How to Develop an Effective GUI Standard

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by Dr. Eric M. Schaffer, C.P.E.

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TABLE OF CONTENTS

INTRODUCTION

Developing 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, Ph.D.

President, 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

after

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 Sta

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

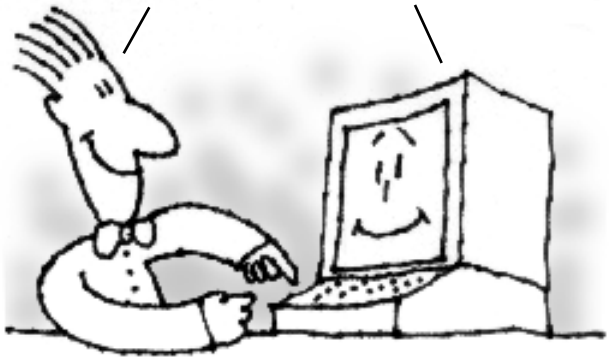
Training requirements are reduced as skills can be generalized from previous experience. Also, we avoid problems from proactive inhibition (the tendency of users to do it the old way by accident, even though they know the new way is different).

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.

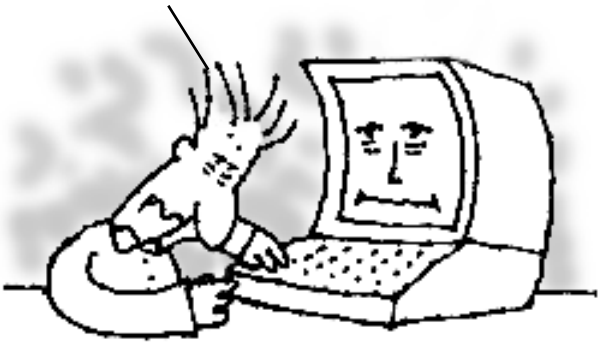
No problem! I know a lot about menus!



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 ►

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

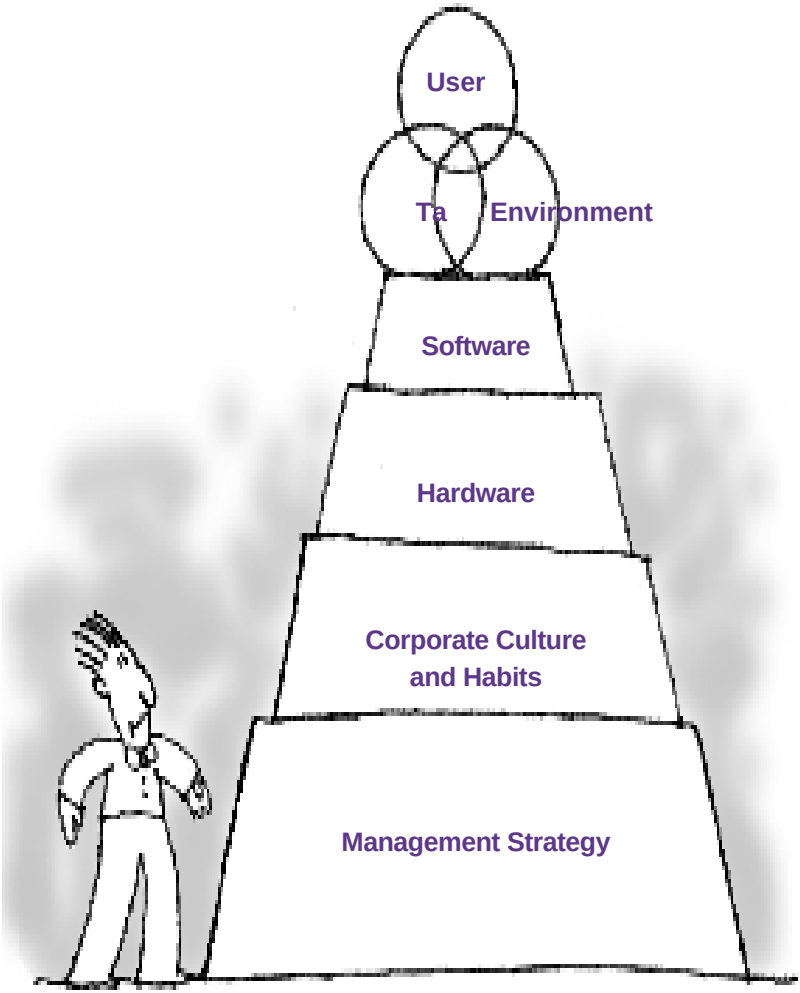
National standards don't work

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.)

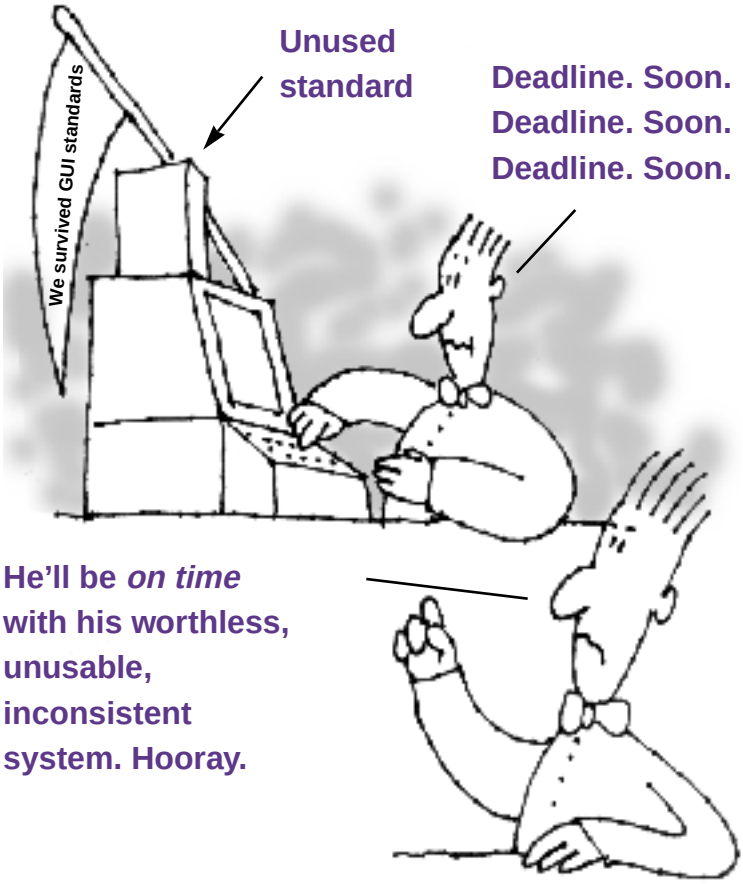
Pitfall #5: Allow a 'natural' project flow

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

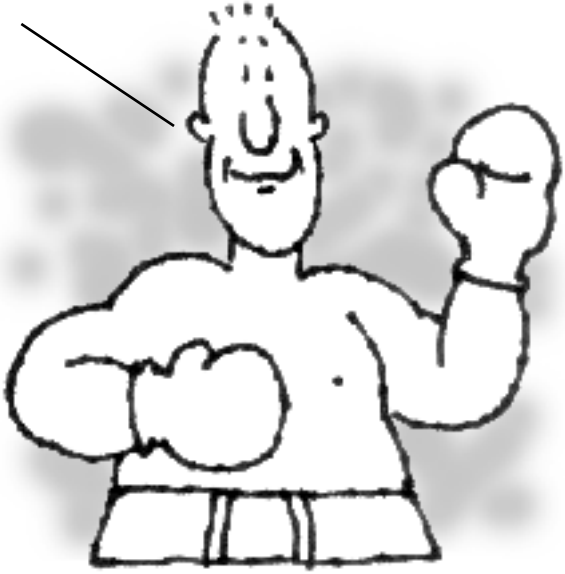
You can't just write a book and expect to succeed. The book does NOTHING. There must be an ongoing standardization process or the momentum will be lost.

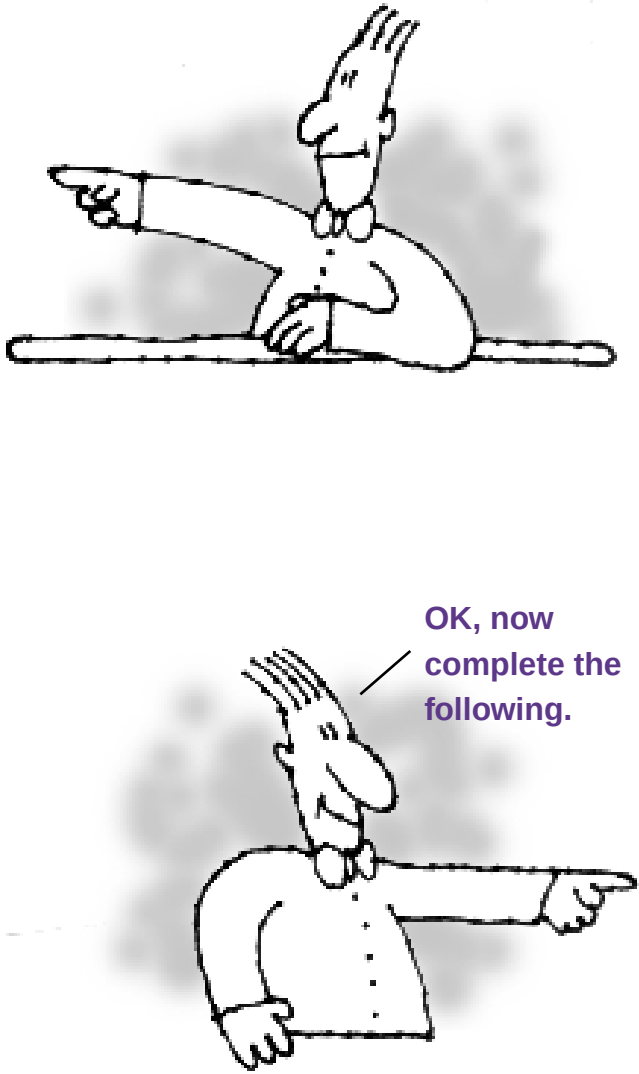


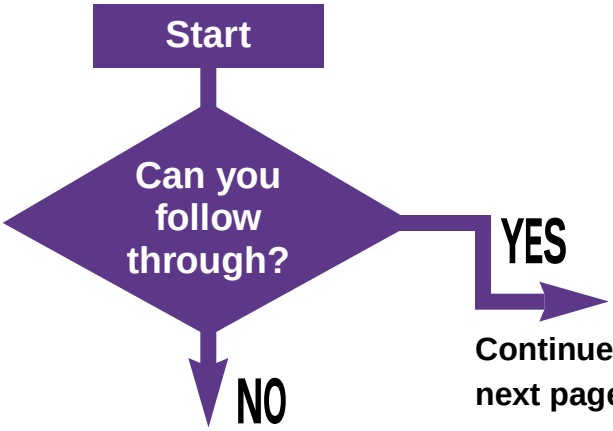
You Need Follow-Through!

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

We'll make this *happen.*




OK, now complete the following.


Start
Can you follow through?
YES
Continue to next page.
NO
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

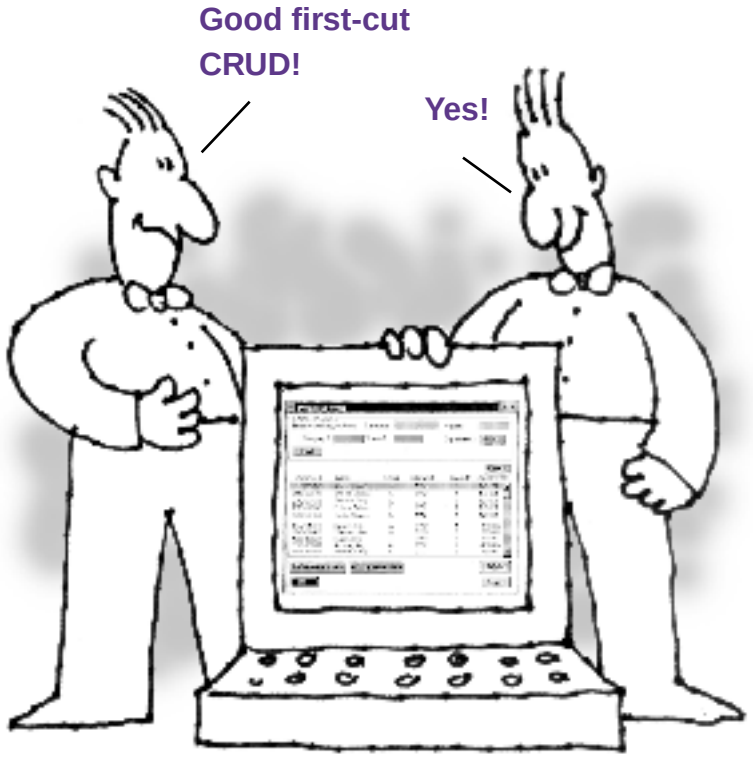
Data Gathering

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

Phase 2: 8–10 days

Prototype Standard Screen Examples

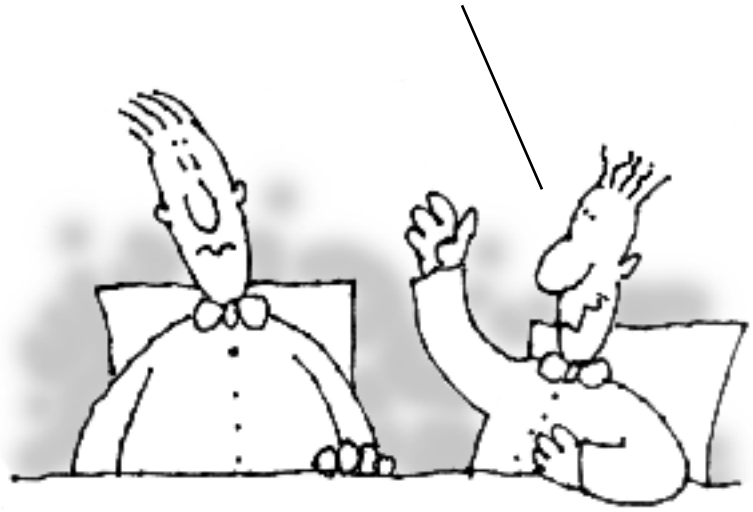
This is really the secret. We select a set of screen types that will cover 85% of the company needs (e.g., menu, browser, CRUD, graphic drilldown, form, search). It's usually 3–10 types. We select a real case of each and draft it.



Phase 3: 3–4 days (plus revisions)

Committee Meetings

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



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.

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.

Also called "Guideline" or "Style Guide"

(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

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

Our board-certified professional ergonomists apply software ergonics to ensure that computer systems are user friendly.

Consulting

- Expert review
- Workflow re-engineering
- Intranet standards development
- Site design
- Usability diagnosis and testing

Instructor-Lead Training

- Overview of Human Factors Technology
- Introduction to Software Ergonomics
- How to Design Effective GUIs
- How to Design Object-Oriented GUIs
- Fundamentals of Multimedia
- How to Design Usable Web Pages
- Designing Interactive Voice Response Systems
- Conversational Interfaces
- Software Prototyping
- Practical Usability Testing
- User Interface Specialist Training
- Annual User Interface Update

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