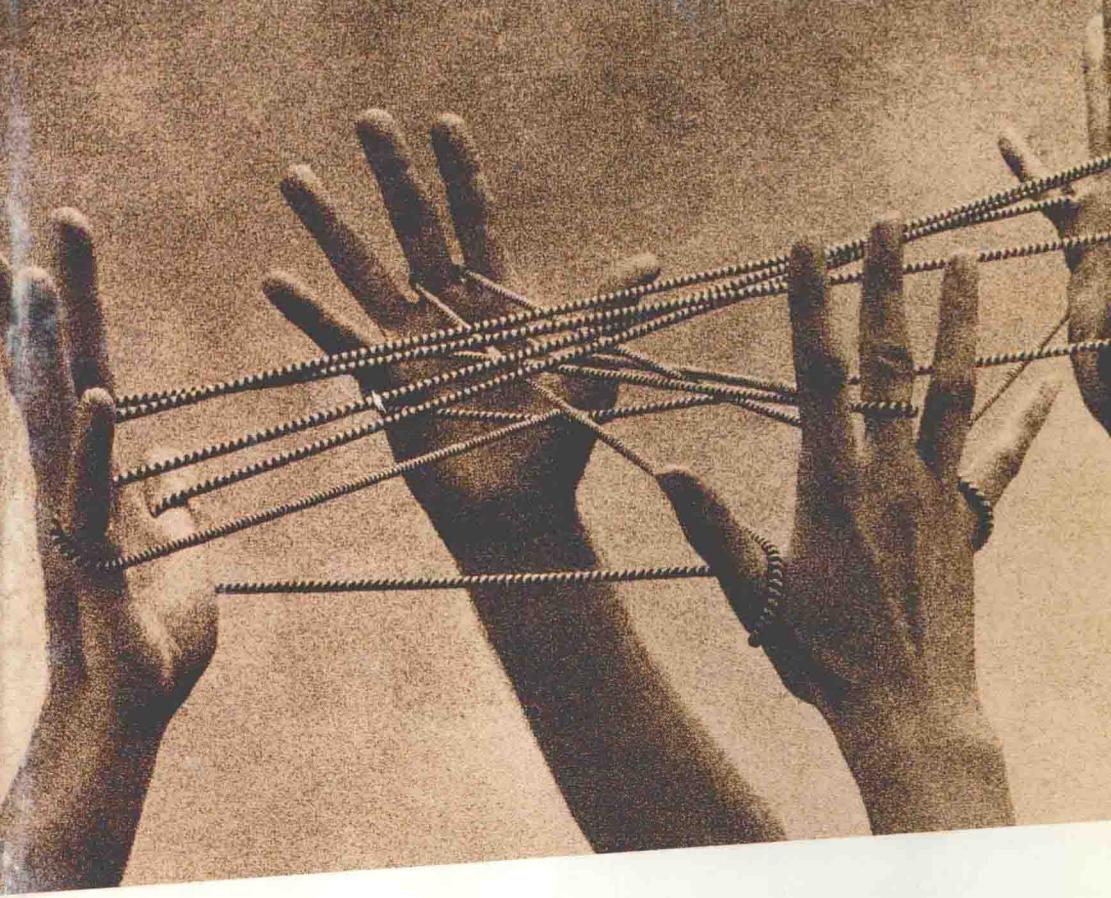

ENTERPRISE E-COMMERCE

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Enterprise E-Commerce

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The Software Component Breakthrough for Business-to-Business Commerce

Peter Fingar
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Tarun Sharma

MK Meghan-Kiffer Press Tampa, Florida, USA
Publishers of Advanced Technology Books for Competitive Advantage

Publisher's Cataloging-in-Publication Data

Fingar, Peter.
Enterprise e-commerce : the software component breakthrough for business-to-business commerce / Peter Fingar, Harsha Kumar, Tarun Sharma - 1st ed.
p. cm.
Includes bibliographic references, appendices and index.
ISBN 0-929652-11-8 (cloth : alk. paper)

1. Electronic commerce. 2. Strategic planning. 3. Reengineering (Management) 4. Management information systems. 5. Information technology. 6. Internet (Computer network) 7. Object-Oriented methods - Computer science. 8. World Wide Web (Information retrieval system) 9. Computer software - Development. 10. CORBA (Computer architecture) 11. XML (Document markup language) 12. Information resources management. I. Fingar, Peter. II. Kumar, Harsha. III. Sharma, Tarun. IV. Title.

HF5548.32.F464 2000 99-75765
658.8'00285-dc21 CIP

Published by Meghan-Kiffer Press
310 E. Fern Street – Suite G
Tampa, FL 33604 USA

Cover Art by Yellow, Inc.

Meghan-Kiffer Press Tampa, Florida, USA
Publishers of Advanced Technology Books for Competitive Advantage

Printed in the United States of America. SAN 249-7980
MK Printing 10 9 8 7 6 5 4 3 2

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Preface

The Internet is bringing profound change to the business world and has enabled a new way of conducting commerce – *e-Commerce*. To compete in the emerging digital economy, companies will need to change their business models, rethink the way they work and form new relationships with their trading partners and customers. Even though e-Commerce has just arrived on the business scene, this new business framework is changing rapidly. For some forward thinking companies the *third wave* of e-Commerce already has begun. These pioneering companies have come to realize that e-Commerce is neither just a buy-side nor sell-side package. They have learned that mission-critical business opportunities abound. To them, e-Commerce is an infrastructure for a whole new way of doing business and gaining competitive advantage in the Customer Age.

Enterprise E-Commerce takes head-on the challenges, issues and strategies for *enterprise-class* electronic commerce. In this book, we explore the business imperatives, technologies, applications, challenges and strategies of mission-critical, enterprise-class e-Commerce. At the enterprise-level, e-Commerce takes on some very challenging characteristics including scalability, reliability, extensibility, interoperability, adaptability and integration with heterogeneous legacy systems.

From working with the pioneers of e-Commerce on large-scale e-Commerce projects such as GE's TPN Register, GE Capital's Vendor Financial Services, MasterCard's E-Purchasing, Transamerica's Tradex Online and American Express' @Work, we have seen some common patterns and gained valuable insight through observing traits common to companies that have developed sustainable and flexible initiatives. In this book, we recap what we learned and summarize the critical business and technology factors of success.

The book contains in-depth discussions of both business and technology including concepts, jargon and strategy. Anyone can tell you that attempting to include both business and technology audiences for the same book is a big challenge. We, however, believe that e-Commerce is *inseparably* about both business and technology. So we took on the challenge (we now know just how difficult the task is) and hope that if you are a CEO, CIO, COO, CFO, CTO, line-of-business manager, project

leader, application developer or shop floor manager you will gain the information and insight you need to think about, act upon and capitalize on the opportunity of e-Commerce. We have strived to provide the information you need to boldly move into your corporation's e-Commerce initiatives.

CEOs will find vocabulary, concepts and notions needed to formulate business strategy – what they need to be thinking about and doing now to prepare themselves and their companies for the digital era. The CIO will find the blend of business and technology discussions useful in developing technology strategy and aligning technology with business. The marketing executive will learn about the shape and nature of emerging digital marketplaces and how to formulate strategies to compete in them. The COO will find breakthrough opportunities to manage total operating resource costs through real-time connections with suppliers and value-chains. The CTO will be able to use the technology discussions to formulate architectural plans that can ensure the scalability, extensibility and reliability demanded of enterprise-class e-Commerce. The Internet generation of developers must command the language of both technology and business. Context is essential to component-based development, and this book provides the business context to which the technologies must be aligned. If you are either a business or technology professional reading this book, we hope you will find information you can use and profit from in your business.

The book does contain jargon from both the business and technology communities. Where either business or technical terms and buzzwords are used, they are not intended to impress or distract – they are there because they are an essential part of a thorough e-Commerce vocabulary. The terms in this book were carefully selected based on their relevance and frequency of use. Both business and technology specialists should understand, for example, the business buzzword, BPR. On the other hand, no business executive should be caught flat footed not knowing the significance, much less the word itself, when Java comes up in conversation. Neither business nor technology people are likely to be familiar with terms like reintermediation, digital non-repudiation and other tongue twisters, but they are included and explained because they are an essential part of e-Commerce vocabulary. Where technical terms are used, they are explained in everyday language, and most technical concepts are illustrated in the more than

70 illustrations presented throughout the book. We have chosen a depth of discussion and language that we hope will serve as a reference guide for managing enterprise-class e-Commerce. We hope you will keep the book on or near your desk to find the sustentative "right stuff" you need to gain competitive advantage, now and in the future.

For this book to reach out to both business and technology professionals, we adopted several writing goals:

- Make the content relevant to *both* business people and technologists.
- Be thorough: produce the best-researched book available on enterprise-class e-Commerce.
- Speak directly to the CIO and his or her immediate colleagues (CEOs, CFOs, CTOs, line-of-business managers and project teams).
- Write from the research, not from the ego or unfounded opinion.
- Respect the reader's limited reading time – business and technology practitioners have very little time to read.
- For each essential topic, make a strong business case as well as a technology case.
- Do not try to trivialize or oversell the content.
- Do not draw conclusions or make assertions that are unsupported.
- Take the reader from current business and technology practice to e-Commerce as an infrastructure for a whole new way of conducting business.
- Tell how to get there.

We'd like to suggest a couple of quick paths for those readers who may not have time to read the entire book in one sitting. The first two chapters offer a complete overview and should be read. Business executives (CEOs, COOs, CFOs and line-of-business managers) should then read one or two of the application chapters (3-6), and proceed to the business strategies and critical success factors of chapter 8. The quick read path for technology managers (CIOs, CTOs and project teams) includes the first two chapters, one or two of the application chapters (3-6), the component-based development overview of chapter 7 and the technology strategies and critical success factors of chapter 8. We hope you will have time to read the entire book and keep it handy for reference.

Over a year of research and preparation went into writing *Enterprise E-Commerce*. Along the way many people including our customers, partners, colleagues and fellow members of the Object Management Group, CommerceNet, WfMC, IEEE Computer Society and the Association of Computing Machinery (ACM) aided us. First, we would like to thank Faisal Hoque and Sathish Reddy for their entrepreneurship, guidance and the inspiration they provided us. For their feedback, fresh ideas and constructive criticisms we would like to give special thanks to our colleagues at EC Cubed: Ephrem Bartolomeos, Dr. Barbara Belon, Garth Bowlby (special thanks for the book layout and the amazing attention to detail), Terrence Curley, Bruce Dorfman, Nikolai Fetissov, Alex Henkin, Naushad Kapasi, Alex Karasulu, Vidyadhar Kareddy, Adel Khan, Andrey Kozhevnikov, Tharak Krishnamurthy, Srivatsa Manjunath, Jim McClafferty, Eric Miller (our OMG architectural representative, thanks for the brain-storming), Shridhar Rangarajan (co-chair of the OMG EC task force and architectural member of CommerceNet's catalog interoperability project), Beatrice Raggio, Pramod Waingankar, Venkat Rao Yadlapalli, Lance Sperring (special thanks for the late nights and "Lancification" of the artwork), Doug Swanson and Jim Upton.

Also helping to influence and shape this book in many ways were: Steven Hagy and Rahul Narain of Perot Systems, Pete Gallo and Demetrious Yannakopoulos of IBM, Jim Clarke of Sun Microsystems, Prof. Roy Young of the University of Tampa, Prof. Ben Shneiderman of the HCI Lab of the University of Maryland, Dr. Thomas Greene of the Lab for Computer Science at MIT, Dave Hollander co-chair of the W3C XML schema workgroup, Mark Ragel for his international perspective as CEO of Al-Gosaibi Information Systems (Mideast), Damien Miller of Kinetoscope, Stephen McConnell of OSM Sarl and Founding Chair of the OMG EC task force, Leslie Heeter Lundquist for her insight from her post of V.P. of Research at CommerceNet, Haim Kilov and his work on information modeling while at IBM's Watson Research Center, and long time mentor, James Odell. Some of the material in this book has been adapted from the recent research and works of Peter Fingar, including reports on Open e-Commerce and *A CEO's Guide to E-Commerce* published as CommerceNet Research Report #98-19 and at Software Engineering Australia; and Harsha Kumar's research conducted with Prof. Ben Shneiderman and published in the *International Journal of Human-Computer Studies,* Volume 46, No. 1, January, 1997.