Create Multimedia for the Internet

MULTI MEDIA

MAKING IT WORK

THIRD EDITION

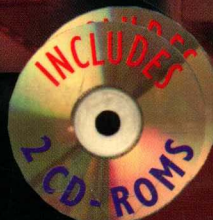**Tay Vaughan**

Foreword by Bud Colligan
CEO of Macromedia, Inc.

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Multimedia

0057002

Multimedia: Making It Work, Third Edition

Multimedia is any combination of text, graphic art, sound, animation and video

Tay Vaughan

Osborne McGraw-Hill
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Welcon   *dia Multimedia*
Showcase CD-ROM

Overview

Macromedia's Multimedia Showcase CD-ROM provides an interactive road map to the products and services offered by Macromedia. The Multimedia Showcase gives you detailed explanations of the Macromedia tools that power your ideas. With it you can preview valuable information on Macromedia's product line; movies illustrating powerful titles and presentations from leading multimedia developers; fully functional working models that let you try out our software; and guided product demonstration files that take you step by step through Macromedia's most popular applications including Action, Authorware, Deck II, Director, Extreme 3D, FreeHand, Fontographer, SoundEdit, and XRes.

Product Datasheets

For more detailed product information, visit Macromedia on line at

http://macromedia.com/Tools/Datasheets/index.html.

Recommended System Configuration

Macintosh

It is advisable to have a Macintosh 68040, 8MB RAM, System 7.0 or higher, QuickTime 2.0, 640x480 display running at 256 colors, and a double-speed CD-ROM drive.

PowerPC users: It is advisable to disable the QuickTime PowerPlug extension before running the Showcase.

To install the Macromedia Multimedia Showcase:

1. Insert the Showcase CD-ROM.

2. Double-click the Macromedia Showcase Installer icon.

3. After the Installer has loaded QuickTime and necessary projector files, restart your computer.

4. Double-click the Macromedia Showcase CD icon.

The application's default memory partition is set to 5MB. However, if you have more than 8MB of RAM installed and you would like to see better performance, you may increase its partition. Select the "Macromedia Showcase CD" icon, choose "Get Info=8A" from the File menu, and increase the application's partition in the "Preferred Size" text field. Be sure not to allocate all your free memory to the Showcase application. Leave at least 500K available for the system!

A copy of QuickTime 2.0 is provided. If you do not have QuickTime, drag the contents of the "QuickTime 2.0" folder, as appropriate, to your System Folder.

Windows

It is advisable to have an MPC 486/25SX or faster, 8MB RAM, Windows 3.1 or higher, a 640x480 256-color display, and a double-speed CD-ROM drive.

To install the Macromedia Multimedia Showcase:

1. Insert the Showcase CD-ROM.

2. Open the File Manager and choose the disk drive that contains the Showcase CD-ROM.

3. Choose Run from the File menu.

4. In the Command Line field, type **SETUP.EXE** after the disk drive name and click OK.

5. Follow the instructions onscreen.

Any questions about Macromedia? -> http://www.macromedia.com.

Attention

While we do everything we can to ensure the quality of the CD, occasional problems may arise. If you experience problems with the CD, please call:

Macromedia customer service 1-800-288-4797

Dedicated to

Warren Taylor Vaughan Jr., M.D.

1920

1933

About the Author...

Tay Vaughan is a recognized authority and pioneer in multimedia. He has designed and produced award-winning projects for clients such as Apple Computer, Lotus, Tandy, Sun, and Novell. He is the president of Timestream, Inc., a multimedia production company in Oakland, California; and a visiting professor at the Interactive Telecommunications Program of the Helsinki School of Economics and Business Administration.

Preface

Revolution

There is an unstoppable revolution underway, made possible by the technology and ideas described in this book.

The way humans access and learn information, and the swiftly-changing way that information is packaged, have kindled an electronic revolution far more complex and powerful than the liberation of the printed word that occurred 500 years ago in middle Europe. That last revolution, led by Gutenberg, Grolier, Aldus Manutius, and others who built and used printing presses, yielded powerful and long-lasting transformations to the human condition that far exceeded the imaginations of that day.

Someone among us, perhaps you, may become multimedia's Gutenberg, a creative, intellectual, or engineering talent who will truly alter the human condition.

Surfing at the leading edge of the wave of change, you have already abandoned the calm place behind the crest; ahead is the unknown.

Calling

If, among your talents, you are able to discern the hazy silhouette of future tracks through the multimedia froth, we want your help to shape that which is to come. If you are a story teller, artist, musician, programmer, idea person, or other creative talent with a sense of what multimedia is all about... if you can make order out of chaos... join the revolution and write personally to Tay Vaughan at Timestream, Inc., 6114 LaSalle Avenue, Suite 300, Oakland, California 94611 U.S.A., or by e-mail at tay@timestream.com.

Tay Vaughan
Oakland, California
http://www.timestream.com
tay@timestream.com
June, 1996

The explosive growth of the Internet is the most exciting development for multimedia since the introduction of the CD-ROM. In 1993, the potential audience for multimedia was the million people who had personal computers equipped with CD-ROM drives. When Macromedia introduced Shockwave for Director two years later, multimedia developers could instantly reach over 20 million customers who were cruising the Internet. Shockwave transformed the Web from static pages to a dynamic mix of sound, graphics, animation, video, and text. It quickly took off, thanks to the creative efforts of thousands of developers who immediately realized multimedia's potential on the Internet.

Over a thousand companies, from General Motors to DC Comics, MTV, Disney, Time Magazine, and Maytag, have jazzed up their Web sites with multimedia advertising. Kids are learning online from multimedia titles about evolution and dinosaurs, and they hang out with their favorite television characters at the Beavis and Butthead site. Adults have their own multimedia sites for home banking, home repair, and nearly any kind of interactive learning.

The Internet offers tremendous new avenues for creativity and business. As the average user's bandwidth increases from 14.4 kilobits per second to midband technology like ISDN and eventually to cable modems, developers can deliver richer multimedia content over the Internet. Businesses will attract customers to their Web sites with richly interactive marketing that changes daily. Multi-player games and edutainment will stream rapidly from Internet Web sites. Over time, multimedia will transform the Internet into a medium that seems like television or movies, with one important difference: the viewer controls the interaction.

We are thrilled to include our Showcase CD with *Multimedia: Making It Work*. Tay Vaughan's book, now in its third edition and with a new section about the Internet, is the standard text and reference for both seasoned developers and people taking their first steps into multimedia, with a leading authority as their guide.

Welcome to the exciting world of multimedia!

Bud Colligan
Chairman and CEO
Macromedia, Inc.

Acknowledgments

This third edition of *Multimedia: Making It Work* includes the cumulated input and advice of many colleagues and friends over a five-year period. Each time I revise and update this book, I am pleased to see that the acknowledgments section grows. Indeed, it is difficult to delete people from this (huge) list because, like the stones of a medieval castle, new and revised material relies upon the older foundation. I will continue accumulating the names of the good people who have helped me build this castle and list them here, at least until my publisher cries "Enough!" and provides substantial reason to press the delete key.

I would like to thank my wife and daughter who again allowed me the time and space to write this third edition of *Multimedia: Making It Work*.

For this third edition, I would also thank two impressive CEOs for taking time from their busy schedules to help: Bud Colligan of Macromedia, who provided the foreword for this edition and the Showcase CD-ROM; and Joel Staadecker of Allegiant, who provided the Allegiant Presents! CD-ROM. Bob Myren and Heidi Poulin at Osborne/McGraw-Hill went out of their way to accommodate my fully-electronic submissions and fast tracked schedule, and Dan Hilgert was instrumental in the transition from Windows 3.1 to Windows 95. Rich Santalesa, my official technical editor, kept me on track in the new Internet section. Helayne Waldman, Hank Duderstadt, Chip Harris, Dina Medina, Joyce Edwards, and Michael Allen have contributed to making the work more complete; and Mark Karmendy, Joanne Cuthbertson, Bill Pollock, Jeff Pepper, Scott Rogers, Kathy Hashimoto, Marla Shelasky, Linda Medoff, Valerie Robbins, Cindy Brown, and Larry Levitsky at Osborne/McGraw-Hill always kept me from falling off the deep end of my deadlines for each edition. For the first edition, I remain indebted to Eric Brown, Tom Sheldon, Frances Stack, Jill Pisoni, Madhu Prasher, Carol Henry, Linda Beatty, Theo Posselt, Ann Stewart, Graham Arlen, Kathy Gardner, Steve Goeckler, Steve Peha, Christine Perey, Pam Sansbury, and Terry Schussler, who helped me form the words. The professional, steady, and disciplined contribution of Donna Booher remains evident throughout the chapters of this work.

My very bright students and friends from the Interactive Telecommunications Program at the Helsinki School of Economics and Business Administration (Helsingen Kauppakorkeakoulu) provided hands-on practical insights into the difficulties of designing multimedia for the World Wide Web, which I have included in Chapter 21. The results of their three-week multimedia production experiment can be found at http://www.hkkk.fi/mmedia. My grateful thanks to Rector Eero Kasanen, Professor Jyrki Wallenius, Outi-Maria Liedes, Arja Kinnarinen, and my students Juuso Auvinen, Santtu Elsinen, Jian Gu, Paula Hämäläinen, Harri Hautala, Tarja Hjort, Harri Hölttä, Heli Joensuu, Hannu Jouhki, Martin Juselius, Jari Karvinen, Veera Kauste, Juha Kerminen, Ella Kirjasniemi, Katja Koivisto, Jukka Koskinen, Aki Lassila, Sanna Leskinen, Sonja Lindén, Jaakko Luukanen, Cary Maisala, Janne Patosalmi, Olli Perttilä, Juha Ponteva, Jani Pösö, Janne Ruokonen, Hannu Soini, Riku Talvitie, Jussi Tiilikka, Sami Turpeinen, Saara Väänänen, Matti Väisänen, and Hans Valldén.

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Introduction

In a few years, multimedia computers will be an anachronism. All computers will readily integrate images, sounds, and motion video—and this capability will be built onto the motherboard as an essential part of what a computer is. Already, these computers are connected to the Internet for worldwide real-time sharing of high-quality images, sounds, and video.

Multimedia computers per se may disappear when hardware and software platforms become more capable and we take sound, animation, and video features for granted, but the fundamental concepts and techniques required to work with these elements will not disappear. This is a book about the elemental parts of multimedia as much as about how to sew these parts together with current technology and tools. It is a book that shows you how to use text, images, sound, and video to deliver your messages and content in meaningful ways. It is about designing, organizing, and producing multimedia projects of all kinds and avoiding technical and legal pitfalls along the way. Above all, it is a practical guide to making multimedia, complete with tips, pointers, and answers.

The first part deals with the basic elements of multimedia. Hardware and software tools are described in detail. The next part introduces you to the step-by-step creative and organizing process that results in a finished multimedia project. You will learn about the importance of text and how to make characters look pretty, about making graphic art on your computer and how to choose colors, and about how to digitize sound and video segments. You will learn about human interaction and how to design a user-friendly computer interface. You will even learn how to deliver your multimedia projects on the World Wide Web.

I have written this book for people who make or want to make multimedia, for people who gladly take up new challenges and are unafraid of learning curves and intensely creative work. The words and ideas of this book are the harvest of many years in the computer industry and of hands-on experience deep in the factory where real multimedia is being made daily. The book is intended to be, above all, useful.

For focus, I chose two well-known computer environments to discuss in detail throughout the book: Apple Macintosh and Microsoft Windows—

these are the most widely used computers today for making multimedia. But multimedia is by no means limited to these platforms, and most of the ideas discussed in the book are translatable to others.

I have made a great effort to include in this book references to as much multimedia software and hardware as I could, trying not to miss any players. Because, however, the industry is fast-paced and rapidly growing and because, while writing this book, I have rediscovered the finite limits of my own time, I am sure some have fallen into the bit bucket anyway. Immutable physical laws have prevented me from including the fine details of forty or fifty hardware and software manuals and technical resources into the pages allowed for this book; the distillation presented here should, however, provide you with pointers to further information and study. I have also made a great effort to double-check my words and statements for accuracy; if errors have slipped past, they are mine alone.

This is the third edition of *Multimedia: Making It Work*. Almost four years have passed since the first edition was published, and many changes have occurred. For this edition, I have not only attempted to bring the book's content up to date, I have also included a new section about multimedia for the Internet and the World Wide Web.

Some years ago, after completing a book about HyperCard, I swore never to write another. Writing a book is much like childbirth, I believe. In the beginning it gestates slowly, usually over a few months, then it ramps up inexorably and quickly toward deadline until all attention is focused upon the delivery itself and the pain and workload are great. Afterwards, you remember it was rough, but the pain itself becomes diffused in the post partum release. I am glad to share my multimedia experiences with you, and hope that in reading this book you will become better at what you do.

Tay Vaughan
Oakland, California
June, 1996

Multi

Multimedia is any combination o

Multimedia excites
eyes, ears, fingertips,
and, most importantly,
the head.

When you **weave** together the sensual elements of multmedia -

interactive control