

The Machine That Changed World Budeau

A deep dive into pivotal technological advances in areas from warfare to time measurement. “A wonderful combination of history and physics.” —Mark Kidger, author of *Astronomical Enigmas* *Ingenium* is medieval English vernacular for “an ingenious contrivance.” In this fascinating book, physicist Mark Denny considers five such contrivances—the bow and arrow, the waterwheel, the counterpoise siege engine (including the trebuchet), the pendulum clock anchor escapement, and the centrifugal governor—and demonstrates how they literally changed the world. Interweaving an entertaining narrative with diagrams, equations, and drawings, Denny shares the history of each device, explains the physics behind it, and describes how it was used, how it evolved, and why it is significant in today’s world. Consider the bow and arrow, which transformed warfare by allowing soldiers to attack their enemies at a safe distance. Or the waterwheel, which enabled Old World civilizations to grind grain, pump water, and power machines during a period of extreme labor shortages. Medieval warriors engaged in an early form of biological warfare by using the trebuchet to launch dead animals or plague-ridden corpses over enormous fortress walls. The pendulum clock forever enslaved modern humans to the clock by linking the accurate measure of time to the burdens of schedules, deadlines, promptness, and tardiness. And the centrifugal governor gave rise to an entire branch of modern engineering science: feedback control. Reflecting on the inventors of these ancient machines and the times in which they lived, Denny concludes with thought-provoking observations about inventors, inventiveness, genius, and innovation. Whether you dream of

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making a better mousetrap or launching pumpkins into the stratosphere, Ingenium will tickle your fancy.

A bold new theory of cyberwar argues that militarized hacking is best understood as a form of deconstruction. From shadowy attempts to steal state secrets to the explosive destruction of Iranian centrifuges, cyberwar has been a vital part of statecraft for nearly thirty years. But although computer-based warfare has been with us for decades, it has changed dramatically since its emergence in the 1990s, and the pace of change is accelerating. In *Deconstruction Machines*, Justin Joque inquires into the fundamental nature of cyberwar through a detailed investigation of what happens at the crisis points when cybersecurity systems break down and reveal their internal contradictions. He concludes that cyberwar is best envisioned as a series of networks whose constantly shifting connections shape its very possibilities. He ultimately envisions cyberwar as a form of writing, advancing the innovative thesis that cyber attacks should be seen as a militarized form of deconstruction in which computer programs are systems that operate within the broader world of texts. Throughout, Joque addresses hot-button subjects such as technological social control and cyber-resistance entities like Anonymous and Wikileaks while also providing a rich, detailed history of cyberwar. *Deconstruction Machines* provides a necessary new interpretation of deconstruction and timely analysis of media, war, and technology.

How the Computer Changed History examines the development of the computer, how it works, and how it has become a standard machine used in businesses, homes, and industries. Features include essential facts, a glossary, selected bibliography, websites, source notes, and an index, plus a timeline and maps, charts, and diagrams. Aligned to Common Core Standards and correlated to state standards. Essential Library is an imprint of Abdo Publishing, a division

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The Machine That Changed the World Simon and Schuster

“The Knowledge Machine is the most stunningly illuminating book of the last several decades regarding the all-important scientific enterprise.” —Rebecca Newberger Goldstein, author of *Plato at the Googleplex* A paradigm-shifting work, *The Knowledge Machine* revolutionizes our understanding of the origins and structure of science. • Why is science so powerful? • Why did it take so long—two thousand years after the invention of philosophy and mathematics—for the human race to start using science to learn the secrets of the universe? In a groundbreaking work that blends science, philosophy, and history, leading philosopher of science Michael Strevens answers these challenging questions, showing how science came about only once thinkers stumbled upon the astonishing idea that scientific breakthroughs could be accomplished by breaking the rules of logical argument. Like such classic works as Karl Popper’s *The Logic of Scientific Discovery* and Thomas Kuhn’s *The Structure of Scientific Revolutions*, *The Knowledge Machine* grapples with the meaning and origins of science, using a plethora of vivid historical examples to demonstrate that scientists willfully ignore religion, theoretical beauty, and even philosophy to embrace a constricted code of argument whose very narrowness channels unprecedented energy into empirical observation and experimentation. Strevens calls this scientific code the iron rule of explanation, and reveals the way in which the rule, precisely because it is unreasonably close-minded, overcomes individual prejudices to lead humanity inexorably toward the secrets of nature. “With a mixture of philosophical and historical argument, and written in an engrossing style” (Alan Ryan), *The Knowledge Machine* provides captivating portraits of some of the greatest luminaries in science’s history, including Isaac Newton, the

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chief architect of modern science and its foundational theories of motion and gravitation; William Whewell, perhaps the greatest philosopher-scientist of the early nineteenth century; and Murray Gell-Mann, discoverer of the quark. Today, Strevens argues, in the face of threats from a changing climate and global pandemics, the idiosyncratic but highly effective scientific knowledge machine must be protected from politicians, commercial interests, and even scientists themselves who seek to open it up, to make it less narrow and more rational—and thus to undermine its devotedly empirical search for truth. Rich with illuminating and often delightfully quirky illustrations, *The Knowledge Machine*, written in a winningly accessible style that belies the import of its revisionist and groundbreaking concepts, radically reframes much of what we thought we knew about the origins of the modern world.

New York Times bestseller • Finalist for the Pulitzer Prize
“This is a book to shake up the world.” —Ann Patchett
Nicholas Carr’s bestseller *The Shallows* has become a foundational book in one of the most important debates of our time: As we enjoy the internet’s bounties, are we sacrificing our ability to read and think deeply? This 10th-anniversary edition includes a new afterword that brings the story up to date, with a deep examination of the cognitive and behavioral effects of smartphones and social media.

A beautifully designed edition of one of the most beloved science fiction novels of all time... First published in 1895, *The Time Machine* won author H.G. Wells immediate recognition and has been regarded ever since as one of the great masterpieces in the literature of science fiction. It popularized the concept of time travel and introduced the concept of a "time machine" device that could travel forwards and backwards through the years. It is the story of one man’s astonishing journey beyond the conventional limits of the

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imagination. One of the most renowned works of science fiction, *The Time Machine* reflects on the adventures of The Time Traveller - a man who constructs a machine which allows him to explore what the future has to offer. When he courageously steps out of his machine for the first time, he finds himself in the year 802,701—and everything has changed. In this unfamiliar utopian age, creatures seem to dwell together in perfect harmony. Thinking he can study these marvelous beings and unearth their secret then return to his own time, he discovers that his only avenue of escape, his invention, has been stolen. Wells is generally credited with the popularization of the concept of time travel by using a vehicle that allows an operator to travel purposefully and selectively. The term "time machine", which was coined by Wells, is now universally used to refer to such a vehicle. The book has been adapted for a number of films and television shows, as well as inspiring other science fiction writers. This dazzlingly original work of literary nonfiction interweaves the science and history of the powerful refrigerant (and dangerous greenhouse gas) Freon with a haunting meditation on how to live meaningfully and morally in a rapidly heating world. In *After Cooling*, Eric Dean Wilson braids together air-conditioning history, climate science, road trips, and philosophy to tell the story of the birth, life, and afterlife of Freon, the refrigerant that ripped a hole larger than the continental United States in the ozone layer. As he traces the refrigerant's life span from its invention in the 1920s—when it was hailed as a miracle of scientific progress—to efforts in the 1980s to ban the chemical (and the resulting political backlash), Wilson finds himself on a journey through the American heartland, trailing a man who buys up old tanks of Freon stockpiled in attics and basements to destroy what remains of the chemical before it can do further harm. Wilson is at heart an essayist, looking far and wide to tease out what

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particular forces in American culture—in capitalism, in systemic racism, in our values—combined to lead us into the Freon crisis and then out. It's a story that offers a rare glimpse of environmental hope, suggesting that maybe the vast and terrifying problem of global warming is not beyond our grasp to face.

Lean Thinking was launched in the fall of 1996, just in time for the recession of 1997. It told the story of how American, European, and Japanese firms applied a simple set of principles called 'lean thinking' to survive the recession of 1991 and grow steadily in sales and profits through 1996. Even though the recession of 1997 never happened, companies were starving for information on how to make themselves leaner and more efficient. Now we are dealing with the recession of 2001 and the financial meltdown of 2002. So what happened to the exemplar firms profiled in Lean Thinking? In the new fully revised edition of this bestselling book those pioneering lean thinkers are brought up to date. Authors James Womack and Daniel Jones offer new guidelines for lean thinking firms and bring their groundbreaking practices to a brand new generation of companies that are looking to stay one step ahead of the competition.

Readers will learn how to integrate quality and reliability control, machine tool maintenance, production and inventory control, and suppliers into the linked-cell system for one-piece parts movement within cells and small-lot movement between cells.

"For anyone who wants to learn about the rise and decline of Potosí as a city . . . Lane's book is the ideal place to begin."--The New York Review of Books In 1545, a native Andean prospector hit pay dirt on a desolate red mountain in highland Bolivia. There followed the world's greatest silver bonanza, making the Cerro Rico or "Rich Hill" and the

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Imperial Villa of Potosí instant legends, famous from Istanbul to Beijing. The Cerro Rico alone provided over half of the world's silver for a century, and even in decline, it remained the single richest source on earth. Potosí is the first interpretive history of the fabled mining city's rise and fall. It tells the story of global economic transformation and the environmental and social impact of rampant colonial exploitation from Potosí's startling emergence in the sixteenth century to its collapse in the nineteenth. Throughout, Kris Lane's invigorating narrative offers rare details of this thriving city and its promise of prosperity. A new world of native workers, market women, African slaves, and other ordinary residents who lived alongside the elite merchants, refinery owners, wealthy widows, and crown officials, emerge in lively, riveting stories from the original sources. An engrossing depiction of excess and devastation, Potosí reveals the relentless human tradition in boom times and bust.

"A globe-spanning investigation into the Transhumanist movement, considering the tech billionaires, scientific luminaries, and DIY body-hackers attempting to prolong, improve, and ultimately transcend the limits of human life"-- World-renowned economist Klaus Schwab, Founder and Executive Chairman of the World Economic Forum, explains that we have an opportunity to shape the fourth industrial revolution, which will fundamentally alter how we live and work. Schwab argues that this revolution is different in scale, scope and complexity from any that have come before. Characterized by a range of new technologies that are fusing the physical, digital and biological worlds, the developments are affecting all disciplines, economies, industries and governments, and even challenging ideas about what it means to be human. Artificial intelligence is already all around us, from supercomputers, drones and virtual assistants to 3D printing, DNA sequencing, smart thermostats, wearable

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sensors and microchips smaller than a grain of sand. But this is just the beginning: nanomaterials 200 times stronger than steel and a million times thinner than a strand of hair and the first transplant of a 3D printed liver are already in development. Imagine "smart factories" in which global systems of manufacturing are coordinated virtually, or implantable mobile phones made of biosynthetic materials. The fourth industrial revolution, says Schwab, is more significant, and its ramifications more profound, than in any prior period of human history. He outlines the key technologies driving this revolution and discusses the major impacts expected on government, business, civil society and individuals. Schwab also offers bold ideas on how to harness these changes and shape a better future--one in which technology empowers people rather than replaces them; progress serves society rather than disrupts it; and in which innovators respect moral and ethical boundaries rather than cross them. We all have the opportunity to contribute to developing new frameworks that advance progress. This book provides insights and process details of how to design and build disruptive innovations, so that you are not flying blind or just throwing darts in an effort to pivot/expand to the online order fulfillment world. The fulfillment machine is the delivery side infrastructure of an online business, it is the physical and digital innovations which make it possible to immediately deliver customer orders. Customers want to order everything, while sitting on their couch and they want immediate fulfillment. Fast fulfillment is happening, and everyone knows that, but most are scared of it. Many experts describe the wonders of online retail, but none explains what fast fulfillment is or propose a solution to building a fast fulfillment machine. Managers are frustrated just reading about how great Amazon is, and how startups are innovating fantastic technology driven processes. Here is the book,

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written in a simple easy to read style which unravels the technical mystery of the fulfillment machine. It levels the knowledge field, reveals the secrets of fast fulfillment, and helps the reader construct a plan to innovate and be ready to face the disruptors. What is happening in retail is contagious across industries, there are no wide moats. Managers and engineers are rushing to redesign their supply chains into fast fulfillment machines. This book provides insights and process details of how to design and build disruptive innovations, so that you are not flying blind or just throwing darts in an effort to pivot/expand to the online order fulfillment world. The book does not story-tell the fast fulfillment machine, it is informative and instructive.

When James Womack, Daniel Jones, and Daniel Roos wrote THE MACHINE THAT CHANGED THE WORLD in 1990, Japanese automakers, and Toyota in particular, were making a strong showing by applying the principles of lean production. However, the full power of lean principles was unproven, and they had not been applied outside of the auto industry. Today, the power of lean production has been conclusively proved by Toyota's unparalleled success, and the concepts have been widely applied in many industries. Based on MIT's pioneering global study of industrial competition, THE MACHINE THAT CHANGED THE WORLD offers a groundbreaking analysis of the entire lean business system, including product development, supplier management, sales, service, and production - an analysis even more relevant today as GM and Ford struggle to survive and a wide range of British and American companies embrace lean production. A new Foreword by the authors brings the story up to date and details how their predictions were right. As a result, this reissue of a classic is as insightful and instructive today as when it was first published.

The New York Times bestselling, groundbreaking

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investigation of how the global elite's efforts to "change the world" preserve the status quo and obscure their role in causing the problems they later seek to solve. An essential read for understanding some of the egregious abuses of power that dominate today's news. Former New York Times columnist Anand Giridharadas takes us into the inner sanctums of a new gilded age, where the rich and powerful fight for equality and justice any way they can--except ways that threaten the social order and their position atop it. We see how they rebrand themselves as saviors of the poor; how they lavishly reward "thought leaders" who redefine "change" in winner-friendly ways; and how they constantly seek to do more good, but never less harm. We hear the limousine confessions of a celebrated foundation boss; witness an American president hem and haw about his plutocratic benefactors; and attend a cruise-ship conference where entrepreneurs celebrate their own self-interested magnanimity. Giridharadas asks hard questions: Why, for example, should our gravest problems be solved by the unelected upper crust instead of the public institutions it erodes by lobbying and dodging taxes? He also points toward an answer: Rather than rely on scraps from the winners, we must take on the grueling democratic work of building more robust, egalitarian institutions and truly changing the world. A call to action for elites and everyday citizens alike.

A strikingly original exploration of what it might mean to be authentically human in the age of artificial intelligence, from the author of the critically-acclaimed *Interior States*. "Meghan O'Gieblyn is a brilliant and humble philosopher, and her book is an explosively thought-provoking, candidly personal ride I wished never to end. . . This book is such an original synthesis of ideas and disclosures. It introduces what will soon be called the O'Gieblyn genre of essay writing." --Heidi Julavits, author of *The Folded Clock* For most of human history the

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world was a magical and enchanted place ruled by forces beyond our understanding. The rise of science and Descartes's division of mind from world made materialism our ruling paradigm, in the process asking whether our own consciousness--i.e., souls--might be illusions. Now the inexorable rise of technology, with artificial intelligences that surpass our comprehension and control, and the spread of digital metaphors for self-understanding, the core questions of existence--identity, knowledge, the very nature and purpose of life itself--urgently require rethinking. Meghan O'Gieblyn tackles this challenge with philosophical rigor, intellectual reach, essayistic verve, refreshing originality, and an ironic sense of contradiction. She draws deeply and sometimes humorously from her own personal experience as a formerly religious believer still haunted by questions of faith, and she serves as the best possible guide to navigating the territory we are all entering.

It could be argued that the most significant advances in the past two centuries have been made in the fields of science and technology, and that the defining objects of our culture are its mechanical devices. Rather than at looking at technology as a succession of generic inventions, *50 Machines that Changed the course of History* identifies the most significant branded or one-off machines of the nineteenth and twentieth centuries, placing them in their historical and technological contexts, and evaluating their impact on the development of human civilization. The preeminent machines of the First Industrial Revolution, the "Age of Steam," include the first locomotive designed for passenger transport, Stephenson's Rocket (1829), and the Corliss steam engine (1849) that powered Britain's "Satanic mills," in which the Harrison power loom (1851) produced the bulk of the world's cotton cloth. The turn of the twentieth century, and the Second Industrial Revolution, saw the

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invention of many of the technologies that have created modern lifestyles: the Westinghouse AC system (1887) brought electrical power and lighting to homes and workplaces; the Berliner gramophone (1892), Lumière cine projector (1896), and Marconi radio (1897) heralded the dawn of the media age; and the age of the mass-produced automobile began with the Model T Ford (1908). Perfect for history buffs and anyone who is fascinated by complex and beautiful mechanical devices, *Fifty Machines that Changed the Course of History* is a celebration of 50 iconic machines, and of mechanical technology in general.

The first and only book containing a comprehensive history of washing machines. Included are over 200 color pictures of washers dating from the early 1800s. A description of the many and varied types of machines along with picture examples is given. Also included are discussions on finding antique washers, restoration, patent descriptions, advertising, safety issues and the companies which manufactured washers.

Mr. Rogo, a plant manager, must improve his factory's efficiency or face its closing in just three months. Despite the fictional setting, Goldratt's novel has become a classic business and management text.

An overview of engineering systems that describes the new challenges posed for twenty-first-century engineers by today's highly complex sociotechnical systems.

Engineering, for much of the twentieth century, was mainly about artifacts and inventions. Now, it's increasingly about complex systems. As the airplane taxis to the gate, you access the Internet and check email with your PDA, linking the communication and transportation systems. At home, you recharge your plug-

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in hybrid vehicle, linking transportation to the electricity grid. Today's large-scale, highly complex sociotechnical systems converge, interact, and depend on each other in ways engineers of old could barely have imagined. As scale, scope, and complexity increase, engineers consider technical and social issues together in a highly integrated way as they design flexible, adaptable, robust systems that can be easily modified and reconfigured to satisfy changing requirements and new technological opportunities. Engineering Systems offers a comprehensive examination of such systems and the associated emerging field of study. Through scholarly discussion, concrete examples, and history, the authors consider the engineer's changing role, new ways to model and analyze these systems, the impacts on engineering education, and the future challenges of meeting human needs through the technologically enabled systems of today and tomorrow.

This new edition of Friedman's landmark book explains the flattening of the world better than ever- and takes a new measure of the effects of this change on each of us. As consumers, we have a greater selection of higher quality goods & services to choose from, yet our experience of obtaining & using these items is more frustrating than ever. At the same time, companies find themselves with declining customer loyalty & greater challenges in fulfilling orders. This text offers solutions to these problems.

THE C-LEVEL GUIDE TO SUCCEEDING WITH LEAN

"With 30 years of accumulated experience, Art Byrne is one of the rare few people who can speak with authority

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about the pitfalls of financial measurement systems, the importance of respect for people, the power of Lean in the marketplace, and the leverage from organizing people around value streams. When he writes 'Go to the Gemba and Run Your Kaizen,' we must take heed." -- MASA AKI IMAI, bestselling author of Kaizen and Gemba Kaizen "In this wonderful and important book, Byrne shows us that Lean management, understood and practiced correctly, consistently delivers spectacular results." -- BOB EMILIANI, author, Better Thinking, Better Results, and Professor, Connecticut State University "A compelling picture of how Lean techniques and attitudes enable CEOs and senior executives to create a culture for transforming a company and putting it on a highperformance path." -- JERRY J. JASINOWSKI, former President of the National Association of Manufacturers "Art Byrne provides real-world examples of how he exhibited the wisdom and courage to do the right thing, improving work practices at all levels of the organization to deliver the right results for all stakeholders. Which comes first, the wisdom or the courage? Read The Lean Turnaround to find out." -- JOHN SHOOK, Chairman and CEO, Lean Enterprise Institute "Lean is the closest thing to magic I have experienced in my 40 years in business. I recommend Lean and this book to everyone responsible for the performance of a business, particularly those in private equity like me, where leverage magnifies the importance of cash." -- JOHN CHILDS, founder and CEO, of J. W. Childs Associates L.P. "A must-read for any leader interested in understanding the strategic advantages

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from focusing on activities that add value to the customer experience." -- GARY S. KAPLAN, MD, Chairman and CEO of the Virginia Mason Health System Lean isn't just for manufacturing anymore . . . Few business leaders in the world have applied Lean strategy as successfully as Art Byrne has--and none has the ability to explain how to do it with such succinctness and clarity. Famous for turning around the wire management company Wiremold, where he rethought every aspect of operations from the customer's standpoint--and got everyone else in the company to do likewise--Byrne has successfully implemented Lean strategies in more than 30 companies in 14 different countries. In *The Lean Turnaround*, this legendary business leader shares everything he has learned during his remarkable career and shows how anyone can achieve similar results. His primary message is this: Lean strategy isn't just for manufacturing. In fact, Byrne is using this very approach in his present position at a private equity firm. Whatever type of company you run, Lean can be used to improve virtually every aspect of operations, from training and leading employees to accounting and payroll issues. *The Lean Turnaround* explains all the ins and outs of applying Lean strategy to:

- Eliminate waste in every value-added operation
- Deliver consistent value to customers
- Stimulate growth and add jobs
- Increase wealth for all your stakeholders
- Build a company culture of continuous improvement (kaizen)

Instead of attempting to get customers to conform to your way of doing things--which is, sadly, what most managers are taught to do--you need to configure your company to be responsive to the

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customers. This is at the core of Byrne's method--and it always works.

In 1909 Mohandas Karamchand Gandhi, on his way back to South Africa from London, wrote his now celebrated tract *Hind Swaraj*, laying out his vision for the future of India and famously rejecting the technological innovations of Western civilization. Despite his protestations, Western technology endured and helped to make India one of the leading economies in our globalized world. Few would question the dominant role that technology plays in modern life, but to fully understand how India first advanced into technological modernity, argues David Arnold, we must consider the technology of the everyday. *Everyday Technology* is a pioneering account of how small machines and consumer goods that originated in Europe and North America became objects of everyday use in India in the late nineteenth and early twentieth centuries. Rather than investigate “big” technologies such as railways and irrigation projects, Arnold examines the assimilation and appropriation of bicycles, rice mills, sewing machines, and typewriters in India, and follows their impact on the ways in which people worked and traveled, the clothes they wore, and the kind of food they ate. But the effects of these machines were not limited to the daily rituals of Indian society, and Arnold demonstrates how such small-scale technologies became integral to new ways of thinking about class, race, and gender, as well as about the politics of colonial rule and Indian nationhood. Arnold’s fascinating book offers new perspectives on the globalization of modern technologies and shows us that

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to truly understand what modernity became, we need to look at the everyday experiences of people in all walks of life, taking stock of how they repurposed small technologies to reinvent their world and themselves.

An examination of the ways that digital and networked technologies have fundamentally changed research practices in disciplines from astronomy to literary analysis. In *Knowledge Machines*, Eric Meyer and Ralph Schroeder argue that digital technologies have fundamentally changed research practices in the sciences, social sciences, and humanities. Meyer and Schroeder show that digital tools and data, used collectively and in distributed mode—which they term e-research—have transformed not just the consumption of knowledge but also the production of knowledge. Digital technologies for research are reshaping how knowledge advances in disciplines that range from physics to literary analysis. Meyer and Schroeder map the rise of digital research and offer case studies from many fields, including biomedicine, social science uses of the Web, astronomy, and large-scale textual analysis in the humanities. They consider such topics as the challenges of sharing research data and of big data approaches, disciplinary differences and new forms of interdisciplinary collaboration, the shifting boundaries between researchers and their publics, and the ways that digital tools promote openness in science. This book considers the transformations of research from a number of perspectives, drawing especially on the sociology of science and technology and social informatics. It shows that the use of digital tools and data is not just a

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technical issue; it affects research practices, collaboration models, publishing choices, and even the kinds of research and research questions scholars choose to pursue. *Knowledge Machines* examines the nature and implications of these transformations for scholarly research.

A landmark insider's tour of how social media affects our decision-making and shapes our world in ways both useful and dangerous, with critical insights into the social media trends of the 2020 election and beyond "The book might be described as prophetic. . . . At least two of Aral's three predictions have come to fruition."—New York NAMED ONE OF THE BEST BOOKS OF THE YEAR BY WIRED • LONGLISTED FOR THE PORCHLIGHT BUSINESS BOOK AWARD Social media connected the world—and gave rise to fake news and increasing polarization. It is paramount, MIT professor Sinan Aral says, that we recognize the outsize effect social media has on us—on our politics, our economy, and even our personal health—in order to steer today's social technology toward its great promise while avoiding the ways it can pull us apart. Drawing on decades of his own research and business experience, Aral goes under the hood of the most powerful social networks to tackle the critical question of just how much social media actually shapes our choices, for better or worse. He shows how the tech behind social media offers the same set of behavior influencing levers to everyone who hopes to change the way we think and act—from Russian hackers to brand marketers—which is why its consequences affect everything from elections to

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business, dating to health. Along the way, he covers a wide array of topics, including how network effects fuel Twitter's and Facebook's massive growth, the neuroscience of how social media affects our brains, the real consequences of fake news, the power of social ratings, and the impact of social media on our kids. In mapping out strategies for being more thoughtful consumers of social media, *The Hype Machine* offers the definitive guide to understanding and harnessing for good the technology that has redefined our world overnight.

The Just-in-time (JIT) manufacturing system is an internal system in use by its founder, Toyota Motor Corporation, but it has taken on a new look. *Toyota Production System, Second Edition* systematically describes the changes that have occurred to the most efficient production system in use today. Since the publication of the first edition of this book in 1983, Toyota has integrated JIT with computer integrated manufacturing technology and a strategic information system. The JIT goal of producing the necessary items in the necessary quantity at the necessary time is an internal driver of production and operations management. The addition of computer integrated technology (including expert systems by artificial intelligence) and information systems technology serve to further reduce costs, increase quality, and improve lead time. The new Toyota production system considers how to adapt production schedules to the demand changes in the marketplace while satisfying the goals of low cost, high quality, and timely delivery. The first

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edition of this book, *Toyota Production System*, published in 1983, is the basis for this book. It was translated into many languages including Spanish, Russian, Italian, Japanese, etc., and has played a definite role in inspiring production management systems throughout the world.

1855: The Industrial Revolution is in full and inexorable swing, powered by steam-driven cybernetic Engines. Charles Babbage perfects his Analytical Engine and the computer age arrives a century ahead of its time. And three extraordinary characters race toward a rendezvous with history—and the future: Sybil Gerard—a fallen woman, politician's tart, daughter of a Luddite agitator Edward "Leviathan" Mallory—explorer and paleontologist Laurence Oliphant—diplomat, mystic, and spy. Their adventure begins with the discovery of a box of punched Engine cards of unknown origin and purpose. Cards someone wants badly enough to kill for.... Part detective story, part historical thriller, *The Difference Engine* is the collaborative masterpiece by two of the most acclaimed science fiction authors writing today. Provocative, compelling, intensely imagined, it is a startling extension of Gibson's and Sterling's unique visions—and the beginning of movement we know today as "steampunk!" Examines Japan's innovative, highly successful production methods

In this "spectacularly smart space opera" (*Publishers Weekly*, starred review) set in the same universe as the critically acclaimed *White Space* series and perfect for fans of Karen Traviss and Ada Hoffman, a space station begins to unravel when a routine search and rescue

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mission returns after going dangerously awry. Meet Doctor Jens. She hasn't had a decent cup of coffee in fifteen years. Her workday begins when she jumps out of perfectly good space ships and continues with developing treatments for sick alien species she's never seen before. She loves her life. Even without the coffee. But Dr. Jens is about to discover an astonishing mystery: two ships, once ancient and one new, locked in a deadly embrace. The crew is suffering from an unknown ailment and the shipmind is trapped in an inadequate body, much of her memory pared away. Unfortunately, Dr. Jens can't resist a mystery and she begins doing some digging. She has no idea that she's about to discover horrifying and life-changing truths. Written in Elizabeth Bear's signature "rollicking, suspenseful, and sentimental" (Publishers Weekly) style, Machine is a fresh and electrifying space opera that you won't be able to put down.

"Mike Woods urges his retired father into helping out a friend's failing company. But for Bob Woods, another struggle to introduce lean manufacturing quickly rehashes production battles that he's long since fought. And not even the senior Woods, son Mike, or friend Phil and his colleagues really grasp what's in store for them."--Cover.

Award-winning author Don Brown explores computers and technology in book two of the Big Ideas series Machines That Think! explores machines from ancient history to today that perform a multitude of tasks, from making mind-numbing calculations to working on assembly lines. Included are fascinating looks at the

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world's earliest calculators, the birth of computer programming, and the arrival of smartphones. Contributors discussed include Muhammad ibn Musa al-Khwarizmi, Ada Lovelace, and Bill Gates. From the abacus to artificial intelligence, machines through the ages have pushed the boundaries of human capability and creativity. Back matter includes a timeline, endnotes, a bibliography, an author's note, and an index.

Documents the innovations of a group of eccentric geniuses who developed computer code in the mid-20th century as part of mathematician Alan Turing's theoretical universal machine idea, exploring how their ideas led to such developments as digital television, modern genetics and the hydrogen bomb.

Known worldwide in manufacturing among those striving to maximize productivity and create pull scheduling of production as "the yellow book," this is the premier how to book for companies going lean. Touted by experts everywhere as practical, down-to-earth, and easy to read, it warns of cultural issues that are certain to arise, and gives step by step instructions for making the transformation. It clearly explains such tools as continuous flow, value stream mapping, kanban, kaizen, six sigma, just-in-time (JIT), techniques for quick set-ups, and other pillars of the Toyota Production System. It's full of examples of value stream mapping, how kanban can resolve material supply issues, how kaizen brainstorming can result in startling improvements overnight, how just-in-time (JIT) frees mountains of money tied up in work-in-progress, why Six Sigma quality needs to be built in and not inspected in, how bottlenecks can be eliminated,

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kanban snafus spotted before they happen, and how instilling a championship mentality in cross-functional teams can lead to increased productivity and continuous improvement that doesn't stop after the initial kaizen event.

"The Machine Stops" is a science fiction short story (12,300 words) by E. M. Forster. After initial publication in *The Oxford and Cambridge Review* (November 1909), the story was republished in Forster's *The Eternal Moment and Other Stories* in 1928. After being voted one of the best novellas up to 1965, it was included that same year in the populist anthology *Modern Short Stories*.^[1] In 1973 it was also included in *The Science Fiction Hall of Fame, Volume Two*. The story, set in a world where humanity lives underground and relies on a giant machine to provide its needs, predicted technologies such as instant messaging and the Internet."

Winner of a Shingo Research and Professional Publication Award *Lean Production Simplified, Second Edition* is a plain language guide to the lean production system written for the practitioner by a practitioner. It delivers a comprehensive insider's view of lean manufacturing. The author helps the reader to grasp the system as a whole and the factors that animate it by organizing the book around an image of a house of lean production. Highlights include:

- A comprehensive view of Toyota's lean manufacturing system
- A look at the origins and underlying principles of lean
- Identifying the goals of lean production
- Practical problem solving for lean production
- Activities that support involvement - Kaizen circles, suggestion systems, and problem solving

This second edition has been updated with expanded

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information on the Lean Improvement Process; Production Physics and Little's Law - the fundamental equation for both manufacturing and service industries (cycle time = work in process/throughput); Value Stream Thinking - combining processes required to bring the product or service to the customer; Hoshin Planning -- using the Planning and Execution Tree diagram and Problem Solving -- including the "Five Why" method and how to use it. Lean Production Simplified, Second Edition covers each of the components of lean within the context of the entire lean production system. The author's straightforward common sense approach makes this book an easily accessible on-the-floor resource for every operator.

When we think of great events in the history of the world, we tend to think of war, revolution, political upheaval or natural catastrophe. But throughout history there have been moments of vital importance that have taken place not on the battlefield, or in the palaces of power, or even in the violence of nature, but between the pages of a book. In our digitised age of instant information it is easy to underestimate the power of the printed word. In his fascinating book, Melvyn Bragg presents a vivid reminder of the book as agent of social, political and personal revolution. 12 Books that Changed the World presents a rich variety of human endeavour and a great diversity of characters. There are also surprises. Here are famous books by Darwin, Newton and Shakespeare - but we also discover the stories behind some less well-known works, such as Marie Stopes' Married Love, the original radical feminist Mary Wollstonecraft's A Vindication of the Rights of Woman - and even the rules to an obscure ball game that became the most popular sport in the world . . .

From a New York Times-bestselling historian comes the story of how the alphabet ordered our world. A Place for Everything

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is the first-ever history of alphabetization, from the Library of Alexandria to Wikipedia. The story of alphabetical order has been shaped by some of history's most compelling characters, such as industrious and enthusiastic early adopter Samuel Pepys and dedicated alphabet champion Denis Diderot. But though even George Washington was a proponent, many others stuck to older forms of classification -- Yale listed its students by their family's social status until 1886. And yet, while the order of the alphabet now rules -- libraries, phone books, reference books, even the order of entry for the teams at the Olympic Games -- it has remained curiously invisible. With abundant inquisitiveness and wry humor, historian Judith Flanders traces the triumph of alphabetical order and offers a compendium of Western knowledge, from A to Z.

Pulitzer Prize winner Tracy Kidder memorably records the drama, comedy, and excitement of one company's efforts to bring a new microcomputer to market. Computers have changed since 1981, when *The Soul of a New Machine* first examined the culture of the computer revolution. What has not changed is the feverish pace of the high-tech industry, the go-for-broke approach to business that has caused so many computer companies to win big (or go belly up), and the cult of pursuing mind-bending technological innovations. *The Soul of a New Machine* is an essential chapter in the history of the machine that revolutionized the world in the twentieth century. Lean thinking is a powerful method that allows organizations to improve the productivity, efficiency and quality of their products or services. Achieving these benefits requires good teamwork, clear communication, intelligent use of resources and a commitment to continuous improvement. This 2006 book shows how lean thinking can be applied in practice, highlighting the key challenges and pitfalls. The authors, based at a leading centre for lean enterprise research, begin

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with an overview of the theory of lean thinking. They then explain the core tools and techniques and show how they can be applied successfully. The detailed implementation of lean thinking is illustrated by several case studies, from a range of industries, in which the authors had unprecedented access to the management teams. With its focus on implementation and practical solutions, this book will appeal to managers at all levels, as well as to business students and researchers in lean thinking.

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