

Mastering Core Essentials Togaf Preliminary Phase Volume 1

This book introduces a Digital Social System Praxis Framework (DSSPF) integrating Computational Media, Evolutionary Systems Thinking and Design Thinking approaches to E-transformation practice, also called Community Informatics Design (CID). The DSSPF framework is intended to create communication spaces dedicated to knowledge production and sharing for social and organizational change. It allows social systems researchers and practitioners to recognize their synergistic roles in the praxis process to shape their future through social innovation projects. This transdisciplinary text provides potential students and practitioners fundamental concepts and tools for such design. It offers resources from the Pragmatic and Systemic philosophy of science for the co-construction of social architectures and infrastructures, and multi-aspectual design methodologies by which government, organizations and civil society can learn to ethically co-design common ground. This approach provides complementary and common patterns from known methods, models, and theories of social systems interventions that could support a generic framing of large scale sociotechnical systems: digital social innovation ecosystem, living Labs, Fab Labs, enterprise collaborative networks. There will be a particular focus on understanding and addressing the dimensions that make people from different communities of practice able to communicate and collaborate through multiple digital media, design platforms, worldviews and modeling approaches. Aimed at helping business and IT managers clearly communicate with each other, this helpful book addresses concerns straight-on and provides practical methods to building a collaborative data warehouse . You'll get clear explanations of the goals and objectives of each stage of the data warehouse lifecycle while learning the roles that both business managers and technicians play at each stage. Discussions of the most critical decision points for success at each phase of the data warehouse lifecycle help you understand ways in which both business and IT management can make decisions that best meet unified objectives.

In practice, many different people with backgrounds in many different disciplines contribute to the design of an enterprise. Anyone who makes decisions to change the current enterprise to achieve some preferred structure is considered a designer. What is problematic is how to use the knowledge of separate aspects of the enterprise to achieve a glob

ArchiMate®, an Open Group Standard, is an open and independent modeling language for Enterprise Architecture that is supported by different tool vendors and consulting firms. The ArchiMate language enables Enterprise Architects to describe, analyze, and visualize the relationships among architecture domains in an unambiguous way. This Pocket Guide is based on the ArchiMate® 3.0.1 Specification. It gives a concise introduction to the ArchiMate language. What's

more, it's authoritative with material derived from the official ArchiMate documentation. Topics covered include:

- A high-level introduction to the ArchiMate Specification and its relationship to Enterprise Architecture
- The high-level structure of the ArchiMate language, including an introduction to layering, and the ArchiMate Framework
- The Generic Metamodel for the language
- The relationships that the ArchiMate language includes to model the links between elements
- The Motivation Elements, which includes concepts such as goal, principle, and requirement
- The Strategy Elements, which includes concepts such as resource, capability, and course of action
- The Business Layer, which includes the modeling concepts relevant in the business domain
- The Application Layer, which includes modeling concepts relevant for software applications
- The Technology Layer, which includes modeling concepts relevant for system software applications and infrastructure
- The Physical Elements, which include concepts relevant for the modeling of physical concepts like machines and physical installations
- The relationships between different layers of the language
- The Implementation and Migration Elements, which include concepts to support modeling Enterprise Architecture-enabled transformation
- A summary of the major changes from ArchiMate 2.1 to ArchiMate 3
- A Glossary of terms

Modeling Enterprise Architecture with TOGAF explains everything you need to know to effectively model enterprise architecture with The Open Group Architecture Framework (TOGAF), the leading EA standard. This solution-focused reference presents key techniques and illustrative examples to help you model enterprise architecture. This book describes the TOGAF standard and its structure, from the architecture transformation method to governance, and presents enterprise architecture modeling practices with plenty of examples of TOGAF deliverables in the context of a case study. Although widespread and growing quickly, enterprise architecture is delicate to manage across all its dimensions. Focusing on the architecture transformation method, TOGAF provides a wide framework, which covers the repository, governance, and a set of recognized best practices. The examples featured in this book were realized using the open source Modelio tool, which includes extensions for TOGAF. Includes intuitive summaries of the complex TOGAF standard to let you effectively model enterprise architecture Uses practical examples to illustrate ways to adapt TOGAF to the needs of your enterprise Provides model examples with Modelio, a free modeling tool, letting you exercise TOGAF modeling immediately using a dedicated tool Combines existing modeling standards with TOGAF

This volume presents a detailed explanations of business analysis concepts, terms, tasks, and techniques, and includes examples to help readers understand how to apply them to real-world situations. It also delineates the key activities that are core to the BA role and the diverse range of activities analysts perform based on their career competency level, ranging from problem solving and identification of business opportunities, to complex systems thinking and solution

development, to strategic planning and change management. It is a must-have reference for BA generalists, specialists, and hybrids at every career level and industry segment or perspective.

The Open Group Architecture Framework (TOGAF) is a framework a detailed method and a set of supporting tools for developing an enterprise architecture, developed by members of The Open Group Architecture Forum (www.opengroup.org/architecture).As a comprehensive, open method for enterprise architecture, TOGAF Version 9 complements, and can be used in conjunction with, other frameworks that are more focused on specific aspects of architecture or for vertical sectors such as Government, Defense, and Finance.TOGAF may be used freely by any organization wishing to develop an enterprise architecture for use within that organization (subject to the Conditions of Use).This book is divided into seven main parts :PART I (Introduction) This part provides a high-level introduction to the key concepts of enterprise architecture and in particular the TOGAF approach. It contains the definitions of terms used throughout TOGAF and release notes detailing the changes between this version and the previous version of TOGAF.PART II (Architecture Development Method) This is the core of TOGAF. It describes the TOGAF Architecture Development Method (ADM) a step-by-step approach to developing an enterprise architecture.PART III (ADM Guidelines & Techniques) This part contains a collection of guidelines and techniques available for use in applying TOGAF and the TOGAF ADM.PART IV (Architecture Content Framework) This part describes the TOGAF content framework, including a structured metamodel for architectural artifacts, the use of re-usable architecture building blocks, and an overview of typical architecture deliverables.PART V (Enterprise Continuum & Tools) This part discusses appropriate taxonomies and tools to categorize and store the outputs of architecture activity within an enterprise.PART VI (TOGAF Reference Models) This part provides a selection of architectural reference models, which includes the TOGAF Foundation Architecture, and the Integrated Information Infrastructure Reference Model (III-RM).PART VII (Architecture Capability Framework) This part discusses the organization, processes, skills, roles, and responsibilities required to establish and operate an architecture function within an enterprise.

Modeling Enterprise Architecture with TOGAF A Practical Guide Using UML and BPMN Morgan Kaufmann

Ever-changing business needs have prompted large companies to rethink their enterprise IT. Today, businesses must allow interaction with their customers, partners, and employees at more touch points and at a depth never thought previously. At the same time, rapid advances in information technologies, like business digitization, cloud computing, and Web 2.0, demand fundamental changes in the enterprises' management practices. These changes have a drastic effect not only on IT and business, but also on policies, processes, and people. Many companies therefore embark on enterprise-wide transformation initiatives. The role of Enterprise Architecture

(EA) is to architect and supervise this transformational journey. Unfortunately, today's EA is often a ponderous and detached exercise, with most of the EA initiatives failing to create visible impact. The enterprises need an EA that is agile and responsive to business dynamics. Collaborative Enterprise Architecture provides the innovative solutions today's enterprises require, informed by real-world experiences and experts' insights. This book, in its first part, provides a systematic compendium of the current best practices in EA, analyzes current ways of doing EA, and identifies its constraints and shortcomings. In the second part, it leaves the beaten tracks of EA by introducing Lean, Agile, and Enterprise 2.0 concepts to the traditional EA methods. This blended approach to EA focuses on practical aspects, with recommendations derived from real-world experiences. A truly thought provoking and pragmatic guide to manage EA, Collaborative Enterprise Architecture effectively merges the long-term oriented top-down approach with pragmatic bottom-up thinking, and that way offers real solutions to businesses undergoing enterprise-wide change. Covers the latest emerging technologies affecting business practice, including digitization, cloud computing, agile software development, and Web 2.0 Focuses on the practical implementation of EAM rather than theory, with recommendations based on real-world case studies Addresses changing business demands and practices, including Enterprise 2.0, open source, global sourcing, and more Takes an innovative approach to EAM, merging standard top-down and pragmatic, bottom-up strategies, offering real solutions to businesses undergoing enterprise-wide changes

Cloud Enterprise Architecture examines enterprise architecture (EA) in the context of the surging popularity of Cloud computing. It explains the different kinds of desired transformations the architectural blocks of EA undergo in light of this strategically significant convergence. Chapters cover each of the contributing architectures of EA—business, information, application, integration, security, and technology—illustrating the current and impending implications of the Cloud on each. Discussing the implications of the Cloud paradigm on EA, the book details the perceptible and positive changes that will affect EA design, governance, strategy, management, and sustenance. The author ties these topics together with chapters on Cloud integration and composition architecture. He also examines the Enterprise Cloud, Federated Clouds, and the vision to establish the InterCloud. Laying out a comprehensive strategy for planning and executing Cloud-inspired transformations, the book: Explains how the Cloud changes and affects enterprise architecture design, governance, strategy, management, and sustenance Presents helpful information on next-generation Cloud computing Describes additional architectural types such as enterprise-scale integration, security, management, and governance architectures This book is an ideal resource for enterprise architects, Cloud evangelists and enthusiasts, and Cloud application and service architects. Cloud center administrators, Cloud business executives, managers, and analysts will also find the book helpful and inspirational while formulating appropriate mechanisms and schemes for sound modernization and migration of traditional applications to Cloud infrastructures and platforms.

Enterprises, from small to large, evolve continuously. As a result, their structures are transformed and extended continuously. Without some means of control, such changes are bound to lead to an overly complex, uncoordinated and heterogeneous environment that is hard to manage and hard to adapt to future changes. Enterprise architecture

principles provide a means to direct transformations of enterprises. As a consequence, architecture principles should be seen as the cornerstones of any architecture. In this book, Greefhorst and Proper focus on the role of architecture principles. They provide both a theoretical and a practical perspective on architecture principles. The theoretical perspective involves a brief survey of the general concept of principle as well as an analysis of different flavors of principles. Architecture principles are regarded as a specific class of normative principles that direct the design of an enterprise, from the definition of its business to its supporting IT. The practical perspective on architecture principles is concerned with an approach to the formulation of architecture principles, as well as their actual use in organizations. To illustrate their use in practice, several real-life cases are discussed, an application of architecture principles in TOGAF is included, and a catalogue of example architecture principles is provided. With this broad coverage, the authors target students and researchers specializing in enterprise architecture or business information systems, as well as practitioners who want to understand the foundations underlying their practical daily work.

Looks at the principles and clean code, includes case studies showcasing the practices of writing clean code, and contains a list of heuristics and "smells" accumulated from the process of writing clean code.

This book is based on class notes for a course in the MS program in Systems Engineering at Johns Hopkins University. The program was a cooperative effort between senior systems engineers from the Johns Hopkins University Applied Physics Laboratory and the Westinghouse Electric Company. The authors were part of the curriculum design team as well as members of the faculty.

The scientific basis for the widely accepted ideal of the brotherhood of man rests on the fact of the interwoven etheric (or energy) structure underlying all forms in all kingdoms within the planet. It is this essential oneness which provides the conditions for intercommunication on all levels of consciousness, and which creates the possibility of simultaneous impression in many by a stream of Plan - inspired energy.

"... an engaging book that will empower readers in both large and small software development and engineering organizations to build security into their products. ... Readers are armed with firm solutions for the fight against cyber threats." —Dr. Dena Haritos Tsamitis, Carnegie Mellon University "... a must read for security specialists, software developers and software engineers. ... should be part of every security professional's library." —Dr. Larry Ponemon, Ponemon Institute "... the definitive how-to guide for software security professionals. Dr. Ransome, Anmol Misra, and Brook Schoenfield deftly outline the procedures and policies needed to integrate real security into the software development process. ...A must-have for anyone on the front lines of the Cyber War ..." —Cedric Leighton, Colonel, USAF (Ret.), Cedric Leighton Associates "Dr. Ransome, Anmol Misra, and Brook Schoenfield give you a magic formula in this book - the methodology and process to build security into the entire software development life cycle so that the software is secured at the source! " —Eric S. Yuan, Zoom Video Communications There is much publicity regarding network security, but the real cyber Achilles' heel is insecure software. Millions of software vulnerabilities create a cyber house of cards, in which we conduct our digital lives. In response, security people build ever more elaborate cyber fortresses to protect this vulnerable software. Despite their efforts, cyber fortifications consistently fail to protect our digital

treasures. Why? The security industry has failed to engage fully with the creative, innovative people who write software. Core Software Security expounds developer-centric software security, a holistic process to engage creativity for security. As long as software is developed by humans, it requires the human element to fix it. Developer-centric security is not only feasible but also cost effective and operationally relevant. The methodology builds security into software development, which lies at the heart of our cyber infrastructure. Whatever development method is employed, software must be secured at the source. Book Highlights: Supplies a practitioner's view of the SDL Considers Agile as a security enabler Covers the privacy elements in an SDL Outlines a holistic business-savvy SDL framework that includes people, process, and technology Highlights the key success factors, deliverables, and metrics for each phase of the SDL Examines cost efficiencies, optimized performance, and organizational structure of a developer-centric software security program and PSIRT Includes a chapter by noted security architect Brook Schoenfield who shares his insights and experiences in applying the book's SDL framework View the authors' website at <http://www.androidinsecurity.com/>

This book constitutes the thoroughly refereed proceedings of ten international workshops held in London, UK, in conjunction with the 23rd International Conference on Advanced Information Systems Engineering, CAiSE 2011, in June 2011. The 59 revised papers were carefully selected from 139 submissions. The ten workshops included Business/IT Alignment and Interoperability (BUSITAL), Conceptualization of Modelling Methods (CMM), Domain Specific Engineering (DsE@CAiSE), Governance, Risk and Compliance (GRCIS), Integration of IS Engineering Tools (INISSET), System and Software Architectures (IWSSA), Ontology-Driven Information Systems Engineering (ODISE), Ontology, Models, Conceptualization and Epistemology in Social, Artificial and Natural Systems (ONTOSE), Semantic Search (SSW), and Information Systems Security Engineering (WISSE).

An enterprise architecture tries to describe and control an organisation's structure, processes, applications, systems and techniques in an integrated way. The unambiguous specification and description of components and their relationships in such an architecture requires a coherent architecture modelling language. Lankhorst and his co-authors present such an enterprise modelling language that captures the complexity of architectural domains and their relations and allows the construction of integrated enterprise architecture models. They provide architects with concrete instruments that improve their architectural practice. As this is not enough, they additionally present techniques and heuristics for communicating with all relevant stakeholders about these architectures. Since an architecture model is useful not only for providing insight into the current or future situation but can also be used to evaluate the transition from 'as-is' to 'to-be', the authors also describe analysis methods for assessing both the qualitative impact of changes to an architecture and the quantitative aspects of architectures, such as performance and cost issues. The modelling language presented has been proven in practice in many real-life case studies and has been adopted by The Open Group as an international standard. So this book is an ideal companion for enterprise IT or business architects in industry as well as for computer or management science students studying the field of enterprise architecture.

Information Security professionals today have to be able to demonstrate their security strategies within clearly demonstrable frameworks, and show how these are driven by their organization's business priorities, derived from sound risk management assessments. This Open Enterprise Security Architecture (O-ESA) Guide provides a valuable reference resource

for practising security architects and designers explaining the key security issues, terms, principles, components, and concepts underlying security-related decisions that security architects and designers have to make. In doing so it helps in explaining their security architectures and related decision-making processes to their enterprise architecture colleagues. The description avoids excessively technical presentation of the issues and concepts, so making it also an eminently digestible reference for business managers - enabling them to appreciate, validate, and balance the security architecture viewpoints along with all the other viewpoints involved in creating a comprehensive enterprise IT architecture.

Well-known security experts decipher the most challenging aspect of cloud computing-security Cloud computing allows for both large and small organizations to have the opportunity to use Internet-based services so that they can reduce start-up costs, lower capital expenditures, use services on a pay-as-you-use basis, access applications only as needed, and quickly reduce or increase capacities. However, these benefits are accompanied by a myriad of security issues, and this valuable book tackles the most common security challenges that cloud computing faces. The authors offer you years of unparalleled expertise and knowledge as they discuss the extremely challenging topics of data ownership, privacy protections, data mobility, quality of service and service levels, bandwidth costs, data protection, and support. As the most current and complete guide to helping you find your way through a maze of security minefields, this book is mandatory reading if you are involved in any aspect of cloud computing. Coverage Includes: Cloud Computing Fundamentals Cloud Computing Architecture Cloud Computing Software Security Fundamentals Cloud Computing Risks Issues Cloud Computing Security Challenges Cloud Computing Security Architecture Cloud Computing Life Cycle Issues Useful Next Steps and Approaches

By implementing a comprehensive data analytics program, utility companies can meet the continually evolving challenges of modern grids that are operationally efficient, while reconciling the demands of greenhouse gas legislation and establishing a meaningful return on investment from smart grid deployments. Readable and accessible, Big Data Analytic Explore the world of .NET design patterns and bring the benefits that the right patterns can offer to your toolkit today About This Book Dive into the powerful fundamentals of .NET framework for software development The code is explained piece by piece and the application of the pattern is also showcased. This fast-paced guide shows you how to implement the patterns into your existing applications Who This Book Is For This book is for those with familiarity with .NET development who would like to take their skills to the next level and be in the driver's seat when it comes to modern development techniques. Basic object-oriented C# programming experience and an elementary familiarity with the .NET framework library is required. What You Will Learn Put patterns and pattern catalogs into the right perspective Apply patterns for software development under C#/.NET Use GoF and other patterns in real-life development scenarios Be able to enrich your design vocabulary and well articulate your design thoughts Leverage object/functional programming by mixing OOP and FP Understand the reactive programming model using Rx and RxJs Writing compositional code using C# LINQ constructs Be able to implement concurrent/parallel programming techniques using idioms under .NET Avoiding pitfalls when creating compositional, readable, and maintainable code using imperative, functional, and reactive code. In Detail Knowing about design patterns enables developers to improve their code base, promoting code reuse and making their design more robust. This book focuses on the practical aspects of programming in .NET. You will learn about some of the relevant design patterns (and their application) that are most widely used. We start with classic object-oriented programming (OOP) techniques, evaluate parallel programming and concurrency models, enhance implementations by mixing OOP and functional programming, and finally to the reactive programming model where functional programming and OOP are used in synergy to write better code. Throughout this book, we'll

show you how to deal with architecture/design techniques, GoF patterns, relevant patterns from other catalogs, functional programming, and reactive programming techniques. After reading this book, you will be able to convincingly leverage these design patterns (factory pattern, builder pattern, prototype pattern, adapter pattern, facade pattern, decorator pattern, observer pattern and so on) for your programs. You will also be able to write fluid functional code in .NET that would leverage concurrency and parallelism! Style and approach This tutorial-based book takes a step-by-step approach. It covers the major patterns and explains them in a detailed manner along with code examples.

A comprehensive guide to exploring software architecture concepts and implementing best practices

Key Features

- Enhance your skills to grow your career as a software architect
- Design efficient software architectures using patterns and best practices
- Learn how software architecture relates to an organization as well as software development methodology

Book Description

The Software Architect's Handbook is a comprehensive guide to help developers, architects, and senior programmers advance their career in the software architecture domain. This book takes you through all the important concepts, right from design principles to different considerations at various stages of your career in software architecture. The book begins by covering the fundamentals, benefits, and purpose of software architecture. You will discover how software architecture relates to an organization, followed by identifying its significant quality attributes. Once you have covered the basics, you will explore design patterns, best practices, and paradigms for efficient software development. The book discusses which factors you need to consider for performance and security enhancements. You will learn to write documentation for your architectures and make appropriate decisions when considering DevOps. In addition to this, you will explore how to design legacy applications before understanding how to create software architectures that evolve as the market, business requirements, frameworks, tools, and best practices change over time. By the end of this book, you will not only have studied software architecture concepts but also built the soft skills necessary to grow in this field. What you will learn

- Design software architectures using patterns and best practices
- Explore the different considerations for designing software architecture
- Discover what it takes to continuously improve as a software architect
- Create loosely coupled systems that can support change
- Understand DevOps and how it affects software architecture
- Integrate, refactor, and re-architect legacy applications

Who this book is for

The Software Architect's Handbook is for you if you are a software architect, chief technical officer (CTO), or senior developer looking to gain a firm grasp of software architecture. The rapid progress of information technology allows for increasingly powerful software intensive embedded systems (machines) executing integrated applications connected by and to global networks. Thus these systems are more and more networked among each other, but also with data and services on the Internet. Intelligent solutions originate which gather processes of the living environment by means of sensors and actuators, connect them to virtual software worlds and interpret, monitor and control these processes in interaction with people. In this way, so-called Cyber-Physical Systems evolve – a living in a networked world. The interlocking applications include smart cities, social infrastructures with integrated telemedicine care, enhanced connected mobility with fully or semi-autonomous driving cars and traffic systems, safety, security and privacy as well as networked production and the sustainable energy turnaround. The integrated research agenda Cyber-Physical-Systems (agendaCPS) provides a comprehensive overview of the capabilities and benefits of the arising CPS-applications and manifold technological and social challenges involved. The agenda illustrates which value the subject for economy and society has: revolutionary applications of Cyber-Physical Systems address technological and social trends and needs; at the same time they penetrate and interconnect more and more areas of life. On the basis of concrete future scenarios essential application domains are shown. Their analysis reveals which capabilities

and technologies form the basis of Cyber-Physical systems and which innovation and possible conflict potential is inherent. The agendaCPS makes clear which research and action areas are of particular importance. In these contexts opportunities, but also risks become apparent for Germany by Cyber-Physical Systems. This is the English translation of the report agenda Cyber-Physical Systems finished three years ago as a German acadtech project by a German publication.

Enterprise architecture is leading IT's way to the executive boardroom, as CIOs are now taking their place at the management table. Organizations investing their time, money, and talent in enterprise architecture (EA) have realized significant process improvement and competitive advantage. However, as these organizations discovered, it is one thing to acquire a game-changing technology but quite another to discover ways to use it well. A project of the Society for Information Management's Enterprise Architecture Working Group and edited by Leon A. Kappelman, *The SIM Guide to Enterprise Architecture* provides insights from leading authorities on EA, including John Zachman, Larry DeBoever, George Paras, Jeanne Ross, and Randy Hite. The book supplies a solid understanding of key concepts for effectively leveraging EA to redesign business processes, integrate services, and become an Information Age enterprise. Beginning with a look at current theory and frameworks, the book discusses the practical application of enterprise architecture and includes a wealth of best practices, resources, and references. It contains the SIM survey of IT organizations' EA activities, which provides important metrics for evaluating progress and success. Successful businesses exploit synergy among business functions and push the boundaries of process design. IT's cross-functional position uniquely qualifies it to lead process innovation. EA lets CIOs integrate technology with business vision and is the roadmap for implementing new systems, changing behavior, and driving value. This book explores the vision, foundation, and enabling technology required to successfully transform organizations with enterprise architecture.

This open access book explores ways to leverage information technology and machine learning to combat disease and promote health, especially in resource-constrained settings. It focuses on digital disease surveillance through the application of machine learning to non-traditional data sources. Developing countries are uniquely prone to large-scale emerging infectious disease outbreaks due to disruption of ecosystems, civil unrest, and poor healthcare infrastructure – and without comprehensive surveillance, delays in outbreak identification, resource deployment, and case management can be catastrophic. In combination with context-informed analytics, students will learn how non-traditional digital disease data sources – including news media, social media, Google Trends, and Google Street View – can fill critical knowledge gaps and help inform on-the-ground decision-making when formal surveillance systems are insufficient.

Electro-optical and infrared systems are fundamental in the military, medical, commercial, industrial, and private sectors. *Systems Engineering and Analysis of Electro-Optical and Infrared Systems* integrates solid fundamental systems engineering principles, methods, and techniques with the technical focus of contemporary electro-optical and infrared optics, imaging, and detection methodologies and systems. The book provides a running case study throughout that illustrates concepts and applies topics learned. It explores the benefits of a solid systems engineering-oriented approach focused on electro-optical and infrared systems. This book covers fundamental systems engineering principles as applied to optical systems, demonstrating how modern-day systems engineering methods, tools, and techniques can help you to optimally develop, support, and dispose of complex, optical systems. It introduces contemporary systems development paradigms such as model-based systems engineering, agile development, enterprise architecture methods, systems of systems, family of systems, rapid prototyping, and more. It focuses on the connection between the high-level systems engineering methodologies and detailed optical analytical methods to analyze, and understand

optical systems performance capabilities. Organized into three distinct sections, the book covers modern, fundamental, and general systems engineering principles, methods, and techniques needed throughout an optical system's development lifecycle (SDLC); optical systems building blocks that provide necessary optical systems analysis methods, techniques, and technical fundamentals; and an integrated case study that unites these two areas. It provides enough theory, analytical content, and technical depth that you will be able to analyze optical systems from both a systems and technical perspective.

Practical Software Architecture Solutions from the Legendary Robert C. Martin ("Uncle Bob")
By applying universal rules of software architecture, you can dramatically improve developer productivity throughout the life of any software system. Now, building upon the success of his best-selling books *Clean Code* and *The Clean Coder*, legendary software craftsman Robert C. Martin ("Uncle Bob") reveals those rules and helps you apply them. Martin's *Clean Architecture* doesn't merely present options. Drawing on over a half-century of experience in software environments of every imaginable type, Martin tells you what choices to make and why they are critical to your success. As you've come to expect from Uncle Bob, this book is packed with direct, no-nonsense solutions for the real challenges you'll face—the ones that will make or break your projects. Learn what software architects need to achieve—and core disciplines and practices for achieving it Master essential software design principles for addressing function, component separation, and data management See how programming paradigms impose discipline by restricting what developers can do Understand what's critically important and what's merely a "detail" Implement optimal, high-level structures for web, database, thick-client, console, and embedded applications Define appropriate boundaries and layers, and organize components and services See why designs and architectures go wrong, and how to prevent (or fix) these failures *Clean Architecture* is essential reading for every current or aspiring software architect, systems analyst, system designer, and software manager—and for every programmer who must execute someone else's designs. Register your product for convenient access to downloads, updates, and/or corrections as they become available.

This book reflects the tremendous changes in the telecommunications industry in the course of the past few decades – shorter innovation cycles, stiffer competition and new communication products. It analyzes the transformation of processes, applications and network technologies that are now expected to take place under enormous time pressure. The International Telecommunication Union (ITU) and the TM Forum have provided reference solutions that are broadly recognized and used throughout the value chain of the telecommunications industry, and which can be considered the de facto standard. The book describes how these reference solutions can be used in a practical context: it presents the latest insights into their development, highlights lessons learned from numerous international projects and combines them with well-founded research results in enterprise architecture management and reference modeling. The complete architectural transformation is explained, from the planning and set-up stage to the implementation. Featuring a wealth of examples and illustrations, the book offers a valuable resource for telecommunication professionals, enterprise architects and project managers alike.

The Complete Business Process Handbook is the most comprehensive body of knowledge on business processes with revealing new research. Written as a practical guide for Executives, Practitioners, Managers and Students by the authorities that have shaped the way we think and work with process today. It stands out as a masterpiece, being part of the BPM bachelor and master degree curriculum at universities around the world, with revealing academic research and insight from the leaders in the market. This book provides everything you need to know about the processes and frameworks, methods, and approaches to implement BPM. Through real-world examples, best practices, LEADing practices and advice from experts,

readers will understand how BPM works and how to best use it to their advantage. Cases from industry leaders and innovators show how early adopters of LEADing Practices improved their businesses by using BPM technology and methodology. As the first of three volumes, this book represents the most comprehensive body of knowledge published on business process.

Following closely behind, the second volume uniquely bridges theory with how BPM is applied today with the most extensive information on extended BPM. The third volume will explore award winning real-life examples of leading business process practices and how it can be replaced to your advantage. Learn what Business Process is and how to get started Comprehensive historical process evolution In-depth look at the Process Anatomy, Semantics and Ontology Find out how to link Strategy to Operation with value driven BPM Uncover how to establish a way of Thinking, Working, Modelling and Implementation Explore comprehensive Frameworks, Methods and Approaches How to build BPM competencies and establish a Center of Excellence Discover how to apply Social BPM, Sustainable and Evidence based BPM Learn how Value & Performance Measurement and Management Learn how to roll-out and deploy process Explore how to enable Process Owners, Roles and Knowledge Workers Discover how to Process and Application Modelling Uncover Process Lifecycle, Maturity, Alignment and Continuous Improvement Practical continuous improvement with the way of Governance Future BPM trends that will affect business Explore the BPM Body of Knowledge Software services are established as a programming concept, but their impact on the overall architecture of enterprise IT and business operations is not well-understood. This has led to problems in deploying SOA, and some disillusionment. The SOA Source Book adds to this a collection of reference material for SOA. It is an invaluable resource for enterprise architects working with SOA. The SOA Source Book will help enterprise architects to use SOA effectively. It explains: What SOA is How to evaluate SOA features in business terms How to model SOA How to use The Open Group Architecture Framework (TOGAF™) for SOA SOA governance This book explains how TOGAF can help to make an Enterprise Architecture. Enterprise Architecture is an approach that can help management to understand this growing complexity. This volume constitutes the proceedings of the combined 7th International Workshop on Trends in Enterprise Architecture Research (TEAR 2012) and the 5th Working Conference on Practice-Driven Research on Enterprise Transformation (PRET-5), held in Barcelona, Spain, October 23-24, 2012, and co-located with The Open Group's Conference on Enterprise Architecture, Cloud Computing, and Security. Joining the forces of the two events with The Open Group Conference provided the unique opportunity for an intensive exchange between practitioners as well as for discussions on standardization efforts and academic research in the areas of enterprise transformation and enterprise architecture (EA). Based on careful reviews by at least three Program Committee members, 18 papers were chosen for inclusion in these proceedings. They were presented in six sessions on enterprise architecture management (EAM) effectivity, languages for EA, EAM and the ability to change, advanced topics in EA, governing enterprise transformations, and EA applications.

Now today's managers can prepare to successfully oversee and understand information systems with Reynold's INFORMATION TECHNOLOGY FOR MANAGERS, 2E. This practical, insightful book prepares current and future managers to understand the critical business implications of information technology. A wealth of actual contemporary examples demonstrate how successful managers can apply information technology to improve their organizations. A new chapter on IT security, hands-on scenarios and practical cases give readers an opportunity to apply what they're learning. This edition's solid framework helps define the manager's important role in information technology and in working effectively with all members of the organization to achieve results. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

This book frames business analysis in the context of digital technologies. It

introduces modern business analysis techniques, including a selection of those in the Business Analysis Body of Knowledge (BABOK) by the International Institute of Business Analysis (IIBA), and exemplifies them by means of digital technologies applied to solve problems or exploit new business opportunities. It also includes in-depth case studies in which business problems and opportunities, drawn from real-world scenarios, are mapped to digital solutions. The work is summarized in seven guiding principles that should be followed by every business analyst. This book is intended mainly for students in business informatics and related areas, and for professionals who want to acquire a solid background for their daily work. It is suitable both for courses and for self-study. Additional teaching materials such as lecture videos, slides, question bank, exams, and seminar materials are accessible on the companion web-page. This IBM® Redbooks® publication presents a development approach for master data management projects, and in particular, those projects based on IBM InfoSphere® MDM Server. The target audience for this book includes Enterprise Architects, Information, Integration and Solution Architects and Designers, Developers, and Product Managers. Master data management combines a set of processes and tools that defines and manages the non-transactional data entities of an organization. Master data management can provide processes for collecting, consolidating, persisting, and distributing this data throughout an organization. IBM InfoSphere Master Data Management Server creates trusted views of master data that can improve applications and business processes. You can use it to gain control over business information by managing and maintaining a complete and accurate view of master data. You also can use InfoSphere MDM Server to extract maximum value from master data by centralizing multiple data domains. InfoSphere MDM Server provides a comprehensive set of prebuilt business services that support a full range of master data management functionality.

This book contains all refereed papers accepted during the fourth asia-pacific edition & twelve edition-which were merged this year-of the CSD&M conference that took place in Beijing, People's Republic of China by 2021. Mastering complex systems requires an integrated understanding of industrial practices as well as sophisticated theoretical techniques and tools. This explains the creation of an annual go-between European and Asian forum dedicated to academic researchers & industrial actors working on complex industrial systems architecting, modeling & engineering. These proceedings cover the most recent trends in the emerging field of complex systems, both from an academic and professional perspective. A special focus was put this year on Digital Transformation in Complex Systems Engineering CESAM Community The CSD&M series of conferences are organized under the guidance of CESAM Community, managed by CESAMES. CESAM Community aims in organizing the sharing of good practices in systems architecting and model-based systems engineering (MBSE) and certifying the level of knowledge and proficiency in this

field through the CESAM certification. The CESAM systems architecting & model-based systems engineering (MBSE) certification is especially currently the most disseminated professional certification in the world in this domain through more than 1,000 real complex system development projects on which it was operationally deployed and around 10,000 engineers who were trained on the CESAM framework at international level.

A detailed and thorough reference on the discipline and practice of systems engineering The objective of the International Council on Systems Engineering (INCOSE) Systems Engineering Handbook is to describe key process activities performed by systems engineers and other engineering professionals throughout the life cycle of a system. The book covers a wide range of fundamental system concepts that broaden the thinking of the systems engineering practitioner, such as system thinking, system science, life cycle management, specialty engineering, system of systems, and agile and iterative methods. This book also defines the discipline and practice of systems engineering for students and practicing professionals alike, providing an authoritative reference that is acknowledged worldwide. The latest edition of the INCOSE Systems Engineering Handbook: Is consistent with ISO/IEC/IEEE 15288:2015 Systems and software engineering—System life cycle processes and the Guide to the Systems Engineering Body of Knowledge (SEBoK) Has been updated to include the latest concepts of the INCOSE working groups Is the body of knowledge for the INCOSE Certification Process This book is ideal for any engineering professional who has an interest in or needs to apply systems engineering practices. This includes the experienced systems engineer who needs a convenient reference, a product engineer or engineer in another discipline who needs to perform systems engineering, a new systems engineer, or anyone interested in learning more about systems engineering.

Agile software development approaches have had significant impact on industrial software development practices. Today, agile software development has penetrated to most IT companies across the globe, with an intention to increase quality, productivity, and profitability. Comprehensive knowledge is needed to understand the architectural challenges involved in adopting and using agile approaches and industrial practices to deal with the development of large, architecturally challenging systems in an agile way. Agile Software Architecture focuses on gaps in the requirements of applying architecture-centric approaches and principles of agile software development and demystifies the agile architecture paradox. Readers will learn how agile and architectural cultures can co-exist and support each other according to the context. Moreover, this book will also provide useful leads for future research in architecture and agile to bridge such gaps by developing appropriate approaches that incorporate architecturally sound practices in agile methods. Presents a consolidated view of the state-of-art and state-of-practice as well as the newest research findings Identifies gaps in the requirements of applying architecture-centric approaches and principles of

agile software development and demystifies the agile architecture paradox Explains whether or not and how agile and architectural cultures can co-exist and support each other depending upon the context Provides useful leads for future research in both architecture and agile to bridge such gaps by developing appropriate approaches, which incorporate architecturally sound practices in agile methods

Migrate to Intent-Based Networking—and improve network manageability, cost, agility, security, and simplicity With Intent-Based Networking (IBN), you can create networks that capture and automatically activate business intent, assure that your network responds properly, proactively detect and contain security threats, and remedy network issues before users even notice. Intent-Based Networking makes networks far more valuable, but few organizations have the luxury of building them from the ground up. In this book, leading expert Pieter-Jans Nefkens presents a unique four-phase approach to preparing and transforming campus network infrastructures, architectures, and organization—helping you gain maximum value from IBN with minimum disruption and cost. The author reviews the problems IBN is intended to solve, and illuminates its technical, business, and cultural implications. Drawing on his pioneering experience, he makes specific recommendations, identifies pitfalls, and shows how to overcome them. You'll learn how to implement IBN with the Cisco Digital Network Architecture and DNA Center and walk through real-world use cases. In a practical appendix, Nefkens even offers detailed technical configurations to jumpstart your own transformation. Review classic campus network deployments and understand why they need to change Learn how Cisco Digital Network Architecture (DNA) provides a solid foundation for state-of-the-art next generation network infrastructures Understand “intent” and how it can be applied to network infrastructure Explore tools for enabling, automating, and assuring Intent-Based Networking within campus networks Transform to Intent-Based Networking using a four-phased approach: Identify challenges; Prepare for Intent; Design and Deploy; and Enable Intent Anticipate how Intent-Based Networking will change your enterprise architecture, IT operations, and business This book offers a unique blend of reports on both theoretical models and their applications in the area of Intelligent Information and Database Systems. The reports cover a broad range of research topics, including advanced learning techniques, knowledge engineering, Natural Language Processing (NLP), decision support systems, Internet of things (IoT), computer vision, and tools and techniques for Intelligent Information Systems. They are extended versions of papers presented at the ACIIDS 2018 conference (10th Asian Conference on Intelligent Information and Database Systems), which was held in Dong Hoi City, Vietnam on 19–21 March 2018. What all researchers and students of computer science need is a state-of-the-art report on the latest trends in their respective areas of interest. Over the years, researchers have proposed increasingly complex theoretical models, which provide the theoretical basis for numerous

applications. The applications, in turn, have a profound influence on virtually every aspect of human activities, while also allowing us to validate the underlying theoretical concepts.

This book contains all refereed papers that were accepted to the third edition of the « Complex Systems Design & Management » (CSD&M 2012) international conference that took place in Paris (France) from December 12-14, 2012.

(Website: <http://www.csdm2012.csdm.fr>) These proceedings cover the most recent trends in the emerging field of complex systems sciences & practices from an industrial and academic perspective, including the main industrial domains (transport, defense & security, electronics, energy & environment, e-services), scientific & technical topics (systems fundamentals, systems architecture & engineering, systems metrics & quality, systemic tools) and system types (transportation systems, embedded systems, software & information systems, systems of systems, artificial ecosystems). The CSD&M 2012 conference is organized under the guidance of the CESAMES non-profit organization (<http://www.cesames.net>).

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