

Usability Engineering

Jakob Nielsen



Usability Engineering

JAKOB NIELSEN

SunSoft
2550 Garcia Avenue
Mountain View, California



Morgan Kaufmann

An Imprint of Elsevier

Amsterdam Boston Heidelberg London New York Oxford
Paris San Diego San Francisco Singapore Sydney Tokyo

This book is printed on acid-free paper. ©

Copyright © 1993 by Academic Press.

An Imprint of Elsevier

All rights reserved.

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the publisher.

Permissions may be sought directly from Elsevier's Science and Technology Rights Department in Oxford, UK. Phone: (44) 1865 843830, Fax: (44) 1865 853333, e-mail: permissions@elsevier.co.uk. You may also complete your request on-line via the Elsevier homepage: <http://www.elsevier.com> by selecting "Customer Support" and then "Obtaining Permissions".

All brand names and product names are trademarks or registered trademarks of their respective companies.

ACADEMIC PRESS

An Imprint of Elsevier

525 B Street, Suite 1900, San Diego, CA 92101-4495 USA
<http://www.academicpress.com>

Academic Press

Harcourt Place, 32 Jamestown Road, London, NW1 7BY UK

Morgan Kaufmann

340 Pine Street, Sixth Floor, San Francisco, CA 94104-3205
<http://www.mkp.com>

Library of Congress Catalog Number: 93000488

ISBN-13: 978-0-12-518406-9

ISBN-10: 0-12-518406-9

Printed and bound in the United Kingdom

Transferred to Digital Printing, 2010

Table of Contents

Preface ix

Audience ix
Teaching Usability Engineering xi
Acknowledgments xiii

Chapter 1	<i>Executive Summary 1</i>
1.1	Cost Savings 2
1.2	Usability Now! 8
1.3	Usability Slogans 10
1.4	Discount Usability Engineering 17
1.5	Recipe For Action 21

Chapter 2	<i>What Is Usability? 23</i>
2.1	Usability and Other Considerations 24
2.2	Definition of Usability 26
2.3	Example: Measuring the Usability of Icons 37
2.4	Usability Trade-Offs 41
2.5	Categories of Users and Individual User Differences 43

Chapter 3	<i>Generations of User Interfaces</i>	49
3.1	Batch Systems	51
3.2	Line-Oriented Interfaces	52
3.3	Full-Screen Interfaces	54
3.4	Graphical User Interfaces	57
3.5	Next-Generation Interfaces	62
3.6	Long-Term Trends in Usability	67
Chapter 4	<i>The Usability Engineering Lifecycle</i>	71
4.1	Know the User	73
4.2	Competitive Analysis	78
4.3	Goal Setting	79
4.4	Parallel Design	85
4.5	Participatory Design	88
4.6	Coordinating the Total Interface	90
4.7	Guidelines and Heuristic Evaluation	91
4.8	Prototyping	93
4.9	Interface Evaluation	102
4.10	Iterative Design	105
4.11	Follow-Up Studies of Installed Systems	109
4.12	Meta-Methods	111
4.13	Prioritizing Usability Activities	112
4.14	Be Prepared	113
Chapter 5	<i>Usability Heuristics</i>	115
5.1	Simple and Natural Dialogue	115
5.2	Speak the Users' Language	123
5.3	Minimize User Memory Load	129
5.4	Consistency	132
5.5	Feedback	134
5.6	Clearly Marked Exits	138
5.7	Shortcuts	139
5.8	Good Error Messages	142
5.9	Prevent Errors	145
5.10	Help and Documentation	148
5.11	Heuristic Evaluation	155

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.