

Open Source Technology And Policy

During the latter half of the twentieth century, federal funding in the United States for scientific research and development increased dramatically. Yet despite the infusion of public funds into research centers, the relationship between public policy and research and development remains poorly understood. How does the federal government attempt to harness scientific knowledge and resources for the nation's economic welfare and competitiveness in the global marketplace? Who makes decisions about controversial scientific experiments, such as genetic engineering and space exploration? Who is held accountable when things go wrong? In this lucidly-written introduction to the topic, Sylvia Kraemer draws upon her extensive experience in government to develop a useful and powerful framework for thinking about the American approach to shaping and managing scientific innovation. Kraemer suggests that the history of science, technology, and politics is best understood as a negotiation of ongoing tensions between open and closed systems. Open systems depend on universal access to information that is complete, verifiable, and appropriately used. Closed systems, in contrast, are composed of unique and often proprietary features, which are designed to control usage. From the Constitution's patent clause to current debates over intellectual property, stem cells, and internet regulation, Kraemer shows the promise-as well as the limits-of open systems in advancing scientific progress as well as the nation's economic vitality.

Knowing about the open source alternative to integrated library systems and being able to make accurate comparisons can save a library tens to hundreds of thousands of dollars a year while more closely matching the library's functional needs.

This document contains the report of the Strategic Data policy workshop held in Rome from 21 to 22 September. Originally targeting the South West Indian Ocean (SWIO) Region, it expanded to a global scope with the SWIO Region as an example. As a consequence, its main objective was "Developing strategies and best practices for investments in an efficient data supply chain, of global value, building on the Indian Ocean situation used as case study. Working sessions aimed to analyze different cases through projects/initiatives presentations and discussions to identify what worked and what didn't to define general principles, identify challenges and propose strategies and best practices for cost-efficient and sustainable investments in fisheries data collection, sharing and utilization. Key principles were raised by the participants to keep tools, methodology and process in the data supply chain simple and to reuse as much as possible what already exists. Seventeen key points were identified during the discussion as common issues/common needs/general principles and were organized and developed in the Expert Document "Strategies and Best Practices".

As is true of most technological fields, the software industry is constantly advancing and becoming more accessible to a wider range of people. The advancement and accessibility of these systems creates a need for understanding and research into their development. *Optimizing Contemporary Application and Processes in Open Source Software* is a critical scholarly resource that examines the prevalence of open source software systems as well as the advancement and development of these systems. Featuring coverage on a wide range of topics such as machine learning, empirical software engineering and management, and open source, this book is geared toward academicians, practitioners, and researchers seeking current and relevant research on the advancement and prevalence of open source software systems.

The continuous development of new technologies has led to significant socio-economic advances in modern society. When applied in the medical sector, healthcare delivery techniques are optimized. *Health Information Systems and the Advancement of Medical Practice in Developing Countries* is a comprehensive reference source for the latest scholarly research on technology utilization for delivering reliable and accurate health information to patients and clinical staff. Highlighting pivotal perspectives on topics such as mobile health, telemedicine, and healthcare access, this book is ideally designed for professionals, practitioners, researchers, academics, and graduate students interested in the benefits and challenges of technology applications in healthcare systems.

Free and open source is the foundation of software development, and it's built by people just like you. Discover the fundamental tenets that drive the movement. Take control of your career by selecting the right project to meet your professional goals. Master the language and avoid the pitfalls that typically ensnare new contributors. Join a community of like-minded people and change the world. Programmers, writers, designers, and everyone interested in software will make their mark through free and open source software contributions. Free and open source software is the default choice for the programming languages and technologies which run our world today, and it's all built and maintained by people just like you. No matter your skill level or area of expertise, with this book you will contribute to free and open source software projects. Using this practical approach you'll understand not only the mechanics of contributing, but also how doing so helps your career as well as the community. This book doesn't assume that you're a programmer, or even that you have prior experience with free and open source software. Learn what open source is, where it came from, and why it's important. Start on the right foot by mastering the structure and tools you need before you contribute. Choose the right project for you, amplifying the impact of your contribution. Submit your first contribution, whether it's code, writing, design, or community organising. Find out what to do when things don't go the way you expect. Discover how to start your own project and make it friendly and welcoming to contributors. Anyone can contribute! Make your mark today and help others while also helping yourself. The open source movement is a worldwide effort to promote an open style of software development more aligned with the accepted intellectual style of science than the proprietary modes of invention that have been characteristic of modern business. The idea is to keep the scientific advances created by software development openly available for everyone to use, understand, and improve. The very process of open source creation is highly transparent. This book addresses prominent projects in the open source movement, along with its enabling technologies, social characteristics, legal issues, business venues, and public and educational roles.

This Handbook brings together scholars from around the world in addressing the global significance of, controversies over and alternatives to intellectual property (IP) today. It brings together over fifty of the leading authors in this field across the spectrum of academic disciplines, from law, economics, geography, sociology, politics and anthropology. This volume addresses the full spectrum of IP issues including copyright, patent, trademarks and trade secrets, as well as parallel rights and novel applications. In addition to addressing the role of IP in an increasingly

information based and globalized economy and culture, it also challenges the utility and viability of IP today and addresses a range of alternative futures.

The pervasiveness of and universal access to modern Information and Communication Technologies has enabled a popular new paradigm in the dissemination of information, art, and ideas. Now, instead of relying on a finite number of content providers to control the flow of information, users can generate and disseminate their own content for a wider audience. *Open Source Technology: Concepts, Methodologies, Tools, and Applications* investigates examples and methodologies in user-generated and freely-accessible content available through electronic and online media. With applications in education, government, entertainment, and more, the technologies explored in these volumes will provide a comprehensive reference for web designers, software developers, and practitioners in a wide variety of fields and disciplines.

Modern science is ever more driven by computations and simulations. In particular, the state of the art in space and Earth science often arises from complex simulations of climate, space weather, and astronomical phenomena. At the same time, scientific work requires data processing, presentation, and analysis through broadly available proprietary and community software.¹ Implicitly or explicitly, software is central to science. Scientific discovery, understanding, validation, and interpretation are all enhanced by access to the source code of the software used by scientists. This report investigates and recommends options for NASA's Science Mission Directorate (SMD) as it considers how to establish a policy regarding open source software to complement its existing policy on open data. In particular, the report reviews existing data and software policies and the lessons learned from the implementation of those policies, summarizes community perspectives, and presents policy options and recommendations for implementing an open source software policy for NASA SMD.

Open-Source Lab: How to Build Your Own Hardware and Reduce Scientific Research Costs details the development of the free and open-source hardware revolution. The combination of open-source 3D printing and microcontrollers running on free software enables scientists, engineers, and lab personnel in every discipline to develop powerful research tools at unprecedented low costs. After reading *Open-Source Lab*, you will be able to: Lower equipment costs by making your own hardware Build open-source hardware for scientific research Actively participate in a community in which scientific results are more easily replicated and cited Numerous examples of technologies and the open-source user and developer communities that support them Instructions on how to take advantage of digital design sharing Explanations of Arduinos and RepRaps for scientific use A detailed guide to open-source hardware licenses and basic principles of intellectual property

The authors have done a masterful job of charting the important story of DARPA, one of the key catalysts of technological innovation in US recent history. By plotting the development, achievements and structure of the leading world agency of this kind, this book stimulates new thinking in the field of technological innovation with bearing on how to respond to climate change, pandemics, cyber security and other global problems of our time. The DARPA Model provides a useful guide for governmental agency and policy leaders, and for anybody interested in the role of governments in technological innovation.

—Dr. Kent Hughes, Woodrow Wilson International Center for Scholars This volume contains a remarkable collection of extremely insightful articles on the world's most successful advanced technology agency. Drafted by the leading US experts on DARPA, it provides a variety of perspectives that in turn benefit from being presented together in a comprehensive volume. It reviews DARPA's unique role in the U.S. innovation system, as well as the challenges DARPA and its clones face today. As the American model is being considered for adoption by a number of countries worldwide, this book makes a welcome and timely contribution to the policy dialogue on the role played by governments in stimulating technological innovation. — Prof. Charles Wessner, Georgetown University The U.S. Defense Advanced Research Projects Agency (DARPA) has played a remarkable role in the creation new transformative technologies, revolutionizing defense with drones and precision-guided munitions, and transforming civilian life with portable GPS receivers, voice-recognition software, self-driving cars, unmanned aerial vehicles, and, most famously, the ARPANET and its successor, the Internet. Other parts of the U.S. Government and some foreign governments have tried to apply the 'DARPA model' to help develop valuable new technologies. But how and why has DARPA succeeded? Which features of its operation and environment contribute to this success? And what lessons does its experience offer for other U.S. agencies and other governments that want to develop and demonstrate their own 'transformative technologies'? This book is a remarkable collection of leading academic research on DARPA from a wide range of perspectives, combining to chart an important story from the Agency's founding in the wake of Sputnik, to the current attempts to adapt it to use by other federal agencies. Informative and insightful, this guide is essential reading for political and policy leaders, as well as researchers and students interested in understanding the success of this agency and the lessons it offers to others.

The Earth's plant genetic resources are a common inheritance of all humankind, which should be held in shared trust for a common future. A key component of the global genetic commons is agricultural biodiversity. Our food and livelihood security depend on the sustained management of these diverse biological resources that are important for food and agriculture. Whilst agricultural biodiversity originates in specific farming communities, it has been shared widely and is considered by many to be part of the much-threatened global commons. This book is about the creation, management and use of the global crop commons. It focuses primarily on the legal and administrative construct that provides the basis of the global crop commons, that is, the multilateral system of access and benefit-sharing created by the International Treaty on Plant Genetic Resources for Food and Agriculture. This is particularly significant because it transcends the traditional dichotomy between privatization and total governmental control. It came into effect in 2006 and the book describes its origins and implementation since then, showing how many international organizations and some developing countries are moving quickly with implementation, while other countries are moving slowly and some multinational corporations are expressing misgivings about the system overall. The authors further analyze current challenges and how they might be resolved.

"A collection of articles addressing a variety of aspects related to IT standards and the setting of standards"--Provided by publisher.

"This book presents learning and knowledge management from a point of view where the basic tools and applications are provided by open source technologies. It explains an intense orientation to the critical issues of the open source paradigm: open source tools, applications, social networks, and knowledge sharing in open source communities"--Provided by publisher.

In contemporary global capitalism, the most powerful corporations are innovation or intellectual monopolies. The book's unique perspective focuses on how private ownership and control of knowledge and data have become a major source of rent and power. The author explains how at the one pole, these corporations concentrate income, property and power in the United States, China, and in a handful of intellectual monopolies, particularly from digital and pharmaceutical industries, while at the other pole developing countries are left further behind. The book includes detailed empirical mappings of how intellectual monopolies develop and transform knowledge from universities and open-source collaborations into intangible assets. The result is a strategy that combines undermining the commons through privatization with harvesting from the same commons. The book ends with provoking reflections to tilt the scale against intellectual monopoly capitalism and arguing that desired changes require democratic mobilization of workers and citizens at large. This book represents one of the first attempts to capture the contours of an emerging new era where old perspectives lead us astray, and the old policy toolbox is hopelessly inadequate. This is true for the idea that the best, or only, way to promote innovation is to transform knowledge into private property. It is also true for anti-trust policies focusing exclusively on consumer prices. The formation of global infrastructures that lead to natural monopolies calls for public rather than private ownership. Scholars and professionals from the social sciences and humanities (in

particular economics, sociology, political science, geography, educational science and science and technology studies) will enjoy a clear and all-embracing depiction of innovation dynamics in contemporary capitalism, with a particular focus on asymmetries between actors, regions and topics. In fact, its topical issue broadens the book's scope to those curious about how innovation networks shape our world. A global collection of experts in social, natural, and human sciences, with contributions from researchers and practitioners in both developing and developed countries, cover the theoretical and practical implications of FOSS technologies. While FOSS development, education, and business potentials may appear as a phenomenon for the developed world, a sizable number of developing countries have implemented FOSS policies of their own. Empirical and anecdotal evidence continues to demonstrate the potential of FOSS technologies for giving people the opportunity to participate actively in the development and shaping of their own technology, stimulating the growth of indigenous software industries, creating local jobs, and lowering technology acquisition and deployment costs.

Describes the legal implications of open source and free software licensing and provides an explanation of what an open source software license actually is, and how to draft one for personal use.

The Free and Open Source Software (FOSS) movement demonstrates how labour can self-organise production, and, as is shown by the free operating system GNU/Linux, even compete with some of the worlds largest firms. The book examines the hopes of such thinkers as Friedrich Schiller, Karl Marx, Herbert Marcuse and Antonio Negri, in the light of the recent achievements of the hacker movement. This book is the first to examine a different kind of political activism that consists in the development of technology from below.

This Portfolio serves as a catalogue of all the training opportunities to be offered by the WIPO Academy in 2021 and outlines the content of each course. It gives information to potential participants on eligibility criteria, application formalities, timelines, selection procedures, travel and other relevant necessary information.

The automotive industry appears close to substantial change engendered by "self-driving" technologies. This technology offers the possibility of significant benefits to social welfare—saving lives; reducing crashes, congestion, fuel consumption, and pollution; increasing mobility for the disabled; and ultimately improving land use. This report is intended as a guide for state and federal policymakers on the many issues that this technology raises.

"Knowledge commons" describes the institutionalized community governance of the sharing and, in some cases, creation, of information, science, knowledge, data, and other types of intellectual and cultural resources. It is the subject of enormous recent interest and enthusiasm with respect to policymaking about innovation, creative production, and intellectual property. Taking that enthusiasm as its starting point, *Governing Knowledge Commons* argues that policymaking should be based on evidence and a deeper understanding of what makes commons institutions work. It offers a systematic way to study knowledge commons, borrowing and building on Elinor Ostrom's Nobel Prize-winning research on natural resource commons. It proposes a framework for studying knowledge commons that is adapted to the unique attributes of knowledge and information, describing the framework in detail and explaining how to put it into context both with respect to commons research and with respect to innovation and information policy. Eleven detailed case studies apply and discuss the framework exploring knowledge commons across a wide variety of scientific and cultural domains.

Open Sources 2.0 is a collection of insightful and thought-provoking essays from today's technology leaders that continues painting the evolutionary picture that developed in the 1999 book *Open Sources: Voices from the Revolution*. These essays explore open source's impact on the software industry and reveal how open source concepts are infiltrating other areas of commerce and society. The essays appeal to a broad audience: the software developer will find thoughtful reflections on practices and methodology from leading open source developers like Jeremy Allison and Ben Laurie, while the business executive will find analyses of business strategies from the likes of Sleepycat co-founder and CEO Michael Olson and Open Source Business Conference founder Matt Asay. From China, Europe, India, and Brazil we get essays that describe the developing world's efforts to join the technology forefront and use open source to take control of its high tech destiny. For anyone with a strong interest in technology trends, these essays are a must-read. The enduring significance of open source goes well beyond high technology, however. At the heart of the new paradigm is network-enabled distributed collaboration: the growing impact of this model on all forms of online collaboration is fundamentally challenging our modern notion of community. What does the future hold? Veteran open source commentators Tim O'Reilly and Doc Searls offer their perspectives, as do leading open source scholars Steven Weber and Sonali Shah. Andrew Hessel traces the migration of open source ideas from computer technology to biotechnology, and Wikipedia co-founder Larry Sanger and Slashdot co-founder Jeff Bates provide frontline views of functioning, flourishing online collaborative communities. The power of collaboration, enabled by the internet and open source software, is changing the world in ways we can only begin to imagine. *Open Sources 2.0* further develops the evolutionary picture that emerged in the original *Open Sources* and expounds on the transformative open source philosophy. "This is a wonderful collection of thoughts and examples by great minds from the free software movement, and is a must have for anyone who follows free software development and project histories." --Robin Monks, *Free Software Magazine* The list of contributors include Alolita Sharma Andrew Hessel Ben Laurie Boon-Lock Yeo Bruno Souza Chris DiBona Danese Cooper Doc Searls Eugene Kim Gregorio Robles Ian Murdock Jeff Bates Jeremy Allison Jesus M. Gonzalez-Barahona Kim Polese Larry Sanger Louisa Liu Mark Stone Mark Stone Matthew N. Asay Michael Olson Mitchell Baker Pamela Jones Robert Adkins Russ Nelson Sonali K. Shah Stephen R. Walli Steven Weber Sunil Saxena Tim O'Reilly Wendy Seltzer

This comprehensive, hands-on guide is the go-to source for everything you need to confidently navigate the ever-changing scene of this booming industry. *FinTech For Dummies* will shed light on this rapidly changing landscape making it an invaluable source of information for anybody working in or interested in this space. This book provides insights, knowledge and guidance from industry experts Steve O'Hanlon and Susanne Chishti on the following: Gaining insight fastest growing market segment of the financial markets Learning the core decision making to effect a growth plan Securing knowledge of the fastest growing fintech companies in the world Navigating the fintech world The ingredients into building a FinTech company

Can open source software—software that is usually available without charge and that individuals are free to modify—survive against the fierce competition of proprietary software, such as Microsoft Windows? Should the government intervene on its behalf? This book addresses a host of issues raised by the rapid growth of open source software, including government subsidies for research and development,

government procurement policy, and patent and copyright policy. Contributors offer diverse perspectives on a phenomenon that has become a lightning rod for controversy in the field of information technology. Contributors include James Bessen (Research on Innovation), David S. Evans (National Economic Research Associates), Lawrence Lessig (Stanford University), Bradford L. Smith (Microsoft Corporation), and Robert W. Hahn (director, AEI-Brookings Joint Center).

The rise of collaborative consumption, peer-to-peer systems, and not-for-profit social enterprise heralds the emergence of a new era of human collectivity. Increasingly, this consolidation stems from an understanding that big-banner issues—such as climate change—are not the root causes of our present global predicament. There is a growing and collective view that issues such as this are actually symptoms of a much more vicious, seemingly insurmountable condition: our addiction to economic, consumption, and population growth in a world of finite resources. Nanotechnology and Global Sustainability uses nanotechnology—the product of applied scientific knowledge to control and utilize matter at atomic and molecular scales—as a lens through which to explore the interrelationship between innovation, politics, economy, and sustainability. This groundbreaking book addresses how stakeholders can actively reshape agendas to create positive and sustainable futures through this latest controversial, cross-sectoral technology. It moves beyond issues of efficiency, productivity, and utility, exploring the insights of 22 contributors from around the world, whose work spans the disciplines of science and the humanities. Their combined knowledge, reinforced with various case studies, introduces an exciting prospect—how we can innovate without economic growth. This new volume in the Perspectives in Nanotechnology series is edited by Dr. Donald Maclurcan and Dr. Natalia Radywyl. Dr. Maclurcan is a social innovator and Honorary Research Fellow with the Institute for Nanoscale Technology at the University of Technology Sydney, Australia. Dr. Radywyl is a social researcher and Honorary Research Fellow in the School of Culture and Communication at the University of Melbourne, Australia. She is also an Adjunct Research Fellow in the Faculty of Life and Social Sciences at Swinburne University of Technology, Melbourne. This book is written for a wide audience and will be of particular interest to activists, scholars, policy makers, scientists, business professionals, and others who seek an understanding of how we might justly transition to sustainable societies.

Collaborative democracy—government with the people—is a new vision of governance in the digital age. Wiki Government explains how to translate the vision into reality. Beth Simone Noveck draws on her experience in creating Peer-to-Patent, the federal government's first social networking initiative, to show how technology can connect the expertise of the many to the power of the few. In the process, she reveals what it takes to innovate in government. Launched in 2007, Peer-to-Patent connects patent examiners to volunteer scientists and technologists via the web. These dedicated but overtaxed officials decide which of the million-plus patent applications currently in the pipeline to approve. Their decisions help determine which start-up pioneers a new industry and which disappears without a trace. Patent examiners have traditionally worked in secret, cut off from essential information and racing against the clock to rule on lengthy, technical claims. Peer-to-Patent broke this mold by creating online networks of self-selecting citizen experts and channeling their knowledge and enthusiasm into forms that patent examiners can easily use. Peer-to-Patent shows how policymakers can improve decisionmaking by harnessing networks to public institutions. By encouraging, coordinating, and structuring citizen participation, technology can make government both more open and more effective at solving today's complex social and economic problems. Wiki Government describes how this model can be applied in a wide variety of settings and offers a fundamental rethinking of effective governance and democratic legitimacy for the twenty-first century.

"This book reviews the development, design, and use of free and open source software, providing relevant topics of discussion for programmers, as well as researchers in human-computer studies, online and virtual collaboration, and e-learning"--Provided by publisher.

This title is about the most important concept underpinning current European Union research policy. It focuses on the notion of the European Research Area, a European 'internal market' for research, whose achievement will become the main objective of EU research policy once the Lisbon Treaty enters into force.

The Digital Review of Asia Pacific provides an overview of how information and communication technology (ICT) is being diffused throughout the Asia Pacific region to facilitate socio-economic development. This third annual review provides an analytical overview of the state of ICT4D in the Asia Pacific region. It covers 31 countries and economies including - for the first time - North Korea. Each country is dealt within a separate chapter, which attempts to provide comprehensive coverage of the various aspects of ICT4D in the concerned country at the time of writing (in 2006). The chapters have been written by a team of authors representing different sectors, such as government, academia, industry, and civil society.

Imagining New Legalities reminds us that examining the right to privacy and the public/private distinction is an important way of mapping the forms and limits of power that can legitimately be exercised by collective bodies over individuals and by governments over their citizens. This book does not seek to provide a comprehensive overview of threats to privacy and rejoinders to them. Instead it considers several different conceptions of privacy and provides examples of legal inventiveness in confronting some contemporary challenges to the public/private distinction. It provides a context for that consideration by surveying the meanings of privacy in three domains—the first, involving intimacy and intimate relations; the second, implicating criminal procedure, in particular, the 4th amendment; and the third, addressing control of information in the digital age. The first two provide examples of what are taken to be classic breaches of the public/private distinction, namely instances when government intrudes in an area claimed to be private. The third has to do with voluntary circulation of information and the question of who gets to control what happens to and with that information.

From the Internet's infrastructure to operating systems like GNU/Linux, the open source movement comprises some of the greatest accomplishments in computing over the past quarter century. Its story embraces technological advances, unprecedented global collaboration, and remarkable tools for facilitating distributed development. The evolution of the Internet enabled an enormous expansion of open development, allowing developers to exchange information and ideas without regard to constraints of space, time, or national boundary. The movement has had widespread impact on education and government, as well as historic cultural and commercial repercussions. Part I discusses key open source applications, platforms, and technologies used in open development. Part II explores social issues ranging from demographics and psychology to legal and economic matters. Part III discusses the Free Software Foundation, open source in the public sector (government and education), and future prospects.

Open SourceTechnology and PolicyCambridge University Press

Part III discusses the Free Software Foundation, open source in the public sector (government and education), and future prospects."--Jacket.

Guide of open source software business

This book constitutes revised selected papers from the following SEFM 2012 satellite events: InSuEdu, the First International Symposium on Innovation and Sustainability in Education; MokMaSD, the First International Symposium on Modelling and Knowledge Management for Sustainable Development and Open Cert, the 6th International Workshop on Foundations and Techniques for Open Source Software Certification, held in Thessaloniki, Greece, in October 2012. The total of 14 regular papers and 7 short papers

included in this volume were carefully reviewed and selected from 35 submissions. The papers cover the topics related to the use of Information and Communication Technology (ICT) and Open Source Software (OSS) as tools to foster and support Education, Innovation and Sustainability.

Over the past decade, diverse organizations have been turning to open source software for their technological needs, in both internal processes management and public interaction. Turning the data generated by organizations ranging from universities to large corporations into usable information has plagued users for years, making open source solutions one of the primary goals of these institutions. Open Source Solutions for Knowledge Management and Technological Ecosystems addresses the issues surrounding the search for each organization's unique data management needs, defining the tools necessary to fulfill them within their technological ecosystem, along with the selection, interoperability, and integration of these tools. This book is ideal for managers, business professionals, software engineers, information technology professionals, and students of business and IT.

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