

Thanks for having me here.

I have to say I wish I had a week to rejigger my deck based on what I have learned about your thinking and your goals from our lunch talks and the opening presentation.

I don't have much futurism here, because of one thing Tony said I agree with totally: we're going retrograde, so much the point of my talk is about how we're using 1990s Web 1.0 methods and we must stop that, then will organically develop the next generation of software and hardware.

My examples are mostly not stuff I worked on either, and are mostly app and web, because they are easier get find and get your head around for quick illustrations, than OS-level work, or so much wearable etc. I think nothing is Huawei to avoid you thinking too much about how that example happened.

Anyway... on we go but interrupt if you disagree or want me to expand...

A lot of decisions about product design boil down to following the herd.

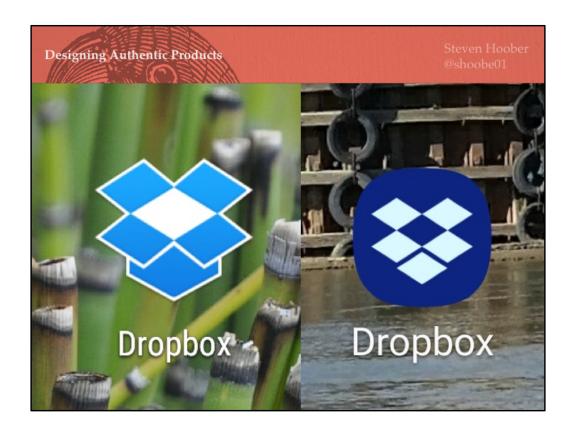


Why — for example — did all the Android OEMs start adding backgrounds to their icons? So much so, it's now Android Standard?

Trends. I can only say: copying Apple.

Even though Android has 85% installed base globally. Even though we have solid data that non-bounded icons were more easily visible, identifiable, good in every measurable way.

They even used to be on lists of things that made Android different and good.



Is a company like Dropbox improved by having their distinctive icon shape reduced to a another blue blob?

Are their users happier and more effective?



What Would Apple Do — or Amazon as some prefer — "WWAD?" is always the wrong question to ask.

Because it never comes from a sense of respect, or belief that they know better, and not even just what Tony says about lack of creativity, but of FEAR.

Many organizations, many I have worked for, actually FEAR the competition. They don't admit it, but they go so far as to use euphemisms or nicknames to refer to them in the corporate HQ.

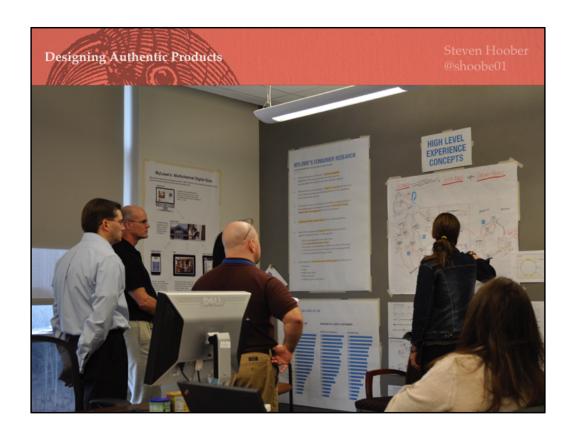
"The death star," "Big Orange." Two real ones I have had to use.



Don't worry about them... don't consider what choices they made to be a guide for your business.

Instead, you need to think what you would do at Your Company. Your products, you structure and organization, your customers, are all different. Even in the same segment, you are not the same.

Be true to your brand, your organization, your product, your users.



Fear destroys.

So much that I have seen people throw away product ideas because of a rumor Apple is doing something.

So much that I have been places the awesome, industry-changing ideas are still locked in a war room; because of the fear they will be stolen by the competition.

It can't be. Sure, the competition knowing your plans might be bad, but No One Can Copy You. You

are unique.



Some of what I've said is standard marketing-speak that may be familiar. "What differentiates you?"

To guide product design, you aren't MAKING yourselves different, but just IDENTIFYING what makes up your brand, and your corporate culture.

There are lots of business books on this. You should read some, and find out what you stand for. In a meaningful and unique way. Then tell everyone.



And make decisions about how you design your products based on that.

You should be yourself as much as you can.

It is what your users expect of you. The more you try to be the competition, the more you will fail.

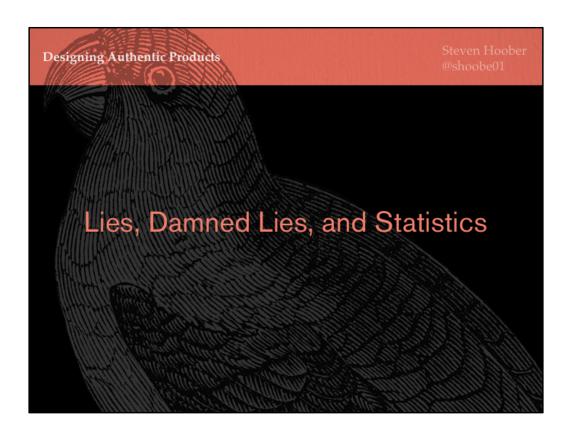


This is actually why jobs like mine exist. Not to make things pretty or shiny or fast. But to make sure what is being designed works for the goals and methods of your organization, and for te needs and expectations of your users.

I like to say Marketing is about telling users why your product meets their every need.

User Experience is about creating products that meet user needs and expectations.

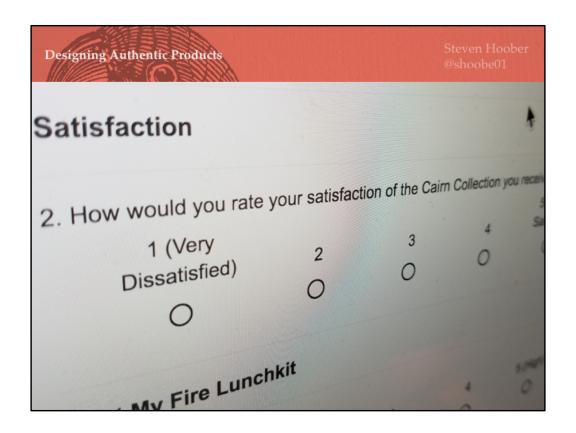
How do we do that?



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Conventional wisdom is rumor and innuendo.

Never work off your gut instinct, or What You Heard Once. Go get the data, and don't be fooled by bad data.



So, it is time to get data from your users. Time to run a survey, right?

## Wrong...

Surveys are so bad, so often, that I never ever suggest anyone even do them anymore. Sure, they can work, but in limited ways. They are so prone to bias — in a dozen different ways! — it is hard to suggest them.

Surveys are dangerous. If you must run one, take it seriously. Hire researchers, let them do their thing

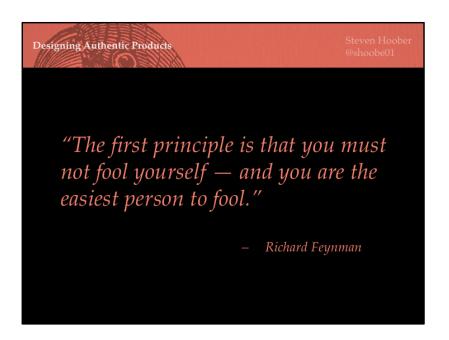
and don't over-rule them.



Focus groups are bias-engines in a different way.

Group dynamics are hard to control, so you end up getting good results only based on how skilled your moderator is. That's risky. Skill never should take the place of methods and structure for data gathering.

I have even encountered moderators with no morals, who asked what results I wanted to find! Now do you distrust focus groups?



So, you can't trust your gut instinct, surveys and focus groups.

What do you do?



It's okay, there are valid data collection methods.

I always start with trusting the info your team has, COLLECTIVELY and with structured methods.

Workshops are great. Get everyone in the room, and using well-established methods to gather info, you get everyone's voice, collaboratively. The chart paper on the wall here has notes, and post-its, which everyone contributed, and now they are working on affinity groupings.

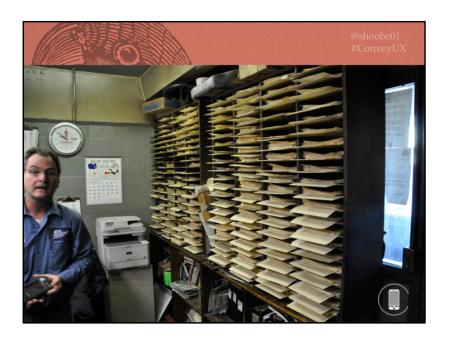


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Ethnography has become one of my favorite methods.

At the highest level it is the study of cultures. For product design, we observe — with as little intrusion as possible — how people do their jobs, or their day to day lives, or whatever activity we're interested in. Often, sure, we're looking over their shoulders at how they use our technology, but very often the most interesting information comes from simply observing how they exist in the environment, and what they do that is not solved

by a website, digital tool, or mobile app.



Be prepared for surprises. You won't find out about these from surveys and questions because they don't think of these as processes they perform worth mentioning.

Here, everyone at the client, even the sales staff who visits the customers weekly, just knew we needed to replace the old digital system with a new one. It took me going in there and using ethnographic methods to find they actually still do a hell of a lot of stuff on paper. They don't want to, but it works, and Just Working is most important to most people.



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Usability testing is also an observational method. We give users a prototype, the actual app before or after launch, and let them use it.

It is a bit guided, with specific tasks we ask them to perform, and then we watch and measure how they do.

If they fail, that's the PRODUCT failing, not the user.

We ask questions, so we know what they think, want, and need as well.

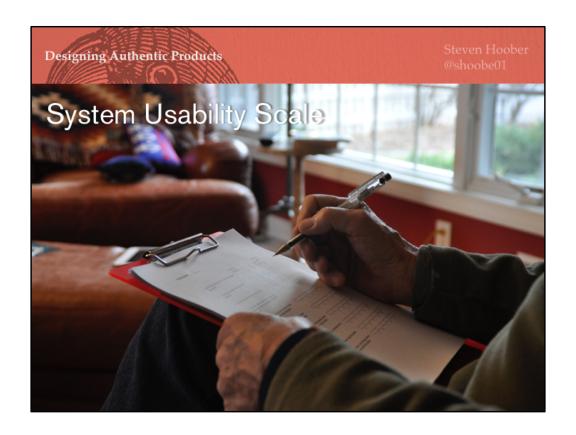


Even better is the exact same thing, in the field like with ethnographic methods.

The user does their work for real, or simulates it in the real environment where they live or work, sometimes with safety glasses and hi viz vests, or surgical masks, or riding around in a car.

For all these methods, we can gather a lot of specific data, not just on if the product works, but how. Note this guy has giant weird glasses; they are filming the screen so we can review it later, and others allow you to see where their eyes are

looking, which is NOT necessarily where their brain is looking or their eyes go.

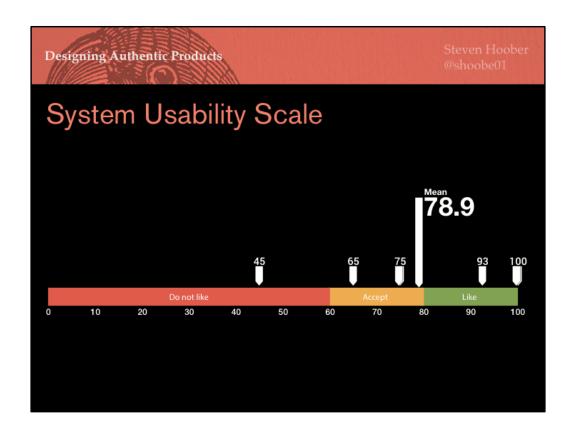


We need to use all these methods together. Eye tracking doesn't work alone, so we combine it with other data to understand what they actually saw and understood.

Another point of data I use is a survey. YES! I use a survey!

It is a very, very carefully built survey, that's been around for decades. Called SUS, for the System Usability Scale. You give it to users right after a usability test or other experience with the product, to see how satisfied they are.

It gives you a nice single number...



With results like this.

This one did... okay. See, we're still in the yellow. Which is FINE, really it is. But we prefer over 80 where we find, always, from hundreds of thousands of these surveys completed, that people are assured to like the product.

NO, this is not NPS. That is another of those methods that is bad, ineffective, inaccurate, and not repeatable. Don't subject your users to NPS surveys anymore.



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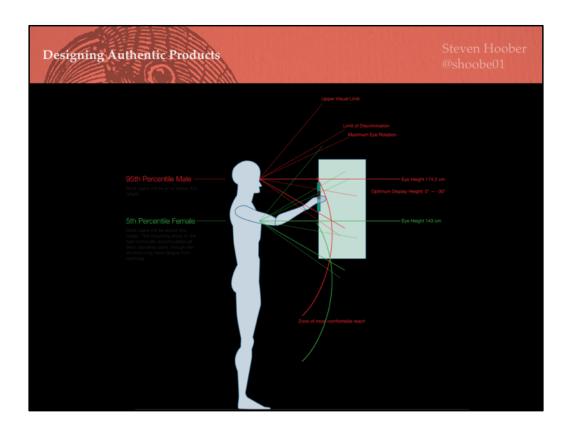
The other things we do is use our long-standing baseline knowledge of how people think, and interact.



There are other versions, and perfectly smart people who have a valid claim to "inventing" UX. But the way many of us practice it, and where our info comes from, goes back to the 1930s, and was really codified as a practice area during World War 2. Human Factors engineering, especially in the US, allowed us to build amazing machines like long range high altitude bombers, that could actually be used safely, and effectively, by the humans inside them.

In the post-war era this was applied to computing, and helped develop things that became

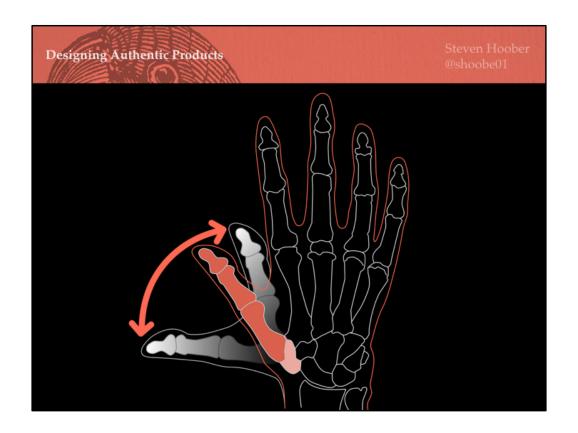
touchscreens. This guy is using a part of the SAGE system, and highlighting things with a light gun, soon to be a light pen. And you can see how this evolved to the principles we use on touchscreens today.



Air force or civilian, business man or soccer mom:

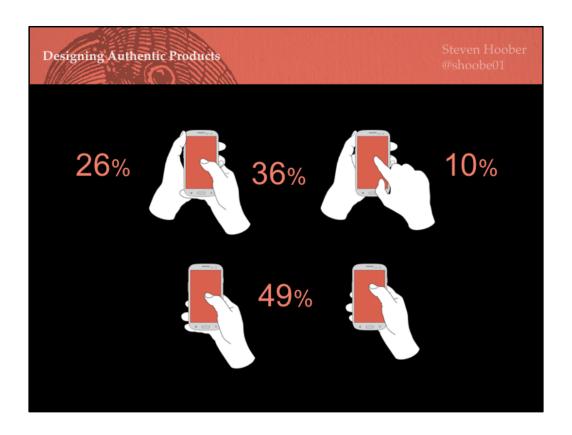
People are still people. When we learn something, at the deep layer of not just what but why and how, we know it and it won't change unless we all get super-hero mutated.

So, we consider how people work in their built environment, before designing items.



We understand how people really work. How they see and perceive, how they process information — a whole field with degree programs called Cognitive Psychology.

For mobiles, wearables and the IoT, we've moved the ergonomics discussion from how to sit and look at fixed monitors into the kinesthetics; how our bodies work with devices that are carried, touched, and worn.



We're learning more — I did some of the most important recent research on how people hold and touch phones, and we'll cover more later — but if you get into it far enough, it all ties together to the foundations, and can be explained by psychology or physiology.



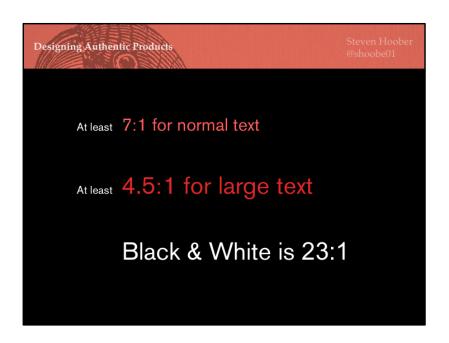
All this knowledge, and a lot of experience in designing digital systems has been boiled down to a set of best practices, proven by science, we call Heuristics. Most of these have not changed in decades.

And this means that we can do a lot of design by following these guidelines. We can do Expert Reviews of a design, and tell where most problems will emerge.



Heuristics are truly Best Practices. Not common practice. Not trends.

A Lot of products in the market today were not designed, but just assembled from what was easy to build, what came with the framework, copied what the competition is doing, or did what is trendy without thought to the consequences.



But many things never change.

So, go ahead and pick whatever colors you want, but make sure they meet the contrast guidelines set fort by international standards. Then you know it will be readable to all users, in all the varied conditions in which they use their computers, and phones.



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No project should be about building a new webapp.

No company should describe their one core product as "we have a mobile app."

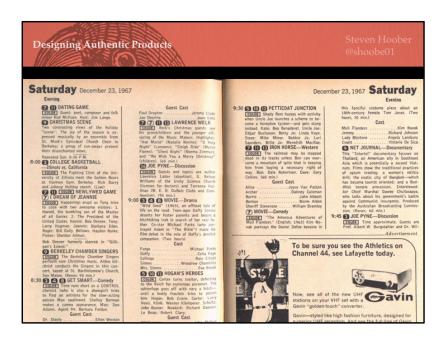
What do you really DO?



You solve a problem. Distribute data. Process or build things.

How it gets to people is a secondary consideration. We should always be seeking to build an ecosystem around our core competency; a range of consumption and distribution options.

Newspapers and magazines are designed not just to be readable, but to be appealing to the newsstand. And, to have room for mailing labels for home delivery. They are responsively designed, on paper!



Today, a popular magazine (and yes, they exist) sells around 3 million paper subscriptions a week. Well, from the 60s or so through the 1990s, TV guide was vastly, vastly popular. They sold 20 million copies a week of this [IMAGE]. What is all but a database dump you pay for, and which is also full of ads. You can see why the Internet did so well.

The guys who actually gathered this data realized early on they didn't make a magazine though. They had a data product. And when the first EPGs came along — Electronic Programming Guides, the TV-Guide channel that is the first thing that came up

when you turned on the early Cable TV systems — the data they had was all ready for it. They had already been storing short and long descriptions (reruns within a week don't get the full description, or maybe space is an issue), as well as the concept of meta-data well before anyone called it that.

Derived, with some improvements for history, from http://karenmcgrane.com/category/content-strategy/ though I saw it presented instead.



Simplifying the story some, what with mergers and acquisitions over the decades, the content we see today on our much more high tech cable, satellite or streaming systems is not just the same basic format, but in some cases is the SAME EXACT CONTENT.

There's no need to write a new description for that Lawrence Welk show every time it airs, so the original 1979 description is still pulled from the database and used today.

It's all just data.



This is what annoys me about almost everyone selling Anything As A Service. I go to the trade show booths when I am at conferences and every one assumes you are a startup and will Start from Scratch. But the world is full of info, and most often /improvements/ to that are what we want.

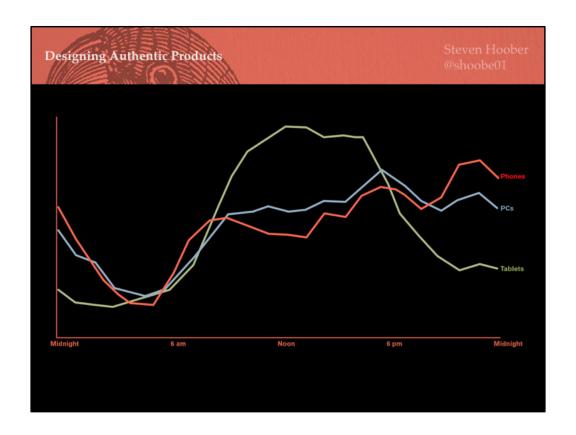
This is a few years old but I still love the photo. It is the same old subway data (and this is real, not a mockup) projected onto the sidewalk, in context. So people walking down the street can see what the trains right under their feet are doing, to determine which one to take, and how long it will take them.



We need more data on sidewalks. And everywhere that makes sense.

These new systems, of wearables and IoT devices, and information radiators, and even just new ways of using mobile phones, are about people.

They are about bringing information to people when and where they need it, instead of being about sitting down at a device and doing active work.



And we can see this shift in behavior. When people wake up in the morning, they check their phone, or tablet. You can see these trends if you track internet use data, every day, time zone to time zone.

There's a slow tapering off in the evenings of online use as people do chores, interact with each other, and get ready for bed. Then a spike as they actually check one last time before falling asleep.



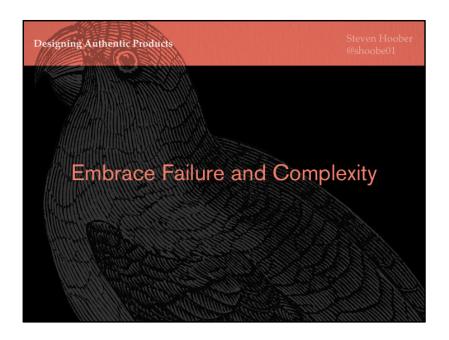
Another of those things that gets lost in the shuffle unless you go look at real people, and pay attention to broader topics is that no one settles down with the website — or app — and goes and performs actions start to finish on one and only one platform.

I worked for a big retailer once on home improvement projects, and they found from research that most of their customers were taking anywhere from 6 months to three YEARS to make decisions. Your customers are likely the same, even if it's not a purchase decision that's the key think

you care about. They engage, they re-engage, they share.

So, don't push them, and also don't assume one platform.

Build web AND mobile AND sharing!



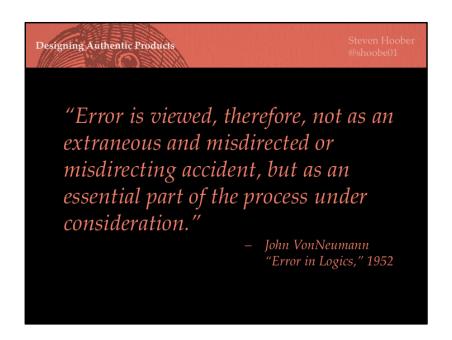
That's a lot of gaps to deal with. How do you jump between systems? What if the network fails mid stream?

Well, first off, admit that you can't prevent these problems, so you have to expect and plan for them.

Even the smallest digital system is "arbitrarily complex." We take in so much data, of so many types, we pretend it is infinitely complex.

So: Assume you have always missed something, then be prepared to deal with the unexpected,

both in design and so you can modify your product over time to take advantage of new ways you find people using your information.



For a long time, we have assumed computers are infallible, but they aren't.

Resilience engineering is something that leverages this principle to keep big, reliable services like Google, Facebook, Etsy, Flickr, Yahoo, or Amazon online. Have you noticed they never go down or have a maintenance window?

At a deep engineering level they follow practices and procedures to assure their systems are not brittle, and avoid failure or fail gracefully and can be fixed easily even with power failures, network breaks and typhoons.

Resilience is usually defined as the ability of a system to absorb disruptions without tipping over to a new kind of order. A building when exposed to too much lateral ground movement settles into a state of "pile of rubble on the ground" unless you design it to resist the disruption of earthquakes adequately.



I say there's also something called *Resilience Design*. Here's a simple example...

Though I love my smartwatches (although I forgot to wear one at all today!) I also still wear normal dial watches. One is a dive watch, because it's shiny, not because I am a diver or anything. It is one of those with a twisty ring around the outside. That part with the numbers here twists around.

If you don't know, and I didn't until I bought one, this is used as a simple timer. But on mine, and on all dive watches (vs. Aviators watches), the ring

only goes one way. The clicky detent lets it go counter-clockwise, only. WHY? ... Because it's for timing remaining air. The ring might get bumped and change it's setting. Having it show less time might be inconvenient, but going the other way might kill you. And, you don't even need to know this. It just works. That's the sort of brilliantly-simple answer I am talking about with resilient design.



Resilient design doesn't mean adding error messages, but embracing that people use your product in various ways.

Providing alternative paths, like letting people "wait in line" at the DMV with text messaging.

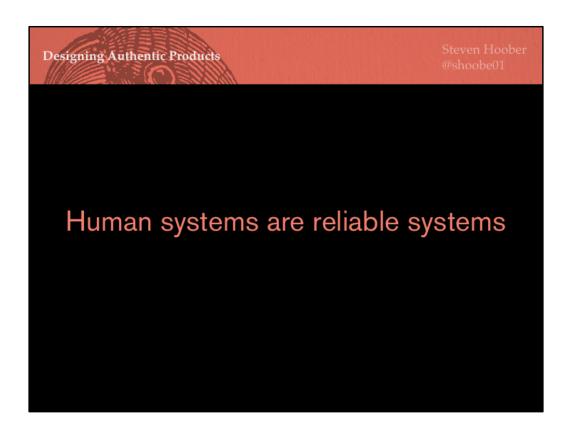


Or removing the whole principle of you asking a computer to do anything.

We can collaborate with our computers, so they can analyze data and push it to you...



...or doing things for you, from avoiding filling in formsa to changing your environment based on the knowledge the system has about you already.



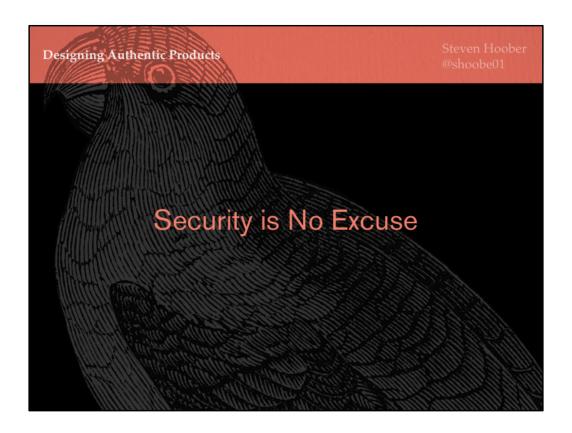
UX is about considering the design of the entire experience customers have with your product.

It is in many ways more about how they perceive the brand than about what color a button on the app is.

If you make an unreliable, unfriendly digital product, that is what people experience. In most businesses, your digital side is something people encounter more than anything else.

That Is Your Brand.

Is it good, or bad?



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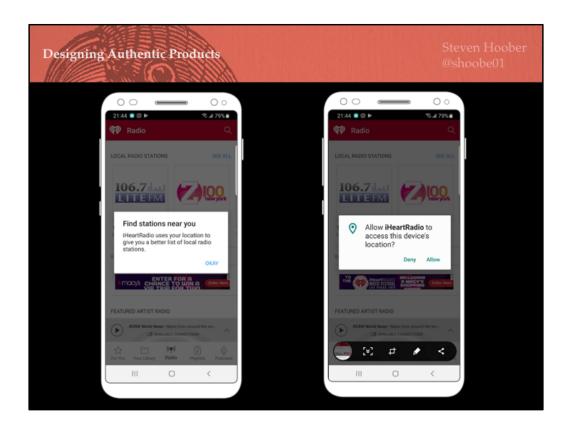
I have built a lot of secure systems, for regulated industries where it matters. I have gotten calls from lawyers who popped out of the committee chamber just to ask me the question and tell the chairman what I said.

I don't know you, but I bet your registration form, your app install process, and your signon pocess, is awful.

We have data across products, industries and

regions; this is why people never finish registration, and uninstall apps

You are driving them away with bad processes, looking like you are violating their privacy, too many questions, and bad security practices.

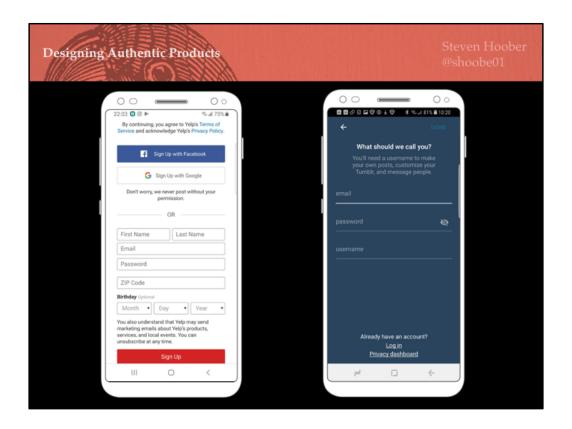


The first experience most people have with most services is going to be registering, or installing the app. We can make this all good, and still follow law, regulation, and protect user info. Very often, we can do it better by thinking of ecosystem design, and resilient design instead of just adding more popups, and blaming the user for problems.

Don't ask for permissions you don't need.

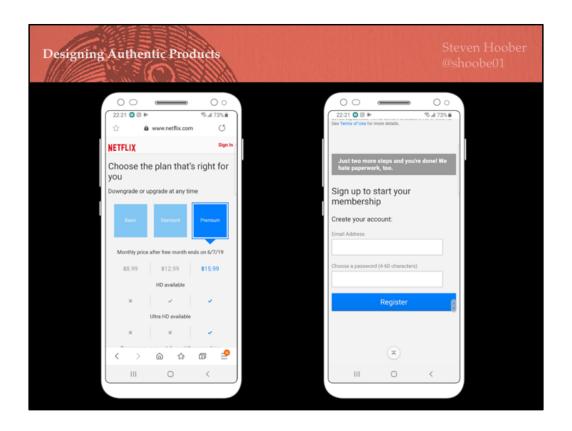
And don't just pop them up, demanding they agree. Don't kill the app when they disagree. Explain, and give them limited functionality if they

do not accept.



Make your forms SHORT.

And make them human. No more firstname/lastname. That's a holdover of things like credit reporting bureaus. You don't need it in that format, and it's not easily internationalized.

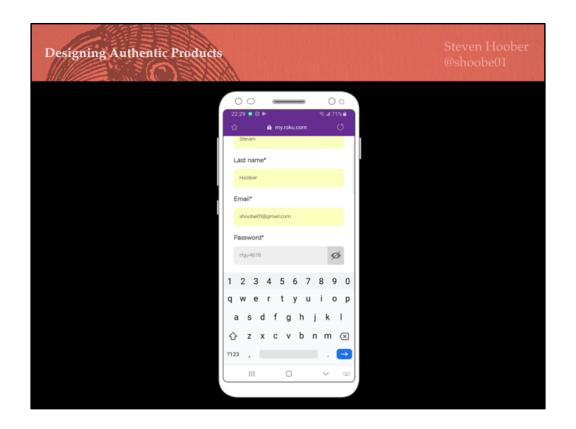


No optional fields. Don't need it, don't ask. And don't start with confusion. Just get them in first, and let them experience it.

Need more info, or want them to pick a better monthly plan: lazy register. Ask them for info later on, in the context in which you need it, to make the experience better. Don't throw errors for that feature or content being unavailable, but upsell them. NICELY. Don't overdo that selling, but as a helpful thing. Want this neat feature, then upgrade.

Two more steps? Two more steps! Registration better be 1 step, and a short one.

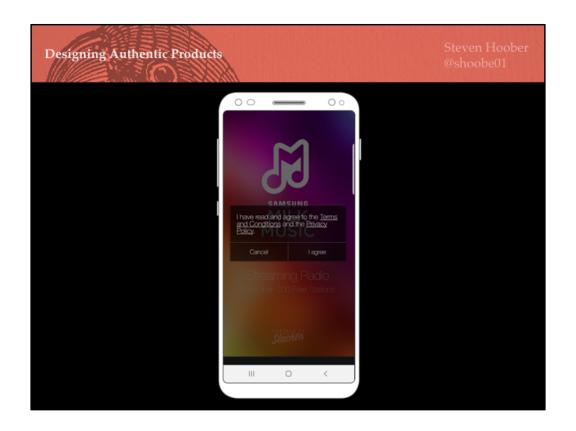
Good example of not following the market leaders; they get away with stuff because people already know the value so tolerate their issues. This is a terrible registration process.



Never ask to confirm stuff by entering twice ESPECIALLY not on mobile. Don't mask fields, but let people see what they are typing...

NO, shoulder surfing doesn't exist. There is zero risk of passwords being visible to the world on a mobile phone or tablet. Small, personal devices. People know when they are entering personal info, and will protect it.

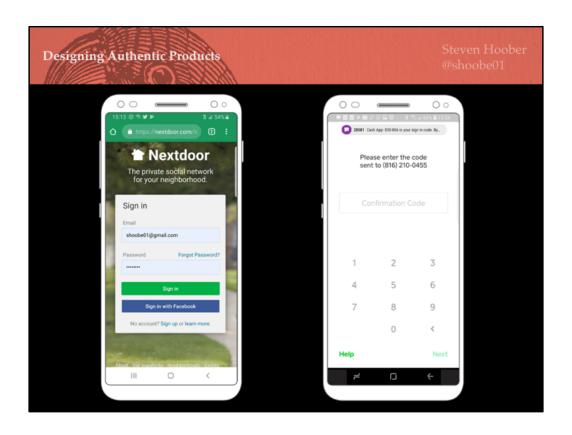
Because you might demo the app, let passwords be hidden, but default to visible.



Always challenge the lawyers. They work off gut instinct, rumor and innuendo a lot also, and think in terms of defense in court, not keeping you out of court entirely.

You can be a lot nicer to customers, without loosing any legal protections. Signing EULAs and so on like this, not helpful and not especially protective in courts. Been there. But it sure starts your relationship with your customer by looking like you respect your lawyers more than you value them.

And make things readable. Dark. Thin type. This is trendy, but an awful dialog in every way.



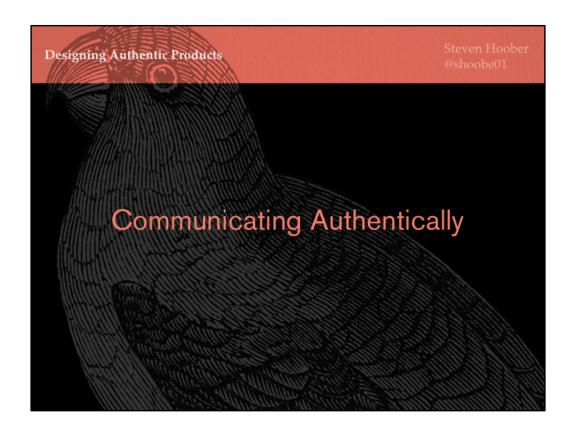
Apps. Are. Not. Websites.

And websites are not 1970s shared computers. No session timeouts. No signing on each time. For apps, NO LOGOUT BUTTON. You "register the app instance," and for security, rely on the phone being personal, and often locked.

For websites, keep them logged in, and only ask for credentials again when doing stuff like changing payment info or the password.

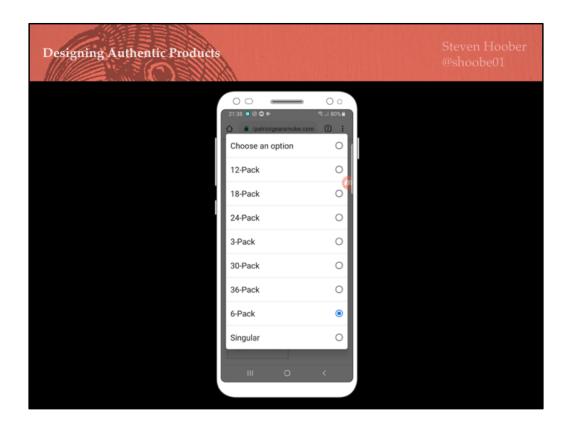
And... let's get rid of passwords. If not using it daily

now, people forget them. You can do kinda ONLY the second factor. When changing phones or something, they sign on with the email and get an SMS with a temporary key. On the mobile, they can click and log in with no more typing!



How do you talk to your customers?

Probably, badly. You probably talk at them, in the way you talk to each other, with some false-friendliness thrown on top. It doesn't fool anyone, but it does confuse them.



Talk like a human.

Code like a human.

Never make anyone go "what they hell?!"

Don't ever, ever say "Oh, they'll figure it out." That's inhuman, and inauthentic.

I'll give you a minute to figure this one out if you haven't yet.



Check out this super cute baby swing.

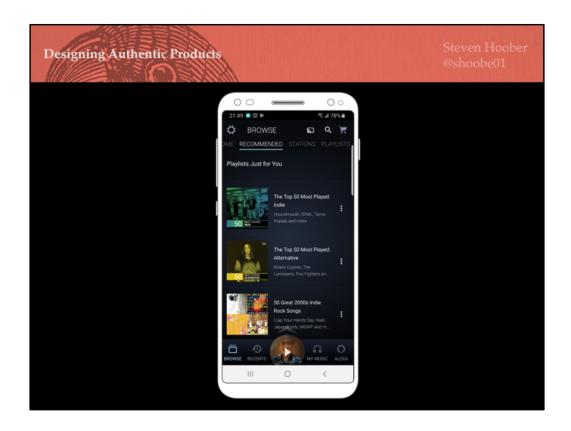
I'm a designer, so I fall for the Amazon cool stuff list at the top of the page, and we have a toddler so I get to look at cute things a lot.

But check out this one. It's an Ecotribe

Sigh...

The title, and the description, are entirely to chase SEO, and cover what the company thinks is important. But does it say anything I care about?

Nope. And it's so long I am not going to bother to read it all anyway.



The structure of the site, your nav, your wayfinding, even the way you label those items, can make or break your app or website a lot more than any choices of UI design.

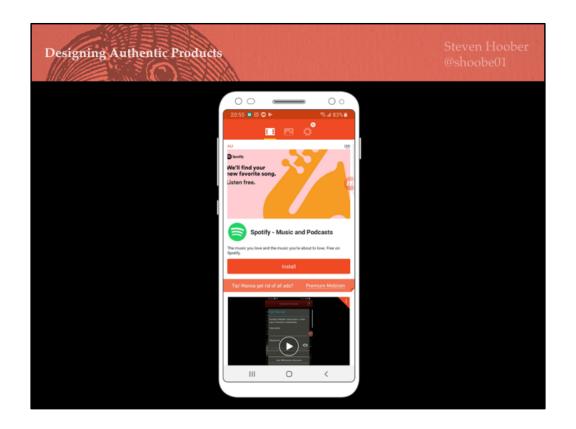
Customers don't care about your internal organization, what division has which product, and doesn't want to download a new app for your new thing. Just add the feature, and let us use it.

And don't lie.

Never lie, sure. Key to communicating.

But really never lie with top level categories. I don't know how many times I see something recommended just for me, by people like Netflix, or Amazon, or Google, or Apple, that have over a decade of my information. And then, they... totally do not customize for me. Here, NOTHING, absolutely nothing.

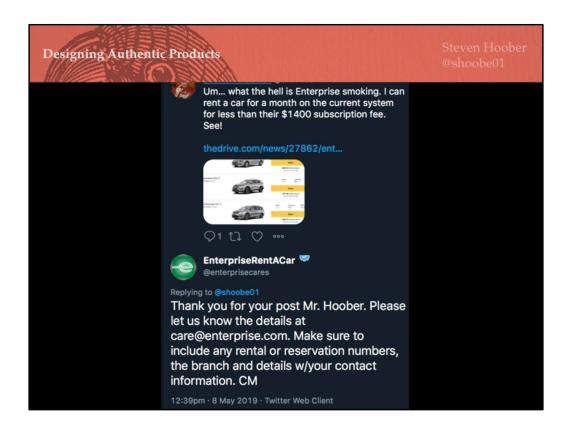
The promise of digital was choice, personalization, big data, long tails. Not another way to get Top 40 radio.



Remember what I said about sales lifecycles. Pushing to close just pushes people away. And you have a LOT of competition.

In app purchases, download our app, and other stuff like this doesn't work well.

And if you push it so hard that, like this, the app functionality can be totally lost, then you have lost a customer for life.



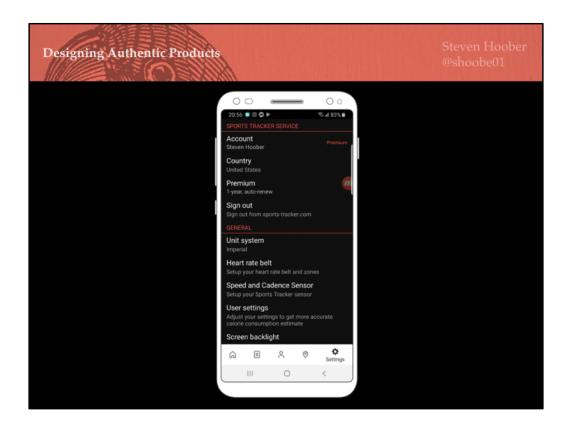
Make sure customer service serves customers.

And also, that they know what an individual problem is, vs a systematic issue. If you intercept a complaint about your website,... Well first, see the registration and signon details. Do NOT try to take it to DMs and get fifteen pieces of personal info. It may be impossible or irrelevant and that just makes you look like robots. It is worse when it IS people, and they still act like robots.

But most of all: Empower your people to read it like a human. If it's that this is badly designed,

doesn't do what they expected, or so on... just take the input and send it to the right team. Don't try to make every problem a personal problem.

That blames the user, gives them no confidence that it won't happy again, and it means it WILL happen again! You need to make a program where CS reports stuff to the devops/design-ops teams to improve the products over time.



Don't over-simply. Speak plainly, but always, always have Slightly More Info than your customers want.

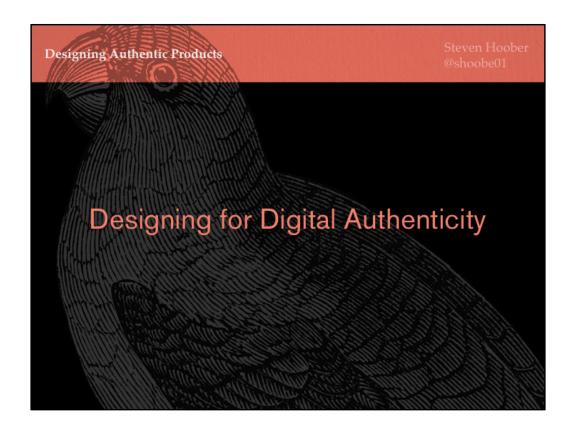
I like the whole principle of progressive disclosure and build a lot of portals, but specifically who ever checks the product details out? Who reads about, or edits, the privacy details and settings?

Well, it turns out you are asking the wrong question. It isn't about eyeballs and clicks. Just because no one uses those detail settings, and they spend only 3 seconds on the specifications tab, doesn't mean it hasn't fulfilled the value.

TRUST is a huge deal in communicating with your customers. Hand in hand with authenticity in fact.

Giving them control means you trust them. And they notice. And control means All functions and All settings in All channels. Never say to go to the website to do stuff.

Giving them a tedious specs tab in product details means they feel like they could be the expert if they need to be. Even though 99.9% of your customers are not, the trust is invaluable. Keep doing it.



I, and others like me try to call all of this "design," but I recognize many of you think we mean only the classic Look and Feel side.

Lucky for you I have an art degree and a background in graphic design, so I can go on about this for a bit also.



For centuries there has been a tension between authenticity (usually coupled with simplicity) and decoration, sometimes coupled with facades and the implication of falseness.

We know things like this chair [or real example in the room ]is not wood. Because wood might be too expensive, inconvenient, or maybe like this chair simply impossible to use to build the way we want.

There is no one right answer. Often, a veneer is the best solution, partly because we are building for people. You are probably happier behind a "Wood"

desk than one that is unabashedly plastic and MDF.



Today's digital world is full of open, and airy, beautiful, tediously identical, and unusable designs. Basically because of things like THIS.

Because Apple and many others took the false veneer (simulating something else, or "skeuomorphism") too far.

Applying simulated surface effects (or real world effects to digital interfaces) can be helpful, but is easily overdone. How does fine stitching enhance this interface, inform the user about anything shown here, or even help you feel good about

finding your friends?



The opposite has been termed "flat design" but is really a range of principles that tend to gravitate around Swiss Modernism as the ideal.

It is not new. Even long before digital, simple graphic design is some of the most classic work. Brand designers still say "does it FAX," which is shorthand for any low-res work.



Your design can be awesomely 3D and color and animated, or painted on the tail of a plane, but there's always a fallback to flat, black and white stuff for stenciling on crates and thermal printing on boarding passes.

These are well-understood design principles.



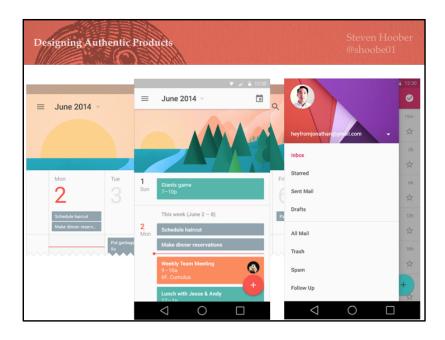
Microsoft was one of the first to do all this, with their universal use, and heavy promotion of Modern UI. They don't talk about the roots of it enough for everyone to understand why it's important.

This is a screenshot I took just the other day of my work tablet.



And THIS is from Encarta, 15 years ago.

Despite much of Windows before the Metro/Modern era really embracing the rounded, gradient, and nearly-realistic icon motif, the roots go back to the 1990s. Microsoft — at least bits and pieces of it — recognized more than a lot of people that this design language works for digital products.



Google Material Design is the one that has really made flat design take off lately. Partly from simply supporting it so robustly, with not just guides but whole sets of icons to use, and deep support of it in their development platforms.

Android has leapt ahead in design from this.

But in many ways, Material design is key because they explain why it's important. Much of what is bad about flat has come from this belief that...

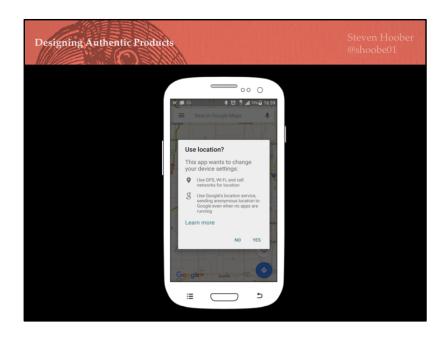


... screens are flat. I mean look at them. They are flat!

But I am not sure why this is unique. It's not like paper was 3D.

When certain experts say The Right Way to do flat design is to "make use of subtle shadows, highlights, and layers to create some depth in the UI."

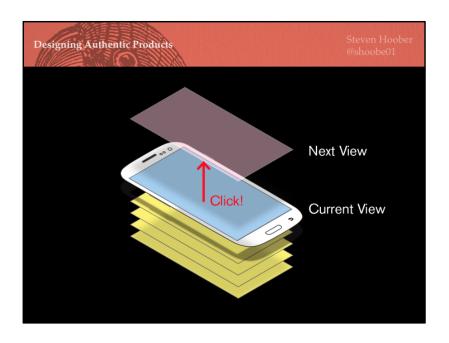
CREATE depth.



I say they are wrong.

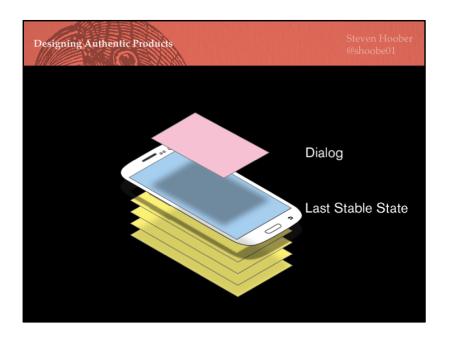
Look at your phone, or computer. Or your TV, or anything.

When your app or website has a dialog, it appears on top of the screen...

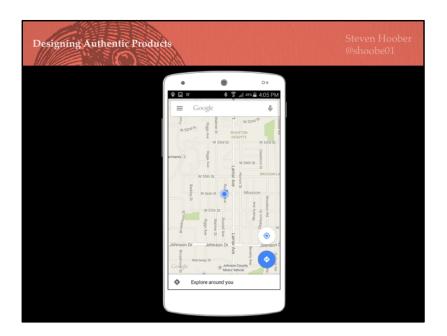


Literally on top. Software is built in layers. Dimensionality in digital interfaces is REAL. You don't make fake depth, but use it.

When you click an item you open a new view and add to the stack.



This concept is one reason dialogs work so well. The temporary condition is explicitly "on top" of the page. Because new views appear on top, and the reduced size indicates that it's just a temporary condition, but the previous view is waiting for you



Layering extends to components within a single page as well.

This is flat design, right? Yeeessss... but it's not truly flat.



The fields and buttons on top of the map are ON TOP OF THE MAP. Literally.

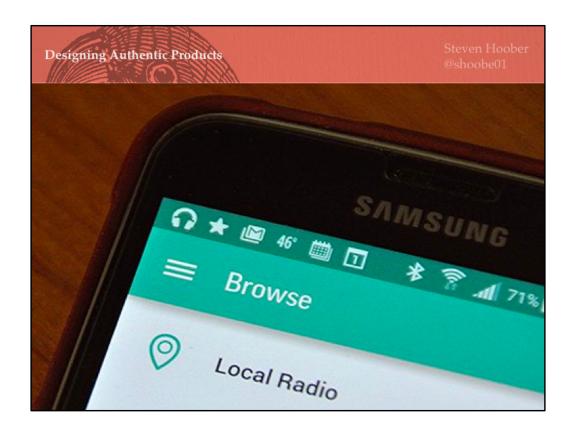
Everything has a layered position, and it behaves this way. Items on top block items below. Items scroll behind things, based on this layering.

They even have little shadows, which are not affectations, or ornaments, or pretending that it's a real world thing, but just emphasize the actual layering that exists.



Let's talk about another thing a lot of folks are writing off. The Hamburger menu.

But the objections are... I am not sure why people viscerally object to it. But the research is limited, narrow, and not at all my findings.



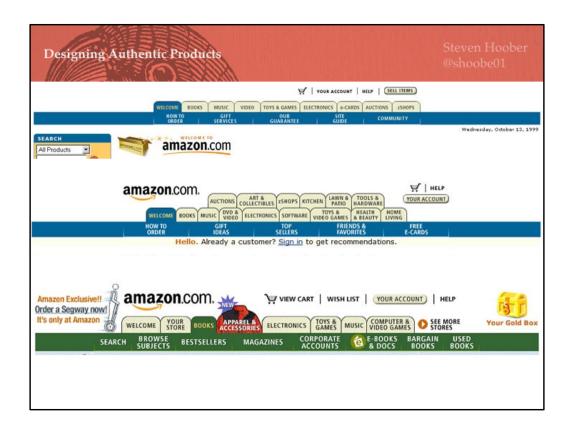
You totally can use a hamburger or dot menu.

I use them. It works great. I do testing of my apps, and get LITERALLY 100% of all participants to find the items I put there.

## How?

Because I don't hide key information under the menu. I have architected the structure of the website or app to let me put key functions Right in front of the user, and I can live with lower-use items that people expect to find, somewhere,

under the menus.



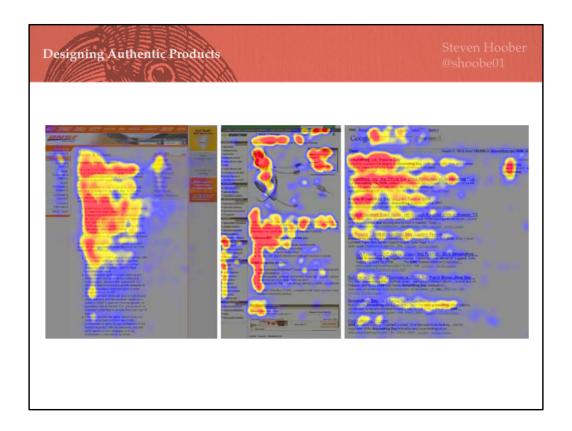
Tabs are often offered up as the Perfect Solution to the problems of Hamburger Menus.

But, they have issues also. And, we encountered these issues 20 years ago. This is Amazon trying their best to make menus work over a 2 year period of experiments starting in 1999. Who is old enough to have an opinion about these stacked tabs when this was happening? RAISE HAND.

As they add categories (expanding from being a book and music store) they ran out of room, so do

crazy things like stacking the tabs! Then, they end up with stuff like this (POINT AT LAST ONE), adding an overflow, or a Menu button in essence.

Mobile just makes this worse, as the small vertical screen means you will run out of room faster.



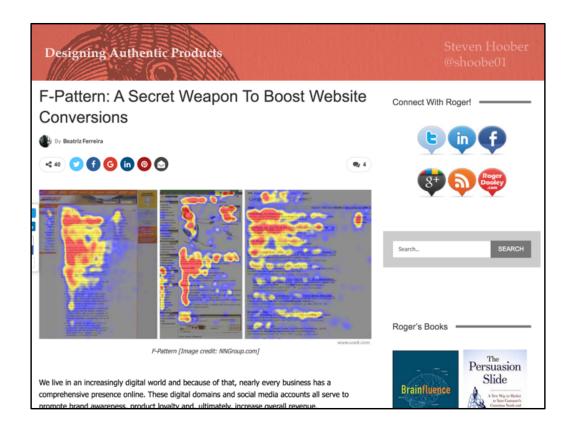
This is another good example that is, I PROMISE, totally relevant to the topic at hand.

Who here has heard about the "F Pattern"? It's supposedly the way people scan web pages.

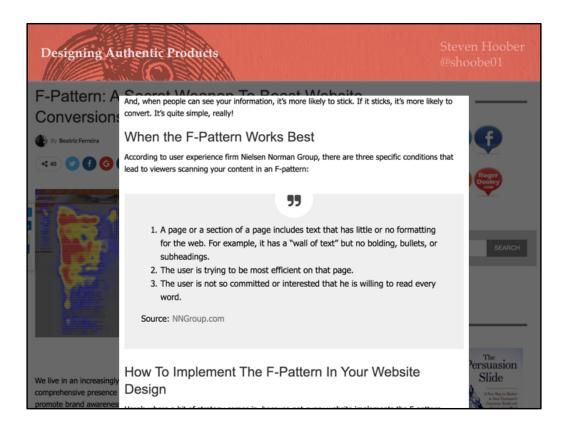
It is essentially not true. It is One Way people scan web pages. There are several others, based on how your page is designed.

It's a way of understanding what people do, not a goal because of intrinsic truth about humanity.

Somehow it got latched onto, and was misunderstood, and overly applied.



BADLY over-applied and misinterpreted. Marketing folks, be careful reading these sorts of articles...



Because — for example — at least two of these three points are BAD THINGS. Don't design your website to have them!

More importantly for us, it's really only a desktop phenomenon.

https://www.nngroup.com/articles/f-shaped-pattern-reading-web-content/

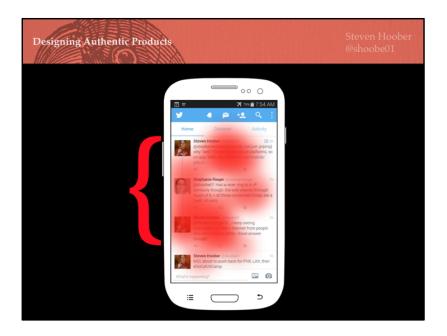


## Okay then:

Mobile is not read top to bottom, and really not in an F-pattern.

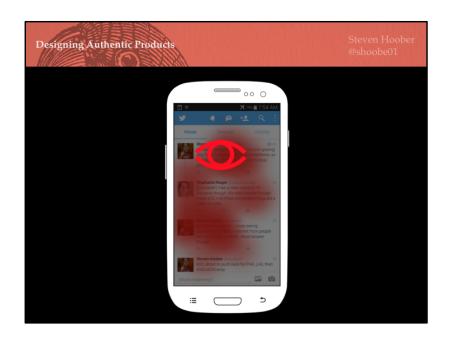
Content on mobile devices is read, and interacted with, from the inside out. The center gets the most views.

This is true for phones, and tablets equally.



So, you might think that when you copy the UI for something like this, the key controls are the actions and input at the top and bottom of the viewport.

[CLICK] but in fact the primary content and interactive area is the list in the middle of the page.



## This is great!

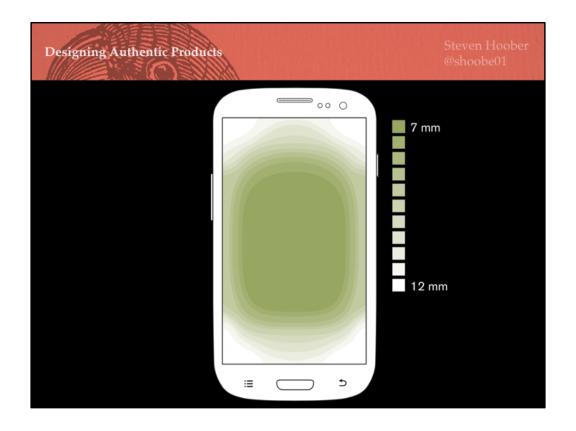
We love list and grid views.

Just put your main content into them, in the middle of the page.

Make sure menu bars, tabs, and status displays and action items on the top or bottom are SECONDARY.

Think about how you use Twitter or Facebook or Email... you read the content in the center and May Sometimes compose new content, or go to

another section using controls along the sides.



Not coincidentally, people are MORE ACCURATE when tapping the center of the screen.

There's no bottom thumb sweep zones, no stretching the thumb.

Ignore the guidelines for a single very small size for touch targets: Apple's 44 pixel doesn't even make sense as it varies by device resolution! Fingers aren't measured in pixels.

Ignore finger sizes, as size and accuracy are not the same thing. Accuracy doesn't vary by finger size,

but by context; you are much less accurate one handed, walking, and carrying stuff.

More accuracy in the middle means you can put lots of stuff in that list in the center.

At the edges, you can put A FEW functions, tabs, etc. as people cannot hit them as well.



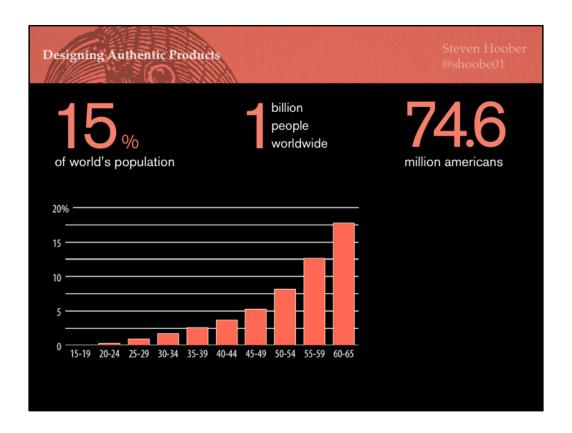
Aside from misreading the research, it is way past time to realize that mobile is not a PC, and shoving your desktop web design into the app isn't going to work.

Working with trends and bad data is a recipe for failure.



Think of humans, and the environment they live within.

Don't just build your app or website, but zoom out a level: think of the customer experience on the platform, think of where they use the phone, and why.



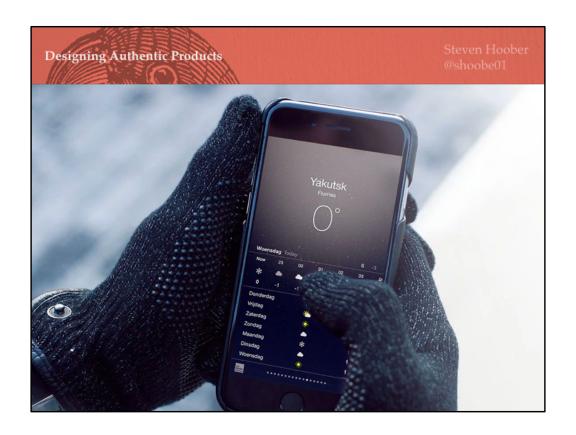
Let me finish off with a few notes about universal access.

Around 15 per cent of the world's population, or estimated 1 BILLION PEOPLE are living with disabilities.

This makes it the world's largest minority by far and if nothing else gets to you: a very big market

http://www.un.org/disabilities/default.asp?id=18 http://www.disabled-

world.com/disability/statistics/ http://www.cbpp.org/research/chart-book-socialsecurity-disability-insurance



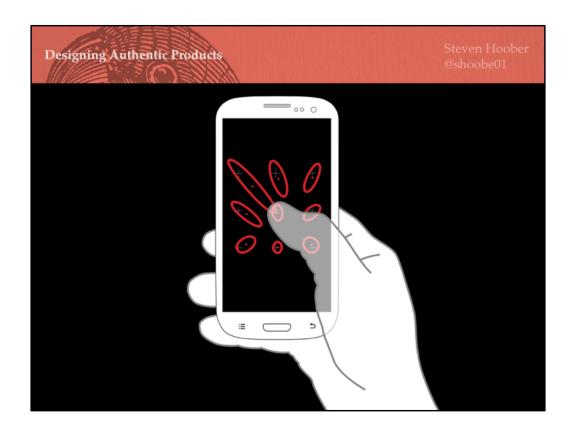
But really, EVERYONE is disabled sometimes. And I mean literally everyone.

Robin Christopherson has the brilliant concept of "temporary disability." Not illness, or the part where we all grow old so will all be disabled in our lives.

No, things like distraction or transient physical conditions that change how you work. When you are in the kitchen, or the shop, you ever have dirty hands? When it's cold, you wear gloves. How do you use your phone or computer? Differently.

Maybe badly.

https://twishort.com/fI0jc — Robin doesn't do articles or decks or videos, but here's a list of links of cool stuff he referred to once. It's something.



There's even data about this. People use their mobile phones all the time, so something as simple as carrying groceries changes how accurately they can tap. A lot.

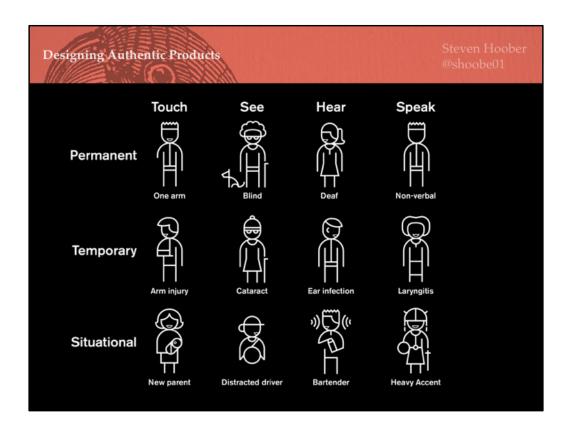
Color? Well, due to glare and the way phone screens work, if you design for your product to rely on color, every user will sometimes be unable to use it properly.

And so on.

Accounting for disability means people can use

your product in more places AND more people can use your product.

http://www.uxmatters.com/mt/archives/2015/01/phones-arent-flat-designing-for-real-people-in-diverse-contexts.php#sthash.9gYLPuiA.dpufhttp://insights.wired.com/m/blogpost?id=6544125%3ABlogPost%3A99367



Microsoft, as part of their Inclusive tools (which are otherwise worth checking out) has a lovely chart about levels of disability that I think says this better than I previously have.

Disability is not a health condition, but when interactions mismatch:

At a school for the deaf, the individual who doesn't sign is the disabled one.

https://www.microsoft.com/en-us/design/inclusive



Designing for universal access REQUIRED for most of you. Many countries, and many subsets — such as designing for government use — require accessibility certifications.

You have video on your product? You have to caption it. Court ruling, so not quite a law, but you will be sued and will loose badly if you don't.

But don't think of it as the cost of doing business. Like all of this, everything I have said today, it's not additional effort or time, or expense.



Design...

...properly and robustly considered design...

...always saves money in build, reduces bugfix effort, saves time in revisions, reduces external costs such as customer service, and improves use in whichever measure makes you money off of it.



Good design is not fast and cheap.

Good design creates products that work well for your organization, your product, you platforms, and your users.



Thanks very much for listening.



Feel free to contact me to discuss any of this more, or if you have a question you don't want to ask in front of everyone else.

Visit my site for many more tips and tricks and guidelines, to read articles covering many of these topics, or to get a copy of this deck if you want it.

And you can even hire us to help you do this sort of work for your organization.

## TIME FOR QUESTIONS?

## **FINISH 3:10**