACKNOWLEDGMENT -- REFERENCES -- Determinants of Innovative Activity -- RELATIVE TECHNOLOGICAL POSITIONS OF VARIOUS COUNTRIES -- DETERMINANTS OF NATIONAL PATTERNS OF TECHNOLOGICAL ACTIVITY -- EFFECTS OF GOVERNMENT POLICIES --REFERENCES -- Programmed Innovation-Strategy for Success --EASTMAN CHEMICALS: A CASE STUDY OF THE CHEMICAL INDUSTRY --Making Research Central to a Company's Future -- The Role of

Planning in a Research Organization -- Managing and Guiding the Process of Innovation -- Business Aspects of Managing R&amp -- D --The Future at Eastman Chemicals -- INTEGRATING TECHNOLOGY WITH CORPORATE STRATEGIC PLANNING -- The Chemical Industry: Challenges, Risks, and Rewards -- NOTES -- Entrepreneurship and Innovation: The Electronics Industry -- Entrepreneurship and Innovation: Biotechnology -- OPPORTUNITIES AND RISKS -- Patent Protection -- REGULATIONS -- FDA Regulations -- Export Policy --SUMMARY -- Impact of Entrepreneurship and Innovation on the Distribution of Personal Computers -- Making the Transition From Entrepreneur to Large Company -- Cultivating Technological Innovation -- UNDERPINNINGS OF TECHNOLOGICAL GROWTH -- A CLOSER LOOK AT VENTURE FUNDS -- LARGE COMPANIES AND TECHNOLOGICAL INNOVATION -- SUMMARY -- The Role of Large Banks in Financing Innovation -- BANKS AND TECHNOLOGICAL INNOVATION -- THE ROLE OF LARGE BANKS IN THE FINANCIAL SYSTEM -- LARGE BANKS AND THE START-UP COMPANY -- BANKS AND THE EMERGING GROWTH COMPANY -- FINANCING INNOVATION IN THE ESTABLISHED COMPANY -- LARGE FINANCIAL INSTITUTIONS AS GLOBAL INTERMEDIARIES --CONCLUSIONS -- NOTES -- A View From Wall Street -- Trends in Financing Innovation -- Technology and Trade: A Study of U.S. Competitiveness in Seven Industries. FINDINGS OF INDUSTRY STUDIES.