

## ***Innovation Policy Challenges For The 21st Century***

*Innovation underpins competitiveness, is crucial to addressing societal challenges, and its support has become a major public policy goal. But what really works in innovation policy, and why? This Handbook, compiled by leading experts in the field, is the first comprehensive guide to understanding the logic and effects of innovation policies. The Handbook develops a conceptualisation and typology of innovation policies, presents meta-evaluations for 16 key innovation policy instruments and analyses evidence on policy-mix. For each policy instrument, underlying rationales and examples are presented, along with a critical analysis of the available impact evidence. Providing access to primary sources of impact analysis, the book offers an insightful assessment of innovation policy practice and its evaluation.*

*This report assesses the current status of Korea's innovation system and policies, and identifies where and how the government should focus its efforts to improve the country's innovation capabilities.*

*This open access book encompasses a collection of in-depth analyses showcasing the challenges and ways forward for macroeconomic modelling of R&D and innovation policies. Based upon the proceedings of the EC-DG JRC-IEA workshop held in Brussels in 2017, it presents cutting-edge contributions from a number of leading economists in the field. It provides a comprehensive overview of the current academic and policy challenges surrounding R&D as well as of the state-of-the-art modelling techniques. The book brings to the forefront outstanding issues related to the assessment of the macroeconomic impact of R&D policies and its modelling. It speaks to the rising importance of R&D and innovation policy, and the proliferation of macroeconomic models featuring endogenous technological change. The contents of this book will be of interest to both academic and policy audiences working in the fields of R&D and innovation.*

*This book captures what is missing from the current limited, deficit-cutting discourse of the campaigns: asking politicians instead to think boldly about the kind of investment needed to deliver future growth.*

*Mass Flourishing*

*Towards Better Models*

*Mission-Oriented Innovation Policy*

*The OECD Innovation Strategy Getting a Head Start on Tomorrow  
Challenges for European Innovation Policy*

This Handbook assembles state-of-the-art insights into the co-evolutionary and precarious relations between science and public policy. Beyond this, it also offers a fresh outlook on emerging challenges for science (including technology and innovation) in changing societies, and related policy requirements, as well as the challenges for public policy in view of science-driven economic, societal, and cultural changes. In short, this book deals with science as a policy-triggered project as well as public policy as a science-driven venture.

Economic globalization has intensified since the 1980s and created faster channels of international interdependence and an accelerating technology race. In this new asymmetric world economy the EU is facing a dynamic and flexible US system which takes advantage of the global quest for foreign direct investment. Innovation policies in the EU - in particular in Germany - are found to be rather inadequate. There are also new theoretical challenges where a "structural macro model" and a Schumpetrian model of innovation and full employment are presented as new approaches. Besides theoretical challenges the increasing global dynamics raise new problems of international policy coordination which could lead to unsustainable economic globalization. This book focuses on Public Procurement for Innovation. Public Procurement for Innovation is a specific demand-side innovation policy instrument. It occurs when a public organization places an order for a new or improved product to fulfill certain need

This volume offers a detailed conceptual framework for understanding and learning about technology innovation policies and programs, and their implementation in the context of different countries.

Global Challenges to R&D and Innovation Policy

Theoretical Foundations, Policy Problems, and Instrument Choices

Getting a Head Start on Tomorrow

Research Handbook on Innovation Governance for Emerging Economies

Handbook on Science and Public Policy

Macroeconomic Modelling of R&D and Innovation Policies

***Focuses on the changing roles and challenges of innovation and growth policy, and the strategies and measures that are critical in a globalizing world. This title provides guidance for innovation policy strategy formulations and design of innovation policy measures.***

***This timely book brings together cutting-edge research on the important subject of science and innovation (S&I) policies. The contributors - distinguished social science scholars - tackle the key challenges of***

*designing and implementing public policies in the context of the new knowledge economy. They provide an extensive overview of the most advanced methods for designing, monitoring, and evaluating S&I policies, and analyse current applications in a wide-ranging selection of fields along the innovation supply chain, from legal and institutional landscapes to the industrial sector. Topics dis.*

*As the economies of western countries move from primarily resource-based to knowledge-based, and trade liberalization limits what governments can do through direct action, the landscape of innovation is changing and policymakers must react accordingly. This exciting new book examines the challenges that policy makers face in responding to a new environment. The book addresses how governments are now seeking to drive innovation through new forms of R&D policies, through public procurement, skills development, entrepreneurship and innovation culture to name but a few of the approaches. Innovation Policy Challenges for the 21st Century explores these and other contemporary issues in innovation, reviewing the state of the art literature and consolidating current thinking at the frontiers of innovation. The volume debates and presents scattered and anonymous material in a coherent way, with a particular focus is on 'hot topics' in the field of innovation studies that have been previously under-researched. The book is divided into four key themes: government as a key actor in the innovation process, entrepreneurs as innovators, skills and competences required to maintain and improve innovation performance in Europe and finally, the wider context in which innovation policy develops.*

*This publication summarises the main findings of a series of high-level expert workshops, organised with support by the European Commission, to deepen the understanding how OECD countries can move towards a broad-based form of innovation policy for regions and cities. Weaknesses in technology and knowledge diffusion are weighing on productivity growth and innovation in OECD countries, particularly in firms that are distant from the technological frontier (global or national). This in turn weakens their capacity to meet future challenges and undermines inclusive growth.*

*Mission-oriented Innovation Policy in Japan*

*Cohesion and Excellence from a Schumpeterian Perspective*

*Opportunities and Challenges for the Knowledge Economy*

*Meeting Global Challenges*

*Innovation Policy*

*Innovation in Seven Candidate Countries*

*This report assesses the potential for mission-oriented innovation policies (MOIPs) to contribute to the sustainable transition in Norway, and examines the challenges and opportunities that MOIPs would present. As part of a series of MOIP national case studies, the report finds that MOIPs could contribute significantly to alleviating some of the long-standing limitations of Norway's innovation system, acknowledging the country's strong advantages for mission-orientation and its innovative policy experimentations, such as the Pilot-E scheme and the CLIMIT programme. It proposes two options for Norway's future MOIP approach, with corresponding recommendations. Under a 'scaling-up' option, Norway would develop a system to manage the implementation of cross-agency schemes in relevant challenge areas. A 'levelling-up' option would involve the programming of a pilot mission in the four-year investment plan of the next edition of Norway's Long Term Plan, with support from high-level policy and political actors.*

*All over the world, open innovation is emerging and requires much more interactions between different actors with different organizational cultures: large firms and SMEs (i.e. industry), universities and research institutions (i.e. academia), as well as national and regional authorities for building the legal or incentive framework of innovation (i.e. government). Certainly, flows of knowledge between these three spheres, which are also known as the triple helix, have always existed; but what appears to be new in an open innovation environment is the overlapping of their missions. In many areas such multi-actor interactions with overlapping roles did not emerge spontaneously, as was the case with the United States. Based on robust cases studied by researchers and practical experiences of personnel involved in innovation at public or private institutions, this book successively discusses the policy framework in Europe and Japan, the new role for universities due to intellectual property reform or technology transfer promotion, the new challenges for firms in terms of licensing, patents, corporate venturing, including entrepreneurship, incubation, venture capital or cross-industry knowledge sharing. All issues addressed in this book are clearly those toward regional innovation policies and practices that are open in nature. It contains descriptions and analysis of the various approaches taken by industrial, governmental, and academic players in various regions of Japan (Tohoku, Tokyo) and Europe (France, Belgium). The mix of theoretical and empirical material collected in this book was first presented at an international symposium in Tokyo. The dynamics of regional innovation is an on-going issue, and we are still standing at the threshold of this field of research. It is exactly why such a book is needed now.*

*This title was first published in 2003. During the 1990s research and technological development policies moved from a 'problem-solving' approach towards a wider one focusing on the systemic nature of the innovation process. This change can be featured as the transition from a technology policy towards an innovation policy. 'Innovation Policies in Europe and the US: The New Agenda' provides a comparative analysis of eleven highly industrialized countries' innovation policies in the 1990s, and addresses the nature, dynamics, causes and effects of this transition. By combining the analytical skills of sociologists, economists and political scientists the book sets up a novel framework for studying the evolution of this particular policy area by examining institutional change from a broader perspective.*

*While nations have always competed for territory, mineral riches, water, and other physical assets, they compete most vigorously today*

*for technology-based innovations and the value that flows from them. Much of this value is based on creating scientific knowledge and transforming it into new products and services for the market. This process of innovation is complex and interdisciplinary. Sometimes it draws on the genius of individuals, but even then it requires sustained collective effort, often underpinned by significant national investments. Capturing the value of these investments to spur domestic economic growth and employment is a challenge in a world where the outputs of innovation disseminate rapidly. Those equipped to understand, apply, and profit from new knowledge and technical advances are increasingly able to capture the long-term economic benefits of growth and employment. In response to this new, more distributed innovation paradigm, the National Academies Board on Science, Technology, and Economic Policy (STEP) convened leading academics, business leaders, and senior policymakers from Germany and the United States to examine the strengths and challenges of their innovation systems. More specifically, they met to compare their respective approaches to innovation, to learn from their counterparts about best practices and shared challenges, and to identify cooperative opportunities. The symposium was held in Berlin and organized jointly by the German Institute for Economic Research (DIW) and the U.S. National Academies with support of the German Federal Ministry for Education and Research (BMBF) and the American Embassy in Berlin. Both U.S. and German participants described common challenges on a wide variety of issues ranging from energy security and climate change to low-emissions transportation, early-stage financing, and workforce training. While recognizing their differences in approach to these challenges, participants on both sides drew out valuable lessons from each other's policies and practices. Participants were also aware of the need to adapt to a new global environment where many countries have focused new policy measures and new resources to support innovative firms and promising industries. Meeting Global Challenges: U.S.-German Innovation Policy reviews the participants meeting and sets goals and recommendations for future policy.*

*Science and Innovation Policy for the New Knowledge Economy*

*Structural Change, Schumpetrian Adjustment, and New Policy Challenges*

*Holistic Innovation Policy*

*National Innovation Strategies in the Global Economy*

*Mission-Oriented Finance for Innovation*

*Challenges, Opportunities and Future Options*

**Innovation Policy and the Economy provides a forum for research on the interactions among public policy, the innovation process, and the economy. The distinguished contributors cover all types of policy that affect the ability of an economy to achieve scientific and technological progress or that affect the impact of science and technology on economic growth. Among the issues covered in Volume 8 are policy challenges at the university-industry interface, the role**

**of innovation and experimentation in the net neutrality debate, and the trade-offs in establishing the scope of patent rights or limitations on patent pools.**

**America's position as the source of much of the world's global innovation has been the foundation of its economic vitality and military power in the post-war. No longer is U.S. pre-eminence assured as a place to turn laboratory discoveries into new commercial products, companies, industries, and high-paying jobs. As the pillars of the U.S. innovation system erode through wavering financial and policy support, the rest of the world is racing to improve its capacity to generate new technologies and products, attract and grow existing industries, and build positions in the high technology industries of tomorrow. Rising to the Challenge: U.S. Innovation Policy for Global Economy emphasizes the importance of sustaining global leadership in the commercialization of innovation which is vital to America's security, its role as a world power, and the welfare of its people. The second decade of the 21st century is witnessing the rise of a global competition that is based on innovative advantage. To this end, both advanced as well as emerging nations are developing and pursuing policies and programs that are in many cases less constrained by ideological limitations on the role of government and the concept of free market economics. The rapid transformation of the global innovation landscape presents tremendous challenges as well as important opportunities for the United States. This report argues that far more vigorous attention be paid to capturing the outputs of innovation - the commercial products, the industries, and particularly high-quality jobs to restore full employment. America's economic and national security future depends on our succeeding in this endeavor.**

**As the economies of western countries move from primarily resource-based to knowledge-based, and trade liberalization limits what governments can do through direct action, the landscape of innovation is changing and policymakers must react accordingly. This exciting new book examines the challenges that policy makers face in responding to a new environment. The book addresses how governments are now seeking to drive innovation through new forms of R&D policies, through public procurement, skills development, entrepreneurship and innovation culture to name but a few of the approaches. Innovation Policy Challenges for the 21st Century explores these and other contemporary issues in**

**innovation, reviewing the state of the art literature and consolidating current thinking at the frontiers of innovation. The volume debates and presents scattered and anonymous material in a coherent way, with a particular focus is on 'hot topics' in the field of innovation studies that have been previously under-researched. The book is divided into four key themes: government as a key actor in the innovation process, entrepreneurs as innovators, skills and competences required to maintain and improve innovation performance in Europe and finally, the wider context in which innovation policy develops.**

**There is wide consensus on the importance of knowledge for economic growth and local development patterns. This book proposes a view of knowledge as a collective, systemic and evolutionary process that enables agents and social systems to overcome the challenges of the limits to growth. It brings together new conceptual and empirical contributions, analysing the relationship between demand and supply factors and the rate and direction of technological change. It also examines the different elements that compose innovation systems. The Economics of Knowledge, Innovation and Systemic Technology Policy provides the background for the development of an integrated framework for the analysis of systemic policy instruments and their mutual interaction the socio-political and economic conditions of the surrounding environment. These aspects have long been neglected in innovation policy, as policymakers, academics and the business community, have mostly emphasized the benefits of supply side strategies. However, a better understanding of innovation policies grafted on a complexity-based approach calls for the appreciation of the mutual interactions between both supply and demand aspects, and it is likely to improve the actual design of policy measures. This book will help readers to understand the foundations and working of demand-driven innovation policies by stressing the importance of competent and smart demand.**

**Policy Challenges in Europe and Japan**

**The Dynamics of Regional Innovation**

**OECD Reviews of Innovation Policy: Korea 2009**

**Public Procurement for Innovation**

**Emerging Challenges for Science, Technology and Innovation Policy Research**

**Micro-foundations for Innovation Policy**

Although in recent years some emerging economies have improved their performance in terms of R&D investment, outputs and innovative capacity, these countries are still blighted by extreme poverty, inequality and social exclusion. Hence, emerging countries are exposed to conditions which differ quite substantially from the dominant OECD model of innovation policy for development and welfare. This Research Handbook contributes to the debate by looking at how innovation theory, policy and practice interact, and explains different types of configurations in countries that are characterized by two contrasting but mutually reinforcing features: systemic failure and resourcefulness. Focusing on innovation governance and public policies, it aims to understand related governance failures and to explore options for alternative, more efficient approaches.

This report assesses the potential for mission-oriented innovation policies (MOIPs) to contribute to the sustainable transition in Japan, and examines the challenges and opportunities that MOIPs would present. As part of a series of MOIP national case studies, the report finds that the ongoing ambitious and top-down MOIPs led by the center-of-government build upon a long history of proactive and goal-oriented policy intervention. MOIPs in Japan are the latest step of decades of efforts to reduce the fragmentation and lack of holistic coordination of Japan's science, technology and innovation policy in order to proactively address societal challenges. Available evaluations of these policies demonstrate very encouraging results in that regards. The study concludes with recommendations to pursue these efforts, including by mainstreaming these policy initiatives across the government structure and complementing them with more bottom-up challenge-based initiatives.

This book provides a set of principles for fostering innovation in people (workers and consumers), in firms and in government, taking an in-depth look at the scope of innovation and how it is changing, as well as where and how it is occurring.

This book uniquely applies the Schumpeterian innovation policy perspective to the countries of Central and Eastern Europe (CEE). A broadly defined framework of the science, technology, innovation and growth system underpins the empirical and conceptual analysis of the critical issues including demand, FDI, finance and education. Specifically, the expert contributors address the (in)capacity of CEE to play a more significant role in the knowledge-based competitiveness of the EU. They question whether it is possible to bolster this capacity with innovation-technology- industry-specific policies, and discuss the changes required at EU and individual country levels to remove sector- and industry-specific obstacles to greater competitiveness based on innovation. Policies are analysed from the perspective of growth, and the conclusions drawn are relevant to education, the labour market and competition policy. This highly original, explicit and systematic study will prove an illuminating read for academics, researchers, students and policy makers focusing on a range of areas including economics, heterodox economics, European studies, technology and innovation.

Broad-based Innovation Policy for All Regions and Cities

Opportunities and Challenges for Regional Innovation Policy

Innovation policy in six applicant countries: the challenges

New Ideas for Investment-Led Growth

Handbook of Innovation Policy Impact

How Grassroots Innovation Created Jobs, Challenge, and Change

**In economics, business, and government policy, innovation policy requires the creation of new approaches based on insight in what happens in innovation processes, on the micro level of people, firms and interaction between them. In innovation policy it should also be recognized that innovation entails a whole range of activities beyond R&D, such as entrepreneurship, design, commercialization, organization, collaboration and the diffusion of knowledge and innovations . This edited volume explores the roles of individuals and organizations involved in the creation and application of innovations. Covering topics as diverse as the macro-economic importance of innovation, theories of knowledge and learning, entrepreneurship, education and research, organizational innovation, networks and regional innovation systems, Micro-Foundations for Innovation Policy provides critical insights into the development of innovation policy.**

**This is the first book on a new policy approach that has been widely adopted in Europe and beyond. It analyses the concept of smart specialisation and discuss the need for smart specialisation strategies, explains why the approach is new and different from more standard policy processes and explores what are the conditions for successful implementation. Smart Specialisation: Opportunities and Challenges for Regional Innovation Policy describes the origin of the concept, explains when a smart specialisation policy is necessary, provides a detailed analysis of the design principles of the policy and discuss the pertinence of this approach according to regional development levels. Finally the book discuss the practical implementation phase of the process – based on the first feedback acquired from certain regions engaged in the preparation of their smart specialisation strategy. The book is original in that it provides the first full analysis of smart specialisation strategies both at theoretical and practical levels. It has been written at the critical period of the implementation of smart specialisation strategies in every region in Europe. The fact that the EU has adopted smart specialisation as a mandatory principle for every region and member states will make this book well received by and very useful for: i) policy makers in regional and national administrations in Europe, ii) policy makers in other parts of the world who are in charge of regional policy and have heard about the concept, iii) consultants, analysts and experts who are active on the "markets for smart specialisation diagnosis and expertise", iv) scholars, researchers and graduate students working in the field of regional studies, technology policy and geography of innovation.**

**Innovation and technological capability are pivotal driving forces behind economic growth. This book synthesizes existing knowledge on technology upgrading failures to better understand the challenges of technology upgrading in emerging economies in an increasingly complex and connected world.**

**This book examines dynamics between demand and innovation and provides insights into the rationale and scope for public policies to foster demand for innovation.**

**Five Big Challenges**

## Rising to the Challenge

### Mission-oriented Innovation Policy in Norway

### The Challenges of Technology and Economic Catch-Up in Emerging Economies

### A Reflexive Overview

### Social Inclusion and Sustainable Development in Latin América

*Leading economists discuss how economic policy can stimulate technological innovation.*

*In this book, Nobel Prize-winning economist Edmund Phelps draws on a lifetime of thinking to make a sweeping new argument about what makes nations prosper--and why the sources of that prosperity are under threat today. Why did prosperity explode in some nations between the 1820s and 1960s, creating not just unprecedented material wealth but "flourishing"--meaningful work, self-expression, and personal growth for more people than ever before? Phelps makes the case that the wellspring of this flourishing was modern values such as the desire to create, explore, and meet challenges. These values fueled the grassroots dynamism that was necessary for widespread, indigenous innovation. Most innovation wasn't driven by a few isolated visionaries like Henry Ford and Steve Jobs; rather, it was driven by millions of people empowered to think of, develop, and market innumerable new products and processes, and improvements to existing ones. Mass flourishing--a combination of material well-being and the "good life" in a broader sense--was created by this mass innovation. Yet indigenous innovation and flourishing weakened decades ago. In America, evidence indicates that innovation and job satisfaction have decreased since the late 1960s, while postwar Europe has never recaptured its former dynamism. The reason, Phelps argues, is that the modern values underlying the modern economy are under threat by a resurgence of traditional, corporatist values that put the community and state over the individual. The ultimate fate of modern values is now the most pressing question for the West: will Western nations recommit themselves to modernity, grassroots dynamism, indigenous innovation, and widespread personal fulfillment, or will we go on with a narrowed innovation that limits flourishing to a few? A book of immense practical and intellectual importance, Mass Flourishing is essential reading for anyone who cares about the sources of prosperity and the future of the West.*

*This volume explores the governance and management of science, technology, and innovation (STI) in relation to innovation policy and governance systems, highlighting its goal, challenges, and opportunities. Divided into two sections, it addresses the role of governments in promoting innovation in Latin-American contexts as well as barriers and opportunities for STI governance in the region. The chapters tackle the role of institutions, innovation funding, technological trajectories, regional innovation policies, innovation ecosystems, universities, knowledge appropriation, and markets. Researchers and scholars will find an opportunity to grasp a better understanding of innovation policies in emerging economies. This interdisciplinary work presents original research on science, technology and innovation policy and governance studies in an*

***understudied region.***

***Holistic Innovation Policy puts forward a novel framework for the design and analysis of innovation policy. It provides a theoretically anchored foundation for the design of holistic innovation policy by identifying the core problems that tend to afflict innovations and the activities of innovation systems, including the unintended consequences of policy itself. As most of the current innovation policies focus on few determinants of innovation processes, this is a necessary stepping stone for the identification of viable, relevant, and down-to-earth policy solutions. Rather than presenting a recipe or 'how-to' guide, this book offers a critical analysis of policy instruments and their choice in innovation policy design, and considers the ways in which policy might be providing solutions to problems in systems of innovation. Exploring areas such as knowledge production and R&D, education, training and skills development, demand-side activities, interaction and innovation networks, changing institutions and regulations, and the public financing of early stage innovations, its critical and novel perspective serves policy-makers, scholars, and those interested in the design of innovation policy.***

***Innovation Policies in Europe and the US***

***Smart Specialisation***

***The Economics of Knowledge, Innovation and Systemic Technology Policy***

***Innovation Imperative***

***Policy and Governance of Science, Technology, and Innovation***

***Globalization of the Economy, Unemployment and Innovation***

Examines the impact of science and technology systems on economic and social development.

Final Report

A Guide for Developing Countries

Innovation Policy Challenges for the 21st Century

Innovation Policy and the Economy

Science, Technology, and Innovation Policy

Demand-side Innovation Policies