



Esri International Developer Summit
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Quick and Easy Usability Testing for Improving Your Web Apps

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User Experience (UX) &
User Interface (UI) Summit

Lightning Talks – 1pm to 6pm

Santa Rosa / San Jacinto

Why Usability?

- Create the best possible experience when people touch our technology.
- Flatten the learning curve, engage, and when possible, delight.
- Is it needed, understood, and how can it be improved?



Why Usability?

Self-explanatory.

Obvious.

Frictionless.



Our Expectations of Technology

Don't make me think. Don't waste my time. I just want it to work.



Steve Krug (2000)

User-Centered

Whatever it is that you are planning to build, it needs to be useful to somebody and has to solve a real-world problem. This end-user need is the reason of existence...

Michael Gaigg (esri)

Why?

It Saves You Time

(yes, counter-intuitive)

Why?

Saves Money

(cheaper to uncover sooner rather than later)

Why?

Sharpens Scope and Vision

(eliminate pet buttons)

Why?

Better, more useful and usable product

=

increased user happiness

=

more competitive, more loyal customers

Why?

Increased Confidence

Why?

Reduces Demands on Support

How?

Informal to formal

Quick to time-consuming

Cheap to expensive

They all have a place, all can make your product better.

UsabilityPartners.se

Cheat Sheet to 38 Approaches

Usability tools and methods

Tool/Method	Stage in development				
	Context and user requirements	Early design and prototyping	Test and evaluation	Resources required	Purpose/Strength
Affinity diagramming	X	X		LOW	Helps structure concepts and content
Brainstorming		X		LOW	Generates design ideas
Card sorting	X	X		MEDIUM	Helps structure interface content
Cognitive workload assessment			X	LOW	Assesses if mental effort is acceptable
Cognitive walkthrough		X	X	MEDIUM	Checks structure and flow against user goals
Comparative analysis		X		LOW	Gathers design input from other products
Context of use analysis	X			LOW	Specifies vital user and product characteristics
Contextual inquiry	X			MEDIUM/HIGH	Provides information about users' work context
Cost/benefit analysis	X			MEDIUM	Directs design effort towards issues providing best return
Diary keeping	X			MEDIUM	Captures day-to-day usage
Eye tracking			X	HIGH	Analyze how users look at parts of an interface
Focus groups	X			LOW	Elicits user requirements/views through discussion
Functionality matrix	X	X		LOW	Specifies functions required to support tasks
Goal and effort analysis	X			LOW	Analyze usability goals to help prioritize development effort
Group discussion	X	X	X	LOW	Summarizes user ideas/comments on design issues
Heuristic evaluation		X	X	LOW	Provides expert feedback on user interfaces
Interactive/Computer-based prototyping		X		MEDIUM/HIGH	Used for testing with users
Job interview techniques	X	X		LOW/MEDIUM	Provides detailed user experience about product usage
ISO 9241 conformance			X	MEDIUM	Assesses product conformance with ISO 9241
Observation	X			MEDIUM	Describes user activity in detail
Paper prototypes		X		MEDIUM	Tests design ideas with users

nForm.com

Paper Prototype



UX Trading Cards (45+)

UCD Menu

ENTREES

Every **Proposal** is the entrance to something great.

Paper Prototyping

Hand-drafted mockups and sketches, carefully selected and laid out, sautéed with your ideas.

\$\$

UX Storyboarding

A portion of your end-users and their needs topped with their stories and actual problems.

\$

Heuristic Evaluation

Draft designs, wireframes or fully implemented systems evaluated by a choice of 2-3 hand-picked experts.

\$

Survey

Freshly picked set of questions, sliced to identify your users and their needs, served with lots of insights.

\$

Chef's recommendation:

Make the User a stakeholder!

Involving the user early and throughout the cooking process will improve the experience and usability of your app and save you and your client money.

18% gratuity added to projects of 250k or more.

MAIN COURSES

Let us **delight your users** with our house specialities.

Rapid Prototyping

Lightly functional demos or prototypes, served in high or low fidelity, grilled to perfection.

\$\$\$

Usability Testing

Home-made end-user observations that feed right into the next design iteration, served by 3-5 users.

\$\$\$

Focus Group

Choice of nutritional opinions and beliefs, shared and discussed by a group of people.

\$\$\$

Field Study

Real end-user behavior observations collected by following people in their daily job and environment.

\$\$\$\$

Card Sorting

Delicious index cards sprinkled with individual concepts, tossed into meaningful piles, served hot.

\$\$\$

Server Log & Search Log Analysis

Crisp log statistics piled high with insights of user's navigation and search behavior. Very tasty!

\$\$

Please ask your server for the recommended selection of user-centered design methods that suits your project.

Watch and Listen

I contend that 80% of the value of testing comes from the magic of observing and listening as people use a design. The things you see and the things you hear are often surprising, illuminating, and unpredictable. This unpredictability is tough to capture in any other way.

Dana Chisnell

Esri DC Dev

Identify problems early, and repeatedly, and systemically (it's baked-in to the dev process)



Three Core Questions

Scope: “do we need a share button?”

Implementation: “is this the best way to build a share button?”

Deployment: “how are people using the share button?”



Myth #1

It's Expensive

“If you think good design is expensive, you should look at the cost of bad design.”

Dr. Ralf Speth, CEO Jaguar

Myth #2

Build It, Then Test It

Myth #3

You Need Lots of Test Subjects

Myth #4

Users Don't Know What They Want

Myth #5

All I get is Contradictory Feedback

Myth #6

I Don't Have Time

Our Philosophy

1. You can always do better
2. Foster empathy
3. Champion better ideas
4. Be humble, no one has all the answers
5. Seek specific feedback, not general

Pitfalls

Don't help or interrupt. Sit on your hands, literally

Don't lead the witness - it's not a training session

Don't cherry pick feedback - stay honest

Don't be defensive, invite critique

Thank people for their feedback and honesty

Ums, silences, and body language are super important

Caveats

Not a magic bullet - triangulate

Be deliberate

Can be artificial

Out Source!

Let others evaluate for you - fast turn around

Who's Your Target Audience?

GENDER: Female

AGE: 18-34

COUNTRY: United States

YEARLY HOUSEHOLD INCOME: \$40,000 to \$100,000

EXPERTISE WITH THE WEB: [\(click here for ID\)](#)
Advanced

(OPTIONAL) TECHNOLOGY REQUIREMENTS
Only accept this test if you play Facebook games more than once a week.

Annotations Clips

0:48 Save Cancel

Time	Comment	Options
0:01	Image doesn't load	
0:05	Page shows error in browser	
0:12	Have to reload page	
0:14	Site tries to install extra software does not feel safe	
0:43	Have to click enter twice	
4:41	How do I save this?	
6:00	Session end	

Usability in
< 5 minutes





Glance Test

Edit Map Title...



“What did you see?”

- Note
 - Major Actions
 - Buttons
 - Text
- Privately note
 - What they didn't see that you expected
 - e.g. Did you notice how to 'Add Data'

Deeper Experimentation

- ask to “Please speak thoughts out loud”
 - Good, Bad, Looking For
 - Expected vs. Saw
- Don’t guide.
- Only help when they are stuck and ask for help

- ▶ Persona
- ▶ Exploration

Persona

- Real People with Real Needs
- Provide a typical scenario
- Know that the steps would work for you - prepare the data and workflow
- only use real data



Samir Composer

New to online maps, but it's now part of my new job at this NGO, so time to learn! I just moved to Washington DC, and I earned my doctorate in Economics from the UK. I am hoping that I can create some interesting analysis to publish in some academic journals.



Patrick Composer

A long time GIS user, I am currently the GIS Coordinator in a Federal Agency. I usually enjoy being the Go-to-guy for the GIS system at work, but remember that I'm just a single person! What excites me about maps are about imagery and leveraging spatial analysis.



Julie Composer

I make maps that help Washington understand the country and make decisions. Usually I only have an hour to handle last minute requests before a big committee meeting. Looking forward to learning how to make my maps really shine for the big screen.

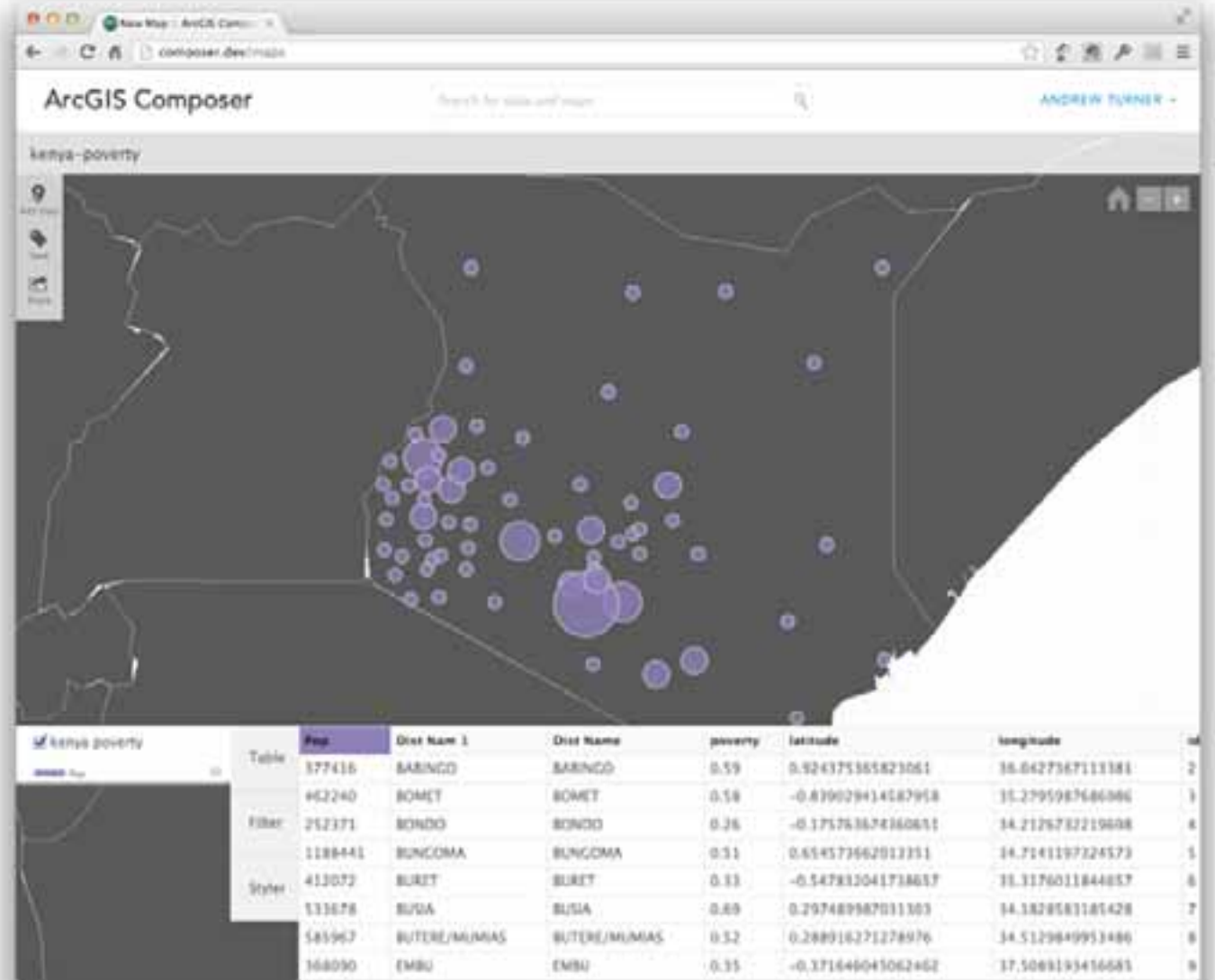
Edit Map Title...



- World Bank Economist
- Where is Highest Poverty?
- top 5 districts of highest poverty
- Share your map with colleague



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Exploration

- Allow to freely play with the application
- Time-bound
- After initial exploration, ask open-ended questions
 - “How do you think you Share?”
 - “What do you think happens if you click this button?”



Exercise

So easy, we can do it here and now...

ArcGIS Open Data

Our Experience...

<http://composer.dc.esri.com>

Places To Start

[Usability.Gov](#)

A List Apart

alistapart.com/topic/usability

Medium

medium.com/design-ux/

User Interface Engineering

uie.com

Lean UX

(book)

Cadence & Slang

cadence.cc/

Design Patterns

designinginterfaces.com/patterns/

Thought Leaders

Jakob Nielsen www.nngroup.com/people/jakob-nielsen/

Steve Krug www.sensible.com

Don Norman www.jnd.org

Jared Spool www.uie.com/about/consultants/

Michael Gaigg michaelgaigg.com/blog/

Doug Bowman research.cs.vt.edu/3di/user/123



Understanding our world.