

# Listening To and Engaging Users Through Contextual Inquiry

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# The Promise

*How can we find out what users really want or need? The methods of "Contextual design", formalized by Beyer and Holtzblatt, provide a method for answering this question.*

*Arthur Fink will discuss how developers can really listen to and learn from users, and then engage them in the database and interface design process.*

*Careful observation, and then studying users as they interact with simple prototype models, can significantly improve the usability of the resulting systems. On the other hand, treating users like "technopeasants", and leaving them out of the design process, almost guarantees disfunction.*

*The "listening" skills presented here are applicable to a wide range of design projects.*

# Wish I'd Promised ...

*Arthur Fink will talk.*

*As you listen, you may find  
something of value.*

# Blind Users ?

Don't know what's possible

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Don't know what's possible

Fear change

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Not “system thinkers”

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Ask little of a system

# Blind Users ?

Don't know what's possible

Fear change

Not “system thinkers”

Ask little of a system

Will do tedious work



# Users Are **Not** Blind!

Not blind

Not dumb

Not technopeasants

Not incapable of understanding

Not the problem

# Not TechnoPeasants

# Blind Developers

Don't trust users

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Design & program for elegance

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Provide what users ought to need

# Blind Developers

Don't trust users

Design & program for elegance

Provide what users ought to need

Interface often an afterthought

# Developers Are Not Blind!

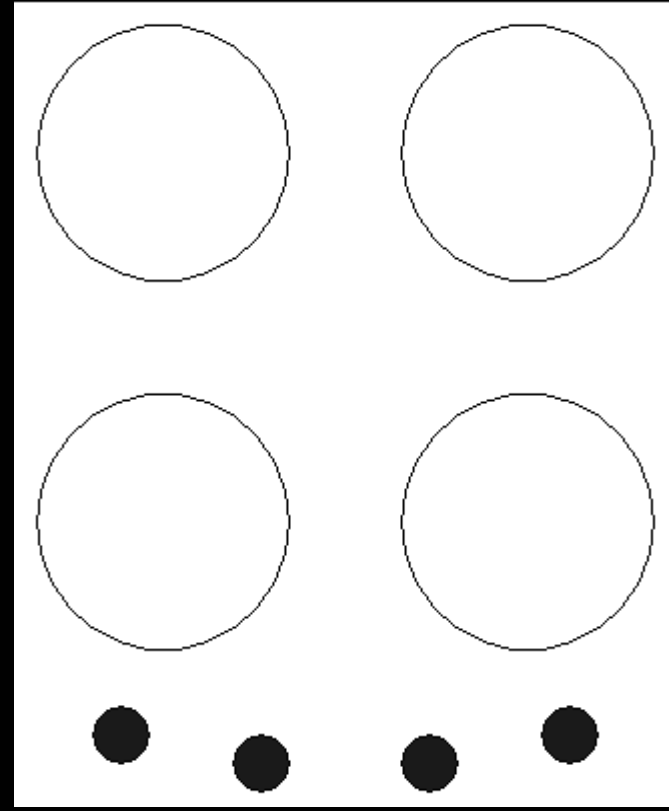
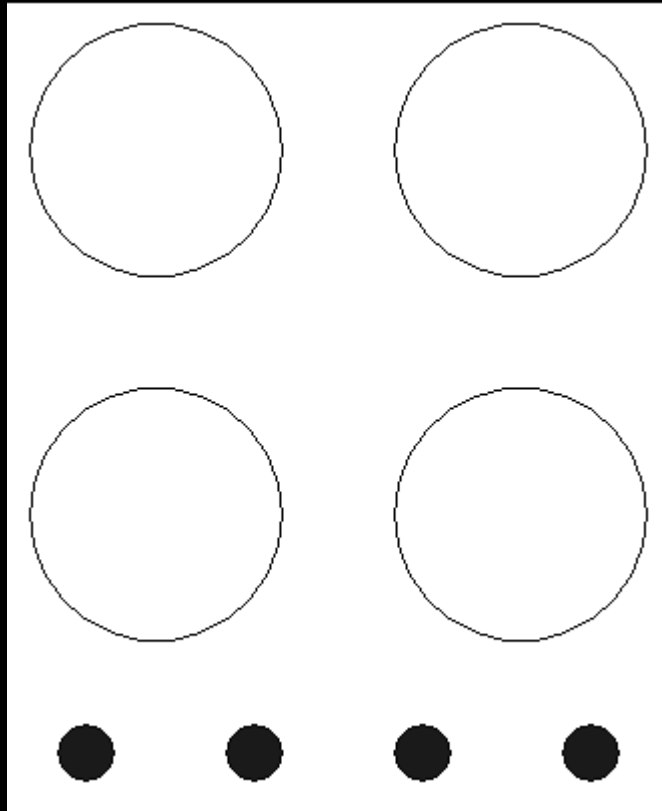
They are just . . .

Small changes

Big effects



# Design for Usability





[www.BadDesigns.com](http://www.BadDesigns.com)





# “Butterfly Ballot”

**Although the Democrats are listed second in the column on the left, they are the third hole on the ballot.**

(REPUBLICAN)			
GEORGE W. BUSH - PRESIDENT	3 →		
DICK CHENEY - VICE PRESIDENT			
(DEMOCRATIC)			
AL GORE - PRESIDENT	5 →		
JOE LIEBERMAN - VICE PRESIDENT			
(LIBERTARIAN)			
HARRY BROWNE - PRESIDENT	7 →		
ART OLIVER - VICE PRESIDENT			
(GREEN)			
RALPH NADER - PRESIDENT	9 →		
WINDY LA DUKE - VICE PRESIDENT			
(SOCIALIST WORKERS)			
JAMES HARRIS - PRESIDENT	11 →		
MARGARET TROWE - VICE PRESIDENT			
(NATURAL LAW)			
JOHN HAGELIN - PRESIDENT	13 →		
NAT GOLDHABER - VICE PRESIDENT			

**Punching the second hole casts a vote for the Reform Party.**

(REFORM)			
PAT BUCHANAN - PRESIDENT	4 ←		
EZOLA FOSTER - VICE PRESIDENT			
(SOCIALIST)			
DAVID McREYNOLDS - PRESIDENT	6 ←		
MARY CAL KOLLIS - VICE PRESIDENT			
(CONSTITUTION)			
HOWARD PHILLIPS - PRESIDENT	8 ←		
J. CURTIS FRAZIER - VICE PRESIDENT			
(WORKERS WORLD)			
MONICA MOOREHEAD - PRESIDENT	10 ←		
GLORIA LA RIVA - VICE PRESIDENT			
<b>WRITE-IN CANDIDATE</b> To vote for a write-in candidate, follow the directions on the long stub of your ballot card.			

If they knew how I wrote it,  
They'd use it right.

Wrong!



Carelman's pot for masochists



Carelman's tandem for fiancés

# Listening to Users

**Marketing:** What companies / people may buy

May not be what they need or want!

**Contextual inquiry:** Actual work people do



# What Users Really Do?

We may not know

They may not know

It's worth finding out!



# What Do Users Really Do?!



Listening to users

They might not speak!

# Listening - An Acquired Skill

Looking

Asking

Empowering

Embracing

# Listening

Listening is not responding

(Let go of ego, preconceptions, personal investment)

# Listening

Provide feedback  
to test understanding

Listen / understand / respond

# Listening

Test      *with paper or live prototype*

Revise   *based upon user feedback*

Test      *and revise again (and again)*

# The Courage To Listen

*An important barrier to user requirements analysis is that it takes courage to really listen to users. Some corporate cultures are not prepared to really listen to customers, suppliers, employees, etc. They're afraid to learn something they don't know already. ... The cost of "learning something about users you didn't want to know" at the start of a web project is small compared to the cost of learning it after launching the website.*

*-- Sim D'Hertefelt [interactionarchitect.com](http://interactionarchitect.com)*



# Why Listen to Users?

Content (work experience)

Empathetic understanding

Relationship (also useful later)

• • •

# My Informal Process

Listen to users	(with ALL senses)
Model user behavior	(in-formally?)
Design it <i>wrong</i>	(Have I a choice?)
Paper prototyping	(Quick build/test)
Listening again	(usability testing)

# Paper Prototyping

*(as described by Jarad Spool)*

Make screens from paper & board  
*(be creative)*

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*(as described by Jarad Spool)*

Make screens from paper & board  
*(be creative)*

Developers “play” the computer

Users take the simulation seriously,  
and provide real feedback

# Affordance

How an object communicates  
the way it is used

# Goals

Are the supposed affordances  
really affordances?

Can users proceed confidently?

# Goals

~~Are the supposed affordances  
really affordances~~

Does work happen better?

~~Can users proceed confidently?~~



# How Not to Do It!

- 1.6 Establish initial usability goals with users
  - 1.6.1 Conduct usability test of existing or similar product if applicable
  - 1.6.2 Set quantitative usability goals for tasks
    - 1.6.2.1 Time to complete tasks
    - 1.6.2.2 Number of steps to complete tasks
    - 1.6.2.3 Number of errors made while completing tasks
    - 1.6.2.4 Requests for assistance
    - 1.6.2.5 Number of uses of documentation
    - 1.6.2.6 Number of expressions of frustration
    - 1.6.2.7 Successes at tasks
    - 1.6.2.8 Improvement over time (learning)

-- NASA Usability Engineering Team

# CONTEXTUAL DESIGN

*Defining  
Customer-Centered  
Systems*



HUGH BEYER

KAREN HOLTZBLATT

# Contextual Inquiry

What do users really do?

Listen / look / inquire --  
to really understand

May need work redesign  
(social change in work process)

Not just technical support  
for current work patterns

# From Inquiry to Design

Get shared perspective -- from diverse team

Look at multiple customers

Ground solutions in how users work  
(but want better ways to work)

Structure system (UI) for new work practice

Iterate with paper mockups  
(verify/revise design before coding phase)

Build system, with continual test & revise!

# Working Together

A new skill  
for users  
and for developers

# Three Principles

*Context* Interact with users where the system will be used.

*Partnership* User is partner in design and expert in the work being done.

*Focus* Need a clear focus = Visible assumptions, beliefs, and concerns about particular situation.

# Setting Up The Interview

Right users & enough time

Users appreciate their valued role

Not hurting their performance

Mostly watching them work/interact  
(not just lots of questions)

# Contextual Interview

“Interview” user in their setting when doing their tasks with minimal interference.

Just “raw” data  
With little or no analysis.

Goal is a shared understanding of the actual work process



# 1. Traditional Interview

Get overview of work tasks

Build trust

Establish ground rules  
(recording, confidentiality, etc)

User stops work for this phase

## 2. Switch roles

Move into master / apprentice

Will watch user, occasionally asking why or what

Get agreement about when interruptions are okay

### 3. Observe

Users are at work, and in command

Interviewer just watches  
and asks questions

Can question anything that  
happened - why, how, etc.

Don't "filter" - anything may be  
relevant

# Look Carefully



# Hidden Work Structure

“Water cooler” conversations

“Gossip” as need to know

Informal procedures (e.g.  
private stash of critical parts)

“What it takes” to do the job!

## 4. Summarize

Try to summarize what you've learned.

You'll get some of it wrong.  
Watch user reactions to see which.

Build correct picture,  
with user help.

# Models of Work

Flow = Communication & coordination

Cultural = Culture & policy

Sequence = Steps to accomplish a task

Physical = Work environment

Artifact = Things used in doing work

# Consolidation

See common patterns & structure,  
along with individual variation.

Reveal common strategies &  
intent, while retaining picture  
of individual differences.

*“I used to be different,  
but now I’m the same!”*



# What We Know About Users

(They are us!)

# What Users DO Want

Consistency

Simplicity

Control

Core Functionality

# What Users Don't Want

Complexity

Confusion

Change

Users want support  
to do a better job.

Users want systems  
that work for them.

# Getting To The Root

What are the business goals?

business goals

business goals

business goals

# Getting To The Root

Start at the beginning

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Start at the beginning

Imagine excellence & ease

# Getting To The **root**

Start at the beginning

Imagine excellence & ease

Let the **users** keep you honest



# Getting To The Root

Start at the beginning

Imagine excellence & ease

Let the users keep you honest

You **won't** get it right - ever!



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