



Larry L.
Constantine

& Lucy A.D.
Lockwood

SOFTWARE FOR USE

A Practical Guide
to the Models
and Methods of
Usage-Centered
Design



SOFTWARE FOR USE

*A Practical Guide
to the Models and Methods
of Usage-Centered Design*

LARRY L. CONSTANTINE
LUCY A. D. LOCKWOOD



ACM Press
New York, New York

◆ Addison-Wesley

Boston • San Francisco • New York • Toronto • Montreal
London • Munich • Paris • Madrid
Capetown • Sydney • Tokyo • Singapore • Mexico City

Software for Use: A Practical Guide to the Models and Methods of Usage-Centered Design

Table of Contents

Contents

Acknowledgments

Preface

SECTION I: TOWARD MORE USABLE SOFTWARE

1 SOFTWARE FOR USE: Usage, Usability, and User Interfaces

Upgrading Usability

Approaching Usability

Changing Contexts

2 BUILT-IN USABILITY: A Usage-Centered Design Approach

Interfacing with Users

Elements of a Usage-Centered Approach

Driving Models

Coordinated Activity

3 IN PRINCIPLE: Rules and Principles of Usage-Centered Design

Design as Dialogue

Rules and Principles

Usability Rules

User Interface Design Principles

Other Rules

Details, Details, Details

SECTION II: ESSENTIAL MODELS FOR USABILITY

4 USERS AND RELATED SPECIES: Understanding Users and User Roles

Table of Contents

Of Use and Users

Real Users and Others

User Role Models

User Role Maps

User Roles in Action

Structured Role Models

5 WORKING STRUCTURES: Task Modeling with Essential Use Cases

Work, Work, Work

Task Modeling

The Use Case Map

Building Essential Use Case Models

Application

6 INTERFACE ARCHITECTURE: Interface Contents and Navigation

Workplaces

Interface Contents

The Context Navigation Map

Application

SECTION III: CREATING THE VISUAL DESIGN

7 DESIGNING THE DIALOGUE: Layout and Communication

From Abstraction to Expression

Communication Channels

Screen Real Estate

8 PRACTICAL WIDGETRY: Choosing and Designing Visual Components

Buy or Build

Iconic Communication

Menus

Selecting Selection Widgets

9 INNOVATIVE INTERFACES: Creative Interface Engineering and Custom Components

Creative Engineering

Table of Contents

The Process of Innovation

Instructive Interfaces

Applied Innovation

SECTION IV: COMPLETING THE DESIGN

10 EXPRESSING SOLUTIONS: Implementation Modeling and Prototypes

Fun Stuff

Prototypes and Prototyping

Mapping the Models

Implementation Modeling Illustrated

11 HELP ME IF YOU CAN: Designing Help and Helpful Messages

Even Experts Need a Lift

Use Cases for Help

Access and Presentation Techniques

Special Techniques and Modalities

Helpful Writing

Helpful Messages

12 ONCE A BEGINNER: Supporting Evolving Usage Patterns

Beyond Beginners

Skiing the Interface

Progressive Usage

Supportive Interfaces

Designing for Progressive Usage

Progressive Usage Applied

13 IN PLACE: Fitting the Operational Context

Unsound Context

Operational Modeling

Environmental Adaptation

Binding Context

Environment Profile

Putting Context in Place

Table of Contents

14 SAME GAME, DIFFERENT FIELDS: Special Applications, Special Issues

- Theme and Variation, Again
- Web Design for Use
- Web Wisdom Applied
- Embedded Systems Applications
- Other Special Interfaces

15 USAGE-CENTERED DESIGN APPLIED: The TeleGuida Case

- Scaling Up
- Telephone Tag
- Gathering Requirements
- TeleGuida Users and Uses
- Toward a TeleGuida Prototype

SECTION V: ASSESSMENT AND IMPROVEMENT

16 BETTER NEXT TIME: Improvement by Inspection and Review

- Assessing Usability
- Inspection Methods
- Collaborative Usability Inspections
- Focused Inspections

17 BY THE NUMBERS: Measuring Usability in Practice

- Comparison Shopping
- Measured Quality
- User Interface Design Metrics
- Essential Usability Metrics Suite
- Metrics in Practice

18 TEST SCORES: Laboratory and Field Testing of Usability

- History Testing
- Testing, One, Two
- Test Protocol
- Testing Tactics

Table of Contents

Why Test, Why Not

SECTION VI: ORGANIZING AND MANAGING THE PROCESS

19 CODE AND YOU'RE DONE: Implementing Interfaces

Objects and Interfaces

Accelerated Development

Visual Development of Visual Designs

20 USING YOUR USERS: Users in the Development Process

Use or Abuse of Users

Requirements Dialogue, Requirements Dance

Going to the Source

Using Users

Joint Essential Modeling

21 GETTING ORGANIZED: Usability in the Larger Context

Organizational Units

Standards and Style Guides

Competing Constituencies

Experts and Expertise

Cultural Fit

Appendix A: Suggested Readings

Appendix B: Eleven Ways to Make Software More Usable: General Principles of Software Usability

Appendix C: Glossary

A

B

C

D

E

F

Table of Contents

I

J

L

N

O

P

R

S

T

U

V

W

Appendix D: Forms for Usage-Centered Design

Appendix E: Subjective Usability Scales for Software (SUSS)

References

Index