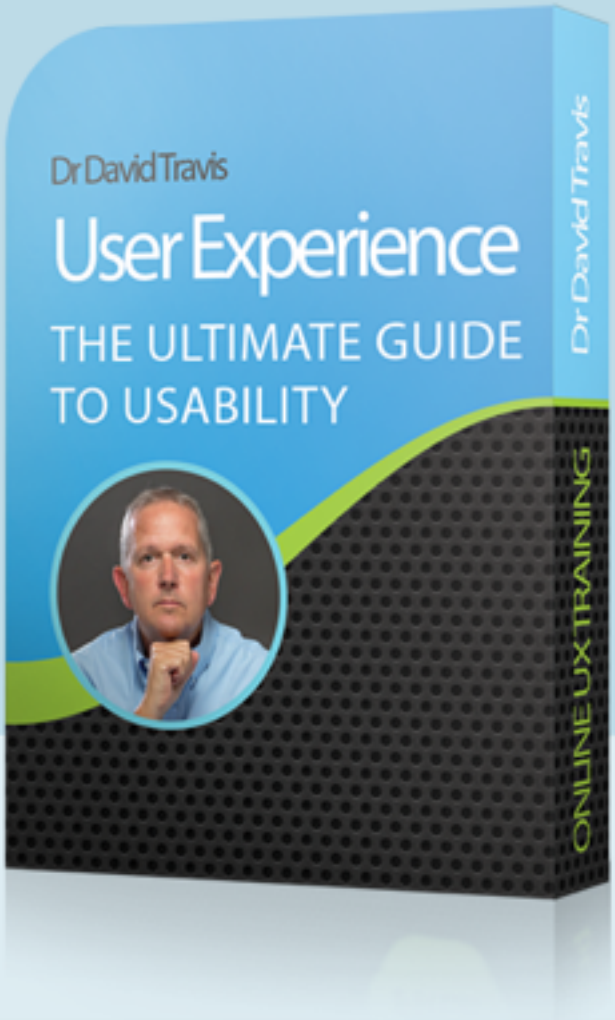
# STUDENT WORKBOOK

# USER EXPERIENCE

*The Ultimate Guide to Usability*



# Welcome!

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Hello and welcome to my course on user experience!

Completing an online course is no simple endeavour. It requires time, dedication, and commitment. So here are two things I recommend you do straight away to get the most out of this course.

1 Join our Facebook group by visiting https://www.facebook.com/groups/uxtraining/ and clicking on the 'Join Group' button. Although you can ask questions from within the Udemy interface, it's not a very usable system and it doesn't do a good job of encouraging discussion. The Facebook group is a thriving community: we run UX design activities, post quizzes and highlight interesting new articles in UX so joining the group will help you cement your learning.

2 To quickly get up to speed, make sure you review the announcements that I've made on the course, since that way you'll find out additions that have been made to the course since it was launched.

Most important of all: if anything is unclear, or you just want more information, please ask a question — I want to make the training as interactive as possible. You can post a question on the Facebook group or in the Udemy interface. Or if you prefer you can ask a question privately by sending me an email (my email is david.travis@userfocus.co.uk). I usually respond to questions within 24hrs.

If you get a moment, please post a message to the Facebook group to introduce yourself and let me know what you're hoping to get out of the course. I'd really like to hear your answers. Good luck!

PS If you enjoy the content in this workbook, head over to http://www.userfocus.co.uk/articles/ where you can read blog posts I've written on similar topics.

# Before you start the course…

## YOUR GOALS

I would like you to think for a while about what has prompted you to take this on-line workshop. Spend some time considering what you are looking to get out of the workshop, what you are hoping to achieve as a result of attending the workshop and what you want to do differently as a result of the workshop. Write 1-2 goals or aims or objectives in the spaces below.

1

2

## YOUR QUESTIONS

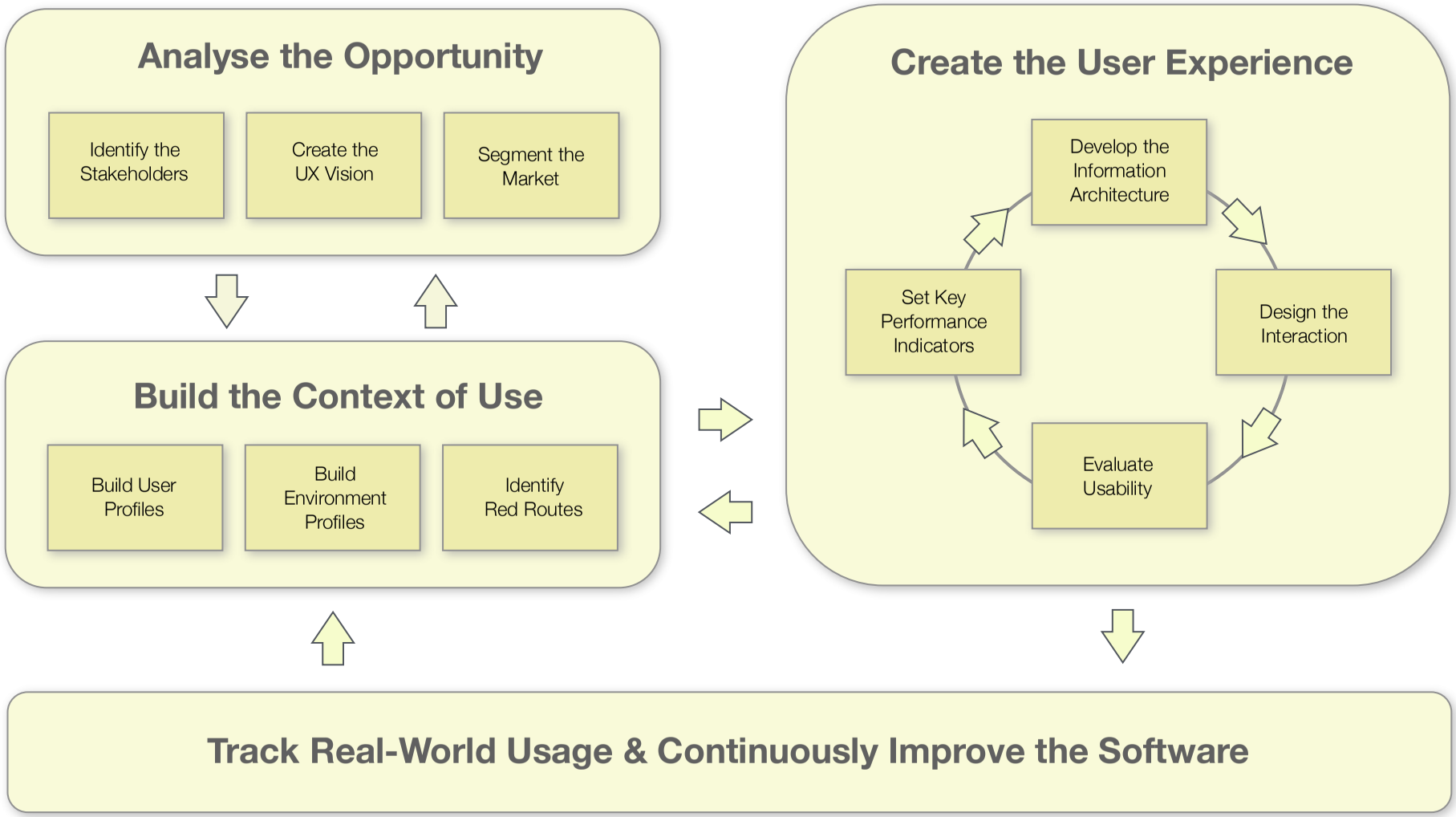
Perhaps you have read some books or articles on this topic, or maybe you already work in the field. Either way, there will be some questions that you need answered. There will be things that you want to know, or are puzzled or curious about. What are your questions? Write some questions in the spaces below.

1

2

3

# User Experience Design Steps



# WHAT IS USABILITY?

You have four can openers to evaluate. For each of the criteria (Functionality, Learnability, Flexibility, and Industrial Design) give one of the following ratings on the Jakob-ometer:

-1

0

+1

## Can Opener Activity

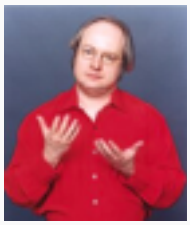
## What is Usability?

IDENTIFY THE MOST USABLE AND LEAST USABLE CAN OPENERS

# Can Opener Activity

You have four can openers to evaluate. For each of the criteria (Functionality, Learnability, Flexibility, and Industrial Design) give one of the following ratings on the Jakob-ometer:

**-1**



**0**

**+1**

If you want, add extra evaluation criteria to the table. When you have finished, total the scores for each can opener and **identify the best and the worst can opener**.

| | A | B | C | D |
|---|---|---|---|---|
| **Functionality**<br>How well does it support the task of opening a can? | | | | |
| **Learnability**<br>How quickly could a new user get going with it? | | | | |
| **Flexibility**<br>Can it adapt to different needs or circumstances? | | | | |
| **Industrial Design**<br>How well does it combine function with appearance? | | | | |
| **Your criterion** (optional) | | | | |
| TOTAL SCORE | | | | |

Based on your evaluation, what makes a can opener easy to use? What makes a can opener hard to use?

# Can Opener Activity — Phase 2

## Parent

"I live in Alderley Edge with my husband and two young children, aged 5 and 8. I give my eldest child some simple tasks when I'm cooking because she likes to help me cook meals for the family. We have a large dog who has been known to empty the contents of the kitchen bin on the floor, and I don't want my children (or the dog) exposed to any sharp edges from badly-opened cans."

## Landlord

"My partner and I rent out a house in London lived in by four students. The house is let fully furnished and we are expected to provide a set of basic kitchen appliances, including a can opener. We have a fairly high turnover of tenants in our house and when we check the inventory after somebody leaves there is always something missing."

## Pensioner

"I live on my own in a village in Cheshire. I retired from my job in a factory five years ago because of severe pains in my wrist. I still have the pains, although some days are better than others. Sometimes I can't even hold a can properly, let alone a can opener. I find activities where I need to twist or turn my hands especially painful."

## Backpacker

"I'm an 18 year-old student planning a backpacking holiday around Europe next Summer. I hope to spend most of my time in the Mediterranean, but I don't have a lot of money so I'll be camping or staying in hostels. I expect to do some self-catering so I'll need a can opener."

| | A | B | C | D |
|---|---|---|---|---|
| | | | | |
| **Parent** | | | | |
| **Landlord** | | | | |
| **Pensioner** | | | | |
| **Backpacker** | | | | |

*Indicate each user's "most preferred" can opener with a tick and each user's "least preferred" can opener with a cross. Each row (Parent, Landlord, Pensioner, Backpacker) should have one tick and one cross.*

# Contextual inquiry activity

## The remote control

You work for a company developing a new user interface for a home entertainment system. You're going to visit a user to see how the existing system is used.

While you watch the video, identify **five** things that you learned from observing the user in context. Here's some questions to bear in mind:

**What stuff did we learn that we probably wouldn't have picked up if we'd interviewed him in the street or even if we brought him into our office to run a usability test?**

**What specifically is it that we pick up by going into his home and observing the way that he works?**

**1**

**2**

**3**

**4**

**5**

# User Experience Briefing

## The 5 habits of highly effective field researchers

*You may not get many chances to visit and observe your customers at their home or place of work, so you want to make the most of the opportunity. But what's the best way to run a field visit? Highly effective field researchers show 5 specific behaviours. They create a focus question, audio record the sessions, take photographs of the environment, take notes and write up a short summary of the observation immediately.*

Visiting your customers at their place of work — sometimes called ethnography, shadowing, contextual inquiry or simply a field visit — is the best way to understand the way people do their job. This understanding is central to doing great design as it helps you really understand the needs, motivations and goals of your users.

But if you're not careful, it's easy to waste the opportunity and end up overwhelmed by what you've observed.

I've been fortunate to work with a number of user experience researchers, and I've noticed they all tend to be detail-oriented, highly motivated and conscientious. But when I think specifically about the field researchers I've worked with who have stood out from the crowd, there are a handful of particular behaviours I see in each of them:

- They create a focus question.
- They audio record the sessions.
- They take photographs of the environment.
- They take great notes.
- They write up a short summary of their observation immediately.

### CREATE A FOCUS QUESTION

When you make a field visit to a customer, there's so much to observe that it's been likened to drinking from a fire hose. So before carrying out the visit, highly effective field researchers create a focus question to zero in on the aims of the project. A focus question — sometimes called a hunt statement — is usually expressed in this form: "I am going to research [activity] so that I can [design a system]." An example of a focus question might be, "I am going to research how our customers use our support materials so that I can design an online troubleshooting tool." The focus question helps you concentrate on the observations that matter and prevent you from treating every observation as equal in value.

**Practical tip**: I've noticed that highly effective field researchers don't create the focus question in isolation but develop it by working with the project team. A simple and quick technique (first described by Teresa Brazen as a way of engaging school children in user research) is to use a sticky note activity, where you give the project team 5 minutes to brainstorm all of the questions they would like to ask their users. Tell them to write each question on a sticky note, one question per sticky note. After 5 minutes, all the sticky notes are placed on the wall and the team first arrange the questions into groups and then vote for the most important group. That group of questions then becomes the articulation of the focus question.

### RECORD THE SESSION

You need to record the session because the participant's verbal protocol is central to your later analysis. Unless you're an expert at shorthand, you'll miss comments, phrases and some of the technical language that the participants use. Even if you're great at shorthand, you'll still miss intonation. Recordings are so important for a proper, in-depth analysis that highly

>

effective field researchers get the sessions transcribed. Typically this costs around £1 per minute of audio, so if you run 15, 1hr sessions it will cost you £900 (about $1400). This isn't cheap, but you need to balance the price against the time you've spent setting up the field visit, travelling to the location and collecting the data. Reviewing the transcript in depth is the most important analysis step you'll make.

Some practitioners like to video record their ethnographic observations. I've found that this is feasible in large, relatively anonymous spaces such as manufacturing plants and production lines, where you are able to set up a camera and film a large area in long shot (very much like the view of a ceiling-mounted surveillance camera). But in an office space — even a large office space such as a call centre — video recording participants is risky, for three reasons:

- To video record on business premises you need to ask for permission from a very senior person in the organisation — and this is often all it takes to have the whole visit cancelled. ("Why are they doing this anyway?")
- Video recording draws attention to the observation and changes the behaviour in the workplace, with employees understandably anxious that management might use the videos to rate their performance.
- Commercial confidentiality and data protection issues mean that it just isn't feasible in many situations (for example, when a customer's personal data appears on the participant's computer screen).

Audio recording on the other hand is usually possible in most environments. Because it's more discreet, you don't need to ask permission before your visit: you can wait until you start the observation. I ask permission by trying not to make too a big deal of it: "I'll be taking notes during our interview, but if it's OK with you I'd also like to record the session as I can't take notes quickly enough." I also make it clear how the recordings will be used: "The recording is just for my purposes and anything you tell me will be kept confidential". It's also easy to pause the recording if sensitive data gets discussed, like when a customer's credit card details are read over the phone. When I get the transcriptions, I change the participant's name along with any other information in the transcript that could identify the participant.

**Practical tip**: You can keep transcription costs low by supplying the transcriber with high quality audio recordings. I like the Olympus LS-11 PCM because the audio quality is outstanding — it's like listening to a DAB radio broadcast.

## TAKE PHOTOGRAPHS

When you enter a new environment, there's often so much going on, you're not sure what to record. The risk is that you'll review your notes and transcripts later, only to realise that you can't recall a key element of the environment. Highly effective field researchers tend to take three kinds of photograph:

- Pictures that show the overall context, such as photographs of the exterior of the building and pictures of the entire office.
- Pictures that show the participant alongside other people and objects in the environment.
- Close-up photographs of the participant interacting with specific objects in his or her environment.

Once again, you need to ask permission but in my experience people are quite happy for you to take photographs so long as they know how they will be used. It's even easier to ask if you wait until the end of the session and give the participant a gift before asking (such as some chocolates).

**Practical tip**: If you really, really can't take photographs, you can always make a sketch. These don't need to be works of art, but useful prompts to remind you about the relations between people and things in the environment.

## TAKE GREAT NOTES

Although you'll be audio recording the session, don't use this as an excuse not to take notes. The audio recording saves you from having to write extensive verbatim quotations, but it won't tell you about the participant's behaviour and environment.

The challenge when you're taking notes is to make sure that your note taking doesn't disrupt your relationship with the participant. You need to choreograph your note taking so that it is balanced with appropriate eye contact, other signs that you're attending ("uh-huh") and behavioural observations. Despite these constraints, I've noticed that highly effective field researchers somehow manage to take around 4 pages of A5 notes (steno-pad pages in the US) for each 30-minute observation. They also reserve the first page of their notes for any abbreviations and jargon that they hear: this quickly builds into a useful glossary.

CONTEXTUAL INTERVIEW HIGHLIGHTS

DATE: PARTICIPANT: JOB ROLE: AGE / SEX:

Describe the participant and the environment. What clues do these give us about the goals and priorities of the participant and the organisation?

List the 3 main themes or learnings that stood out from this observation

List the ways in which this participant is similar to other participants

List the ways in which this participant is different from other participants

This participant is most similar to:

This participant is most different from:

My experience working alongside less experienced researchers is that they try to write down everything people say — even when they have an audio-recorder running. The moment the respondent's mouth opens you can hear them scribbling. Hiding behind a notebook is a sure way to miss observations and is very distracting for the participant. So knowing what to write in your notes is important. In addition to a few quotes (the ones that really strike you) you should jot down ideas, key themes as they start to form, and also questions that you want to ask later in the discussion.

**Practical tip**: If you find that your mind goes blank and you're not sure what to write down, try the 'AEIOU' method. This acronym stands for Activities, Environments, Interactions, Objects and Users:

- Activities are goal directed sets of actions — things that people want to accomplish. What primary activities do users need to perform to meet their goals? What do users mention first? Which action words (verbs) do they use?
- Environments include the entire arena where activities take place. Take photographs or make a sketch of the environment where the action happens.
- Interactions are the exchanges between a person and someone or something else. What are the intermediate steps or tasks in the process? What steps does the user enjoy most? What are the user's pet peeves? Who reviews or authorises the work?
- Objects are the artefacts that people interact with. What physical items does the participant interact with? What software does the participant use?
- Users are the people providing the behaviours, preferences and needs. What are the participant's goals, attitudes and motivations? What are the participant's capabilities with the product domain and with technology? What education and training do participants have?

AEIOU is just one of several frameworks for making ethnographic notes, but it's the one I find most useful for user experience observations.

## SUMMARISE OBSERVATIONS IMMEDIATELY

How often have you turned to your notes a week after taking them, only to realise that you can't remember what on earth you were thinking?

This experience is even worse if you've observed 4-6 people in a single day, as they all begin to blend into one another. Because of this, highly effective field researchers always schedule around 15 minutes after each participant to summarise what they have learnt.

**Practical tip**: To make sure you create an accurate summary, try using a standardised form. You will customise this for each project, but in general it will include some demographic information (like gender and age), a description of the context, any stand-out observations or user stories and a description of similarities or differences with other observations that you've made (this last information is useful if you want to create personas as it helps you group participants). The picture shows an example of a standardised form and you'll find a printable version later in this workbook.

## TRY IT YOURSELF

Although a site visit may take just a few days, if you do it right you'll find yourself returning to your recordings, photographs, notes, and summaries for months afterwards. It's an activity that just keeps on giving. This is because it provides the key data that you need to generate red routes, build personas, create mental models, craft user stories and understand the context of use.

Next time you get the opportunity to visit a customer, behave like a highly effective field researcher and you'll discover how much easier this makes your life as a designer.

# DESIGN ACTIVITIES

# Project 1

## Find my pet

'Find my pet' is a product being developed by a small start up in your home town. The product allows people to track down wayward pets who may have got lost, run away or been dog-napped.

The system has just received funding from a firm of venture capitalists and you have been brought in to provide user research and UX design support.

The system has two components: a dog tag that contains a small GPS transmitter (which attaches to the pet's collar); and a mapping application that allows people to locate the animal that is wearing the tag. The system will locate the animal to within about 8 metres.

The design of the dog tag has been finalised but no work has yet been done on the design of the accompanying app. When you were interviewed for the job, it was clear that the company founder envisioned it as a smartphone app but he also said you have total responsibility for deciding the direction of the product. So if your research shows it will work better on a tablet, desktop or even as a standalone product, you will have his support. In fact, he's told you he's so committed to user experience that if it turns out a better use of the product would be to help parents find their wayward teenager, the team will design that instead.

Your job is to carry out user research to discover if there is a user need for a product like this. You'll then identify the key user groups, identify the key tasks, set usability goals, develop a prototype and run a usability test before iterating on the design.

# Project 2

# Tomorrow's Shopping Cart

'Tomorrow's Trolley' is an electronic shopping device that is being developed by a large supermarket in your home town. The device will allow customers to find any product in the supermarket rather than waste time looking for goods.

But 'Tomorrow's Trolley' is more than just an in-store sat nav. The device could allow users to enter in a shopping list and provide a map to each item. It could also allow users to choose recipes or create a meal planner and then help people find the ingredients. It could also allow people to scan items as they put them in the shopping trolley to help customers speed through checkout. "The possibilities are endless!" said the Head of Retail breathlessly, when you were recruited for the role of UX Designer.

This product is the Head of Retail's baby; but right now she has little idea of how it will work or even what it should do. The only thing she's decided is that it should be a physical product that attaches to the shopping trolley and that remains in store. This is because she wants it to be a differentiator to encourage people to shop in her chain of supermarkets. If it was a smartphone app then any supermarket could steal her idea.

Your job is to carry out user research to discover if there is a user need for a product like this. You'll then identify the key user groups, identify the key tasks, set usability goals, develop a prototype and run a usability test before iterating on the design.identify the key user groups, identify the key tasks, set usability goals, develop a prototype and run a usability test before iterating on the design.

*Image credit: Deb Hultgren on flickr.*

"THE POSSIBILITIES ARE ENDLESS!" SAID THE HEAD OF RETAIL

# Project 3

## Gift Giver

You work for a company that has developed an extremely accurate product recommendation technology. Superficially, the technology is a bit like Amazon's "People that bought product X also bought product Y". However, it is much more sophisticated than Amazon: the technology uses a complex algorithm based on an enormous set of purchasing behaviours across various channels. If you enter your five most recent purchases, this algorithm will predict what your next purchase will be with 95% accuracy. In one test, the algorithm predicted that a woman's next purchase would be a pack of disposable nappies before the woman even knew she was pregnant. It's spookily accurate.

The company is creating various products based on this technology, but your team have been given the job of creating a gift recommendation system. The idea is that users will enter the birthdays of significant people in their lives (such as their spouse, children and friends) along with a handful of products that each of these people has especially liked in the past. The system will then send users an email a week before the person's birthday with some suggestions for gifts that person will love. Right now, the team are thinking of this as a web application, but if your research shows that it would work better as (say) a mobile app or as some other kind of service then they will go with your suggestion.

Your job is to carry out user research to discover if there is a user need for a product like this. You'll then identify the key user groups, identify the key tasks, set usability goals, develop a prototype and run a usability test before iterating on the design.

PREDICT A CUSTOMER'S NEXT PURCHASE WITH 95% ACCURACY

# Project 4
# The Citizen Journalist

You're a UX consultant and have been called to a meeting with the editor of a national newspaper in your home town.

"The days of journalists finding all the best stories are over," he says to you. "Right now, the best way to create a newspaper is to have citizens crowdsourcing the news."

The editor has come up with a radical idea. He wants you to create a system that will allow ordinary people to film events, take photographs, write a story and submit that story for publication in his new, crowdsourced, online newspaper. His vision is that ordinary citizens will submit news stories from the front line, capture sporting events and even send in reviews of plays and art exhibitions.

> "THE BEST WAY TO CREATE A NEWSPAPER IS TO HAVE CITIZENS CROWDSOURCING THE NEWS."

The editor envisions the final system as having a mobile component but he's also open to the idea of people editing and submitting their work via a laptop or desktop computer. But basically he's passing all research and design responsibility to you.

Your job is to carry out user research to discover if there is a user need for a product like this. You'll then

identify the key user groups, identify the key tasks, set usability goals, develop a prototype and run a usability test before iterating on the design.

# Project 5

# The Digital Postcard

Years ago, a holiday wasn't complete until you sent postcards to friends and family to let them know you were having a better time than they were. But these days, between the ever-rising cost of postage stamps, the gradual disappearance of corner mailboxes, and the increasing ubiquity of both smartphone cameras and Wi-Fi, the postcard vacation ritual has fallen by the wayside.

Not any more.

You're part of a small start-up that is creating a mobile phone app called "The Digital Postcard". The app will allow users to create their own postcard, either by using a photograph they have taken on their phone, or by selecting a professionally taken image of a local beauty spot. Users will then be able to add text or other design elements to the image, craft a message for the postcard itself and then submit it for posting. At that point, the card will be printed in the home country of the recipient and then posted to the recipient's address.

Your job is to carry out user research to discover if there is a user need for a product like this. You'll then identify the key user groups, identify the key tasks, set usability goals, develop a prototype and run a usability test before iterating on the design.

*Image credit: Evan Bench on flickr.*

RE-INVENT THE POSTCARD FOR THE 21ST CENTURY

# User Research Activity

## 1 CHOOSE A DESIGN ACTIVITY

## 2 OBSERVE 5 USERS

Find out:

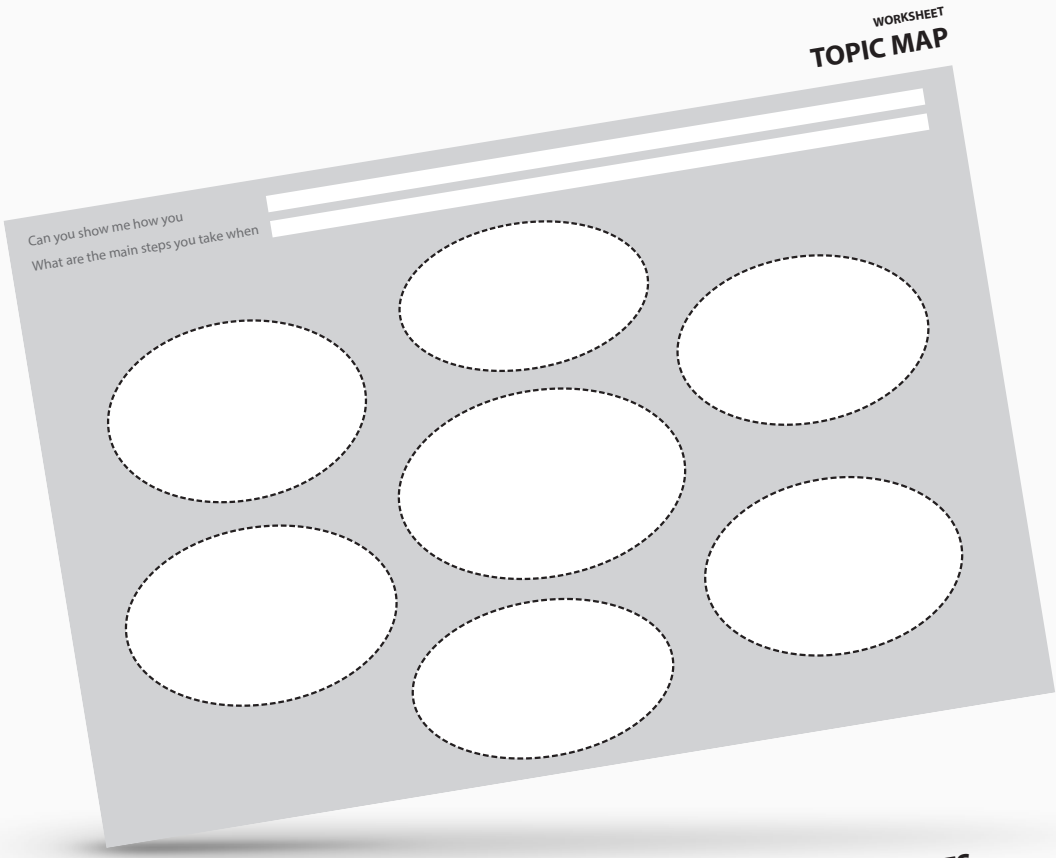
- Is there a need for this system?
- If not, how can you change it so that it meets a need?
- Who are are the main user groups?
- What day-to-day activities do they engage in that's related to the product?
- What is the workflow (the sequence of activities)?

Make sure you actually **observe** people, don't just interview them.

DON'T OVERTHINK THIS ACTIVITY. JUST GET OUT AND SPEAK TO SOME USERS!

# User Research Activity (continued)

Use the templates on the following pages to prepare the outline topics you want to cover in the field visit and to summarise each interview you carry out with a user. You'll need a copy of the interview highlights template for each user you interview.

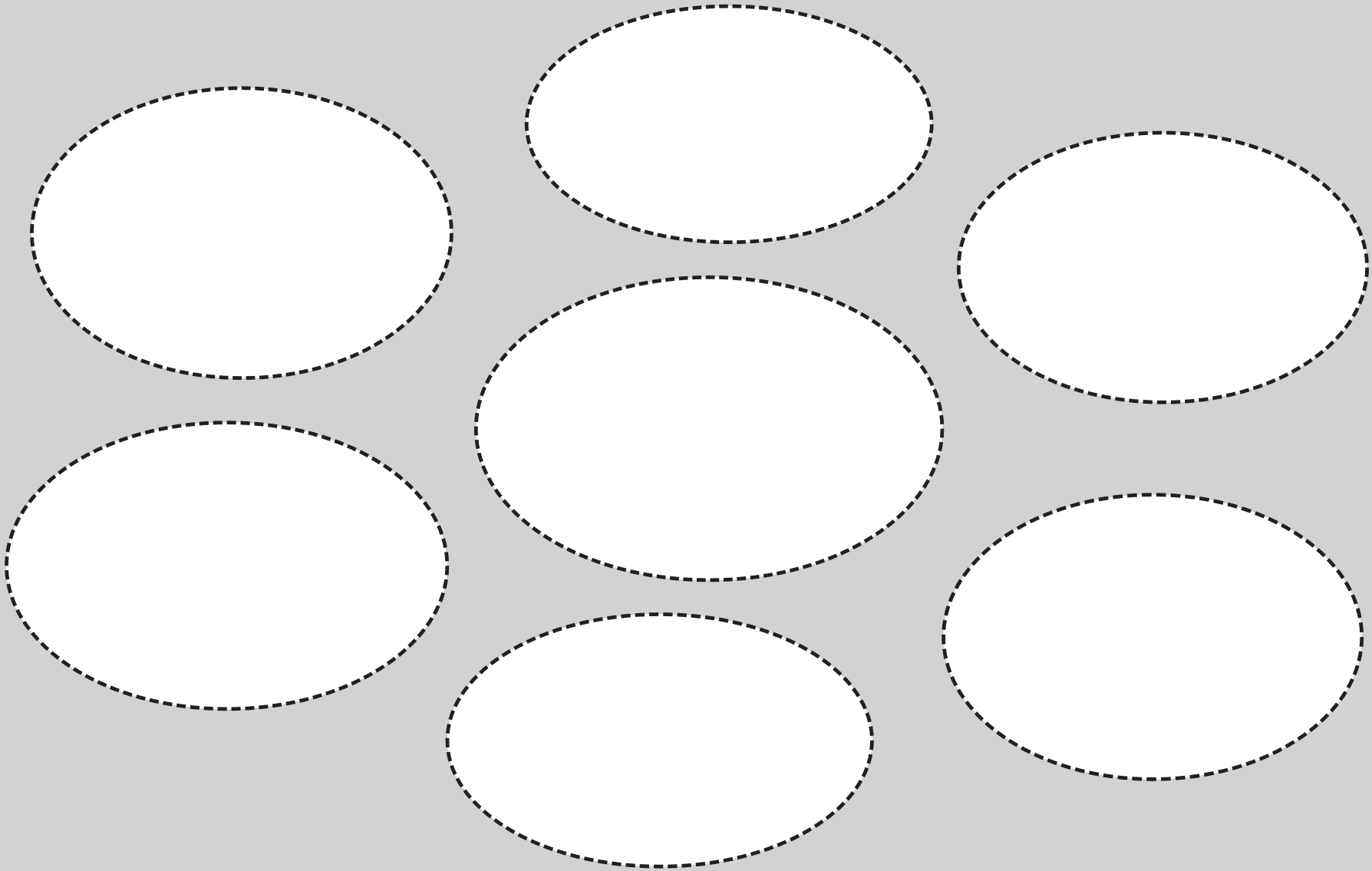


# TOPIC MAP



Can you show me how you

What are the main steps you take when



# CONTEXTUAL INTERVIEW HIGHLIGHTS



**DATE:** **PARTICIPANT:** **JOB ROLE:** **AGE / SEX:**

Describe the participant and the environment. What clues do these give us about the goals and priorities of the participant and the organisation?

List the 3 main themes or learnings that stood out from this observation

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This participant is most similar to:

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# User Experience Briefing

## How to create personas your design team will believe in

*Does your organisation use personas to describe users' characteristics, goals, needs and behaviours? Although they are a popular tool for communicating knowledge about users, many personas are little more than anecdote, hearsay and rumour. These kind of fake personas rapidly fall into disuse. Make sure your own personas get used by validating them against this 7-item checklist.*

### ASSUMPTION PERSONAS ARE FAKE PERSONAS

It's easy to create a set of plausible statements about the primary users of a product or web site. We can make assumptions about their goals, their background and their behaviours, find a suitable bit of clip art and voila, we have a persona. It's much harder to create an accurate description of users that the design team will believe in and actually use to resolve design disputes.

How do we know if we have a real persona or something fake? Ask these 7 questions of your persona:

1. Is the persona based on contextual interviews with real customers?
2. Does the persona evoke empathy by including a name, a photograph and a product-relevant narrative?
3. Does the persona appear realistic to people who deal with customers day-to-day?
4. Is each persona unique, having little in common with other personas?
5. Does the persona include product-relevant high-level goals and include a quotation stating the key goal?
6. Is the number of personas small enough for the design team to remember the name of each one, with one of the personas identified as primary?
7. Can the development team use the persona as a practical tool to make design decisions?

If you have a great persona, you'll be able to answer each question with a resounding "Yes".

### P-E-R-S-O-N-A

As a memory aid, we can take each letter in the word PERSONA and relate it to one of these criteria:

P is for **Primary research**
E is for **Empathy**
R is for **Realistic**
S is for **Singular**
O is for **Objectives**
N is for **Number**
A is for **Applicable**

Let's look at each of these in turn.

### 7 WAYS TO IDENTIFY FAKE PERSONAS

**Primary research: Is the persona based on contextual interviews with real customers?**

It's easy to create a fake persona by inventing an imaginary character containing all of your assumptions about users. But if your assumptions are wrong then your persona is worthless and will mislead the development team. As Mark Twain once wrote, "Supposing is good, but finding out is better."

Every key element of your persona should be traceable to primary research with end users. For personas, “primary research” means observations of customer behaviour combined with interviews in the places where people actually use your product or web site. This means you should shun research methods like focus groups and instead use techniques like field visits.

**Empathy: Does the persona evoke empathy by including a name, a photograph and a product-relevant narrative?**

It's a lot harder to ship a bad product if you know the individual who is going to have to use it. One of the key benefits of having a persona is that it helps the design team empathise with the user and appreciate the difficulties that the user faces. That's why personas have a name and a photograph: to make them real, so the design team believes in the personas. People should refer to the persona by name and think of him or her as a real person. To achieve this, a good persona also has a compelling narrative: not simply a bulleted list of goals but an engaging story describing the persona, to help designers relate to the persona.

**Realistic: Does the persona appear realistic to people who deal with customers day-to-day?**

Once your persona has been created you need to sanity check your creation with people in the organisation who work with customers every day. Send your persona to front-line staff, people in customer support and to the sales team. Check that this is someone they recognise and that they believe in the persona's goals and behaviours.

**Singular: Is each persona unique, having little in common with other personas?**

Each of the personas in your set should comprise a unique cluster of behaviours, motivations and goals. If you have personas that are too similar to each other it becomes difficult to remember who you are designing for. As Alan Cooper, the father of personas, writes: "It is the specificity and detail of personas that gives them their value."

**Objectives: Does the persona include product-relevant high-level goals and include a quotation stating the key goal?**

Understanding the persona's goals is the heart of great user experience design. So your persona needs to make these goals explicit, with the most important goal captured in a

brief quotation. Part of the art in creating personas is pitching your goals at the right level. For example, "Keep in touch with friends and family" is probably too high-level a goal to be useful for a design team developing a web site that sells mobile phones. A tactical goal like, "Find a handset small enough for my jacket pocket" captures the user's goal and also provides an appropriate design target.

**Number: Is the number of personas small enough for the design team to remember the name of each one, with one of the personas identified as primary?**

If you start heading into double figures, you've probably got too many personas. This is because the design team won't be able to remember all of their names or keep them in mind when designing. A Forrester survey of consultancies showed that firms created around four personas per project (and these were based on an average of 21 user interviews per project). You also need to make sure that one of your personas is primary: this will be the persona whose needs won't be met if you design the interface for someone else (whereas the other personas will accept the primary persona's interface).

**Applicable: Can the development team use the persona as a practical tool to make design decisions?**

Personas are lots of fun to create but don't lose sight of the fact that they are a design tool. This means that the content of your personas — the persona's goals, behaviours and mental model — should help the design team make better design decisions. Invariably, this means you want your persona to focus on behaviours, motivations and goals rather than demographics. Whether your persona does or doesn't own a dog is irrelevant to the use of your product (unless you're designing a web site for the Kennel Club).

## AVOIDING FAKES

Fake personas are easy to create but risk derailing your design effort. So remember the mantra: Primary research; Empathy; Realistic; Singular; Objectives; Number; Applicable.

## Persona Groups Activity

**What different groups of users did you identify?**

USE THE TEMPLATE ON THE NEXT PAGE TO SUMMARISE THE USER GROUPS

WORKSHEET

# PERSONA GROUPS



| | GROUP 1 | GROUP 2 | GROUP 3 |
|---|---|---|---|
| **GIVE THIS GROUP OF USERS A NAME**<br>e.g. 'Telesales support' | | | |
| **WHY DO THEY USE THE APPLICATION?**<br>Write down the goals as users would express them. Don't simply write down the functions you expect them to use. | | | |
| **WHAT INFORMATION DO THEY WANT?**<br>In order to achieve their goals, what kind of information, functions or features do they need? | | | |
| **HOW DO THEY DIFFER FROM THE OTHER GOUPS?**<br>What makes this group a group? Think about usage patterns, job roles, tasks and activities. | | | |

# Individual Persona Activity

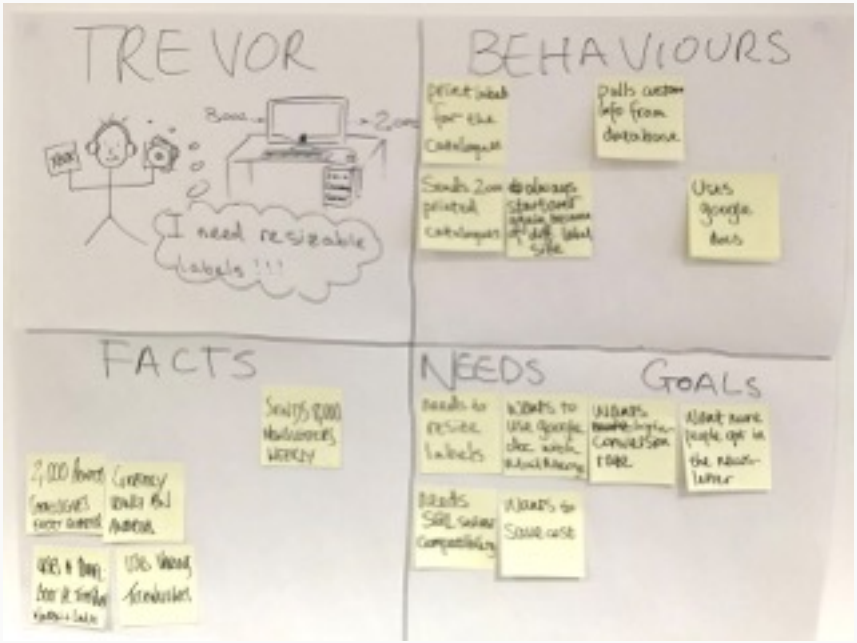
To do this activity, you'll need a sheet of flip chart paper, some Sharpies and a pack of sticky notes. You will create a persona for ONE of your user groups that will include:

- A sketch: Show the persona's context, with a quotation stating the main user need.
- Facts: Descriptive demographic information about your persona.
- Behaviours: How is the persona solving their problem now?
- Needs and goals: What does your persona want to accomplish?

Arrange the flip chart paper in landscape format and split it into four quadrants.

**Label the top left quadrant with a name for this user type**. Draw a sketch showing this user type in a context having some thought that's relevant to your product. This should be some expression of the main user need.

**Label the bottom left quadrant 'Facts'**. Using sticky notes, list the facts you know to be true about this user type (such as gender, age, job title…) Put one fact per sticky note. Try to come up with about 10 sticky notes, and afterwards refine this to just 5.




**Label the top right quadrant, 'Behaviours'**. In this section, you'll state what this user type wants to do with the product. What problem are you solving for users? How are they attempting to solve the problem now? What do they currently do that's related to usage of the product? What motivates people to use the service? Put one behaviour per sticky note. Again, try to come up with about 10 sticky notes, and afterwards refine this to just 5. If you're stuck, here's a tip. Behaviours are actions so they should start with a verb: an action word.

**Label the bottom right quadrant, 'Needs and goals'**. In this section, you'll state what users want to achieve with the system. What is this user type's deep drives and motivations? How would users satisfy their goals if your system didn't exist? How do users want to feel when using the system? Put one need/goal per sticky note. Once again, try to come up with about 10 sticky notes, and afterwards refine this to just 5. If you're stuck, here's a couple of tips. You could take one of the behaviours you've already listed and ask: why would someone do that? Another tip is that needs and goals start with key words like "wants", "wishes that", "would like", "hopes for", "needs".

CREATE A PERSONA FOR ONE OF YOUR USER GROUPS

# User Experience Briefing

## Red route usability: The key user journeys with your system

*Important roads in London are known as 'red routes' and Transport for London do everything in their power to make sure passenger journeys on these routes are completed as smoothly and quickly as possible. Define the red routes for your system and you'll be able to identify and eliminate any usability obstacles on the key user journeys.*

Because London has more cars than it has parking spaces, driving in London is like a huge game of musical chairs. The lucky few have parking spaces by their home or office but the majority of us are doomed to drive around and around in circles hopelessly searching for empty stretches of kerb. A while back, this got even more difficult: on certain main roads yellow lines indicating a parking ban were replaced by red lines. Unlike yellow lines, single and double red lines ban all stopping, parking and loading.

### RED ROUTES IMPROVE SPEED AND EFFECTIVENESS

Roads with red lines on them are known as red routes: these are the key road arteries in London. The idea is that these routes need to be kept clear in order for traffic to move smoothly through the capital (we're told that just one driver can clog the roads). Transport for London is uncompromising in its enforcement of parking restrictions on red routes. Make the mistake of stopping your car on a red route to buy your daily paper and traffic wardens converge on you from nowhere.

The motorist's loss proved to be the bus passenger's gain. Research showed that bus journeys were 10% quicker and 27% more reliable. Journey time reliability improved by 20% and red routes led to a 6% reduction in accidents.

Improvements in speed and accuracy need not only apply to bus routes. We can get analogous gains by applying the red route philosophy to web sites. By adopting the role of enthusiastic

traffic wardens and treating usability obstacles on red routes like badly behaved motorists, we can ruthlessly eradicate any usability obstacles on the key user journeys. To begin, we need to map out the red routes for our site.

### RED ROUTES DESCRIBE FREQUENT AND CRITICAL ACTIVITIES

In defining red routes, it's important to consider both the frequency and critical nature of the activity. Activities that customers carry out frequently are crucial to the success of the web site since they will determine customers' perception of it. One example of a frequent activity might be search. In contrast, critical activities may be infrequent but users will hate your web site if these tasks are not well supported. An example of an infrequent but critical task might be editing my personal details stored on a web site. Finally, activities that are both frequent and critical are the web site's bread and butter. Get these wrong and you may as well not be in business.

### RED ROUTES SHOULD REFLECT KEY BUSINESS OBJECTIVES

You probably already have an idea of some of your red routes from a business perspective. For example, if you run an e-commerce site, buying a product is a red route. If it's a local authority site, paying council tax is a red route. If it's a charity site, then showing people how they can support or donate to the charity is a red route. These red routes are clearly important from the perspective of the organisation: you need to make sure these routes are trouble-free to make money.

### RED ROUTES SHOULD REFLECT KEY CUSTOMER OBJECTIVES

But this list of red routes is only part of the story. Visitors to your site will have their own goals that your site needs to support. Some of these goals — like buying a product — will match your organisation's goals. But there will be others that may not seem that important to your organisation but that are critical if customers are going to do business with you.

> RED ROUTES MUST BE COMPLETE ACTIVITIES, NOT SIMPLE TASKS

For example, if you run an e-commerce site, one of your customers' goals will be to check that they are getting value for money. Making a decision to buy is difficult. There is always a nagging feeling that you can get the same product cheaper elsewhere, and that a different model might be a better fit for your needs. Consider the act of buying a new smartphone. There's always the risk that the device you have bought will have poorer battery life than another model, or the audio quality might not be as good, or the screen might be harder to read. As a seller of phones, this isn't a big deal for you (other than the risk of returns for truly awful products). But for a purchaser this is important information. So we also need to define 'choosing' a product as a red route, and this might include links to independent reviews, testimonials from other customers and even showing comparative prices from competitor sites.

### WHAT DOES A RED ROUTE LOOK LIKE?

If you look at a map of London with the red routes superimposed upon it, there doesn't appear to be an obvious visual logic to the design. This is because London's archaic road system was never designed to handle the traffic that now runs through it, and just like water running downhill, certain routes have just evolved based on usage. With a web site, we can be more proscriptive. To be useful, red routes should have the following five characteristics.

- Red routes must be complete activities, not simple tasks: they will probably require several web pages to complete.
- Red routes must imply an obvious measure of accomplishment: anyone should

be able to describe what success looks like on a red route (in contrast to platitudes like "we want our site to be easy to use").
- Red routes must be "portable" to competitor web sites: for example, we could attempt to carry out the 'council tax' activity on any local authority site.
- Red routes must focus on goals not procedural steps: they do not dictate any single implementation.
- Red routes must be accurate and realistic: they should focus on the most important goals for the customer and the organisation.

### BASE YOUR RED ROUTES ON REAL CUSTOMER DATA

One way of defining red routes (admittedly, not a good one) is to simply make them up. We can all tell a good story as to why someone, somewhere, will want to do a certain activity at our web site. For example, when working with a recent client I was told that a typical customer red route was to "read the latest news about the company". We could justify this red route by making up a story about a journalist on a particular slow news day that is casually surfing the web waiting for something interesting to turn up. And thanks to the benefit of groupthink we might even believe it for a while. But it's unlikely this will ever be a red route from a real customer's perspective.

A better way is to carry out some research with customers. This doesn't mean hiring a market research company to run a focus group and it need not mean carrying a clipboard and stopping people in a shopping mall. This is because you probably already have a lot of customer data that you can mine for this activity. For example:

- Have a look at a month's worth of search queries. (If your site doesn't have its own search engine you can still look at the search queries that come to your site via search engines like Google). Group together common queries and see if you can determine what people are trying to achieve at your site.
- If you have a bricks and mortar office, speak to the people who work there. What questions do customers ask?
- If you have a call centre, spend a day listening into customer calls. Survey and classify the calls that come in.
- Look at what your competitors are doing. (But be careful, they might just have made it up too.)

# Red Routes Activity

In 5 minutes, brainstorm **5 red routes** for **one** of the following:

- An application that lets you back up your computer over the Internet
- A presentation app (like PowerPoint) that runs on a mobile phone
- An application to help you calculate your taxes
- An application that lets you read online magazines on a tablet device, like an iPad

TASKS ARE ACTIONS SO THEY SHOULD START WITH A VERB

# Red Routes Activity

**Now let's apply this to your design activity.** In this exercise, you'll brainstorm **10 red routes** that describe your persona's key tasks when using your application.

**Remember to focus on your primary persona's tasks** — not just tasks you think "anyone" will want to do.

Write 10 ideas, one per sticky note.

Hint: tasks are actions so they should start with a verb.

# User Story Activity

Sort the red routes into two piles: 7 less important and 3 more important. (“Important” means most relevant to your user and reflects your vision for the system.) Use the important red routes to create 2-3 user stories on index cards.

Use this format: **[Persona] says, “As a [role], I want to [do this task] so that I can [achieve this goal]".**





**Check:**

- Is it something a real user would say?
- Does it help you design and prioritise?
- Does it unnecessarily constrain possible solutions?
- Do you have good evidence?

# Define Usability

## Complete this sentence…

ONE THING THAT MAKES A PRODUCT OR WEB SITE USABLE IS...

# Information architecture: Quick Activity

How would you organise the list of contacts in an address book?

Imagine you work for a design team that is creating a new kind of address book that will run on a mobile phone.

Your job is to come up with various ideas about how to organise the contacts. So obviously, organising contacts by alphabet is one way. But how many others can you think of?

Take 5 minutes to come up with some ideas.

# Information architecture: Quick Activity

Now go through the exercise again, but this time see if you can generate more ideas using the **5 hat racks**.

What would it mean to organise the list of contacts in an address book application by:

**Location?**
**Alphabet?**
**Time?**
**Category?**
**Hierarchy / Magnitude?**

# User Experience Briefing

## Card Games for Information Architects

*This briefing reviews 6 simple but powerful research techniques you can use to improve the information architecture of your product or web site. None of these activities requires a computer. You simply need a bunch of cards, a participant and a desk.*

Over the last few years I've seen a quiet revolution in user experience research. Participants no longer need to come to a usability lab. Nowadays, we can carry out many user research activities over the web. Although I welcome this change, user experience research is fundamentally straightforward. There's a lot you can do with the simplest of tools.

### EXPLORATORY CARD SORTING

Many people are familiar with card sorting as a method of finding out how your users classify the information in your domain. You need this information to create the menuing system for your application or the information architecture for your web site.

#### How to carry out exploratory card sorting

Prepare a stack of cards. Each card contains a title (usually the title of a function or a page within your web site). In my card sorts, I also include a short description of what that function is used for (this is optional but helps avoid simple keyword matching). Card sorting works well when you have more than 30 and less than 100 cards.

Ask around 15 users to sort the cards into groups that make sense to them.

Once the cards have been sorted into groups, give each user a stack of blank cards. For each group, users take a blank card and write on the card a description of what makes that group a group (these will become the proto-headings of your navigation structure).

Analyse the data to (a) find out the cards that users place together, (b) the terms people use to describe the groups of cards, (c) cards that appear in multiple categories and (d) how the results compare with the existing (or proposed) design. Software exists to make the analysis easier — I'd recommend SynCaps, version 1 of which is now a free download (get it from http://www.syntagm.co.uk/design/cardsortdl.shtml).

The process I've just described is called an "open" card sort. You can also carry out a closed card sort where you give people the group headings and ask them to put the individual cards in each group. This tests the quality of the taxonomy you have created.

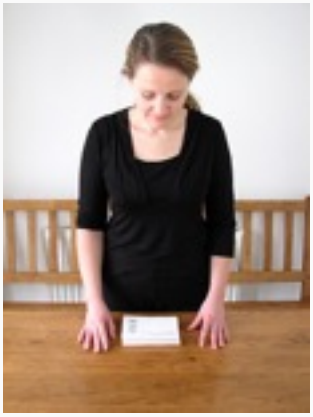
But if you're interested in where in the navigation structure people would go to complete a task, you should use a tree test.

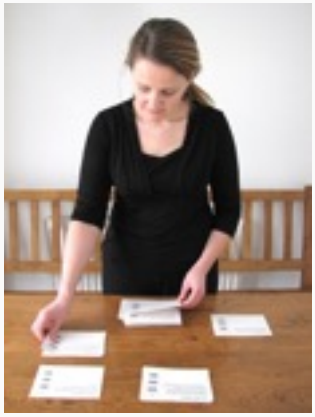
### TREE TEST

Use a tree test to check if people can actually find stuff in your navigation structure.

#### How to carry out a tree test

Prepare a stack of around 10-20 cards. Each card contains a short description of a likely goal that your web site supports. For example, "Find an exercise bike" might be common task for a web site that sells fitness products. Tasks where





people are asked to find stuff work well with a tree sort.

Prepare a set of group headings — these will be the headings from your existing navigation structure or derived from an open card sort. Then, on the back of each card, write down the sub-groups that appear in that group. For example, on one side of the card, you might have the group heading, "Sports & Leisure". On the reverse of the card, you might have the sub-groups, "Fitness", "Camping & Hiking", "Cycling," etc.

Lay out the group headings in front of the user in a grid. Give users the task cards. Ask them to pick the group card they would use to start that task. Then turn over the group card and ask them to pick the sub-group they would use to complete that task.

Analyse the data to find out the percentage of users that choose the correct option for each task.

### TRIGGER WORD ELICITATION

Use trigger word elicitation to identify the words or phrases that will encourage users to click on links. You need to identify trigger words because users arrive at a page on your web site, hunt around for a link that seems the best fit to their goal and then they click on it — and if you site doesn't contain the trigger word, they hit the back button.

#### How to carry out a trigger word analysis

Prepare a stack of around 10-20 task cards, as with the Tree Test. Each card contains a short description of a likely goal that your web site supports. For example, "Book a romantic meal for two" might be common task for a restaurant web site close to Valentine's Day.

Ask users the words or phrases they would expect to find on a web site that supported that task. For example, you might get phrases like, "Book a table", "Make a reservation" and "Put your name down".

Analyse the data to identify the common words used for each task. Make sure your web site contains those words to direct users towards the appropriate content.

### WEB BOARD

Use a web board to find out where users expect to find your functions. This works well for a web page where navigation items appear in headers, footers and page margins as well as the more conventional menus. You need these data because if your functions appear where people expect, they will find them more quickly.

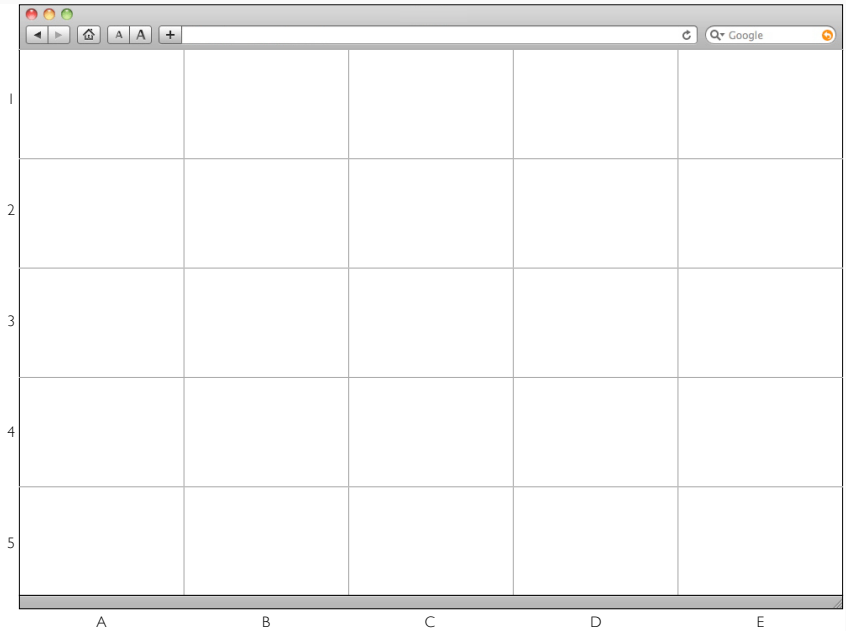
#### How to use a web board

Take a screen shot of a blank browser page. Open the image in your favourite drawing application and overlay a 5 x 5 grid on the page (the next page shows an example). You want the print out to be as large as possible, so print it on A3 paper or use a photocopier to scale up an A4 or Letter-sized page to A3.

Prepare a stack of cards. Each card contains a title of the function or link and a short description of what that function is used for (as with an card sort).

Tell users that the browser page represents a page from your web site. Ask users to place each card on the grid in the approximate location where they would expect to find it. For example, you may find that users place a 'Back to home' card in the top left square, and a 'Sign into your account' card in the top right square

Using the letters and numbers on the grid, note down where users expect each function to appear. Analyse the data to identify areas of agreement across participants. Make sure your functions and links are placed in these locations.




## FUNCTION FAMILIARITY TEST

Use a function familiarity test to gauge how often people use functions within your application. You need this information to discriminate frequently used functions from infrequently used functions.

### How to carry out a function familiarity test

Prepare a stack of cards. Each card contains a title of the function and a short description of what that function is used for. For example, for a mobile phone you might have "Address book", "Ring tones", "Network", etc.

Ask users to sort each card into three piles: functions I use frequently; functions I use sometimes; and functions I rarely or never use. (This is easy to adapt: for example, you could change the test to measure levels of understanding by naming the piles, "Functions I know how to use", "Functions I can use by muddling through" and "Functions I don't understand").

If a function appears in the "use frequently" pile, give it 5 points. If it appears in the "use sometimes" pile, give it 2 points. After you've tested all participants, add up the scores to identify the most used functions in your interface.

## SWAP SORT

Use a swap sort to find out the most important functions, features or tasks within your interface. You need this information to know how to prioritise content.

### How to carry out a swap sort

Prepare a stack of cards. Each card contains a title of the function, feature or task and a short description of it.

Ask users to read through the cards and fish out the 10 most important cards for them. Put the other cards to one side — you won't be using them anymore.

Ask users to place the 10 "most important" cards vertically in front of them. Ask users to rank order the cards by swapping adjacent cards, putting the most important ones higher up in the list, until no more can be swapped.

Give the card placed first in the list 10 points, the card placed second in the list 9 points and so on — so the card placed last in the list gets 1 point. After you've tested all your users, total the points for each card and use the results to identify the most important functions in your interface.

# Card Sorting Activity

You are part of a design team developing a web site that sells financial products. Each of the main web pages have been written onto an index card. Sort the cards into groups that seem logical to you. You can use as many or as few groups as you wish.

It should take you about 10-15 minutes to complete. It's really worth doing as you'll be able to see what the test is like from the perspective of a user and afterwards, you'll be able to view the results.

Use this link to take part in the activity:
https://demo.optimalworkshop.com/optimalsort/webusability

Use this link to view the aggregate results from other students:
https://apps.optimalworkshop.com/optimalsort/shared-results/demo/webusability

# Mental model activity

Use these questions to uncover your mental model of the way an ATM machine works.

- What information is stored on your bank card?
- Is your current balance stored on the card? How about your overdraft limit or credit limit? Your PIN? How about your name?
- Where is the information stored? Is it stored on the magnetic strip? Or it stored on the chip, if you have a chip and pin card?
- What happens to the card when you place it in the machine? Does the ATM read the chip or the magnetic strip?
- Why are there sometimes pauses after you enter information?
- Why doesn't the machine give you your card back once you've entered your PIN? Why does it stay in the machine?
- How do you think the machine counts out the money? For example, lets say you withdraw 50 in you local currency, 50 pounds, 50 dollars, 50 Euros or whatever, and let's say the cash comes out as a 10 and two 20s. How is the money counted? What's happening inside the machine? How is it dispensed?
- Do you count the money? Why? If you don't trust it, why not?

Try asking a friend these questions to uncover his or her mental model. What differences did you observe?

Image credit: Tax Credits on flickr.

TRY ASKING A FRIEND THESE QUESTIONS TO UNCOVER HIS OR HER MENTAL MODEL

# User Experience Briefing

## A CRAP way to improve usability

*Visual design is often dismissed as eye candy. In fact, we can use four key principles of visual design to create more usable interfaces. These principles are Contrast, Repetition, Alignment and Proximity.*

Within the field of user experience, visual design is sometimes perceived as a bit of an outsider. Indeed, some visual designers are apparently feeling a pressure to rebrand themselves as "user experience" designers to progress their careers. In my experience with clients, visual design is often likened to decorating the walls of your living room. It makes everything a little nicer, but it's hardly a key part of the architecture of your house.

In fact, visual design has an important impact on the usability of designs. Research shows that people believe that more attractive designs are easier to use than less attractive designs — even when they're not. This is known in psychology as the aesthetic usability effect and in folklore more simply as, "first impressions count".

But good visual design offers more than improving people's attitudes to a design. Good visual design will actually make interfaces easier to use.

There are at least four key principles of visual design that have an important impact on usability. These four principles — contrast, repetition, alignment and proximity — were originally given the engaging acronym CRAP by Robin Williams (the visual designer, not the comedian). You can exploit these four principles to make user interfaces both more attractive and easier to use.

Let's look at each one in turn.

### CONTRAST

Contrast in visual design helps to direct the viewer's eyes to what's important and helps them focus on what to do next. This means making your call to action — or whatever the focus of attention is meant to be on the page — very different from the other items that surround it.

In this example (Figure 1), the "Add to Basket" button is formatted identically to the "Cancel" button. This means that the user will have to carefully read the text on each button before making a choice.

With good use of contrast, we can make the default choice immediately apparent to users. For example, we can:

- Reduce the apparent depth of the button.
- Use a Roman (as opposed to a Bold) font.
- Remove the button entirely and change it to a hyperlink.

Figure 2 shows the impact of making these changes and with each change it becomes more self-

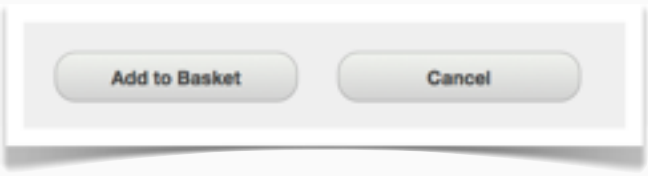



Figure 1 (above): Two buttons on a form, one labeled "Add to Basket" and the other labeled "Cancel". Because the two buttons are formatted identically, it's not self-evident which is the primary and which is the secondary action.

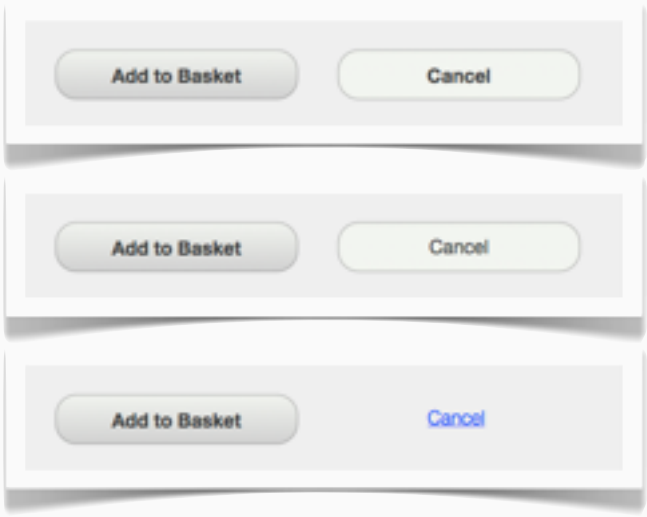



Figure 2 (right): Three examples of using contrast to distinguish the primary action from the secondary action.The first example removed the apparent depth of the "Cancel" button; the second example builds on this and changes the font; and in the third example, the button is replaced with a hyperlink.

evident which choice we expect the user to make.

This example shows that you have many simple ways of creating contrast in your user interface, even if you think your design skills are limited. Simple text changes like bold, italic, underlining, uppercase, colour and highlighting may often be sufficient (although you obviously need to use these in moderation).

Contrast can also be used for more nefarious purposes. Figure 3 shows a voting paper used during the Anschluss (the 1938 annexation of Austria into Greater Germany by the Nazis). Note how the designer of this ballot paper has used contrast to make the 'default' choice ("Ja") easier for voters to identify. (Officially, 99.73% of people voted 'Yes' in this ballot.)

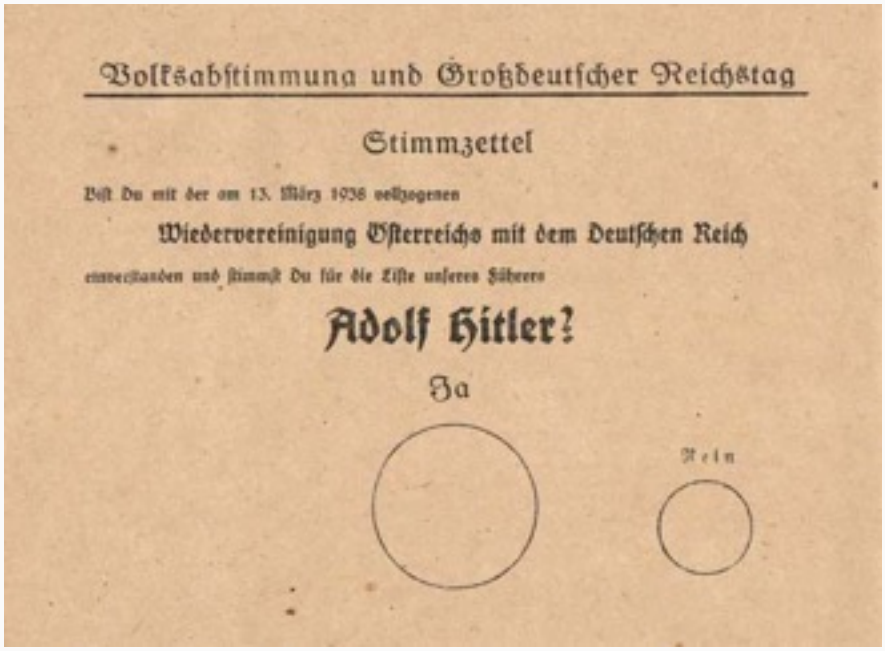



Figure 3: Voting paper from 10 April 1938. The text reads "Do you agree with the reunification of Austria with the German Empire that was enacted on 13 March 1938, and do you vote for the party of our leader Adolf Hitler?" The large circle is labeled "Yes" and the small circle is labeled "No". From Wikipedia.

## REPETITION

Repetition is really about consistency. (Sadly, 'Consistency' doesn't make a memorable acronym when combined with the other principles, so we're making do with 'Repetition' instead). At one level, this principle simply states that systems are more usable (and easier to learn) when similar stuff is presented in similar ways. Note that this means both internal consistency (within your application) and external consistency (with the platform you're designing for). For a web site, internal consistency means making sure you use the same kind of fonts, icons, headings, links, list styles and page layout. External consistency means things like using standard buttons, link colours and search results. Jakob Nielsen has even coined a 'Law' for this: "Users spend most of their time on other web sites." People's expectations are formed by what they experience on other sites so if you do it differently your site will be harder to use. So ensure that people can find the common elements of a web page (such as page titles, site navigation, page navigation, search etc.) in the standard locations.

One of the best ways to use this principle intelligently is to think about the task your users are carrying out. Consider this example: if I asked you to put away the knives, forks and spoons in my kitchen, you would look for the cutlery tray. But if I then asked you to put away a penknife, you would probably look for the overstuffed drawer that contains items like the corkscrew and the tin opener. And if I then asked you to put away a box cutter, you would probably place it in the garage with the hammer, screwdrivers and other tools. This seems inconsistent: they are all knives, so why put them in different locations?

There's a deeper reason why consistency matters in user interface design and this example illustrates it. Your behaviour in these examples is entirely consistent with the task that you use these objects for. A knife is more like a fork than a box knife when the task is eating; but it is more like a hammer when the task is DIY. The task is the common denominator.

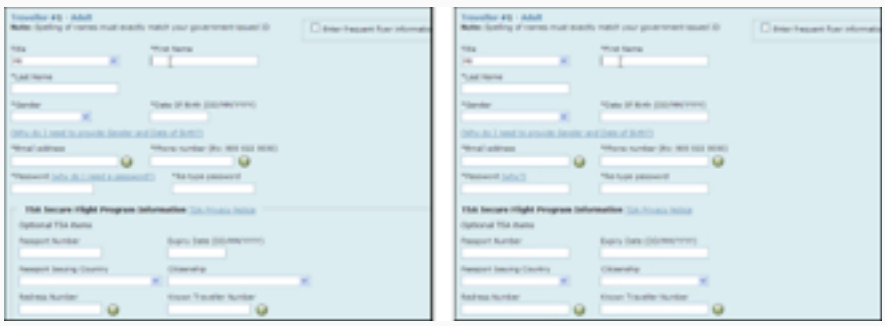


Figure 4: Two identical forms that differ only in their use of alignment.

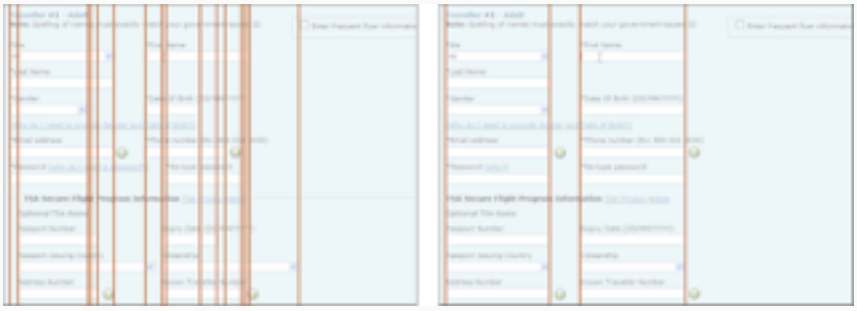


Figure 5: This shows the same forms as in Figure 4 but now the red lines show the vertical alignment points of the various user interface elements. The form on the left (which most people describe as looking more complicated) also has more lines of vertical alignment.

So when thinking about how to apply repetition in your user interface, think about the tasks that users carry out and how you can support that with your visual design.

## ALIGNMENT

Alignment simply means making sure that all elements of the design line up horizontally and vertically. This can best be achieved by designing the interface to an underlying grid.

Alignment is probably the most dramatic visual treatment you can do to a design to make it appear visually easier to use. Take a look at Figure 4, below. Without thinking about it too hard, which form looks easier to complete, the one on the left or the one on the right?

Most people say the form on the right looks easier to complete. The two forms are identical except that the form fields have been properly aligned in the example on the right. In Figure 5, I have overlaid each form with red lines to show the various alignment lines. You can see that the form on the left, which most people describe as looking more complicated, also has more vertical alignment lines.

As well as making interfaces look more complicated, poor alignment can also lead to usability mistakes. One of the most dramatic examples comes from a voting paper used in Florida in the 2000 US Presidential election. This ballot paper is called a 'butterfly' ballot because the paper has names down both sides, with a single column of punch holes in the centre. Alignment issues caused many people to vote for the wrong candidate.

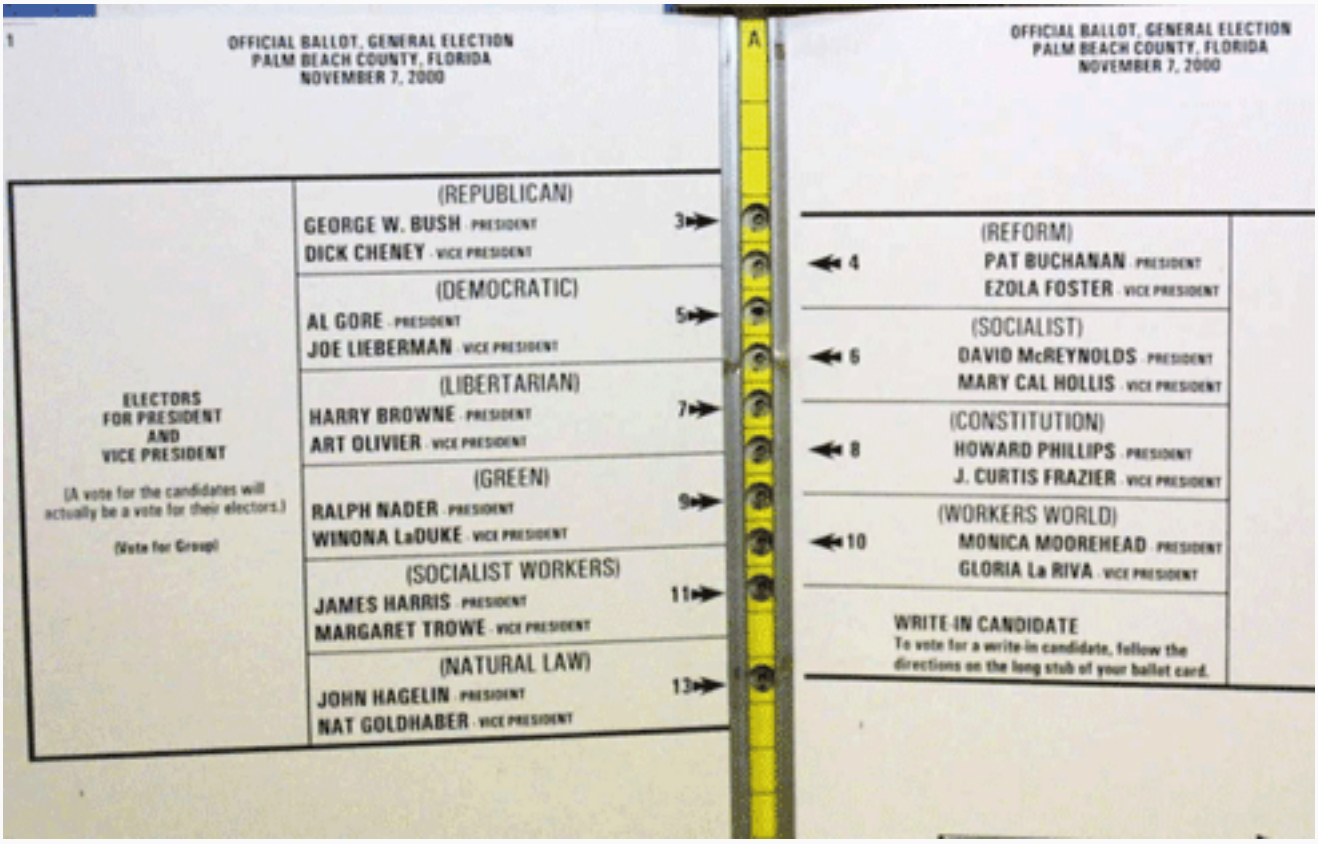



Figure 6: The ballot paper from the US Presidential election in Florida in 2000. Although the Democrats are listed second in the column on the left, voters need to select the third hole on the ballot to vote for them. Voters that select the second hole cast their vote for the Reform party. From Wikipedia.

## PROXIMITY

The principle of proximity was first articulated by the Gestalt school of psychology. The Gestalt theorists emphasised visual perception was about perceiving organised wholes, not just about seeing isolated objects. The principle of proximity means that if you place elements in a user interface near each other, people will think that they are related somehow. There are two ways that you can use this principle to enhance usability. First, proximity will help users find the option they are looking for. If users want to see your range of laptops, it will be quicker for them to find this if it's grouped with other related items in a part of the interface devoted to "Computers & Office" than if it's & one of many options in a disorganised mess on the page (see Figure 7).

You can apply this principle in a user interface by appropriate use of background colours, borders and white space: these will help users identify a set of items as a discrete functional block.

But there's a second reason why this principle makes user interfaces more usable: the way you organise information on the page helps people build a conceptual model of how the interface is structured. The web design trend of using "portlets" is a good example of this.

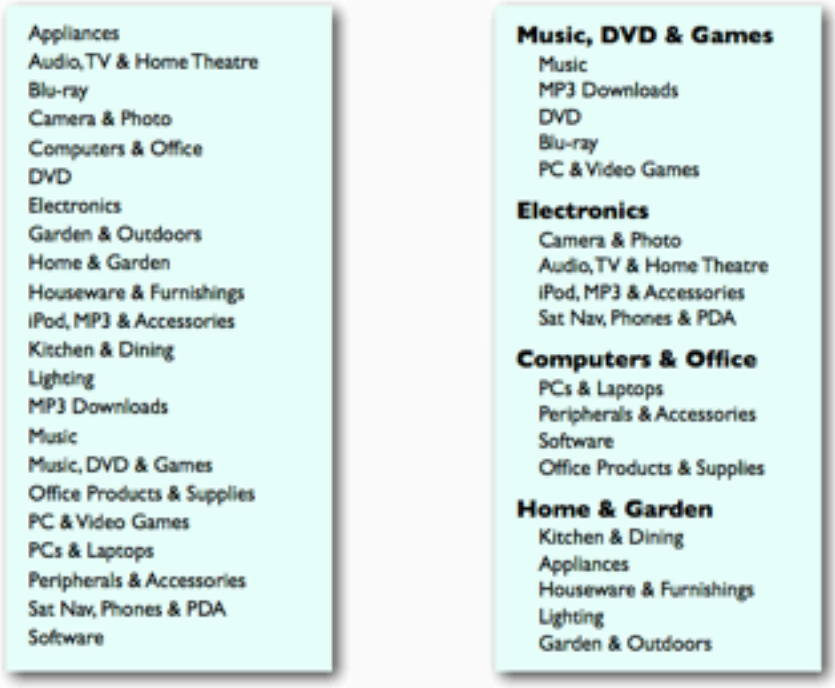



Figure 7: A simple example showing the principle of proximity used to organise items in a navigation menu. The items on the left are in alphabetical order, whereas the ones on the right are organised into groups with each group given a heading.

## CRAP DESIGNS ARE MORE USABLE DESIGNS

It's tempting to dismiss visual design as mere icing or eye candy. And certainly, you will never rescue an awful interface simply by making it more attractive. ("You can put lipstick on a pig," as the old saying goes, "but it's still a pig"). But its wrong to think of good visual design as doing nothing more than encouraging first use. Following CRAP design principles actually makes systems more usable.

# Form Redesign Activity

Use the principles of contrast, alignment, repetition and proximity to improve the visual design of the form on the next page.

You are also free to make any other changes that you think would improve the usability of the form.

CONTRAST

ALIGNMENT

REPETITION

PROXIMITY

FEEDBACK FORM

TITLE

FIRST NAME

SURNAME

TELEPHONE NUMBER

E-MAIL ADDRESS

COMMENTS

RESET

SUBMIT

# User Experience Briefing

## 7 myths about paper prototyping

*Paper prototyping is probably the best tool we have to design great user experiences. It allows you to involve users early in the design process, shows you how people will use your system before you've written any code, and supports iterative design. So why are some design teams still resistant to using it? Here are 7 objections I've heard to paper prototyping and why each one is mistaken.*

### MYTH 1: "I CAN'T DRAW WELL ENOUGH TO CREATE A PAPER PROTOTYPE."

When given a pencil and paper, most people (myself included) will tend to doodle words rather than draw pictures. Art was never my subject at school, so when I see wonderful, artistic renditions of user interfaces, I tend to feel somewhat humble. I can't draw like that, my inner voice reminds me, so don't pretend you can sketch a user interface.

But just because it's on paper, it doesn't mean it's a paper prototype.

A paper prototype is a sketch — a quick visualisation of your idea. The artistic merit of your sketch is irrelevant. The purpose of paper prototyping is to evaluate the idea behind the user interface, not the sketch itself. Paper prototypes are quite literally 'artless': simple and unaffected.

This focus on 'neat and pretty' is one of the biggest obstacles to overcome with paper prototyping. It has even spawned a real industry. For example, search the web and you'll find imaginative stencil sets for iPhone, web, iPad and Android. These kind of tools simply feed the paranoia of people who worry their sketches aren't pretty enough.

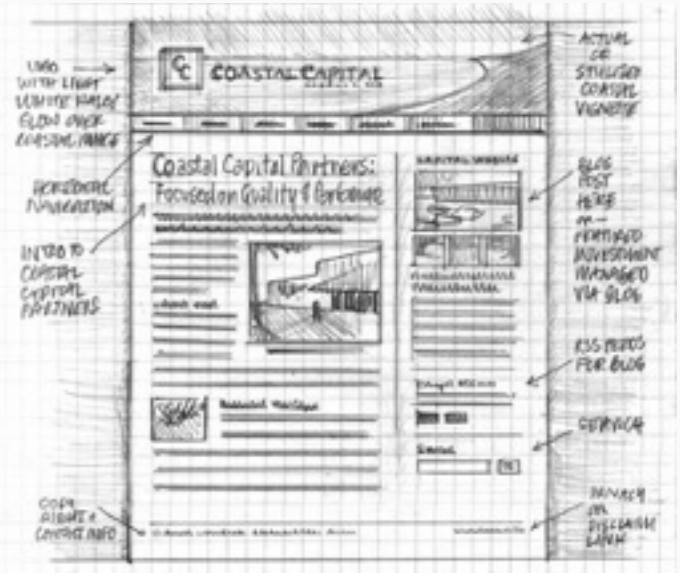
### MYTH 2: "WIREFRAMES ARE THE SAME AS PAPER PROTOTYPES."

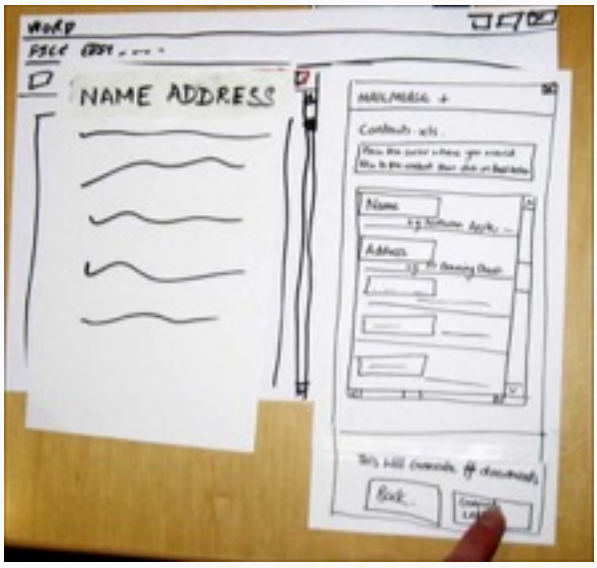
Wireframes show a skeleton view of a user interface. They identify the areas of the screen where content will appear, such as images, text and navigation.

Wireframes often include call-outs and notes explaining certain elements of the design in more detail. They are a useful communication tool for design agencies who want their clients to sign off on a design without getting hung up on the colours and images displayed in the user interface.

But wireframes don't work as paper prototypes for at least two reasons:

- They encourage too much focus on the layout of pages. As a consequence they can attract nitpicky feedback on issues like alignment and fonts. In the early design phase you're more interested in the navigation, workflow, terminology and functionality than in details of the visual design.




Left: A beautiful prototype on paper, but not a paper prototype. By Mike Rhode on flickr (some rights reserved). Right: A paper prototype. It's not pretty but the whole prototype was created in minutes by one of the delegates on my training course.

- Wireframes are usually produced towards the end of the initial design phase, not at the beginning. At this point, many important design decisions — about functionality, for example — have already been made.

Many information architects are obsessed with wireframes but in most projects, they aren't needed: they are just a bureaucratic overhead. You'll find that an electronic prototype, modified as the project progresses, provides a much more useful design communication tool than a wireframe.

### MYTH 3: "I CAN DO IT JUST AS WELL WITH VISIO."

I've often heard developers object to paper prototyping because they can mock up an interface in Visio, or another favourite tool, in the same time it takes to sketch one out. Developers point out that electronic prototyping scores over paper because it is easier to cut and paste repeating elements (like navigation bars) rather than go through the exercise of re-sketching them. And electronic prototypes can be shown to users over the Internet and tested remotely.

Ironically, 'cut and paste' is exactly what paper is good for — you just need real scissors and glue. You can quickly duplicate elements of a paper prototype with a photocopier or even mock-up the repeating elements in Visio and glue them to your sketched user interface. (If you'd like a starter kit, I've provided a paper prototyping helper kit in this workbook. This provides more flexibility than a stencil yet doesn't express the same imperative to draw neatly).

Similarly, paper prototypes can be tested remotely: you simply scan in your sketches and chain the screens together in PowerPoint or Keynote. You can even record the sessions with usability testing software like Morae.

There is certainly a time for prototyping with electronic tools — but that time isn't the early design phase, for a couple of reasons.

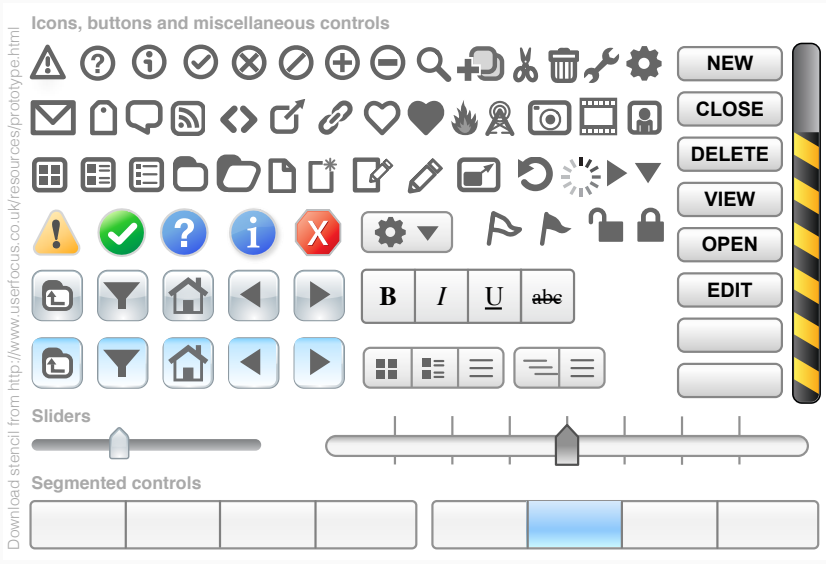
- Electronic tools constrain your thinking about what can be achieved. So if you don't have a 'carousel' widget you'll find you don't include that interaction idea in your electronic prototype.
- Electronic prototyping blinkers you into thinking only about incremental improvement. In the early design phase you want to generate a number of completely different ideas, test them, and combine the best parts into a converged solution. Bill Buxton makes the point that you first need to get the right design before you move onto getting the design right. Electronic tools aren't good at supporting the divergent thinking you need to get the right design.

I think there's a deeper issue here, to do with confidence. Developers feel happy in front of a computer: it's their domain and it's what they're skilled at. Take away their computer and they feel a bit… naked. But this massively undervalues another key skill that developers have: problem solving. More developers should realise that their skills extend way beyond that of the keyboard.

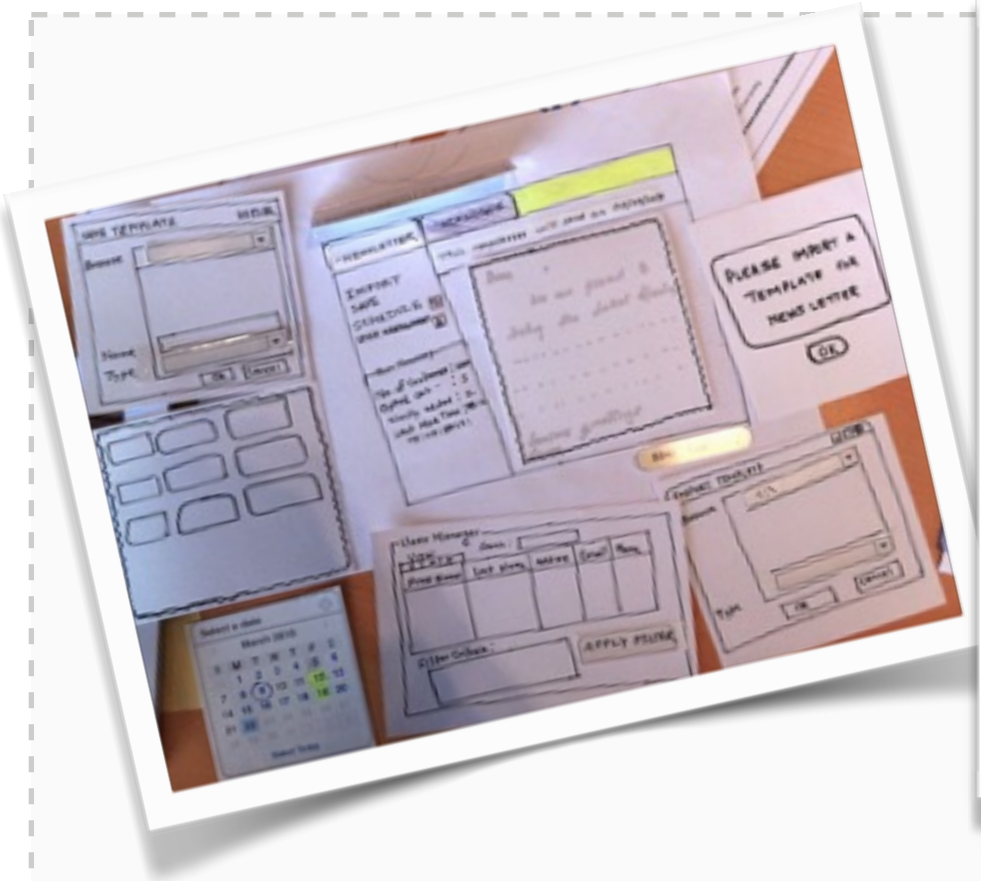
### MYTH 4: "WHITEBOARDING IS JUST AS EFFECTIVE."

Many designers I've spoken with tell me that they already do paper prototyping — they just do it on a white board or flip chart instead. The design team then discuss the ideas and refine them before moving to implementation.

Whiteboarding, and its close cousin sketchboarding, are terrific creativity tools — but they're not paper prototyping. These techniques remind me of Gerry McGovern's joke that the worst possible way to design a web site is to have five smart people in a room drinking lattes and discussing branding. The purpose of paper prototyping is to quickly generate design ideas that you can test out with users. It's not for coming up with design ideas that can be voted on by the design team. This is because paper prototyping isn't just about design — it's about iterative design: creating stuff you




Part of the paper prototyping helper kit provided in this workbook.



"PAPER PROTOTYPES ARE JUST AS EFFECTIVE AS HIGH-FIDELITY PROTOTYPES AT DETECTING USABILITY ISSUES"

can test quickly and then discard or improve upon.

Rather than hold a fruitless design meeting where you spend hours arguing over where you should put the navigation, you could spend the time more productively by creating a couple of different paper prototypes and testing out the alternatives with a handful of users. Not only will this help you make a decision quickly, you'll also have the confidence that the final decision is based on real data rather than on a designer's intuition, or worse: the HIPPO (the highest-paid person's personal opinion).

### MYTH 5: "USERS BEHAVE DIFFERENTLY WITH A PAPER PROTOTYPE THAN WITH A REAL SYSTEM."

Paper prototypes use the participant's finger as the mouse and a pen as a keyboard. Interfaces are roughly drawn and are clearly not finished prototypes. This is clearly different to a real system and so a common objection is that users will behave differently with a paper prototype.

This objection has no basis in fact. A raft of published research shows that paper prototypes are just as effective as high-fidelity prototypes at detecting many types of usability issues.

### MYTH 6: "IT LOOKS UNPROFESSIONAL."

There is no denying that paper prototypes lack beauty — but this is different from saying that paper prototyping is unprofessional. In my experience, so long as you get participants really using the paper prototype (rather than sitting back and having it demonstrated to them), they quickly get 'lost' in the experience of using a paper prototype. This makes issues of professionalism moot.

In contrast, I would argue that your users will think you're more professional because you're clearly involving them early in the design process and taking their comments seriously.

If your management is still unsure, run a trial with single participant and ask, "Is your opinion of our organisation better or worse after this experience?" I'll bet you'll hear only positives.

### MYTH 7: "I CAN'T PROTOTYPE INTERACTIVITY."

It's true that there are some intricate interaction styles that don't lend themselves to paper prototyping. Gesture-based interactions on the iPad and iPhone can't be replicated on paper. Panning and zooming, Google Maps-style, isn't practical. Similarly, applications that require continuous scrolling or that include long download or response times can't be properly emulated.

But the vast majority of web and software interaction — even on an iPhone — is still point and click (with a little keyboard too). These can easily be emulated with a paper prototype. Rather than focus on the edge case that won't work, think of the vast majority of situations where paper prototyping will work.

RATHER THAN PROTOTYPE WHAT YOU KNOW WILL BE OK, PROTOTYPE WHAT YOU THINK WILL CAUSE PROBLEMS. YOU'LL LEARN MORE!

# Prototyping Activity

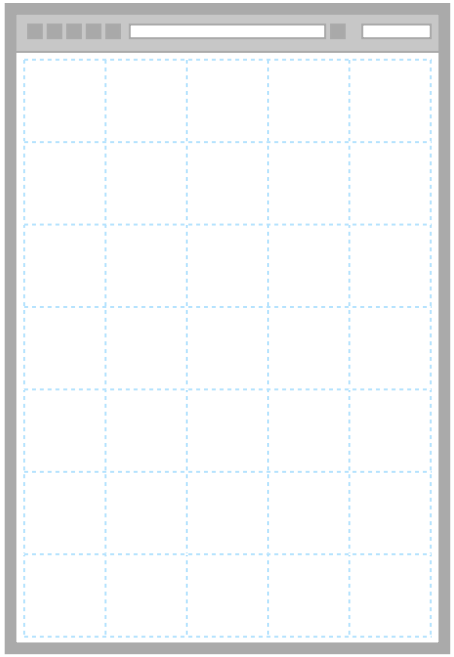
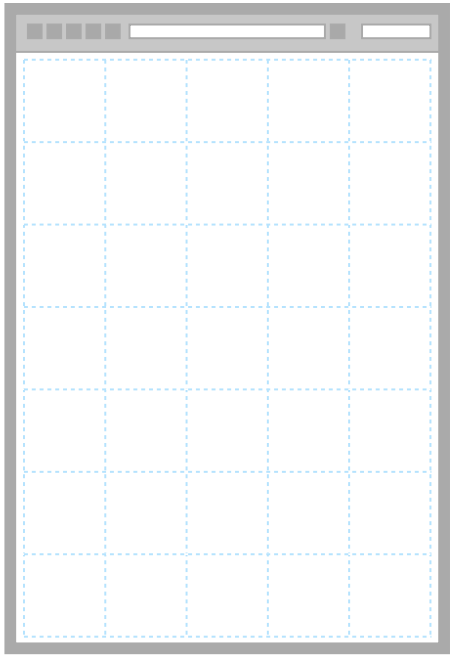
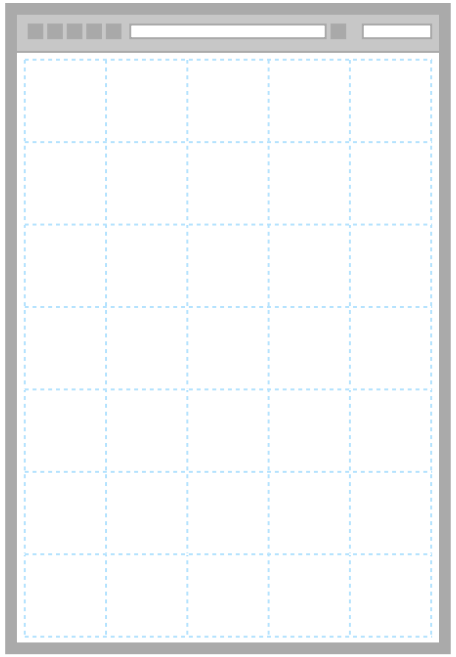
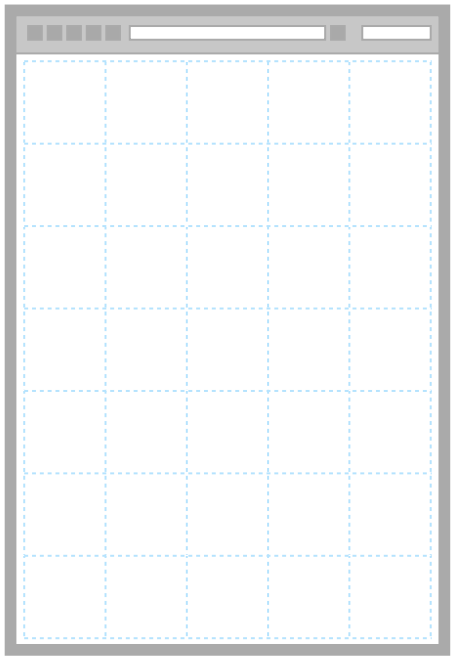
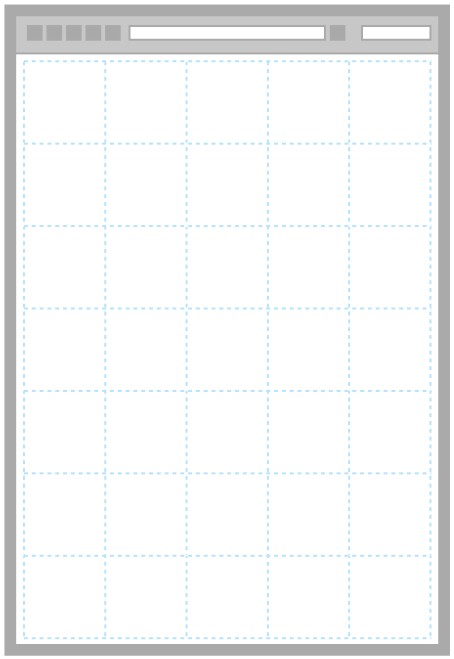
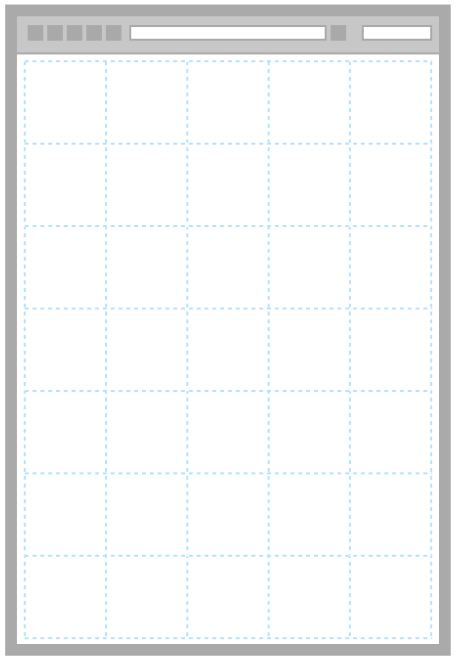
Use the templates and resources on the following 4 pages to develop a paper interface for your application based on one of your user stories and your primary persona.

**Tip**: Think about your design idiom before launching into screen design.

Your design should comprise a sequence of 4-6 screens (one screen per step).

**Tip**: Later, you'll usability test your design, so keep it simple and clear.

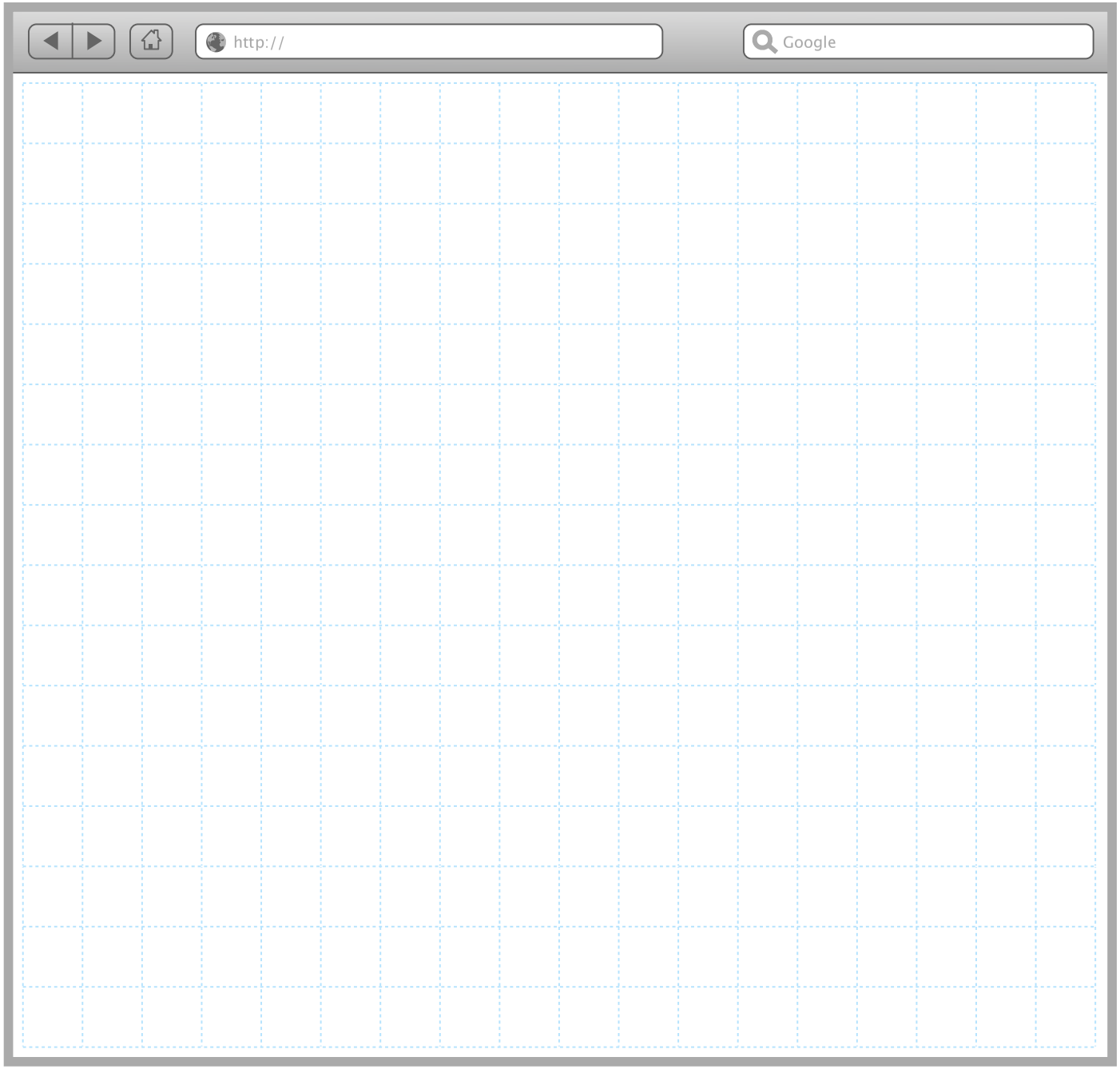
**Remember**: You don't need to prototype the whole app. Think about the riskiest hypothesis and prototype that. What are you most unsure about?

6-UP SKETCHING TEMPLATE



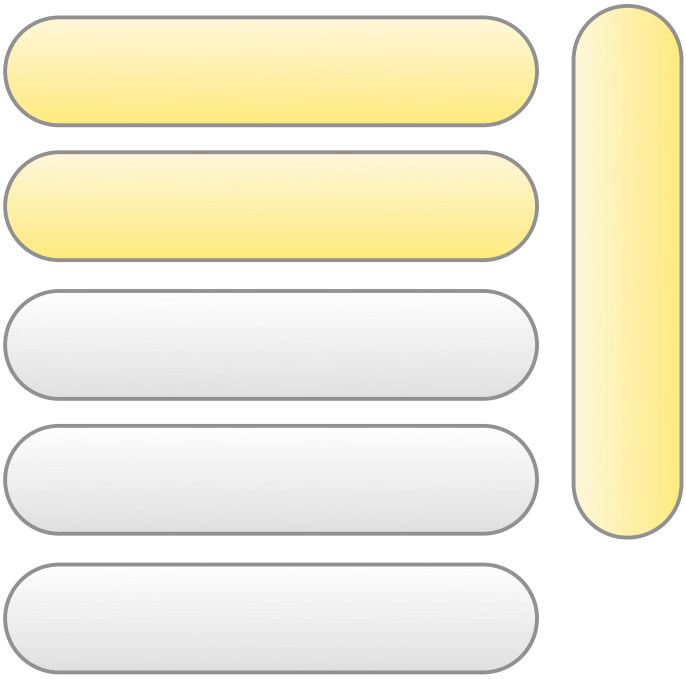
www.uxtraining.net


http://
Google

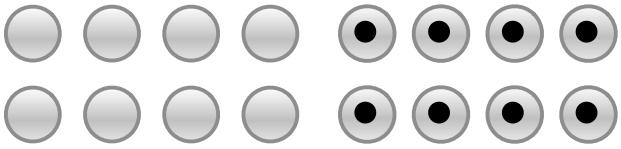
Download stencil from http://www.userfocus.co.uk/resources/prototype.html

## Drop-down / Pop-up list box

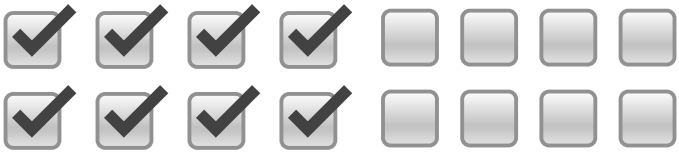
## Action buttons



## Radio buttons

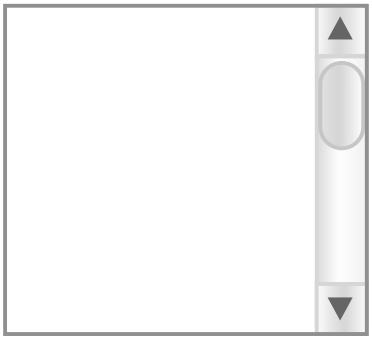


## Checkboxes



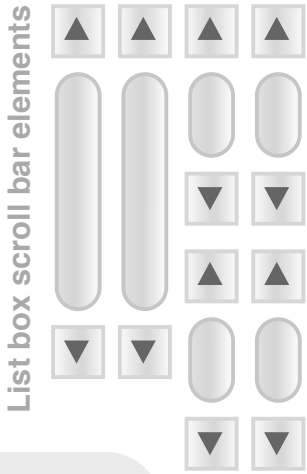
Download stencil from http://www.userfocus.co.uk/resources/prototype.html

## List box (narrow)

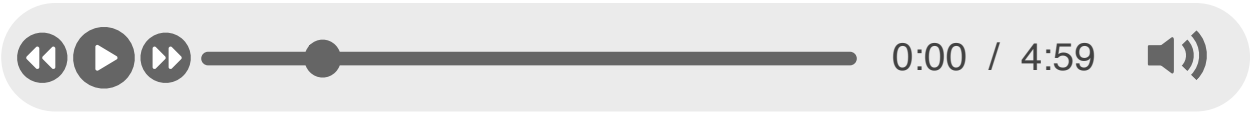


## List box (wide)

## List box scroll bar elements



## Media player



## Tabs

Download stencil from http://www.userfocus.co.uk/resources/prototype.html

Date selector

/ /

Select a date

December

| S | M | T | W | T | F | S |
|---|---|---|---|---|---|---|
| 30 | 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | 8 | 9 | 10 | 11 | 12 | 13 |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| 28 | 29 | 30 | 31 | 1 | 2 | 3 |

Select Today

Switches

ON OFF

ON OFF

Spinner

Pagination

1 2 3 4 1 of 4

First Prev Next Last

Search

Captcha

Ux743

Can't read this?

Download stencil from http://www.userfocus.co.uk/resources/prototype.html

Icons, buttons and miscellaneous controls

NEW

CLOSE

DELETE

VIEW

OPEN

EDIT

B I U abc

Sliders

Segmented controls

# User Experience Briefing

## Creating usability test tasks that really motivate users

*The magic of usability tests is that you get to see what people actually do with a system (rather than what they say they do). This gives you great insights into how people behave and how to improve your design. But if your tasks lack realism you'll find that people just go through the motions and don't engage with the test — reducing the credibility of your results. Here are 6 ways to captivate participants with great test tasks.*

Usability test tasks are the beating heart of a usability test. These tasks determine the parts of a system that test participants will see and interact with. Usability test tasks are so critical that some people argue they are even more important than the number of participants you use: it seems that how many tasks participants try, not the number of test participants, is the critical factor for finding problems in a usability test.

But for test tasks to uncover usability problems, usability test participants need to be motivated: they need to believe that the tasks are realistic and they must want to carry them out. So how do we create test tasks that go beyond the mundane and engage participants?

To help our discussion, I'm going to classify usability test tasks into 6 different categories. You don't need to create tasks in each of these categories — you simply need to review the categories and decide which kind of task will best motivate your participants.

The 6 categories are:

- Scavenger hunt.
- The Reverse Scavenger hunt.
- Self-generated tasks.
- Part self-generated.
- 'Skin in the game' tasks.
- Troubleshooting tasks.

Let's look at each of these in a bit more depth.

### SCAVENGER HUNT

This type of task is a great way for you to find out if users can complete tasks with your system. With a scavenger hunt task, you ask users to do something that has one clear, ideal answer: an example of this kind of task (for a web site that sells luggage) might be: "You're travelling abroad next month and you're looking for a good-sized bag that you can take on as hand luggage. You want the bag to be as big as possible while still meeting the airline's maximum luggage dimensions (56cm x 45cm x 25cm). You have a budget of £120. What's the most suitable bag you can get?" With a good scavenger hunt task there will be one perfect answer, so quiz the design team to find out the best solution to this task and then see if participants can find it.

### THE REVERSE SCAVENGER HUNT

With this type of task, you show people the answer — for example a picture of what they need to look for — and then ask them to go about finding or purchasing it. For example, if you're testing out a stock photography application, you could show people an image that you want them to locate and then ask them to find it by creating their own keywords. This kind of task works well if you think that a textual description of the task might give away too many clues.

### SELF-GENERATED TASKS

Scavenger hunt and reverse scavenger hunt tasks work well when you know what people want to do with your web site. But what if you're less sure? In these situations, try a self-generated task instead. With this type of task, you ask participants what they expect to do with the site (before you show it to them), and then you test out that scenario. For example, you might be evaluating a theatre-ticketing kiosk with regular theatre-goers. You begin the session by interviewing participants and asking what they expect to be able to do with the kiosk. For example, you might hear, 'book tickets for a show', 'find out what's on' and 'find out where to park'.

You then take each of the tasks in turn, and ask the participant to be more specific. For example, for the task, 'book tickets for a show', you'll want to find out what kind of shows they prefer, such as a play, a musical or a stand-up routine. How many tickets would they want to book? On what day? For an evening or a matinee performance?

Your job is to help participants really think through their requirements before letting them loose with the system, to make sure that the task is realistic.

### PART SELF-GENERATED

These tasks work well when you have a good idea of the main things people want to do with the site, but you're less sure of the detail. With a part self-generated task, you define an overall goal (for example, 'analyse your electricity usage') and then ask the participant to fill in the gaps. For example, you can do this by asking participants to bring data with them to the session (such as electronic versions of past electricity bills) and allowing them to query their own data in ways that are of interest (for example, 'what are my hours of peak usage?')

### 'SKIN IN THE GAME' TASKS

A problem with usability test tasks is that you want participants to carry out the tasks as realistically as possible. But there's a big difference between pretending to buy a holiday in Spain and really buying a holiday in Spain. No matter how well intentioned they are, participants know that, if they get it wrong, there are no consequences. You can mitigate this risk by giving participants real money to spend on the task.

The easiest way to do this with an e-commerce web site is simply to give participants a redeemable voucher to spend during the test, or reimburse their credit card after they have made a purchase.

A related approach for other systems is to incentivise the participant with the product itself. For example, if you're testing a large format printer that creates photographic posters, you could ask people to bring in their digital photographs and then get them to use the printer to create the poster they want. The poster itself then becomes the participant's incentive for taking part.

As well as getting as close as possible to realistic behaviour (mild concerns become pressing issues), this approach also gives you the confidence that your participants are the right demographic, since their incentive is based on the very product you're testing.

### TROUBLESHOOTING TASKS

Troubleshooting tasks are a special category of test task because people may not be able to articulate their task in a meaningful way. It would be misleading to give a participant a written task that you've prepared earlier since by its very nature this will describe the problem that needs to be solved. For example, a mobile phone may display an arcane error message if the SIM card is improperly inserted or a satnav system may fail to turn on. As far as the user is concerned, the product is simply not working and they don't know why.

For these situations, it makes sense to try to recreate the issue with the product and then ask the user to solve it — either by starting the participant at Google or at your company's knowlegebase articles. You'll then get great insights into the terminology that people use to describe the specific issue, as well as seeing how well your documentation stands up to real-world use.

# Create a usability test scenario

Create a test scenario for your usability test.

Read over your user story — the one your prototype is based on — and review your prototype.

Create a usability testing scenario that you could give to a test participant that will put your prototype through its paces.



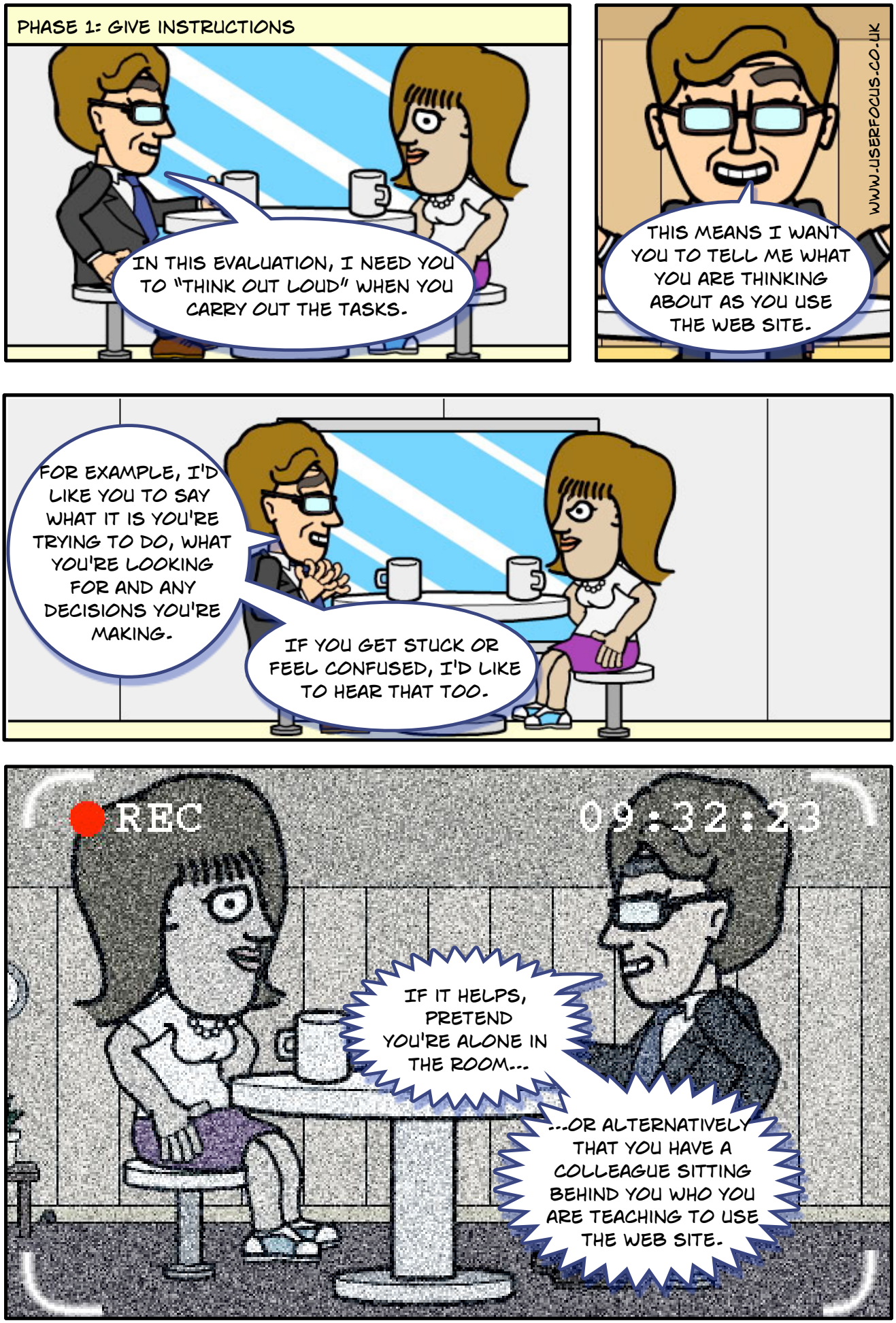
**Make sure your scenario**:

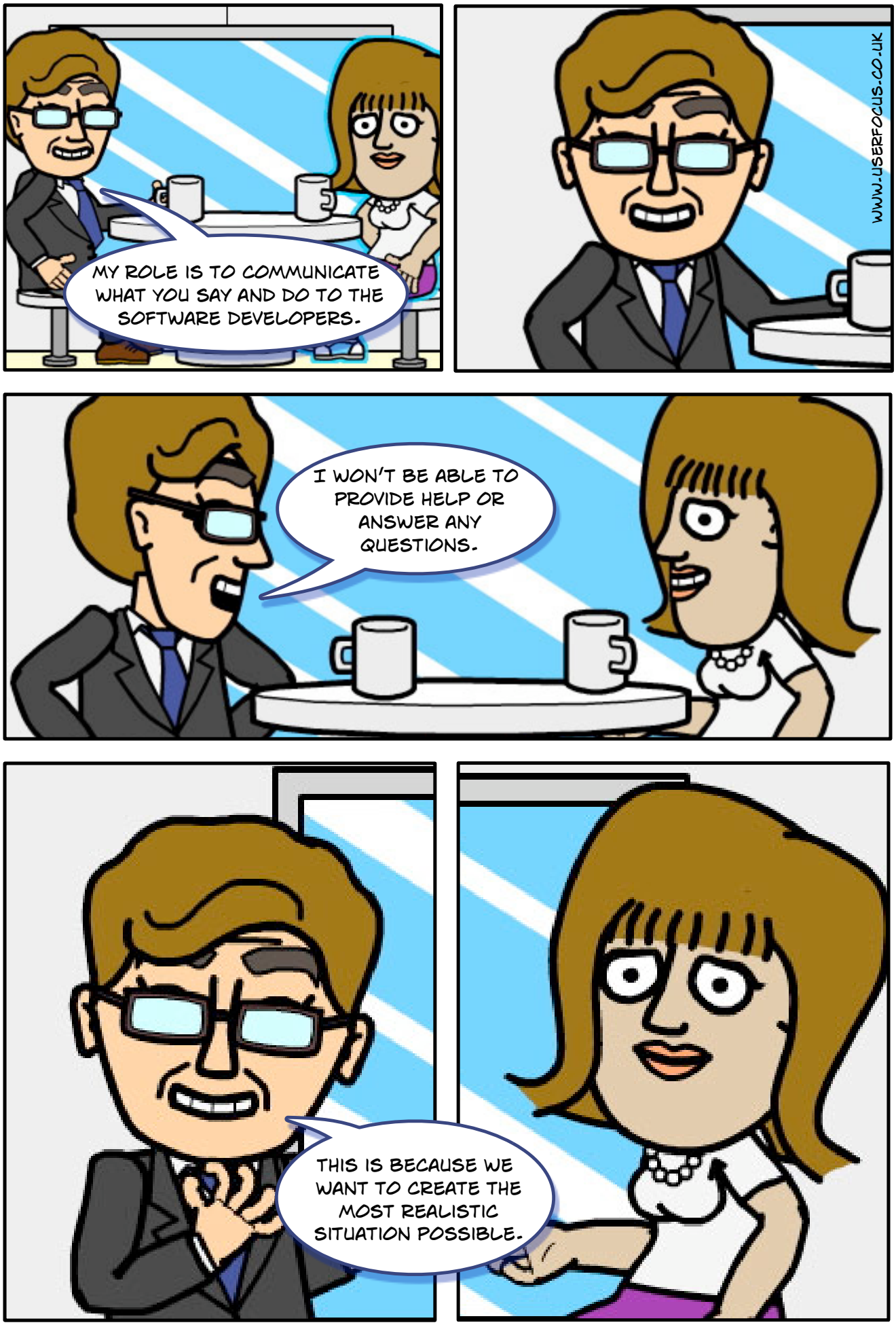
- Is expressed in the user's language (it should avoid system-specific jargon).
- Is realistic, i.e. it describes something that the user would normally expect to do.
- Doesn't hint at the correct path (a usability test is not a user acceptance test).
- Has a correct solution (so you know if the task was successfully completed).

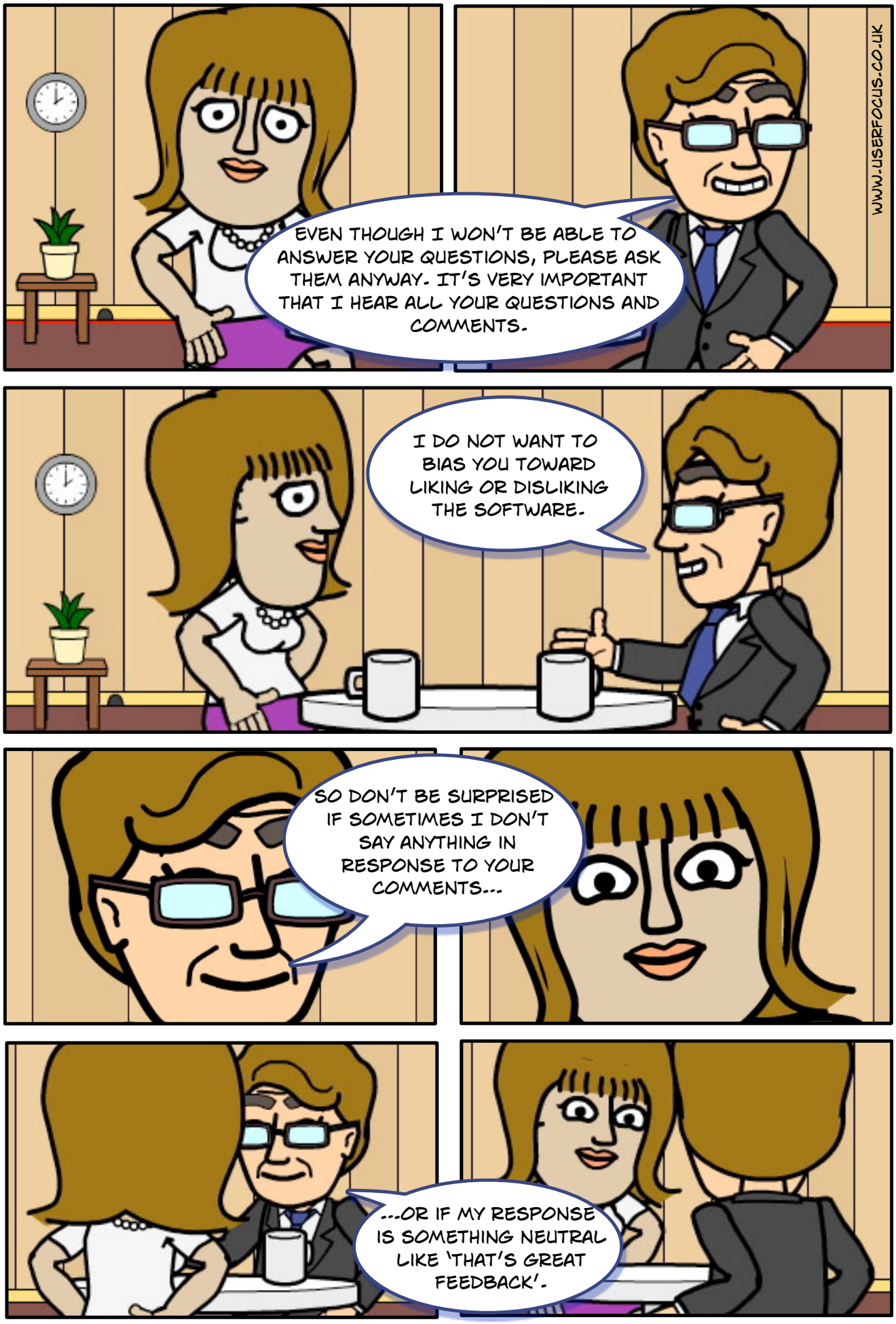
# USABILITY TEST MODERATION

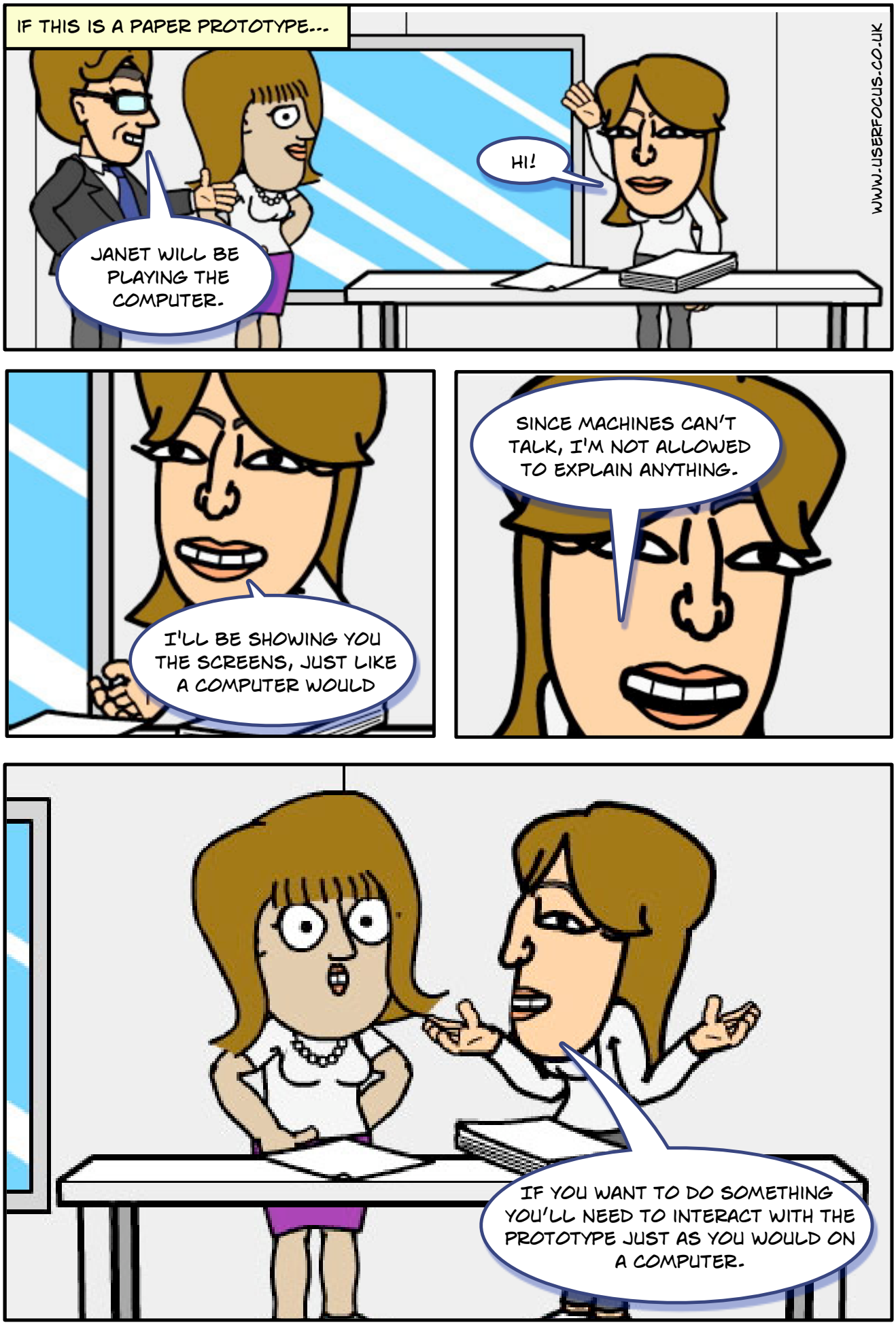
A GRAPHIC INSTRUCTION GUIDE FROM USERFOCUS

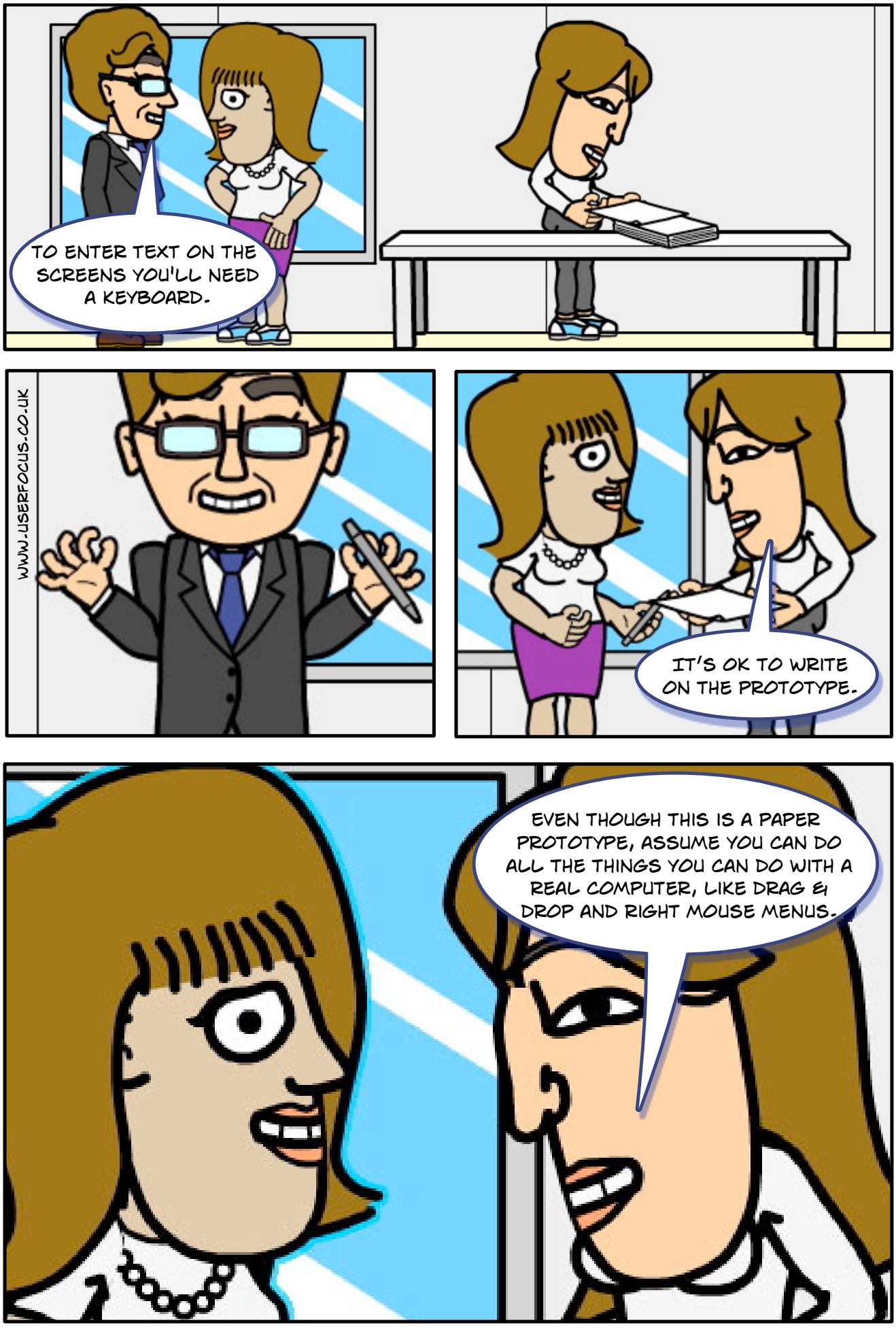
TEXT © USERFOCUS 2009. CARTOON ARTWORK © BITSTRIPS WWW.BITSTRIPS.COM

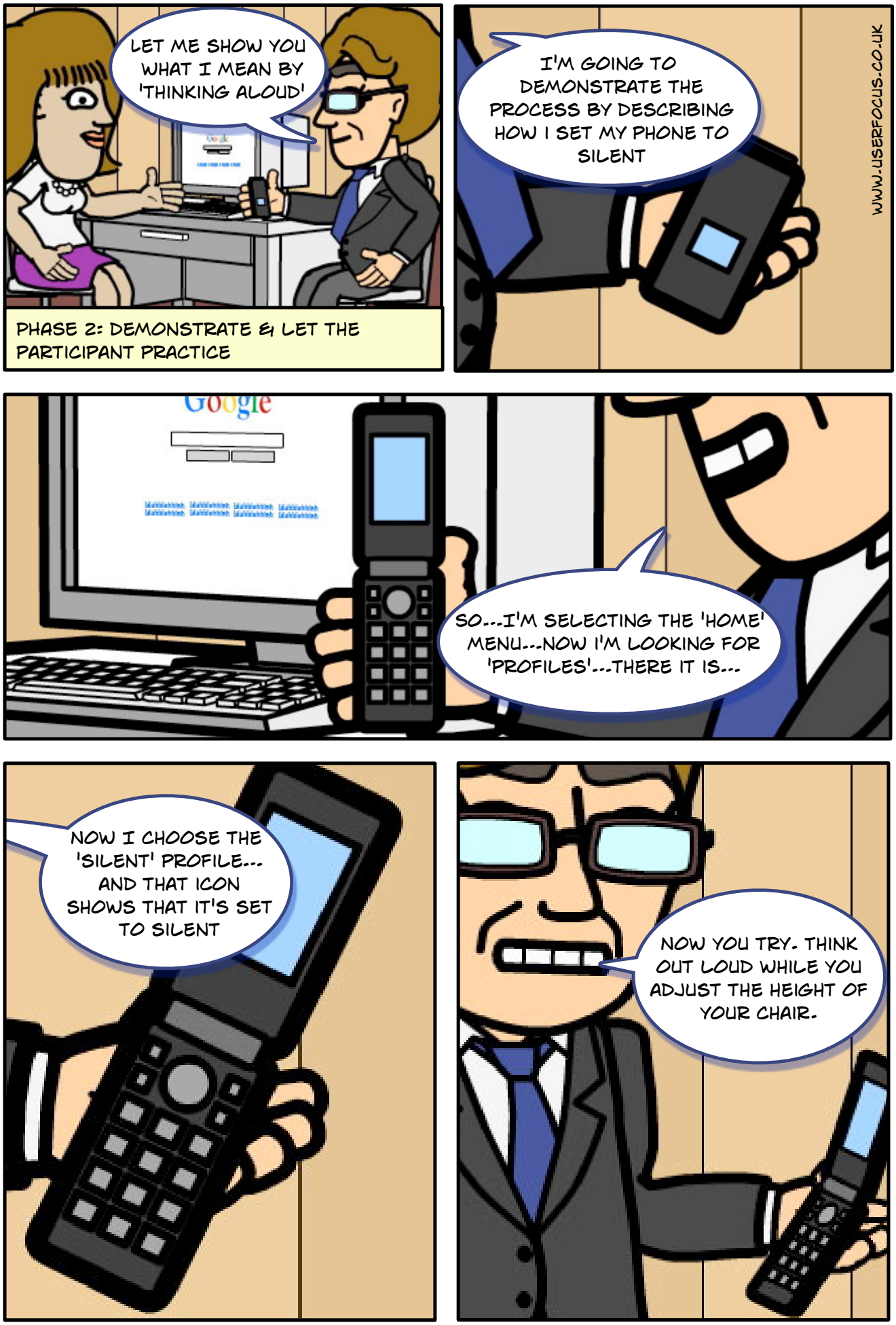

PHASE 1: GIVE INSTRUCTIONS
IN THIS EVALUATION, I NEED YOU TO "THINK OUT LOUD" WHEN YOU CARRY OUT THE TASKS.
THIS MEANS I WANT YOU TO TELL ME WHAT YOU ARE THINKING ABOUT AS YOU USE THE WEB SITE.
WWW.USERFOCUS.CO.UK
FOR EXAMPLE, I'D LIKE YOU TO SAY WHAT IT IS YOU'RE TRYING TO DO, WHAT YOU'RE LOOKING FOR AND ANY DECISIONS YOU'RE MAKING.
IF YOU GET STUCK OR FEEL CONFUSED, I'D LIKE TO HEAR THAT TOO.
REC
09:32:23
IF IT HELPS, PRETEND YOU'RE ALONE IN THE ROOM...
...OR ALTERNATIVELY THAT YOU HAVE A COLLEAGUE SITTING BEHIND YOU WHO YOU ARE TEACHING TO USE THE WEB SITE.

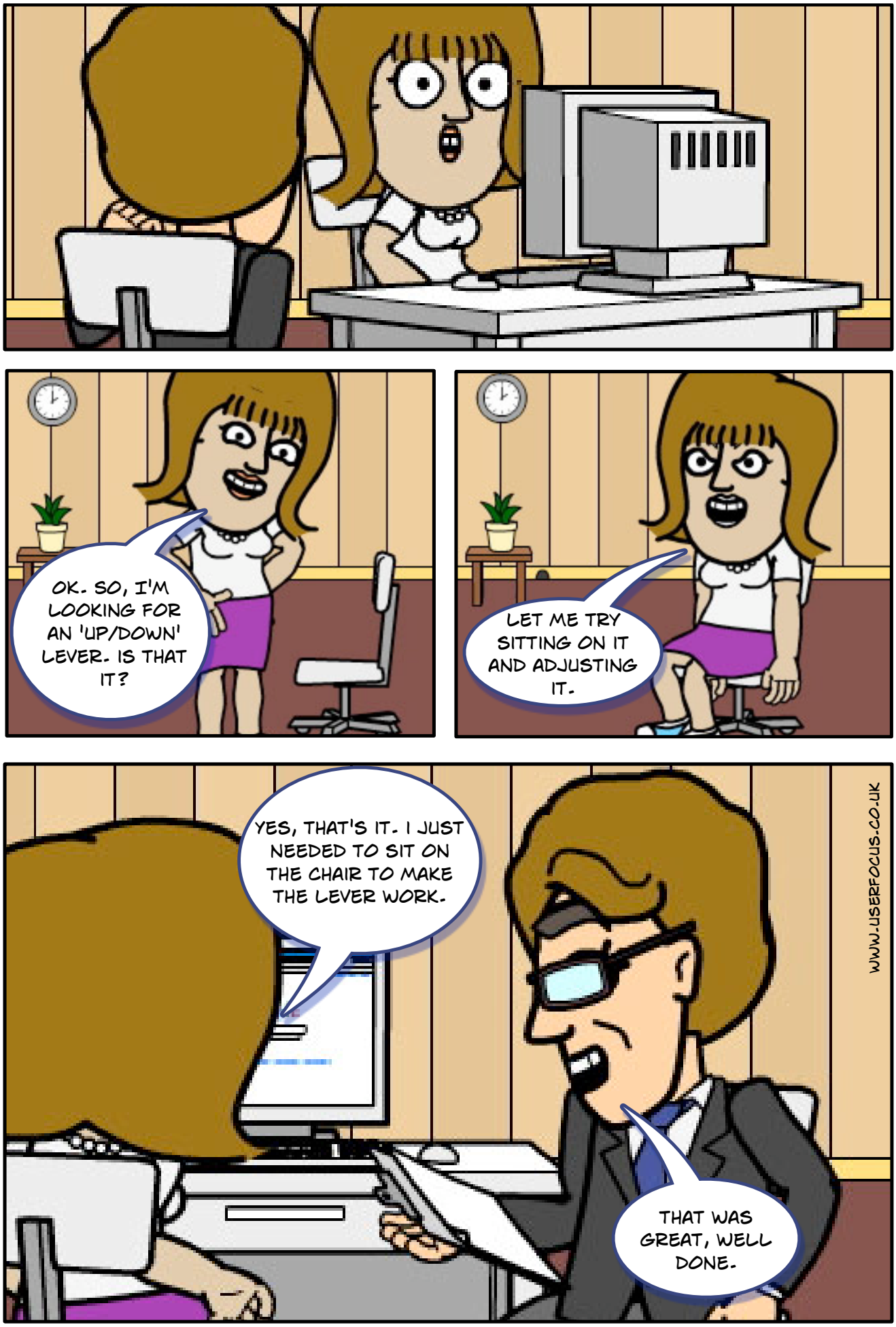

MY ROLE IS TO COMMUNICATE WHAT YOU SAY AND DO TO THE SOFTWARE DEVELOPERS.
WWW.USERFOCUS.CO.UK
I WON'T BE ABLE TO PROVIDE HELP OR ANSWER ANY QUESTIONS.
THIS IS BECAUSE WE WANT TO CREATE THE MOST REALISTIC SITUATION POSSIBLE.

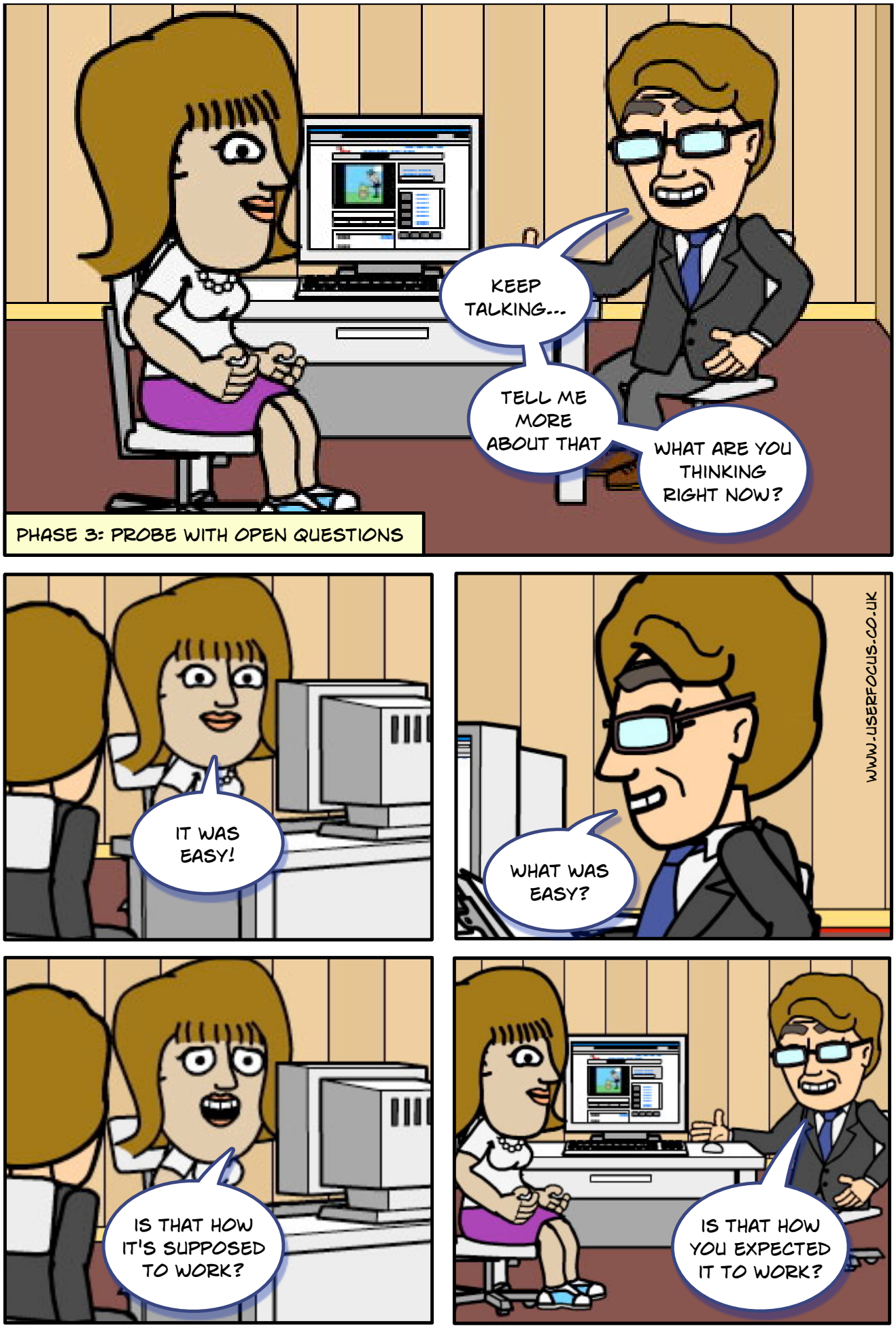

EVEN THOUGH I WON'T BE ABLE TO ANSWER YOUR QUESTIONS, PLEASE ASK THEM ANYWAY. IT'S VERY IMPORTANT THAT I HEAR ALL YOUR QUESTIONS AND COMMENTS.
WWW.USERFOCUS.CO.UK
I DO NOT WANT TO BIAS YOU TOWARD LIKING OR DISLIKING THE SOFTWARE.
SO DON'T BE SURPRISED IF SOMETIMES I DON'T SAY ANYTHING IN RESPONSE TO YOUR COMMENTS...
...OR IF MY RESPONSE IS SOMETHING NEUTRAL LIKE 'THAT'S GREAT FEEDBACK'.

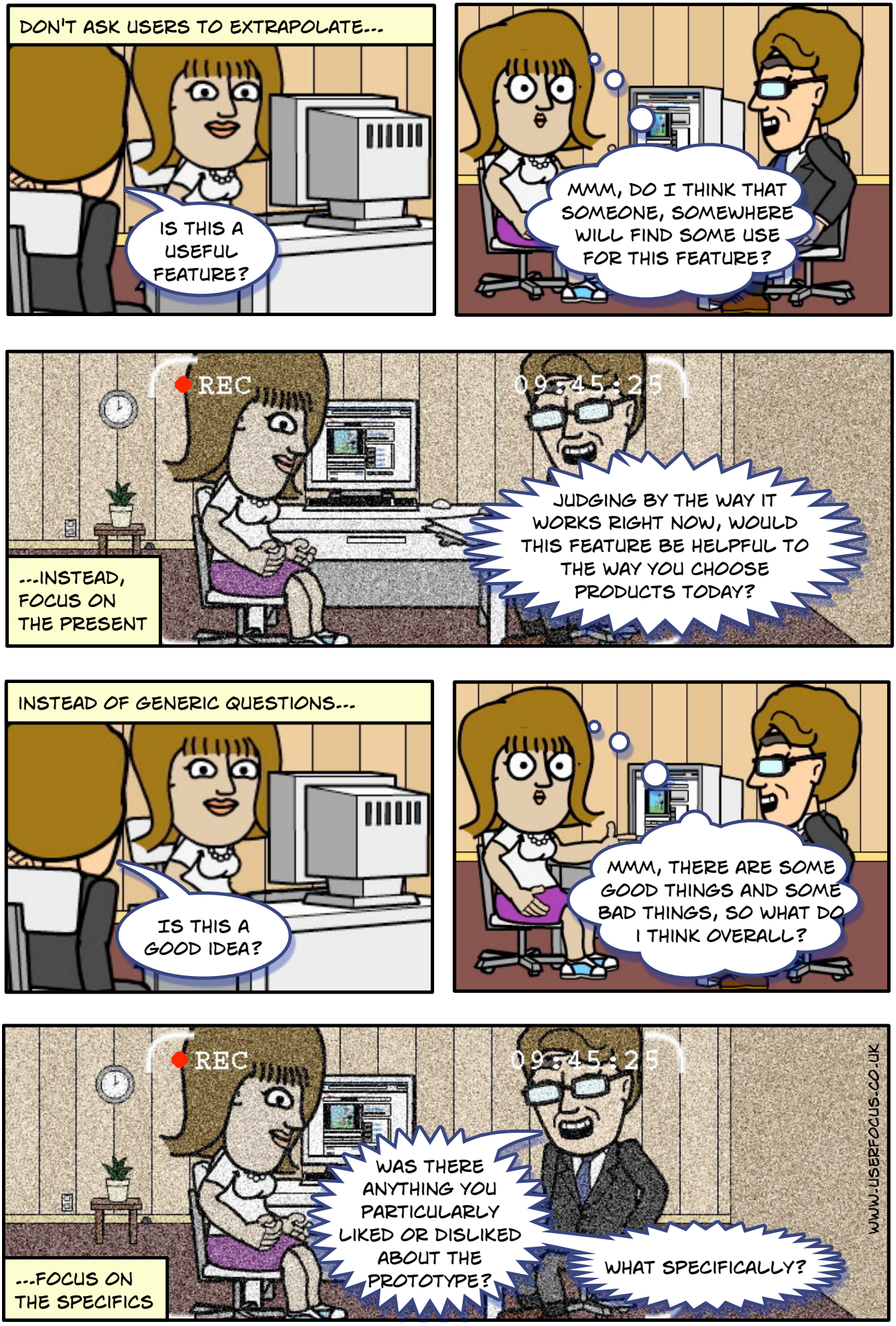

IF THIS IS A PAPER PROTOTYPE...
HI!
JANET WILL BE PLAYING THE COMPUTER.
WWW.USERFOCUS.CO.UK
I'LL BE SHOWING YOU THE SCREENS, JUST LIKE A COMPUTER WOULD
SINCE MACHINES CAN'T TALK, I'M NOT ALLOWED TO EXPLAIN ANYTHING.
IF YOU WANT TO DO SOMETHING YOU'LL NEED TO INTERACT WITH THE PROTOTYPE JUST AS YOU WOULD ON A COMPUTER.

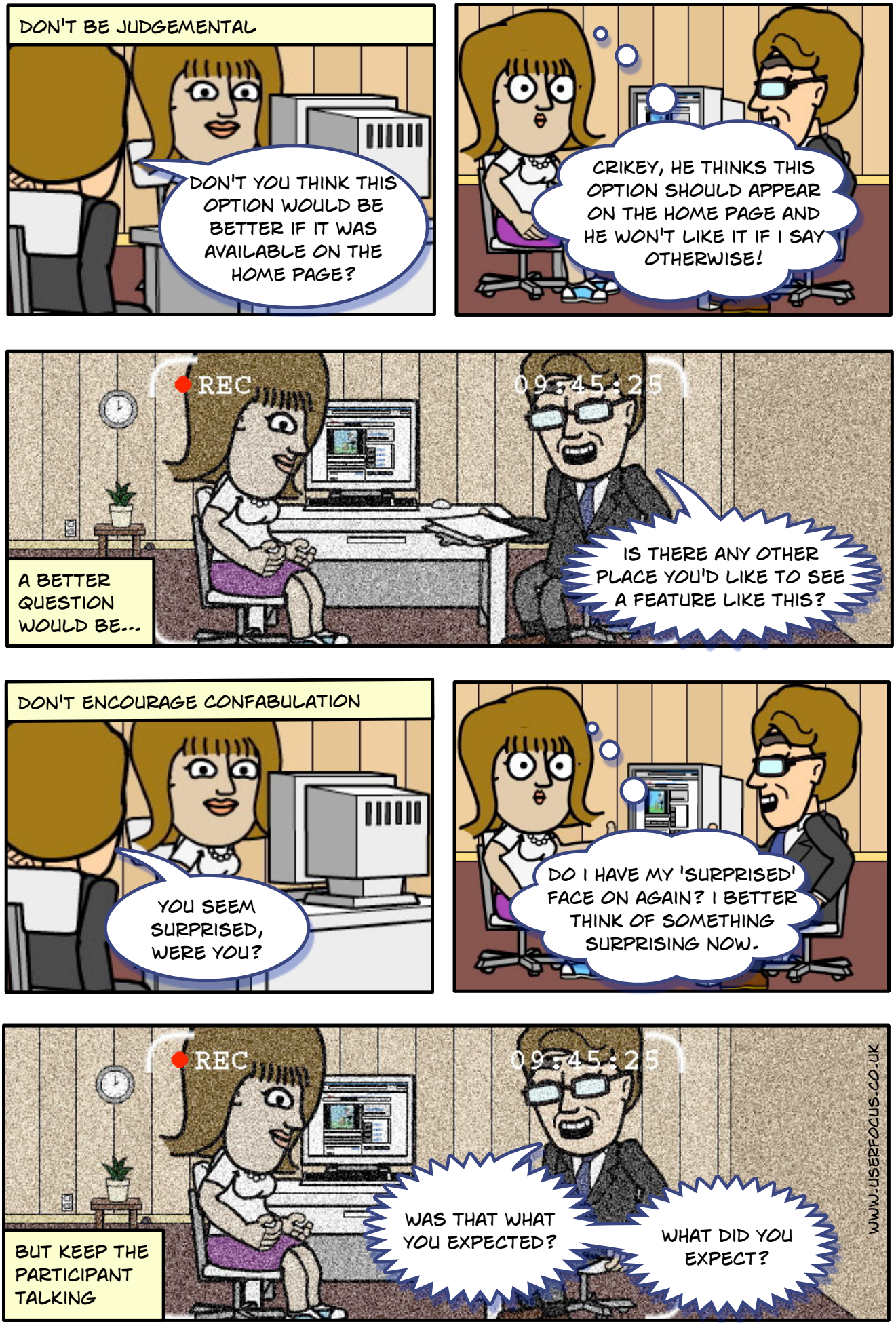

TO ENTER TEXT ON THE SCREENS YOU'LL NEED A KEYBOARD.
WWW.USERFOCUS.CO.UK
IT'S OK TO WRITE ON THE PROTOTYPE.
EVEN THOUGH THIS IS A PAPER PROTOTYPE, ASSUME YOU CAN DO ALL THE THINGS YOU CAN DO WITH A REAL COMPUTER, LIKE DRAG & DROP AND RIGHT MOUSE MENUS.


LET ME SHOW YOU WHAT I MEAN BY 'THINKING ALOUD'
PHASE 2: DEMONSTRATE & LET THE PARTICIPANT PRACTICE
I'M GOING TO DEMONSTRATE THE PROCESS BY DESCRIBING HOW I SET MY PHONE TO SILENT
WWW.USERFOCUS.CO.UK
Google
SO...I'M SELECTING THE 'HOME' MENU...NOW I'M LOOKING FOR 'PROFILES'...THERE IT IS...
NOW I CHOOSE THE 'SILENT' PROFILE... AND THAT ICON SHOWS THAT IT'S SET TO SILENT
NOW YOU TRY. THINK OUT LOUD WHILE YOU ADJUST THE HEIGHT OF YOUR CHAIR.


OK. SO, I'M LOOKING FOR AN 'UP/DOWN' LEVER. IS THAT IT?
LET ME TRY SITTING ON IT AND ADJUSTING IT.
YES, THAT'S IT. I JUST NEEDED TO SIT ON THE CHAIR TO MAKE THE LEVER WORK.
THAT WAS GREAT, WELL DONE.
WWW.USERFOCUS.CO.UK


KEEP TALKING...
TELL ME MORE ABOUT THAT
WHAT ARE YOU THINKING RIGHT NOW?
PHASE 3: PROBE WITH OPEN QUESTIONS
IT WAS EASY!
WHAT WAS EASY?
WWW.USERFOCUS.CO.UK
IS THAT HOW IT'S SUPPOSED TO WORK?
IS THAT HOW YOU EXPECTED IT TO WORK?


DON'T ASK USERS TO EXTRAPOLATE...
IS THIS A USEFUL FEATURE?
MMM, DO I THINK THAT SOMEONE, SOMEWHERE WILL FIND SOME USE FOR THIS FEATURE?
REC
09:45:25
...INSTEAD, FOCUS ON THE PRESENT
JUDGING BY THE WAY IT WORKS RIGHT NOW, WOULD THIS FEATURE BE HELPFUL TO THE WAY YOU CHOOSE PRODUCTS TODAY?
INSTEAD OF GENERIC QUESTIONS...
IS THIS A GOOD IDEA?
MMM, THERE ARE SOME GOOD THINGS AND SOME BAD THINGS, SO WHAT DO I THINK OVERALL?
REC
09:45:25
...FOCUS ON THE SPECIFICS
WAS THERE ANYTHING YOU PARTICULARLY LIKED OR DISLIKED ABOUT THE PROTOTYPE?
WHAT SPECIFICALLY?
WWW.USERFOCUS.CO.UK


DON'T BE JUDGEMENTAL
DON'T YOU THINK THIS OPTION WOULD BE BETTER IF IT WAS AVAILABLE ON THE HOME PAGE?
CRIKEY, HE THINKS THIS OPTION SHOULD APPEAR ON THE HOME PAGE AND HE WON'T LIKE IT IF I SAY OTHERWISE!
REC
09:45:25
A BETTER QUESTION WOULD BE...
IS THERE ANY OTHER PLACE YOU'D LIKE TO SEE A FEATURE LIKE THIS?
DON'T ENCOURAGE CONFABULATION
YOU SEEM SURPRISED, WERE YOU?
DO I HAVE MY 'SURPRISED' FACE ON AGAIN? I BETTER THINK OF SOMETHING SURPRISING NOW.
REC
09:45:25
BUT KEEP THE PARTICIPANT TALKING
WAS THAT WHAT YOU EXPECTED?
WHAT DID YOU EXPECT?
WWW.USERFOCUS.CO.UK

# User Experience Briefing

## What every usability test moderator ought to know about good listening

*Moderation seems effortless but there's a lot more to good listening than opening your ears. Here are 15 suggestions to improve your own listening skills.*

### ROLES MODERATORS PLAY

Usability test moderators need to play several roles, such as ensuring the technology is working properly, ensuring the session runs to schedule and schmoozing the client. But the moderator's most important role is to ensure that the participant is heard. With most test sessions lasting less than 90 minutes, this is one of a small number of opportunities that the design team has to understand how people use their product.

### 15 TIPS FOR GOOD LISTENING

1. Do try to read the participant's "non-verbals" — inflections, gestures, posture and facial expression.

2. Do work hard at overcoming distractions (such as problems with the recording equipment) that may interfere with good listening.

3. Do try to stay with speakers who may be hard to follow — those who speak slowly, those whose ideas are poorly organised or those who repeat themselves.

4. Do use non-verbal communication (eye contact, smiles, occasional head nods) to indicate that you want to hear more.

5. Do re-state or re-phrase the participant's statements when necessary so that the participant will know that you have understood him or her. A good way to reflect back is to begin a sentence with, "What I hear you saying is…" or "If I'm hearing you correctly…" or "Let me just check what I understand you're saying…"

6. Do admit it if you don't understand something that the participant said and ask the participant to re-state it.

7. Do avoid preparing your response to what is said while the participant is still speaking.

8. Don't just listen for the factual statements that a participant makes about the interface. These are important but just scratch the surface of what the participant is thinking. Also listen for feelings, attitudes, perceptions and values.

9. Don't just listen to what's said. Participants often spend a lot of time saying nothing, even when you use the phrase, "What are you thinking right now?". You should also listen for what is not said since this indicates what is being taken for granted.

10. Don't interrupt. You'll get your chance to voice your opinions when you contribute to the report. If you find yourself talking over a participant, bite your lip.

11. Don't fake attention. If you find yourself day dreaming, re-orient yourself and ask a relevant question that shows you are paying attention.

12. Don't tune out participants just because you think they're dull. There are always nuggets of useful information, you may just have to work hard to find them.

13. Don't get distracted from what participants say by their style, mannerisms, clothing, accent or voice quality.

14. Don't allow a participant's status to have any bearing on how well you listen to him or her. Every participant recruited for a usability test has passed the screener and so each one is equally important. It's not your place to prioritise one participant over another.

15. Don't let your expectations — hearing what you want to hear — influence your listening behaviour.

# Run a usability test

## Evaluate your paper interface with a usability test.

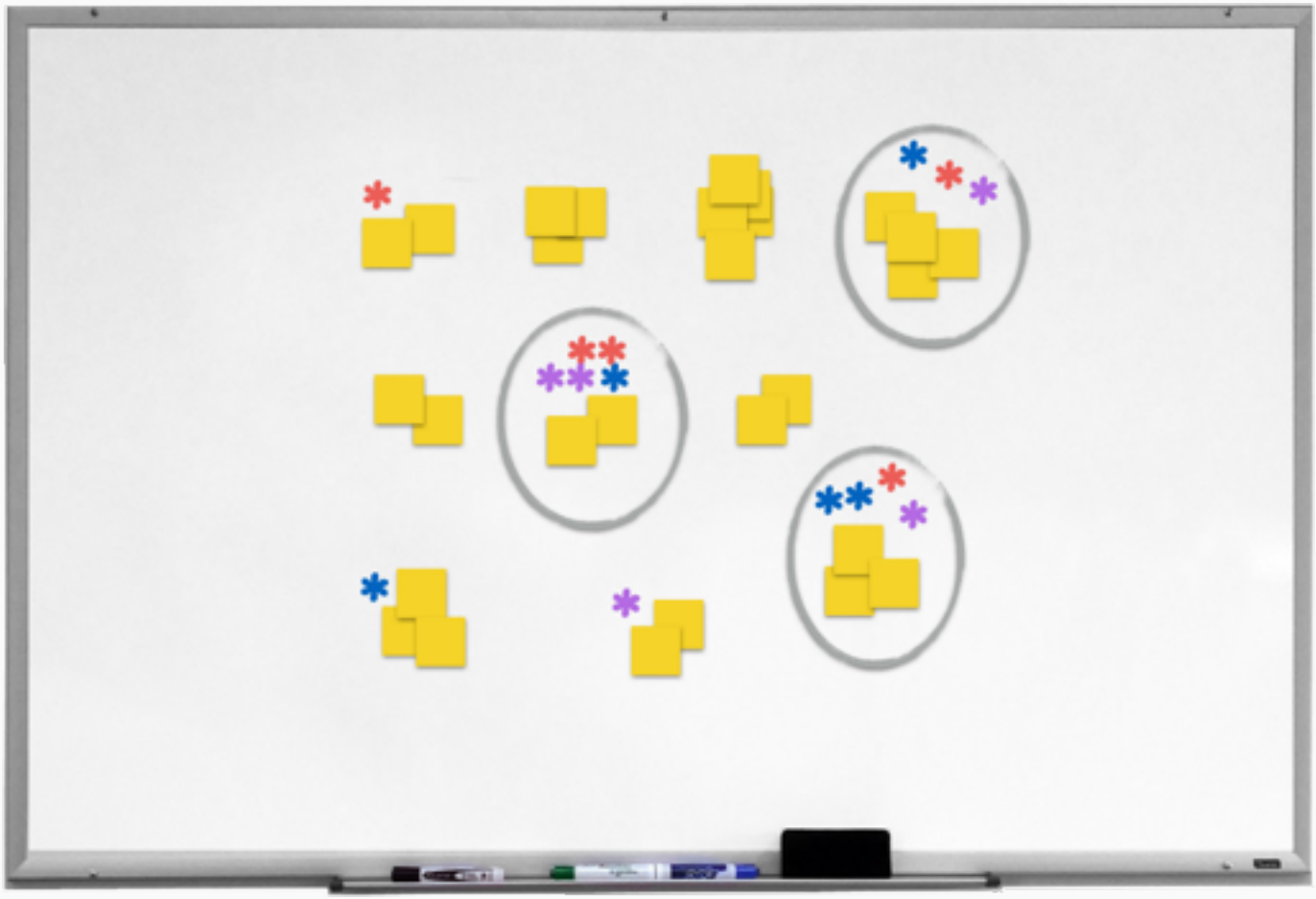
**Your job as the test moderator** is to run the session and write each usability problem on a sticky note.

**Your friend's job is to play the role of the computer**, that is, present the screens.

**Try to test around 5 participants.**

REMEMBER: AN OBSERVATION IS SOMETHING YOU SEE OR HEAR

# Analyse your data



1. Start with a set of sticky notes that contain the observations you made during the usability test. Each sticky note contains a single observation.

2. Group the observations into common problems that you saw across participants.

3. Identify the high priority problems either through discussion with team members, dot voting or by using the severity flowchart.

THIS TECHNIQUE IS KNOWN AS AFFINITY DIAGRAMMING

# Jakob Nielsen's 10 Usability Heuristics

## VISIBILITY OF SYSTEM STATUS

The system should always keep user informed about what is going on, through appropriate feedback within reasonable time.

- Keep users oriented and clear about where they are in the system or where they are up to in a process.
- Provide an indication of activity between the initiation of a command and its execution.
- Provide visual clues, like cursor shape and animation.
- Make it clear what has been saved and what hasn't.
- Provide clear navigation clues.

## MATCH BETWEEN SYSTEM AND THE REAL WORLD

The system should speak the user's language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

- Provide an intuitive visual layout.
- Concepts and processes mirror what the user is familiar with.
- Build a consistent model in user's mind.
- Provide good mapping between the task and the system.

## USER CONTROL AND FREEDOM

Users should be free to select and sequence tasks (when appropriate), rather than having the system do this for them. Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Users should make their own decisions (with clear information) regarding the costs of exiting current work. The system should support undo and redo.

- Allow the user to control where to start and when to finish.
- Allow the user to control the interaction.
- Support multiple paths.
- Allow users to backtrack.
- Create a feeling of progress and achievement.

## CONSISTENCY AND STANDARDS

Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

- Conform to any existing processes or procedures.
- Be consistent across the system (words, objects, operations, behaviours).

## HELP USERS RECOGNIZE, DIAGNOSE, AND RECOVER FROM ERRORS

Error messages should be expressed in plain language (no codes).

- Be as specific and precise as possible.
- Be constructive: indicate what needs to be done.
- Use a positive tone: avoid condemnation.
- Keep consistent grammatical form, terminology and abbreviations.
- Keep consistent visual format and placement.

## ERROR PREVENTION

Even better than good error messages is a careful design that prevents a problem from occurring in the first place.

- Avoid situations where errors are likely to occur. Errors should be predicted.
- Provide only appropriate choices.
- Warn users of potential problems before they take action.
- Ask for confirmation of potential destructive actions. Use a message that clearly warns the user of the consequences of the requested action.
- Provide a way to cancel the command.

## RECOGNITION RATHER THAN RECALL

Make objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

- Limit the number of items a user has to deal with at any given moment.
- Let the design suggest the right action to do next.
- Use task-focussed, user-centred labels and descriptive links.
- Reduce the user's cognitive load (memory, calculating, understanding relationships).

## FLEXIBILITY AND EFFICIENCY OF USE

Accelerators—unseen by the novice user—may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions. Provide alternative means of access and operation for users who differ from the “average” user (e.g., physical or cognitive ability, culture, language, etc.)

- Encourage exploration.
- Support different methods to achieve the same end.
- Accommodate a range of user sophistication and diverse user goals.
- Provide logical information hierarchy.
- Allow users to perform tasks in the fewest number of steps.

## AESTHETIC AND MINIMALIST DESIGN

Dialogues should not contain information that is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

- Create a layout that is aligned, clear and uncluttered.
- Place information consistently.
- Reduce complexity.
- Use direct, active and positive language.
- Group related tasks and give only a few choices any one time.
- Provide suitable content and appropriate page length.

## HELP AND DOCUMENTATION

Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user’s task, list concrete steps to be carried out, and not be too large.

- Provide on-line help and guidance.
- Make it task focussed (“how do I…?”).
- Make it easy to search.
- Keep it relatively short.
- Make it available in context (such as field level help).
- List concrete steps to be carried out.

# User Experience Briefing

## A task-focussed user experience reading list

*People often ask me to recommend a good book on user experience. This is actually a lot harder than you might think. Someone who's new to the field won't gain much from a book aimed at experts, and someone looking to improve their sketching skills won't learn much from a book about usability testing. So here is my list of recommended books along with the people I think they are best suited for.*

### "I'M NEW TO THE FIELD. WHAT SHOULD I READ TO GET STARTED?"

*Don't Make Me Think, Revisited: A Common Sense Approach to Web Usability*, 3rd edition, by Steve Krug.

Steve Krug's book is quite rightly a classic. Now in its third edition, this is the book that you would give to a senior manager if she wanted to understand what it is that you do all day. It's short (under 200 pages), practical and doesn't take itself too seriously. Although it's not meant for fully-fledged practitioners, even they will find some useful quotations and stories to communicate the benefits of usability. The book has 13 chapters structured around four key sections ('Guiding principles'; 'Things you need to get right'; 'Making sure you got them right'; and 'Larger concerns and outside influences'). The original version of this book was published in 2000 but this third edition brings the content up to date, including a chapter on mobile.

### "I'M VISITING A CUSTOMER NEXT WEEK AND DON'T KNOW HOW TO GET STARTED WITH USER RESEARCH. WHAT SHOULD I READ?"

*The Mom Test*, by Rob Fitzpatrick.

The bible for contextual inquiry is the classic book by Hugh Beyer and Karen Holtzblatt titled 'Contextual Design'. But like any bible, this is a book that's often quoted but rarely read. It's certainly something that everyone who does site visits should read, but frankly it can be tough to get through — and if you are about to do a customer visit you may finish the book and still not be sure what you should do next. In contrast, Rob Fitzpatrick's book is light on theory but packed with tips and good advice. I've bought several copies of this book because I keep giving it away to people who are about to carry out a site visit. The philosophy behind the book is that doing bad interviews is worse than doing nothing at all because it leads to false positives. This is because bad interviews are filled with fluff and compliments. In contrast, good interviews result in actionable insight. Fitzpatrick helps you understand that the measure of usefulness of an early customer conversation is whether it gives you concrete facts about your customers' lives. The book has a few exercises to help you turn bad questions into good ones.

### "I KNOW VISUAL DESIGN MATTERS BUT I CAN'T DECIDE WHAT LOOKS GOOD. WHAT CAN I READ THAT WILL HELP ME?"

*The Non-Designer's Design Book*, 4th edition, by Robin Williams.

If you find it difficult to articulate why one design looks better than another, this book will give you the language you need. Based around the memorable acronym 'CRAP', the author describes four principles of design that you can apply to everything from business cards to web pages. There are a number of books on the visual design of user interfaces (check the longer reading list(opens in a new window)) but none of them express the principles quite so clearly as Robin Williams, and certainly not as concisely.

### "I WANT TO FIND OUT MORE ABOUT APPLYING PSYCHOLOGY TO DESIGN. WHAT SHOULD I READ?"

*The Design of Everyday Things*, 2nd revised and expanded edition, by Don Norman.

I have the first edition of this book, which was titled 'The Psychology of Everyday Things', and in some ways having 'psychology' in the title was more appropriate (although perhaps less good for marketing the book). Don Norman takes on everything from coffee pots to telephones and explains not just his frustration with the way they expect to be used but provides an analysis of why we struggle with them. He makes the point that 'human error' and 'bad design' are two sides of the same coin. This is one of the few books on this list that can be read by both

>

experienced practitioners and by people new to the field and still learn something.

**"I'VE BEEN PUT IN A UX ROLE WHERE I HAVE TO DO EVERYTHING. WHAT SHOULD I READ?"**

*The User Experience Team of One*, by Leah Buley.

Most of us would prefer to work in a team with other like-minded practitioners but the truth is that many people in a UX role work alone. If that describes you, then you'll love this book. The book is divided into two broad sections, 'Philosophy' and 'Practice'. The 'Philosophy' section covers the basics such as getting started in user research and building support for your work. But I think it's the 'Practice' section that provides all the value. This section has chapters on 'Planning and discovery methods', 'Research methods', 'Design methods', 'Testing and validation methods' and 'Evangelism methods'. Altogether, Buley describes 27 different methods you can apply in your job when you have access to few resources. One of my favourite methods is one she calls 'Bathroom UX': she encourages you to post A4 notices on the inside of bathroom stalls within your company to encourage people to (for example) speak with users.

**"I'VE JUST JOINED AN AGILE TEAM TO PROVIDE UX SUPPORT. HOW CAN I ADAPT THE WAY I WORK TO FIT IN WITH AGILE?"**

*User Story Mapping*, by Jeff Patton.

There have been a few books that claim to show UX practitioners how to work with Agile teams (hint: they tend to have 'Agile' somewhere in the title). Jeff Patton's book is unusual, not only because it doesn't include the word 'Agile' on the cover, but mainly because it's the most practical text you'll find on really doing UX and agile the right way. Patton shows how you can apply the technique of user story

mapping to drive the entire Agile process. If you're a UX person on an Agile team, after reading this book you'll find that you don't just fit in with your new team but you actually take charge of it and make the team more user centred. If I could have just one book on this list, this would probably be it.

**"I NEED ADVICE ON DESIGNING USER INTERFACES. HELP!"**

*About Face: The Essentials of Interaction Design* 4th edition, by Alan Cooper, Robert Reimann and David Cronin.

You'll find this book on most interaction designers' bookshelves and if you examine a used copy you'll notice that the spine is broken and the pages are falling out because it's been so well thumbed. Definitely a book for someone who designs graphical user interfaces on a day-to-day basis, it's hard to beat the scope and depth of this book. The book is in three parts: Part 1 describes Cooper's 'Goal Directed Design' approach; Part 2 covers 'Making well behaved products'; and Part 3 covers 'Designing Interaction Details'. I have the 3rd edition of this book, which weighs in at just over 600 pages; the latest, 4th edition boosts the page count to 720.

**"I'M A PRACTITIONER AND I NEED A SINGLE BOOK THAT I CAN TURN TO THAT COVERS THE WHOLE UX PROCESS"**

*Designing for the Digital Age*, by Kim Goodwin.

Most of the books in usability and user experience tend to focus on specialised areas, like user research or interaction design, and so there aren't many options when it comes to books that cover the entire design process. But whenever I feel that I need a reminder about something, it's Kim Goodwin's book that I turn to first. At over 700 pages, this is another door stop of a book but that's exactly what you want from a reference volume. The book has 26 chapters that cover the full project lifecycle, including project planning, user research, data analysis, defining requirements, design patterns, detailed design, usability evaluation and design communication. It's worth buying for the chapter on Personas alone.

**"I WANT TO CREATE USER INTERFACE IDEAS BUT I'M A KLUTZ WITH A PENCIL. WHAT CAN I READ?"**

*Sketching user experiences: The Workbook*, by Saul Greenberg, Sheelagh Carpendale, Nicolai Marquardt and Bill Buxton.

Sketching is a critical skill for user experience designers because it's a quick way to convey complex ideas and reduce ambiguity. But sadly, most people think that means they need to know how to draw. Although it obviously helps to be a budding artist, this book shows you how to cheat at creating sketches (for example, by tracing digital photos) and bring your ideas to life. If you don't have time to attend evening classes at art college, this is the next best thing. It could have been called 'The Bluffers' Guide to Prototyping'.

**"I NEED HELP RUNNING A USABILITY TEST. WHERE SHOULD I START?"**

*Handbook of Usability Testing* 2nd edition, by Jeffrey Rubin and Dana Chisnell.

This is the go to text for practitioners running a usability test. With chapters on moderating techniques, creating a test plan, finding participants and analysing the data, it covers all you need to know to run an effective test. There are a number of books on usability testing, many that specialise in particular areas of running a usability test, but none quite have the scope and practicality of this book.

# A much longer reading list

## GUIDING PRINCIPLES

Gould, J.D. (1988) How to design usable systems. In Helander, M. (ed.) *Handbook of Human-Computer Interaction*. North-Holland: Elsevier. pp 757-789.

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# Glossary

## A

**A/B TESTING** A technique used to compare two alternative designs of a live system with a large number of users

**ACCESSIBILITY** The extent to which products, systems, services, environments or facilities can be used by people from a population with the widest range of characteristics and capabilities to achieve a specified goal in a specified context of use (ISO 26800)

**AFFINITY DIAGRAM** A method used by design teams to organise large amounts of qualitative data and information into groups so that the data can be analysed

**AFFINITY DIAGRAMMING** Organising large amounts of qualitative data and information into groups

**AFFORDANCE** The properties of an object that suggest to people how the object can be interacted with. This should be distinguished from a signifier, an indicator of how something is designed to be interacted with to get an intended result.

**ALIGNMENT** The practice of creating strong lines that keep the viewer focussed and cause user interface screens to look elegant

**ASSUMPTION PERSONA** Personas developed without user research.

## B

**BOOMERANG TECHNIQUE** Answering a question with another question

## C

**CARD SORT** A research method where participants organise features, functions and pages of a user interface into groups that make sense to the participants.

**CLOSED CARD SORT** A card sort where the categories into which information can be sorted has been pre-defined. See also ‘Card Sort’

**CLOSED QUESTION** A question where the participant has to choose his answer from among a proposed list of responses. No other answer than the ones proposed are allowed.

**CONCEPTUAL MODEL** A high-level description of the way the designer of a system has planned the system to work.

**CONTEXT OF USE** Users, tasks, equipment (hardware, software and materials), and the physical and social environments in which a product is used. (ISO 9241-11).

**CONTEXTUAL INQUIRY** A research method where a researcher carries out a site visit to observe users carrying out their normal activities in their natural environment.

**CONTRAST** A visual design technique where the object of attention is made very different from the other elements that surround it.

## D

**DESIGN PATTERN** A reussable solution to a commonly occurring design problem

**DIARY STUDY** A longitudinal research method where users keep track of the activities in which they engage.

**DISCOUNT USABILITY** An approach to usability that seeks to optimise usability methods for cost effectiveness

## E

**EMPATHY MAP** A visual summary of what the user hears, sees, thinks and feels within the context of use.

**ETHNOGRAPHY** The scientific description of people and cultures with their customs, habits and mutual differences

**EYE TRACKING** A technique used to measure either the point of gaze (where the user is looking) or the motion of the user’s eye relative to the head.

# F

**FITTS' LAW** The time taken to move to a target is a function of the target size and the distance to the target.

**FIXATION** The pause of an eye movement on a specific area of the visual field.

**FORMATIVE USABILITY TEST** A form of iterative usability testing that aims to find problems with a system so they can be fixed.

# G

**GAZE PLOT** A moment-by-moment representation of a user's eye movement across the screen.

# H

**HEAT MAP** A representation of the different areas of the screen where the user has spent the most time looking.

**HEURISTIC** A guideline for evaluating the usability of a user interface

**HICK'S LAW** The time taken to make a decision increases as the number of choices is expanded.

**HIGH FIDELITY PROTOTYPE** A prototype that appears very similar to the final system.

# I

**IMPLEMENTATION MODEL** The view of the system from the developers' point of view, often with system models, etc

**INFORMATION ARCHITECTURE** The discipline that ensures users can find the functions, features or content they need to achieve their tasks.

**INTERACTION DESIGN** The process of identifying design solutions and creating prototype user interfaces.

**INTERFACE CONTROL** An element of interaction in a graphical user interface, such as a button or scroll bar

**INTERFACE PATTERN** See *design pattern*

**ITERATIVE DESIGN** A design methodology based on a cyclical process of prototyping, testing, analysing, and refining a system. Based on the results of testing the most recent iteration of a design, changes and refinements are made.

# L

**LOW FIDELITY PROTOTYPE** A prototype that has some characteristics of the target system but is otherwise simple, usually in order to quickly produce the prototype and test broad concepts.

**LEADING QUESTION** An interview question phrased in such a way that it tends to suggest the desired answer.

# M

**MENTAL MODEL** The internal, mental, representation that a user has about how a system works.

**MODERATOR** The person who runs a usability test. The moderator is responsible for ensuring the smooth running of the session and for ensuring that the test objectives are addressed.

**MICROCOPY** Text labels that appear on buttons, dialog names, form fields and tooltips.

**MODERATED USABILITY TEST** A usability test where a test administrator is with a test participant in real time, for example to remind the participant to think aloud.

**MONOTHETIC AGGLOMERATIVE CLUSTER ANALYSIS** A statistical method of analysing the results of a card sorting session.

**MULTIVARIATE TESTING** Generalised version of A/B testing, where there are more than 2 alternatives

# N

**NEGATIVE PERSONA** Users whom the service is specifically not designed to serve.

# O

**OBSERVATION** In the context of a usability test, this is something the participant says or does (as distinguished from an 'interpretation' which is the observer's belief about the cause).

**OPEN CARD SORT** A card sort where where users can create their own grouping scheme. See also 'Card Sort'

**OPEN QUESTION** A question that cannot be answered “Yes” or “No” but requires the participant to answer with a sentence or two.

# P

**PAPER PROTOTYPE** A prototyping technique that involves creating drawings (often roughly drawn) of an interface that can be used to test out design ideas with end users. There is often the ability to 'interact' with the prototype

**PERSONA** A fictional person created to model and describe the goals, needs, and characteristics of a specific type or group of users.

**PRIMARY PERSONA** The main target for the design of the service.

**PROGRESSIVE DISCLOSURE** An interaction design technique that helps maintain the focus of a user's attention by reducing clutter, confusion, and cognitive workload. This improves usability by presenting only the minimum information required for the task at hand.

**PROXIMITY** A visual design technique used to organise and group the various parts of a user interface.

# R

**RECALL QUESTION** A question that requires the participant to remember an event that has happened in the past.

**REPETITION** A visual design technique used to create consistency and to add visual interest.

# S

**SACCADE** The movement of the eye from one part of the visual field to another.

**SAMPLE SIZE** The number of participants interviewed / observed etc. in a given research study.

**SECONDARY PERSONA** A persona whose needs and goals can be accommodated without upsetting the design’s ability to serve the primary persona.

**SCRUM** A system design methodology, falling within the ‘Agile’ set of methodologies. Attributed to Ken Schriber.

**SKETCH** A design concept or solution not intended for testing with users.

**SUMMATIVE USABILITY TEST** A form of usability testing that aims to measure usability metrics, such as effectiveness, efficiency and satisfaction.

**SYSTEM MODEL** A system model is the conceptual model that describes and represents a system.

# T

**THINKING ALOUD** A technique from cognitive interviewing where a participant describes his or her thought processes when engaged in an activity.

# U

**UNMODERATED USABILITY TEST** A usability test where the test participant works alone on the test tasks, for example from their home computer.

**USABILITY** The extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use (ISO 9241-11)

**USABILITY INSPECTION** A usability evaluation process where an expert evaluates a design against a set of usability principles or standards.

**USER** Person who interacts with a system, product or service.

**USER ACCEPTANCE TEST** A test conducted to determine if the functional requirements of a specification have been met.

**USER CENTRED DESIGN** A design process in which the needs, wants, and limitations of the end users of a product, service or process are considered at each stage of design.

**USER EXPERIENCE** A person’s perceptions and responses resulting from the use and/or anticipated use of a product, system or service (ISO 9241-210)

**USER JOURNEY MAP** A diagram showing the steps in a scenario in which a user interacts with a system or service.

**USER RESEARCH** The process of uncovering user needs, goals and motivations.

**USER STORY** User stories are part of an agile approach that helps shift the focus from writing about requirements to talking about them. All agile user stories include a written sentence or two and, more importantly, a series of conversations about the desired functionality. The generalised format is "As a [role], I need to [carry out this task] so that I can [achieve this goal]".

## V

**VALIDATED LEARNING** A form of iterative design where the design team test design hypotheses with users.

**VISUAL DESIGN** The process of devising grids, laying out pages, choosing colour palettes and developing icons.

## W

**WIREFRAME** An image or set of images which displays the functional elements of a website or page, typically used for planning a site's structure and functionality.