

## Internet Of Things Digitize Or Die Transform Your Organization Embrace The Digital Evolution Rise Above The Competition lot Internet Of Things Volume 1

This book explains the key feature to develop a complex and stable network that helps to gather the data to optimize the asset performance and maximize the production in the Industries leveraging on the cloud infrastructure and services. By the end, you can design the Industrial IoT network and the architecture for processing its data in the cloud.

A guided tour of the rapidly evolving networked world of connected devices, objects, and people that is changing the way we live and work. Since the publication of the original edition of this volume in the MIT Press Essential Knowledge series, the Internet of Things (IoT) has evolved from a novelty (look! my phone connects to my lamp!) to a mainstream technology framework that we rely on every day to accomplish many tasks. This revised and updated edition reports on the latest developments in this rapidly evolving networked world of connected devices, objects, and people that is changing the way we live and work. Business and technology writer Samuel Greengard takes us on a guided tour of the IoT, describing smart lightbulbs, sensors in phones that trigger earthquake warnings, 3D headsets that connect users to business expos through completely immersive virtual reality environments, and more. He offers a clear explanation of the technology that builds and manages the IoT and examines the growing array of consumer devices now available, from smart door locks to augmented reality fitting rooms. Greengard also shows how the IoT is part of the Fourth Industrial Revolution, which is transforming business through smart manufacturing, end-to-end supply chain visibility, integrated artificial intelligence, and much more. He considers risks associated with the IoT, including threats to free speech, growing inequality, and an increase in cybercrime. Finally, he takes a look at the future of a hyperconnected world and what it means to people and human interaction.

This book provides an overview of the current Internet of Things (IoT) landscape, ranging from the research, innovation and development priorities to enabling technologies in a global context. A successful deployment of IoT technologies requires integration on all layers, be it cognitive and semantic aspects, middleware components, services, edge devices/machines and infrastructures. It is intended to be a standalone book in a series that covers the Internet of Things activities of the IERC - Internet of Things European Research Cluster from research to technological innovation, validation and deployment. The book builds on the ideas put forward by the European Research Cluster and the IoT European Platform Initiative (IoT-EPI) and presents global views and state of the art results on the challenges facing the research, innovation, development and deployment of IoT in the next years. The IoT is bridging the physical world with virtual world and requires sound information processing capabilities for the "digital shadows" of these real things. The research and innovation in nanoelectronics, semiconductor, sensors/actuators, communication, analytics technologies, cyber-physical systems, software, swarm intelligent and deep learning systems are essential for the successful deployment of IoT applications. The emergence of IoT platforms with multiple functionalities enables rapid development and lower costs by offering standardised components that can be shared across multiple solutions in many industry verticals. The IoT applications will gradually move from vertical, single purpose solutions to multi-purpose and collaborative applications interacting across industry verticals, organisations and people, being one of the essential paradigms of the digital economy. Many of those applications still have to be identified and involvement of end-users including the creative sector in this innovation is crucial. The IoT applications and deployments as integrated building blocks of the new digital economy are part of the accompanying IoT policy framework to address issues of horizontal nature and common interest (i.e. privacy, end-to-end security, user acceptance, societal, ethical aspects and legal issues) for providing trusted IoT solutions in a coordinated and consolidated manner across the IoT activities and pilots. In this, context IoT ecosystems offer solutions beyond a platform and solve important technical challenges in the different verticals and across verticals. These IoT technology ecosystems are instrumental for the deployment of large pilots and can easily be connected to or build upon the core IoT solutions for different applications in order to expand the system of use and allow new and even unanticipated IoT end uses. Technical topics discussed in the book include:

Introduction  
Digitising industry and IoT as key enabler in the new era of Digital Economy  
IoT Strategic Research and Innovation Agenda  
IoT in the digital industrial context: Digital Single Market  
Integration of heterogeneous systems and bridging the virtual, digital and physical worlds  
Federated IoT platforms and interoperability  
Evolution from intelligent devices to connected systems of systems by adding new layers of cognitive behaviour, artificial intelligence and user interfaces.  
Innovation through IoT ecosystems  
Trust-based IoT end-to-end security, privacy framework  
User acceptance, societal, ethical aspects and legal issues  
Internet of Things Applications

Every organization makes plans for updating products, technologies, and business processes. But that's not enough anymore for the twenty-first-century company. The race is now on for everyone to become a digital enterprise. For those individuals who have been charged with leading their company's technology-driven change, the pressure is intense while the correct path forward unclear. Help has arrived! In *Driving Digital*, author Isaac Sacolick shares the lessons he's learned over the years as he has successfully spearheaded multiple transformations and helped shape digital-business best practices. Readers no longer have to blindly trek through the mine field of their company's digital transformation. In this thoroughly researched one-stop manual, learn how to:

- Formulate a digital strategy
- Transform business and IT practices
- Align development and operations
- Drive culture change
- Bolster digital talent
- Capture and track ROI
- Develop innovative digital practices
- Pilot emerging technologies
- And more!

Your company cannot avoid the digital disruption heading its way. The choice is yours: Will this mean the beginning of the end for your business, or will your digital practices be what catapults you into next-level success?

Deliver unprecedented customer value and seize your competitive edge with a transformative digital supply network

Digital tech has disrupted life and business as we know it, and supply chain management is no exception. But how exactly does digital transformation affect your business? What are the breakthrough technologies and their capabilities you need to know about? How will digital transformation impact skills requirements and work in general? Do you need to completely revamp your understanding of supply chain management? And most importantly: How do you get started? Digital Supply Networks provides clear answers to these and many other questions. Written by an experienced team comprised of Deloitte consultants and leading problem-driven scholars from a premier research university, this expert guide leads you through the process of improving operations building supply networks, increasing revenue, reimagining business models, and providing added value to customers, stakeholders, and society. You'll learn everything you need to know about: Stages of development, roles, capabilities, and the benefits of DSN Big data analytics including its attributes, security, and authority Machine learning, Artificial Intelligence, Blockchain, robotics, and the Internet of Things Synchronized planning, intelligent supply, and digital product development Vision, attributes, technology, and benefits of smart manufacturing, dynamic logistics, and fulfillment A playbook to guide the digital transformation journey Drawing from real world-experience and problem-driven academic research, the authors provide an in-depth account of the transformation to digitally connected supply networks. They discuss the limitations of traditional supply chains and the underlying capabilities and potential of digitally-enabled supply flows. The chapters burst with expert insights and real-life use cases grounded in tomorrow's industry needs. Success in today's hyper-competitive, fast-paced business landscape, characterized by the risk of black swan events, such as the 2020 COVID-19 global pandemic, requires the reimagining and the digitalization of complex demand-supply systems, more collaborative and connected processes, and smarter, more dynamic data-driven decision making?which can only be achieved through a fully integrated Digital Supply Network.

Industrial internet of things (IIoT) is changing the face of industry by completely redefining the way stakeholders, enterprises, and machines connect and interact with each other in the industrial digital ecosystem. Smart and connected factories, in which all the machinery transmits real-time data, enable industrial data analytics for improving operational efficiency, productivity, and industrial processes, thus creating new business opportunities, asset utilization, and connected services. IIoT leads factories to step out of legacy environments and arcane processes towards open digital industrial ecosystems. Innovations in the Industrial Internet of Things (IIoT) and Smart Factory is a pivotal reference source that discusses the development of models and algorithms for predictive control of industrial operations and focuses on optimization of industrial operational efficiency, rationalization, automation, and maintenance. While highlighting topics such as artificial intelligence, cyber security, and data collection, this book is ideally designed for engineers, manufacturers, industrialists, managers, IT consultants, practitioners, students, researchers, and industrial industry professionals.

Today, billions of devices are Internet-connected, IoT standards and protocols are stabilizing, and technical professionals must increasingly solve real problems with IoT technologies. Now, five leading Cisco IoT experts present the first comprehensive, practical reference for making IoT work. IoT Fundamentals brings together knowledge previously available only in white papers, standards documents, and other hard-to-find sources—or nowhere at all. The authors begin with a high-level overview of IoT and introduce key concepts needed to successfully design IoT solutions. Next, they walk through each key technology, protocol, and technical building block that combine into complete IoT solutions. Building on these essentials, they present several detailed use cases, including manufacturing, energy, utilities, smart+connected cities, transportation, mining, and public safety. Whatever your role or existing infrastructure, you'll gain deep insight what IoT applications can do, and what it takes to deliver them. Fully covers the principles and components of next-generation wireless networks built with Cisco IOT solutions such as IEEE 802.11 (Wi-Fi), IEEE 802.15.4-2015 (Mesh), and LoRaWAN Brings together real-world tips, insights, and best practices for designing and implementing next-generation wireless networks Presents start-to-finish configuration examples for common deployment scenarios Reflects the extensive first-hand experience of Cisco experts

How the enabling technologies in 5G as an integral or as a part can seamlessly fuel the IoT revolution is still very challenging. This book presents the state-of-the-art solutions to the theoretical and practical challenges stemming from the integration of 5G enabling technologies into IoTs in support of a smart 5G-enabled IoT paradigm, in terms of network design, operation, management, optimization, and applications. In particular, the technical focus covers a comprehensive understanding of 5G-enabled IoT architectures, converged access networks, smart network management, and emerging applications of 5G-enabled IoT.

This textbook presents an end-to-end Internet of Things (IoT) architecture that comprises of devices, network, compute, storage, platform, applications along with management and security components with focus on the missing functionality in the current state of the art. As with the first edition, it is organized into six main parts: an IoT reference model; Fog computing and the drivers; IoT management and applications ranging from smart homes to manufacturing and energy conservation solutions; Smart Services in IoT; IoT standards; and case studies. The textbook edition features a new chapter entitled The Blockchain in IoT, updates based on latest standards and technologies, and new slide ware for professors. It features a full suite of classroom material for easy adoption.

This book constitutes revised and selected papers from the 5th International Symposium on Security and Privacy in Social Networks and Big Data, SocialSec 2019, held in Copenhagen, Denmark, in July 2019. The 18 full papers and 3 short papers presented in this volume were carefully reviewed and selected from a total of 76 submissions. The papers in the volume cover a broad range of topics on security in Internet-of-things, Social Networks, User Authentication, Algorithm design, Artificial Intelligence, and Big Data.

This book features selected papers presented at Second International Conference on International Conference on

Information Management & Machine Intelligence (ICIMMI 2020) held at Poornima Institute of Engineering & Technology, Jaipur, Rajasthan, India during 24 – 25 July 2020. It covers a range of topics, including data analytics; AI; machine and deep learning; information management, security, processing techniques and interpretation; applications of artificial intelligence in soft computing and pattern recognition; cloud-based applications for machine learning; application of IoT in power distribution systems; as well as wireless sensor networks and adaptive wireless communication.

An incisive history of the controversial Google Books project and the ongoing quest for a universal digital library Libraries have long talked about providing comprehensive access to information for everyone. But when Google announced in 2004 that it planned to digitize books to make the world's knowledge accessible to all, questions were raised about the roles and responsibilities of libraries, the rights of authors and publishers, and whether a powerful corporation should be the conveyor of such a fundamental public good. *Along Came Google* traces the history of Google's book digitization project and its implications for us today. Deanna Marcum and Roger Schonfeld draw on in-depth interviews with those who both embraced and resisted Google's plans, from librarians and technologists to university leaders, tech executives, and the heads of leading publishing houses. They look at earlier digital initiatives to provide open access to knowledge, and describe how Google founders Sergey Brin and Larry Page made the case for a universal digital library and drew on their company's considerable financial resources to make it a reality. Marcum and Schonfeld examine how librarians and scholars organized a legal response to Google, and reveal the missed opportunities when a settlement with the tech giant failed. *Along Came Google* sheds light on the transformational effects of the Google Books project on scholarship and discusses how we can continue to think imaginatively and collaboratively about expanding the digital availability of knowledge.

In order to survive in their market and differentiate themselves from the competition, small- and medium-sized enterprises (SMEs), which represent more than 90% of companies worldwide, need to be creative and innovative. This book presents a conceptual framework for thinking about innovation and creativity in SMEs. It takes into account their strategic relation to their environment and the economic, technological and social changes that they face. Their ability to enhance their creativity with new ideas and to legitimize them during their implementation is also taken into account

Explore the current state of the production, processing, and manufacturing industries and discover what it will take to achieve re-industrialization of the former industrial powerhouses that can counterbalance the benefits of cheap labor providers dominating the industrial sector. This book explores the potential for the Internet of Things (IoT), Big Data, Cyber-Physical Systems (CPS), and Smart Factory technologies to replace the still largely mechanical, people-based systems of offshore locations. *Industry 4.0: The Industrial Internet of Things* covers Industry 4.0, a term that encapsulates trends and technologies that could rewrite the rules of manufacturing and production. **What You'll Learn:** Discover the Industrial Internet and Industrial Internet of Things See the technologies that must advance to enable Industry 4.0 and learn what is happening today to make that happen Observe examples of the implementation of Industry 4.0 Apply some of these case studies Discover the potential to take back the lead in manufacturing, and the potential fallout that could result **Who This Book is For:** Business futurists, business strategists, CEOs and CTOs, and anyone with an interest and an IT or business background; or anyone who may have a keen interest in how the future of IT, industry and production will develop over the next two decades.

This book provides a holistic picture of the digital age as it emerges in the 2010s. On the background of business analysis concepts from firm to megatrends and all business sectors of the World, the digital age of information systems and digital drivers are thoroughly laid out.

This book presents a comprehensive framework for IoT, including its architectures, security, privacy, network communications, and protocols. The book starts by providing an overview of the aforementioned research topics, future directions and open challenges that face the IoT development. The authors then discuss the main architectures in the field, which include Three- and Five-Layer Architectures, Cloud and Fog Based Architectures, a Social IoT Application Architecture. In the security chapter, the authors outline threats and attacks, privacy preservation, trust and authentication, IoT data security, and social awareness. The final chapter presents case studies including smart home, wearables, connected cars, industrial Internet, smart cities, IoT in agriculture, smart retail, energy engagement, IoT in healthcare, and IoT in poultry and farming. Discusses ongoing research into the connection of the physical and virtual worlds; Includes the architecture, security, privacy, communications, and protocols of IoT; Presents a variety of case studies in IoT including wearables, smart cities, and energy management.

This book shows a vision of the present and future of Industry 4.0 and identifies and examines the most pressing research issue in Industry 4.0. Containing the contributions of leading researchers and academics, this book includes recent publications in key areas of interest, for example: a review on the Industry 4.0: What is the Industry 4.0, the pillars of Industry 4.0, current and future trends, technologies, taxonomy, and some case studies (A.U.T.O 4.0, stabilization of digitized process). This book also provides an essential tool in the process of migration to Industry 4.0. The book is suitable as a text for graduate students and professionals in the industrial sector and general engineering areas. The book is organized into two sections: 1. Reviews 2. Case Studies Industry 4.0 is likely to play an important role in the future society. This book is a good reference on Industry 4.0 and includes some case studies. Each chapter is written by expert researchers in the sector, and the topics are broad; from the concept or definition of Industry 4.0 to a future society 5.0.

**LEARN MORE ABOUT FOUNDATIONAL AND ADVANCED TOPICS IN INTERNET OF THINGS TECHNOLOGY WITH THIS ALL-IN-ONE GUIDE** *Enabling the Internet of Things: Fundamentals, Design, and Applications* delivers a comprehensive starting point for anyone hoping to understand the fundamentals and design of Internet of Things (IoT) systems. The book's distinguished academics and authors offer readers an opportunity to understand IoT concepts via programming in an abstract way. Readers will learn about IoT fundamentals, hardware and software components, IoT protocol stacks, security, IoT applications and implementations, as well as the challenges, and potential solutions, that lie ahead. Readers will learn about the social aspects of

IoT systems, as well as receive an introduction to the Blockly Programming Language, IoT Microcontrollers, IoT Microprocessors, systems on a chip and IoT Gateway Architecture. The book also provides implementation of simple code examples in Packet Tracer, increasing the usefulness and practicality of the book. Enabling the Internet of Things examines a wide variety of other essential topics, including: The fundamentals of IoT, including its evolution, distinctions, definitions, vision, enabling technologies, and building blocks An elaboration of the sensing principles of IoT and the essentials of wireless sensor networks A detailed examination of the IoT protocol stack for communications An analysis of the security challenges and threats faced by users of IoT devices, as well as the countermeasures that can be used to fight them, from the perception layer to the application layer Perfect as a supplementary text for undergraduate students taking computer science or electrical engineering courses, Enabling the Internet of Things also belongs on the bookshelves of industry professionals and researchers who regularly work with and on the Internet of Things and who seek a better understanding of its foundational and advanced topics.

Development in information and communication technologies has led to the advancement of business and enabled enterprises to produce on a global scale. Productivity is a key function in maintaining a competitive advantage in today's market. The internet of things has rapidly become prevalent in the productivity efforts of businesses. Understanding these technologies and how to implement them into current business practices is vital for researchers and practitioners. Internet of Things (IoT) Applications for Enterprise Productivity is a collection of innovative research on the advancing methods productivity efforts of business through the implementation of the internet of things. While highlighting topics including employee motivation, enterprise productivity, and supply chain tracking, this book is ideally designed for manufacturing professionals, industrialists, engineers, managers, practitioners, academicians, and students seeking current research on enterprise production systems and its transformation using internet of things technologies.

Connect your organization to the Internet of Things with solid strategy and a proven implementation plan Building Internet of Things provides front-line business decision makers with a practical handbook for capitalizing on this latest transformation. Focusing on the business implications of Internet of Things (IoT), this book describes the sheer impact, spread, and opportunities arising every day, and how business leaders can implement IoT today to realize tangible business advantages. The discussion delves into IoT from a business, strategy and organizational standpoint, and includes use-cases that illustrate the ripple effect that this latest disruption brings; you'll learn how to fashion a viable IoT plan that works with your organization's strategy and direction, and how to implement that strategy successfully by integrating IoT into your organization tomorrow. For business managers, the biggest question surrounding the Internet of Things is what to do with it. This book examines the way IoT is being used today—and will be used in the future—to help you craft a robust plan for your organization. Grasp the depth and breadth of the Internet of Things Create a secure IoT recipe that aligns with your company's strategy Capitalize on advances while avoiding disruption from others Leverage the technical, organizational, and social impact of IoT In the past five years, the Internet of Things has become the new frontier of technology that has everyone talking. It seems that almost every week a major vendor announces a new IoT strategy or division; is your company missing the boat? Learn where IoT fits into your organization, and how to turn disruption into profit with the expert guidance in Building the Internet of Things.

The goal of this book is to gain a clear picture of the current status and future challenges with regard to the digitalization of the supply chain – from the perspective of the suppliers, the manufacturers, and the customers. They were the target groups of the book. Digitization has touched upon all aspects of businesses, including supply chains. Technologies such as RFID, GPS, and sensors have enabled organizations to transform their existing hybrid (combination of paper-based and IT-supported processes) supply chain structures into more flexible, open, agile, and collaborative digital models. Unlike hybrid supply chain models, which have resulted in rigid organizational structures, unobtainable data, and disjointed relationships with partners, digital supply chains enable business process automation, organizational flexibility, and digital management of corporate assets. In order to reap maximum benefits from digital supply chain models, it is important that companies internalize it as an integral part of the overall business model and organizational structure. Localized disconnected projects and silo-based operations pose a serious threat to competitiveness in an increasingly digital world. The technologies discussed in this text – artificial intelligence, 3D printing, Internet of things, etc. – are beginning to come together to help digitize, automate, integrate, and improve the global supply chains. It's certainly an exciting and challenging time for both new supply chain professionals and long-time supply chain professionals.

**DISTINGUISHED FAVOURITE:** Independent Press Award 2020 - Business General Category WINNER: CES 2020 Gary's Book Club Top Technology Book of the Year Artificial Intelligence (AI) is the new electricity of our times. It is revolutionizing industries the world over, and changing how we fundamentally view and understand work. Superhuman Innovation argues that AI will supercharge the workforce and the world of work, can be harnessed to deliver powerful change to how companies innovate and gain competitive advantage. It is a practical guide to how AI and Machine Learning are impacting not only how businesses, brands, and agencies innovate, but also what they innovate: products, services and content. In a world of product and pricing parity, the delivery of superior service experience has become the new marketing, and the new real competitive edge. With AI companies can harness the power of data, personalization and on-demand availability, at the touch of an intelligent button. Superhuman Innovation discusses how AI will serve the superstar innovators of tomorrow, by enabling them to see deeper insights and set sail for higher goals. It unearths a powerful five-pronged model which describes how AI enables innovation through the offerings of Speed (facilitating work processes), Understanding (revealing and mastering deep insights), Performance (customization of delivery to customers), Experimentation (the iterative process of reinvention and feedback) and Results (tangible, measurable and optimizable results). The book is supported by varied and innovative case studies from a variety of industries.

Are you missing opportunities for growth that are right in front of you? In today's volatile economic environment, filled with uncertainty and sudden change, the forces pushing you to stay focused on the core business are extremely powerful. Profiting from the core is crucial, but the danger is that overfocus on the core can blind companies. Scanning the horizon for new markets and new products can also be tempting, but risky. Fixating too much on either strategy can cause you to miss the substantial opportunities for growth that are often hidden in plain sight, at the edge of the core business. In this insightful yet practical book, strategy experts Alan Lewis and Dan McKone articulate a mindset that helps leaders recognize and capitalize on these opportunities. The Edge Strategy framework challenges how the boundaries of your existing products and services map to your customers' views of the world and then provides three different lenses through which you can see and leverage value: • Product edge. How to capture incremental profits and other benefits by slightly altering the elements and composition of a core offering •

Journey edge. How to create and capture extra value by adjusting your role in supporting the customer's journey to and through your offering • Enterprise edge. How to unlock additional value from resources and capabilities that support your core offering by applying them in a different context, for a different offering or different set of customers With engaging examples across many industries, Lewis and McKone coach you on how to identify and assess each of the different "edges" and then provide concrete insights and advice on applying edge strategy and tactics to use in specific business contexts. The book concludes with a ten-step process to help executives and managers find and leverage the edges in their own companies. Edge Strategy is the concise, hands-on guide for growing your business by getting more yield from assets already in place, relationships already established, and investments already made.

This book gathers extended versions of the best papers presented at the Global Joint Conference on Industrial Engineering and Its Application Areas (GJCIE), organized virtually on August 14-15, 2020, by Istanbul Technical University. It covers a wide range of topics, including decision analysis, supply chain management, systems modelling and quality control. Further, special emphasis is placed on cutting-edge applications of industrial Internet-of-Things. Technological, economic and business challenges are discussed in detail, presenting effective strategies that can be used to modernize current structures, eliminating the barriers that are keeping industries from taking full advantage of IoT technologies. The book offers an important link between technological research and industry best practices, and covers various disciplinary areas such as manufacturing, healthcare and service engineering, among others.

This book offers the first comprehensive view on integrated circuit and system design for the Internet of Things (IoT), and in particular for the tiny nodes at its edge. The authors provide a fresh perspective on how the IoT will evolve based on recent and foreseeable trends in the semiconductor industry, highlighting the key challenges, as well as the opportunities for circuit and system innovation to address them. This book describes what the IoT really means from the design point of view, and how the constraints imposed by applications translate into integrated circuit requirements and design guidelines. Chapter contributions equally come from industry and academia. After providing a system perspective on IoT nodes, this book focuses on state-of-the-art design techniques for IoT applications, encompassing the fundamental sub-systems encountered in Systems on Chip for IoT: ultra-low power digital architectures and circuits low- and zero-leakage memories (including emerging technologies) circuits for hardware security and authentication System on Chip design methodologies on-chip power management and energy harvesting ultra-low power analog interfaces and analog-digital conversion short-range radios miniaturized battery technologies packaging and assembly of IoT integrated systems (on silicon and non-silicon substrates). As a common thread, all chapters conclude with a prospective view on the foreseeable evolution of the related technologies for IoT. The concepts developed throughout the book are exemplified by two IoT node system demonstrations from industry. The unique balance between breadth and depth of this book: enables expert readers quickly to develop an understanding of the specific challenges and state-of-the-art solutions for IoT, as well as their evolution in the foreseeable future provides non-experts with a comprehensive introduction to integrated circuit design for IoT, and serves as an excellent starting point for further learning, thanks to the broad coverage of topics and selected references makes it very well suited for practicing engineers and scientists working in the hardware and chip design for IoT, and as textbook for senior undergraduate, graduate and postgraduate students (familiar with analog and digital circuits).

Emergence of Pharmaceutical Industry Growth with Industrial IoT Approach uses an innovative approach to explore how the Internet of Things (IoT) and big data can improve approaches, create efficiencies and make discoveries. Rapid growth of the IoT has encouraged many companies in the manufacturing sector to make use of this technology to unlock its potential. Pharmaceutical manufacturing companies are no exception to this, as IoT has the potential to revolutionize aspects of the pharmaceutical manufacturing process, from drug discovery to manufacturing. Using clear, concise language and real world case studies, this book discusses systems level from both a human-factors point-of-view and the perspective of networking, databases, privacy and anti-spoofing. The wide variety of topics presented offers readers multiple perspectives on a how to integrate the Internet of Things into pharmaceutical manufacturing. Covers efficiency improvements of pharmaceutical manufacturing through IoT/Big Data approaches Explores cutting-edge technologies through sensor enabled environment in the pharmaceutical industry Discusses the systems level from both a human-factors point-of-view and the perspective of networking, databases, privacy and anti-spoofing

This volume, SGIoT 2020, constitutes the refereed proceedings of the 4th EAI International Conference on Smart Grid and Internet of Things, SGIoT 2020, held in TaiChung, Taiwan, in December 2020. The IoT-driven smart grid is currently a hot area of research boosted by the global need to improve electricity access, economic growth of emerging countries, and the worldwide power plant capacity additions. The 40 papers presented were reviewed and selected from 159 submissions and present broad range of topics in wireless sensor, vehicular ad hoc networks, security, blockchain, and deep learning.

By 2020, experts forecast that up to 28 billion devices will be connected to the Internet with only one third of them being computers, smartphones and tablets. The remaining two thirds will be other "devices"--sensors, terminals, household appliances, thermostats, televisions, automobiles, production machinery, urban infrastructure and many other "things"--which traditionally have not been Internet enabled. This "Internet of Things" (IoT) represents a remarkable transformation of the way in which our world will soon interact. Much like the World Wide Web connected computers to networks, and the next evolution connected people to the Internet and other people, IoT looks poised to interconnect devices, people, environments, virtual objects and machines in ways that only science fiction writers could have imagined. In a nutshell, the Internet of Things (IoT) is the convergence of connecting people, things, data and processes. It is transforming our life, business and everything in between. Secure and Smart Internet of Things explores many aspects of the Internet of Things and explains many of the completed principles of IoT and the new advances in IoT including the use of Fog Computing, AI, and Blockchain technology. The topics discussed in the book include: - Internet

of Things (IoT) - Industrial Internet of Things (IIoT) - Fog Computing - Artificial Intelligence - Blockchain Technology - Network Security - Zero-Trust Model - Data Analytics - Digital Transformation - DDoS - Smart Devices

Tracing the rise of digital computing in policing and punishment and its harmful impact on criminalized communities of color The U.S. Bureau of Justice Statistics estimates that law enforcement agencies have access to more than 100 million names stored in criminal history databases. In some cities, 80 percent of the black male population is registered in these databases. *Digitize and Punish* explores the long history of digital computing and criminal justice, revealing how big tech, computer scientists, university researchers, and state actors have digitized carceral governance over the past forty years—with devastating impact on poor communities of color. Providing a comprehensive study of the use of digital technology in American criminal justice, Brian Jefferson shows how the technology has expanded the wars on crime and drugs, enabling our current state of mass incarceration and further entrenching the nation's racialized policing and punishment. After examining how the criminal justice system conceptualized the benefits of computers to surveil criminalized populations, Jefferson focuses on New York City and Chicago to provide a grounded account of the deployment of digital computing in urban police departments. By highlighting the intersection of policing and punishment with big data and web technology—resulting in the development of the criminal justice system's latest tool, crime data centers—*Digitize and Punish* makes clear the extent to which digital technologies have transformed and intensified the nature of carceral power.

Provides a detailed analysis of the standards and technologies enabling applications for the wireless Internet of Things  
The *Wireless Internet of Things: A Guide to the Lower Layers* presents a practitioner's perspective toward the Internet of Things (IoT) focusing on over-the-air interfaces used by applications such as home automation, sensor networks, smart grid, and healthcare. The author—a noted expert in the field—examines IoT as a protocol-stack detailing the physical layer of the wireless links, as both a radio and a modem, and the media access control (MAC) that enables communication in congested bands. Focusing on low-power wireless personal area networks (WPANs) the text outlines the physical and MAC layer standards used by ZigBee, Bluetooth LE, Z-Wave, and Thread. The text deconstructs these standards and provides background including relevant communication theory, modulation schemes, and access methods. The author includes a discussion on Wi-Fi and gateways, and explores their role in IoT. He introduces radio topologies used in software-defined radio implementations for the WPANs. The book also discusses channel modelling and link budget analysis for WPANs in IoT. This important text: Introduces IEEE 802.15.4, ITU-T G.9959, and Bluetooth LE as physical layer technology standards enabling wireless IoT Takes a layered approach in order to cultivate an appreciation for the various standards that enable interoperability Provides clarity on wireless standards with particular focus on actual implementation Written for IoT application and platform developers as well as digital signal processing, network, and wireless communication engineers; *The Wireless Internet of Things: A Guide to the Lower Layers* offers an inclusive overview of the complex field of wireless IoT, exploring its beneficial applications that are proliferating in a variety of industries.

Digital transformation is not about technology--it's about change. In the rapidly changing digital economy, you can't succeed by merely tweaking management practices that led to past success. And yet, while many leaders and managers recognize the threat from digital--and the potential opportunity--they lack a common language and compelling framework to help them assess it and guide them in responding. They don't know how to think about their digital business model. In this concise, practical book, MIT digital research leaders Peter Weill and Stephanie Woerner provide a powerful yet straightforward framework that has been field-tested globally with dozens of senior management teams. Based on years of study at the MIT Center for Information Systems Research (CISR), the authors find that digitization is moving companies' business models on two dimensions: from value chains to digital ecosystems, and from a fuzzy understanding of the needs of end customers to a sharper one. Looking at these dimensions in combination results in four distinct business models, each with different capabilities. The book then sets out six driving questions, in separate chapters, that help managers and executives clarify where they are currently in an increasingly digital business landscape and highlight what's needed to move toward a higher-value digital business model. Filled with straightforward self-assessments, motivating examples, and sharp financial analyses of where profits are made, this smart book will help you tackle the threats, leverage the opportunities, and create winning digital strategies.

Internet of Things From Hype to Reality The Road to Digitization Springer

This book covers IoT and Big Data from a technical and business point of view. The book explains the design principles, algorithms, technical knowledge, and marketing for IoT systems. It emphasizes applications of big data and IoT. It includes scientific algorithms and key techniques for fusion of both areas. Real case applications from different industries are offering to facilitate ease of understanding the approach. The book goes on to address the significance of security algorithms in combining IoT and big data which is currently evolving in communication technologies. The book is written for researchers, professionals, and academicians from interdisciplinary and transdisciplinary areas. The readers will get an opportunity to know the conceptual ideas with step-by-step pragmatic examples which makes ease of understanding no matter the level of the reader.

This book describes state-of-the-art approaches to Fog Computing, including the background of innovations achieved in recent years. Coverage includes various aspects of fog computing architectures for Internet of Things, driving reasons, variations and case studies. The authors discuss in detail key topics, such as meeting low latency and real-time requirements of applications, interoperability, federation and heterogeneous computing, energy efficiency and mobility, fog and cloud interplay, geo-distribution and location awareness, and case studies in healthcare and smart space applications.

Current hype aside, the Internet of Things will ultimately become as fundamental as the Internet itself, with lots of opportunities and trials along the way. To help you navigate these choppy waters, this practical guide introduces a dedicated methodology for businesses preparing to transition towards IoT-based business models. With a set of best practices based on case study analysis, expert interviews, and the authors' own experience, the *Ignite | IoT Methodology* outlined in this book delivers actionable guidelines to assist you with IoT strategy management and project execution. You'll also find a detailed case study of a project fully developed with this methodology. This book

consists of three parts: Illustrative case studies of selected IoT domains, including smart energy, connected vehicles, manufacturing and supply chain management, and smart cities The Ignite | IoT Methodology for defining IoT strategy, preparing your organization for IoT adoption, and planning and executing IoT projects A detailed case study of the IIC Track & Trace testbed, one of the first projects to be fully developed according to the Ignite | IoT Methodology

Chemical, Gas, and Biosensors for the Internet of Things and Related Applications brings together the fields of sensors and analytical chemistry, devices and machines, and network and information technology. This thorough resource enables researchers to effectively collaborate to advance this rapidly expanding, interdisciplinary area of study. As innovative developments in the Internet of Things (IoT) continue to open new possibilities for quality of life improvement, sensor technology must keep pace, Drs. Mitsubayashi, Niwa and Ueno have brought together the top minds in their respective fields to provide the latest information on the numerous uses of this technology. Topics covered include life-assist systems, network monitoring with portable environmental sensors, wireless livestock health monitoring, point-of-care health monitoring, organic electronics and bio-batteries, and more. Describes the latest advances and underlying principles of sensors used in biomedicine, healthcare, biotechnology, nanotechnology and food and environment safety Focuses on sensors' methods of data communication, logging and analysis for IoT applications Explains the specific requirements of sensor design and performance improvement, helping researchers enhance sensitivity, selectivity, stability, reproducibility and response time

This work skeptically explores the notion that the internet will soon obviate any need for traditional print-based academic libraries. It makes a case for the library's staying power in the face of technological advancements (television, microfilm, and CD-ROM's were all once predicted as the contemporary library's heir-apparent), and devotes individual chapters to the pitfalls and prevarications of popular search engines, e-books, and the mass digitization of traditional print material.

Master powerful techniques and approaches for securing IoT systems of all kinds—current and emerging Internet of Things (IoT) technology adoption is accelerating, but IoT presents complex new security challenges. Fortunately, IoT standards and standardized architectures are emerging to help technical professionals systematically harden their IoT environments. In Orchestrating and Automating Security for the Internet of Things, three Cisco experts show how to safeguard current and future IoT systems by delivering security through new NFV and SDN architectures and related IoT security standards. The authors first review the current state of IoT networks and architectures, identifying key security risks associated with nonstandardized early deployments and showing how early adopters have attempted to respond. Next, they introduce more mature architectures built around NFV and SDN. You'll discover why these lend themselves well to IoT and IoT security, and master advanced approaches for protecting them. Finally, the authors preview future approaches to improving IoT security and present real-world use case examples. This is an indispensable resource for all technical and security professionals, business security and risk managers, and consultants who are responsible for systems that incorporate or utilize IoT devices, or expect to be responsible for them. · Understand the challenges involved in securing current IoT networks and architectures · Master IoT security fundamentals, standards, and modern best practices · Systematically plan for IoT security · Leverage Software-Defined Networking (SDN) and Network Function Virtualization (NFV) to harden IoT networks · Deploy the advanced IoT platform, and use MANO to manage and orchestrate virtualized network functions · Implement platform security services including identity, authentication, authorization, and accounting · Detect threats and protect data in IoT environments · Secure IoT in the context of remote access and VPNs · Safeguard the IoT platform itself · Explore use cases ranging from smart cities and advanced energy systems to the connected car · Preview evolving concepts that will shape the future of IoT security

A USA Today bestseller! Companies like Netflix, Spotify, and Salesforce are just the tip of the iceberg for the subscription model. The real transformation--and the real opportunity--is just beginning. Subscription companies are growing nine times faster than the S&P 500. Why? Because unlike product companies, subscription companies know their customers. A happy subscriber base is the ultimate economic moat. Today's consumers prefer the advantages of access over the hassles of maintenance, from transportation (Uber, Surf Air), to clothing (Stitch Fix, Eleven James), to razor blades and makeup (Dollar Shave Club, Birchbox). Companies are similarly demanding easier, long-term solutions, trading their server rooms for cloud storage solutions like Box. Simply put, the world is shifting from products to services. But how do you turn customers into subscribers? As the CEO of the world's largest subscription management platform, Tien Tzuo has helped hundreds of companies transition from relying on individual sales to building customer-centric, recurring-revenue businesses. His core message in *Subscribed* is simple: Ready or not, excited or terrified, you need to adapt to the Subscription Economy -- or risk being left behind. Tzuo shows how to use subscriptions to build lucrative, ongoing one-on-one relationships with your customers. This may require reinventing substantial parts of your company, from your accounting practices to your entire IT architecture, but the payoff can be enormous. Just look at the case studies: \* Adobe transitions from selling enterprise software licenses to offering cloud-based solutions for a flat monthly fee, and quadruples its valuation. \* Fender evolves from selling guitars one at a time to creating lifelong musicians by teaching beginners to play, and keeping them inspired for life. \* Caterpillar uses subscriptions to help solve problems -- it's not about how many tractors you can rent, but how much dirt you need to move. In *Subscribed*, you'll learn how these companies made the shift, and how you can transform your own product into a valuable service with a practical, step-by-step framework. Find out how how you can prepare and prosper now, rather than trying to catch up later.

Skillfully navigate through the complex realm of implementing scalable, trustworthy industrial systems and architectures in a hyper-connected business world. Key Features Gain practical insight into security concepts in the Industrial Internet of Things (IIoT) architecture Demystify complex topics such as cryptography and blockchain Comprehensive references to industry standards and security frameworks when developing IIoT blueprints Book Description Securing connected industries and autonomous systems is a top concern for the Industrial Internet of Things (IIoT) community. Unlike cybersecurity, cyber-physical security is an intricate discipline that directly ties to system reliability as well as human and environmental safety. Practical Industrial Internet of Things Security enables you to develop a comprehensive understanding of the entire spectrum of securing connected industries, from the edge to the cloud. This book establishes the foundational concepts and tenets of IIoT security by presenting real-world case studies, threat models, and reference architectures. You'll work with practical tools to design risk-based security controls for industrial use cases and gain practical know-how on the multi-layered defense techniques including Identity and Access Management (IAM), endpoint security, and communication infrastructure. Stakeholders, including developers, architects, and business leaders, can gain practical insights in securing IIoT lifecycle processes, standardization, governance and assess the applicability of emerging technologies, such as blockchain, Artificial Intelligence, and Machine Learning, to design and implement resilient connected systems and harness significant industrial opportunities. What you will learn Understand the crucial concepts of a multi-layered IIoT security framework Gain insight on securing identity, access, and configuration management for large-scale IIoT deployments Secure your machine-to-machine (M2M) and machine-to-cloud (M2C) connectivity Build a concrete security program for your IIoT deployment Explore techniques from case studies on industrial IoT threat modeling and mitigation approaches Learn risk management and mitigation planning Who this book is for Practical Industrial Internet of Things Security is for the IIoT community, which includes IIoT researchers, security professionals, architects, developers, and business stakeholders. Anyone who needs to have a comprehensive understanding of the unique safety and security challenges of connected industries and practical methodologies to secure industrial assets will find this book immensely helpful. This book is uniquely designed to benefit professionals from both IT and industrial operations backgrounds.

