Making Everything Easier!™

IT Architecture FOR DUMMIES®

Learn to:

- Create an Enterprise IT strategy that meets business objectives
- Work with each layer of the technology stack
- Support organizational structure and processes
- Develop an action plan for implementation

Kalani Kirk Hausman
Susan L. Cook

IT Architecture For Dummies®

Table of Contents

Use Risk Assessment Results to Find Easily Fixed Vulnerabilities

Schedule Workstation Replacement

Implement Virtualization

Reduce Cost from Consumables by Implementing Green IT Practices

IT Architecture For Dummies®

by Kalani Kirk Hausman and Susan L. Cook

Wiley Publishing, Inc.

IT Architecture For Dummies®

Published byWiley Publishing, Inc.111 River StreetHoboken, NJ 07030-5774

www.wiley.com

Published by Wiley Publishing, Inc., Indianapolis, Indiana

Published simultaneously in Canada

understanding that the publisher is not engaged in rendering legal, accounting, or other professional services. If professional assistance is required, the services of a competent professional person should be sought. Neither the publisher nor the author shall be liable for damages arising herefrom. The fact that an organization or Website is referred to in this work as a citation and/or a potential source of further information does not mean that the author or the publisher endorses the information the organization or Website may provide or recommendations it may make. Further, readers should be aware that Internet Websites listed in this work may have changed or disappeared between when this work was written and when it is read.

For general information on our other products and services, please contact our Customer Care Department within the U.S. at 877-762-2974, outside the U.S. at 317-572-3993, or fax 317-572-4002.

For technical support, please visit www.wiley.com/techsupport.

Wiley also publishes its books in a variety of electronic formats. Some content that appears in print may not be available in electronic books.

Library of Congress Control Number: 2010937819

ISBN: 978-0-470-55423-4

Manufactured in the United States of America

10 9 8 7 6 5 4 3 2 1

About the Authors

Kalani Kirk Hausman is employed as an Assistant Commandant at Texas A&M University and specializes in enterprise architecture, security, information assurance, business continuity, and regulatory compliance. His background includes varied topics from digital forensics and WMD response, pandemic response planning, technology audit practices, and IT governance strategies. His experience includes application design, data resource management, network architecture, server and storage virtualization, strategic technology modernization, network and backup centralization, research computing, and large network BCP/DR planning. With a Master's degree in Information Technology, Kirk has served as a senior research scientist in the fields of cyber terrorism, cybercrime, and cyber security, and he regularly lectures on uses of technology in education, solutions for persons with disabling conditions, and strategic architectural planning to improve enterprise efficiencies. Kirk's professional certifications include the CISSP, CGEIT, CRISC, CISA, CISM, and CCP together with a wide assortment of technology- and regulatory-specific designations.

Susan L. Cook is a Senior IT Policy and Security Programs Administrator at Texas A&M University, specializing in enterprise risk assessment and compliance. She has a master's degree in Information Technology, additional graduate work in Security

Management, and more than a decade of experience in the field. She has also worked as a compliance auditor in the financial industry and as a licensed private investigator.

Dedication

This book is dedicated to the many talented IT professionals faced with supporting enterprises in which the only constant is change.

Authors' Acknowledgments

We would like to acknowledge the tremendous help in preparing this book provided by the excellent editorial staff at Wiley, in particular our Project Editor, Blair Pottenger; Development Editors, Kelly Ewing, Jodi Jensen, and Kathy Simpson; Copy Editors, Teresa Artman and Maryann Steinhart; and Tech Editor, Chris Leiter. Special thanks are also due to Katie Mohr, our Acquisitions Editor for the Dummies series, and to our agent and all-around-guide, Carole Jelen of Waterside Productions.

Publisher's Acknowledgments

We're proud of this book; please send us your comments at http://dummies.custhelp.com. For other comments, please contact our Customer Care Department within the U.S. at 877-762-2974, outside the U.S. at 317-572-3993, or fax 317-572-4002.

Some of the people who helped bring this book to market include the following:

Acquisitions and Editorial

Project Editor: Blair J. Pottenger

Development Editors: Kelly Ewing, Jodi Jensen, Kathy Simpson

Acquisitions Editor: Katie Mohr

Copy Editors: Teresa Artman, Maryann Steinhart

Technical Editor: Chris Leiter

Editorial Manager: Kevin Kirschner

Editorial Assistant: Amanda Graham

Sr. Editorial Assistant: Cherie Case

Cartoons: Rich Tennant (www.the5thwave.com)

Composition Services

Senior Project Coordinator: Kristie Rees

Layout and Graphics: Carl Byers, Erin Zeltner

Proofreaders: Tricia Liebig, Lindsay Littrell

Indexer: BIM Indexing & Proofreading Services

Publishing and Editorial for Technology Dummies

Richard Swadley, Vice President and Executive Group Publisher

Andy Cummings, Vice President and Publisher

Mary Bednarek, Executive Acquisitions Director

Mary C. Corder, Editorial Director

Publishing for Consumer Dummies

Diane Graves Steele, Vice President and Publisher

Composition Services

Debbie Stailey, Director of Composition Services

Introduction

The enterprise begins when you carefully put the first two computers together, and complexity grows with every step thereafter. Haphazard IT building practices can easily lead to an enterprise network that is poorly planned or composed of random, one-off projects undertaken as standalone goals. An e-mail consolidation project can unexpectedly derail concurrent licensing projects intended to vastly reduce expensive software licensing costs by carving the authentication domain into separate silos unable to share resources. A server virtualization project may run into difficulties if not coordinated properly with server consolidation projects to make sure that sufficient bandwidth and host resources are available when systems are transferred from physical to virtual states.

Obviously, these scenarios are simply examples of potential conflicts that may occur when enterprise realignment and cost-saving strategies drive independent projects without coordination and guidance at the strategic level. Many other conflicts are much more subtle and not apparent until well along a new path, such as an incompatibility between communications protocols that support new equipment or a lack of executive support that leaves adoption of enterprise practices in a loose “opt in by choice” state.

After reading this book, you’ll have a better grasp of the interconnected nature of enterprise architecture realignment. We hope the information we provide encourages you to look around your own enterprise and find some low-hanging fruit opportunities for quick savings or other proof of value to help develop executive

support for additional changes. Few enterprises lack such opportunities because technology and its uses tend to fall into stable practices users describe as “the way we’ve always done it” rather than changing to adopt the best or most efficient ways.

About This Book

This book is not a checklist for efficiency, although it does present some strategies that may improve cost and operational efficiencies. It is not a step-by-step guide that will lead to a secure and risk-free network, although it provides some examples of projects that may help to reduce risk. Instead, this book introduces you to enterprise architectural planning from the theoretical viewpoint and then drills down to the meat and bones of enterprise technologies and functions.

You should recognize elements of your own environment reflected here and take advantage of my past experience in dealing with challenges faced during realignment, consolidation, and other re-engineering practices within an extended enterprise network. Although the content of this book is suitable for globally distributed enterprises of significant scale, the topics covered are useful for resource and availability planning in networks of any size.

Conventions Used in This Book

This book is, after all, a reference book, and we expect that using conventions will make it easier for you to find exactly what you're looking for by quickly scanning through chapters. The conventions for this book are as follows:

Italics emphasize important terms the first time they're defined.

Web site addresses, or *Uniform Resource Locators* (URLs), are provided for Web sites referenced in this book and appear in a special typeface, such as www.dummies.com.

Because the Web is such a dynamic environment, provided URLs may change at any time.

What You're Not to Read

In order to make a technical topic more interesting, we include interesting tidbits of information and anecdotes based on our professional experiences. You can find this information in sidebars throughout the book. You don't have to read the sidebars to understand IT architecture, but if you do, we hope you find them as interesting as we do.

Occasionally, we're guilty of outright techno-babble, but fortunately we mark those discussions with Technical Stuff icons so that you can skip right over them if that sort of thing makes your eyes glaze over.

Foolish Assumptions

We assume this book is going to be read by CIOs, chief architects, network planners, IT operation managers, and front-line technical implementers. We don’t delve deeply into specific technologies, but instead present considerations for integration of whatever technologies are already in place.

We also assume that you’re not looking for someone to tell you exactly what hardware and software to buy. We won’t tell you that open-source is the best solution for every problem, any more than we’ll suggest that a particular vendor’s commercial off-the-shelf line of products is best. In general, the best choices for technology are based on those already in place and familiar to users and support staff alike.

Finally, we assume that you need help identifying areas of focus and strategies for sustaining your enterprise year to year in the face of constant technological evolution. We trust this will spark many ideas you can leverage toward management of your extended enterprise. By starting at the theoretical level and progressing through the book into ever-more-direct technology approaches and strategies, you can develop a better framework for evaluation of your own enterprise setting.

How This Book Is Organized

We divide this book into several parts based on topic. The following sections describe what you can expect to find in each part.

Part I: Developing the Architecture

Part I establishes the fundamental concepts of what defines an enterprise and then examines the value provided by this definition.

Part II: Defining the Role of IT Architecture

Part II addresses the identification of challenges and advantages in enterprise reconfiguration. It further examines the need to prove value to the organization as a result of change.

Part III: Creating an Enterprise Culture

Part III discusses the fundamental aspects of identity management, developing an enterprise culture, and specific collaborative options that can be used to reinforce this cultural evolution.

Part IV: Developing an Extended Network Enterprise

Part IV covers elements of a distributed network and its resources, identifying areas of planning that must play a

part in enterprise reorganization and long-term operational strategies.

Part V: Obtaining Value beyond the Basic Enterprise

Part V examines technical considerations and projects that may or may not apply to some enterprises, although many of the strategies listed can be applied at any level.

Part VI: Protecting the Enterprise

Part VI defines strategies for protecting resources and services within the enterprise network environment.

Part VII: The Part of Tens

Part VII offers lists of ten useful items in enterprise architectural planning, together with references to areas of the book focusing on each.

Icons Used in This Book

The familiar *For Dummies* icons offer visual clues about the material contained within this book. Look for the following icons throughout the chapters:

Whenever you see a Tip icon, take note and pay particular attention. Tips address special-case items or strategies that come up often.

The Remember icon points out key concepts that will be helpful in understanding later topics in this book. And here's your first thing to remember: There is an online cheat sheet for this book that you can find at www.dummies.com.

Warning icons draw your attention to potential pitfalls and particularly difficult challenges. Pay attention to these factors in your enterprise because they have a habit of coming back to bite you.

Although this book attempts to avoid advocating specific technologies or alternatives in favor of a more generally useful examination of architectural strategies appropriate to any enterprise, technical details are indicated with a Technical Stuff icon. These items may prove of greater use to implementers than to pure strategists, but you will likely wear many hats over the course of enterprise realignment. It can't hurt to review a few technical details!

Where to Go from Here

The goal of this book is to get you thinking about your own enterprise and the opportunities it presents to the