

**How to**

**Develop an**

**Effective**

**GUI**

**Standard**

# How to Develop an Effective GUI Standard

By Human Factors International Inc.  
*We Make Software Usable*



Eric M. Schaffer, PhD, CUA, CPE  
CEO, Human Factors International

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How to Develop an Effective GUI Standard

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Call toll-free from the US and Canada, 1-800-242-4480

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## INTRODUCTION



**D**eveloping a corporate GUI standard is challenging work. During the last 12 years, we at Human Factors International, Inc. (HFI) have worked on over 56 user interface standardization projects.

Initially, our design contribution was based on our state-of-the-art knowledge of methods and principles in the field of software ergonomics. We helped design more usable interfaces. Then, over time, we learned a lot about the standardization process. This guide shares some of our experiences, methods, strategies, and insights.

Perhaps you have tried to do your own standard and the process has stalled. Perhaps you want a standard but don't know how to get started. If so, cheer up! A little laughter will help. Read this pamphlet for some real-life experience pointers. Call Jay More, VP Marketing at 1-515-472-4480 if you would like to know more.

***Eric M. Schaffer, PhD, CUA, CPE***

CEO, Human Factors International, Inc.

## OUR GUI STANDARDIZATION PROCESS

1. Define the types of standards you need
2. Get commitment to follow through on the standardization process
3. Get 7–12 volunteers for committee membership (key opinion leaders)
4. Gather data (users, taskflow, work environment, software, corporate strategy, etc.)
5. Define screen types that cover 85% of the windows that will be designed (e.g., menu, browser, create-update-delete (CRUD), graphic drill down, form)
6. Draft an actual case for each screen
7. Work with the committee to refine the standard screen designs
8. Draft the standards document around the examples
9. Add general chapters (e.g., widget selection, standard keys, color, error handling)
10. Review the standards document with the committee and iterate
11. Distribute the book for wider review and iterate
12. Implement the standard

## HISTORY OF USER INTERFACE STANDARDS

### 1965 → 1985

Human factors specialists worked to make user interfaces fast, accurate, and easy-to-learn.

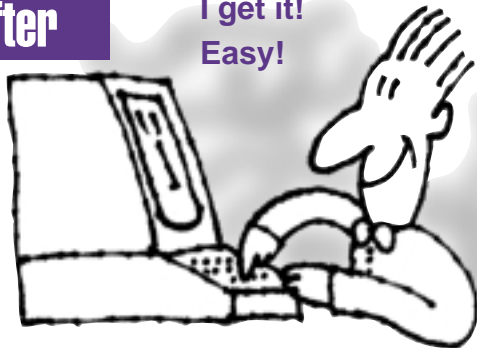
**before**

“Grep” what?



**after**

I get it!  
Easy!



### 1985 → present

We realized that *usability* was not enough.  
We needed *consistency*.

This system uses  
“D” to move down  
a page. Easy!

This system uses  
“D” to delete all  
files. Also easy!



Standards become important

## TYPES OF STANDARDS

There are three types of standards:

### 1. Methodological Standards

This is a checklist to remind developers of the tasks needed to create usable systems.

User Interviews .....check  
Task Analysis .....check  
Task Design .....check  
Conversion Plan.....oops!  
I forgot.



### 2. Design Standards

This is The Building Code. A set of absolute legal requirements that ensure a consistent look and feel.

You are guilty of failing  
to provide a CANCEL  
button.



### 3. Design Principles

These tenets of good design help developers work well within the design standard's rules. Good design principles are specific and research-based.

Thou shalt...

- Use short words.
- Use short sentences.
- Write in the active voice.
- Avoid using all capital letters as they will lose 14-20% in reading speed.



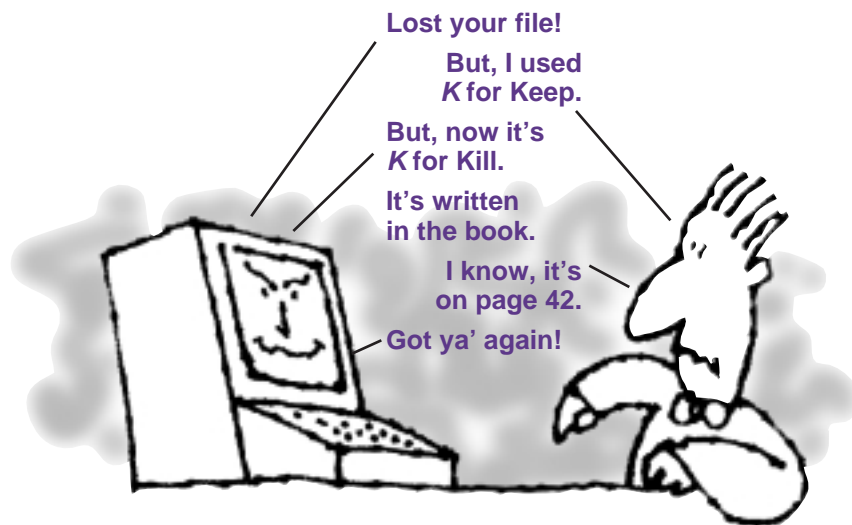
## BENEFITS OF STANDARDS

### Consistency is good

While most designers have a negative emotional response to standardization...it is worth it. Of the three types of standards, you must at least have a design standard.

### Users benefit

Training requirements are reduced as skills can be generalized from previous experience. Also, we avoid problems from proactive inhibition (the tendency of users to do it the old way by accident, even though they know the new way is different).



## Developers benefit

Don't waste time reinventing the wheel. Also, you can build reusable routines and instantiate rules in the toolset.

Make another standard menu.

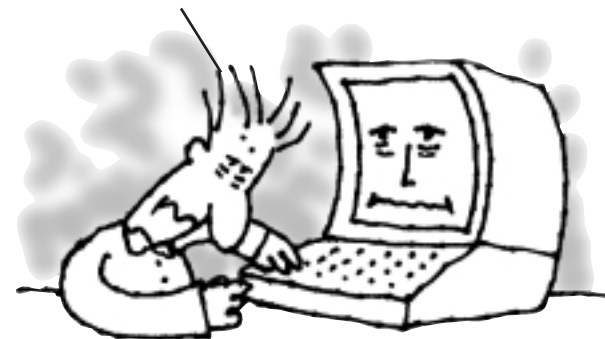
No problem! I know a lot about menus!



## Maintenance benefits

Changes are easier when code is consistent.

Wonder how Joe did it this time?



## SOME MAJOR PITFALLS

### Pitfall #1: Mix standard types

If you mix the three types of standards together in one book, you'll get standards stew (a thick jumbled mess nobody can chew). It will also take forever to finish!



### Pitfall #2: Make a design principle standard

Design principles have been documented. We'll sell you a copy—cheap! But people don't absorb principles from a book. Quality training is a better solution to design principles.

Book ►



Training ▼





### Pitfall #3: Just use a nationally available standard—or maybe borrow another company's!

#### National standards don't work

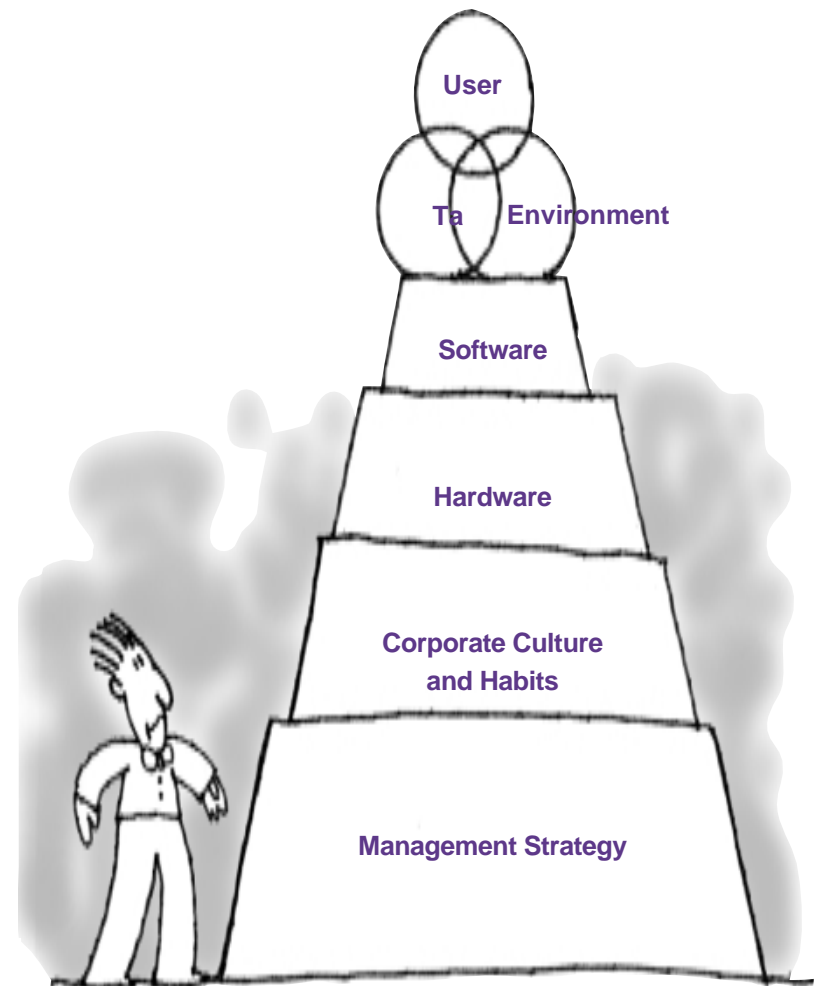
All the current style guides (SAA-CUA, Motif, Windows, etc.), when given to developers, fail to ensure consistent applications. They are not specific enough in the critical application areas.

A very creative interface. Should be a *most* entertaining challenge for the user to decipher. . . Well, it was hard to write, it should be hard to use!



### National standards don't usually fit

While corporate standards must be compliant with national standards, they also must fit the company's business needs. Small design errors have large consequences.



## Pitfall #4: Give it to someone to write

The standards decisions are extremely complex. We must anticipate future interface needs and trends. The best people must be used. The standards committee should include:

- Human Factors Expert
- Systems Analyst
- GUI Tools Expert
- User Representative

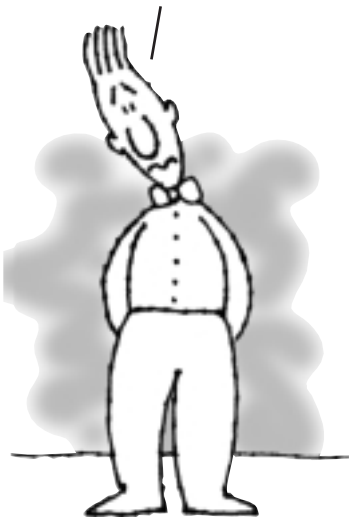
An ergonomically correct standard?

(Wonder how you spell it?)

Sure, I can do it.

I hope?

(I'm gonna die.)



## Pitfall #5: Allow a 'natural' project flow

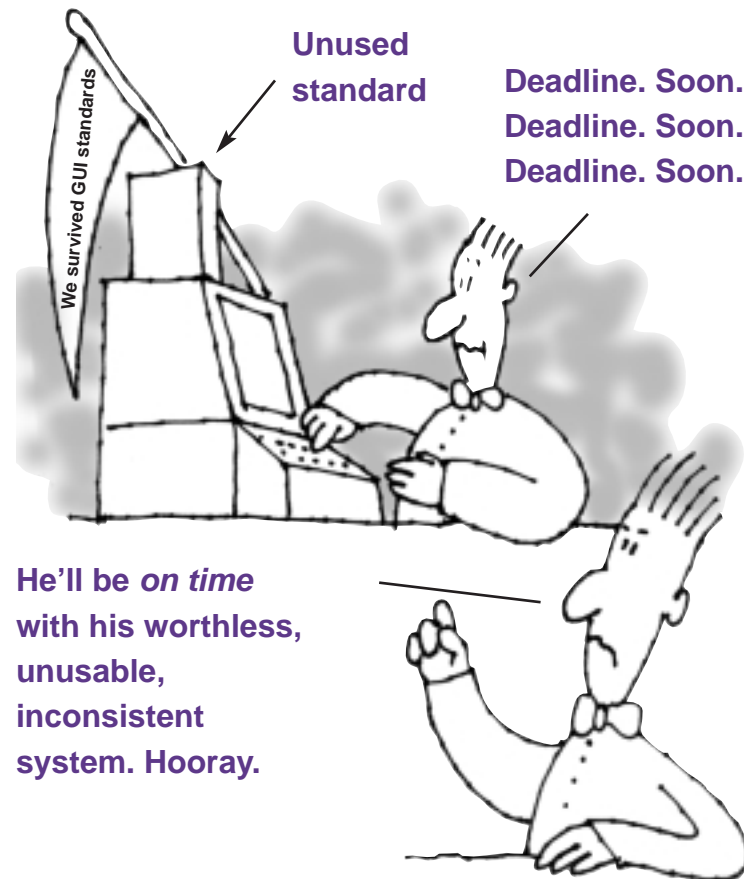
Unless a highly directed and unconventional project method is used, it will take forever. You may never even know when you're done.



(HFI Inc. works with clients to complete standards documents in 2-3 months—real time.)

## The BIG Pitfall

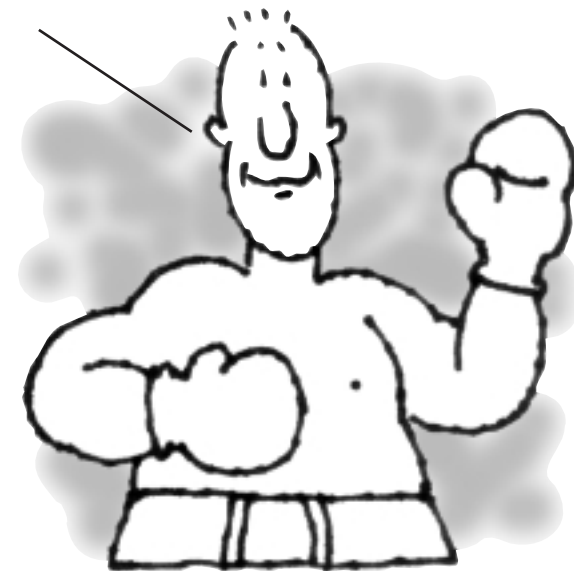
You can't just write a book and expect to succeed.  
The book does NOTHING. There must be an ongoing  
standardization process or the momentum will be lost.



## You Need Follow-Through!

- Consensus
- Dissemination
- Training
- Tools
- Enforcement
- Showcase projects
- Management support

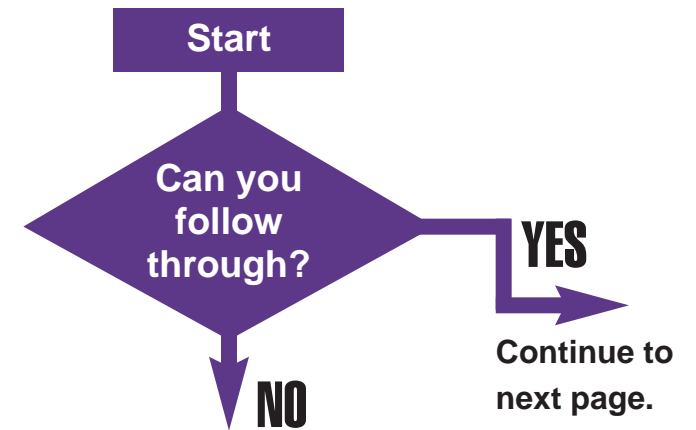
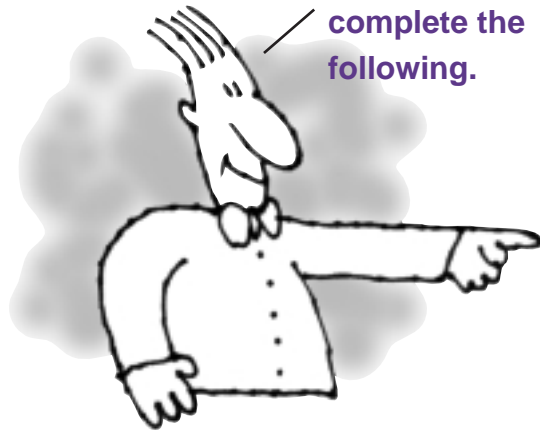
We'll make  
this *happen*.





**PLEASE TURN BACK  
TO THE PREVIOUS PAGE  
AND READ IT AGAIN.**

OK, now  
complete the  
following.



Stop here.

Burn this book.

Forget standards.

Forget consistent user interfaces.

Go home and take up gardening.



## HOW WE BUILD DESIGN STANDARDS

Methodological standards are important.

But, most people need a GUI design standard NOW!

### Phase 1: 2–3 days

#### Data Gathering

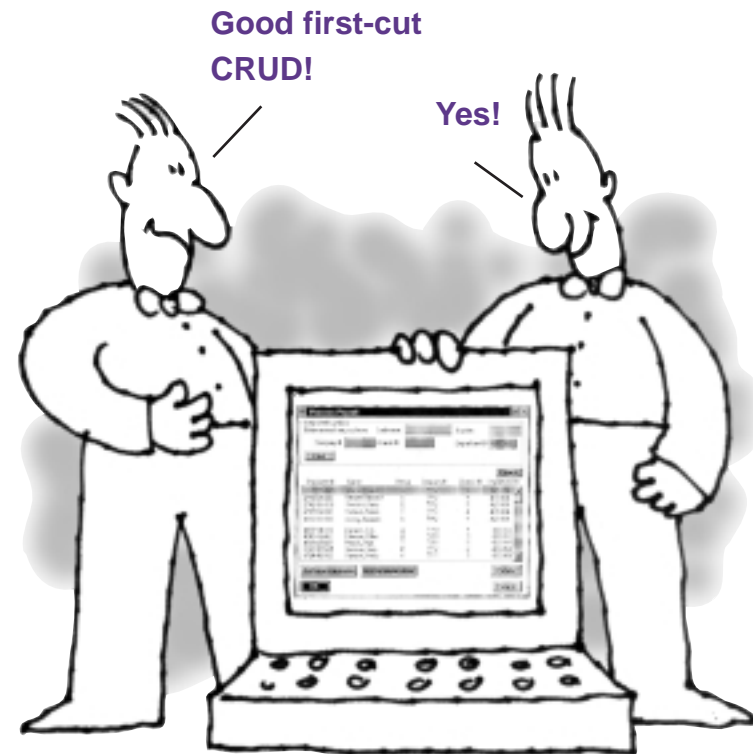
We need to learn about users, taskflows, environments, habits, corporate strategy, etc.



### Phase 2: 8–10 days

#### Prototype Standard Screen Examples

This is really the secret. We select a set of screen types that will cover 85% of the company needs (e.g., menu, browser, CRUD, graphic drilldown, form, search). It's usually 3–10 types. We select a real case of each and draft it.

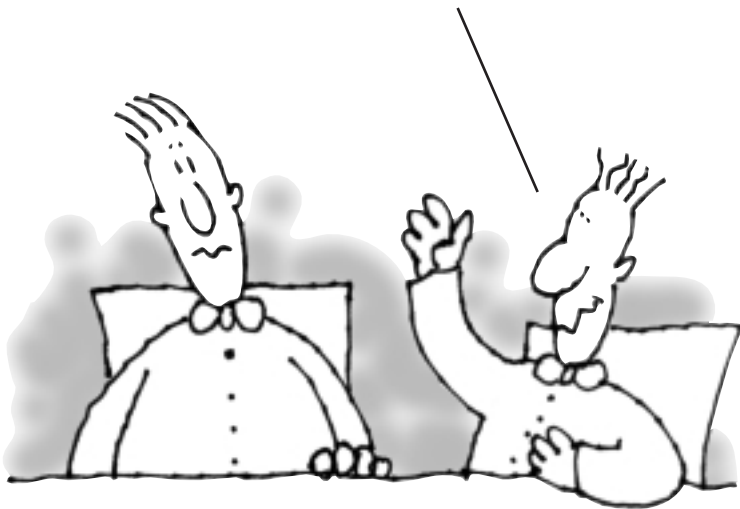


## Phase 3: 3–4 days (plus revisions)

### Committee Meetings

The standards committee works together to design each standard screen prototype.

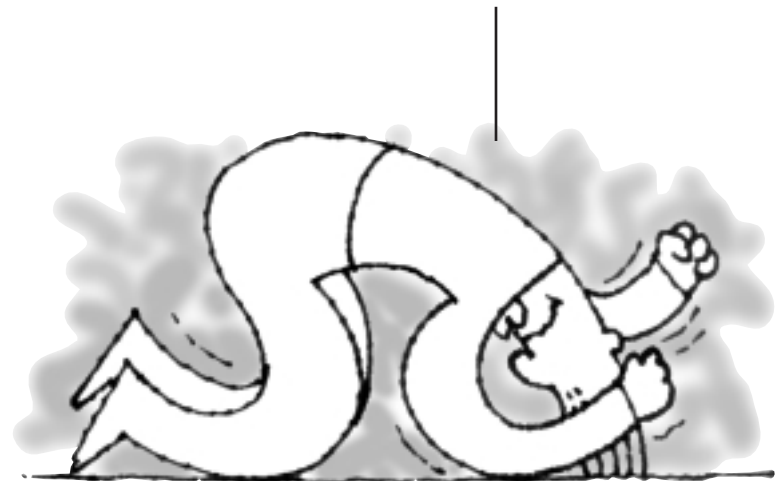
Blue...Please...We need to  
make it blue! Blue! Blue! Blue!  
Yummy, friendly blue.



### Rules

HFI Inc. staff do NOT get a vote. The people must have ownership in their standard. However, we do beg, plead, suggest, wimper, cry, and present sound alternatives.

NO!  
I can't  
stand it!  
Argh!



## Phase 4: Write The Book—2–3 weeks

The document is structured around the examples. The designer is able to flip to a section on menus, see the menu example, and read about the rules. Additional sections are important (color, standard keys and buttons, etc.).

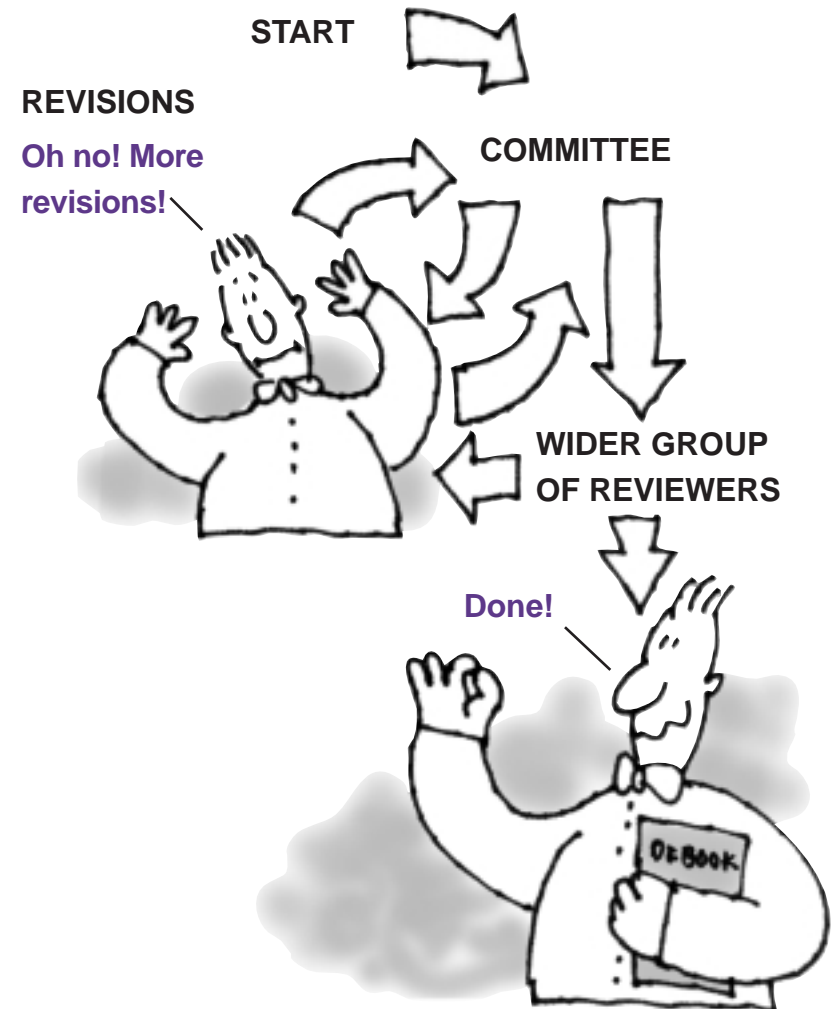
The committee reviews the document. It then goes to a wider distribution for review.



(HFI has more than 16 megabytes of boilerplate to speed document generation.)

## Phase 5: Final Review—1 week

An interactive process





## FOLLOW-THROUGH IS ESSENTIAL

The book is NOT done.

You must keep your standards book a living document, with expansions and improvements.

Until the standard is used, there is *no* value

—you've not made one cent because nobody:

- knows it exists
- knows how it works
- has a tool-set to support it
- has design skills to work well within the rules

***This is a  
standardization  
process.***



## If you can get it implemented, here are the benefits

**Happy! Happy!**  
**—Joy! Joy!**



- Reduced development time
- Reduced maintenance costs
- Reduced support costs

### If you sell your software:

- Competitive advantage
  - ▶ improved usability
  - ▶ improved quality
  - ▶ corporate image

### If you build in-house software:

- Reduced personnel costs
  - ▶ time
  - ▶ errors
  - ▶ training requirements

**No calls  
this week!**

**The first lonely  
system support  
specialist!**





## Human Factors

## Consulting

## On-Site Courses

**O**ur board-certified professional ergonomists apply software ergonomics to ensure that computer systems are user friendly.

- Expert review
- Workflow re-engineering
- Intranet standards development
- Web site and application design
- Usability diagnosis and testing
- Complete user-centered solutions

- The Science and Art of Effective Web and Application Design
- User-Centered Analysis and Conceptual Design
- Practical Usability Testing
- Putting Research into Practice
- Certification for usability practitioners



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