SMASHING MAGAZINE

Rethinking UX

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Cover Design: Ricardo Gimenes
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eBook Strategy and Editing: Vitaly Friedman
Technical Editing: Cosima Mielke
Planning and Quality Control: Vitaly Friedman, Iris Lješnjanin
Tools: Elja Friedman
Idea & Concept: Smashing Magazine GmbH

Preface

The challenges of UX are constantly changing. Who would have thought that we would embrace not only multi-screen but also multi-device user experience so early in the 21st century? It is for this reason that it is now even more important to rethink and enhance our current habits, as well as prepare ourselves as much as we can for the future of UX.

In "Rethinking UX", various UX professionals share their lessons learned and provide practical advice from their very own personal experience. The eBook is packed with interesting thoughts and concepts that let us reflect on our own practices. Every designer has their own user research techniques and strategies, but leaving the office and talking to people on the streets can foster innovation even more as any thought-out strategy ever could.

Is empathy possibly the best guarantor for great UX? In this eBook, one of the authors shares a story about a research participant, an old lady, who kept pointing the mouse at her screen, speaking words of encouragement to it. It will make you chuckle as you read this particular chapter, but it also illustrates the importance of a well-planned research process. Overcoming traditional patterns and designing with a new type of user in mind is among the many topics of this eBook.

Of course, you can also get your hands on some future scenarios. The Smashing authors dare to sneak a peak at some new challenges that we could face with the rise of innovative technologies such as Google Glass and Leap Motion, and explore how we can embrace entirely gesture-driven interfaces today. This eBook is a springboard for developing a new perspective and for creating future-proof user experiences. So are you ready to prepare yourself for the future of UX?

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Thirteen Tenets Of User Experience

BY ROBERT HOEKMAN JR ❧

In my career as a user experience professional, part of my purpose has always been to help push our profession forward. And I've had the great privilege of being able to do just that in a myriad of ways — by writing books and articles, speaking at conferences all over the world, delivering in-house training workshops at wonderful companies, and simply doing the work for a great many clients.

If I could be remembered for just one thing, I'd want it to be *this*, because *this* is what designers and companies need to know and understand about the nature of user experience as a profession, a goal, an idea. And it's taken me 13 years to be able to say it in exactly this way.

Following is my list of 13 beliefs on the value of user experience strategy, design, and designers, one for every year I'd been in the Web industry at the time I wrote it in 2012:

TENET 1:

"User experience is the net sum of every interaction a person has with a company, be it marketing collateral, a customer service call, or the product or service itself. It is affected by the company's vision and the beliefs it holds and its practices, as well as the service or product's purpose and the value it holds in a person's life."

TENET 2:

"User experience is strategic. It begins with an idea to improve the lives of users, and continues through every moment of the customer lifecycle, from attention to abandonment and beyond. It is driven by a vision that guides and justifies every design decision."

TENET 3:

"Every detail of a company and its product says something about it. User experience strategy and design ensures that these messages are put forth with intention and purpose. Design extends into each and every detail, and each and every detail can indeed be designed."

TENET 4:

"User experience is a process of discovery, vision definition, strategy, planning, execution, measurement and iteration. It requires flexibility, and a willingness to be wrong until you are right."

TENET 5:

"Great products and services require bravery. Design puts a shape to your courage."

TENET 6:

"A great service or product is rarely the mere logical result of research. Most often, it is the result of a courageous belief that what you are doing will change the world, and a determination to do it well."

TENET 7:

"The solvers of the world's problems will be those who apply their skill, talent, knowledge and experience to design and redesign the world around us. Whether they call themselves designers or not, the creators of the future will be those who design (as in, *on purpose*, not by mere fact of being involved)."

TENET 8:

"The goal of a designer is to listen, observe, understand, sympathize, empathize, synthesize and glean insights that enable him or her to 'make the invisible visible' (as Hillman Curtis put it) — to pull treasure out of nothing, to pull value out of vapor."

TENET 9:

"The job of a designer, just like that of a writer, is to twist and stretch and shape a conceptualized piece of work over and over again until it becomes the masterpiece the world needs it to be."

TENET 10:

"Designers act not on opinion, but on insight. They do not mandate, but educate. While the best decision can often only be based on the best guess, designers inform their instincts every single day so that these guesses may be right."

TENET 11:

"Designers enable companies to change the world, define the future, create value and make a ton of money, and the evidence of this is endless."

TENET 12:

"A user's experience belongs to the user. An experience cannot be designed. It can, however, be influenced. A designer's job is to be the influencer."

TENET 13:

"Designers do not manage. They lead." ❧

Improving Your Website Usability Tests

BY DAMIAN REES ❧

In one of the first usability tests I ever did, I met a lovely old lady who could not use a mouse. She kept lifting it in the air and pointing at the screen, speaking words of encouragement to the cursor. At the end of the test I got absolutely nothing, but she did think I was a "lovely boy" who should meet her granddaughter. Very quickly I learned the value of setting very clear criteria for participant recruitment.

If you've ever run a usability test before, you'll know that it's not as easy as it looks. Although it's not rocket science, there are some intricacies that can make a big difference. In this chapter I share some of the lessons I have learned which should help you avoid your user test turning into a frustrating experience for you or the test participant.

That first year of my career was the most valuable experience I could have had and while I believe that learning through your own mistakes is the best way to learn, we do not always have the luxury to do so. Here are some tips I have learned along the way which should help you quickly improve your usability testing skills and avoid some pitfalls.

Design Your Usability Test Script To Answer Specific Research Questions

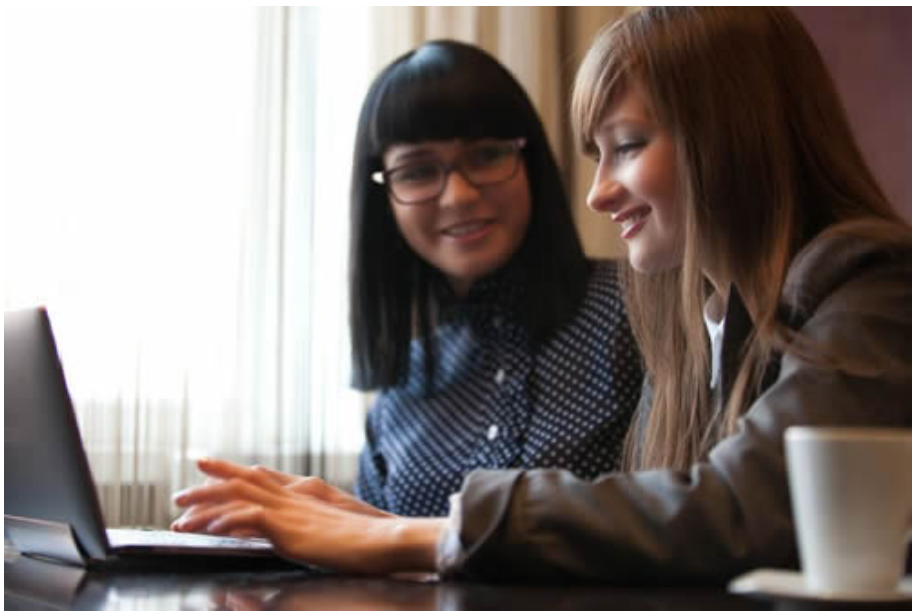
When starting a new usability test, don't assume that all you need to do is pick out the main areas of the website and ask users to complete those tasks. You may well find some useful insights with this approach but don't be surprised if when you present back your findings you get bombarded with questions from the project stakeholders that you cannot answer.

KEY TAKEAWAY

Talk to the people you'll report back to and ask them what key questions they need the research to answer for them. If you end up with lots of questions, prioritize them and then work out a way to answer them as best as you can. If the question seems too vague or you're unsure why they are asking it, get clarification. The more you understand the reasons behind the questions, the better equipped you are at answering them by adapting your tasks and questions mid-test.

Give Participants The Confidence To Behave Naturally

When participants turn up to a test, they're usually not sure what to expect. They're probably a bit nervous with a camera in their face and someone looking over their shoulder. Don't be surprised if they look to you for guidance at the beginning. If you're too controlling at the start of the test, you'll reinforce to them that they need to get permission from you before they do anything.



Give participants the confidence to behave naturally.

KEY TAKEAWAY

Encourage users to show you their natural behavior by starting off your test with a broad task to allow them to go off and explore in any direction they like. I use pre-test questions to uncover a real problem they face within the context of the test and then I let them off the leash to answer it as naturally as possible. For example, I wanted to test an online property law website, so in the first task I asked people to search for a house in the area in which they would like to buy, within a specific budget range. This allowed us to get a realistic view of how they use the Web, while also setting the context for the next tasks in the test.

Leave Room For User Freedom To Complete The Task In Their Way

In the early days, I used to set out a task in the test script and as soon as users started to stray off the task I'd reign them in and ask them to try

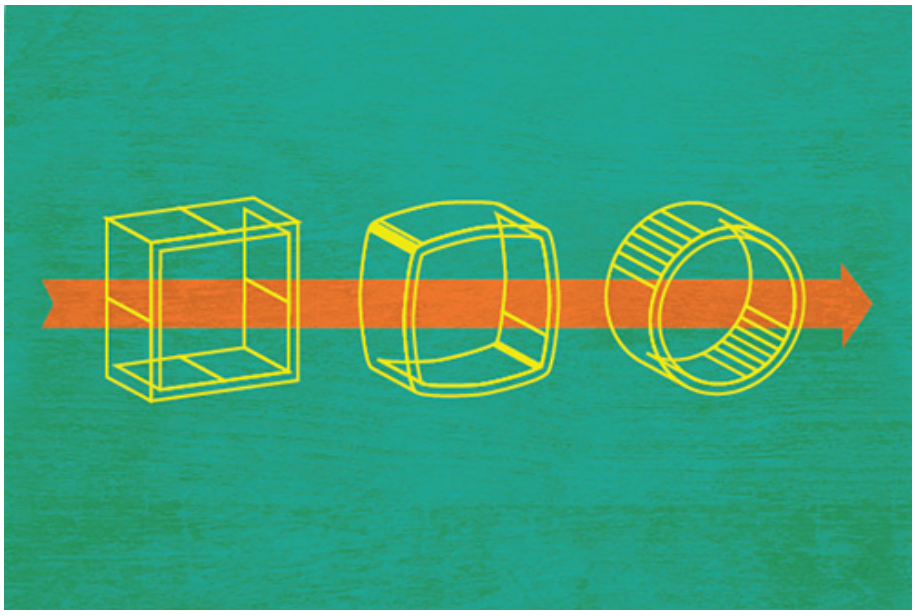
again. Not only was I extremely controlling, sometimes losing rapport with participants, I also denied myself the chance to learn something I hadn't already expected to find.

KEY TAKEAWAY

Always leave room for users to freely roam around the website and go off track a little before bringing them back to the purpose of the task. You may feel you are losing control or that the participant has misunderstood the task, but try to resist temptation for a while longer because it can be fascinating to see where they go and why. Often you'll uncover some real gems here, so try your best to let it happen. If you need to pull them back on track you can, but not until you're sure they won't find their own way back.

Relax, Shut Up And See What Unfolds

It's easy to be rigid and controlling and only focus on what you need users to do for you. When they do something interesting or unexpected, it is extremely useful to ask them what they are thinking. But do this too early or too often and, like I mentioned above, you could miss out on observing natural behavior.



Let the users' thought processes flow. (Image by Drew Clemens[1].)

1. https://twitter.com/drewtclemens

KEY TAKEAWAY

Try your best not to interrupt the flow of the participant's thought process. The more you interrupt, the less likely they are to have the confidence to complete tasks unaided. If you're asking them something every 30 seconds, they will keep losing their flow and you won't see anything like natural behavior. You can always bring them back and ask them what happened afterwards. I see a lot of people new to usability testing make this mistake, so I remind them that it is impossible to ask questions and observe what users are doing at the same time.

Tailor The Tasks To The Participant In Front Of You

I've mentioned being too rigid a lot so far. I think its because when you do something new, you like to control the variables and lock down the unknown. But with experience, you learn to release control as you get more confident that you'll handle anything that comes up.

In my early days I liked to write out the exact scenario I was going to give to users to set the scene for a task. But I soon learned that users simply do not engage as much when I set tasks that do not match with what they would normally do. I remember a time when I asked a 19-year-old guy to imagine he was a mother of three in order to complete a task. Needless to say, he looked at me strangely and didn't really engage with the task at all before he gave up and said he couldn't find it.

KEY TAKEAWAY

Set the overall task you want users to complete but try to be generic and then tailor the scenario to the participant. While this isn't always possible, there is huge value in spending a little time at the beginning of the test to learn about who the participant is and their current use of similar products or services. If you can then use this to build a test scenario that fits with a real problem or scenario they would like to solve, you can learn so much more than when someone simply "pretends" to be in a scenario.

Always Include Tasks On Peer Or Competitor Websites

Spending a whole hour on a single website can be boring for you and your participant. But boredom isn't the only problem. All your findings and observations are based on an isolated case. You have no real understanding of whether that person always goes to the search box, or

whether they just did it on your website because they were confused by the navigation options. Just looking at one website doesn't give you a realistic picture of how people use the Web.

KEY TAKEAWAY

Make the time in your test plan to look at competitor or peer websites as part of your test. The best way to do this is to ask participants at the start of the test what websites they currently use and ask them to show you. Then you can introduce a competitor or peer website they haven't used before. You'll find that you learn much more about their patterns of behavior and why they choose one website over another, and more importantly you'll learn what works well on other websites and why. This is a great source of inspiration when you need to solve a tricky usability problem on your website.

Don't Let Them Know Which Website You Are Testing Straight Away

I have made the mistake in the past of making it obvious what website I am testing. Sometimes this is difficult to avoid, but if you can, I would advise it. The main reason is that it can be very hard for anyone to be completely honest about their experience with a website when you work for the company either as an employee or as an agent.

KEY TAKEAWAY

If I haven't been involved in the design of the website prior to the test, I always emphasize my independence. Another trick is to get participants to look at competitor websites and give you honest feedback on them before visiting the actual website you are testing. If you can do this without them knowing which website you are really testing, you have a much higher chance of them offering their honest initial thoughts. Towards the end of the test it is likely to be obvious as you've spent most of your time setting tasks on one website, but by then you should have been able to get a good understanding of their honest first impressions.

In Summary

If you want to improve your usability testing technique, there is no substitute for doing more tests. However, as I've highlighted here, you can try to be aware of how the design of your tasks and how you inter-

act with the participant can affect the outcome of your research. Designing your test to focus on key research questions and not being too rigid with your tasks is a good starting point. In addition, using competitors as part of the test and encouraging users to behave as naturally as possible can yield better results.

If you want to learn more about how to plan, design and moderate usability tests, I have listed some highly recommended books below:

- A Practical Guide to Usability Testing[2], Joseph Dumas and Janice Redish (Greenwood Publishing Group: 1993)
- Handbook of Usability Testing: How to Plan, Design and Conduct Effective Tests[3], Jeffrey Rubin and Dana Chisnell (John Wiley & Sons: 1994)
- Moderating Usability Tests: Principles and Practices for Interacting[4], Joseph Dumas and Beth Loring (Morgan Kaufmann: 2008)

2. http://www.amazon.com/A-Practical-Guide-Usability-Testing/dp/1841500208
3. http://www.amazon.com/Handbook-Usability-Testing-Conduct-Effective/dp/0470185481/ref=pd_sim_b_1
4. http://www.amazon.com/Moderating-Usability-Tests-Interacting-Technologies/dp/0123739330/ref=pd_sim_b_11

Designing For The Multifaceted User

BY STEPHANIE TROETH

Designing with users in mind is a tricky thing. Not only does it require of us a sound understanding of who our users are, but the actual act of translating what we know about them into a well-designed product is not always an obvious or easy path.

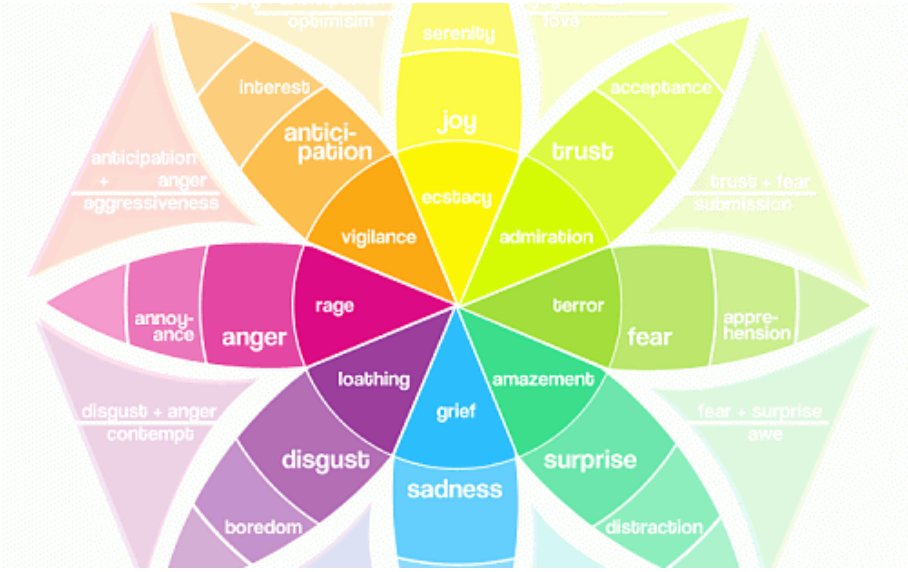
Currently, our user experience tools tend to focus on "who" users are. I believe this is a hangover from how we traditionally approached marketing and market research. A couple of years ago, I stumbled across a somewhat different method, which has proven useful in a few of my own projects. It has been particularly handy for building value propositions and for clarifying assumptions we make about our users' behaviours. Most of all, I like how it helps with prioritizing product design decisions.

So, first, let me explain where I think our current toolset falls short, and then I'll walk you through an example that uses this newer technique. By the end of this chapter, you should be ready to give it a try yourself.

We Are Multifaceted

Put yourself in the shoes of a user for a moment. Imagine that a friend has introduced you to a new Facebook group about a subject you both like. If you are the shy sort, like me, you would lurk around for a little while. Once you became more familiar with the group's dynamics, you might gradually become bold enough to post a comment or share an appropriate link.

Imagine also, then, that you've stumbled upon a blog post on a topic that you care strongly about. Someone has posted a comment that you completely disagree with — I'll wager that, if you're fired up, you would post almost immediately, rather than take the time to absorb previous posts. You remain the same person, yet your reaction to something will depend on what it is and what is happening at the time. This is normal.



Acting differently according to circumstance and context is natural. Image source[5].

What does this mean for us as designers? For me, it means that our deliverables right now are probably too prescriptive in their details about who the user is. We would probably do better to work towards a clearer understanding of the user's varying contexts — contexts that would yield different behaviors and decisions.

In short, our current tools tend to focus on the person, not on predicting their reactions and, therefore, what we should effectively be designing for.

Personas, User Journeys, Mental Models?

Personas, when created properly based on research, distill what we know about a few key user profiles. They have many advantages, particularly in enabling a common language among stakeholders about who our users are. User journeys and experience maps show a potential path that a user can take through an application or website. They are great for understanding flows and for mapping user needs to functionality.

However, both of these tools, and others similarly derived, take on a depth-wise view of the user. User journeys can map out specifically what a user may do, too, but not take into account why they make certain decisions. With personas, you garner some degree of knowledge about users' background contexts and activities, but they might contain

5. http://uxdesign.smashingmagazine.com/2011/05/19/optimizing-emotional-engagement-in-web-design-through-metrics/

more detail about particular user profiles than what you need to design app-wide features.

Consider what is actually involved in your typical design process. At any stage, your design needs to cater to different activity flows. As designers, we often have to collapse a complex range of user behaviors into quantifiable feature sets that could feasibly fit a product management schedule.

Between personas and user journeys, it would get unwieldy to explore and map these complex ranges of behavior in a way that wouldn't give us a headache. The closest tool we have at our disposal is the mental model, with which you map out a user's intentions and tasks. However, a generic use of mental models doesn't always take different contexts into account at a glance.

The question remains, how can we better position a product or design an interface that maps onto users' decision patterns when their behaviors and motivations span a spectrum?

Modelling User Groups

I finally found a semblance of the method I'd been looking for while gate-crashing a guest lecture by a friend and colleague, David Rollert[6], a designer with extensive experience.

Holding a roomful of smart design-engineering students at his attention, David showcased a number of user experience tools that day, including a way to model groups of users. Using a dating website as an example, he explained how we can define key "dimensions" of customer groups (figures 1 and 2 below). This first step is not dissimilar to what we often already do when creating personas. The following diagrams are quoted from David's slide deck, with his blessing.

6. http://www.designtangible.com/wp/

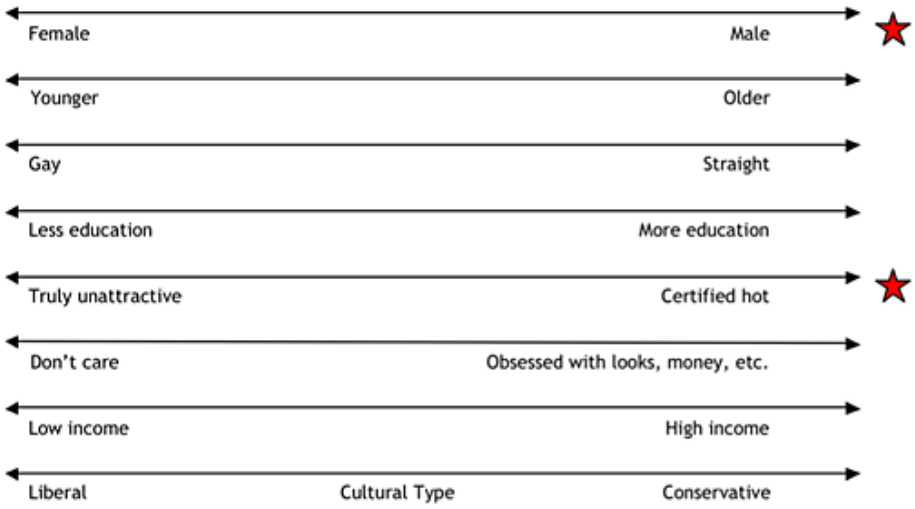


Figure 1. Demographic dimensions for a dating service.

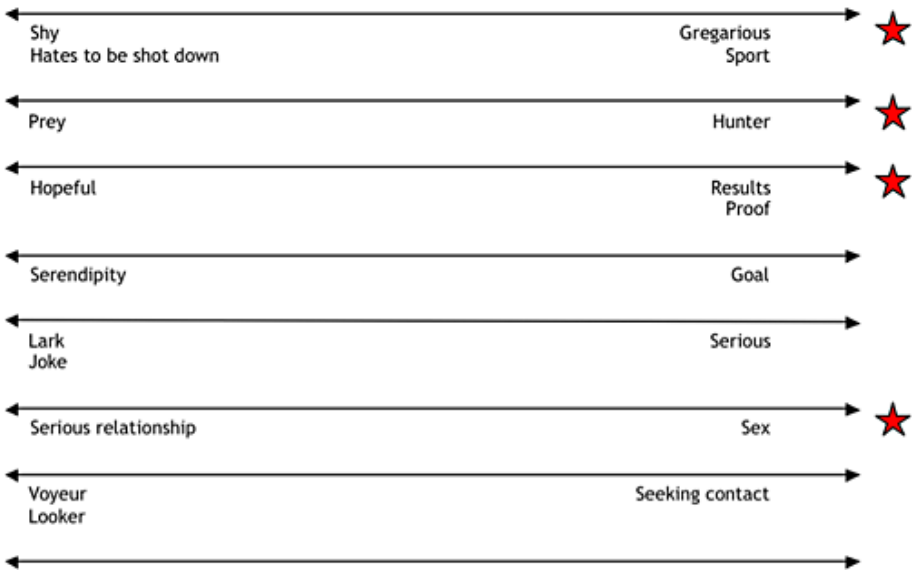


Figure 2. Psychographic dimensions for a dating service.

This next step is where we start to look for patterns. Then, picking two of these dimensions, he showed an example of a 3 × 3 matrix where you could map someone's immediate goal relative to the role they preferred to play (figure 3). In order to fill in the matrix, David asked the question, "What does each group need?"

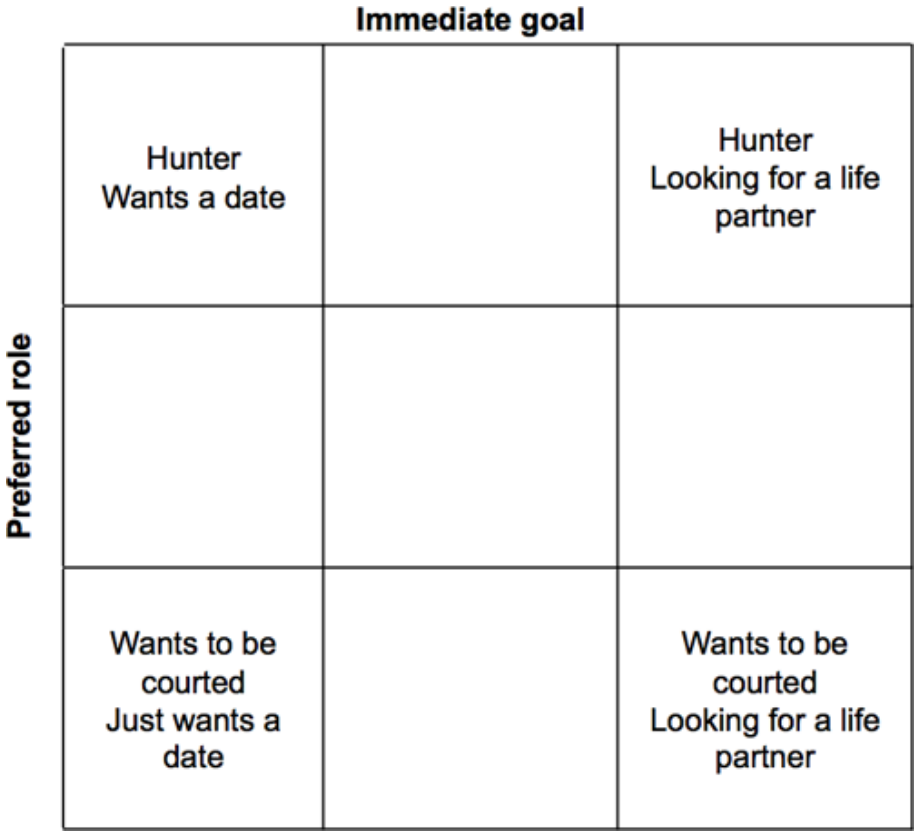


Figure 3. Mapping target customers: What does each group need?

A similar technique of user modelling is mentioned in A Project Guide to UX Design[7] by Russ Unger and Carolyn Chandler (chapter 6, page 90), but it barely spans a page. While emphasizing the need for real user research, this reference still aligns with what we've always done — grouping users according to who they are, rather than what the users want to do or what drives them.

I thought it was fascinating. Rather than asking the question of "who" these customer groups are, what if we were to ask different questions? Such as, "What do these groups of users want to do?" or "What do they need to know?" Over my next few projects, I started incorporating this technique into my own work with clients, and it has turned out to be a useful tool on many occasions.

Before getting much further, I want to point out that this method is not a deliverable. It is not something you just draw up and send over to your client or product manager for sign-off. It is a technique that is most effectively used in a workshop format with all stakeholders in the same room.

7. http://www.amazon.com/Project-Guide-Design-experience-designers/dp/0321815386

Exploring Our Assumptions About Users

"User" has become such a loaded word. We pile all our beliefs, interpretations and emotional baggage onto the word "user" and on what they would want. Having been on many teams, I've started to realize that it's a common problem that not all stakeholders and team members understand the word "user" in the same way. This is why having a set of personas internally can help iron out the issue of language.

However, the problem with personas is that they place a particular user on a map discretely, but they are not necessarily the best high-level tool for looking at continuous spectrums of user contexts.

The matrix technique explores what we know and what we don't know about our users by looking through the lens of contexts for their behaviors and motivations.

I've used this method to do the following:

- to establish key audiences;
- to understand or validate value propositions;
- to help prioritize research areas and product features — to identify what we already know and where we lack data;
- to pinpoint which features are vital.

It is essentially a structured brainstorming tool to make sense of user patterns. Best of all, it can be an easy way to unpack assumptions that each stakeholder is making about their users.

Step 1: Draw Your Matrix

In the many times I've since done this little thinking process with clients or workshop attendees, a 3 × 3 grid has worked best for me. This is probably because it gives enough variation without being too precise — thereby keeping us from getting analysis-paralysis.

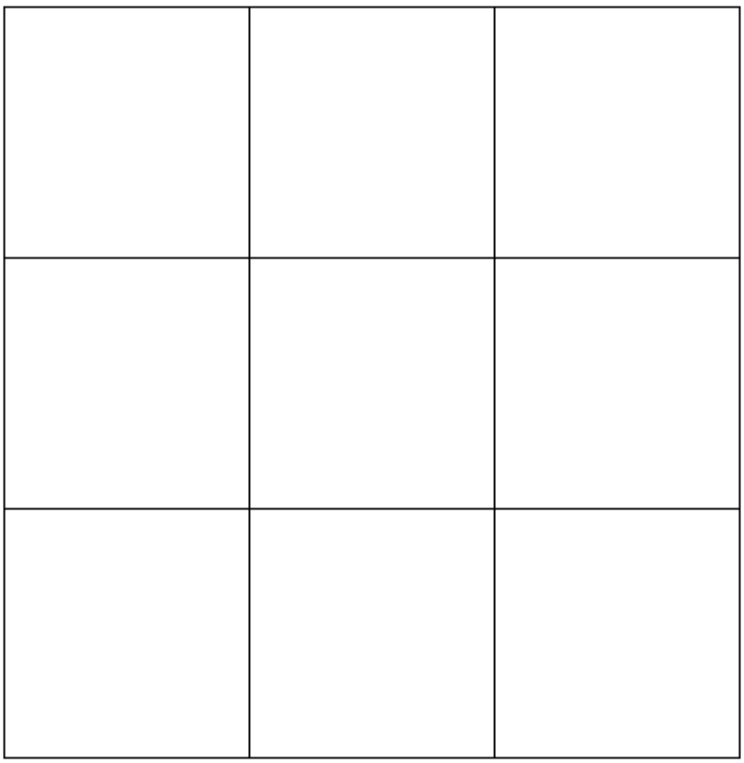


Figure 4. A blank matrix.

Step 2: Identify Important Axes

The next step is to identify how many of these different "selves" of our users can exist in this system we are designing for.

Let's talk about the example of a potential social app for runners. It's a straightforward offering with which local runners can post routes and visiting runners can find routes. We could imagine virtual competitive elements; a runner might have previously posted a time that you are trying to beat on the same route. Or you might just want a scenic run as a way to explore a new city's environments.

What kinds of behavioural attributes can we come up with for runners who would likely use this app? I tend to think in terms of "opposing" attributes. You might end up with a list looking like this and the corresponding user stories:

- **explorative**
  "I want a new way to experience this city through running."
- **competitive**
  "I like to race against someone else, or against myself."
- **frequent**
  "I run a lot, several times a week to every day."

- **occasional**
  "I run once a week or less."

  Your axes might then look like this:

curious	↔	engaged
social	↔	individual
explorative	↔	competitive
frequent	↔	occasional
visitor	↔	local

Depending on the project you are working on, you may or may not know something about the users you are talking about. The team with which we explored the idea of this social app belonged to a sports shoe company and consisted entirely of runners who travel fairly frequently to run marathons. They had also done studies previously and gotten some ideas of the spectrum of novice runners to advanced runners, and some insight into the kinds of people who use an existing Web app that they produced.

As you go through this exercise, keep in mind what you know about your users and what you are presuming. From the list above, choose two axes that most interest you or that you think are worth exploring. Choosing might be difficult if you are just starting with this method; in which case, the best thing to do is to dive in and see what happens. If it doesn't work or if ideas don't seem to flow, change your axes and keep going.

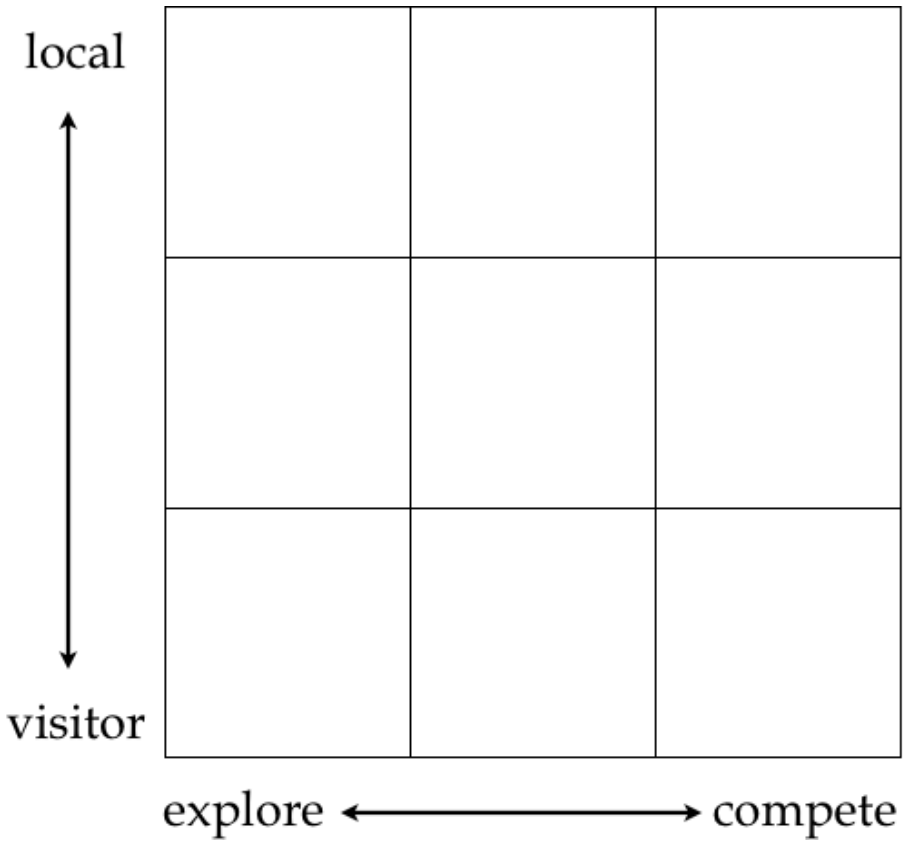


Figure 5. A blank matrix with a pair of key axes.

Step 3: Identify Key Questions

I liken this step to a "magic 8 ball" process. Ask a question! I generally like, "What would these users want to do?" Or, even more simply, "What do they want?" The latter question would cover what users want to know and what they would want to do. You could also ask questions like, "How would they feel?" as a kind of emphatic exercise.

As you think up questions, keep a list handy. You'll need it later.

In this example, let's stick with "What can they do?" Or, from a user's perspective, "What can I do with this app?"

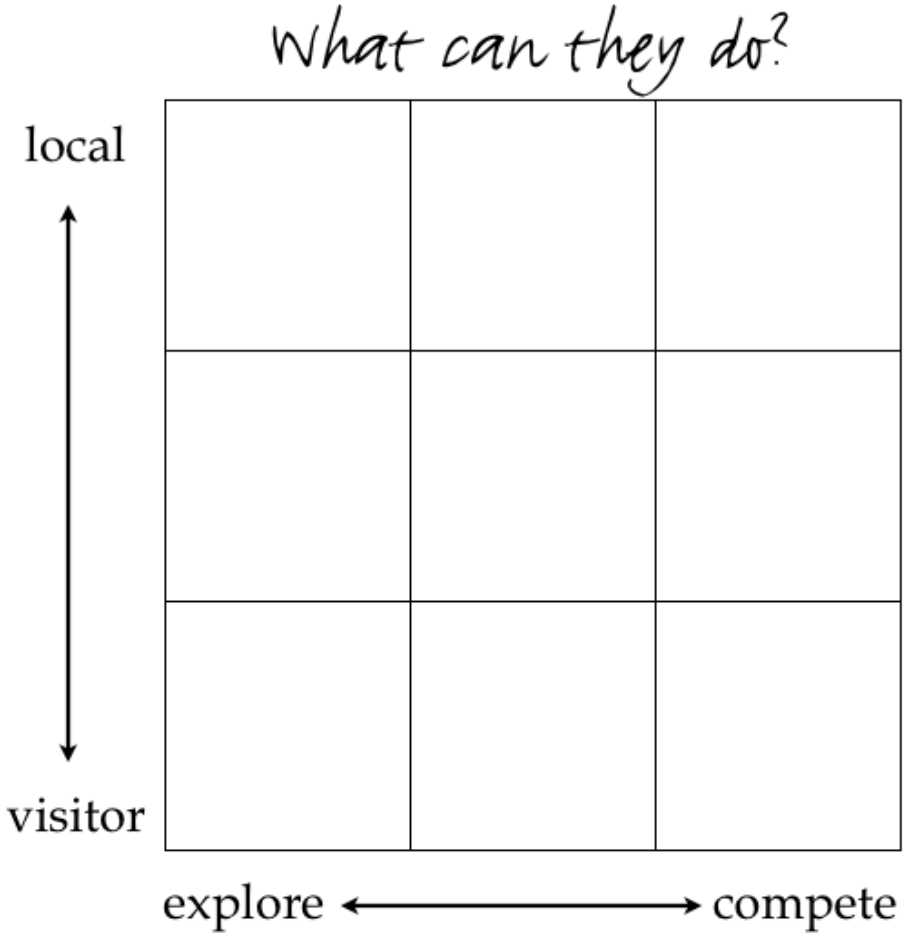


Figure 6. A blank matrix with axes and a question.

Step 4: Fill It Up

Fill in the matrix as best you can. If you already have some insights from research, then mark which things you know for certain, as opposed to things you believe to be true but have nothing yet to back it up.

Generally, by the time you've filled the first matrix, you'll have a fairly good idea of what information you already know about your users and what further research might be required.

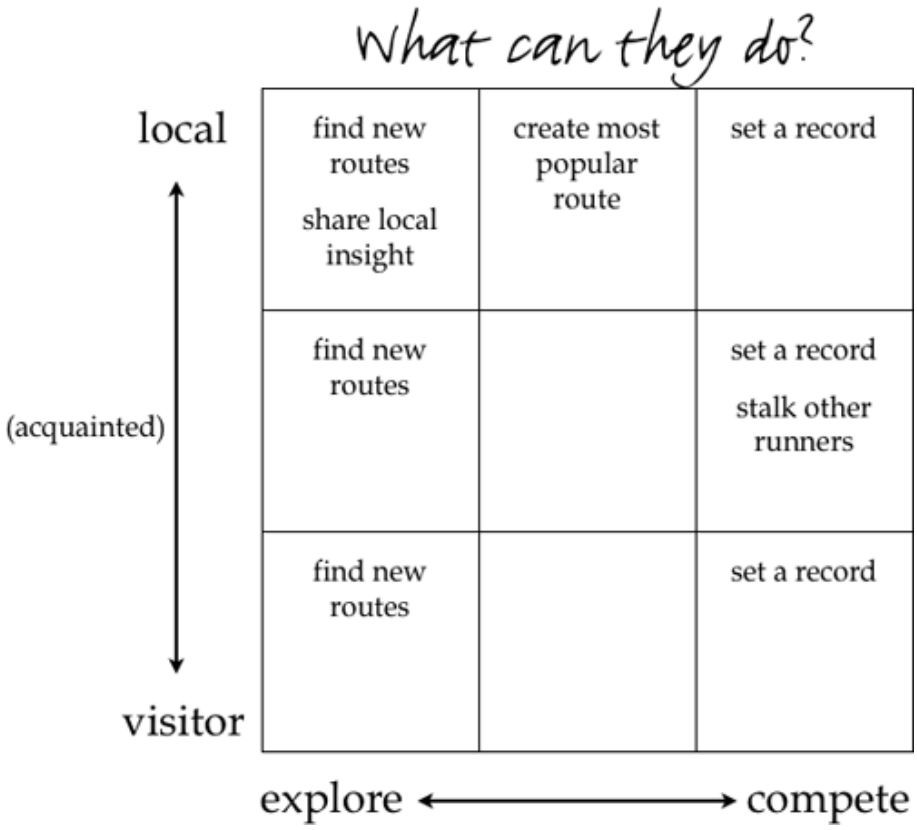


Figure 7. Filling in a matrix.

Step 5: Iterate

Once you are done with the first matrix, set that aside, and draw another blank grid.

You can do one of two things:

1. Pick another question from your list, "What do these users need from us?"; or
2. Switch one of your axes to something different, but stick to the same question.

Start filling in the matrix again from the top. Remember, this is a brainstorming process. Putting down ideas that you can refine later is more important, so try to move rapidly through each iteration.

When you have done as much as you can with this iteration of the matrix, do the dance again: pick another question, or switch another axis.

It's best when your team collectively chooses which questions and spectrums to think about.

Rinse and repeat. You'll likely find that you can generate a lot of matrices in the space of just an hour, even if it may be a slow start at first.

Analysis And Key Insights

Once you have done a few of these, it is time to sit back and look for patterns. Let's look at a few things that could emerge.

ASSUMPTIONS VS. KNOWLEDGE

One important thing to remember — I cannot emphasize this enough — is when you and your team sit down and write this all out, what you have is merely a summary of a complex set of assumptions. As you manage your discussions around any insights, keep in mind that you are discussing various degrees of potential truth. This is an handy tactic to avoid getting into fights about too much detail!

With your matrices in hand, now is a very good time to see which set of users we already know about, and how confident we are in stating their needs. Obviously, it is also a very good time to identify which users we know nothing about. Have we already done any research on any of these user groups? Do we have any case studies that back up any of the answers we have listed in the matrices? In short, what do we know, and what don't we know?

If we don't have any evidence at hand to back up some of these user needs we have written down, then these are merely assumptions that we need to test. Assumptions are great because they serve as perfect design hypotheses. With this set of matrices, we can now identify what kind of user research we need to undertake to validate our assumptions.

COMMON FACTORS

Quite often you'll notice that some questions generate similar results all the way down one column or one row. For example, in figure 7, we assumed that all "exploring" users would likely be interested in finding new routes regardless of whether they are locals or visitors and, similarly, that all "competitive" users would likely be interested in timekeeping.

Nothing is wrong with this; it just means that when we come to test for these needs, we will have some parameters to decide what kind of users we need to talk to. And when we come to design for these scenarios, these features will likely represent the "baseline" functionality to include in our app.

PRIORITY AND DEPENDENCIES

Sometimes, when you are trying to prioritize features, the practice of generating these user matrices can help you unpack some clear depen-

dencies. In the case of our app, it became clear very quickly that the type of users who would populate the routes in a meaningful way would be locals — before being used by visitors. This means we needed to make the app attractive to local runners first, from all standpoints: in our feature set, in our communications and in our marketing.

CORE VALUE PROPOSITION

"Value proposition" is just a fancy way of describing the promise of the value you will be providing to customers. When you work through a set of matrices, you might find that you have a clearer view of what you are really promising users by addressing the ranges of users' needs and contexts.

As for our little example, we had done a handful of matrices in less than an hour. Suddenly, one of the team members shouted excitedly, "'I wish I knew where to run!' That is the question we need to answer!"

I handed her the pen, and she scribbled the figure below (8) at the bottom of our last matrix. We knew then that, for this app to succeed, we would have to be able to answer this question, no matter what the user's context — and that would be our core value proposition at its rawest. With this, we now had an excellent focus on the reasoning behind the design, and we'd just given ourselves a clear fundamental principle through some bottom-up thinking.

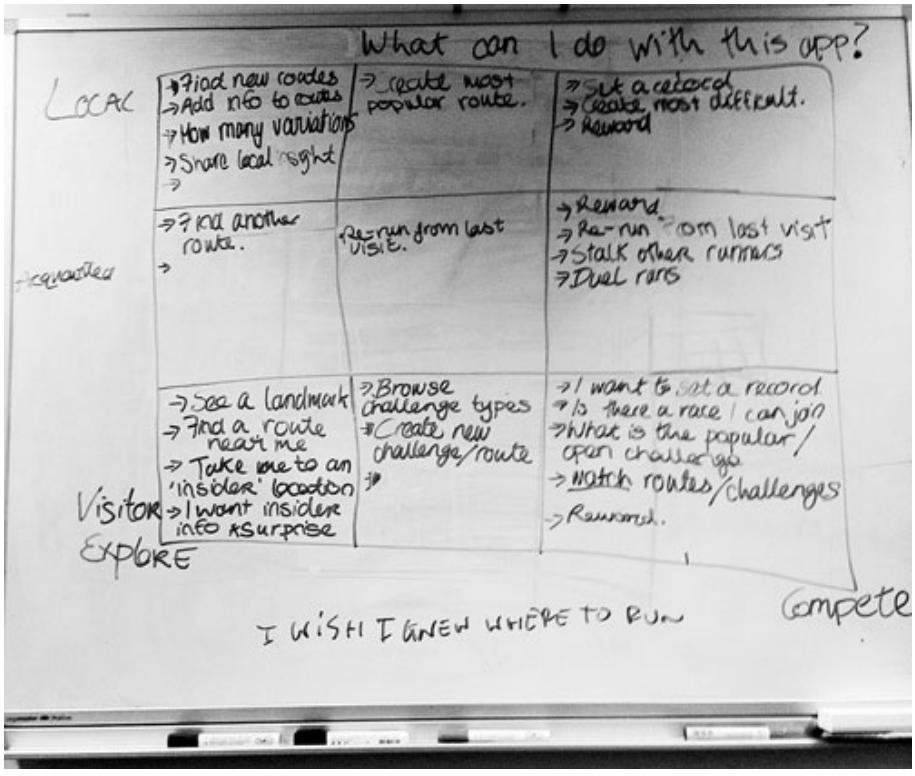


Figure 8. Value proposition.

Taking It Further

So, we have a set of matrices on our hands and some high-level analysis and insight. What next?

First, as with many workshop tools that encourage structured brainstorming, the process is as important as the result itself, possibly more so. As I stated in the beginning, this process doesn't generate a pretty formatted deliverable — rather, it clarifies how we really think about our users.

Having gone through the process of generating these matrices and analyzing them, you should find that you can take on subsequent challenges with more clarity:

- Decide which user groups require more research, from which you can generate personas, mental models and user journeys for more detailed tasks, if required.
- Establish a product road map based on having identified which needs should be met across user groups, so that you can decide which features to design and build together.

One happy little byproduct of expressing user needs through such matrices is that you can delineate each of them into a corresponding user story, which fits nicely into an agile methodology. Using our app again as an example, we can create a user story like, "As a local runner, I want to find new routes to run." You could then decide whether that user story is a validated user need; if so, you could transfer it into a design-then-build process.

When Does It Work Best?

I've successfully used this method in conjunction with others when I help startups figure out how to approach their user base, and also what they ought to build first. It fits neatly into methodologies such as the Lean Startup because it creates a structured basis for generating hypotheses. I've found it to be excellent both as a preliminary thinking tool to facilitate design decisions and as a synthesizing tool in the process of user research.

No doubt, as you explore this method, you may find other ways it works for you, or not at all. You could say that there is the right tool for every job, but sometimes the best tool is the one that gets the job done in the simplest and quickest way.

In this case, we have a very simple way to enable us to think about the ranges of user behaviors and motivations — while keeping their contexts in mind.

FURTHER READING

- *Mental Models: Aligning Design Strategy With Human Behavior*[8], Indy Young
- *A Project Guide to UX Design*[9], Russ Unger and Carolyn Chandler
- "User Stories: A Strategic Design Tool[10]," Penny Hagen and Michelle Gilmore
- *User Stories Applied for Agile Software Development*[11], Mike Cohn
- *The Lean Startup*[12], Eric Ries

ACKNOWLEDGEMENTS

Many thanks to David Rollert, who sparked the idea for the approach described in this article, and who I hold wholly responsible for opening my eyes to better ways to achieve great user experiences. ❧

8. http://rosenfeldmedia.com/books/mental-models/
9. http://projectuxd.com/
10. http://johnnyholland.org/2009/08/user-stories-a-strategic-design-tool/
11. http://www.userstories.com/book
12. http://theleanstartup.com/book

50 Design Problems In 50 Days: Real Empathy For Innovation

BY PETE SMART

I recently travelled 2517 miles to try to solve 50 problems in 50 days[13] using design — a journey that would challenge me to fundamentally rethink my understanding of the user-experience design process.

I set myself a challenge. I wanted to test the limits of design's ability to solve problems — big and small. To do this, I left the comfort of my computer chair and set out into the unknown. Each day, I had 24 hours to observe a problem, attempt to solve it and then communicate the solution.

On my own shoestring budget, from grimy backstreet hostels to bustling cities, I travelled Europe attempting to solve a different social problem that I observed every day. The project itself was an incredible experience. Some days, my solutions were OK, some days I failed, and some days the solutions were great. The point, however, was not to succeed, but to get up every day and try again — even when I had failed the day before.

The adventure taught me an unbelievable amount about design's power to solve problems and about my own capacities as a designer. Importantly, it honed my ability to think through and tackle problems rapidly.

In this chapter I'll share what travelling from the bustling metropolis of London to the cobbled backstreets of Turin taught me about the design process and about the power of empathy to foster innovation.

Tube Congestion

It was day 19 of my 50-day adventure. I found myself dashing to catch an underground train, running until I arrived at the station to find a sea of people crammed onto the platform. There were problems on the line, and trains were delayed. Surveying the scene, I decided to make this my problem for the day.

13. http://www.50problems50days.com

I took a step back, analyzed the situation in front of me and got to work. Having started my own design consultancy at 15 years old and now consulting as a user-experience lead, I knew how I would start:

- **Observe**
  I examined the flow of people, watched them jostle for position and looked at the methods of entry and exit from the platform.
- **Analyze**
  I calculated the time between trains, counted the number of people waiting to board and tried to identify patterns in the way people behaved.
- **Interview**
  I spoke to people waiting to board, asked them how they felt and what would make this experience better.

I collected as much useful information as I could about the way people were engaging with the service…

…and came up with nothing.

At best, I had some pretty predictable solutions, chief of which was simply to increase the number of trains — a solution that hardly felt adequate.

Frustrated, I sat down. Then as the next train arrived, opened its doors and let on passengers, I heard a voice bellowing in the distance:

"Move! Come on! Move!"

I looked up to find a hefty underground attendant shouting at commuters. I walked over and asked him what the problem was.

"We can fit more people on the train, but they just won't get on!"
I thought for a moment.
The next train rolled in.
Passengers started to board.
And I got on.

Getting on the train (Image: Alexander Montuschi[14]).

Immediately, the train pulled away, and I tried to find a place to stand, still surprised that I had decided to board. As I tried to find a spot among the sweaty mass of people, I suddenly understood the real problem.

There was space further down towards the middle of each carriage, enough to fit at least another 10 people. However, people didn't want to move down the carriages. Instead, they crammed by the doors for fear of not being able to get off at their stop.

Whereas my best design processes had failed, getting on the train revealed the real problem to me as clear as day. I discovered the underlying problem not because I had observed, analyzed or interviewed, but because I had felt it myself.

14. http://www.flickr.com/photos/montuschi/

Real Empathy

Trying to solve 50 problems in 50 days enabled me to realize, among other things, that the constraints of our design process can allow us to neglect a vital tenant of creating truly effective solutions: it can allow us to miss real empathy.

Real empathy is not naturally fostered in focus groups. It's not uncovered in analytics. It doesn't start with personas or empathy maps.

Real empathy starts with people.

Innovation Via Immersion

My adventure fundamentally challenged me on how we understand people as part of our design process. The quality of our problem solving is directly linked to our ability to understand the problem. As I tried to tackle a new problem every day, I learned that *analysis* of people's behaviours and problems simply wasn't enough — I had to make them my own.

Sitting with the homeless on day 24 of 50 in Turin, Italy.

From sitting with beggars on the streets of Turin (day 42) to getting lost in the streets of Antwerp (day 23) to having no money or energy in Zurich (day 38), my adventures immersed me in unfamiliar situations and enabled me to learn, analyze and solve more effectively than I ever could in isolation.

Empathic research helps us understand our users' needs beyond the functional, enabling us to develop more appropriate design outcomes. It is one of a raft of valuable processes and tools, on its own seemingly no more important than any other. However, while good designers understand the tools, great designers understand people.

Methods For Anyone And Everyone

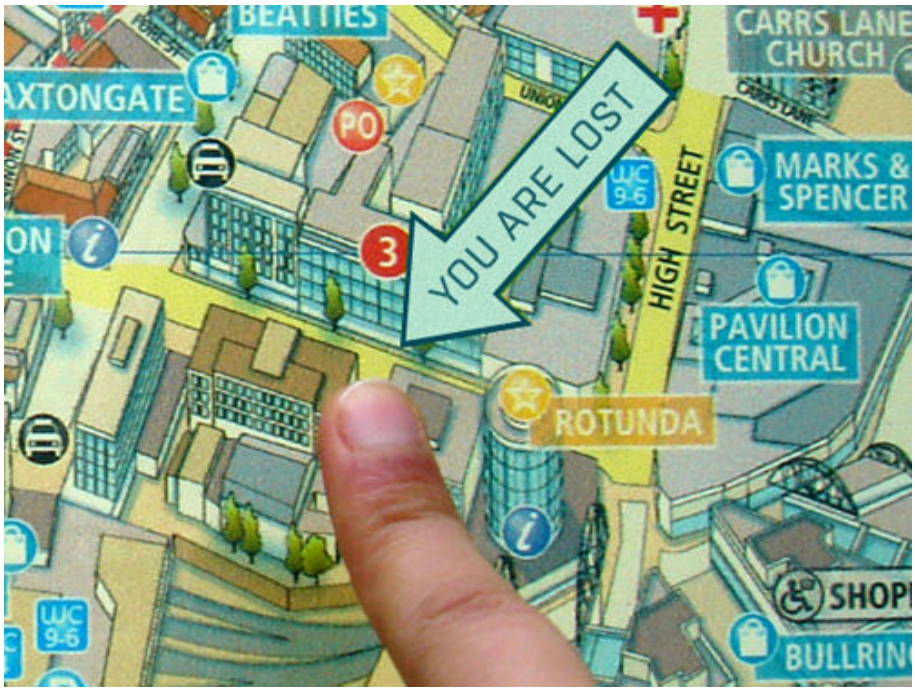
Empathic research is not new. Yet, it is too often treated merely as a tool to create new products or as the domain of pin-up design agencies that have the budgets and clients to accommodate this type of critical inquiry. This needn't be, and simply is not, the case. The best-designed solutions, however small, are born from real understanding of the underlying, complex needs.

Observing the behavior of bicycle riders on day 28 of 50 in Amsterdam.

We can't all travel thousands of miles every time we start a new project, and commercial realities constrain the time and resources of our projects. However, gaining a deeper understanding of people doesn't require allocating drastically more time for ethnographic research or sacrificing other areas of the process.

Below are some of the methods I started to employ on my adventure, with many more picked up along the way. Use them, build on them, and develop your own. Our aim should be to understand people more deeply and, in doing so, to solve their problems more effectively.

GET INTO A COLD SWEAT



Do everything you can to feel what your audience feels, whether it's ecstasy, powerlessness or relief. Say you are tasked with creating a journey-planning website. It is too often a temptation to unquestioningly rely on the conventions we've accumulated from other designed experiences. Innovation is born out of a natural distrust of convention and a desire to create smarter, more intuitive experiences.

Pick two locations you've never been to and try to travel from one to the other without using any technology. You'll soon have that unnerving feeling of being lost in unfamiliar surroundings. Doing so will surface valuable, first-hand insight into the interventions you've relied on when no technology was at hand. How did you find your way? Which landmarks guided you? What processes did you rely on? How can these tools be translated into your service? The empathic research process is grounded in understanding an experience from the user's perspective. Feeling what your users feel will enable you to understand complex scenarios more intimately and, in doing do, to solve them more effectively.

~~INTERVIEW PEOPLE~~ MEET PEOPLE

An impromptu co-creation workshop to solve communication challenges, on day 29 of 50 at my hostel in Amsterdam.

To gain empathic understanding, rather than distanced analysis, go to meet people where they are — in their environments, not in our labs. Focus groups give us some insight into people's experiences, but they can't enable true understanding. We're aware that experiences are felt: they are predominantly emotional not rational. By asking people to communicate their experiences in our settings, we are asking them to rationalise their thoughts and actions. This can never paint a totally accurate picture.

Rather than interviewing users, we should look to meet people. Take creating an e-commerce website for a bathroom retailer. Go down to a showroom and watch how people interact with the products. Meeting people in their environments allows us not only to ask them what they think of the products in front of them, but to physically see how they form their opinions. What stages of decision-making did they go through? Where were they looking? What did they compare the product to in order to reach their decision? These insights will inevitably inform better decisions and foster more intuitive results.

EVERYONE IS A DESIGNER

Laptop as a stand for a phone — an unconscious act of design. (Image: Josh Russell[15])

If empathic research teaches us anything, it's to be humble and realize that everyone on the planet is a designer — and is usually better at solving problems than we are. We all commit deliberate acts of organization to overcome problems, from the way we arrange our desks to the way we use a window to catch our reflection. Empathic investigation helps us to observe the ways in which people are already overcoming obstacles, and it often uncovers solutions that are more elegant than we'd expect.

Trying to design a daily news-feed mobile app? Walk into any library and spend some time looking at how people physically interact with information. From bending page corners into bookmarks, to underlining in pencil to make scanning faster, to positioning journals side by side for easier cross-referencing, once you start to really look, you'll gain insights that enable you to combine people's half-solutions into even more useful experiences.

15. http://www.flickr.com/photos/joshrussell/2713032593/in/pool-78307073@N00/

In-situ prototyping of a tool to help hostel staff communicate with guests, on day 29 of 50.

When we try to consolidate what we've learnt into design decisions, we do so in our studios, often on our high quality screens. Try picking up your pen, getting out of the office and finding a location in which someone might typically use the service you're creating. *Now* try to design. You'll soon have to deal with the same distractions, complications and restrictions that some of your users face. How does that affect your design decisions?

There are many more techniques for getting under people's skin, but these are just a few to start. Ultimately, empathic research is not about asking users what they want, but about understanding their needs for ourselves.

The Solution... Not Quite

So, what was the result of getting on that underground train, being squashed among busy commuters and feeling people's anxiety for myself?

Initially, the result was another pretty predictable solution.

Leveraging the closing doors of the underground trains.

I leveraged the closing of the train doors to suggest that people move closer together. This didn't feel good enough — more like a public-service announcement than an effective solution.

The Solution: Play

So, I thought harder, drawing on my experiences and instinctive responses, and I ended up asking myself the question, "How can I turn a logistical problem into an enjoyable experience that people actually *want* to engage with?"

The solution? To introduce "play". I transformed the floors of the underground carriage into a game of Monopoly. Rather than standing in jail, people are encouraged to move down the carriage, towards Mayfair — an engaging and participatory solution to a complex problem.

Computer Arts Magazine called it, "A playful way to encourage people to move away from Tube train doors. Top hat and flat iron optional."

Since being published, 50 Problems in 50 Days[16] has received some super press and some unexpected awards. This particular solution was one of the most discussed and has been one of the most widely shared.

Conclusion

Empathetic understanding is a vital tool in fostering innovation. If we can better understand the people we are designing for, the better our decisions, designs and results will be. Travelling 2517 miles taught me that if we wish to innovate, we must go beyond analyzing people's experiences and try and make them our own.

Understanding people better often requires us to get outside and get our hands dirty but, in doing so, allows us to better analyze and solve. In the words of Diego Rodriguez[17], partner at IDEO:

> *"In doing, there is knowing. Doing is the resolution of knowing."* ❧

16. http://www.50problems50days.com
17. http://metacool.typepad.com/metacool/2010/10/shinya-kimura-and-the-primacy-of-doing.html

Beyond The Button: Embracing The Gesture-Driven Interface

BY THOMAS JOOS

As a mobile UI or UX designer, you probably remember the launch of Apple's first iPhone as if it was yesterday. Among other things, it introduced a completely touchscreen-centered interaction to an individual's most private and personal device. It was a game-changer.

Today, kids grow up with touchscreen experiences like it's the most natural thing. Parents are amazed by how fast their children understand how a tablet or smartphone works. This shows that touch and gesture interactions have a lot of potential to make mobile experiences easier and more fun to use.

Challenging Bars And Buttons

The introduction of "Human Interface Guidelines" and Apple's App Review Board had a great impact on the quality of mobile applications. It helped a lot of designers and developers understand the core mobile UI elements and interactions. One of Apple's popular suggestions, for instance, is to use UITabBar[18] and UINavigationBar[19] components — a guideline that many of us have followed, including me.

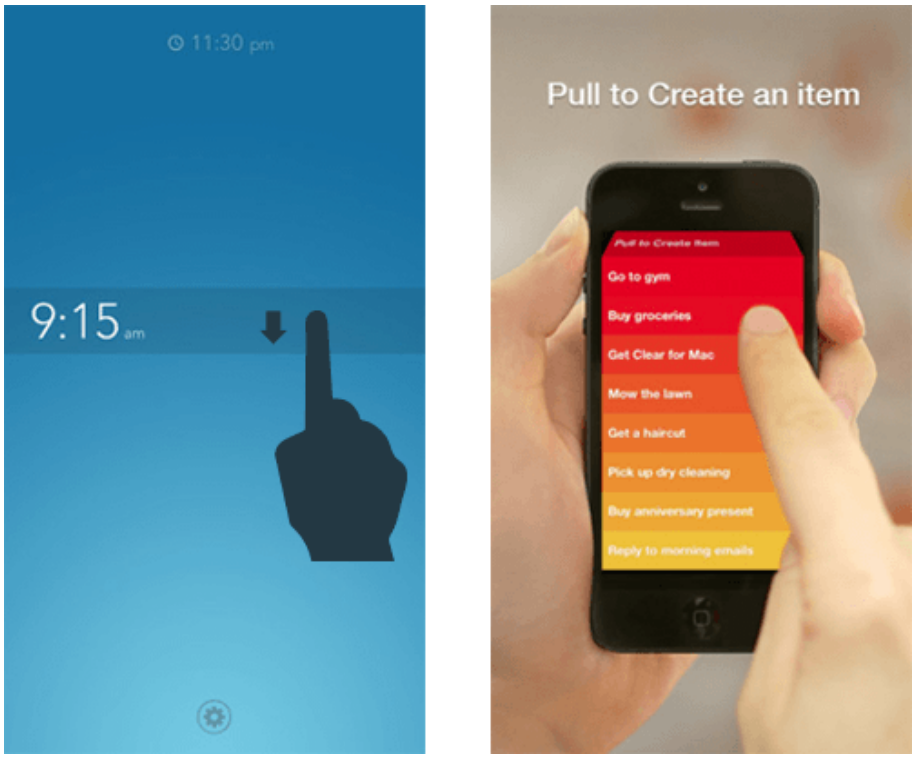
In fact, if you can honestly say that the first iPhone application you designed didn't have any top or bottom bar elements, get in touch and send over a screenshot. I will buy you a beer and gladly tweet that you were ahead of your time.

My issue with the top and bottom bars is that they fill almost 20% of the screen. When designing for a tiny canvas, we should use every available pixel to focus on the content. In the end, that's what really matters.

In this innovative industry, mobile designers need some time to explore how to design more creative and original interfaces. Add to that Apple's frustrating rejection of apps that "think outside the box," it is no surprise that experimental UI and UX designs such as Clear and Rise

18. http://developer.apple.com/library/ios/#documentation/uikit/reference/UITabBar_Class/Reference/Reference.html
19. http://developer.apple.com/library/ios/#documentation/uikit/reference/UINavigationBar_Class/Reference/UINavigationBar.html

took a while to see the light of day. But they are here now. And while they might be quite extreme and focused on high-brow users and early adopters, they show us the great creative potential of gesture-driven interfaces.



Pulling to refresh feels very intuitive.

The Power Of Gesture-Driven Interfaces

For over two years now, I've been exploring the ways in which gestures add value to the user experience of a mobile application. The most important criterion for me is that these interactions feel very intuitive. This is why creative interactions such as Loren Brichter's "Pull to Refresh[20]" have become a standard in no time. Brichter's interaction, introduced in Tweetie for iPhone, feels so intuitive that countless list-based applications suddenly adopted the gesture upon its appearance.

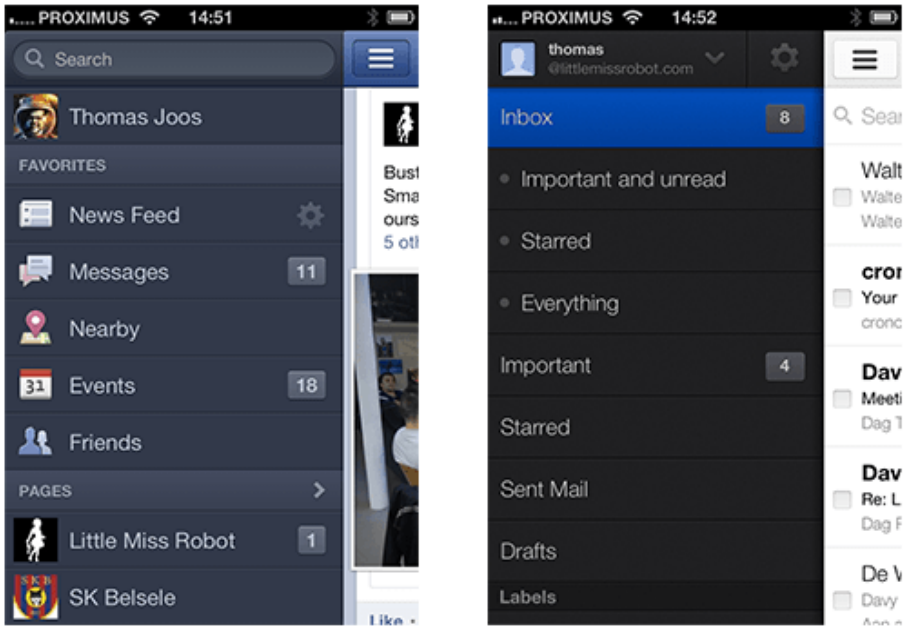
REMOVING UI CLUTTER

A great way to start designing a more gesture-driven interface is to use your main screen only as a viewport to the main content. Don't feel obliged to make important navigation always visible on the main

20. http://www.macstories.net/news/loren-brichter-talks-about-pull-to-refresh-patent-and-design-process/

screen. Rather, consider giving it a place of its own. Speaking in terms of a virtual 2-D or 3-D environment, you could design the navigation somewhere next to, below, behind, in front of, above or hidden on top of the main view. A dragging or swiping gesture is a great way to lead the user to this UI element. It's up to you to define and design the app.

What I like about Facebook and Gmail on iOS, for instance, is their implementation of a "side-swiping" menu. This trending UI concept is very easy to use. Users swipe the viewport to the right to reveal navigation elements. Not only does this make the app very content-focused, but accessing any section of the application takes only two to three touch interactions. A lot of apps do far worse than that!



Facebook and Gmail's side-swiping menu

In addition to the UI navigation, your app probably also supports contextual interactions, too. Adding the same two or three buttons below every content item will certainly clutter the UI! While buttons might seem to be useful triggers, gestures have great potential to make interaction with content more intuitive and fun. Don't hesitate to integrate simple gestures such as tapping, double-tapping and tapping-and-holding to trigger important interactions. Instagram supports a simple double-tap to perform one of its key features, liking and unliking a content item. I would not be surprised to see other apps integrate this shortcut in the near future.

AN INTERFACE THAT FITS

When designing an innovative mobile product, predicting user behavior can be very difficult. When we worked with Belgium's Public Radio,

my team really struggled with the UI balance between music visualization and real-time news. The sheer number of contextual scenarios and preferences made it very hard to come up with the perfect UI. So, we decided to integrate a simple dragging gesture to enable users to adjust the balance themselves.

By dragging, users can balance music-related content and live news.

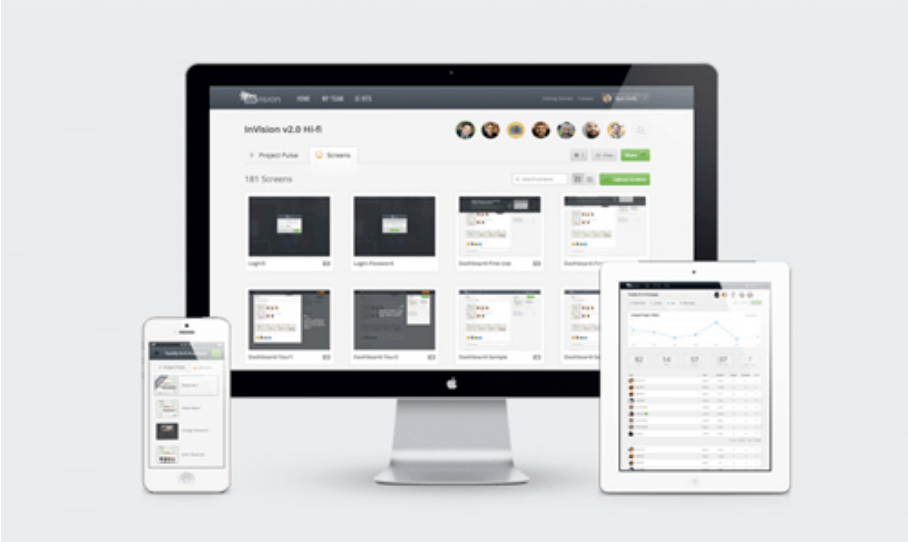
This gesture adds a creative contextual dimension to the application. The dragging gesture does not take the user from one section (news or music) to another. Rather, it enables the user to focus on the type of content they are most interested in, without missing out on the other.

THINK IN TERMS OF TIME, DIMENSION AND ANIMATION

What action is triggered when the user taps an item? And how do you visualize that it has actually happened? How fast does a particular UI element animate into the viewport? Does it automatically go off-screen after five seconds of no interaction?

The rise of touch and gesture-driven devices dramatically changes the way we design interaction. Instead of thinking in terms of screens and pages, we are thinking more in terms of time, dimension and animation. You've probably noticed that fine-tuning user interactions and demonstrating them to colleagues and clients with static wireframe screenshots is not easy. You don't fully see, understand and feel what will happen when you touch, hold, drag and swipe items.

Certain prototyping tools, including Pop[21] and Invision[22], can help bring wireframes to life. They are very useful for testing an application's flow and for pinpointing where and when a user might get stuck. Your application has a lot more going on than simple back-and-forth navigation, so you need to detect interface bugs and potential sources of confusion as soon as possible. You wouldn't want your development team to point them out to you now, would you?



Invision enables you to import and link your digital wireframes.

To be more innovative and experimental, get together with your client first and explain that a traditional wireframe is not the UX deliverable that they need. Show the value of interactive wireframes and encourage them to include this in the process. It might increase the timeline and budget, but if they are expecting you to go the extra mile, it shouldn't be a problem.

I even offer to produce a conceptual interface video for my clients as well, because once they've worked with the interactive wireframes and sorted out the details, my clients will often need something sexier to present to their internal stakeholders.

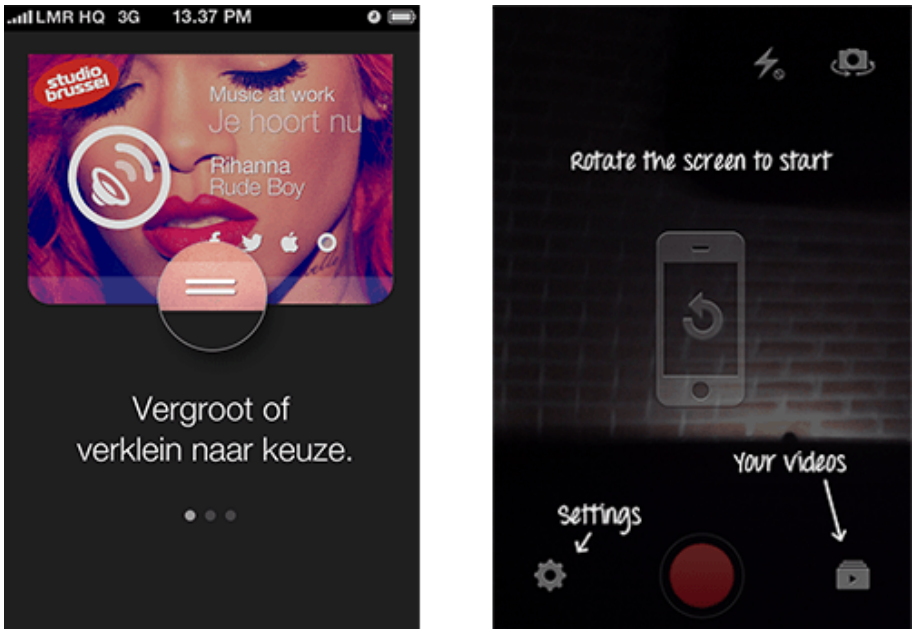
The Learning Curve

When designing gesture-based interactions, be aware that every time you remove UI clutter, the application's learning curve goes up. Without visual cues, users could get confused about how to interact with the application. A bit of exploration is no problem, but users should know

21. http://popapp.in/
22. http://www.invisionapp.com/

where to begin. Many apps show a UI walkthrough when first launched, and I agree with Max Rudberg[23] that walkthroughs should explain only the most important interactions. Don't explain everything at once. If it's too explicit and long, users will skip it.

Why not challenge yourself and gradually introduce creative UI hints as the user uses the application? This pattern is often referred to as progressive disclosure and is a great way to show only the information that is relevant to the user's current activity. YouTube's Capture application, for instance, tells the user to rotate the device to landscape orientation just as the user is about to open the camera for the first time.



Fight the learning curve with a UI walkthrough and/or visual hints.

Adding visual cues to the UI is not the only option. In the Sparrow app, the search bar appears for a few seconds, before animating upwards and going off screen, a subtle way to say that it's waiting to be pulled down.

Stop Talking, Start Making

The iPhone ushered in a revolution in interactive communication. Only five years later, touchscreen devices are all around us, and interaction designers are redefining the ways people use digital content.

23. http://blog.maxrudberg.com/post/38958984259/if-you-see-a-ui-walkthrough-they-blew-it

We need to explore and understand the potential of touch and gesture-based interfaces and start thinking more in terms of time, dimension and animation. As demonstrated by several innovative applications, gestures are a great way to make an app more content-focused, original and fun. And many gesture-based interactions that seem too experimental at first come to be seen as very intuitive.

For a complete overview of the opportunities for gestures on all major mobile platforms, check out Luke Wroblewski's "Touch Gesture Reference Overview[24]." I hope you're inspired to explore gesture-based interaction and intensify your adventures in mobile interfaces. Don't be afraid to go the extra mile. With interactive wireframes, you can iterate your way to the best possible experience. So, let's stop talking and start making.

24. http://www.lukew.com/ff/entry.asp?1071

What Leap Motion And Google Glass Mean For Future User Experience

BY TOMMY WALKER

Editor's note: *Please note that this chapter explores an entirely hypothetical scenario, and these are opinions, some of which you may not agree with. However, the opinions are based on current trends, statistics and existing technology. If you're the kind of designer who is interested in developing the future, the author encourages you to read the sources that are linked throughout the chapter.*

With the Leap Motion controller being released on July 22nd and the Google Glass Explorer program already live, it is obvious that our reliance on the mouse or even the monitor to interact with the Web will eventually become obsolete.

The above statement seems like a given, considering that technology moves at such a rapid pace. Yet in 40 years of personal computing, our methods of controlling our machines haven't evolved beyond using a mouse, keyboard and perhaps a stylus. Only in the last six years have we seen mainstream adoption of touchscreens.

Given that emerging control devices such as the Leap Controller are enabling us to interact with near pixel-perfect accuracy in 3-D space, our computers will be less like dynamic pages of a magazine and more like windows to another world. To make sure we're on the same page, please take a minute to check out what the Leap Motion controller[25] can do:

25. http://www.youtube.com/embed/_d6KuiuteIA

"Introducing the Leap Motion[26]*"*

Thanks to monitors becoming portable with Google Glass (and the competitors that are sure to follow), it's easy to see that the virtual world will no longer be bound to flat two-dimensional surfaces.

In this chapter, we'll travel five to ten years into the future and explore a world where Google Glass, Leap Motion and a few other technologies are as much a part of our daily lives as our smartphones and desktops are now. We'll be discussing a new paradigm of human-computer interface.

The goal of this piece is to start a discussion with forward-thinking user experience designers, and to explore what's possible when the mainstream starts to interact with computers in 3-D space.

Setting The Stage: A Few Things To Consider

Prior to the introduction of the iPhone in 2007, many considered the smartphone to be for techies and business folk. But in 2013, you'd be hard pressed to find someone in the developed world who isn't checking their email or tweeting at random times.

So, it's understandable to think that a conversation about motion control, 3-D interaction and portable monitors is premature. But if the mobile revolution has taught us anything, it's that people crave connection without being tethered to a stationary device.

26. http://www.youtube.com/embed/_d6KuiuteIA

To really understand how user experience (UX) will change, we first have to consider the possibility that social and utilitarian UX will be taking place in different environments. In the future, people will use the desktop primarily for utilitarian purposes, while "social" UX will happen on a virtual layer, overlaying the real world (thanks to Glass). Early indicators of this are that Facebook anticipates its mobile growth to outpace its PC growth[27] and that nearly one-seventh of the world's population own smartphones[28].

The only barrier right now is that we lack the technology to truly merge the real and virtual worlds. But I'm getting ahead of myself. Let's start with something more familiar.

The Desktop

Right now, UX on the desktop cannot be truly immersive. Every interaction requires physically dragging a hunk of plastic across a flat surface, which approximates a position on screen. While this is accepted as commonplace, it's quite unnatural. The desktop is the only environment where you interact with one pixel at a time.

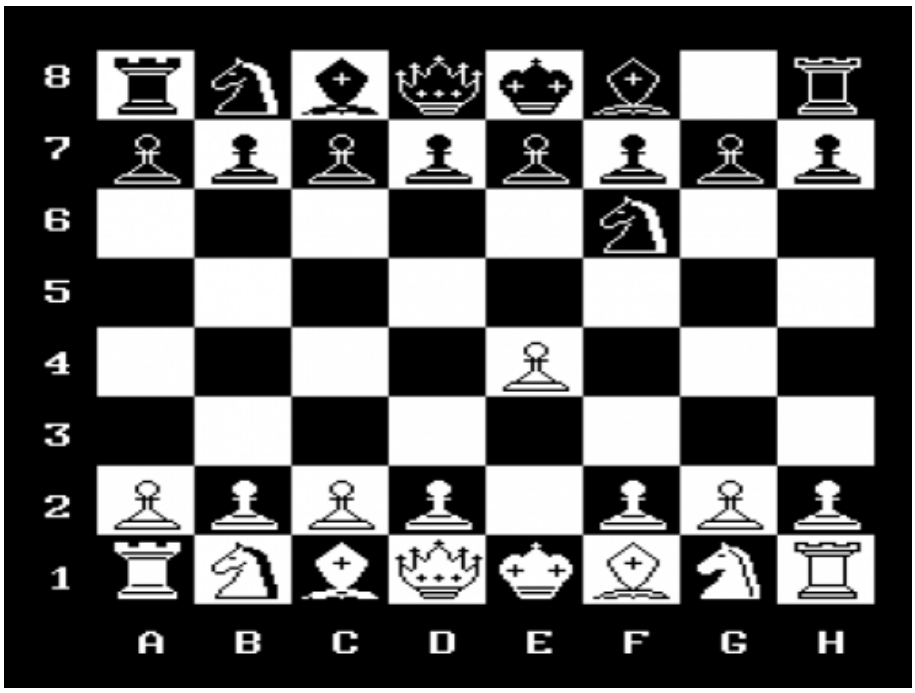
Sure, you could create the illusion of three dimensions with drop shadows and parallax effects, but that doesn't change the fact that the user may interact with only one portion of the screen at a time.

This is why the Leap Motion controller is revolutionary. It allows you to interact with the virtual environment using all 10 fingers and real-world tools in 3-D space. It is as important to computing as analog sticks were to video games.

The Shift In The Way We Interact With Machines

To wrap our heads around just how game-changing this will be, let's go back to basics. One basic UX and artificial intelligence test for any new platform is a simple game of chess.

27. http://thenextweb.com/facebook/2012/10/24/facebook-anticipates-growth-happening-in-mobile-usage-rather-than-through-personal-computers/
28. http://www.go-gulf.com/blog/smartphone/



(Image: Wikimedia Commons[29])

In the game of chess below, thanks to motion controllers and webcams, you'll be able to "reach in" and grab a piece, as you watch your friend stress over which move to make next.

Now you can watch your opponent sweat. (Image: Algernon D'Ammassa[30])

29. http://commons.wikimedia.org/wiki/File:Agat-7_Chess.png
30. http://algerblog.blogspot.de/2011/12/quality-time.html

In a game of The Sims, you'll be able to rearrange furniture by moving it with your hands. CAD designers will use their hands to "physically" manipulate components (and then send their design to the 3-D printer they bought from Staples[31] for prototyping.)

While the lack of tactile feedback might deter mainstream adoption early on, research into haptics[32] is already enabling developers to simulate physical feedback in the real world to correspond with the actions of a user's virtual counterpart. Keep this in mind as you continue reading.

Over time, this level of 3-D interactivity will fundamentally change the way we use our desktops and laptops altogether.

Think about it: The desktop is a perfect, quiet, isolated place to do more involved work like writing, photo editing or "hands-on" training to learn something new. However, a 3-D experience like those mentioned above doesn't make sense for social interactions such as on Facebook or even reading the news, which are more becoming of mobile[33].

With immersive, interactive experiences being available primarily via the desktop, it's hard to imagine users wanting these two experiences to share the same screen.

So, what would a typical desktop experience look like?

Imagine A Cooking Website For People Who Can't Cook

With this cooking website for people who can't cook, we're not just talking about video tutorials or recipes with unsympathetic instructions, but rather immersive simulations in which an instructor leads you through making a virtual meal from prep to presentation.

Interactions in this environment would be so natural that the real design challenge is to put the user in a kitchen that's believable as their own.

You wouldn't click and drag the icon that represents sugar; you would reach out with your virtual five-fingered hand and grab the life-sized "box" of Domino-branded sugar. You wouldn't click to grease the pan; you'd mimic pushing the aerosol nozzle of a bottle of Pam.

The Tokyo Institute of Technology has already built such a simulation in the real world. So, transferring the experience to the desktop is only a matter of time.

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31. http://www.staples.com/3-D-Printing/cat_CL205651?icid=SearchResults3-D
32. http://www.disneyresearch.com/project/surround-haptics-immersive-tactile-experiences/
33. http://www.businessesgrow.com/2013/03/27/what-a-blog-post-will-look-like-in-2020/

"Cooking simulator will help you cook a perfect steak every time[34]*"*

UX on the future desktop will be about simulating physics and creating realistic environments, as well as tracking head, body and eyes[35] to create intuitive 3-D interfaces, based on HTML5 and WebGL[36].

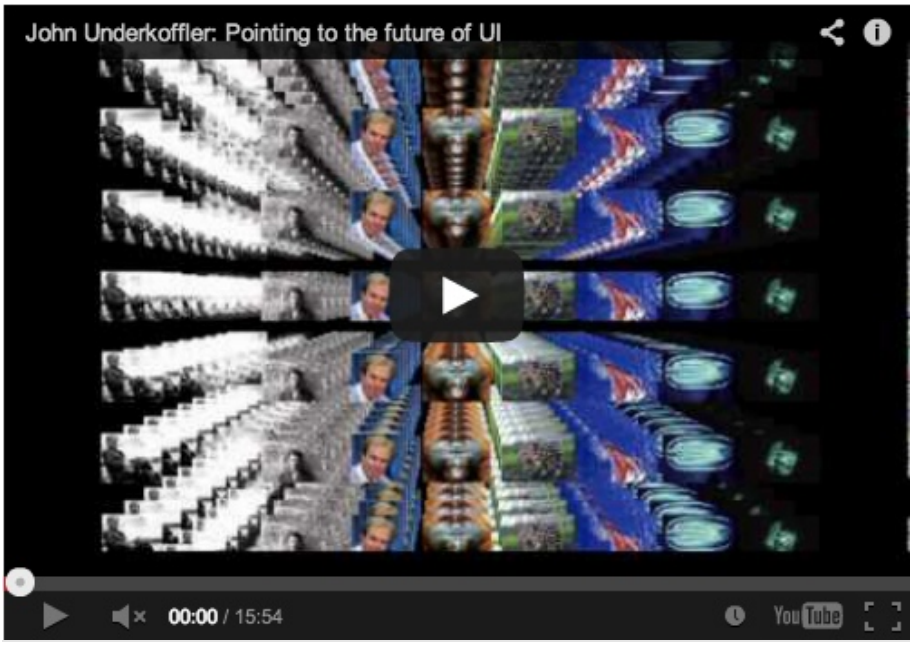
Aside from the obvious hands-on applications, such as CAD and art programs, the technology will shift the paradigm of UX and user interface (UI) design in ways that are currently difficult to fathom.

The problem right now is that we currently lack a set of clearly defined 3-D gestures to interact with a 3-D UI. Designing UIs will be hard without knowing what our bodies will have to do to interact.

The closest we have right now to defined gestures are those created by Kinect hackers[37] and John Underkoffler of Oblong Technology[38] (the team behind Minority Report's UI).

In his TED talk from 2010, Underkoffler demonstrates probably the most advanced example of 3-D computer interaction that you're going to see for a while. If you've got 15 minutes to spare, I highly recommend watching it:

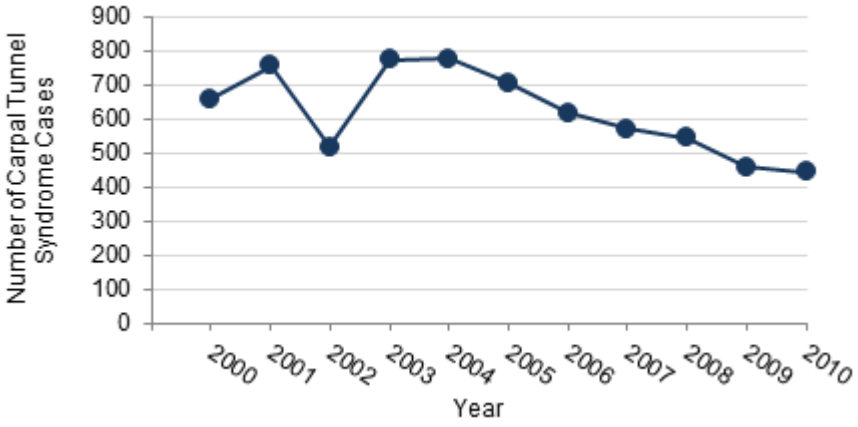
34. http://www.youtube.com/embed/F565MHCfsSo
35. https://www.youeye.com/how-it-works
36. http://www.awwwards.com/22-experimental-webgl-demo-examples.html
37. http://smashed.by/kinect-ui
38. http://www.oblong.com/g-speak/



John Underkoffler's talk "Pointing to the Future of UI[39]*"*

Now, before you start arguing, "Minority Report isn't practical — humans aren't designed for that!" consider two things:

1. We won't likely be interacting with 60-inch room-wrapping screens the way Tom Cruise does in Minority Report; therefore, our gestures won't need to be nearly as big.
2. The human body rapidly adapts to its environment. Between the years 2000 and 2010, a period when home computers really went mainstream, reports of Carpal Tunnel Syndrome dropped by nearly 8%[40].



(Image: Minnesota Department of Health[41]*)*

39. http://www.youtube.com/embed/b6YTQJVzwlI
40. http://www.health.state.mn.us/divs/hpcd/cdee/occhealth/indicators/carpal-tunnel.html

However, because the Leap Motion controller is less than $80 and will be available at Best Buy, this technology isn't just hypothetical, sitting in a lab somewhere, with a bunch of geeks saying "Wouldn't it be cool if..."

It's real and it's cheap, which really means we're about to enter the Wild West of true 3-D design.

Social Gets Back To The Real World

So, where does that leave social UX? Enter Glass.

It's easy to think that head-mounted augmented reality (AR) displays, such as Google Glass, will not be adopted by the public, and in 2013 that might be true.

But remember that we resisted the telephone when it came out, for many of the same privacy concerns[42]. The same goes for mobile phones[43] and for smartphones[44] around 2007.

So, while first-generation Glass won't likely be met with widespread adoption, it's the introduction of a new phase. ABI Research predicts that the wearable device market will exceed 485 million annual shipments by 2018.[45]

According to Steve Lee, Glass' product director, the goal is to "allow people to have more human interactions" and to "get technology out of the way."

First-generation Glass performs Google searches, tells time, gives turn-by-turn directions, reports the weather, snaps pictures, records video and does Hangouts — which are many of the reasons why our phones are in front of our faces now.

Moving these interactions to a heads-up display, while moving important and more heavy-duty social interactions to a wrist-mounted display, like the Pebble smartwatch[46], eliminates the phone entirely and enables you to truly see what's in front of you.

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41. http://www.health.state.mn.us/divs/hpcd/cdee/occhealth/indicators/carpal-tunnel.html
42. http://news.cnet.com/8301-1023_3-57573966-93/google-glass-and-the-third-half-of-your-brain/
43. http://www.maebrussell.com/Articles%20and%20Notes/Do%20cell%20phones%20cook%20cells.html
44. http://www.computerworld.com/s/article/9014118/Ten_dangerous_claims_about_smart_phone_security
45. http://www.abiresearch.com/press/wearable-computing-devices-like-apples-iwatch-will
46. http://getpebble.com/

(Image: Pebble[47])

Now, consider the possibility that something like the Leap Motion controller could become small enough to integrate into a wrist-mounted smartwatch. This, combined with a head-mounted display, would essentially give us the ability to create an interactive virtual layer that overlays the real world.

Add haptic wristband[48] technology and a Bluetooth connection to the smartwatch, and you'll be able to "feel" virtual objects[49] as you physically manipulate them in both the real world and on the desktop. While this might still sound like science fiction, with Glass reportedly to be priced between $299 and $499 and Leap Motion at $80 and Pebble being $150, widespread affordability of these technologies isn't entirely impossible.

Social UX In The Future: A Use Case

Picture yourself walking out of the mall, and your close friend Jon updates his status. A red icon appears in the top right of your field of vision. Your watch displays Jon's avatar, which says, "Sooo hungry right now."

You say, "OK, Glass. Update status: How about lunch? What do you want?" and keep walking.

"Tacos."

47. http://getpebble.com/
48. http://www.popsci.com/technology/article/2012-09/haptic-armband-improves-muscle-memory-helping-blind-athletes-train-better
49. http://www.popsci.com/technology/article/2010-07/fingertip-mounted-haptic-interface-lets-you-feel-virtual-3-d-objects

You say, “OK, Glass. Where can I get good Mexican food?” 40 friends have favorably rated Rosa’s Cafe[50]. Would you like directions? “Yes.” The navigation starts, and you’re en route.

You reach the cafe, but Jon is 10 minutes away. Would you like an audiobook while you wait? “No, play music.” A smart playlist compiles exactly 10 minutes of music that perfectly fits your mood.

“OK, Glass. Play Angry Birds 4.”

Across the table, 3-D versions of the little green piggies and their towers materialize.

In front of you are a red bird, a yellow bird, two blue birds and a slingshot. The red bird jumps up, you pull back on the slingshot, the trajectory beam shows you a path across the table, you let go and knock down a row of bad piggies.

Suddenly, an idea comes to you. “OK, Glass. Switch to Evernote.”

A piece of paper and a pen are projected onto the table in front of you, and a bulletin board appears to the left.

You pick up the AR pen, jot down your note, move the paper to the appropriate bulletin, and return to Angry Birds.

You could make your game visible to other Glass wearers. That way, others could play with you — or, at the very least, would know you’re not some crazy person pretending to do… whatever you’re doing across the table.

When Jon arrives, notifications are disabled. You push the menu icon on the table and select your meal. Your meal arrives; you take photos of your food; eat; publish to Instagram 7.

Before you leave, the restaurant gives a polite notification, letting you know that a coupon for 10% off will be sent to your phone if you write a review.

How Wearable Technology Interacts With Desktops

Later, having finished the cooking tutorial on the desktop, you decide it’s time to make the meal for real. You put on Glass and go to the store. The headset guides you directly to the brands that were advertised “in game.” After picking out your ingredients, you receive a notification that a manufacturer’s coupon has been sent to your phone and can be used at the check-out.

When you get home, you lay a carrot on the cutting board and an overlay projects guidelines on where to cut. You lay out the meat, and a POW graphic is overlaid, showing you where to hit for optimal tenderness:

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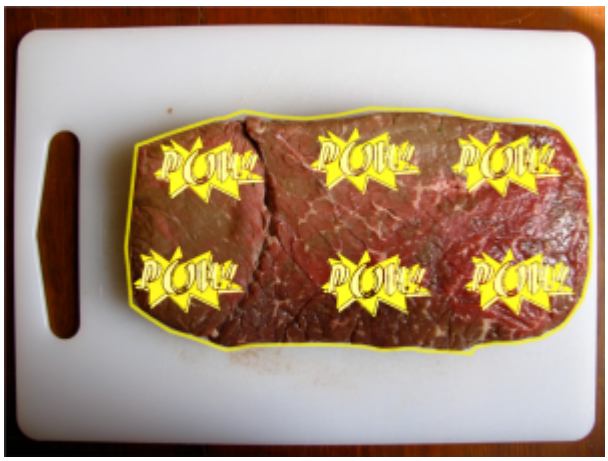
50. http://facebook.com/rosascafe



You put the meat in the oven; Glass starts the timer. You put the veggies in the pan; Glass overlays a pattern to show where and when to stir.

While you were at the store, Glass helped you to pick out the perfect bottle of wine to pair with your meal (based on reviews, of course). So, you pour yourself a glass and relax while you wait for the timer to go off.

In the future, augmented real-world UX experiences will be turned into real business. The more you enhance real life, the more successful your business will be. After all, is it really difficult to imagine this cooking experience being turned into a game?

What Can We Do About This Today?

If you're the kind of UI designer who seeks to push boundaries, then the best thing you can do right now is think. Because the technology isn't 100% available, the best you can do is open your imagination to what will be possible when the average person has evolved beyond the keyboard and mouse.

Draw inspiration from websites and software that simulate depth to create dynamic, layered experiences that can be easily operated without a mouse. The website of agency Black Negative[51] is a good example of future-inspired "flat" interaction. It's easy to imagine interacting with this website without needing a mouse. The new Myspace[52] is another.

To go really deep, look at the different Chrome Experiments[53], and find a skilled HTML5 and WebGL developer to discuss what's in store for the future. The software and interactions that come from your mind will determine whether these technologies will be useful.

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51. http://blacknegative.com/
52. http://new.myspace.com
53. http://www.chromeexperiments.com/

Conclusion

While everything I've talked about here is conceptual, I'm curious to hear what you think about how (or even if) these devices will affect UIs. I'd also love to hear your vision of future UIs. To get started, let me ask you two questions:

1. How will the ability to reach into the screen and interact with the virtual world shape our expectations of computing?
2. How will untethering content from flat surfaces fundamentally change the medium? ❧

About The Authors

Damian Rees

Damian is a Director at Experience Solutions a user experience design agency supporting leading UK brands. Damian has 13 years experience as a UI design specialist for companies like BBC and National Air Traffic Services researching & designing websites, apps, voice recognition, and air traffic control interfaces. Damian regularly writes for the Experience Solutions Blog and tweets for @experiencesolns[54].

Pete Smart

Peter Smart is a designer, speaker and writer from the UK. He recently travelled 2517 miles to try and solve 50 problems in 50 days[55] using design. He now consults on user experience for innovation, working with organisations worldwide. You can follow him on Twitter[56] and read more on his blog[57].

Robert Hoekman Jr

Robert Hoekman, Jr, is the author of Designing the Obvious[58], Designing the Moment[59], and Web Anatomy[60], and is the founder of Miskeeto[61]. He has worked with Adobe, World Trade Centers Association, Dodge, American Heart Association, Automattic, and countless others, and has spoken at industry events worldwide, including SXSW and Web App Summit. Website: http://www.rhjr.net[62]. You can follow Robert on Twitter @rhjr[63].

54. http://www.twitter.com/damianrees
55. http://50problems50days.com/
56. https://twitter.com/petewsmart
57. http://petesmart.co.uk/
58. http://www.rhjr.net/s/dto
59. http://www.rhjr.net/s/dtm
60. http://www.rhjr.net/s/wa
61. http://www.miskeeto.com/
62. http://www.rhjr.net
63. http://www.twitter.com/rhjr

Stephanie Troeth

Steph is a user experience strategist who loves maturing ideas and making things real. She has worn many hats, including a product lead for a startup in digital publishing and a studio director at a digital agency. She is also known for her grassroots contributions to best Web practices through the Web Standards Project and the W3C. Well-travelled and living on her fourth island, she speaks several flavours of English, a few languages, and possesses an indecipherable accent. Twitter: @sniffels[64].

Thomas Joos

Thomas Joos is partner and interactive director at Little Miss Robot. He designs creative & innovative digital experiences and directs projects from concept to creation. He is passionate about interactive experiences and UI/UX design. Thomas is also very active in the design community as an inspirational speaker, sharing thoughts and insights on innovative digital creation. Twitter: @thomasjoos[65].

Tommy Walker

Tommy Walker is is the host of Inside The Mind[66] & The Mindfire Chats[67] — shows that detangle difficult online marketing and make them easy to understand and fun to learn. You can find his work at Mindfire.Tommy.ismy.name[68]. Twitter: @tommyismyname[69].

64. http://www.twitter.com/sniffles
65. http://www.twitter.com/thomasjoos
66. http://relaunch.tommy.ismy.name/inside-the-mind
67. http://mindfire.tommy.ismy.name/
68. http://mindfire.tommy.ismy.name/
69. http://www.twitter.com/tommyismyname

About Smashing Magazine

Smashing Magazine[70] is an online magazine dedicated to Web designers and developers worldwide. Its rigorous quality control and thorough editorial work has gathered a devoted community exceeding half a million subscribers, followers and fans. Each and every published article is carefully prepared, edited, reviewed and curated according to the high quality standards set in Smashing Magazine's own publishing policy[71].

Smashing Magazine publishes articles on a daily basis with topics ranging from business, visual design, typography, front-end as well as back-end development, all the way to usability and user experience design. The magazine is — and always has been — a professional and independent online publication neither controlled nor influenced by any third parties, delivering content in the best interest of its readers. These guidelines are continually revised and updated to assure that the quality of the published content is never compromised. Since its emergence back in 2006 Smashing Magazine has proven to be a trustworthy online source.

70. http://www.smashingmagazine.com
71. http://www.smashingmagazine.com/publishing-policy/