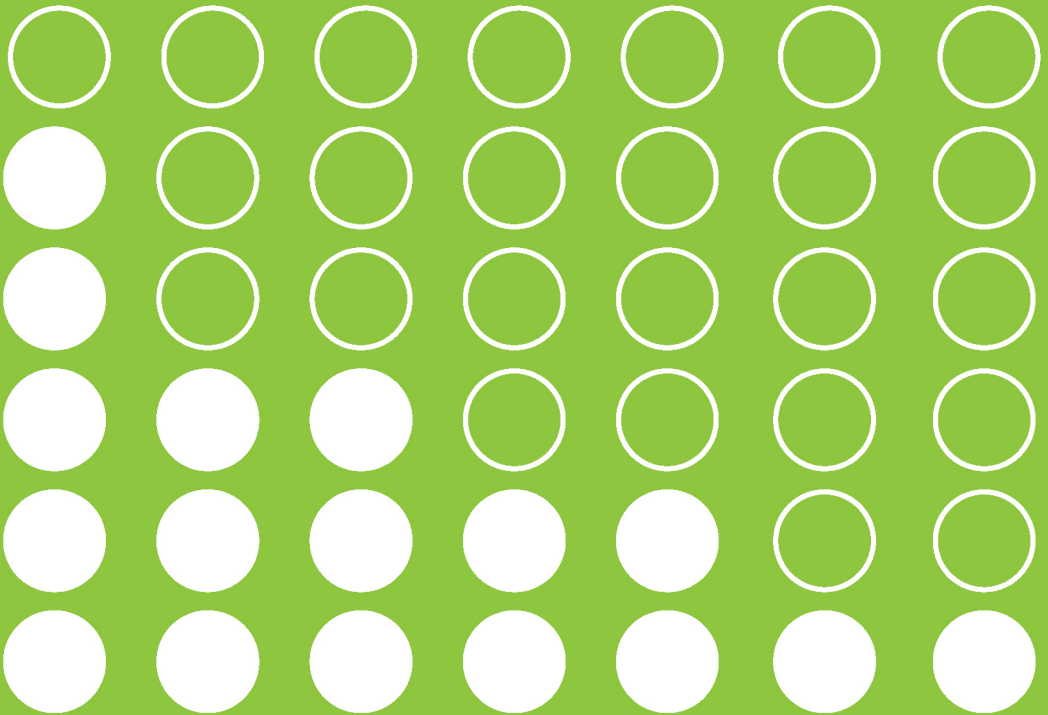


STEPHANIE MARSH

# User Research

A practical guide to designing  
better products and services



# User Research

A practical guide to designing  
better products and services

Stephanie Marsh



**Publisher's note**

Every possible effort has been made to ensure that the information contained in this book is accurate at the time of going to press, and the publishers and author cannot accept responsibility for any errors or omissions, however caused. No responsibility for loss or damage occasioned to any person acting, or refraining from action, as a result of the material in this publication can be accepted by the editor, the publisher or the author.

First published in Great Britain and the United States in 2018 by Kogan Page Limited

Apart from any fair dealing for the purposes of research or private study, or criticism or review, as permitted under the Copyright, Designs and Patents Act 1988, this publication may only be reproduced, stored or transmitted, in any form or by any means, with the prior permission in writing of the publishers, or in the case of reprographic reproduction in accordance with the terms and licences issued by the CLA. Enquiries concerning reproduction outside these terms should be sent to the publishers at the undermentioned addresses:

2nd Floor, 45 Gee Street  
London  
EC1V 3RS  
United Kingdom

c/o Martin P Hill Consulting  
122 W 27th Street  
New York, NY 10001  
USA

4737/23 Ansari Road  
Daryaganj  
New Delhi 110002  
India

© Stephanie Marsh 2018

The right of Stephanie Marsh to be identified as the author of this work has been asserted by her in accordance with the Copyright, Designs and Patents Act 1988.

ISBN 978 0 7494 8104 9  
E-ISBN 978 0 7494 8105 6

---

**British Library Cataloguing-in-Publication Data**

A CIP record for this book is available from the British Library.

---

Typeset by Integra Software Services, Pondicherry  
Print production managed by Jellyfish  
Printed and bound in Great Britain by CPI Group (UK) Ltd, Croydon CR0 4YY

# CONTENTS

*Preface and acknowledgements* x

## **01 Introduction: why is user research so important?** 1

What is user research? 1

Who is this book for? 1

Why do user research? 3

What will you learn in this book? 5

## **PART ONE** The fundamentals: What good research looks like 11

---

## **02 Planning, objectives and legalities in user research** 13

When is the right time to do user research? 13

Be clear what your research is about 15

Be aware of the ethical and legal issues 15

Planning your user research 19

## **03 Best practice in user research: who, what, why and how** 31

Who should be involved in your research? 31

How do you get the right participants? 33

Incentivizing people to take part 39

Understanding the importance of observation 48

Asking the right kind of questions 50

Accessibility and inclusion 61

## **04 Managing user research logistics: agencies, facilities and contracts** 65

Logistics 65

Hiring agencies, choosing facilities, signing contracts 67

Part One summary 69

## **PART TWO** Selecting and using user research methods 71

---

- 05 Usability testing: observing people doing things 75**  
What is usability testing? 75  
The fundamentals of moderated usability testing 76  
The fundamentals of unmoderated usability testing 89  
Summary of usability testing 97
- 06 Content testing: what do people think your content means? 100**  
What is good content? 100  
What content testing is good for 100  
What content testing is not good for 101  
Effort required to do this kind of research 101  
When to use content testing 101  
How to test the effectiveness of content 101
- 07 Card sorting: understanding how people group and relate things 106**  
What is card sorting? 106  
What card sorting is good for 106  
What card sorting is not good for 106  
When to use card sorting 107  
Effort required to do this kind of research 109  
How to do card sorting 109  
Tools for card sorting 118  
Summary 119
- 08 Surveys: how to gauge a widespread user response 121**  
What are surveys? 121  
What surveys are good for 121  
What surveys are not good for 122

When to do a survey 122  
Effort required to do this kind of research 122  
How to do surveys 123  
Survey tools 127

## **09 User interviews: understanding people's experience through talking to them 129**

What are user interviews? 129  
What user interviews are good for 129  
What user interviews are not good for 129  
When to do user interviews 130  
Effort required to do this kind of research 130  
How to do user interviews 131  
Interview tools 139

## **10 Diary studies: how to capture user research data over time 141**

What are diary studies? 141  
What diary studies are good for 141  
What diary studies are not good for 141  
When to do a diary study 142  
Effort required to do this kind of research 143  
How to do a diary study 144  
Diary study tools 147

## **11 Information architecture validation: does the structure of your information work for your users? 152**

What is information architecture? 152  
What information architecture validation is good for 152  
What information architecture validation is not good for 153  
When to do information architecture validation 153  
Effort required to do this kind of research 153  
How to do an information architecture validation 154  
Survey tools 158

- 12 Ethnography: observing how people behave in the real world 160**
- What is traditional ethnography? 160
  - What ethnography is good for 160
  - What ethnography is not good for 161
  - When to use ethnography 161
  - Effort required to do this kind of research 161
  - How to do ethnography 162
  - Extending your ethnographic reach with mobile devices 162
  - Ethnography tools 163
- 13 Contextual inquiry: interviewing people in their own environment 166**
- What is contextual inquiry? 166
  - What contextual inquiry is good for 166
  - What contextual inquiry is not good for 167
  - When to use contextual inquiry 167
  - Effort required to do this kind of research 168
  - How to do contextual inquiry 169
  - Tools 172
- 14 A/B testing: a technique to compare different options 173**
- What is A/B testing? 173
  - What A/B testing is good for 173
  - What A/B testing is not good for 174
  - When to use A/B testing 175
  - Effort required to do this kind of research 175
  - How to do A/B testing 176
  - Tools for A/B testing 178
- 15 Getting the best out of stakeholder workshops 180**
- What is a stakeholder workshop? 180
  - What stakeholder workshops are good for 180
  - What stakeholder workshops are not good for 181

When to use workshops 181  
Effort required to do this kind of research 182  
How to run a workshop 183  
Workshop tools 187

**16 Guerrilla research: running fast-paced research in the real world 191**

What is guerrilla research? 191  
What guerrilla research is good for 191  
What guerrilla research is not good for 192  
When to use guerrilla research 192  
Effort required to do this kind of research 192  
How to do guerrilla research 193  
Tools for guerrilla research 194

**17 How to combine user research methodologies 196**

Where to start when advocating user research 196  
Common research scenarios and combining methodologies 199  
Part Two summary 204

**PART THREE** Analysing and presenting your data 205

---

**18 Content analysis: a method of coding and making sense of your qualitative data 209**

How to do content analysis 209  
Advantages of content analysis 212  
Disadvantages of content analysis 212

**19 Affinity diagramming: understand your data through identifying its themes 213**

How to do affinity diagramming 214  
Analysis through group work 214



- Putting it all together 215
- Advantages of affinity diagramming 217
- Disadvantages of affinity diagramming 217
  
- 20 Prioritizing issues and user needs: what's important and what to work on next 218**
  - Cataloguing issues from qualitative data 219
  - Cataloguing issues from quantitative data 222
  
- 21 Making recommendations: how to make your research findings actionable 226**
  - What kinds of things can you recommend? 226
  
- 22 Creating executive summaries and detailed reports to present results 228**
  - Report structure 229
  
- 23 Using video playback to present your research results 233**
  - How to edit your user research videos 234
  
- 24 Using personas to communicate user characteristics and behaviours 235**
  - What are personas? 235
  - What to include in your persona 236
  - How to present your personas 238
  
- 25 Using mental models to visualize how users think and identify opportunities 241**
  - How to create your own mental model 243
  
- 26 Using journey and experience maps to visualize user research data 247**
  - How to create an experience map 249

- 27 Using scenarios and storyboards to represent the user journey 253**  
How to create scenarios 254  
How to create storyboards 255
- 28 Using infographics to translate numerical and statistical data 257**  
How to make effective infographics 257  
Making use of available tools 259
- 29 How to recommend changes to visual, interaction and information design 265**  
Tools 266
- Conclusion 268**
- Index 271*

# PREFACE AND ACKNOWLEDGEMENTS

There isn't one way to do user research, nor is there one way of using any of the methods covered in this book. This makes doing user research endlessly fascinating, but it can also make it difficult to be confident in using these methods. I have learnt some things over the years, not only by doing user research but also from mentoring people new to it. I would like to share some of this experience and I hope it will be helpful to practitioners, particularly those just starting out. I am grateful to those who have supported me and given me opportunities to learn and gain experience (both the positive and painful). My hope is that this book does the same for others.

I am very fortunate to have spent my career so far doing work that I find interesting and fulfilling. I would like to thank those who make the time and effort to share their work and thoughts and engage in discussion about user research, and those who keep pushing forward and improving our knowledge in this field.

I am extremely grateful to the industry experts who gave such constructive feedback to make this book better and to Kogan Page for their support and hard work in making it a reality. I am eternally grateful to friends and family, who always offer their support and encourage me in my endeavours. Finally, thank you to you the readers, without whom such books wouldn't be written.

# Introduction 01

## Why is user research so important?

### What is user research?

As you're here, reading this, you probably have a fair idea of what user research is, even if you don't know how it's done, but it's worth making sure we have a shared understanding before we continue. User research is the study of people's (users') behaviour, motivations and needs in a particular context, which affect how people understand and use things in their daily lives. It can include thinking about how these factors change over time. Market research is something different: it aims to find out what consumer preferences and wants are. Market and user research have different sets of objectives and outcomes.

### Who is this book for?

The job title 'user researcher' is becoming increasingly common in the digital and service industries, even in policy making. User researchers tend to be found in organizations that have, to a certain extent, bought into the concept of user experience or a 'user first' way of working. User research is relevant anywhere people are interacting with products and services.

The first thing you need to know is that you don't have to have the title 'user researcher' to do user research. The second thing is that you can teach yourself how to do good quality user research. I did. And this book is going to show you how.

There are many reasons why you may be reading this book, including:

- You may want or need to do user research yourself, as there is no one else going to champion a user-centric approach.
- You may be a new user researcher looking for good practice tips.
- You may be one of the lucky ones who get to work with a user researcher and want to understand more about what user research is and how it is done; this would improve your own working practices in collaborating with the team.
- You want to be an intelligent customer when buying in outside help from specialist agencies.
- You may already be user researcher, wanting to refresh or to get a different perspective.

There are several groups of people who would benefit from diversifying their skillset with user research, such as:

- web managers and developers;
- visual and interaction designers;
- experience and service designers;
- copywriters and content designers;
- information architects;
- social media/digital communication specialists;
- digital marketing and campaign specialists;
- marketing managers;
- market researchers;
- communication officers;
- business analysts;
- digital/transformation/IT specialists;
- policy analysts;
- business development managers;
- teachers;
- gallery and museum curators;
- politicians.

Everyone is welcome here. This book is particularly useful for people who are not necessarily user research professionals; they already have a busy day job, need some user research done and are facing the prospect of having to do it themselves. This book will help them avoid common mistakes by identifying the kind of situation they find themselves in and guiding them through the process. It will explain in plain English how to:

- understand the fundamentals of research;
- choose and use the right method;
- analyse the data; and
- make practical use of the findings.

## Why do user research?

Many businesses and organizations are based on creating desirable experiences for users, yet many fail to fully acknowledge users in their development processes. They do not understand:

- who their users are;
- what their users' needs are/what they're trying to do;
- how their users are currently trying to do things;
- how their users would like to do these things.

Without user input, organizations risk spending huge amounts of money creating products and services that will fail. Leaders in some organizations may think they don't need to involve users, or that they can't afford the time or money to involve users on a regular basis. This is fallacy. You cannot presume to know what your users need: you need to really get to know them, how they think and behave. Understanding your users' circumstances, influences and expectations will help you to:

- design better products, services and experiences;
- improve your existing offerings;
- adapt to changing behaviours and expectations;

- save money by getting your offering right first time;
- make an impact by giving users what they need and want – and much more;
- influence users' behaviour by allowing them to do what they want to do and getting them to do what you want;
- influence stakeholders' decisions with options and solutions based on evidence, not opinion;
- challenge internal assumptions about the direction the organization should take.

You can use user research to achieve all of these things. You don't need to be a user research professional to take control of the situation. By following my simple rules for good research, you can truly understand your customer or audience, whoever you are. You don't need a degree in computer science, psychology or human–computer interaction; I was an environmental geologist when I started doing user research. I just happened to spend four years working out what defines good user research, and what defines bad. I taught myself these skills by reading textbooks and practising; the fact that I did it during doctoral research is beside the point. If I can do it, you can.

After getting my PhD, I left academia and started using these methods, in earnest, in anger, in the real world. I have worked for companies that are 'user research evangelists' and others that don't have a clue. In some cases I've had to build understanding and advocacy from the ground up, at the same time as delivering results. I am now 14 years into my user research career, but only once have I had a job title that references user research. I have been a Usability Analyst, a User Experience Manager/Consultant/Lead, and the Head of Digital Strategy. The thing that got me all these jobs? My user research skills.

User research is about putting your natural skills of observation and conversation to use in a specific way, perhaps in a way that you haven't knowingly done before. In reality, we've all tested an idea on people, seen how they react to it, improved the idea and tried it again. This is user research. This book will show you how to put your existing skills together to use them in a more structured way.

## What will you learn in this book?

This book is divided into three parts. The first part outlines the essential rules for success, including making sure you are talking to the right people. I will explain how to get them and how to avoid gathering biased and inaccurate data by asking the right questions and observing people.

Part One, Chapters 2 and 3, will help you gain a better understanding of what good research looks like, no matter the methodology you might be using. This includes:

- *When you should do your research:* it's all in the timing.
- *The kinds of ethical elements you need to consider:* so everything is above board and the people you choose to take part in your research will have a good understanding of what is going to happen and how you will use the data.
- *Planning your research:* choosing a location, identifying internal people who should be involved.
- *Who you should recruit to participate in your research:* we'll look at how to get this right and why this is crucial for getting good data.
- *You'll learn about observing participants:* what they do and what they say can be two different things. We'll look at the difference between behaviour and opinion, and why it is important to your research and the number of people you recruit to take part.
- *You'll understand how to ask the right questions* avoiding bias in your data and helping you get to the truth.

Part One also covers logistics (Chapter 4): hiring agencies, choosing facilities and signing contracts. Part Two will help you identify the type of situation you find yourself in and offer advice on the methods to use.

There certainly isn't one method to rule them all. In fact, there isn't always one preferred method for each situation. If this book were just a list of methods, it wouldn't necessarily be clear which was the best one to use or when. As a taster, below is a quick overview of the methods to consider. You probably have lots of questions about these



methods and the various options and parameters; we'll go into each method in detail and I'll explain:

- what the method is;
- what it's good for;
- what it's not good for;
- the effort required to do it;
- how to do it;
- tools of the trade; and
- further reading (should you want to know more).

### ***Usability testing – gaining insights through observation (Chapter 5)***

Usability testing (also known as user testing) is commonly associated with but not limited to websites. A researcher observes users working through tasks on a product or service to identify where problems are encountered. User testing can be employed both qualitatively and quantitatively (we'll get into the detail later). It can also be done in different environments:

- *Face-to-face and moderated*: the researcher and the user are in the same room at the same time, interacting with each other.
- *Remote and moderated*: the researcher and the user are in different places but are interacting with each other, for example by using screen-sharing technology.
- *Face-to-face and unmoderated*: the researcher and the user are in the same room at the same time, but the researcher does not intervene or talk while the user is working through the tasks.
- *Remote and unmoderated*: the researcher is not involved while the user carries out the research tasks at a time and place of his or her choosing.

### ***Content testing – what do people think your content means? (Chapter 6)***

Content testing is a specific type of usability testing that focuses on how suitable and understandable the content is for the intended

audience(s). It can be done as part of usability testing or it can be done separately.

### ***Card sorting – understanding how people associate and relate things (Chapter 7)***

Card sorting is a method used to understand how people think about and associate things, ie grouping items that are related to each other. This is useful when designing or refining the structure of a website, for example: what information is closely related and should therefore be grouped together and given a label. It can be used in the same environments and manner as usability testing.

### ***Surveys – how to gauge a widespread user response (Chapter 8)***

Surveys are used frequently in both market research and user research. They have limitations, but they are inexpensive to run and can potentially reach a lot of people. UX Mastery describes surveys as typically consisting of a set of questions used to assess a participant's preferences, attitudes, characteristics and opinions on a given topic (Gray, 2014).

### ***User interviews – understand people's experience through talking to them (Chapter 9)***

User interviews are a commonly used method. We are all familiar with interviews in some form or another, usually for a job. For the purposes of user research, interviews are useful for understanding attitudes (and how they change over time), common behaviours and how people think and associate certain things. Interviews can also be face-to-face or conducted remotely (by phone).

### ***Diary studies – how to capture user research data over time (Chapter 10)***

Diary studies are useful for understanding experience, behaviour and attitudes over time. The researcher will give users a format in

which to record their observations at specified times, about particular things; users will complete the diary on their own.

### ***Information architecture validation – does the structure of your information work for your users? (Chapter 11)***

Information architectures are structures of information. The most common example we will be using is the organizing and labelling of website (and intranet) content and functionality. A validation exercise allows you to understand if your current or draft structure is working for a larger (and relevant) group of users, using online tools to facilitate the exercise.

### ***Ethnography – observing how people behave in the real world (Chapter 12)***

Ethnography studies people and culture. It is also used in user research to study groups and people as they go about their everyday lives. Many other methods take place in an artificial setting; they are still valid, but sometimes you need to observe people in their real world. Mobile ethnography makes use of communication and recording technology to capture ethnographic data.

### ***Contextual inquiry – interviewing people in their own environment (Chapter 13)***

Contextual inquiry can be seen as a hybrid of user interviews and ethnography; interviewing people in their own environment can provide insights into why people behave and feel the way they do.

### ***A/B testing – a technique to compare different options (Chapter 14)***

A/B testing (also known split testing) compares two versions of a web page (A and B) by showing them to similar visitors at the same time to see which one performs better (VWO, 2017). Rather than

choosing which to use based on opinion, data and conversion rates inform the decision.

## ***Getting the best out of stakeholder workshops (Chapter 15)***

Stakeholder workshops are a way of engaging those who have an interest in the project, including those with expertise and in-depth knowledge of the domain you are working in. Workshops can be useful for:

- Building consensus among various parties with potentially opposing views and objectives and establishing a shared understanding of what certain things mean.
- Gathering requirements: what the product/service needs to include.
- Sketching initial design ideas.

## ***Guerrilla research – running fast-paced research in the real world (Chapter 16)***

Guerrilla research is a low-cost method of usability testing or interviewing. The term ‘guerrilla’ refers to its ‘out in the wild’ approach – it can be conducted anywhere (café, library, train station, etc); essentially anywhere there is significant footfall.

## ***How to combine user research methodologies (Chapter 17)***

We’ll also look at some examples of how to use a combination of methodologies during the lifecycle of a project, as different methodologies are suitable in certain circumstances and stages.

Part Three explains what to do once you’ve done the research. We’ll look at how to analyse the data you have gathered and how to share the results. This part provides an overview of the analysis methods, when and where they can be used, and how to communicate and share your analysis effectively. It will explain how you can:

- *Catalogue and prioritize issues:* once you have gathered the evidence, understanding what is a serious issue and what is not.

- *Analyse your qualitative data:* making sense of and coding lots of qualitative data.
- *Identify themes:* are the problems/things you have discovered related to each other?
- *Write user needs and stories:* this is a neat way of summarizing who the users are, what they want to do and what they want to achieve.
- *Create personas and mental models:* a way of describing who your user groups are and how they think about certain topics.
- *Share insight through video playback:* creating video highlights of particular topics is another powerful way of communicating your findings.
- *Write executive summaries and detailed reports:* different stakeholders will have varying amounts of time to understand your research. We'll look at the level of detail to provide to different audiences.
- *Visualize the customer journey and experience through mapping:* plotting and visualizing a journey and user touch points, from the user's point of view.
- *Refine the design:* how to go about changing information architectures, interaction designs and visual designs.

The proof is in the evidence. People who carry out user research will identify the improvements they can make and will get results from these changes. This is something that can be done continuously and iteratively: there are different methods for different stages of the design and development cycles.

## **References and further reading**

- Gray, C (2014) Better User Research Through Surveys. UX Mastery. Available from: <http://uxmastery.com/better-user-research-through-surveys/> (last accessed 8 July 2017)
- VWO (2017) The Complete Guide to A/B Testing. VWO. Available from: <https://vwo.com/ab-testing/> (last accessed: 8 July 2017)

# PART ONE

## **The fundamentals. What good research looks like**

Part One explains how to avoid gathering biased and inaccurate data by asking the right questions and using the power of observation (you can't necessarily rely on what people are saying).

There are some things we need to think about before we delve into the nitty gritty of choosing the right research method, how to implement it and then analyse the data. There are fundamentals that go across all methodologies.

THIS PAGE IS INTENTIONALLY LEFT BLANK

# Planning, objectives and legalities in user research

## 02

### When is the right time to do user research?

The pragmatic (and simple) answer is: any time. The ideal answer is: all the time. You can also pinpoint when user research will have the most impact and the greatest positive effect.

If you are working in a truly agile and user-centric environment, you could be planning for and doing user research on a regular, cyclical basis. Problems identified in the user research could be rectified in the next round of work, and then researched and tested again. But you aren't necessarily working in this kind of environment, and you may never work this way.

#### **What is 'agile'?**

Agile is a project management method, often used in software development, with short phases of work and assessment of progress.

If you are working on an entirely new concept, product or service you should start doing user research as soon as possible. You will see later on in the book that you don't need to wait to have something



tangible before you put it in front of users. For example, you can use sketches on paper that describe what you intend to do.

At the inception of the concept, after some initial thinking, you should be doing research to understand whether you are going in the right direction. By understanding the way people behave and think, you will get an understanding of whether your concept is going to enhance their life somehow, or solve a problem they are experiencing. Then you will know whether or not to invest time, effort and money in the new concept, whether it needs refining (which it probably will) or whether it should be abandoned altogether.

If your product/service already exists, there is never a bad time to do user research with the aim of understanding how it can be improved. If your data/analytics/feedback shows that something isn't working, but it is not clear what the problem actually is, do user research to understand what's going on.

If a board of stakeholders disagree on the way forward, then do some research, find out what the users need and give the stakeholders the tools for evidence-based decision making. The best solutions are a balance of business and user requirements.

Part of what we will discuss in this part of the book is how long it takes to plan, execute and analyse the data from the research. This varies depending on the kind of research you might be doing. For example, if you do research before the launch of a new version, you should plan it so there is enough time to fix any issues that have been identified, before launch. If you do it too close to launch you will be told that changes can't be made; they'll have to wait for the next iteration and the potentially great solutions and ideas may never get implemented.

There is a danger, if doing the research is time-sensitive, that you will pick a method that is the quickest and easiest way to meet a crazy deadline. It may not be the most appropriate method. This book will give you the knowledge to understand if the methodology is good enough to get what you need. You will almost certainly have a number of research methods that will be applicable to what you need, but it is essential that you talk to the right people. The right people cannot be substituted for anything else.

### Summary

If you can, choose a point in time when the results of the research will have the most positive impact.

## Be clear what your research is about

### *What's your problem?*

To do effective research you need to be clear about the purpose of the research. Research is most effective when it is focused. *Problem framing*, also known as opportunity framing, is knowing what problem you are trying to solve or understand or, from a positive perspective, what the opportunity is that you are trying to understand and what its parameters are.

It is useful to articulate and share with stakeholders (anyone somehow involved in the project), the *aims and objectives* of your research. Get everyone to agree them before you start putting effort into doing the research. If you don't know exactly what the problem is, that's ok: the aim of the research is to understand the problem. Getting agreement on the aims and objectives upfront should help you avoid *feature creep*. It is best to keep the focus of the research fairly narrow, unless your aim is at first to understand the problem or context. Stakeholders will want to expand the scope – you're likely to hear: 'As you're doing some research, can you also look at x, y and z?' If it isn't relevant to the agreed aims and objectives, say no. I realize this isn't always possible, so at least make your objection known and the reasons behind it.

Part Two looks in much more depth at understanding the problem and then choosing the right method to address it.

## Be aware of the ethical and legal issues

### *Do not skip this section!*

You need to be transparent about what you are doing and how you are doing it. You need to share this with the people who are

taking part in the research. At the beginning of any research session you need to give them some details (whether they're filling in an online survey or you are conducting a face-to-face interview). It is a legal requirement to get consent if you are going to collect, use or store data.

### **What to tell participants**

- Whether you are going to record data in some way (video, audio, screen, survey data capture, etc).
- What you will do with the data (will it be used only for this research? Who will you share it with: people in your organization; people outside your organization?)
- How will you sort the data? Will it be secure?
- How long will you store that data: until the end of the project, for a year, forever?

Also, if you have people observing the research you need to say so (it may not be obvious, for instance if they are in another room).

For research where you are talking to/interacting with people you can give them a verbal explanation. It's a good idea to have it written down, especially if you are conducting remote research; you may want to send people an explanation and consent form prior to the research session taking place.

Make sure the research participants have understood what you have told them and what they have agreed to, and that they are happy to go ahead with the research. If the research is in the form of an online survey, give the explanation upfront before you ask any questions and ask for electronic consent, as the example in the box below shows.

### ***How to gain informed consent from your users***

As part of the research planning process, you will need to write your statement of data collection, storage and processing. If you are

interacting with the user as part of the research session, at the beginning of the session, read out your statement. If it is unmoderated research, you can share the written statement with the users before the session starts or at the start of a session. Make sure the statement is in plain English so it is easy to understand. Doing this at the beginning of the research means you can gain informed consent for what you are doing with data. It can also reassure people and help them settle in to the session. Other things you need to tell people during interactive sessions include:

- Your name, role and who you work for.
- Why you're doing the research (the basics only).
- What you're going to ask them to do (again, only the basics).
- Whether the session is being observed (and who's watching).

### **Example: Introducing consent**

First off, thanks for agreeing to help us out. Today we are going to be looking at/doing (x). I'll be asking you to (x) and answer some questions along the way. This isn't a test, so relax; you can do no wrong! Please let me know if you want to stop and take a break at any point, or if there is anything that you really don't want to talk about. This session will last no longer than (x) minutes.

I will be recording the session by (x) to help me with my notetaking, but any information you provide will be kept confidential, so don't be afraid to speak openly to me. Just so you know, there may be people (from x) observing in another room, but you won't see or hear them.

May I remind you that everything you see in this session is confidential, so by agreeing to the terms on our consent form you agree not to discuss it with anyone after this session. This works both ways – we also protect your anonymity and will not discuss anything that may identify you.

Any data collected will be stored (on/in) a secure (server/computer/cupboard). The data will be shared with (the project team/etc), only for the purpose of (x). The data will be held only for a period of (x), after which it will be destroyed.

I have a consent form for you to read and agree to before we can continue. I appreciate that you are doing this on a voluntary basis and you can withdraw your consent at any time. Please let me know if you have any questions.

### Top tips

- *If someone does not give consent at the beginning, the session needs to be terminated.*
- *Keep the consent form for as long as you are using and storing the information.*
- *If someone withdraws consent, you need to stop the session immediately and ensure that you destroy/delete any data that has been collected. You should not use this partially collected data in the research analysis.*

The box below shows an example of online consent, which I have adapted from a Survey Monkey (2017) consent form.

### Example: Online consent

The purpose of this research project is (x). This is a research project being conducted by (x) at (x). You are invited to participate in this research project because you are (x).

Your participation in this survey is voluntary. You may choose not to participate. If you do decide to participate, you may withdraw at any time.

This online survey will take approximately (x) minutes to complete. Your responses will be confidential. We (do/not) collect identifying information such as (your name, e-mail or IP address). The survey questions will be about (x). All data is stored in a password-protected electronic format.

If you have any questions about this survey, please contact (x).

*Electronic consent:* please select your choice below.

Clicking on the 'agree' button indicates that:

- You have read and understood the above information.
- You voluntarily agree to participate.

If you do not wish to participate in the survey, please decline participation by clicking on the 'disagree' button.

## Planning your user research

There are several factors that you need to take into account when planning your user research. How much time you need to do the research will be discussed in Part Two, looking at each research methodology in detail. How much time you need to analyse the data, understand it, draw conclusions and identify recommendations from this new knowledge and put it into an appropriate shareable format will be considered in Part Three.

If you are planning research that involves interacting with people either face-to-face or remotely, if possible your user research ‘sessions’ should be done consecutively (think back-to-back, with breaks in between); an example of scheduling is shown below. The people you are recruiting to take part in the research will be booked into particular time slots on a particular day. This way you, the research participants and your team all know what is happening when.

### ***Example: scheduling***

You have decided to do *phone interviews* for your user research. This means that you are staying in one place to do the interviews (ie you don’t have to travel to visit people).

We’ll assume you have decided to do eight interviews. Below are three different scheduling examples, depending on the length of the interviews you are conducting.

#### 30-minute interviews

These can be done in one day. Here is how you could schedule the interviews:

Participant 1: 10:00 – 10:30

Participant 2: 10:45 – 11:15

Participant 3: 11:30 – 12:00

Participant 4: 12:15 – 12:45

*Lunch: 12:45 – 13:15*

Participant 5: 13:15 – 13:45

Participant 6: 14:00 – 14:30

Participant 7: 14:45 – 15:15

Participant 8: 15:30 – 16:00

*Backup session (with a replacement participant if anyone drops out during the day).*

Participant 9: 16:15 – 16:45.

### Top tips

*Recruit at least one backup participant, in case someone drops out on the day the research is taking place. This will remove the stress of trying to replace people at the last minute and allow you to still have the appropriate number of participants involved. Allow breaks of at least 15 minutes between each session. This gives you:*

- *Leeway in case there are technical problems that need to be fixed.*
- *Time in case participants are late, or a session overruns as there is so much to talk about.*
- *Some headspace. However many research sessions you schedule in a day, it is tiring work and you will be grateful to have a little time after each session. Therefore, always, always schedule a lunch break (that is my golden rule anyway).*

Don't schedule your first research session at the very beginning of the day if you don't have to. This is why I suggest you start at 10:00, to give yourself some time to set things up and get everything straight before you start.

### 45-minute interviews

These can be scheduled to be completed in a day and a half:

#### *Day 1*

Participant 1: 10:00 – 10:45

Participant 2: 11:00 – 11:45

Participant 3: 12:00 – 12:45

*Lunch: 12:45 – 13:15*

Participant 4: 13:15 – 14:00

Participant 5: 14:15 – 15:00

Participant 6: 15:15 – 16:00

*Day 2*

Participant 7: 10:00 – 10:45

Participant 8: 11:00 – 11:45

*Backup session:*

Participant 9: 12:00 – 12:45

You may choose to have a backup participant for each day.

## 60-minute interviews

These are more labour-intensive, but are often necessary when researching complex topics:

*Day 1*

Participant 1: 10:00 – 11:00

Participant 2: 11:15 – 12:15

Participant 3: 12:30 – 13:30

*Lunch: 13:30 – 14:00*

Participant 4: 14:00 – 15:00

Participant 5: 15:15 – 16:15

*Day 2*

Participant 6: 10:00 – 11:00

Participant 7: 11:15 – 12:15

Participant 8: 12:30 – 13:30

*Backup session:*

Participant 9: 14:00 – 15:00

Again, you may choose to have a backup participant for each day.

These are only examples of how to plan your day and won't work for everyone. For example, if you need to do user research with teachers during term time, you will need to plan evening sessions. If you need to travel to people in between sessions, your day will be very different to what I have described above; you will need to factor in



travel time. If possible, try to schedule visits that are close to each other. You may only be able to get two to four research session done in a day. If you are visiting people at work for example, and if appropriate, try to schedule sessions for people in the same location. You may need to be very flexible about who you talk to and when, as their work priorities will interrupt your research plans.

Location of your research

Location affects the time taken to plan and do the research, as well as the cost. Depending on the type of research you are doing, the location will vary. Table 2.1 summarizes the advantages of different research locations you may want to consider.

(For advice on choosing a research lab, see Government Digital Service, June 2016. There is a rigorous process for UK government departments when hiring a research lab, because it is being paid for with taxpayers’ money. It’s also best practice and sound advice that

**Table 2.1** Cost-benefit analysis for choosing a research venue for face-to-face research

Location	Advantages	Disadvantages
Your offices (or your clients')	You could simply book a room for the day; easy access for you! Hopefully booking would be simple, but it isn't always easy if space is limited.	It could be intimidating for people taking part in the research. Some may not feel comfortable criticizing your things in the place where people work on them every day. Others won't care and will tell you exactly what they think.
	You don't have to pay for facilities.	Where is your office located? Will it be easy for your participants to travel there?
	Easy access to your team members for support.	When using 'bog standard' meeting rooms, colleagues may not be able to observe the research as it happens.
	Easier access to your IT, etc.	You may have to think about the practicalities of getting people in and out of the building.

(continued)

Table 2.1 (Continued)

Location	Advantages	Disadvantages
User research labs	<p>These are labs designed to smoothly facilitate the research you are doing.</p> <p>They will record your sessions and provide you with the data.</p> <p>They will probably provide a person to host the participants.</p> <p>They will provide IT support.</p> <p>They generally have observation rooms, which means colleagues and stakeholders can attend.</p>	<p>Cost is the main consideration here.</p> <p>This is going to be expensive, so you will need to plan carefully when to use these kinds of facilities.</p> <p>Availability of the facilities is also a factor, depending on where you want to do the research.</p>
Conference facilities and hotel rooms	<p>Lots of options, readily available at different price ranges.</p> <p>They may be willing to help with the hosting of the participants.</p> <p>You may even get some IT support (Wi-Fi).</p> <p>It's a neutral venue (outside your offices).</p> <p>You can go to where your users are, if they aren't near you.</p>	<p>In the same way as your office, it may not have all the equipment or IT support you need.</p> <p>Your team and stakeholders may not be able to observe.</p> <p>Although it's a neutral setting, it may not be an environment that participants feel comfortable in. It really depends on the venue.</p>

(continued)

**Table 2.1** (Continued)

Location	Advantages	Disadvantages
Public spaces, libraries and coffee shops	Free, but make sure you have permission for the owner/manager.  It's a neutral (relaxed) setting.  This is a good option if you are doing 'guerrilla research', where anyone can take part in the research, if they are places with high footfall.	There will be no privacy. This needs careful consideration depending on the kind of questions you will be asking.  Background noise may become an issue in a café, for example.  You may start disturbing others.  There may be equipment and support issues.
Visiting people at home or work	Some research requires you to go to where your users are. It may be your only option.  You can gain a deep understanding of the users' environment, making data collection more realistic.  There are no venue costs.	You need to consider the travel costs (and perhaps hotel costs).  It is likely that it will take longer to gather data this way.

anyone can follow to do things properly and get what you need rather than what someone wants to sell you.)

*Side note:* large organizations that have moved to agile and user-centric ways of working have started to build their own user research labs within their offices. There are obviously big upfront costs when doing this but, when you start doing user research on a regular basis it becomes much more cost-effective. This is probably getting a bit ahead of ourselves, but it's good to dream!

*Options for remote research*

Remote research simply means that the researcher and the participants are in different places. Table 2.2 summarizes the advantages and disadvantages.

There are two main modes of remote research: moderated and unmoderated. Moderated remote research includes telephone interviews and video and screen sharing, which means the researcher and participant are interacting in some way. Unmoderated remote research includes online surveys and information architecture validation; participants complete the research without any contact with the researcher, in their own time. This means lots of people can do the research at the same time. Time and money are saved by not requiring a location to do the research, but you will still need to recruit the right people to take part.

*The importance of pilot testing*

If you have some flexibility and you aren't sure at the beginning how long the research session should be, you can do some pilot testing. It is considered best practice to pilot your research methodology before you do the research for real.

By pilot testing I mean creating a draft outline of how you want to run your research session: the things you want to say to the participants, the tasks that you want them to do, any questions that you want to ask them, etc. Do a dummy run session (ideally with someone who is similar to your participants, otherwise get a colleague to

**Table 2.2** Cost-benefit analysis for remote research

Advantages	Disadvantages
You can access a wide geographical spread including international audiences	You exclude users that do not have easy access to the internet.
It is cheaper to run these types of research	You exclude users that have low digital/IT literacy.
It can be quicker to plan and do remote research	You will miss some of the detail gained by observing people in real life (face-to-face).

role-play a participant). Doing a pilot test means that you can identify what does and doesn't work with your draft document: you can edit questions and tasks that cause confusion or are too leading, etc, and refine the draft until you are comfortable that it is the best it can be.

## ***Inviting people to observe research sessions***

In the right circumstances, if you are doing face-to-face or remote moderated research, there is the potential to invite people to observe. The best example (an ideal scenario) of this would be inviting stakeholders to observe some usability testing; ie observing participants interacting with your product or service.

### **Scenario**

The scene: you are improving your website. You are in a user research lab with an observation room. Various stakeholders are watching (on a large screen) as a participant struggles to complete a task. The participant becomes frustrated and annoyed, and eventually gives up. This is a very powerful way for stakeholders to see what it's like to use your product/service in real life, in real time.

### **Getting observers involved in the research**

If you are lucky enough have people from your organization/project team observing the research, it's a good idea to get them actively involved in notetaking. It is useful to have multiple perspectives on what is going on if you can get them! If you do have several observers, it's worth having some ground rules to be shared before they start observing and writing things down; ideally the rules will be visible wherever the observation is happening. For example:

- Separate each observation, whenever a participant says or does something interesting or relevant.
- For each observation, note which participant it was (using the participant ID), so you can tell which participants said what. If possible note down the time for your observations.

- Avoid interpreting what you have seen or heard. Just take notes of what you see and hear.
- Try to write your observations in a sharable format, eg, on a Post-it (one observation per Post-it).

If they see five different participants struggling five times in one day, this is hard evidence that something needs to be fixed. It's not just you telling busy people that something isn't working: it's showing them that it's not working. Video highlights (which we'll discuss in Chapter 3) for those who can't attend are also powerful.

Government Digital Service in the UK (<https://gds.blog.gov.uk>) have a mantra for observing user research: each team member should observe two hours of user research every six weeks. This may not be realistic for you, but it demonstrates how important it is to have stakeholders observe.

## ***Recruiting people to do the research***

The main question here is: how easy or difficult are these people to find and get some of their precious time? For example, if you are building a legal research database you will want to talk to lawyers, barristers, paralegals, law students, judges – a prime example of a specialist audience. They are a relatively small group (compared to people who listen to music online, for example) and they are time-poor. For these kinds of people, you will need a long lead time, before the research happens, giving plenty of notice for them to make time in their diary for the research, especially if you are asking them to travel to a different location during their day.

If you are looking for people who shop online, these are much easier to find. It will take less time, but it still takes time. From the moment you have decided exactly who to include in the research, the general advice is to give at least two weeks to allow for recruitment, longer for specialist audiences. There are multiple ways that you can recruit people; see more on this in Chapter 3.

## ***Planning for analysis and sharing of work***

The research process does not finish once you have gathered the data: you need to plan time and resource for analysing it and sharing the outcomes. The time it takes to do analysis will depend on the amount of data (Part Three will give you some insight into this).

If you can get others involved in the analysis that will help. In the same way as having people observe the research, multiple perspectives will improve the insight gained and having experienced and multiple brains analysing the data will lighten the load. In many cases, you can involve people in the analysis even if they haven't observed the research, if they have a good enough understanding of its aims, objectives and context.

If you've had people observing the research, schedule in a group analysis and debrief as soon as you can after it's completed (see Part Three for more on this). You'll also want to schedule in time with the relevant people to share the outcomes of your research. If you have a clear plan and timescale, it's worth planning this well in advance to get the right people in the room, especially when some of the stakeholders may be very time-poor.

## ***Planning for user research when working agile or lean***

The first thing I want to say is that using agile and lean UX (user experience) approaches does not mean excluding users and user research. I have seen more than one presentation that adopted the 'no users' approach to lean UX. In my opinion there is no UX without the users.

If you're working in an agile environment, hopefully you are also working in a multidisciplinary team and ideally a multidisciplinary team with a dedicated user researcher. If you are that dedicated user researcher, great! If not, it's a challenge to take up that responsibility within the team, but it's certainly worth it and I salute you!

The lean approach is similar to agile in its principles. Lean methods are more holistic across the business, and agile is more focused on software development (Stockwell, 2016). There are many useful resources in lean UX and agile user research, which you can find in the further reading section at the end of this chapter.

There are a few things that I want to highlight before you delve further into this area. The first is to get user research into the planning phase, so that it has committed time and resource. It will depend on the way your organization is doing agile, but ideally you won't develop, design or progress anything for more than two to three weeks at a time without putting it in front of users. Part Two will identify the few methods that can't be adapted to lean and agile approaches.

Getting user research into the plan also includes the data analysis and sharing insight. In an agile environment (or whenever timescales are tight), group analysis is useful, not only because it shares the workload but it also helps others in the team incorporate the insight into the next phase of work (you can find out more about group analysis in Part Three). Not everyone will be able to be involved in the research and analysis phases. You can share the insight with them through retrospectives and 'show and tells' to spread the word; agile is all about being collaborative and not doing things in isolation. There is less documentation, less taking time to make things look pretty in agile; Part Three will highlight which methods are useful for sharing insight in an agile way.

The type of research you do in each sprint will depend on the focus of that sprint. Having team-wide agreement of the aims, objectives and scope will help you do useful and actionable research. The focus of your research is likely to be narrow and the number of participants relatively small to fit into agile ways of working, but it is still valid.

## ***References and further reading***

- Gothelf, J (7 March 2011) Lean UX – Getting out of the deliverables business. Smashing Magazine. Available from: <https://www.smashingmagazine.com/2011/03/lean-ux-getting-out-of-the-deliverables-business/> (last accessed 26 August 2017)
- Gothelf, J and Seiden, J (2016) *Lean UX: Designing great product with agile teams*, O'Reilly Media, New York
- Government Digital Service (16 February 2017) How a knowledge Kanban board can help your user research. GDS User Research Blog. Available from: <https://userresearch.blog.gov.uk/2017/02/16/how-a-knowledge-kanban-board-can-help-your-user-research/> (last accessed 26 August 2017)



- Government Digital Service (24 May 2016) Getting users' consent for research. Service Manual (for further information on gaining consent for your research). Available from: <https://www.gov.uk/service-manual/user-research/getting-users-consent-for-research> (last accessed 11 July 2017)
- Hall, E (September 2013) Just Enough Research: A book apart. Available from: <https://abookapart.com/products/just-enough-research>
- Hands, A and Vashisht, K (21 November 2016) Agile Development Is No Excuse for Shoddy UX Research. UX Matters. Available from: <https://www.uxmatters.com/mt/archives/2016/11/agile-development-is-no-excuse-for-shoddy-ux-research.php> (last accessed 26 August 2017)
- Interaction Design Foundation (July 2017) A simple introduction to lean UX. Available from: <https://www.interaction-design.org/literature/article/a-simple-introduction-to-lean-ux> (last accessed 26 August 2017)
- Sharon, T (2016) *Validating Product Ideas Through Lean User Research*, Rosenfeld Media, New York
- Stockwell, A (26 June 2016) How to adapt UX research for an Agile environment. UX Mastery. Available from: <https://uxmastery.com/how-to-adapt-ux-research-for-an-agile-environment/> (last accessed 26 August 2017)
- Survey Monkey Inc (2017) Consent Form. Available from: <https://www.surveymonkey.com/r/consent> (last accessed 8 July 2017)

# Best practice in user research

## 03

Who, what, why and how

### Who should be involved in your research?

There are many different ways to describe people who use your products, services and content: users, audience, customers or consumers. Involving the right people is one of the fundamentals of doing good research: if you don't understand who 'they' are, you won't be able to provide 'them' with the right thing.

Whatever your organization does, there will be a particular group of people who are interested in what you do or provide. Very few organizations have 'everyone' as their users. Even if you are a national government or an international business such as Amazon or Facebook, not everyone is going to be interested in everything about you. This might seem a little abstract, so let me give you an example. A government does technically have everyone in the country and many people outside it as its audience, but it is not useful to see them as one massive group of people. Where would you even start when trying to understand them? You need to break down the large group into smaller, manageable chunks. If you try to cover everyone and everything in your research, generally you won't get every far. The fundamental question is: who do you need to understand?

You can involve your current and potential users. Users who have similar behaviours and needs can be put into a group together, known as a 'user group'. Depending on what you are working on, you are likely to have several different types of user group.

**Quick fact**

Different user groups do not 'perform' consistently, so who you choose to include in your research will affect your research results.

**Scenario**

If you are working in a university, building software for academic mathematics experts to use, you cannot do user research with English literature undergraduates to improve the software. This is an extreme example, but it clearly highlights my point. English literature undergraduates have very different knowledge to draw on when interacting with the world compared with academics with PhDs in maths. Substituting one for the other is not appropriate. You have to involve the people for whom you are building that software. It seems obvious when it's laid out in this way, but there are many reasons why researchers recruit the wrong people:

- They don't know who the users are.
- The users are difficult to gain access to (lawyers, doctors, CEOs of large corporations, people in intensive care and their families, etc).
- It would be expensive to include them in the research.

**Top tip**

*To achieve useful and usable results, having a small number of intended users is preferable to having a lot of inappropriate ones.*

There are times when the rules should be broken, such as when you are doing guerrilla research (see Chapter 16), but we'll get into that later. For the purposes of doing research, we are going to start thinking about the users/audiences/customers as *participants*.

## How do you get the right participants?

There are agencies that specialize in recruiting for user and market research. They have databases of people who have signed up to do various types of research. These people have shared a certain amount of detail with the agency about who they are and what they like, allowing the recruitment agencies to find the right people to do your research. This can be costly, but it might be the right choice for you, depending on your budget, time, resources and intended participants.

You may have access to subscribers to your organization's newsletter or your customer database, which you can draw upon to recruit for your research, if you have permission to use the databases in this way. Whether you are recruiting the participants yourself or working with a recruitment agency, you are going need two things: *a recruitment brief*, which this sets out exactly who you want to be involved in the user research (and how many); and *a recruitment screener*, which is a questionnaire to find out whether or not they are suitable to take part in the research. The intricacies of getting these two things right could be the subject of a whole other book. However, I will give you enough knowledge to successfully recruit your participants or be an intelligent customer when working with a research recruitment agency. (There are ways of calculating the numbers you need; see Survey Monkey, 2017.)

### ***Writing a recruitment brief***

To write a recruitment brief you will need to include:

- dates of the research;
- location;
- length of the research session;
- the number of participants needed;
- the times at which you want to schedule people;
- the incentive (amount of money you will pay each participant to take part in the research);
- a list of demographics and characteristics you want the participants to have.

It’s essential that you don’t just include the demographics of the participants. They are useful but they are only one dimension. There is a well-known example that has been doing the rounds for years, shown in Table 3.1. As you can see, on paper Prince Charles and Ozzy Osbourne look like the same person, based on their demographic profiles.

When you search for advice on how to get the right participants for your user research, you will come across all sorts of tips, including avoiding recruiting introverts, shy people, non-talkative and ‘inarticulate’ people. *Please ignore this advice.* Almost everyone has something worthwhile to contribute to your research, if they have the right characteristics and behaviours that make up your user groups. With some participants, it will be more difficult to get a response, but with patience and skill you can coax valuable information from them. If you start screening for particular personality types, you are in danger of skewing your research data and results.

There will be times when you will have difficult or unhelpful participants; they are rare but are simply a part of life. Generally, it is my experience that people want to be helpful. In Part Two we will learn about the importance of observation and asking the right questions, so that we get to the truth and don’t allow participants simply to tell us what we want to hear. When you are thinking about who your users are, don’t exclude certain people because they are

**Table 3.1** The limitation of demographics

Person 1 Demographics	Person 2 Demographics
Born 1948	Born 1948
Grew up in England	Grew up in England
Second marriage	Second marriage
Two children	Two children
Successful business person	Successful business person
Wealthy	Wealthy
Spends winter holidays in the Alps	Spends winter holidays in the Alps
Dog owner	Dog owner
Prince Charles	Ozzy Osbourne

**SOURCE** Brian Solis (briansolis.com) inspired by Dr Peter Gentsch

harder to recruit or are in some way disadvantaged. This can include people with low literacy or digital skills, or those with permanent or temporary impairments to their cognition, hearing, sight, speech, movement, etc.

Recruitment brief example

Table 3.2 is an example of a recruitment brief written to recruit participants for an imaginary online travel company. Tables 3.3, 3.4

**Table 3.2** Summary of logistics to include in a recruitment brief

<b>Organization</b>	The Online Train Ticket Vendor
<b>Date of research</b>	22 October
<b>Location</b>	Central User Research Lab The Street AW1 JHD
<b>Number of participants needed</b>	6
<b>Length of session</b>	45 minutes
<b>Research session schedule</b>	Participant 1: 10:00 – 10:45 Participant 2: 11:00 – 11:45 Participant 3: 12:00 – 12:45 Participant 4: 13:15 – 14:00 Participant 5: 14:15 – 15:00 Participant 6: 15:15 – 16:00
<b>Incentive amount</b>	X per participant

**Table 3.3** Participants’ characteristics included the recruitment brief

<b>Who you want to talk to</b>	<b>Characteristics to include in the brief</b>	<b>Number of people to include in the research</b>
You want to talk to people who travel by train. You want a mixture of those who travel frequently and infrequently. For this piece of research each type of traveller is equally important.	Frequent travellers (several times a week)	2 participants
	Occasional travellers (a couple of times a month)	2 participants
	Infrequent travellers (a couple of times a year)	2 participants

and 3.5 detail the participants’ characteristics that the brief is asking the recruitment agency to focus on. These characteristics aren’t mutually exclusive. For instance, one of the frequent travellers may always book his or her train tickets online while the other may always buy tickets at the train station.

It can be useful to clarify who you don’t want to talk to, ie those who don’t currently travel by train or those who don’t plan to travel by train in the future.

**Table 3.4** The range of online experience wanted in the research participants

Who you want to talk to	Characteristics to include in the brief	Number of people to include in the research
Experienced and inexperienced in using the internet.	<i>Very confident online:</i>	1 participants
	Does as many tasks online as possible	
	Happy to try new things online	
	<i>Confident online:</i>	3 participants
	Does most tasks online	
	Sometimes reluctant to do new things online	
	<i>Not confident online:</i>	2 participants
	Does some things online	
	Reluctant to increase the number of tasks they do online	

**Table 3.5** Mixture of travel booking habits wanted in the participants recruited

Who you want to talk to	Characteristics to include in the brief	Number of people to include in the research
Book travel online and offline.	Book all their travel online	1 participants
	Mixture of online and offline travel booking	3 participants
	Book all their travel offline	2 participants

## Recruitment screening

### Screeners questions

Below is an example of a screener questionnaire for a group of possible participants. At this point you don't want to give too much away about the purpose of your research. We are trying to avoid potential participants guessing at the type of person you want to recruit and then skewing their answers. Obviously once they have been selected to participate you will share more details about the nature of the research (but not all the details, to avoid biasing the participants).

#### Top tip

- *Be aware that you are asking people to self-assess their behaviour, which can be difficult, so provide clear descriptions of what you mean.*
- *Use neutral questions that give the potential participants options that will allow them to reflect their behaviours, rather than just the ones you are looking for.*
- *If you are working with a recruitment agency you won't necessarily need to include demographic questions as the agency may already have this some of data. If you are recruiting yourself, it is worth including some demographics to allow you to select an appropriate range of participants.*

The questionnaire, which can be sent by e-mail, put on a website or social media, done over the phone or face-to-face, has the following main elements (adapted from Lewes, 2015):

- introduction;
- logistics;
- demographics;
- behaviour;
- confidence levels;
- technology and devices usage;
- confidentiality and disclosures;
- accessibility.



## Introduction

Here you introduce both you and the project to the participant. The introduction is your opportunity to explain to participants that the screener is to ascertain whether they are eligible to participate, and to make it clear that they may not be able to take part (Lewes, 2015).

## Logistics and timings

Share location and schedule details. It is best to do this at the start, so that if participants aren't available on the specified days and times of the research they will have avoided completing all the other questions for no reason.

## Demographics and behaviour

These are the questions that will help you identify the type of user you require. The options you give at this point should include demographics and behaviours that you both *do* and *don't* want to include in your group of participants. Including options you are not currently interested in will help filter out people that are not appropriate for this research (this will become clearer when you read through the example screener below).

I totally agree with Lewes' (2015) suggestion that as a default you should screen out participants who work in the same industry as you/ your client, or for competitor organizations, and those working on website or app design and usability. However, this will depend on the specific nature of the testing session or research.

## Confidence level

This part of the screener asks potential participants to self-assess their levels of confidence related to the topic being researched. The example screener above uses digital confidence questions as the imaginary organization is an online travel booking company.

## Technology and devices

Understanding what technology and devices participants use is useful for two main reasons. 1) If you intend to support multiple devices,

you may want include the devices your participants are using in the research sessions. 2) This can be grouped with the information the potential participants have shared on their digital confidence to ensure there is a mix of experience levels, so that the outcomes of the testing aren't biased.

## Confidentiality and disclosures

If participants are required to sign a non-disclosure document or similar, it makes sense to mention this at the screener stage. It is best practice to make sure participants are aware that they may be asked to sign something and – most important – why they are being asked to sign it.

Depending on the nature of the project, it may also be useful to mention to the participants that their feedback will be kept confidential and that the session may be viewed, filmed or recorded. Give the participants the chance to decline, if they are uncomfortable with any of this (Lewes, 2015).

## Accessibility

If the research location is not fully accessible, this should be made clear at the start of the process, and alternative arrangements made to accommodate participants. Include a question in all screeners to check whether participants require additional hardware or software in order to participate (Lewes, 2015).

# Incentivizing people to take part

The easiest way to persuade people to take part in your research is to pay them. This persuasion is twofold: they will agree to be scheduled into the research and they will turn up on the day.

The amount you should offer depends on the type of person you trying to recruit and the type of research you are doing. It will also depend on the country, culture and economy in which your research is taking place. If you are unsure about the amount of incentive to pay, contact research recruitment agencies in the area in which you

intend to do your research and ask for some advice. These examples are UK-specific, as this is where the majority of my experience lies:

30 minutes      £30

45 minutes      £45

60 minutes      £60

The incentive amount will also depend on how long the session is. You should at least pay for travel expenses, where these are incurred. Participants will expect a higher amount in big cities than in small towns. People with well-paid or specialist jobs will expect a higher amount to give up some of their time, even if the user research is not related to their work. It sounds unfair to give different people different amounts and you may feel uncomfortable doing this, but it is worth noting that some groups place a higher value on their time, and incentive amounts usually reflect this so as to encourage the people you want to take part.

If you are asking people to fill in an online survey you can incentivize using a prize draw for vouchers; for example, first prize: £50 voucher x 1, second prize: £20 voucher x 2. However, incentives shouldn't be related to the product, service or experience being researched. Beyond questions about the ethics of this, it will also affect the results of your research. If you are paying participants in vouchers to spend with your organization, they are likely to be more positively inclined to anything you show them.

### ***Screener example***

The titles of each section of the screener for our imaginary online train ticket company, above, don't correspond exactly to what has been discussed; they have been changed to be more appropriate and understandable for the potential participants, helping them to more quickly comprehend what will be asked of them in each section. People from all and any backgrounds and experience could be completing your question, so it is best to use plain English whenever

possible. Table 3.6 shows how the screener sections and the topics we discussed relate to each other.

**Table 3.6** The headings for the recruitment screener and how potential participants correspond

Our topics	Screener sections
Introduction	Introduction and welcome
Logistics	Research details
Demographics	About you
Behaviour	How you book travel
Confidence levels	Online experience
Technology and device	Your technology and device
Accessibility	Your access needs
Confidentiality and disclosures	Confidentiality and disclosure

*Note:* demographic questions are mostly optional; only include those that are relevant to your research. There will be other questions that I have not included in the demographics that may be relevant to you. Below is the recruitment screener for the imaginary online travel company.

### Introduction and welcome

We are looking for people to take part in some research for a travel ticket vendor, which is seeking help in improving how it provides services.

### Research details

**Table 3.7**

Date of research	22 October
Location	Central User Research Lab The Street AW1 JHD
Length of session	45 minutes
Incentive	£45

What session times are you available for?

Table 3.8

Time	Availability	
10:00 – 10:45	Yes	No
11:00 – 11:45	Yes	No
12:00 – 12:45	Yes	No
13:15 – 14:00	Yes	No
14:15 – 15:00	Yes	No
15:15 – 16:00	Yes	No

About you

Please tell us a bit about yourself.

Table 3.9

Age	Under 18 years
	18 to 24 years
	25 to 34 years
	35 to 44 years
	45 to 54 years
	55 to 64 years
	65 or older
Gender	Woman
	Man
	Transgender woman
	Transgender man
	Non-binary
	Pangender
	Prefer not to say

(continued)

Table 3.9 (Continued)

Education	No formal qualifications GSCEs BTEC GNVQ/NVQ AS Levels A Levels Bachelor’s degree Master’s degree Doctorate Training through apprenticeship Trade/technical/vocational training Other (please specify)
Marital status	Single (never married) Cohabiting Married Civil partnership Separated Widowed Divorced
Are you a parent or guardian?	No children 1 child 2 children 3 children 4 or more children
Ethnicity	<b>White</b> British/Irish/Gypsy or Traveller Other White background, please describe <b>Mixed/Multiple ethnic group</b> White and Black Caribbean White and Black African White and Asian Other Mixed/Multiple ethnic background please describe <b>Asian/Asian British</b> Indian Pakistani Bangladeshi Chinese Other Asian background, please describe

(continued)

**Table 3.9** (Continued)

	<b>Black/African/Caribbean/Black British</b> African Caribbean Other Black/African/Caribbean background, please describe <b>Other Ethnic Group</b> Please describe
<b>Employment status</b>	Employed full time Employed part time Self-employed Out of work and looking for work Out of work but not currently looking for work A homemaker A student Military Retired Unable to work Volunteer
<b>[If relevant] Job title</b>	[Open text field or specify particular industries]

(For further discussion on inclusivity and diversity when designing forms to capture information, see Fonseca, 2017. Our understanding and language are constantly evolving in these areas.)

How you travel

Please tell us your preferred modes of transport.

**Table 3.10**

Transport	Frequency
Car	Frequent traveller (several times a week)
	Occasional traveller (a couple of times a month)
	Infrequent traveller (a couple of times a year)
	I never travel this way, and don't intend to
	I currently don't travel this way but intend to in the future
Motorbike/ scooter	Frequent travellers (several times a week)
	Occasional travellers (a couple of times a month)
	Infrequent travellers (a couple of times a year)
	I never travel this way, and don't intend to
	I currently don't travel this way but intend to in the future

(continued)

**Table 3.10** (Continued)

Transport	Frequency
Bicycle	Frequent travellers (several times a week) Occasional travellers (a couple of times a month) Infrequent travellers (a couple of times a year) I never travel this way, and don't intend to I currently don't travel this way but intend to in the future
Bus	Frequent travellers (several times a week) Occasional travellers (a couple of times a month) Infrequent travellers (a couple of times a year) I never travel this way, and don't intend to I currently don't travel this way but intend to in the future
Train	Frequent travellers (several times a week) Occasional travellers (a couple of times a month) Infrequent travellers (a couple of times a year) I never travel this way, and don't intend to I currently don't travel this way but intend to in the future
Tube	Frequent travellers (several times a week) Occasional travellers (a couple of times a month) Infrequent travellers (a couple of times a year) I never travel this way, and don't intend to I currently don't travel this way but intend to in the future
Tram	Frequent travellers (several times a week) Occasional travellers (a couple of times a month) Infrequent travellers (a couple of times a year) I never travel this way, and don't intend to I currently don't travel this way but intend to in the future
Taxi/Uber/cab	Frequent travellers (several times a week) Occasional travellers (a couple of times a month) Infrequent travellers (a couple of times a year) I never travel this way, and don't intend to I currently don't travel this way but intend to in the future
Flying	Frequent travellers (several times a week) Occasional travellers (a couple of times a month) Infrequent travellers (a couple of times a year) I never travel this way, and don't intend to I currently don't travel this way but intend to in the future

How you book your travel

Please tell us how you prefer to book your travel.



Table 3.11

I book all my travel online (or as much as I possibly can)	Websites Apps
I book some of my travel online and some offline	Websites Apps Ticket machines Ticket counters Travel agents in person Travel agents over the phone Inspectors on the transport
I book all travel offline	Ticket machines Ticket counters Travel agents in person Travel agents over the phone Inspectors on the transport

Online experience

How do you prefer to do things online?

Table 3.12

What kind of things do you things do you <i>tend to do</i> online?	Shopping Booking Banking Watching TV/Film/Videos Social media Administrative tasks E-mail (corresponding) Listening to music Research Other; please specify
What things do you prefer <i>not to do</i> online?	Shopping Booking Banking Watching TV/Film/Videos Networking Administrative tasks Corresponding Listening music Research Other; please specify

## Your technology and devices

**Table 3.13**

What devices to do you use to go online?	PC Desktop iMac PC Laptop Macbook iPad Tablet Smartphone iPhone Smart TV Smart Watch None of the above Other; please specify
--	---

### Your access needs

Please tell us if you have any access needs once you have arrived at the venue, for example wheelchair access or assistance with stairs. Please tell us if you use any assistive technology, for example, a screen reader.

### Confidentiality and disclosures

You will be asked to sign a non-disclosure agreement if selected to take part in this research.

### Next steps

If you are eligible to take part in this research you will be contacted by one of our recruiters by (date).

If you are creating a recruitment screener, you can take this example and adapt it. If you are asking a recruitment agency to draft the screener, you can use your newfound knowledge to review what it has done.

## Understanding the importance of observation

### *What people say and what people do are two different things*

If you are looking to understand how people behave you can include a much smaller number of people in your research. Behaviour in the context of services and products (digital or not) is often about how people undertake and complete tasks; groups of people with a similar background and motivations for doing something are usually quite consistent.

We all like to think we are very different and unpredictable as people. This is simply not true. We all have a lot of learnt behaviour, shared cultural and societal understandings of how things work on both a macro (society) and micro (families, individuals) level. As you drill down (moving towards the micro level), smaller groups (user groups) that have been segmented in the right way will have similar/shared experiences and therefore understanding of how things work. Designers will already know this. This shared understanding is why we have design patterns for how to build things.

Opinion varies much more widely between people and also within one person over time. Therefore, you need to ask more people when considering opinions.

If you are doing usability testing, after a few sessions observing people doing the same tasks you will start to see a lot of repetition in how people behave and how they get tasks done. However, there might be quite a lot of variation in how they feel about it and what they think of the experience. Some of the difficulty with opinion is that people aren't always willing to tell you what they actually think or they don't really know what they think. I have often heard in user research, when asking people what they think, something along the lines of: 'Most people will struggle to buy gloves from this website and they won't like it, but I found it easy and enjoyed it because I am an internet expert.' The truth is most of the time we don't really know what other people think.

Self-reporting is difficult as people find it hard to be objective when analysing themselves and their behaviour. You are also relying on people to tell the truth and be honest about who they are, when filling in a survey, for example. Online surveys in particular are completed by a self-selecting group of people who aren't necessarily going to be representative of a group as a whole.

When collecting preference data, you must take human nature into account. When talking about past behaviour, users' self-reported data is typically three steps removed from the truth (Nielsen, 2001):

- In answering questions (particularly in a focus group), people bend the truth to be closer to what they think you want to hear or what's socially acceptable in the group.
- In telling you what they do, people are really telling you what they remember doing. Human memory is fallible, especially regarding the small details. Users cannot remember some details at all.
- In reporting what they do remember, people rationalize their behaviour, explaining away mistakes, or take responsibility for something that isn't their fault.

### Top tips

*When you are asking for people's opinions, make sure you are asking the right kind of questions so as to avoid gathering biased or poor quality data.*

## CASE STUDY The difference between behaviour and opinion

When I was a consultant, I worked closely with the UK Houses of Parliament. What parliament does and the content of its website is fascinating; if you're interested you can find out more at [www.parliament.uk](http://www.parliament.uk).

I was observing a participant complete a task on the UK parliament website during a usability testing session. I watched her complete various tasks and noted down when and where she struggled and what she did to successfully complete all the tasks. Some tasks were easier to complete than others, as is often the case. The participant was talking to me as she went along and I was

asking appropriate, timely questions. At the end of the session I asked her to reflect on her overall experience of doing various tasks on the website. She told me it was a really terrible website, extremely difficult to use or find anything, and went on to tell me how much she hated the Prime Minister and all the awful things he had done in his tenure.

I am highlighting another extreme example to demonstrate my point. This participant could not separate her feelings for the Prime Minister and his politics from her experience of the website. If I had not observed her using the website and just surveyed her opinions, I would have got a very biased and inaccurate view of what her experience was. This perfectly illustrates the importance of observation and not just listening to what participants say.

This example is contrary to the normal: often people are too polite and can feel uncomfortable criticizing. They will say that something is fine to use and they like it, when you have observed them struggle and fail to complete tasks.

---

Here's another point to consider: sometimes it is obvious to participants when they have correctly completed a task, sometimes it is not. This will also affect their opinions and views on what they have done. If they don't know exactly what success looks like, for example it's not as clear cut as 'buy a pair of gloves from this website', they may not know they have failed the task and may feel they've had a very positive experience.

A final thought: if people can't be objective about what they have just done, don't ask them to predict what they might do in the future! Users don't know what they want. Many of you will already know the infamous Henry Ford quote about cars and horses (Nielsen, 2001).

## Asking the right kind of questions

Whatever research method you decide to use, a key component of good quality results is asking the right questions.

### ***The first rule is to be inclusive***

Avoid jargon and technical words. Use as much plain English as possible. If you do need to use technical words, be sure to explain exactly

what they mean: don't assume people will understand what you are talking about. If you don't, two things could happen: 1) they may ask you to explain, which is fine, but doesn't necessarily help the participants feel at ease during the research; or 2) they will not ask you to explain and they will simply guess or make up answers to a question they haven't fully understood; giving you inaccurate data. Even when doing research with technical and expert audiences you need to establish a shared understanding of terminology. Keep in mind that even among experts there is a range of knowledge, experience and 'expertise'.

Using plain English will help you be inclusive. Using clear, simple language not only helps people understand you but also makes them feel more comfortable and included in whatever is going on during the research session.

### ***The second rule is use neutral open-ended questions in exploratory research***

There are times when closed questions with yes/no type answers are necessary and valid. However, if you are doing any kind of exploratory research, interviews, usability testing, etc, you'll want to use open-ended questions as much as possible. By 'open-ended' I mean questions that don't assume a certain answer and don't elicit one-word answers.

There is definitely good and bad practice when comes to question format. A very simple example to demonstrate this is the question, 'Do you like this?' It might seem like a perfectly reasonable question to ask people when you are showing them an example of your product/service, but it will influence the participants to give a positive or at least less negative answer than they may have given naturally. People essentially don't want to hurt other people's feelings, so they will worry about telling you that they don't like what you are offering.

Such a simple question could elicit a yes or no answer with no elaboration. To create open-ended neutral questions, you need to give respondents options and avoid influencing them. We are all much more susceptible to being influenced than we like to think, so I would try to make preference questions more balanced; for example: 'What, if anything, do you like about this?' I would always follow this up, for

balance, with: ‘What, if anything, do you dislike about this?’ Asking if someone likes something may seem innocuous on the surface, but subconsciously it can influence them. Simply adding ‘if anything’ to ‘do you like about this’, gives the respondents a get out clause to say they did not like it.

If you can, avoid using positive and negative words altogether, but I know this often isn’t possible or appropriate. Some examples are:

What is your experience of xxx?

How did you find doing xxx?

Do you feel this is something that is designed for you, or is it not relevant to you?

When you first start writing your questions, for whatever research you are doing, practise asking them and see what responses you get. This will help you refine your questions to be most effective. It’s worth spending time formulating your questions in the most neutral way possible.

## Example

Imagine you have just asked a participant to read some content. You want to know if the content is written clearly (see Chapter 6 for more on this) but for now we’ll keep it simple, by considering the three questions below and their connotations:

- 1** *Do you understand (the content)?* This question subtly assumes that the participant has understood the content, and is likely to get a yes or no answer. Without further questioning you cannot know for sure that this is the case or why.
- 2** *What do you understand about (this content)?* This way of phrasing the question still subtly assumes that the participant has some kind of understanding of the content, which may not be the case. However, asking the question in this way encourages the participant to describe what has been understood.
- 3** *What does (this content) mean to you? How would you describe it to a friend?* This way of phrasing the question is most neutral. It does not make any suggestion as to whether the participant has ‘understood’ anything; it simply asks how they would describe

what it means to them. During analysis, you will be able to identify how well participants have understood the question.

### ***The third rule is avoid key words***

Another useful technique for avoiding influencing the results of your research is to limit the use of key words in your questions and tasks. This can be applied to anything you may be researching. The easiest way to explain it is with an example.

#### **Scenario**

Figure 3.1 is a screenshot of the home page of a charity website that I have made up ‘Support Charity’. Let’s imagine that you are doing some usability testing on this website. You think there are some problems with finding and signing up to events and activities that raise funds for the charity; Figure 3.2 shows the events landing page.

To explore how participants find and sign up to take part in an event, you can set them an open-ended task. You could phrase it as follows:

Option 1 Please imagine that you want to get involved with raising money for Support Charity by taking part in a sports event. You want to look for when and where an event is happening in your area.

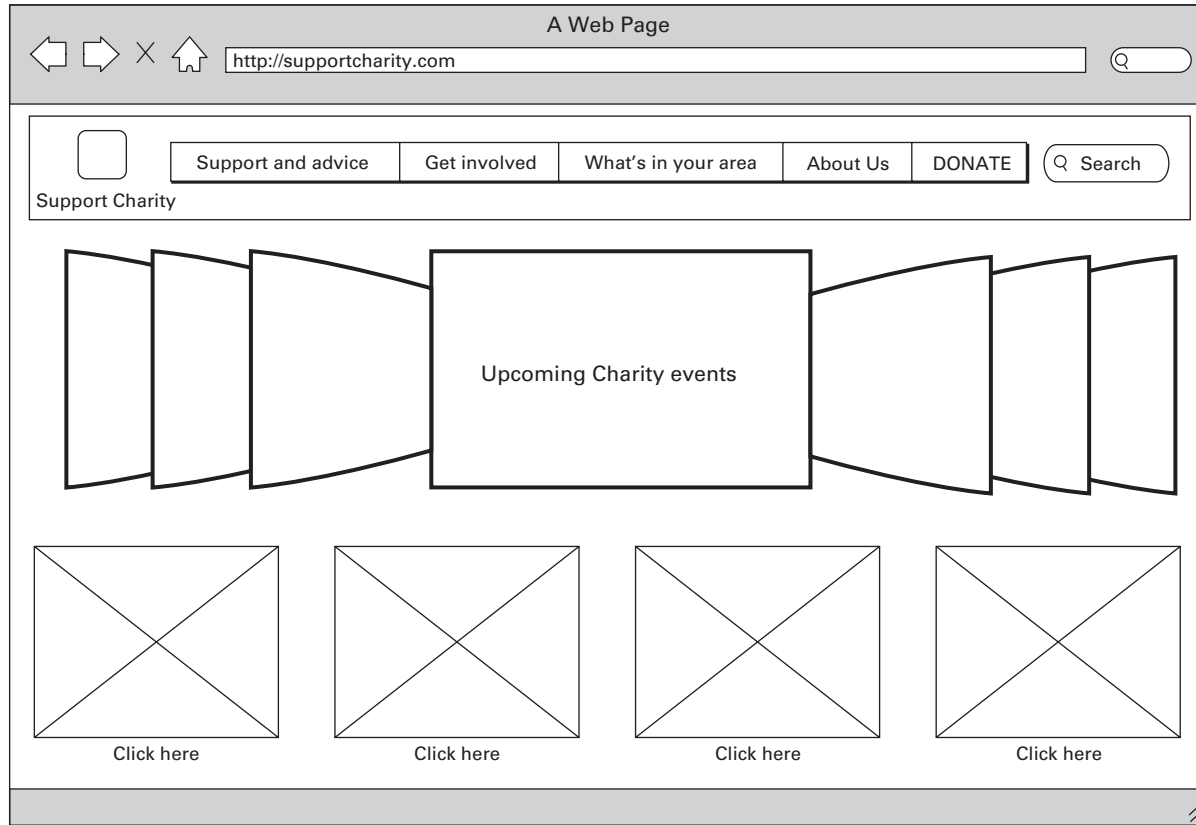
Option 2 Please imagine that you want to do a sports activity to raise money for Support Charity. You want to find out when and where something is happening that is local to you.

There are differences in the language used but it is the same task. Let’s look at why the differences are important. Option 1 uses key words and option 2 doesn’t (here, by ‘key words’ I mean words that are used as navigation labels on the website itself). Figures 3.3 to 3.5 show the three steps you could take to get to all the fundraising sports events:

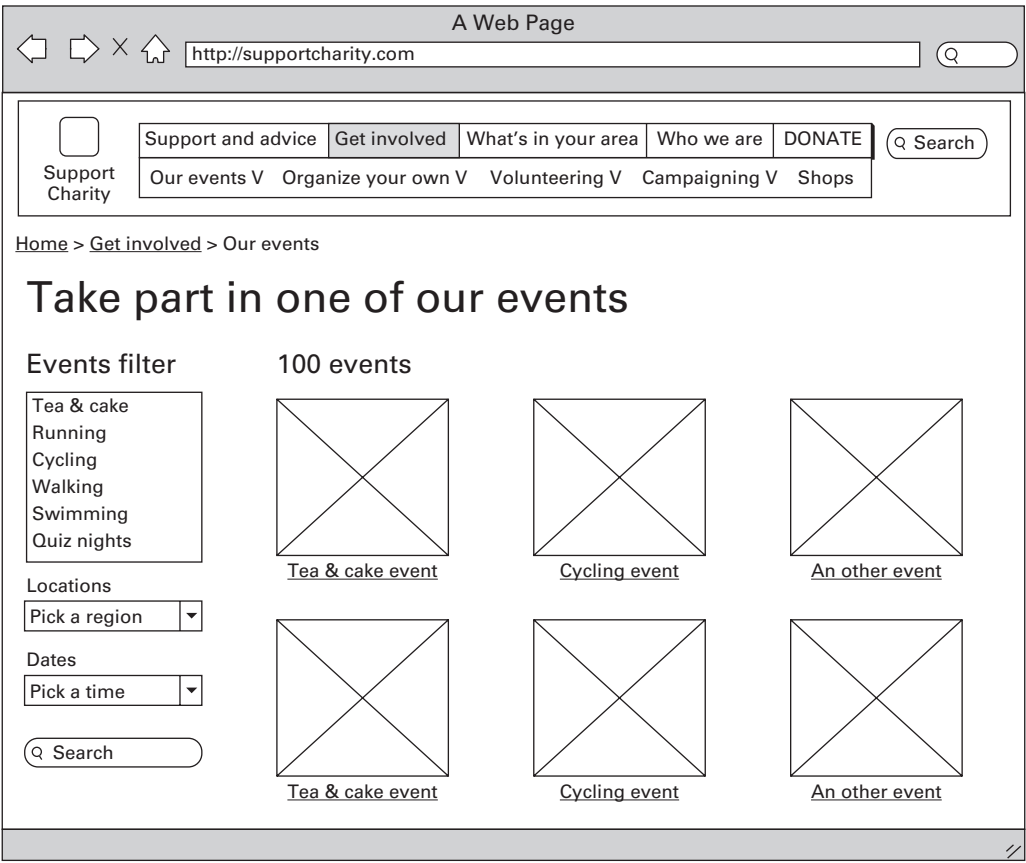
- 1** Click on ‘Get Involved’ on the main navigation of the homepage (Figure 3.3).
- 2** Click on ‘Events’ and ‘Look for an event’ in the second-level navigation dropdown menu (Figure 3.4).
- 3** You would then look for a sports event in your area (Figure 3.5).



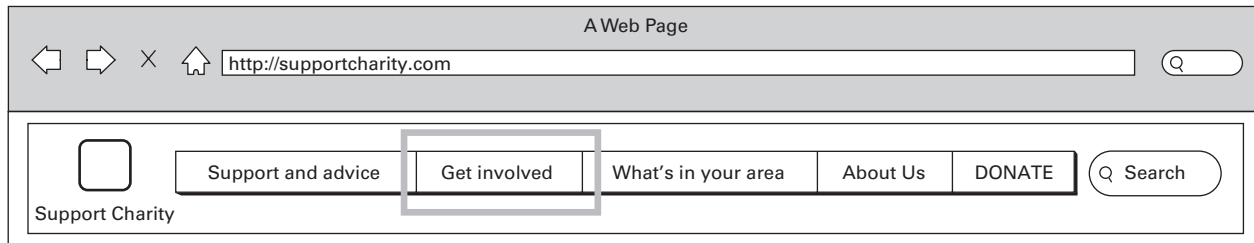
**Figure 3.1** Support Charity website homepage



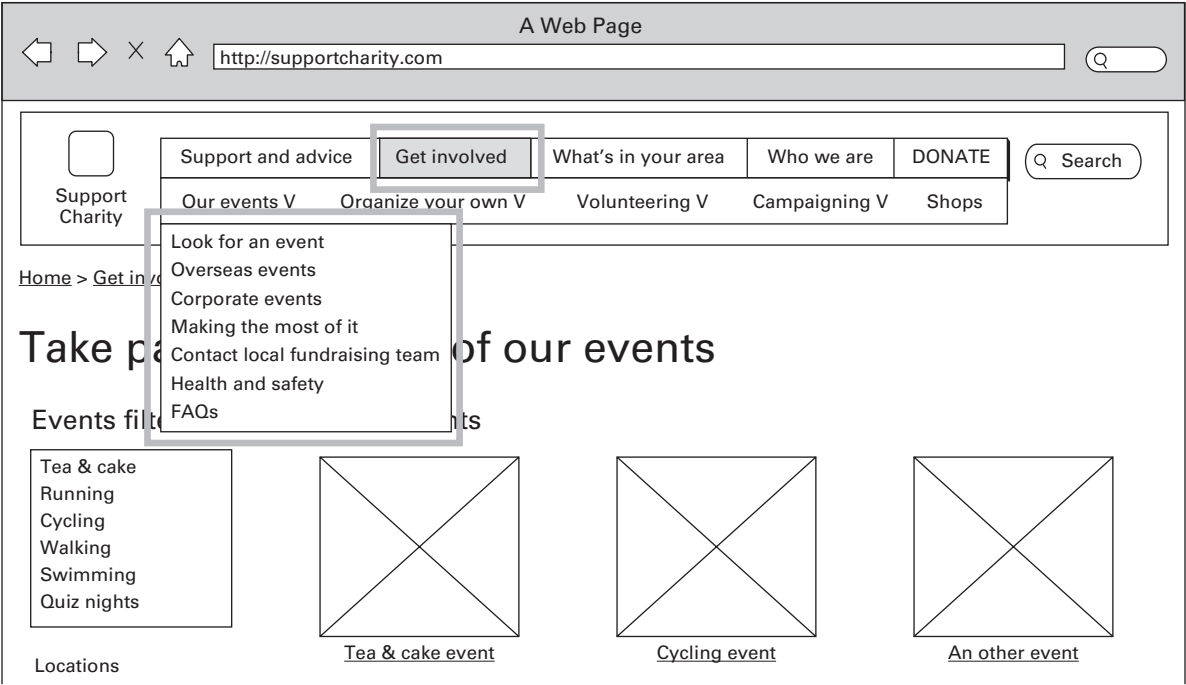
**Figure 3.2** Support Charity website events page



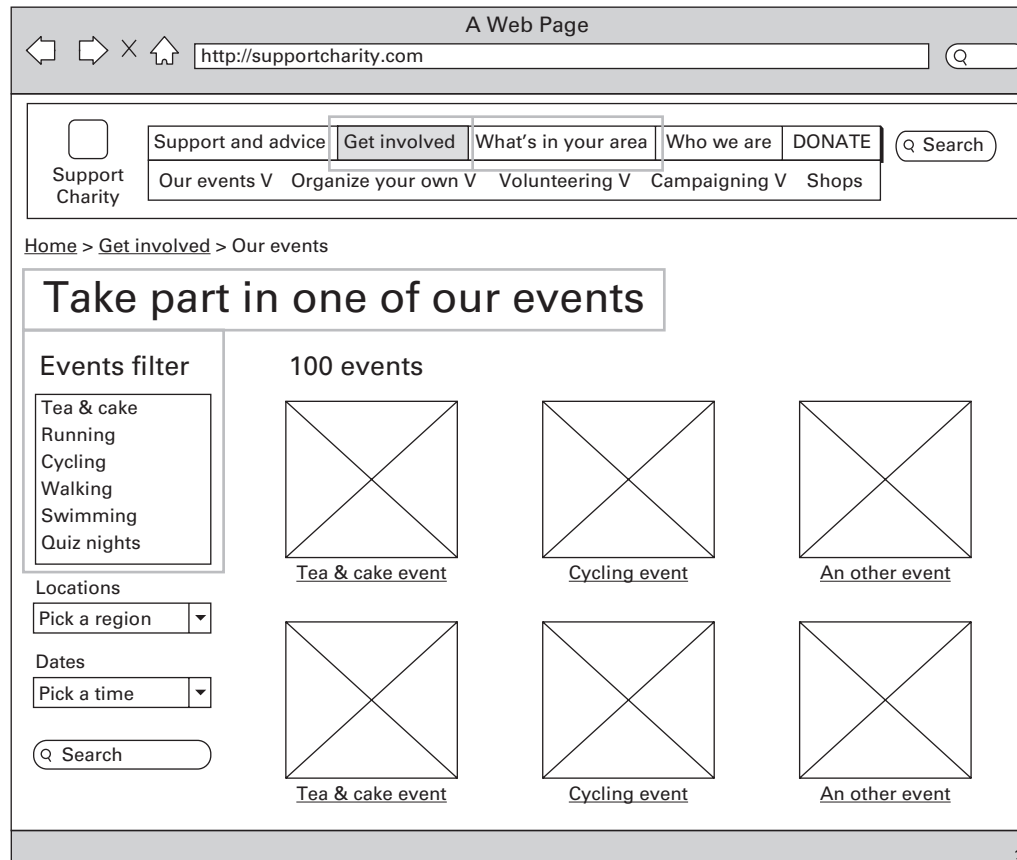
**Figure 3.3** Step 1 in completing the task



**Figure 3.4** Step 2 in completing the task



**Figure 3.5** Step 3 in completing the task



Let's look back at Option 1: 'Please imagine that you want to *get involved* with raising money for Support Charity by *taking part* in a sports *event*. You want to look for when and where an *event* is happening *in your area*.' I have highlighted all the *key words* that can be found in the task. The effect of including the keywords in this example is twofold: 1) when participants are looking round the website, working out how they are going to complete this task, they will spot the key words quickly and focus on clicking these to get to the next step in the task: 'Get involved', 'Look for an event', 'Take part in one of our events', 'Filter events'. This means they could complete the task more quickly and easily than if they were doing it at home on their own. 2) You may inadvertently take them off track in a way they may not have done on their own, by mentioning '*in your area*', which has a different function on this website. They may notice it because it is mentioned in the task and start to explore this instead. Of course, they may have done this anyway, but we want to avoid being the cause of an effect.

Option 2, 'Please imagine that you want to do a sports activity to raise money for Support Charity. You want to find out when and where something is happening that is local to you' – this doesn't contain any of the key words and therefore leaves the participants to their own devices to work out how they want to do the task, avoiding potential false positives and false negatives.

This is a digital example, but the same rules could apply to non-digital things such as paper forms. If you are trying to find out where people are struggling to complete a form, avoid using any key words on it.

### ***The fourth rule is know when to break some of the rules***

The Dalai Lama XIV has been reported as saying something along the lines of, 'Learn the rules so you know how to break them properly.' It sounds like something a wise person might say. Once you are familiar and comfortable with these rules, you will understand when you need to break them. It's important that you make a note of when you have 'broken the rules' and in what way you needed to break them as this will have to be considered during your analysis.

### Scenario 1: the non-responsive participant

No doubt if you do enough research you will meet some participants who aren't willing to say much. Some do not naturally elaborate on their answers. They may have a wealth of insight to offer you, but they don't know how to express it. It takes a lot of skill and practice to get to their answers; sometimes you will have to ask direct, leading questions. Here's a very simple example:

*Question:* Tell me about your experience of buying train tickets from the Imaginary Train Companies app.

*Answer:* It was fine.

*Follow up question:* Was there anything you found difficult about it?

*Answer:* It took a few attempts to enter my credit card details; that was frustrating.

*Follow up question:* What did you think was good about it?

*Answer:* Choosing the right train times was easy.

You can see from this very simple exchange that leading questions were used to get some insight about the participant's experience that would have not been obtained otherwise.

### Scenario 2: usability testing intervention

If a participant is really struggling with something it may cause them a lot of distress and frustration. If it is not appropriate to stop the research session at this point, for the wellbeing of the participant you may need to assist them in the task, to allow them to progress (this is discussed further in Chapter 5 on usability testing).

### Scenario 3: surveys

Surveys are different and benefit from using closed questions; they still have to be well crafted questions (we'll cover this in more depth in Chapter 8). You can give people options with closed questions; for example, to say whether they agree or disagree with a statement, such as: 'Here is a statement about our service. How much do you agree or disagree with this statement?' (see Table 3.14). Whichever technique you use, always give participants the opportunity to express themselves in the way they want.

Table 3.14

Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Not applicable
----------------	-------	---------	----------	-------------------	----------------

## Accessibility and inclusion

I have already mentioned that your products/services are unlikely to be for everyone – but you do need to be as inclusive as possible with your intended audiences. Even in a specified group of people there will be a lot of diversity and a wide range of human capability, so you’ll want to be thinking about accessibility and inclusion from the beginning. I’m not going to cover accessibility and inclusion fully here as they deserve their own book to do them justice, but I can give you just enough information to get started. Making your offering accessible can take on several different meanings, so here is a brief overview of what you can do.

### *Automated accessibility testing*

There is a variety of automated tools that can be used while designing, developing and improving your product, to help you check how accessible it is. W3C (2017) has a helpful list of web accessibility evaluations tools; using them will identify 20–30 per cent of the issues (Government Digital Service, 2017).

### *Manual accessibility testing*

During the development cycle designers and developers can use assistive technologies (eg, screen readers, screen magnifiers and speech recognition software) to see if what they are building is compatible with them. You may need to purchase some assistive digital technologies; doing so is a worthwhile investment. Other accessibility considerations include:

- Allowing people to change the colour contrast of your digital item to suit their needs.



- The size of targets, such as buttons and check boxes, used to select items. Can these be used by people with a motor impairment?
- Can your digital item be used with a keyboard only, without a mouse?

## ***Getting specialists to audit your work***

You can get your digital products/services audited by technical accessibility specialists, and you should do so as early as possible in your work. The later you leave it the harder any problems will be to fix (Government Digital Service, 2017). Specialists will be able to review the full range of potential problems for visual, hearing, cognitive and motor impairments. This will uncover a lot of issues and it is always worthwhile investing time and money; however, these specialists are experts and do not replace the users themselves.

## ***Usability testing with assistive technologies***

As with all kinds of user research, you need to include the users themselves in the process. Usability testing your digital offer with users of assistive technology is a great way to uncover issues. It's a good idea to not only test with a range of assistive technologies but also a range of experience with those technologies: a user new to a certain assistive tool will experience different problems to those who have been using it for a long time.

## ***Inclusion***

Inclusion isn't just about 'technical digital accessibility'. If we're going to think about the full range of human capability we need to think about literacy and (digital) skill levels as well as temporary and permanent impairment.

When developing or improving your offering, consider how you can support those with low literacy and digital skills (or whatever skills are applicable for your product/service). Making accessible products and services isn't just about coding, screen readers and choosing the right colour palette: inclusion can take many forms.

Use plain English, and clear and descriptive content that works for a range of abilities (see more in Chapter 6 on content testing). Clarity is important for everyone, whether they are just learning to read or are highly educated. As someone with dyslexia, I can very much appreciate this.

For digital, you may need to consider how you can meet the needs of those who do not have easy access to a computer or have low digital capability. If you have a multi-channel approach to your work, you may want to do some research to understand if each channel has the same quality of experience to help users achieve what they want and need to do. Those with low literacy and digital skills will experience different issues and barriers to using your product than an expert user: getting the balance right for supporting both ends of the spectrum is hard work but worth the effort.

## ***References and further reading***

- Cunningham, K (2012) *Accessibility Handbook*, O'Reilly Media, Sebastopol
- Digital Accessibility Centre (2017) Available from: <http://digitalaccessibilitycentre.org/> (last accessed 25 August 2017)
- Featherstone, D (October 2015) UX Foundations: Accessibility Course. Lynda.com. Available from: <https://www.lynda.com/Accessibility-tutorials/Accessibility-user-research/435008/446206-4.html> (last accessed 25 August 2017)
- Fonseca, S (25 April 2017) Designing forms for gender diversity and inclusion. uxdesign.cc. Available from: <https://uxdesign.cc/designing-forms-for-gender-diversity-and-inclusion-d8194cf1f51> (last accessed 11 July 2017)
- Government Digital Service (August 2016) Assisted digital support: an introduction. Service Manual. Available from: <https://www.gov.uk/service-manual/helping-people-to-use-your-service/assisted-digital-support-introduction>, and Understanding users who don't use digital services. Service Manual. Available from: <https://www.gov.uk/service-manual/user-research/understanding-users-who-dont-use-digital-services> (last accessed 26 August 2017)
- Government Digital Service (2017) Digital Inclusion Blog. Available from: <https://digitalinclusion.blog.gov.uk/> and Accessibility Blog. Available from: <https://accessibility.blog.gov.uk/> (last accessed 25 August 2017)

- Government Digital Service (2017) Making your service accessible: an introduction. Service Manual. Available from: <https://www.gov.uk/service-manual/helping-people-to-use-your-service/making-your-service-accessible-an-introduction> (last accessed 25 August 2017)
- Henke, A (27 March 2017) How users change colours on websites. Government Digital Services Accessibility Blog. Available from: <https://accessibility.blog.gov.uk/2017/03/27/how-users-change-colours-on-websites/> (last accessed 25 August 2017)
- Horton, S and Sloan, D (March 2014) Accessibility in Practice: A process-driven approach to accessibility. Paciello Group. Available from: <https://www.paciellogroup.com/blog/2014/03/accessibility-practice-process-driven-approach-accessibility/> (last accessed 25 August 2017)
- Horton, S and Quesenbery, W (2014) *A Web for Everyone. Designing accessible user experiences*, Rosenfeld Media, New York
- Hurt, S (12 February 2015) How we recruited people with low/no digital skills on carers allowance. GDS User Research Blog. Available from: <https://userresearch.blog.gov.uk/2015/02/13/how-we-recruited-people-with-lowno-digital-skills-on-carers-allowance/> (last accessed 26 August 2017)
- Kalbag, L (September 2017) Accessibility for Everyone. A Book Apart. Available from: <https://abookapart.com/products/accessibility-for-everyone>
- Lazar, J, Goldstein, D and Taylor, A (2015) *Ensuring Digital Accessibility through Process and Policy*, O'Reilly Media, Sebastopol
- Lewes, J (May 2015) Top tips for writing an effective participant recruitment screener – Part 1. People for Research Blog. Available from: <https://www.peopleforresearch.co.uk/blog/2015/05/top-tips-for-writing-an-effective-participant-recruitment-screener-part-1/> (last accessed 8 July 2017)
- Nielsen, J (5 August 2001) First Rule of Usability? Don't Listen to Users. Nielsen Norman Group. Available from: <https://www.nngroup.com/articles/first-rule-of-usability-dont-listen-to-users/> (last accessed: 9 July 2017)
- Solis, B (29 May 2014) The limitation of demographics. Social Media Today. Available from: <http://www.socialmediatoday.com/content/connected-customers-are-invisible-those-who-value-demographics> (last accessed 8 July 2017)
- Survey Monkey Inc (2017) Consent Form. Available from: <https://www.surveymonkey.com/r/consent> (last accessed 8 July 2017)
- W3C. Accessibility (2017) Available from: <https://www.w3.org/standards/webdesign/accessibility> (last accessed 25 August 2017)

# Managing user research logistics 04

Agencies, facilities and contracts

## Logistics

### *Safety first*

I don't want to scare you before you've even started, but it's important to consider your own safety and the safety of others when doing user research. Wherever the research is taking place, make sure that your team/colleagues know the location and timing of the sessions. If you can have someone help you out, even better. For example, ask someone to escort the participants in and out of the building, get them a drink, and pay their incentive. This will make everything run much smoother and it's someone to call upon if something doesn't feel right. If participants are rude or aggressive (which is rare and unlikely), don't grin and bear it. It sounds obvious but it's worth stating: this is not acceptable behaviour and you should stop the session immediately and ask them to leave.

If it is obvious that a participant has lied about who they are, for example you are working on a teacher's resource and from the participant's answers it is clear they know nothing about teaching, stop the session and ask the participant to leave. This has to be done tactfully and calmly, and should be done in the presence of a colleague. Sometimes the participant will go willingly; sometimes you have to pay them for their time anyway. There is no point wasting your time and energy on someone who is not giving you useful or truthful data.

For research where you are visiting people in their own environment, it is advisable that two people do the research together. It is a two-way trust contract if people are letting you into their house, and everyone needs to feel safe. Let the participant know upfront that two people will be visiting (this is discussed in more depth in Chapter 13 on contextual inquiry). For example, if you are bringing a colleague to take notes, it is more comfortable for the participant if the roles and reasons for being there for both of you are clearly defined.

You can ask people if they have any medical conditions that you should be aware of before a research session starts, and whether there is potential for a medical emergency. (You can, of course, remind them they are fully entitled to not answer the question.) For example, if someone starts having difficulty breathing and you know they have asthma, you can help in finding the inhaler or call for medical assistance.

### ***Appearance and perception when doing face-to-face research***

It is inevitable when you and the participants are together in the same room, at the same time, that they (and you) will make snap judgments about each other. Therefore, you need to consider what kind of impression you want to make.

Dress in a similar way to the participants if possible. If in doubt, dress neatly and avoid standing out. In many contexts, it won't be appropriate to be suited and booted, as you don't want to appear overly authoritarian and you want to make the participant feel at ease, but there will be situations where this could be necessary.

Make sure your equipment is ready and working before you start and you have everything you need. If participants are travelling to you, have everything set up and ready to go before they arrive. If you are travelling to the participant, you want to have everything in easy reach and be well organized to set up as quickly as possible when you arrive.

### ***Be aware of cultural differences***

If you are going to be doing research in a context that is culturally different to your own, it's a good idea to familiarize yourself

with the differences you could encounter. You could be undertaking international research, or research in a different industry, or different socio-economic groups to your own. You may need to consider language barriers, local customs and expected behaviours, for example. Being aware of potential differences will help you:

- plan your research appropriately;
- prepare for differences in what is deemed acceptable and unacceptable behaviour, for example;
- start to understand the context of data you are gathering.

### ***Doing user research with children***

If your product/service is for children, there are additional considerations for planning and doing user research. Briefly, the main things to consider are:

- If you are in the UK, you'll need to be CRB-checked (by the Criminal Records Bureau). If you are working outside of the UK, it's worth checking if there are similar regulations involved.
- You will need to have the permission of the parents/guardians and an adult will need to be present when you are doing the research.
- In the UK, you cannot pay a child a cash incentive, but vouchers are a good alternative. It's worth checking, wherever your research is taking place, what the rules are.
- Consider the length of the session and the likely attention span of the age of child you want to involve in your research. You'll need to be very focused in what you want to achieve.

## **Hiring agencies, choosing facilities, signing contracts**

Depending on the budget available for your research, there are different ways to spend it.

## ***Very small budget***

You must spend this on participants' incentives, unless you can persuade participants to do the research for free. Essentially you will be doing the whole project yourself.

## ***Small budget***

Consider hiring a research participant recruitment agency to find the right people for your research. This will be money well spent, as it can be very time-consuming to find and schedule participants. By outsourcing recruitment, you can concentrate on the rest of what is required for good research.

## ***Medium budget***

This could be spent on a combination of:

- specialist facilities in which to conduct your user research;
- specialist agencies/contractors to do the research for you;
- participants' recruitment and incentives;
- iterative rounds of research.

Choosing whether to spend your money on facilities, skills or more research depends on your requirements and chosen methodology. By the end of Part Two you should have a better feel for which will be the right choice for you.

## ***Large budget***

With a large budget you will be able to outsource all aspects or carry out more research yourself, spending money on:

- participants' recruitment and incentives;
- specialist facilities in which to conduct your user research (depending on your requirements and chosen methodology);
- specialist agencies/contractors to do the research;
- iterative rounds of research and more in-depth research.

If you have a large budget, I still advise that you read this book to understand what good research is and then read guidance from Government Digital Service (August 2016) on how to procure services in a structured way. This guidance will help you to:

- Describe your requirements.
- Communicate effectively with suppliers.
- Evaluate suppliers' proposals.
- Choose the right supplier for you.
- Draw up a good contract that protects you and the supplier.

You don't need to follow the government advice to the letter: the government understandably has strict criteria for spending taxpayers' money, but it will give you an idea of how to structure your selection process, buy the right product or service, and spend your money wisely if you haven't procured specialist services before.

As a final note on this subject, I think it's worth acknowledging that professional facilities and services are rarely available outside of major cities, so money could be better spent doing the research yourself and going wider and deeper, as appropriate.

## Part One summary

The main things to remember are:

- Be clear about what your research is for.
- Get the right people involved.
- Be aware of ethical issues.
- Organize and plan your research in a way that works for both you and the participants.
- Remember the importance of observation: what people say and what they do are two different things.
- Ask the right kind of questions.
- Don't forget about accessibility and being inclusive.
- Safety is important to smooth running research.
- Spend your money wisely and negotiate good contracts.



## ***References and further reading***

Government Digital Service (August 2016) <https://www.gov.uk/guidance/how-to-write-your-requirements-for-digital-outcomes-and-specialists-services>

Government Digital Service (2017) User Research Service Manual, <https://www.gov.uk/service-manual/user-research>

Recruiting Your Target Audience for UX Testing with Screener Questions, User Testing Blog, Ki Arnould, January 2015: <https://www.usertesting.com/blog/2015/01/29/screener-questions/>

UXPA Code of Professional Conduct, User Experience Professionals Association (October 2016) <https://uxpa.org/resources/uxpa-code-professional-conduct>

# PART TWO

## Selecting and using user research methods

In this part of the book we'll look at selecting the right method for your current research needs and learn how to use each method effectively. There are many situations where you will need to use multiple methods to get the answers you need (see Chapter 17 on combining methodologies). For example, if you are looking to understand who your users are, you may want to start with a survey to gather and analyse high-level information about them. After the survey, you could do interviews to get a more in-depth understanding of your users, particularly how they think and behave.

The first step is to identify your current user research needs. Some examples are shown in Figure 5.1: which scenario do you find yourself in at work? If there isn't an exact match, is there a scenario that approximates your situation? You may recognize more than one of these scenarios, but I advise you to focus on one problem at a time, or a handful of clearly related problems.

There isn't one particular method for each scenario, as much as we'd all like it to be that simple. There are likely to be multiple methods that could be useful to you. You may need to read through a couple of different chapters before you decide which one is most appropriate. The more research you do, the easier it will be to make this decision.

You may be experiencing several of these scenarios at the same time, and it may be tempting to choose a method that could solve all your problems at once. I would try to refrain from going down

**Figure 5.1** What problems are you having?

We have a concept that's new to our industry	The stakeholders can't agree	The CEO has an idea...	Why isn't xxx working?
Why is there such poor conversion on xxx?	What do the analytics mean?	We need to get to know our users	Who are our users?
How do users really use our stuff?	There are several solutions to this issue...	What do our users think about xxx?	What are our users experiences?
Our digital stuff reflects the org structure	We need to rebuild	We need to rebrand	We need to change the way we work

this road. It will take longer and require more effort to do separate pieces of research, but user research isn't a one-time event and you will avoid confusing issues and diluting the results and the impact of the conclusions and recommendations if you don't try to do too much at once.

Figure 5.2 shows the user research methods covered in this book. For each method there is an overview followed by information on:

- what the method is good for;
- what it's not good for;
- the effort required to do it;

**Figure 5.2** User research methods we'll cover in this section

Usability testing	Content testing	Card sorting	Surveys
User interviews	Diary studies	Information architecture validation	Ethnography
Contextual inquiry	A/B testing	Stakeholder workshops	Guerrilla research

**Table 5.1** Methodology matrix

Scenario	Usability testing	Content testing	Card sorting	Surveys	User interviews	Diary studies	Information architecture validation	Ethnography	Contextual inquiry	A/B testing	Stakeholder workshops	Guerrilla research
New concept in the industry												
Stakeholders can't agree												
The CEO has an idea...												
Why isn't xxx working?												
Why poor conversion?												
Who are our users?												
We need to get to know users												
Meaning of analytics?												
How do users really use stuff?												
Several solutions?												
What do users think of xxx?												
What are users' experiencing?												
We need to start again												
Changing the way we work												
Organization not user-centric												

- how to do it;
- tools of the trade; and
- further reading (should you want to know more).

Part Three of this book will go into the detail of how the analysis the data you have gathered, which is another skillset that you can learn and develop. Table 5.1 will help you decide which methods you may want to read about first. Hopefully the scenarios covered will approximate what you experience and help you to narrow down your choice.

### ***Important notes***

Don't use guerrilla testing in isolation. It is a useful quick and dirty method to help make some decisions and uncover certain issues, but it's not rigorous enough to be used alone.

If you're working in an agile or lean way, most methodologies can be adapted to be used in short timescales, other than ethnography and diary studies, which are used to understand change over time.

# Usability testing 05

## Observing people doing things

### What is usability testing?

Usability testing (also known as user testing) is a commonly used method, where a researcher observes users who work through tasks on a product or service to identify where problems are encountered. Usability testing can be employed in different ways, both qualitatively and quantitatively, and be moderated or unmoderated.

#### Moderated

Face-to-face: the researcher and the user are in the same room at the same time interacting with each other. Remote: the researcher and the user are in different places but are interacting with each other by using screen-sharing technology.

#### Unmoderated

Remote: the researcher would not be involved while the user does the research tasks at a time and place of his or her choosing. Face-to-face: the researcher and the user are in the same room at the same, but the researcher does not intervene and converse while the user is working through the tasks (the least common approach).

In Chapter 2 (the section on planning) we thought about the logistics of session length. Purists will tell you that the only consideration is how best to research the issue thoroughly, but in the real world this may not be the (only) deciding factor, and here we are pragmatists. For example, you may need to talk to a specific number of people on a particular date. Or the budget you have available will determine how long you can spend with participants; for example the budget will only cover 30 minutes of 'high value' participants' time, such as

lawyers or doctors. This means you may have to tailor your research to fit your current parameters. It's best to pilot test your research to make sure you can cover the priorities in the time available.

## The fundamentals of moderated usability testing

### *What moderated usability testing is good for*

*Moderated tests give you more control.* Moderators can answer questions posed by the participants if appropriate, or be able to note questions that participants have, which can be very insightful for uncovering what is happening. Also, you are able to have an in-depth conversation with the participants. Asking follow-up questions allows you to understand what they have said and done, and how they feel about it.

*It gives you the ability to adapt the research based on your findings.* It's common for this kind of research to reveal something you haven't considered before. Moderating the session will allow you to go off on necessary tangents to pursue it. If warranted you can adapt subsequent research sessions to revisit the new item with other participants. This should be done with caution: it is not advisable to change the tasks and research questions after each session as you will have no consistency in your findings, but sometimes the magnitude of what you have discovered makes it necessary.

*It is relatively cheap.* No special equipment is needed; you can simply sit next to users and take notes as they talk. It takes about a day to collect data from a handful of users, which is all that's needed for the most important insights (Nielsen, 2012).

*Results are robust.* As long as you avoid bias questions, you'll still get reasonably good findings; also, the results are convincing. Feedback from customers can be more powerful than you delivering the same feedback to your team. Getting the rest of your team (and management) to sit in on a few thinking-aloud sessions doesn't take a lot of their time and is the best way to motivate them to pay attention to usability (Nielsen, 2012).

*Where you need to include accessibility usability testing with assistive technology users.* This should really be part of any digital development or improvement project, and it should be done iteratively as development progresses. You should be aware, if you are asking users of assistive technology to visit you in your work place or a user research studio, that the set-up of tools you have is going to be different to the participants'. This means you'll need to include time for them to set up their tool of choice in a way that is suitable to them. It is preferable, if possible, to visit assistive technology users in their own environment (see Chapter 13 on contextual inquiry).

### ***What moderated usability testing is not good for***

It is a time-consuming research method. It's more difficult to schedule research with the participants, restricting when and where they do it. It may therefore not be your first choice if your timescales are very restricted and planning ahead is difficult.

Moderated testing uses small samples of people and so is *not statistically significant*. Stakeholders new to user research sometimes distrust insights that have 'only come from five people', without understanding the background to the differences between behaviour and opinion. It can be difficult for stakeholders to agree to spending money on making changes based on the 'opinion' of five people. (We'll look at this more in Part Three on analysing and presenting your data). The way the work is presented can help, giving some context and background; and getting the stakeholders to see for themselves can be useful. Sometimes it takes some additional research (such as a quantitative study) to convince those new to user research.

This may not be the method for you if you want to understand 'natural' behaviour. Most people don't sit and talk to themselves all day: it can feel very strange at first to talk continuously about what you're doing and thinking. Participants are typically willing to try their best, and they quickly become engaged in the task. I would add that most people soon get used to thinking out loud and some appropriate prompting from you during the session will help keep the momentum going.



## ***Effort required to do this kind of research***

Usability testing is one of the easiest methods to practise and learn. It is relatively easy to learn the basics and if you are aware of the fundamentals of good practice, you can start doing usability testing straight away. But it does require some time and effort to become a skilled moderator.

The results are affected by the method. This is known as the ‘observer effect’, a phenomenon well known in physics: observing changes the act that is being observed and measured. You can’t get around the fact that watching and talking to the participants will change what they would have done if you weren’t there. Be aware that the less experience you have at moderating, the greater the observer effect is likely to be. It will decrease as you become more experienced, but it will always be a factor in moderated user research, so don’t let being new to usability testing put you off.

---

### **CASE STUDY** Example of usability testing

Usability testing was the first user research method that I taught myself when doing my doctoral research. I was testing some highly interactive software that combined multiple geographic datasets, to help graduate students understand what was happening environmentally in a specific part of the Lake District in England.

Because I had read about the fundamentals of best practice, I was able to not only use this method to identify usability issues with the software, I could also show the different kinds of issues identified by different user groups, in this case Master’s and Doctoral students and experienced academics. This demonstrated the importance of including relevant user groups in research.

---

## ***When to use moderated usability testing***

It is a flexible method that you can use at any stage in the development lifecycle, from early paper prototypes to fully implemented running systems, services and experiences. If it’s possible, use face-to-face

qualitative usability testing (this will always be my preference), because observing facial expressions and body language can help you understand what is happening. If your participants are international, or you aren't able to travel to where they are and they can't travel to you, remote moderated usability testing is a great option.

## ***How to do moderated usability testing***

We've already covered what 'usability testing' means. Now let's outline what the rest of these words mean:

- *Moderated*: you are talking to the participants during the session and they are talking to you while they undertake the various tasks you have given them.
- *Face-to-face*: you are in the same room at the same time.
- *Remote*: you and the participant are in different places.
- *Qualitative*: this means your findings won't be statistically significant. It also means you won't be counting things like the number of clicks it takes a participant to complete a task or timing how long it takes to do something.

We have already considered a few of the preparation aspects of doing user testing (or any other research) such as choosing the problem/issue that you want to research and your participants (and how you will incentivize them). You also need to set the dates, times and location of the research, then draft and pilot test the protocol and finally, do the research!

## ***Creating a protocol or a script***

A protocol or a script lists all the things you want to say to the participants, the questions you want to ask, the tasks you want them to do and reminders of certain things that you may want to observe. Various resources describe this document in different ways. It could just be semantics but there are subtle differences in the terms so I'll share my understanding to clarify. This understanding came from when I was working for the agency Bunnyfoot ([www.bunnyfoot.com](http://www.bunnyfoot.com)) as a user experience consultant.

A ‘user testing script’ is a document where you follow what is written down exactly, saying and doing everything in the order in which it is written. Confusingly, a ‘user testing protocol’ looks exactly the same as a script but it’s used in a different way. You don’t have to do everything in the exact order it’s written down. During the research session, it may become clear that certain questions and tasks are not relevant to a particular participant, so you may cut them out completely; or you do some of the tasks in a different order, because it makes sense at the time. One of the most useful things about using the document in this way is that when a participant has covered two tasks in one go, you can feel free move on.

Whether you use your document as a script or a protocol is entirely up to you. Both are legitimate. My preference is for the protocol approach, but when you are just starting out with usability testing you may feel more comfortable with the script approach, to make sure you have covered everything you need to. If you are going to use your document as a protocol, it is worth putting a small disclaimer at the bottom of your first page, for the benefit of anyone you are sharing it with and for anyone observing the research session and using a protocol document to follow progress. For simplicity’s sake I am going to refer to the usability testing document as a protocol from now on.

### **How to explain your protocol to observers**

There will be an opportunity to make small changes to the protocol based on observations of the test sessions. Note that tasks are normally used as a *guide* throughout the testing sessions, rather than being entirely set. The moderator may decide during the testing session that the undertaking of an upcoming scheduled task may be pointless based on a user’s performance on a preceding task. Task schedules are therefore flexible; altering the tasks according to user responses allows us to record more realistic responses.

### ***What should a protocol contain?***

- 1 Introduction and the ethical/legal issues discussed in Chapter 2 (5 minutes).
- 2 Short pre-task interview questions (5 minutes).

### 3 Research tasks.

#### 4 Short post-task interview questions (5 minutes).

As this list suggests, you should leave about 5 minutes for the introduction, pre-task and post-task interviews. You can extend these if you need to but I wouldn't go beyond 10 minutes, as you really want to focus on the research tasks.

## 1 Introduction

In Chapter 2, in the discussion on being aware of ethical and legal issues, I gave an example of how you can start your research session, explain to the participants what the research is about, what's going to happen, how the session is being recorded if at all, and how you will use the data. Giving some context is a good way to start a research session. When writing the interview questions and research tasks you can refer back to Chapter 3 and the section on asking the right kinds of questions.

## 2 Short pre-task interview questions

You will have learnt a little about the participants from the screener questionnaire (see Chapter 3 on who should be involved in your research). Asking some preliminary questions is a chance to get to know the participants better and make them feel comfortable, before diving into the tasks. The questions can focus on gaining some insight into the participants' experience related to the tasks or area that you are researching. This will help you understand some of the observation you make during the session: how and why the participants behave the way they do, how they complete tasks, have certain issues, solve problems, etc.

It's difficult to say what questions should be included without knowing the industry you work in or the area you are researching, but here are some examples of digital experience questions to help you get the idea:

- a** What, if any, devices do you use at home (desktop, laptop, tablet, smartphone, smart watch, smart TV, games consoles, etc)?
- b** What, if any, devices do you use at work (desktop, laptop, tablet, smartphone, etc)?
- c** Which of the following tasks, if any, do you like to do online: researching, booking tickets and travel, gaming, social media,

banking, shopping, corresponding, reading, listening to music, watching TV, films, vlogs, other videos, etc?

- d Which of the following tasks, if any, do you prefer not to do online: researching, booking tickets and travel, gaming, social media, banking, shopping, corresponding, reading, listening to music, watching TV, films, vlogs, other videos, etc?

c and d prompt: Can you tell me a bit about why you like/dislike to do these things online?

### Quick note on prompts

You will have noticed the use of 'prompts' in the questions above. Prompts are clarification and follow-up questions and can be used at any time during the research session. They can help you delve a bit deeper into participants' answers or they can provide examples if participants are struggling with something. Examples can be useful but should be used sparingly as they are leading by nature and could skew the participants' answers.

You won't always be able to anticipate when you need a prompt, but you'll get used to using them the more research you do. It's worth noting down the unanticipated prompts during a research session as you may need to use them again. It may also show you an issue that needs to be rectified that is relevant to one of the tasks you have set.

## 3 Research task

There are a couple of different kinds of research task that you can make use of during a user testing session depending on your objectives: specific and open-ended. You can use specific tasks and questions if you want your research to focus on a precise issue or range of issues, for example, why there is a high rate of shopping cart abandonment or users leaving a journey at a particular point. Being specific gives users clear guidance on what actions to take and what features to speak about. There are various reasons why you may want to be specific:

- You may want to test a particular feature or function, either a new or suboptimal one, for example.

- If you know there's a specific point in a journey or experience where people are dropping out, you can ask participants to do this journey to see the context and insights to understand why.
- If your product is complex and has a learning curve associated with its initial use you may want to use specific tasks that will guide users through it and explain the context (for example investment banking, stocks and shares apps).

You will still want to avoid bias in questions by suggesting a specific response or giving exact instructions; let them work things out for themselves.

Open-ended tasks involve you giving participants a minimal amount of information and explanation about how to perform the task, allowing them to uncover the answer or solution on their own. If you are developing something new and are testing a prototype, it is likely you have a broad focus to your research; you are interested in how people use and experience it. You won't necessarily want to be too specific about what participants do.

You can use open-ended tasks to find topics of interest. When you're not sure where to focus your test in the beginning, you will be able to narrow down your field of focus in subsequent tests. Open-ended tasks and questions lend themselves to exploratory research as you can observe how people are using your product or service, rather than you specifying how to use it and the kinds of problems they're running into. You can find things that are broken or cause friction for your users: letting them explore freely will uncover issues you may not be aware of.

Remember that open-ended tasks and exploratory research still need clearly defined objectives, as discussed in Part One. Open-ended and specific tasks can both be defined in two different ways: 1) pre-defined tasks: ones you have selected to ensure that you cover the topics and issues that you need to during the session; or 2) user-defined tasks: ones a participant self-selects or you help the participant select. The questions you include during the initial interview phase can help with task selection, for example if a participant has stated they have a task already carried out a task with your or a competitor's product/service.

You can use all these task types during one research session, or just one particular type of task depending on the focus of your research. The main bulk of your protocol will be your list of tasks that you will read out (if they are predefined) to the participants so they can do the tasks. If they are not predefined, make a note of what they are when the participants do these tasks.

### Using ‘think aloud’ in moderated usability testing

Think aloud is the main method used for doing moderated testing. Think aloud is when the participants verbalize what they are doing, what they are thinking and feeling while they are undertaking the tasks you or they have defined.

Think aloud is useful for getting deep insight into participants’ mental processes while doing tasks. On the ‘positive side’ there is what they like, what delights and surprises them, what they can get through easily. On the ‘negative side’ you can identify when they are struggling, what they dislike and what frustrates them, their misconceptions. It is particularly useful to identify when participants have a different understanding of something to the one that you intended. To help you identify what practical changes can be made to content, designs and processes, it is important to gain insight into both what is and isn’t working.

The main thing to remember is that you need to learn to combine think aloud with observation, as discussed in Chapter 3. Although most of the time people will be honest and truthful, this is not always the case. People won’t always admit to struggling or finding something difficult, for example, or they will down-play it when they are.

When you first start using think aloud in usability testing, it is tempting to fill in all the gaps with probing questions when participants stop talking. In filling the silence you run the risk of going off the topic of the research, asking leading and biased questions and potentially preventing the participants saying things they had intended to before you leapt in. It can be useful to occasionally leave an awkward silence; most participants will endeavour to fill the void with commentary and thoughts. You’ll also get used to using ‘mmm’ and ‘uh-ha’ a lot to encourage participants to keep talking, without leading them astray. With experience, you will get a feel for when it’s

right to talk because the participants need encouragement to verbalize their thoughts and when to remain silent.

The participants will ask you questions when they are struggling, which can feel like a dilemma at first: it's common to want to ease participants' frustration/anxiety/stress, but it will introduce bias. Here are few tips on how to handle these situations:

- Immediately note down their question and at what point in the task they asked.
- Before answering the question, ask them what they would do if they were doing this by themselves. This is useful for seeing if they can solve the issue on their own or identify at what point in the process they would have actually given up if you weren't there observing them.
- If it's not critical to the research session, do not answer the question. Simply ask them to move on to whatever is next. You may want to tell them you'll answer outstanding questions at the end of the session.
- If it is critical to the research session that they progress at this point, do offer assistance, but be sure to note down that you helped out and they could not progress on their own, as this is a serious usability issue.

## **4 *Post-task interview***

Once you have completed the tasks that you need to cover, or as many as possible in the time available, it's worth leaving 5 minutes at the end to conclude the research session with a few final interview questions. These questions should continue to adhere to the rules we've already set up, in terms of being neutral and open. You can ask anything you want, but it's useful to have a few questions in mind, such as the ones I've suggested below. You may want to tweak, add or remove certain questions depending on what you've observed and heard during the session. As long as it's relevant to the research session, it's all good.

It's worth keeping in mind that the final statements that the participants make may not always accurately reflect the experience they've



just had. Sometimes they can be overly positive or negative in their assessment (which is interesting in itself). Here are some examples of post-task interview questions you could pose:

- Overall, how would you describe your experience of the website today?
- Was it what you expected? Did anything surprise you?
- Was the \_\_\_ easy or difficult to find?
- Was the \_\_\_ overall easy or difficult to understand?
- Having seen what is currently available on the site, is there anything else that you would like to see, or is it all covered?
- If you could change one thing about what you have seen today, what would it be?
- Is there anything else you would like to mention?

It's nice to finish on a statement of thanks such as: 'Thank you very much for your participation. It will help us in the process of improving X to make it easier to use.' If there is any follow-up to the session, now's the time to remind the participants and also pay them (if appropriate).

### **Post-test crib sheet**

In between research sessions, if you have time, it can be useful to note down the most important things about the session while they are still fresh in your mind. You could use these headings:

Participant name/number

Task name

Task completed/partially completed/failed

Top three issues

Top three positive things

Useful quotes

## ***Remote testing considerations***

Remote moderated testing can be set up in a similar way to face-to-face usability testing, in terms of drafting your protocol. The main difference between remote and face-to-face usability testing is the technology involved in letting people in different locations connect, so you may need a few more prompts and questions as you cannot observe body language and facial expressions so easily. When considering the timings for your research session, you need to bear in mind that it will take a little longer to start the session, because of setting up and logging into whatever tool is being used, for both you and the participants. The same rules apply to remote testing as face-to-face testing. You'll need to remind the participants if you are recording the research session and if there are people observing.

## ***Tools for moderated usability testing***

### **Equipment checklist**

- Protocol (one or one per participant).
- Something to take notes on.
- Devices (desktop or laptop, tablet, smartphone) if what you are testing is digital or has digital aspects. For mobile devices it's beneficial to have more than one for participants to use, as operating systems are quite different (eg, Apple vs Android). It's worth having a device the participants are somewhat familiar with otherwise the results will be skewed.

*Note:* I like to write my notes on the protocol next to the particular task or question they are related to, so I print out one protocol per participant. Others will print off one protocol then write their notes on a pad of paper or laptop, etc.

### **Optional items**

- A second screen that is mirroring the device the participants are using so you don't have to look over their shoulders too much.

- A way to record the session (a video record if not on a traditional computer). If you are on a desktop or laptop you can use screen recording software; there is also specialist software such as Morae and Camtasia from TechSmith (<https://www.techsmith.com>) that has been specifically built to record and edit usability testing sessions.
- If testing on a mobile device there are various rigs which have a web camera mounted that can be used.

Eye tracking equipment is expensive to own, but often available in specialists labs. It can be a useful addition to your user research, but is not essential. Eye tracking is useful for observation as it allows you to see what the participants are looking at, what they are focusing on and what they are ignoring. If you do have access to this equipment, it's worth reading up on it.

### Tools for remote testing

At the time of writing, video conferencing and screen sharing tools are freely available and easy to use. Your organization may already have tools for remote testing, but consider whether your participants have access to these tools and the limitations of their technology.

There are different ways to utilize these tools depending on the setup of the product/service you are testing. For instance, if it's a live website, ask the participants to access the website and share their screen with you. This is the quickest and easiest way for the remote testing to happen. If it's a prototype on a secure server, you will need to access the prototype on your computer and then give the participants control of your screen so that they can interact with the prototype directly. Sometimes the participants can experience some lag, but generally it's ok. You may have to talk to your IT department about access.

#### **Example of remote testing**

I once worked on a project with tight timescales, looking at education software resources for teachers. I needed to do the testing in the space of a couple of days, during term time. That meant that some participants

(the teachers) were taking part in remote moderated usability testing at school during their lunch breaks and free periods. I had to make sure the day before the research sessions happened that the teachers were able to download software (the remote testing tool) on the computer to allow them to take part in the session.

A few examples of free (or free trial) video conferencing and screen sharing tools are: <https://www.join.me/>, [www.gotomeeting.com](https://www.gotomeeting.com), <http://www.screenleap.com/> and [www.skype.com](https://www.skype.com). There are lots of options and they are changing all the time. Look for an option that allows control of the screen to be shared between you and the participants, which will let you and them to interact with each other's screens (if permission is given).

## The fundamentals of unmoderated usability testing

### *What is unmoderated usability testing?*

Unmoderated usability testing means participants complete specific, defined tasks without the presence or intervention of a moderator, mostly researching digital items. As with moderated testing, unmoderated testing can be done both face-to-face and remotely.

### *What unmoderated usability testing is good for*

In remote unmoderated usability testing, participants can complete the research essentially at any time, in any place and on any device, giving both you and the participant flexibility. Some suggest that it is more realistic and unbiased than moderated usability testing (Zurb, 2017). While it is true that think aloud and asking questions can affect the way a task is completed, the benefits of capturing this in-depth qualitative data can outweigh this, depending on the objectives of your research.

Unmoderated usability testing is effective at understanding, through observation alone, how participants actually complete a

task; you aren't able to talk to the participants while they are undertaking the task, or ask what they are doing and why. It is a useful method to use if:

- *You need a large sample of data.* A small sample of face-to-face usability test sessions is enough to understand behaviour from a design perspective. However, some stakeholders are uncomfortable making decisions on such small numbers. Doing research with lots of people may be simpler than trying to convince others of the value of the small sample (below we will talk about increasing stakeholders' confidence).
- *Where the audience is hard to access.* They may be geographically dispersed or time-poor or have other reasons why they cannot travel to you. The research can still be done, without great cost.
- *Where timescales are tight.* An example would be working in an agile environment, but we all know what it's like to work on a project with tight timelines or one that is running behind schedule – getting research done quickly may be the only option. An unmoderated study can be run in its entirety in a couple of days. However, you shouldn't have this as your only method for iterative testing; you can work towards building different kinds of research into the work schedule.
- *Where a specific context is critical to getting valid insight.* Some products/services are used or happen in environments that cannot be replicated in a lab/office setting; for example, an app used outdoors for orienteering or a service being used by emergency medical staff.
- *Where budgets are limited.* Remote unmoderated tests don't require a reserved location and the cost of these tools is scalable, so you can pay whatever amount you deem appropriate.

### ***What unmoderated usability testing is not good for***

As with all methods there are limitations to its application:

- *Can you recruit the right people?* By choosing unmoderated testing you are excluding participants who don't have easy access to computers and the internet or who have low digital literacy. The range of participants you need should be a consideration in the

methodology you choose. Also, unmoderated testing runs the risk of participants being motivated purely by the incentive payment.

- *There is a lack of in-depth conversation.* While you can include forms for open-ended questions to users, you won't get the depth of insight that can come from a conversation between moderator and participant.
- *You have less control of what happens.* Because it's up to the user to decide when a task is complete, participants may move onto the next task prematurely.

## ***Effort required to do this kind of research***

As with moderated usability testing, you can get to grips with the basics of unmoderated testing relatively quickly. The main thing is to keep in mind best practices in task writing; otherwise it's pretty easy to set up most kinds of unmoderated testing. If you are testing remotely, depending on what you are testing and the tool you have chosen, you may need some technical help setting things up. It's probably a good idea to pre-warn the technical folk when this will happen (if you aren't the technical folk in question).

## ***When to use unmoderated usability testing***

Remote unmoderated usability testing is used when quantitative data is important and therefore a large number of participants are needed to take part in the research. In both remote and face-to-face usability testing, the actions of the participants are tracked/recorded in some way so that they can be analysed after the data has been captured.

## ***How to do unmoderated usability testing***

Running good quality unmoderated usability testing starts with the set-up, and the first question is about format, which can be low- or high-fidelity:

- *Digital/paper prototypes;* take photos of your drawing on paper or use simple wireframes with no functionality built into them (digital sketches).

- *Low-fidelity prototypes*; these are black and white wireframes with some simple functionality (eg, some buttons are clickable and something will happen when you press them).
- *High-fidelity prototypes*; these are interactive wireframes that have visual design built into them; they could closely resemble a finished website.
- *Live testing environment*: working version of a website that isn't fully finished or publicly available.
- Live publicly available website.
- Any other relevant assets, including physical artefacts if doing face-to-face unmoderated testing.

### ***Choosing the type of unmoderated testing you want to do***

Decide what observations you want recorded. For remote testing, this could affect the tool you chose (for example, one that allows qualitative notes to be added by the participant). For face-to-face testing this will help you with instructions for observers. You also need to identify the metrics you want to record:

- task completion rates;
- time on task;
- time on pages;
- clicks per task;
- web analytic data (eg, browser, operating system, screen resolution, device).

### ***Draft your unmoderated protocol***

*The opening statement*: have a statement for participants to read and agree to before they start doing the tasks. This will explain what to expect (in terms of tasks and session length), what the research is about, how the data will be captured and what you'll do with it, how you'll store it and for how long. You may also want to ask a couple of

survey questions about the participants after the opening statement but before they undertake the tasks.

*Set up your tasks.* You should have well-defined specific tasks. As there is no moderator, tasks should be succinct and easy to follow. Avoid conflating two tasks into one question, as this will lead to confusion. It's important that participants complete one task at a time.

*Run pilot tests* to see how long it will take on average to complete the number of tasks you want to include in your research. I think that shorter sessions (up to 30 minutes) work better for unmoderated testing, as you are relying on the self-motivation of the participants.

*Post-task/test questions:* you can ask the participants questions after each task and/or at the end of the session when all the tasks have been completed or attempted. After each task, you could ask the participants about their satisfaction at doing the task. There are various methods you can draw upon to measure such things, such as the Net Promoter Score, which is a paid-for solution to track customer experience (Satmetrix Systems, 2017). There is also the System Usability Scale (SUS; Usability.gov, 2017). When a SUS is used, participants are asked to score the following 10 items (see Thomas, 2015) although you can use any relevant questions you want:

- 1 I think that I would like to use this system frequently.
- 2 I found the system unnecessarily complex.
- 3 I thought the system was easy to use.
- 4 I think that I would need the support of a technical person to be able to use this system.
- 5 I found the various functions in this system were well integrated.
- 6 I thought there was too much inconsistency in this system.
- 7 I would imagine that most people would learn to use this system very quickly.
- 8 I found the system very cumbersome to use.
- 9 I felt very confident using the system.
- 10 I needed to learn a lot of things before I could get going with this system.



I suggest using a clearly defined scale, such as:

Strongly agree

Agree

Neither agree nor disagree

Disagree

Strongly disagree

While the participants are working through the tasks, give them closed questions with a choice of relevant answers rather than requiring them to type an answer to an open-ended question (which is more difficult and takes longer for the participants to complete and for you to analyse). Sometimes the rules need to be broken: if researching the participants' understanding of something you may need to include open-ended questions with open text fields for the participants to describe what they have understood.

You can ask the participants to complete a survey afterwards, but research shows that people find it difficult to recall actions accurately. Some remote unmoderated testing tools do allow participants to make notes and annotations as they complete the task. In a similar way to a moderator asking the participant a question (the observer effect), making notes about the task will interrupt the natural flow, to a certain extent. It really depends on your objectives for how you want to run your research; each method has its pros and cons. You need to decide whether you want accurate observation (allow participants to make notes during the task or record them thinking aloud to themselves), or realistic and naturalistic task completion (give participants a post-task survey if you want to know their thoughts).

### ***Thank you statement***

This can be served as a final page to close a remote research session or as a follow up e-mail, depending on how the tool you are using works. If it is face-to-face you can say this to the participants at the end. You can include a short statement that may cover your appreciation for their participation, reminders if anything is going to happen next, and contact details if the participants have questions.

## **Face-to-face unmoderated usability testing considerations**

During face-to-face unmoderated research, the participants are left alone in the research lab (or wherever you are doing the testing) with a series of tasks to complete. You could observe from somewhere else or sit next to them. Participants can think aloud or not, depending on your objectives. This methodology is more unusual and not used as often, but is worth considering as it allows for more naturalistic behaviour when interacting with your product or service, compared with moderated testing, although it's likely to be a relatively unnatural setting if it's not the participant's home or workplace.

If you are using a research lab, you can employ eye tracking technology to aid your observation. Unmoderated testing with eye tracking will allow you to ask questions such as:

- Do participants notice the xx?
- Are participants able to use xx?
- What is the cognitive load of having xx on the page? Does xx make it harder or easier for participants to navigate to what they need? (Richardson, 2014)

As you have the participants in close proximity, after the task(s) is finished you have an opportunity to ask them questions about their experience. There are several ways to do this:

- *Online or paper survey*: participants to complete a few questions after each task. This is less disruptive but you will get less in-depth answers.
- *Short interview(s)*: ask a few questions/have a short discussion about the participants' experience. You are relying on them accurately recalling what they have done and how they felt about it.
- *Post Experience Eye-tracked Protocol (PEEP)*: in this instance, you and the participants watch a video of the participants completing the task. You can pause the video at relevant points to ask them what they were doing or thinking about at that particular point. This method is labour-intensive as the observer/moderator will need to keep accurate timestamped notes of what

they want to ask the participants about. It is more disruptive to the flow of the session if you do this for multiple tasks and you will only be able to complete a few tasks in one research session. The major benefit of this method is that you are not relying on the recall and memory of the participants, which will allow for a more accurate and in-depth discussion about their experience (Ball *et al*, 2006).

### **Example of face-to-face unmoderated usability**

I have used face-to-face unmoderated usability testing to see how participants go about finding online guidance and resources to support them in their role in an agile working environment. It was useful to see how they did or did not complete the tasks depending on their knowledge of agile ways of working and agile jargon. If they did not understand the terms used in the guidance, this became clear when they were persistent or when they would give up and go elsewhere to find what they were looking for. In combination with other user research methods it helped identify when too much jargon was being used. It also gave insight into what language would help both those new to agile and those who are experts, which is a difficult balance to strike.

## ***Tools for unmoderated remote usability testing***

Find a tool that will allow you to do the kind of test you want to conduct with the assets you have available. Most tools will give a live demonstration if you ask, or will allow you to trial it for free to make sure it's the right tool for you. A few current examples are:

Loop1: <http://www.loop11.com/>

Usertesting.com: <http://www.usertest.com/>

UserZoom: <http://www.userzoom.com/>

WhatUsersDo: <http://whatusersdo.com/>

Zurb: <http://zurb.com/>

Lookback: <https://lookback.io/>

## Summary of usability testing

### *It's not really moderated versus unmoderated*

Moderated and unmoderated testing are complementary: you can run both kinds of research. For example, you can run a moderated test on your prototype, then iron out any major usability issues; further on in your development cycle, you can run an unmoderated test to gauge how it performs 'in the wild'. If possible, run both kinds of research for true confidence in your results.

### *Building confidence in small samples*

If you've already had some experience of doing or commissioning user research, it's likely that you have come across stakeholders' resistance to and lack of confidence in the small numbers involved in qualitative testing compared with the large sample sizes gained from unmoderated user testing and surveys. Building stakeholders' understanding of qualitative user testing will help gain their trust in the results and confidence in the decisions on the next step to take. Reichelt (2014) advocates that if you're doing qualitative design research, you shouldn't worry about sample size or statistical significance. The only thing that matters is how confident your team members are about the next decision they need to make.

Reichelt (2014) advises that everyone making and signing off decisions should watch user research sessions on a regular basis. This can be difficult to schedule with busy stakeholders, so video playback could help. As soon as you start doing user research, you'll be so busy working out what to do with everything you're learning, you'll have no time to worry about statistics. You'll know what is broken and what is not, and you'll know what you need to spend more time learning about.

### *References and further reading*

Ball, L, Eger, N, Stevens, R and Dodd, J (2006) Applying the post-experience eye-tracked protocol (PEEP) method in usability testing, *Interfaces*, 67, pp 15–19

- Bojko, A (2013) *Eye Tracking, the User Experience. A practical guide to research*, Rosenfeld Media, New York
- Bolt, N and Tulathimutte, T (2010) *Remote Research. Real users, real time, real research*, Rosenfeld Media, New York
- Cao, J (2017) Moderated vs. Unmoderated Usability Testing: Which is Better? UX Pin. Available from: <https://www.uxpin.com/studio/blog/moderated-vs-unmoderated-usability-testing-better/> (last accessed 21 May 2017)
- Dumas, J S and Redish, J C (1999) *A Practical Guide to Usability Testing*, revised edn, Intellect Ltd, Bristol
- Gray, C (7 October 2015) How to Run an Unmoderated Remote Usability Test. UX Mastery. Available from: <http://uxmastery.com/how-to-run-an-unmoderated-remote-usability-test-urut/> (last accessed 21 May 2017)
- Lanoue, S (18 May 2015) Writing Your User Test Plan: Open-Ended vs. Specific Tasks and Questions. User Testing Blog. Available from: <https://www.usertesting.com/blog/2015/05/18/open-ended-vs-specific-tasks-and-questions/> (last accessed 21 May 2017)
- Nielsen, J (16 January 2012) Thinking Aloud: The #1 Usability Tool. Nielsen Norman Group. Available from: <https://www.nngroup.com/articles/thinking-aloud-the-1-usability-tool/> (last accessed 21 May 2017)
- Norman Nielsen Group (1 July 2014) Selecting an Online Tool for Unmoderated Remote User Testing. Available from: <https://www.nngroup.com/articles/unmoderated-user-testing-tools/> (last accessed 21 May 2017)
- Reichelt, L (16 September 2014) Sample size and confidence: how to get your team to trust qualitative research. gov.UK User Research Blog. Available from: <https://userresearch.blog.gov.uk/2014/09/16/sample-size-and-confidence/> (last accessed 21 May 2017)
- Richardson, C (17 December 2014) Using unmoderated research with eye-tracking. gov.UK User Research Blog. Available from: <https://userresearch.blog.gov.uk/2014/12/17/using-unmoderated-research-with-eye-tracking/> (last accessed: 21 May 2017)
- Satmetrix Systems, Inc. (2017) What Is Net Promoter? Net Promoter Network. Available from: <https://www.netpromoter.com/know/> (last accessed 21 May 2017)
- Thomas, N (13 July 2015) How To Use The System Usability Scale (SUS) To Evaluate The Usability Of Your Website. Usability Geek. Available from: <http://usabilitygeek.com/how-to-use-the-system-usability-scale-sus-to-evaluate-the-usability-of-your-website/> (last accessed 21 May 2017)

Usability.gov (2017) System Usability Scale (SUS). US Department of Health & Human Services. Available from: <https://www.usability.gov/how-to-and-tools/methods/system-usability-scale.html> (last accessed 21 May 2017)

Zurb (2017) Unmoderated User Testing. Zurb Word. Available from: <http://zurb.com/word/unmoderated-user-testing> (last accessed 21 May 2017)

# Content testing 06

## What do people think your content means?

Content testing is a specific type of usability testing that focuses on how suitable and understandable your content is for the intended audience(s). It can be done as part of user testing or separately.

### What is good content?

I learnt what I know about content testing from reading Government Digital Service blogs. Good digital content is clear, actionable and readers can find what they're looking for. We know good content when we see it, and we're frustrated when we don't. Good content takes a lot of hard work to create, but if you get it right it can help build trust and confidence in users and can reduce the risk of errors being made by your organization and by your users.

### What content testing is good for

There are many forms of content – imagery, video, infographics, various art forms, text etc. The research methods I'm talking about here focus on written content, but can be adapted for other types of content as these methods aim to gain insight into what people understand by what they see, the language they use, and what they would do with action- and task-oriented content. Finding appropriate ways to test our content helps us improve and find best practice patterns for creating it. Content testing is also a good way to understand how accessible and inclusive it is (see Chapter 3) for our user groups.

## What content testing is not good for

If you want to do research on the impact of content and how emotive it is, there are more effective methods to be found in the market research toolkit.

## Effort required to do this kind of research

As with usability testing it is relatively easy to practise and learn these methods. You can learn the basics of running tests and gaining insights into users' understanding and language, and start doing usability testing straight away. But it does require some time and effort to become a skilled moderator, whether you are focusing on content or looking at usability more broadly. When you want to compare several versions of digital content, you may want to do multivariate testing, which will need some support from technical people, depending on your organization's set-up.

## When to use content testing

Do research on your content as soon as you can in the development cycle. Particularly in the world of digital development, content can become an afterthought, looked at once the technical build has become relatively stable. As creating good content can take a lot of time and effort, creation needs to be started early and tested iteratively. If this is not possible in your line of work, I would aim to do content testing as soon as you can after the draft content is available.

## How to test the effectiveness of content

You don't have to test content *in situ*, especially at the beginning of the content creation process. However, it is useful in iterative research to test the content in the context in which it will be used, to truly understand its effectiveness. As with all kinds of user research, do the testing with the users the content is being created for. There are various methods that can be used to do this.



## ***Before you start your research***

As preparation for whatever type of content testing you are doing, you can check the assumed reading age of your written content. There are various online resources to help you do this; for instance the Hemingway App (<http://www.hemingwayapp.com/>) identifies lengthy, complex sentences, common errors and passive sentences to help you refine your content before you put it in front of participants.

## ***Comprehension testing***

This involves asking open-ended questions about the meaning of your words. There is a lot of content out there that uses unfamiliar legal or technical words or phrases, or asks questions that may be hard for users to understand. You don't have to wait until you have a working prototype or a nicely designed leaflet to test people's understanding. You can print out the words, phrases and questions, and ask users to read them out and tell you what they mean.

It can be useful to ask open-ended questions such as, 'What does this mean to you?' You can also use open-ended and task-oriented content questions to determine if participants have understood the content and what they expect the outcomes or next steps to be, based on what they have read. Can they take action given what they have understood? For example: 'How would you use this website to sign up for xxx?' 'Based on what you read in the document, can you explain xxx to me, without looking at or rereading what you've seen?'

This method is useful for creating content for different cognitive needs and abilities. This kind of testing can remove the 'I'm taking a test' feeling from the research, keeping the pressure and anxiety levels low, as there is no 'right' answer.

## ***Cloze testing***

Cloze testing is another method that focuses on reading comprehension. Participants look at a selection of text with certain words removed and they fill in the blanks. When creating a test, you can delete words using a formula (eg, every fifth word), or you can delete selectively (eg, key words).

You can decide to accept only exact answers, or you can accept synonyms. Sample as many readers as possible for greater accuracy. You can set rules for acceptance: 75 per cent accuracy is considered successful and no refinement is required; below this threshold iteration of content design and testing would be necessary. This kind of comprehension testing is useful for when it's difficult to avoid a certain amount of 'jargon' and technical words, even though research does show that everyone prefers plain English.

The kind of comprehension testing that is most suitable for you really depends on what you are testing and with whom you are doing the research. My best advice would be: if you are not sure which kind of comprehension testing to do, run some pilot tests and see what your participants respond to most effectively, and what gives you the most useful insight.

### ***Let people choose their own words***

When you let people tell you how they feel in their own words, you can reflect this language in your content. This technique can be used on sensitive content such as dealing with the criminal justice system or personal loss. For example, gov.uk has content on what to do after someone dies (<https://www.gov.uk/after-a-death>), not after someone 'passes away'.

You can also use this research method to get insight into the language your user groups use, how they differ from each other and how their usage aligns with that of your organization. This is useful for getting to know your users and for starting to work out what language can be used to support the needs of diverse user groups.

### ***A/B (comparative) testing***

This kind of testing compares two (or more) versions of content to see which performs better (we'll look at this in more depth in Chapter 14 for digital products and services). It's also a good way to test how users connect with your content. You can do this by showing participants each version (making sure you alternate which version you use first, to avoid bias), or you can test this in real life, by serving each

version to different users of your digital product/service and testing which is most successful at doing the thing you need it to do.

The UK National Health Service wrote eight variations of material asking users to sign up as organ donors. The test assessed the use of plain language and ease of understanding. The sign-up rate for each piece of content was measured and the multivariate test showed which call to action was most effective, but not why (Loosemore, 2014).

## ***Highlighting content***

This technique is low-fi: all you need is a print-out of the content for each participant plus one for yourself, and highlighter pens. Ask participants to read the print-out and to highlight things that made them feel more confident in green, and things that made them feel less confident in red. Once they have finished, take your own copy of the content and copy the highlighting with a matching colour for each participant. Once this is done for all the participants, you can see how the text made people feel. Darker green shows text that made people feel confident; darker red shows text that made them feel less so.

The technique is quick and easy. It allows your team to immediately understand the impact of what they're writing. You can learn how to describe your product/service in a way that's clearer and simpler, and make content choices that will benefit your users. You can also ask users to sort the words, phrases and questions according to trust, confidence, or other concerns.

## ***Guerrilla content testing***

If you don't have easy access to participants, consider using relevant events and conferences that you may be going to as an opportunity to test content 'in the wild'. You can read more about this in Chapter 16 and in Ploughman (2015).

## ***References and further reading***

Cawthorne, C and Barnes, E (6 April 2016) Guest post: looking at the different ways to test content. Government Digital Service Blog.

- Available from: <https://gds.blog.gov.uk/2016/04/06/guest-post-looking-at-the-different-ways-to-test-content/> (last accessed: 21 May 2017)
- Gale, P (2 September 2014) A simple technique for evaluating content. gov.uk User Research Blog. Available from: <https://userresearch.blog.gov.uk/2014/09/02/a-simple-technique-for-evaluating-content/> (last accessed: 21 May 2017)
- Government Digital Service Blog. Available from: <https://gds.blog.gov.uk/2014/03/18/organ-donor-register/> (last accessed: 21 May 2017)
- Holliday, B (30 July 2014) Reversing a circle of mistrust. gov.uk User Research Blog. Available from: <https://userresearch.blog.gov.uk/2014/07/30/reversing-a-circle-of-mistrust-2/> (last accessed: 21 May 2017)
- Loosemore, T (18 March 2014) One link on gov.uk – 350,000 more organ donors
- Ploughman, J (16 November 2015) Guerrilla testing content – it makes it better. Inside gov.uk Blog. Available from: <https://insidegovuk.blog.gov.uk/2015/11/16/guerrilla-testing-content-it-makes-it-better/> (last accessed: 21 May 2017)
- Waterworth, J (1 July 2015) What does this mean? Tips for testing your words. gov.uk User Research Blog. Available from: <https://userresearch.blog.gov.uk/2015/07/01/what-does-this-mean-tips-for-testing-your-words/> (last accessed: 21 May 2017)

# Card sorting

# 07

Understanding how people group and relate things

## What is card sorting?

Card sorting is a method used to understand how people think about and associate things, grouping items that are related to each other.

## What card sorting is good for

This is a useful method when designing or refining the structure of a website; for example what pieces of information are closely related and therefore should be grouped together and given a label. The structure of a website, also known as the ‘information architecture’, gives you the ability to make things easy to find: not only where they are placed in the navigation but also what they are called.

Card sorting doesn’t necessarily need to focus on content and website items. It can also give you insight into people’s mental models (as we’ll discuss in Part Three on analysing and presenting your data) and how they think about and associate anything. Card sorting can provide a good foundation for structuring of content and iteratively improving that structure, whether you know something within the structure isn’t working or you are adding new things to it.

## What card sorting is not good for

Card sorting focuses on content. If it is used in isolation without considering tasks and journeys, it may produce an information

architecture that is unusable when users are attempting real tasks. To meet user needs, card sorting should be used in combination with other methodologies such as prototype or paper usability testing.

It can be time-consuming, depending on the amount of content being sorted and the number of participants. The analysis of the data can also be difficult and time-consuming, but there are tools that can help you with this.

## When to use card sorting

Card sorting can be used at any time in the lifecycle of a product, service or experience. Depending where you are in that lifecycle and what your objectives are, different card sorting methods will be appropriate at different times. There are four methods to consider:

- 1 Open card sorting: the participants group the items and name the groups however they want.
- 2 Closed card sorting: the researcher predefines the names of the groups and asks the participants to put items in the groups they think each item is most related to.
- 3 Hybrid card sorting: this is a combination of open and closed sorting. You may have a few predefined groupings but participants can add additional groups.
- 4 Iterative card sorting: this can be used in both open and closed card sorting, where participants iteratively refine the previous participants' grouping.

### *When to do open sorting*

Open card sorting is very exploratory. If you have no fixed ideas about how the items you are interested in should be grouped, do open card sorting. It will be useful, for example, if:

- You are building something new from scratch.
- Analytics and other insights show that the current groups are fundamentally not working.

- There has been a significant change of some sort that means the current structure is no longer appropriate.

### ***When to do closed sorting***

Closed sorting is used to confirm that a pre-existing structure works across all your user groups. You may have a good idea of how things should be structured (as you have analytics and insight or you've already done an open card sort to explore what the groups should be).

### ***When to do hybrid testing***

If you are looking at the structure of a website, the analytics may show that certain parts are working effectively and others are not. You may choose to focus only on what's not working, but you may want to take a holistic view and include everything. You could include the predefined categories you are confident about and let the participants name the categories that you are not confident about. Another scenario is if you are adding new content, products or services: you can have the existing structure predefined and the new items can be added by the participants to the different categories.

### ***When to do iterative card sorting***

There are two types of iterative testing to think about. The first is multiple iterative card sorting projects: this is when you do more than one round of research, perhaps breaking it down into manageable chunks or if you have multiple user groups, doing separate research projects with each group. This kind of iterative testing is always recommended: it is rare that a single card sorting project will tell you everything that you need to know and you'll usually use a combination of open and closed card sorting.

The second is single iterative card sorting projects: this should only be used if your timescales are very tight. Having participants refine what earlier participants have done is almost like doing analysis on the fly. You won't have to merge each individual card sort to see the patterns, but you should be aware that you will probably get

different results if the participants were to do it individually rather than use the iterative method where they already have a structure to work with. This is not to say that it's better or worse, but just to keep in mind it's different.

## Effort required to do this kind of research

Card sorting is accessible to all levels of researcher: straightforward card sorts can be relatively easy to organize and run. However, it does require some time and effort to become a skilled moderator for particularly complex sorts. Equipment is inexpensive, whether opting for the low-tech (cards/paper) or hi-tech (online tools) options.

The time and effort required to do a card sorting project depends on the kind of sorting you are doing. Moderated face-to-face card sorting is time and resource heavy, whereas a remote unmoderated card sort is quick to set up and administer if you have participants ready to go.

## How to do card sorting

### ***Moderated card sorting***

*Face-to-face:* the researcher and the participants are in the same room at the same time interacting with each other. Items are written on cards and the participants group the items physically on a table, while talking to the researcher about their thinking and understanding of items and groups. *Remote:* the researcher and the participants are in different places but are interacting with each other. They could be using screen sharing technology and tools such as OptimalSort ([www.optimalworkshop.com](http://www.optimalworkshop.com)) to do a 'virtual' card sort. You can also use spreadsheets for virtual/remote sorting.

### ***Unmoderated card sorting***

*Face-to-face:* the researcher and the user are in the same room at the same, but the researcher would not intervene and converse while the



participants are grouping the items. *Remote*: the researcher would not be involved while the participants do the sorting, at a time and place of their choosing, again using tools such as OptimalSort.

## ***Preparing your cards***

There are two options for face-to-face moderated card sorting:

Option 1. Write the name of the item on the front of the card. If you aren't including the descriptions on the cards themselves, it's worth having them written separately for you (as moderator) to refer to, if the participants have questions. Not sharing the descriptions upfront means it is more of a conversation about the meaning of items on the cards.

Option 2. Write the item name on the front and a description on the back. Having the description on the card means that the participants can check for themselves that what they thought the item name meant is the same as your understanding. This will allow you to avoid inconsistent sorting based on misunderstanding of items. You can use probing questions on why the participants checked the description. Why did they hesitate? Were they unsure? Did they think it meant something different? This will help you understand in more depth which labels need to be refined.

There is no right or wrong method; it is more about preparation time required and how comfortable you feel moderating. Whether you are using option 1 or 2, it's important to have a shared organizational understanding of what each item is, so that it can be compared against the participants' understanding to identify where it converges and diverges.

## ***To rename or not rename***

Should you allow participants to rename cards/items or groups if they don't make sense, or the participants feel they have a better way to describe it? This is something you need to consider in face-to-face testing as you can have extra stationery resources available to do this.

In remote testing, you can note down comments on changing names of groups, but the software used for remote card sorting often doesn't allow renaming, unless you are using a spreadsheet.

## ***How to select your cards***

### Choosing what to test

The first thing to do is decide on a list of topics. This can come from a wide variety of sources such as existing or potential online content, descriptions of processes, applications and functions. Including what's planned allows you to create structures that work now and in to the near future (to a certain extent).

### Make sure the granularity is consistent

Whatever topics you decide to test, you need to make sure that they are all at the same level. For example, if the majority of your cards are individual pages, do not include other cards that are whole sections of the site; make all the cards individual pages. Other levels of the site (eg, sections), will have to be done in a different card sort, otherwise participants will find it difficult to group content at different levels of granularity.

What you select for the card sort should be representative of what you're doing research on, whether it's a whole thing or a section of something. There needs to be enough similar content to allow groups to form, but variation across the item you are focusing on, otherwise patterns and trends can't be identified.

### How many cards should you include?

The general consensus is between 30 and 100 cards. If you have fewer than 30, there are not enough items to form groups; more than 100 cards can be time-consuming and tiring for participants. I would suggest that you take into consideration the complexity of the content that you are sorting: the more complex the topic, the fewer cards should be used, as this kind of card sorting has a high cognitive load.

## *How many participants should you include?*

Rarely will you have a group of users that are interested in all aspects of what you provide. Usually they will be very interested in one or two specific things and perhaps (if we're lucky) vaguely interested in another couple of areas. You could get everyone to sort everything, but asking participants to sort things they have no knowledge of or interest in is going to introduce inaccuracies and inconsistency.

Quick note on participant numbers: as with usability testing, you should really be doing card sorting with five people from each defined user group.

### **CASE STUDY** Example of card sorting

I learnt through experience that it is not necessarily a good idea to get everyone to sort everything, for example when I did a qualitative face-to-face moderated open card sort for the UK Houses of Parliament intranet. There are three very high-level groups of people who work for the UK parliament:

Group 1: Commons-focused (the business of Members of Parliament in the Commons).

Group 2: Lords-focused (the business of Members of the House of Lords).

Group 3: Bicameral (work that happens across both Houses).

Participants in group 1 will concentrate on Commons-related content and will not be interested in Lords' content; they may have some interest in bicameral content. Participants in group 2 will be the opposite; to be effective you would only ask them to sort Lords-related content and content that concerns the whole of Parliament. Those in group 3 will have a lot of knowledge on the bicameral work of Parliament, but it cannot necessarily be assumed that they have interest in the individual work of the House of Lords and House of Commons; some will, some won't. You will only be able to determine this by talking to them and ascertaining their areas of interest.

For quantitative testing I would aim for over 100 participants if possible. This would be for unmoderated remote testing, unless you have a lot of time and resource available.

## ***Moderated face-to-face and remote card sorting***

Moderated face-to-face sorting gives you the most flexibility in the kind of (qualitative) card sort that you want to do: open, closed, iterative or hybrid. Whatever card sorting method you select, you'll need to have a short protocol written up on the things you need to say and the topics and questions you want to cover. It won't be as extensive as a usability testing protocol (see Chapter 5), but it's extremely handy as a guide to keep each of the research sessions relatively consistent. The protocol should contain:

- 1** Introduction and the ethical/legal issues that we talked about in Chapter 2 (5 minutes).
- 2** Short pre-task interview questions (5 minutes).
- 3** Probes and prompt reminders for the card sort.
- 4** Short post-task interview questions (5 minutes).

### **1 Introduction**

In Part One I gave advice on starting your research session by explaining to the participants what the research is about, what's going to happen, how the session is being recorded if at all and how you will use and store the data. Giving some context is generally the best way to start a research session.

If you want to take photographs of the participants doing the sort (some 'action shots') you need to ask their permission to do so and permission if you are going to use them in a report. It's worth including these clauses in the consent form you'll ask the participants to sign.

The introduction of a moderated remote card sorting protocol will be very similar to the face-to-face moderated sort, with some variations. For a remote card sort, you need to make participants aware of the following:

- If anyone else is observing the session apart from you.
- The different tools you'll be using during the session.
- If you will record the session, and how you'll use and store the data.

You need to either read a consent statement for them to verbally agree to, or send them a document to sign or a short online survey to collect the consent and NDA statements that you require. If any of the software being used needs to be downloaded for the session, you may need to tell the participants to do so beforehand, otherwise you'll have to allow for plenty of time within the session to set everything up, meaning you'll have to extend the session length or limit the number of cards they are sorting.

## 2 Short pre-task interview questions

When writing the interview questions and research tasks, refer back to Chapter 3 on asking the right kind of questions. These questions will help you understand some of the observations you make during the session on how the participants think about and group items and they will start to make the participants feel more comfortable before the sort.

## 3 Probes and questions for moderating the card sort

Before you ask the participants to start the hard work of sorting and grouping the cards, explain what's going to happen. You can adapt the suggested explanation in the box below, depending on what is appropriate for your card sorting.

### **Explaining a face-to-face card sort**

I'm going to tell you how it's going to work – please let me know if you have any questions before we get started.

In front of you is a stack of cards. Those cards represent the (content/functionality/item) for this (product/service). You should try and sort the cards into groups that make sense to you.

Don't worry about trying to design the navigation for a website; we'll take care of that.

It's not a memory test, and you don't need to try and organize the information as it is currently organized on the (product/service). I'm more interested in seeing how you would organize it into the groups you would expect to find things in.

(Open sort.) Once your groups are established, I'd like you to give each group a name that makes sense to you. You are allowed to make sub-groups if you feel that's appropriate. If you feel something is missing, you can use a blank index card to add it. Additionally, if a label is unclear, feel free to write a new label on the card.

(Closed sort.) You'll notice that there are some cards already on the table. These are the groups we'd like you to sort the cards into. If a label is unclear, feel free to write a better label on the card.

(Hybrid sort.) You'll notice that there are some cards already on the table. These are the groups we'd like you to sort the cards into. If you feel something is missing, you can use a blank index card to add it, whether it's a group or an important item. If a label is unclear, feel free to write a better label on the card.

(Iterative sort.)\* You'll notice that the cards have already been sorted; this was done by the previous participants. I'd like you to have a look at the groupings they have created to see if they make sense to you. If there are changes that you want to make to the groupings, feel free to make them. You can make as many or as few changes as you want, depending on what does and doesn't make sense to you.

(All sorts.) Finally, if you think something doesn't belong, you can make a 'not sure' group. We'll look at them again at the end but there may not be a place for these cards, and that's ok.

Please feel free to ask questions during the sort if you feel the need. I may not answer them during the exercise, but I'll do my best to answer them when you've finished.

\*Note that the instructions will be different for the first participants in an iterative card sort as they won't be refining a predefined set of groups. For the first participants, use whatever instructions are appropriate, whether for open, closed or hybrid sorting.

## **Variations for explaining a virtual card sort**

*These instructions assume you are using an online tool specifically for card sorting. If you are using a spreadsheet or something else, you'll need adapt these instructions to suit your tool of choice.*

I'm going to tell you how it's going to work – please let me know if you have any questions before we get started.

To the side of the screen you will see a list of items. Those cards represent the content and functionality for this (product/service). You should try and sort the cards into groups that make sense to you. You can place the mouse over each item and drag it into the main area. When you start making groups, you can easily change which group an item is in by dragging it elsewhere in the main area.

(Open sort.) Once your groups are established, we'd like you to give each group a name that makes sense to you. You make a group by placing cards in the same area of the screen and the tool will automatically create the group for you. Once you have more than one card in a group, you will be able to type in the group name at the top. You cannot make sub-groups with the tool that we are using. If think sub-groups are appropriate at any point, please tell me and I will note down where you expect them to be. If you feel something is missing or if a label is unclear, please tell me and I will also note this down.

(Closed sort.) You'll notice that there are some labels already on screen. These are the groups we'd like you to sort the items into. You cannot make sub-groups with the tool that we are using. If you think sub-groups are appropriate at any point, please tell me and I will note down where you expect them to be. If you feel something is missing or if a label is unclear for an item or a group, please tell me and I will also note this down.

During the sorting phase you'll want to make some notes of the participants' comments and questions, giving you insight into what labels are or aren't working, their understanding and thought processes. As card sorting has a high cognitive load and participants will be concentrating on what they're doing, you may have to encourage them to think aloud. It can be a difficult balance to strike at first: trying to get insight into their thought processes but not interrupting these thought processes too much. As with usability testing, participants generally get used to talking to you while sorting the cards and will start to freely talk about what they are doing.

My advice is at the beginning of a sort is to give participants a few minutes of silence, left alone with their own thoughts while they get into the flow. It may feel slightly uncomfortable but it is worth it. Once they have roughly established a few groups, you can start talking to them. If they are clearly struggling during these first few minutes, asking some open-ended, neutral questions could help them get started. Here are some example questions:

- What does this item mean to you? How would you describe it?
- What is it about the item name that makes you uncertain?

- What is it about these couple of items that makes them related for you?
- Based on the description of the card that I have just given you, does the item name work for you, or would you call it something different?
- Do you think some cards in this group are more closely related than others?
- Do you think this card could fit better in a different group or could it belong in both groups? Why is that, do you think?

It's difficult to anticipate exactly what the participants are going to say, but the questions above will cover most situations that you will find yourself in. Ultimately it's about avoiding bias and not giving the participants ideas on how to do the sorting.

#### 4 Short post-task interview questions

Wrapping up the session gives you a chance to get an overview from the participants:

- Please talk me through each of the groups you have created.
- What is it about the items in this group that makes them related?
- Why have you given the group this title?
- Are there any cards you think could belong to more than one group?
- Which group, if any, are you most confident about? Why is that, do you think?
- Which group, if any, are you least confident about? Why is that, do you think?
- Any final thoughts?

It's nice to finish on a statement of thanks such as: 'Thank you very much for your participation; it will help us in the process of improving this xxx to make it easier to use.'

### ***Unmoderated face-to-face and remote card sorting***

For remote and unmoderated card sorting the researcher would not be involved while the participants do the card sort at a time and



place of their choosing, again using tools such as OptimalSort or UserZoom. Unmoderated testing is most useful for quantitative testing, when you are aiming for large numbers of people to complete the research. What we've learnt about card sorting and the fundamentals of user research so far can be used to set up your remote unmoderated card sort. To do so you'll need to include:

- an explanation;
- initial survey questions;
- sort instructions;
- post-sort questions;
- thank you statement and what happens next (Mayfield, 2011).

Face-to-face unmoderated card sorting is a more unusual way of doing a card sort: it's not a particularly good use of a moderator's time. However, it does have benefits: the participants will complete the task without any outside influence and there can be an in-depth discussion after the sort to understand what the participants have done, what was easy and what was difficult. You can read through the other types of card sorting and decide on the kind of interview you want to do.

## Tools for card sorting

For face-to-face card sorting the following are essential:

- 1** Note cards (plain or lined). Enough notecards for the number of items you are sorting (pre-written); spare notecards if participants want to rename items; a set of notecards (perhaps a different colour or size) for group titles (blank for open sorting and pre-written for closed sorting) with spares available.
- 2** Pens: ideally something like Sharpies for writing on the cards. It is useful to have multiple colours for items, group titles, and participant annotation. Using felt tip pens allows for clear writing that is easily photographed.

- 3** Camera or smartphone: to photograph the groups created by each participant.
- 4** Consent form for the participants to sign to demonstrate understanding.
- 5** Protocol to guide you through the session, what you want to say and do, topics you want to cover. If you don't write notes on your protocol, you'll need a notepad.

Optional items:

- Video camera: it can be difficult to record card sorting in a way that allows you to capture the detail of the cards and not be too intrusive for the participants.
- Audio recorder: if you want to listen back to the conversation you have with each of the participants. (Along with the video camera – consider what you will use the recordings for.)
- Clipboard: something to rest your protocol on for taking notes. In my experience, you usually stand up a lot during card sorting as people create and refine groups on a table, but it's obviously not a requirement to stand!

For remote card sorting the following are essential:

- 1** An online card sorting tool such as OptimalSort or UserZoom.
- 2** An online conferencing and screen sharing tool (as described in Chapter 5 on usability testing).
- 3** If the tool does not have recording capabilities, you may want to use a screen recording, or you could use a phone instead of video conferencing.

## Summary

As with usability testing, card sorting should be iterative. One card sort isn't going to tell you everything you need to know, especially if you have a large, complex content set or you have several different user groups. Don't try and do everything all in one go: this will

make things difficult and complicated, not only to set up and run but particularly during analysis, where things could get unwieldy.

## ***References and further reading***

- Croft, P (20 October 2014) Card Sorting Beginner's Guide – Improving Your Information Architecture. Available from: <https://www.smashingmagazine.com/2014/10/improving-information-architecture-card-sorting-beginners-guide/> (last accessed: 18 August 2017)
- Mayfield, A (12 December 2011) Online or offline card sorting? Optimal Workshop. Available from: <https://blog.optimalworkshop.com/moderated-card-sorting-with-optimalsort> (last accessed: 21 May 2017)
- Spencer, D (7 April 2004) Card sorting: a definitive guide. Optimal Workshop. Available from: <http://boxesandarrows.com/card-sorting-a-definitive-guide/> (last accessed: 18 August 2017)
- Spencer, D (2009) *Card Sorting. Designing usable categories*, Rosenfeld Media, New York

# Surveys

# 08

## How to gauge a widespread user response

### What are surveys?

Surveys are used frequently in both market and user research. They have limitations, but they are inexpensive to run and can potentially reach a lot of people. In Chapter 3, we discussed using surveys for recruiting the right participants. In this chapter, we'll focus on surveys as a way of reaching a lot of people for user research, and gathering quantitative and structured data. The best practice discussed here can be applied to surveys/questionnaires you may want to conduct face-to-face or over the phone. However, in some cases, if you are able to do face-to-face research, other methods could gain more in-depth data on user experience issues; the choice depends on your objectives and who your users are.

### What surveys are good for

Surveys allow you to count or quantify concepts, and you can apply what you learnt from a sample to the broader population. For example, you might have 100,000 unique users/visitors in a given year. If you collect information from 2,000 of them, you can confidently apply the information to the full 100,000 (Gray, 2014). Statistically significant data (needing about 1,000 responses) can provide stakeholders with confidence that a design or decision is effective. You may not need to aim for statistical significance, but surveys are still a useful way to gather quantitative and structured data for analysis.

## What surveys are not good for

It's not a good idea to ask participants to recall past behaviour or describe recent behaviour; you will not get an accurate reflection of the participants' actions. It's much easier to remember how you felt than what you did.

## When to do a survey

You can do a survey at any stage of the development process or life-cycle (Usability.gov, 2017):

- Before a redesign you can learn about users, what they are trying to accomplish and their levels of satisfaction with the current experience.
- After launching a new or refined product/service you can learn if your new design meets the needs of users and identify areas for improvement.
- When you want to have content or features rated or ranked.
- You can conduct ongoing surveys to gain ideas for future improvements.
- You can explore the reasons people visit or use a product/service and assess their experience of that visit.
- You can quantify results from qualitative research activities such as contextual inquiry or interviews.
- You can evaluate usability (System Usability Scale).

## Effort required to do this kind of research

It is quick and easy to put together and launch simple online surveys. However, they can quickly become very complex if you need to include routing and logic to show the right questions to the right people. I don't cover this kind of survey; if you're interested in it, look at the further reading section for sources.

**A note on being inclusive**

The guidance here can be used for any kind of survey – online, face-to-face, over the phone – and the type you use should be the most appropriate for your user groups. Yes, online surveys will reach a lot of people quickly. Phone and face-to-face surveys will require a lot more time and effort but may be the most inclusive way to find the right people. This is particularly the case if the people you are interested do not have easy access to a computer and the internet or they have low digital capability.

## How to do surveys

As with any user research, before designing your survey you need to identify:

- your purpose;
- where you will find participants;
- the tool you will be using; and
- the limitations to information collection.

Get the fundamentals right (Gray, 2014; Usability.gov, 2017):

- Keep your surveys as brief as possible.
- Provide the participants with an estimate of completion time upfront.
- If possible show participants their progress while completing the survey.
- Include a mix of open-ended and closed questions.

Keep open text field questions to a minimum; multiple choice and rating scale questions are useful to represent how participants feel about a topic.

- Rating scale questions should have an equal number of positive and negative options; include neutral and don't know options – don't force them into an answer if they don't have an opinion.
- Group similar questions together and order them logically.

- Questions need to be appropriate for the audience. Ask them questions about themselves upfront; self-selection will help you serve them the right questions. Get to know how to use the logic rules of the survey tool you select.

Ask if respondents are willing to answer more in-depth questions in a follow-up survey or interview (and collect their contact details).

### ***What you can ask about in a survey***

Surveys are most useful when asking about an experience that participants have just had, so memories are relatively fresh. According to Gray (2014), Turner (2011) and Usability.gov (2017), surveys can be used for gathering information on preferences, opinions and attitudes by asking about:

- Who your users are.
- What your users want.
- What they purchase.
- Where they shop.
- What they own.
- What they think of your product/service.
- Whether they are able to find what they're looking for.
- How satisfied they are with the product/service.
- What they like and dislike about it.
- What frustrations or issues they have had most recently.
- If they would recommend the product/service to others.
- If they have any ideas or suggestions for improvements.
- How they would describe the product/service in one or more words.
- If they could change one thing about the product/service what it would be and why.
- What features they could not live without.

- What features they could live without.
- Anything else they care to share (a good one to end with as a free text field.)

### ***What to avoid asking about in a survey***

- Don't make it mandatory to share contact and personal details (unless you are offering an incentive).
- Don't use double negatives and technical language. We looked at plain English in Chapter 3 in the section on asking the right kind of questions. Getting used to writing in this way is extremely important when using surveys to do your research.
- Don't use multiple concepts in one question: each question should be focused on one thing.

### ***Who should fill in your survey?***

If you have a target audience/user group in mind, you'll need to consider how you're going to recruit these people to respond to your survey. If anyone and everyone is to fill it in, that's obviously a lot easier, but will the results be useful? As always, it really depends on your objectives.

### ***When to use recruitment agencies***

If you want to reach new user groups/audiences, those who aren't already known to you, lapsed customers/users, or those you are aware of but are not associated with you, you'll need to engage an agency to find them. Go back to Chapter 3 and the section on who should be involved in your research to remind yourself of how to write a good recruitment brief.

You will have to be mindful of the costs of targeting a lot of specific people to complete your survey. Shop around for different quotes from the agencies to find a balance between good quality work and a good price.



## ***When to do the recruitment yourself***

If you are interested in the attitudes and preferences of existing user groups and you have available a database of customer details, get colleagues who are expert in using the database to identify suitable groups of people to contact, if you have permission to contact people in this way. If your digital product/service allows, you can deliver the survey to users while they are using it. There are various methods for having the survey appear or pop up at a certain point in a journey or experience, or after a certain time (you'll need to talk to the technical folk about that) or you can have it available on specific pages or at all times somewhere on every page. If you are doing a face-to-face survey, you may be able to stand somewhere where there is regular footfall of the relevant people.

Ask upfront about who the users are, to make sure you're getting the right people to complete the survey. Don't feel bad about kicking people out of the survey with a polite message, if they aren't the kind of person you want to hear from right now. Better for them to find out early on rather than needlessly filling in a survey. You'll also avoid having to take out the data they've input. This is not good for anyone.

## ***Do a pilot test***

It is a good idea to test the survey before launching it to your full audience. Run a pilot of the survey with a subset of the audience to help refine the questions, if necessary. Initially you could ask a colleague or someone from your organization to pilot the survey. Don't give them too much information on background; only provide what any potential participants would have. Give them clear direction in terms of the type of feedback you are looking for along the lines of, are there any questions that didn't make sense to you? Are there any questions you couldn't answer or (in the case of multiple choice) were any missing the answer you wanted to provide?

## ***When to give incentives***

Whether or not you include an incentive can affect the kind of person that completes your survey: For basic 5-minute surveys you don't

necessarily have to offer any kind of incentive. For more detailed and complex surveys you will need to offer some kind of incentive, whether it is vouchers or cash. As is common with surveys, you can have a prize draw with three winners.

## Survey tools

There are many online survey tools available. Some are free, many you'll need to pay for to get access to the right functions and allow for the number of responses you need. Research what's best within the budget you have. Here's a few suggestions to get you started:

[www.optimalworkshop.com/questions](http://www.optimalworkshop.com/questions)

[www.surveymonkey.co.uk](http://www.surveymonkey.co.uk)

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

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

[www.campaignmonitor.com/appstore/getfeedback/](http://www.campaignmonitor.com/appstore/getfeedback/)

[fluidsurveys.com/](http://fluidsurveys.com/)

[www.keysurvey.co.uk/](http://www.keysurvey.co.uk/)

For face-to-face and phone surveys, you may want to go as low-tech as paper and pen. You may want to have a spreadsheet set up to input answers when talking to people. Another option would be to have an online survey on a mobile device (tablet or smartphone). There are many tools available and the choice will depend on what is easiest for your users and what is the best way for you to gather a lot of data within your budget.

You could write a book just on analysing surveys and statistical significance. You could write another one on survey design best practice. This chapter provides a brief overview and if you think you'll be conducting a lot of surveys in the future or you need a complex survey, I would recommend doing some further reading.

## ***References and further reading***

- Farrell, S (25 September 2016) Better User Research Through Surveys 28 Tips for Creating Great Qualitative Surveys. Nielsen Norman Group. Available from: <https://www.nngroup.com/articles/qualitative-surveys/> (last accessed: 18 August 2017)
- Gray, C (20 November 2014) Better User Research Through Surveys. UX Mastery. Available from: <http://uxmastery.com/better-user-research-through-surveys/> (last accessed: 21 May 2017)
- Jarrett C (due 2018) Surveys That Work. Rosenfeld Media. New York, <http://rosenfeldmedia.com/books/surveys-that-work/>
- Prelicz-Zawadzka, A (9 August 2016) How to Create an Effective Customer Experience Survey. UX Booth. Available from: <http://www.uxbooth.com/articles/how-to-create-a-customer-experience-survey/> (last accessed: 18 August 2017)
- Survey Monkey (2017) Help Center. Available from: [https://help.surveymonkey.com/?l=en\\_US/](https://help.surveymonkey.com/?l=en_US/) (last accessed: 18 August 2017)
- Survey Monkey (2017) Skip Logic. Available from: <https://www.surveymonkey.com/mp/tour/skiplogic/> (last accessed: 18 August 2017)
- Turner, N (7 April 2011) Online Survey Questions. UX for the Masses. Available from: <http://www.uxforthemasses.com/online-survey-questions/> (last accessed: 21 May 2017)
- Usability.gov (2017) Online Surveys. Available from: <https://www.usability.gov/how-to-and-tools/methods/online-surveys.html> (last accessed: 21 May 2017)

# User interviews 09

Understanding people's experience through talking to them

## What are user interviews?

We are all familiar with interviews in some form or another, usually job interviews. They are also a common and well-established technique used in social science, market research, user research and human computer interaction (Preece *et al*, 2002), conducted face-to-face, over the phone or via video call.

## What user interviews are good for

Interviews will often be one of many techniques used in iterative research. For the purposes of user research, interviews are useful for understanding attitudes and preferences (and how they change over time), common behaviours and the context in which the users live and operate, and how they think and associate certain things.

Interviews (especially when done face-to-face) are a good way to connect with those users who don't have easy access to technology, and those who have low literacy and digital skills. You can interview to gain an understanding of their experience and context without asking them to do anything they may have difficulty with and therefore feel embarrassed.

## What user interviews are not good for

We have to keep in mind the fact that what users say and what they do can be two different things. Also, as we all have memory issues

(it's just a part of being human), it's not necessarily a good idea to ask people to recall precise details of specific journeys and experiences.

In many cases your users won't be designers (although some of you will be designing for them), and interviews are not a good format for asking for details on creating an ideal solution or suggesting specific improvements. It's better to examine what is happening, how the user feels and what the goal is/was, and what outcome they wanted to achieve.

## **When to do user interviews**

User interviews can be considered a quick and dirty method, when time and budget are constrained – you need insight but you don't have the resources to set up more complex research. Interviews are a good place to start project scoping. Talking to users can give you a preliminary understanding of the context you'll be working in and the issues being experienced; this will help define the scope and objectives of the project.

It is an excellent complementary technique to observation (used immediately after an activity, such as ethnography; see Chapter 12). You get a certain amount of insight from each individual method, but you will get a much more holistic insight if you use them in combination.

## **Effort required to do this kind of research**

User interviews are one of the easiest methods to practise and learn. If you have an awareness of the fundamentals of good practice, you can start doing user interviews straight away, but it does require some time and effort to become a skilled moderator. Some sensitive topics will require skill to navigate the participants through, while maintaining their sense of wellbeing. If your research is dealing with a highly emotive subject, you need to be very sensitive to people's state of mind and wellbeing, as shown in the short case study below.

---

**CASE STUDY** Knowing when to stop a research session early

In 2014, I spent five months helping a charity that cares for and supports people living with terminal illness and their carers. Part of my research included over 20 phone interviews that ranged from understanding people's information needs when dealing with terminal illness to looking for volunteering, money raising and donation opportunities. Many of the interviews were with people who were terminally ill or carers and family members. At the beginning of each interview I would remind people that they could take a break or stop at any time, should they feel uncomfortable or upset. Whatever circumstances people find themselves in, they still want to be helpful; even in an emotional state they may try to continue. Most of the time when the interviewees became emotional, I was the one to stop the interview.

You need to call a halt in a gentle and reassuring way. Tell them that they have been very helpful and you really appreciate their time but it is best that you stop for their own wellbeing. Also, make sure you have the number of someone or a helpline that they can call to talk about how they are feeling, should they need to. You could ask their permission for you to have someone (a professional) call them to make sure they're all right.

For this particular project I did some extra interviews to make up the numbers for the interviews that had been stopped early, but it was worth the extra time, effort and cost. *The participant's wellbeing and your own wellbeing are more important than getting research data.*

---

Interviews can be structured, semi-structured or an open discussion, depending on the purpose (Preece *et al*, 2002). Each will require a certain amount of preparation, with predefined questions.

## How to do user interviews

We will go through how to prepare for interviews and then how to moderate individual and paired interviews.

## ***Question design***

We've talked a lot about questions design, particularly in Chapter 3 on asking the right kind of questions. To briefly recap:

- Avoid jargon and technical words. Use plain English as much as possible. If you do need to use technical words, explain what they mean.
- Use neutral open-ended questions that don't force the participant to answer in a certain way.
- Avoid long questions as they are difficult to answer.
- Avoid compound sentences; always split into individual questions.
- Consider words with loaded meanings in the context of your work, and whether they should be included or avoided in your questions. For example, the word 'welfare' has negative connotations in some situations.

## ***Interview structure***

If you have read the usability testing section you'll be familiar with the concept of a script or protocol and how it is structured.

### **1 Introduction**

In Chapter 2 (being aware of ethical and legal issues) and Chapter 5 (usability testing), I gave an example of how you can start your research session. Giving some context is a good way to start and is the participants' opportunity to ask for any clarification they may need before the session starts, and gives them a chance to get comfortable.

### **2 Warm-up questions**

Asking some preliminary questions is a chance to get to know the participants a little better, before diving into the main focus of your interview. The questions you ask should be geared towards gaining some insight into the participants' experience related to the tasks or area that you are researching. Keep the questions quite neutral and relatively easy to answer. Keep to just a couple of questions, spending about 5 minutes on this.

### 3 Main questions/focus of the interview

Open and unstructured interviews have an agenda but not necessarily a specific set of questions to be answered. Open and unstructured interviews have an initial opening question to get things started, but after that the moderator will let the conversation dictate the questions asked. This kind of interview can yield a lot of rich data and is particularly useful when you are just starting to explore an area, but it also requires more skill to conduct such an interview (Preece *et al*, 2002).

#### Top tips

- *All the rules that we've already considered in terms of asking the right kinds of questions apply; it's just that they are spontaneous and responding to the situation rather than being pre-prepared.*
- *Be ready to follow new lines of questioning that you hadn't initially considered but that are related to your agenda.*
- *It is worth including some warm-up and wrap-up questions to indicate the beginning and end of the interview.*

For structured and semi-structured interviews you'll need to create an interview guide to ensure that you cover the same topics with each participant. The difference between the two is the kind of questions that you include. Group related questions together to help the flow and the participants' thought processes. If you are covering sensitive subjects in the interview, try to start with easier questions and work up to the more 'difficult' questions (see the case study above).

### 4 Wrap-up questions

These, like the warm-up questions, should be relatively easy to answer. They could be a summary/review of what you've talked about or participants' overall impression of something. It's generally good to end on a light note if you can: people won't remember what you said or did, but they will remember how you made them feel.



## 5 Closing and thank you

This is the time to make the participants aware of what will happen next with your research/project, if there is any possibility of follow-up, etc. This is also the time to pay them, if you are personally sorting out the incentives. If the incentives are being paid in a different way, remind the participants how and when. You may want to give them some contact details, should they want to follow up with anything; it is up to you.

It's always nice to finish on a statement of thanks such as: 'Thank you very much for your participation; it will help us (to do xxx).'

### ***Moderating an interview: individual participants***

#### Using prompts

Prompts are anticipated clarification and follow-up questions; they are additional to the main question (related to your research focus). They can help you delve a bit deeper into participants' answers or can give them an example if they are struggling. Examples can be useful but should be used sparingly as they are leading by nature and could skew the participants' answers.

You won't always be able to anticipate when you need a prompt, but you'll get used to using them the more research you do. It's worth noting down the unanticipated prompts during a research session as you may need to use them again. Here are some examples that will give you a sense of what prompt questions are.

#### **Some generic prompt questions**

- Can you tell me a bit about why that is?
- Why do you think that is?
- Can you describe how you did this?
- Tell me more about xxx.
- How did this experience make you feel?

## Awkward silences and not answering questions

When you first start interviewing, it is tempting to fill any gaps when the participant stops talking with probing questions. In trying to fill the silence you run the risk of going off the topic of the research, asking leading and biased questions and potentially preventing the participants from saying things they had intended to before you leapt in.

It can be useful to occasionally leave an awkward silence; most participants will endeavour to fill it. You'll also get used to using 'mmm' and 'uh-ha' a lot to encourage participants to keep talking, to show you are listening, without leading them astray. With experience you will get a feel for when it's right to talk because the participants need encouragement to verbalize their thoughts, and when to remain silent.

The participants may ask you questions; it's natural to ask for assistance. It will feel like a dilemma at first: do you answer their question? It's common to want to ease participants' frustration/anxiety/stress. Whether or not you answer depends on the question. Here are a few tips on how to handle these situations:

- If it is clear that the participant is having difficulty understanding the question you have asked, try to ask it in a different way, while keeping the essence of the question and avoiding the bad question pitfalls (hello bias). Note down the question and your response, as you may need to refine how the question is phrased for subsequent participants.
- Sometimes participants will ask what you think, either to make it more of a conversation or to try to identify the answer they think you are looking for. This kind of situation needs to be politely defused without making them feel awkward, while not answering the question. This can often be done by telling them that you are interested in their experience and what they think, that this is what is important and you'd be happy to share your views after the interview is finished.
- If participants cannot answer the question, don't force them to give an answer, as it's likely to be made up. Simply note this and move on to the next question/topic.

## ***Moderating an interview: two participants (paired interviewing)***

Up until now the preparation for an individual or paired interview has been the same. However, when it comes to moderating individual and paired interviews, it is quite different.

---

### **CASE STUDY** Using paired interviewing

I first used paired interviewing during my doctoral research, in the form of paired retrospective think aloud. It sounds fancy, but essentially this means that I interviewed two people at the same time about an exercise they had just completed. This was to ensure that I did not disturb what they were doing, but it was soon enough afterwards that the activity was fresh in their minds. This kind of technique allows participants to prompt each other, discuss and seek clarification from each other. I found this a useful technique in a pedagogic environment, where you don't want to interrupt the learning process that you're observing, and the interview can almost be seen as an extension of the interaction that's already been happening to achieve the task that's been set.

---

Obviously not all topics of research are appropriate to be discussed in pairs, but it can certainly be used advantageously in particular settings, for instance:

- Any situation where collaboration is key to the topic you are researching. For example, when trying to understand collaborative workflows, consider speaking to several people who regularly work together (Barker, 2005).
- When trying to identify differences in working practices between teams or offices, consider speaking to several people who perform the same tasks but are based in different teams or offices (Barker, 2005).
- Friendship pairs are often interviewed in depth where the subject matter is sensitive or the respondents are likely to be more open and articulate in the presence of a friend; it is often recommended for interviewing children and teenagers (AQR, 2016).

Paired interviews allow you to be more in-depth about each person's experience as well as using any similarities and differences in experience to explore the subject more deeply (AQR, 2016). The paired interview is not two interviews being conducted simultaneously; rather it aims to create a dynamic in which the participants interact with each other (Barker, 2005). It can work to reduce the discomfort felt by some in the interview situation, provide more space for thinking, allow respondents to build more comprehensive responses through their discussions and enable them to augment each other's stories (Lohm, 2011).

### Getting the most out of a paired interview

To get the greatest benefit from a paired interview the moderator must ensure that both participants contribute to the session. Consider the following guidelines for the interviews (Barker, 2005):

- The important thing to keep in mind is that the pairing has to be right; generally the two participants know each other in some way, professionally or personally.
- Silence is not a sign of agreement.
- Alternate which participant speaks first after a question has been asked.
- All forms of multi-person research run the risk of being dominated by one of the participants. This is especially likely if the participants have a dominant-subservient working relationship (other examples include parent-child and older-younger sibling relationships).
- If one of participants starts to dominate, you can direct questions specifically to the quieter participant.
- If interviewing children (teenagers), be mindful that different techniques may be required for boys and girls or a mixed pairing (Naranjo-Bock, 2013).

### Recording the data

Recording devices will obviously capture what has been said word for word, but this is not always appropriate. Unless you have training in dictation, it's very difficult to record the interview exactly with your written notes. It is still worth taking written notes, to help jog

your memory later. There are a few techniques that will be helpful when you are getting used to recording data:

- Only note down particularly interesting quotes; don't try to write absolutely everything.
- Have someone else make notes, this takes the pressure off you having to listen, talk and write at the same time, and allows you to concentrate on moderation.
- Use voice-to-text dictation software that will save you a lot of time.

I've never had access to dictation software and I have always preferred to scribble my notes on paper (and I do mean scribble, unfortunately). Some prefer to take notes directly on a device like a laptop or tablet, which certainly speeds up the analysis and sharing process, but having a device in between you and the participant could create a barrier in face-to-face interviews. There are no hard and fast rules, just something to be aware of.

## ***Interview length***

This very much depends on the scope of your research and the number of questions/topics you want to cover. This is where the importance of pilot testing your interview guide comes in:

- Draft your interview guide.
- Recruit a colleague to role-play or real participant(s) to interview.
- Conduct the research with the draft guide as if it were a real research session.
- Time the full session to see how long it takes you and at what point the participant becomes fatigued or agitated by the length of the interview.
- Phone interviews are generally better kept short – 30 or 45 minutes; sustaining a 'formal' conversation over the phone requires more effort compared to face-to-face and is therefore more fatiguing to both the moderator and participant. However, if they need to be longer, then they need to be longer.

- Face-to-face interviews generally can last 30–90 minutes; after an hour it's usually good to stop, before it becomes too taxing for both the participant and the moderator, but often it does depend on the subject you are focusing on.
- Paired interviews will generally need more time; 30 minutes will probably be too short but, again, it depends on the scope of your research.
- If interviewing children (and teenagers) always keep the session length short; 30 minutes generally works well, definitely no more than 45 minutes otherwise they will lose concentration and patience.

## Interview tools

- Your interview guide.
- Something to take notes on.
- Consent forms.
- NDA if required.
- Recording equipment, if appropriate.

## *References and further reading*

- AQR (2017) Paired depth interview. The Association for Qualitative Research. Available from: <https://www.aqr.org.uk/glossary/paired-depth-interview> (last accessed: 21 May 2017)
- Barker, I (4 April 2005) Fast-tracking research with paired interviews. Step Two. Available from: [http://www.steptwo.com.au/papers/cmb\\_paired-interviews/](http://www.steptwo.com.au/papers/cmb_paired-interviews/) (last accessed: 21 May 2017)
- Lohm, D (May, 2011) Sometimes is can take two – paired interviews. Monash University. Available from: <https://www.tasa.org.au/wp-content/uploads/2011/05/Lohm-Davina-Session-70-PDF.pdf> (last accessed: 21 May 2017)

- Naranjo-Bock, C (3 June 2013) Using Paired Interviews to Understand the Current and Future Perspectives of Teenagers. UX Matters. Available from: <http://www.uxmatters.com/mt/archives/2013/06/using-paired-interviews-to-understand-the-current-and-future-perspectives-of-teenagers.php> (last accessed: 21 May 2017)
- Portigal, S (2013) *Interviewing Users. How to uncover compelling insights*, Rosenfeld Media, New York
- Preece, J, Rogers, Y and Sharp, H (2002) *Interaction Design: Beyond human-computer interaction*, Wiley, New York

# Diary studies 10

How to capture user research data over time

## What are diary studies?

Diary studies can be used to record qualitative data over a set period of time, where participants will complete the diary on their own. Participants are given a framework to record their observations and data at specified times, about particular things.

## What diary studies are good for

Diary studies are useful for gaining contextual understanding of experience, behaviour and attitudes over time; it can be very difficult to create scenarios in a 'lab setting' to gather these kinds of insights. It is a low-cost method in terms of specialist equipment, high cost in terms of time for data collection and potentially data analysis too.

## What diary studies are not good for

As with most methods, you need to look at the pros and cons of designing a diary study. The main disadvantage is time. There are certain contexts for which diary studies are not appropriate, such as emotive or productivity-intensive environments: you're probably not going to ask paramedics to fill in a diary about their work day, for example. Ethnography (Chapter 12) would be a more appropriate in



that instance. Taking the contextual point further and thinking about the full range of human capability, there are certain user groups (along the capability spectrum) where methods other than keeping a diary would be more appropriate.

Diary studies are essential focused on change over time. If your research isn't about change over time, they may not be suitable.

## When to do a diary study

Diary studies are useful when you want to understand long-term behaviours such as:

- *Habits*: what time of day do users engage?
- *Usage scenarios*: in what capacity do users engage? This data can be used for scenarios in usability testing in subsequent research.
- *Attitudes and motivations*: what motivates people to do some specific thing? How are they feeling and thinking?
- *Changes in behaviours and perceptions*: how learnable is a system? How loyal are people over time?
- *Customer journeys*: what is the typical customer journey and cross-channel user experience as participants interact with your organization using different devices and channels? What is the cumulative effect of multiple service touchpoints?

Diary studies are also useful for:

- Tracking how users complete a long process that is likely to take several days or more, such as shopping for a large/expensive item (eg, a house).
- Discovering what motivates users to initiate certain actions.
- Determining how your product/service fits into regular habits.
- Assessing retention.

The focus of a diary study can range from very broad to extremely targeted, depending on the topic being studied. Diary studies are often structured to focus on one of the following:

- *A specific thing*: understanding all interactions over a particular time.
- *General behaviour*: gathering general information about user behaviour.
- *A specific activity*: understanding how people complete specific activities.
- *General activity*: understanding how people complete general activities.
- *Expectations, mind-sets, moods and social or physical contexts*: a diary study can capture these influences, shedding light onto how the user experience in each time span has formed; nothing is done in a vacuum.

Diary studies are often used in combination with contextual inquiry (Chapter 13) or user interviews (Chapter 9). They are used to delve more deeply into the habits and behaviours of your users. Diary studies are longitudinal and timeframes might range from two weeks to two months. It depends on what you are investigating and how long you think it may take to observe patterns of behaviour that reflect common, or less common, habits or routines (see Bryant, 2014; Flaherty, 2016; Lallemand, 2012; Moule, 2016).

## Effort required to do this kind of research

Diary studies require time and effort to develop the skills required to run them, to analyse the data captured and understand what insights it provides. If you want to start using diary studies in your work, it may be best to start small and simple.

Depending on the scope of your diary it also takes participants' time and dedication compared to, say, a 30-minute interview. This has all kinds of connotations. Who are you recruiting? Is this method the best for both you and the participants? It's not a method to be taken lightly, given the commitment in time and effort.

To ensure you get the level of involvement you need from participants, provide an incentive that will keep them engaged. This compensation is typically much more than you would offer for a 60-minute usability test. Consider offering the incentive in instalments as participants reach specific milestones to keep them motivated throughout the duration of the study.

## How to do a diary study

### *1 Planning and preparation*

As with all research, first you need to scope the objectives of the project, define the focus of the study and the long-term behaviours that you want to understand. You need to:

- Specify a timeline for the study to run.
- Select data collection tools for participants to use.
- Identify who you need to participate in the research and recruit them. You'll probably only need between four and six of the right participants per user group.
- Prepare instructions or support materials.

#### How long should the study be?

The period of time can either be set (eg, four weeks) or you can monitor the collected data until you have what you need. In practice, a set period of time often works better as it may be difficult to find participants to sign up to an open-ended study.

#### Recruiting participants

Since diary studies require more involvement over a longer period of time, be extra prudent in the recruiting process. Let participants know what is involved and expected of them upfront. Ask screening questions that will help you gauge the level of commitment you will get from them during the study, and be sure to confirm they will be available for the entire study period. Aim to recruit more participants than you need: a 15–20 per cent drop-out rate is normal as

diary studies last longer than other types of research and need more involvement.

### Conduct a pilot study

Diary studies can take quite a bit of time to plan and conduct, so it's helpful to conduct a short pilot study first. The pilot study does not need to be as long as the real study, but it's worth testing your study design and related materials (Flaherty, 2016; Webcredible, 2011).

## ***2 The pre-study briefing***

Take time to get participants ready to record their data. You can do this by scheduling a meeting or phone call with each participant to discuss the details of the study:

- Introduce the project aims and reasons for this research.
- Walk through the recording schedule and discuss expectations.
- Provide key dates for contact and follow-up and the contact details of the main researchers involved for any questions.
- Discuss the tools they will be using and be sure all participants have familiarized themselves with the technology.
- Give data capture instructions, including when to record data (you can set minimum entry expectations, for example at least two entries per week) and a list of questions that each diary entry should cover.
- You could give the participants an example diary entry depending on the complexity of the data you are capturing (be aware this can skew the data: all the participants' data could look like the example you give).

### Logging period

To make data reporting effective, it helps to be as specific as possible about what information you need the participants to record. At the same time, reassure them that they can use the style and method to record that works for them within the framework you have set. There is going to be natural variation and you need the participants to find

a comfortable way to record the data, otherwise they are not going to do it. Also, uncovering the unexpected in these variations is what user research is all about!

There are various collection techniques and low- and hi-tech tools to support them. The format and technique you want to use will depend on the type of data and insight you want to capture and the time you have to analyse it. To choose the most effective technique consider the context and the type of participants you are working with: what are they going to be able to use most easily in their situation?

In *in-situ logging*, when participants engage in a relevant activity, they report important details about it immediately (or as soon as possible). As such, it is best used in situations where you don't think there will be a large volume of diary entries occurring or large amounts of data to be captured on a regular basis (Lallemand, 2012).

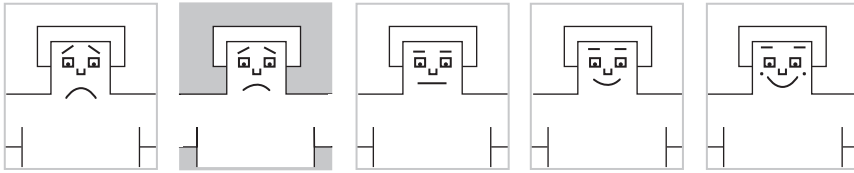
A less intrusive way of logging activities is the *snippet technique*, where participants only record short snippets of information about activities as they occur. Then, at the end of each day, or when participants have time, they elaborate on each snippet by providing additional details about the activity. You can consider asking participants to fill in a questionnaire to expand on their snippets, so you get specific and consistent insights about each snippet. You may want to use a more open and fluid format that allows the participants to reflect on their snippets (Lallemand, 2012).

Diaries may be open format or highly structured:

- In *open diaries* participants record activities and events in their own words, which can encourage reflection and contemplation.
- Highly *structured diaries* have closed questions and are pre-categorized to capture precise information.
- A mixed approach is often adopted to collect both qualitative and quantitative data.

You may want to consider using non-verbal cues in your data capture. There are a few different ways to do this. Participants can take photos to explain their activities and highlight things that stood out for them across the course of their day. You can gain better insight into the users' mindset than words alone offer. You can capture emotional responses on a non-verbal scale, such as that shown in Figure 10.1.

**Figure 10.1** The Self-Assessment Manikin is a non-verbal scale to measure emotions, Lallemand, 2012



**SOURCE** M Bradley and P Lang (1994). Measuring emotion: The Self-Assessment Manikin and the semantic differential, *Journal of Behavioral Therapy & Experimental Psychiatry*, 1, 49–59

## Check in with participants

Getting the insight you need will take some involvement with participants throughout the study. Plan to check in with them or give periodic reminders as needed (each day or every few days). Let participants know upfront that you will be reaching out throughout the study and agree a method of communication, so you can give encouragement or ask for clarification without being overly intrusive.

## 3 Post-study interview

After the study, evaluate all the information provided by each participant. Plan a follow-up interview to discuss logs in detail. Ask probing questions to uncover specific details needed to complete the story and clarify as needed. Ask for feedback from the participants about their experience of taking part in the study, so you can adjust your processes for the next time (see Flaherty, 2016; Lallemand, 2012; Moule, 2016; Webcredible, 2011; Weston, 2017).

## Diary study tools

We've had a look at the different collection techniques, and there are various and low- and hi-tech tools to support them, depending on what you are capturing and who your participants are. Is your tool of choice a comfortable way of communicating for all participants?

## ***Paper diaries***

These are the traditional type of diary recording method and are considered the most natural and personal. They are good because they can be used by participants with all levels of technical ability; they can be used at the same time as digital devices; they're very portable and can be used to capture events as soon as they happen. However, they do have some limitations:

- Having to wait for the diary to be returned by the participant before starting analysis.
- Written accounts don't necessarily capture rich experiences in the same way that audio or video do.
- Handwritten notes aren't always easy to read, and transcribing, if required, can be time-consuming.

### **Top tip**

*Paper diaries should include the participant's name, instructions for capturing entries and details of when and where to return the diary so they are continually reminded of it during the process.*

## ***Digital diaries***

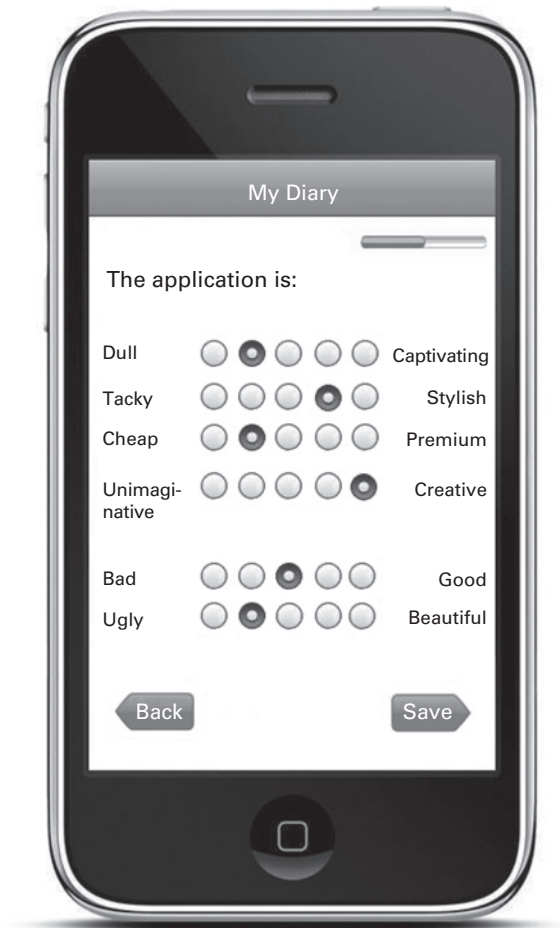
You can ask participants to submit diary entries digitally, usually at the end of each day. There are many tools to do this:

- e-mail;
- Yammer/Evernote and other collaboration tools;
- shared Google Documents for written content;
- shared Google Drives for uploading things like video and audio diary entries;
- a Twitter feed; where participants can send a text message or tweet to a private twitter account;

- Facebook posts to a private group;
- online questionnaires;
- digital customer-insight tools such as FocusVision or 7daysinmylife.

Figure 10.2 is an example of a digital customer-insight tool used in a diary study that involved *in situ* logging. Figure 10.3 is another example of a digital customer-insight tool, this time one employed in a diary study that used the snippet technique.

**Figure 10.2** AttrakDiff scores illustrating how the UX of a mobile application changed over a period of ten days, Lallemand, 2012





**Figure 10.3** Snippets captured during the day serve as memory aides for full diary entries in the evening

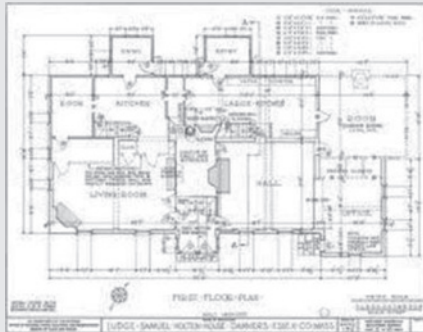
## E-DIARY

### Snippets of the day

*Text snippet recorded on Friday, Feb 17 at 02:13 am*

*Hard consult plan on iphone. Light & Noise++*

*Picture snippet recorded on Friday, Feb 17 at 02:18 am*



**Complete the diary entry**

**SOURCE** Lallemand, 2012

### Top tip

*You will sometimes need to ask follow-up questions and prompt for additional detail, but with online collaborative tools it's good to be wary of interacting too much with participants, as it may alter their thoughts and actions (Flaherty, 2016; Webcredible, 2011).*

## **A mixture**

Being flexible and allowing participants to use different diary capture methods is better for the participants. However, bear in mind that having to analyse different types of diaries can complicate the analysis process.

## **References and further reading**

- Bradley, M and Lang, P (1994) Measuring emotion: the self-assessment manikin and the semantic differential, *Journal of Behavioral Therapy & Experimental Psychiatry*, 1, pp 49–59
- Bryant, A (25 June 2014) How to Get Feedback Over Time with Diary Studies. User Testing Blog. Available from: <https://www.usertesting.com/blog/2014/06/25/how-to-get-feedback-over-time-with-diary-studies/> (last accessed: 21 May 2017)
- Flaherty, K (5 June 2016) Diary Studies: Understanding Long-Term User Behavior and Experiences. Nielsen Norman Group. Available from: <https://www.nngroup.com/articles/diary-studies/> (last accessed: 21 May 2017)
- Lallemand, C (August 2012) Dear Diary: Using Diaries to Study User Experience, © UXPA, (2012) Reprinted from *User Experience Magazine*, 11, 3, <http://uxpamagazine.org/dear-diary-using-diaries-to-study-user-experience/> (last accessed: 21 May 2017)
- Moule, J (19 May 2016) Use a Diary Study to Extend Your UX research. UX Mastery. Available from: <http://uxmastery.com/diary-study-extending-ux-research/> (last accessed: 21 May 2017)
- Webcredible (2011) Diary study guide: How to get the best results. Webcredible. Available from: <https://www.webcredible.com/blog/diary-study-guide-how-get-best-results-diary-study-research/> (last accessed: 21 May 2017)
- Weston, D (2017) 6 things to consider when setting up a UX diary study. Spotless. Available from: <https://www.spotless.co.uk/insights/6-things-for-ux-diary-study/> (last accessed: 21 May 2017)

# Information architecture validation

Does the structure of your information work for your users?

## What is information architecture?

Information architectures (IA) are structures of information. The most common example we will be using is the organizing and labelling of website (and intranet) content and functionality. IA covers both the very broad (overall site structure and navigation) and the very detailed (labelling and content).

## What information architecture validation is good for

An IA validation exercise can be used to test existing structures that you have identified through insight and analytics as not being effective. IA validation can be used to assess the draft structure created after a card sorting exercise with a large group of users. These draft structures may be adding, removing or amending existing content in some way, or they could be an entirely new structure. If you suspect the issues being experienced are related to poor labelling and poor content structure, an IA validation exercise allows you to focus on this, without consideration of design elements.

## What information architecture validation is not good for

If you suspect that interaction or visual design has something to do with the problems being experienced, then usability testing is the way to go. IA validation isn't a research method to use in isolation; generally it's used in combination with card sorting, usability testing or content audits, for example.

## When to do information architecture validation

A validation exercise is usually done after card sorting (see Chapter 7). Card sorting is often done with a small number of users and the results will give you a better idea of how something could be structured. A validation exercise will allow you to validate or invalidate the draft structure with a larger group of users. This kind of exercise can be used early and often: it's quick and easy to set up, run and analyse. You don't have to wait for a prototype to be created, or you can do this in parallel with the design process. In an ideal world IA work will start before interaction and visual design work, but this is often not the case. When it's done properly, IA doesn't just happen at the beginning of the project: it progresses from beginning through middle to end (O'Brien, 2016e).

If your analytics aren't showing the customer journeys you expected or wanted, doing a validation exercise can help you understand how people are navigating through the site; this is an alternative to remote unmoderated usability testing. A draft IA can be created and tested immediately after a content audit, when it has been decided which content will be added, updated or deleted (O'Brien, 2016f).

## Effort required to do this kind of research

It takes a fair amount of time and effort to become familiar with IA, if it's a new subject for you. When starting out, you may want to find

someone to collaborate with who knows more about it so that you can learn from them.

Online tools are required to do this kind of research. Although they aren't particularly expensive, it may be a barrier. Do some reading on how much it is likely to cost you to do this, particularly as it's the kind of research that's best done iteratively and in conjunction with other research methods.

## How to do an information architecture validation

### *Preparing your IA validation exercise*

As with all user research methods, good preparation is the key to gathering useful data.

#### Recruiting participants

Depending on what you are testing, this exercise might be relevant to all your users and potential users, or only a subset. It's worth targeting the right participants, as discussed in Chapter 8 on surveys and Chapter 3 on who should be involved in your research.

#### Test materials

- An introduction to the exercise to send to participants as well as any preliminary survey questions you want to ask them.
- An information architecture, whatever stage of development it's in. You can always put content/items in more than one place if you are unsure where they belong.
- A text version of your IA: either in a text field or on a spreadsheet (a simplified version of the structure). This is the format that tools tend to use to create a clickable navigation of your structure without visual design (as shown in Figure 11.1).
- A representative task list for participants to complete. There is no right number of tasks, but the tasks should be representative of the area that is the focus of your research. Optimal Workshop, an expert in this area, recommends no more than 10 tasks per exercise

**Figure 11.1** Information Architecture created in a spreadsheet

8	BikeSite		
9		For commuters	
0			Bike routes
1			Skills training
2			Cycling and the law
3			Tips for commuting
4		For families	
5			Places to cycle
6			Learning to ride
7			Safety tips
8		For roadies	
9			etc.
0		For mountain bikers	
1			etc.
2		For cycle tourers	
3		News & events	
4			

**SOURCE** O'Brien, 2016a

(McKay, 2016). You'll need to know the correct answers to each of your tasks so that you can analyse various success metrics.

- Post-exercise survey and closing statement: you may want to get some qualitative data on the participants' experience of the exercise, thank them and share what's going to happen next.

## ***Deciding what to test***

You may not want to test the whole of your IA. If you have multiple user groups with specific interests you may want to provide separate exercises for each group, rather than have everyone test everything. If you have a very large structure, it could be too much information in one go for participants. The main problem with tree-testing very large structures is not technical; it's about the participants' experience of the test (O'Brien, 2016d).

## ***How big should the IA be?***

Optimal Workshop's advice on the size of structure to test (O'Brien, 2016d) is as follows. If testing a small or medium-sized structure

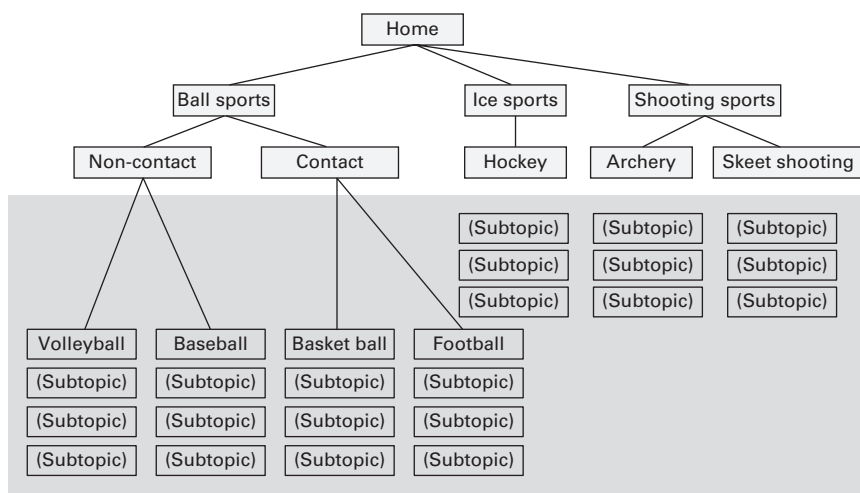
(typically less than 500 items), you can normally test the whole tree; it's not big enough to cause any unwanted test effects. If the tree is large (500–1,000 items) you can:

- Test the whole structure, but degrade the participants' experience.
- Test a 'cut-down' version of the structure, for example focus on how well the top three or four levels work. Participants should then have time to do a larger number of tasks in a shorter total time.
- Cut the structure down to size by removing sections that are not important to the test.
- Opt to test only a particular subset of the whole structure, for example the Culture section of a newspaper site.

### How to cut down your IA

The simplest way to reduce a large structure to a more manageable size is to cut everything below a certain level, as shown Figure 11.2. Bear in mind that when reducing the size of the IA in this way, you'll only find out if participants were able to get to the right general area, rather than a specific place (O'Brien, 2016d).

**Figure 11.2** Cutting down your IA option 1



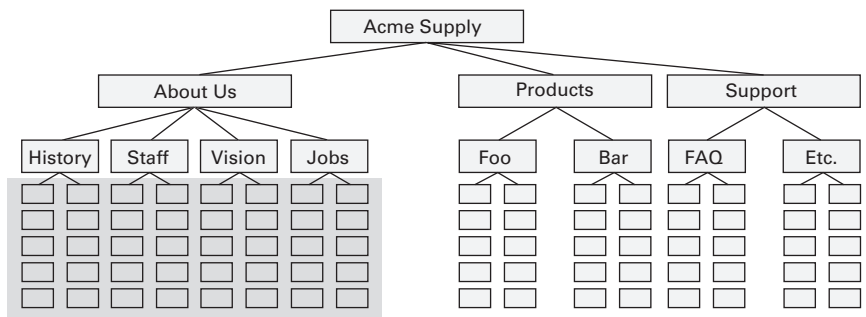
**SOURCE** O'Brien, 2016d

If there's a section that you don't intend to test, you can chop it while leaving other sections (the ones we really want to test) at their full depth of topics (O'Brien, 2016d) as shown in Figure 11.3. Alternatively, you can select a subset of the structure, if you are particularly interested in one area (O'Brien, 2016d). In this case, you should recruit participants who have an interest or expertise in this particular area, as seen in Figure 11.4.

What labels to include and exclude?

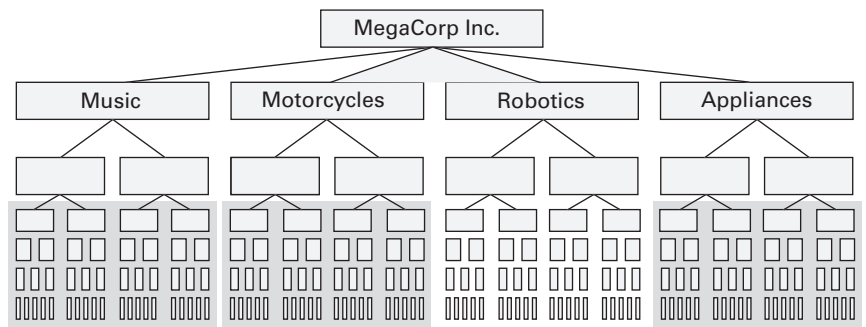
Optimal Workshop's advice is to include global navigation items, unless they're very minor and exclude links or shortcuts that are

**Figure 11.3** Cutting down your IA option 2



**SOURCE** O'Brien, 2016d

**Figure 11.4** Cutting down your IA option 3



**SOURCE** O'Brien, 2016d



not in the global navigation (eg, overview). You should also exclude ‘escape’ headings like Search, Contact Us, Help, etc (O’Brien, 2016c).

## ***Running the test***

It is worth piloting the exercise to make sure it’s working or whether it needs refining before it’s sent out to a large number of participants. Participants are normally contacted by e-mail with the link to the exercise; it’s worth specifying a timeframe for the exercise and stating this clearly to the participants. Keep an eye on the rate of response. It may be worth sending a reminder e-mail halfway in the time period to encourage those who haven’t completed the exercise to do so (O’Brien, 2016b).

## **Survey tools**

This is an exercise that is done online remotely using tools such as Treejack (<https://www.optimalworkshop.com/treejack>) or C-inspector (<http://www.c-inspector.com/>).

## ***References and further reading***

- McKay, A (18 May 2016) Treejack takes a trip with American Airlines. Optimal Workshop. Available from: <https://blog.optimalworkshop.com/treejack-takes-trip-american-airlines> (last accessed: 21 May 2017)
- Nodder, C (7 July 2013) UX Foundations: Information Architecture. Lynda.com from LinkedIn. Available from: <https://www.lynda.com/Web-User-Experience-tutorials/Foundations-UX-Information-Architecture/122427-2.html> (last accessed: 21 May 2017)
- O’Brien, D (19 May 2016a) 5 – Creating trees. Tree Testing for Websites. Available from: <https://treetesting.atlassian.net/wiki/display/TTFW/5+-+Creating+trees> (last accessed: 21 May 2017)
- O’Brien, D (19 May 2016b) 8 – Setting up a test. Tree Testing for Websites. Available from: <https://treetesting.atlassian.net/wiki/display/TTFW/8+-+Setting+up+a+test> (last accessed: 21 May 2017)
- O’Brien, D (19 May 2016c) Which headings to include/exclude? Tree Testing for Websites. Available from: <https://treetesting.atlassian.net/wiki/pages/viewpage.action?pageId=164177> (last accessed: 21 May 2017)

- O'Brien, D (19 May 2016d) Which part of the tree. Tree Testing for Websites. Available from: <https://treetesting.atlassian.net/wiki/pages/viewpage.action?pageId=164168> (last accessed: 21 May 2017)
- O'Brien, D (21 July 2016e) Tree testing in the design process — Part 1: The research phase. Optimal Workshop. Available from: <https://blog.optimalworkshop.com/tree-testing-design-process-part-1-research-phase/> (last accessed: 21 May 2017)
- O'Brien, D (17 October 2016f) Tree testing in the design process — Part 2: The design phase. Optimal Workshop. Available from: <https://blog.optimalworkshop.com/tree-testing-design-process-part-2-design-phase> (last accessed: 21 May 2017)
- O'Brien, D (4 May 2017g) Tree Testing for Websites. Available from: <https://treetesting.atlassian.net/wiki> (last accessed: 21 May 2017)
- Resmini, A (2011) *Pervasive Information Architecture: Designing cross-channel user experiences*, Morgan Kaufmann, Burlington
- Rosenfeld, L, Morville, P and Arango, J (2015) *Information Architecture. For the web and beyond*, 4th edn, O'Reilly Media, Sebastopol
- Spencer, D (13 April 2011) A Practical Guide to Information Architecture Second Edition. UX Mastery. Available from: <http://uxmastery.com/practical-ia/> (last accessed: 21 May 2017)
- UX Booth (22 December 2015) Complete Beginner's Guide to Information Architecture. Available from: <http://www.uxbooth.com/articles/complete-beginners-guide-to-information-architecture/> (last accessed: 21 May 2017)

# Ethnography

# 12

Observing how people behave  
in the real world

## What is traditional ethnography?

Ethnography is a field of science that studies people and culture. It is also used in user research to study people and groups as they go about their everyday lives, capturing natural and nonverbal reactions and unanticipated scenarios.

## What ethnography is good for

Ethnography is designed to uncover things that you're unaware of, collecting real-world data in real-world circumstances. It is observing, documenting and analysing behaviour and is a valuable tool for discovering and understanding user needs. Ethnography can be used to understand:

- how people incorporate things into their daily life;
- authentic behaviour;
- how your and other organizations' products/services interact in people's lives.

If your work is focusing on how a particular team works, ethnographic observation will allow you to understand its interactions with other teams across the organization. Your research may include their interactions with friends and family, customers and the public, depending on the scope of your research.

## What ethnography is not good for

Ethnography is not designed for quick turnaround projects. Ethnography studies are expensive in terms of time, resources and skills. They require a lot of planning and coordination to conduct even a few meetings with participants. It takes time for participants to get used to the presence of an observer, so short ethnographic projects won't necessarily yield authentic results, making them unsuitable for working in agile sprints.

---

### **CASE STUDY** Ethnography in airport design

Ethnographic research has been extremely useful in designing airports in several aspects: where to put the electrical sockets and USB charging ports, near seating areas or built into the seating itself, so people don't have to sit on the floor to charge their devices. Ethnography has also been important in airport wayfinding: where to place signage in busy areas, with many people carrying lots of luggage and trying to keep a group of people together (Larsen, 2016).

---

## When to use ethnography

Observing people in the real world is particularly useful in the early stages of a project, as you can gain deep insight into the scope of the problem and the context in which it exists. Learning about what is really going on can help you create realistic rather than idealized products/services. It also helps in understanding the emotional values people connect to in your product or service.

## Effort required to do this kind of research

Ethnography is labour-intensive; it requires complete immersion in real-world situations and social dynamics. Information and results are highly dependent on observations and interpretations so the data quality will be affected by your skill level. If you are involved in complex

projects from the problem-scoping stage, working with users who have specialized needs, it's worth investing time in honing your ethnography skills. If you've used other research methods the skills you have gained will help you when starting on your ethnographic journey.

## How to do ethnography

As with all research techniques, you need to clearly define your objectives so as to understand what to observe and note; ethnographic research objectives tend to be relatively broad. Emerson *et al* (2011) give some suggestions on information that can be captured: *descriptions of the scene*: the physical environment; the layout of workstations, desk space, clutter, break areas; and *key events and incidents*: what happened? Who did what? What are your impressions? What are team members' thoughts about and interpretations of these events? How do they feel about them?

Try to make it clear in your notes what your thoughts are and what your evidence is. You should be asking questions at appropriate times to clarify your understanding of the situation, context and interactions that are taking place. There is a balance to be struck that comes with practice: interrupting just enough to get the insight you need but not disrupting the dynamics you are observing.

Analysis of the data is also labour-intensive as a large volume of data is collected during ethnographic research. Colville Hyde (2009) suggests doing analysis throughout the data collection process, not just at the end, allowing you to react and adapt to events so you don't miss opportunities to gain insights into user behaviour.

## Extending your ethnographic reach with mobile devices

### *What is mobile ethnography?*

I like to think of mobile ethnography as a combination of ethnographic observation and diary study. Mobile ethnography makes use of communication and recording technology to capture ethnographic data.

Developments in technology allow for new research techniques: the emphasis switches from the researcher actively observing in real time to the participant recording the data. Participants are asked to record their thoughts, feelings and decisions on a regular basis through guided journal entries, shooting video, responding to prompts and capturing sound bites as they're happening, all on their smartphone or by wearing a clip camera that takes a photo every 30 seconds (Cribbitt, 2015; Korostoff, 2014).

### ***When to use mobile ethnography***

Traditional ethnography requires you to be present with your subjects to observe behaviour. Mobile ethnography can be used to enhance your ethnographic observation and extend your reach by having the participants record data and observations when you are not there. You can ask them to answer contextual questions during these tasks to increase your understanding of the impact of time, environment, social pressure, motivation and previous experience. You can use interviews to gain contextual understanding and feedback using the data captured from different events and moments (Hudson, 2016).

### ***How to do mobile ethnography***

There are two main approaches to mobile ethnography. The *passive approach* to capturing the participants' experiences without any conscious action on their part will provide information on their natural behaviour, but may miss out on some detail. The *active approach* gives participants the ability to document their experiences as they see fit or on prompt (as in a diary study). It captures detail but suffers from forcing the participants to actively break their flow and decide what to document. You can take a mixed approach, combining active and passive techniques.

## **Ethnography tools**

Traditionally, all you need is pen and paper. However, there are specific mobile ethnography tools you can use to help capture data.

## ***The narrative clip***

The narrative clip is a small automatic camera. Participants clip it onto their clothing and forget about it. The clip captures a constant stream of pictures, taken every 30 seconds, with a time, date and location tag. A smartphone app collates all the pictures into an animated timeline, which can be reviewed with participants during an in-depth interview to confirm specific details and to draw out insights. Although used for passive data capture, the participant can choose to actively capture photos in significant moments. However, the narrative clip does have some disadvantages such as the photos having a fixed perspective and being unsupported by experience ratings or descriptions (Bailey, 2014).

## ***Experiencefellow***

Experiencefellow allows participants to document their experiences using a smartphone app. For each touchpoint they can provide a title, experience rating, description, picture, video and location. The participants' data is synched with a web-app, which presents their touchpoints and experience ratings along a timeline. This can be reviewed with the participant during an in-depth interview. It can be used to create a valuable experience map that highlights peak experiences, opportunities for enhancement, and pain points that need addressing (Bailey, 2014).

## ***Other tools***

New tools are coming out all the time; keep an eye on developments. You can investigate SurveySwipe (<http://www.surveyswipe.com/>) as another option.

## ***References and further reading***

- Bailey, J (7 November 2014) Mobile Ethnography. Bunnyfoot. Available from: <http://www.bunnyfoot.com/blog/2014/11/mobile-ethnography/> (last accessed: 21 May 2017)
- Boehm, N (21 June 2010) Ethnography in UX. UX Matters. Available from: <http://www.uxmatters.com/mt/archives/2010/06/ethnography-in-ux.php> (last accessed: 21 May 2017)

- Colville Hyde, B (4 November 2009) Using ethnography to improve user experience. CX Partners. Available from: [https://www.cxparkers.co.uk/our-thinking/using\\_ethnography\\_to\\_improve\\_user\\_experience/](https://www.cxparkers.co.uk/our-thinking/using_ethnography_to_improve_user_experience/) (last accessed: 21 May 2017)
- Cribbett, S (16 June 2015) Using Mobile Ethnography to Understand What People Do, Think and Feel. Dub. Available from: <https://www.dubishere.com/using-mobile-ethnography-to-understand-what-people-do-think-and-feel/> (last accessed: 21 May 2017)
- Emerson, R M, Fretz, R I and Shaw, L L (2011) *Writing Ethnographic Fieldnotes*, 2nd edn, The University of Chicago Press, Chicago, IL
- Herzon, C, Skrobe, R, Wilson, C and Battle, L (2009) Ethnography. The Usability Body of Knowledge. Available from: <http://www.usabilitybok.org/ethnography> (last accessed: 21 May 2017)
- Hudson, P (31 May 2016) Mobile Ethnography in Market Research: Fact & Fiction. FlexMR. Available from: <https://www.flexmr.net/blog/qualitative-research/2016/5/mobile-ethnography.aspx> (last accessed: 21 May 2017)
- Korostoff, K (4 February 2014) Mobile Ethnography: The New 'Organic' Market Research Tool to Try in 2014. Research Rockstar. Available from: <http://www.researchrockstar.com/mobile-ethnography-the-new-organic-market-research-tool-to-try-in-2014/> (last accessed: 21 May 2017)
- Larsen, B (1 June 2016) Building Better CX through Ethnography. UX Magazine. Available from: <http://uxmag.com/articles/building-better-cx-through-ethnography> (last accessed: 21 May 2017)
- Weston, D (2017) When and How to Use Ethnographic Research. Spotless. Available from: <https://www.spotless.co.uk/insights/ethnography-when-and-how/> (last accessed: 20 August 2017)



# Contextual inquiry

13

Interviewing people in their own environment

## What is contextual inquiry?

Contextual inquiry can be described as a hybrid of user interviews and ethnography; it consists of a semi-structured interview method to obtain information about the context of use, with the participants then being observed and questioned while they work in their own environments. This makes the data for analysis more realistic (Herzon *et al*, 2010). A contextual inquiry requires participants to take the role of an expert; they are more active than in other research methods as they lead the session by demonstrating and talking about their tasks (Ross, 2012).

## What contextual inquiry is good for

Contextual interviewing can help you to reveal information and understanding that users may not be aware of, and capture realistic and detailed data by observing users in their natural environment (Interaction Design Foundation, 2016). It combines the benefits of observation and in-depth conversation.

When planning for research with users of assistive technology and those with various access and skills needs, it is extremely useful to visit them. This is not only for their convenience and comfort but also for observing how they arrange their environment to meet their

needs, including the technology they are using to access your product/service and what challenges they face in this environment.

## What contextual inquiry is not good for

If you are interested in researching change over time, diary studies and ethnography are more appropriate and sustainable. Contextual inquiry requires more time and effort than usability testing in an artificial setting or using interviews in isolation so, if your timescales are particularly tight, it may be more practical and pragmatic to do research remotely or in an artificial setting convenient to you.

## When to use contextual inquiry

Contextual inquiry is used to discover parameters, criteria, features, or process flows for design or redesign (Webcredible, 2011). Contextual inquiry is useful when it's important for you to understand the context of use for your product or service. If your participants can't travel to you and you are able to travel to them it's worth considering using contextual inquiry as your research method. Rather than meeting participants in an artificial setting close to their location, visit them in their actual location to see the reality of their environment and what they are trying to do in it.

---

### **CASE STUDY** Example of contextual inquiry

I have fond memories of a particular contextual inquiry research project that I worked on, probably because I got to wear a white lab coat and safety specs. 'Props' aside, this case shows how observing the environment (the context) reveals insights that I would not have uncovered in an artificial setting.

A pharmaceutical company wanted to look at the usability of its online index and guidelines. This was an index of procedural guidance on how to make compounds and solutions, which had to be made in a specific way to meet industry standards. The company was aware that its index wasn't optimal but

couldn't articulate in more detail what was 'wrong'. As this online index was being used in a very particular setting, for a specific set of people, it made sense to choose contextual inquiry to understand how it was being used and what the issues being experienced were.

This research uncovered many interesting issues with the online index. Yes, there were usability issues with the design, structure and search function, but it also turned out that there weren't any computers in the lab where the compounds and solutions were created. The online index was accessed in a separate office, so the lab-based workers were printing out the step-by-step instructions they needed and were laminating the printouts in case acid (or something else) was accidentally dripped on them.

We are all busy people and we all have shortcuts and workarounds to help us be more efficient in our work. This kind of workaround had not been anticipated by the company management or the people who had created the index. This set-up ran the risk of people not checking when a method had been updated and therefore not following the correct procedures. As this was a serious issue it led to a rethink of the office/lab set up as well as iteratively improving the online index so it could be better utilized.

I should say that this project was undertaken before tablet devices were so ubiquitous, in case you are thinking it sounds quite old fashioned!

---

## Effort required to do this kind of research

The learning curve involves developing similar skills to those used in interviewing and observation and, potentially, usability testing, depending on the scope and objectives of your research. As with every method, there are drawbacks. Contextual research is time- and resource-intensive: you are visiting users in their own environment and conducting in-depth observations, which takes time and planning, plus budget for travel (Interaction Design Foundation, 2016).

You may want to consider having another person with you, so that you can discuss what you observed and the possible implications. It also means that you have two sets of notes (ideally) and are less likely to miss things. However, this may not always be appropriate, so you need to be prepared to do it on your own.

You'll need to factor in travel time to the participant's location. Try to limit visits to two per day. This may sound like a light

workload, but it's really important to have time to write up your notes and to consider and discuss what you've learnt after each visit.

## How to do contextual inquiry

This technique is generally used at the beginning of the design process and is good for getting rich information about work practices and tools, and the social, technical and physical environments. According to Herzon *et al* (2010), the four principles of contextual inquiry are:

- 1 *Focus*: your plan for the inquiry, based on a clear understanding of your purpose.
- 2 *Context*: go to the participants' location and watch them do their activities, eg working.
- 3 *Partnership*: talk to participants about their work and engage them in uncovering any unarticulated aspects.
- 4 *Interpretation*: develop a shared understanding with the participants about the aspects of work that matter.

### Planning a contextual inquiry

Planning a contextual inquiry involves identifying, locating and getting consent from the appropriate users and stakeholders you want to interview.

#### Participants

Include at least two people from each user group. Each contextual inquiry session is done on an individual basis, but only including one person from each group means you won't be able to identify what is or isn't common behaviour.

#### Time required and scheduling sessions

An important aspect of scheduling is that you probably want to see people on a typical or busy day, whereas participants will want to see you on a quiet (and perhaps unrepresentative) day. You'll need

about two hours for one session, but during the session it may become evident that this isn't enough. You may need to schedule extra sessions to avoid fatiguing the participant and to observe tasks when they normally occur.

## ***Running a contextual inquiry session***

There are different parts to a contextual inquiry:

- *Know your research questions and goals:* you don't want to just show up and watch. You'll make the most of the time available by having a standard set of questions that you can use to get to know this participants' background and their typical challenges and goals.
- *Introduction:* introduce yourself, the purpose of the research and any other relevant information. You can ask if the interview can be recorded and when recording should stop/start. Offer assurances on confidentiality of the participants' data and ask for permission to use the data anonymously as part of sharing research findings, and any other consents you may need (see Chapter 2 on ethical and legal issues).
- *Semi-structured interview:* used to get an overview of the participants' work. The relatively loose structure allows you to follow interesting lines of inquiry as they come up. The important thing is to go with the participants' flow, stay focused on the tasks the users are carrying out, and discuss any queries as you go along (without interrupting natural behaviour too much).
- *Active observation:* it is important to tell the participants that you want to learn from them by watching and occasionally interrupting. Make sure that you have agreed with them when you can interrupt to ask about what's happening, and when you will not disturb their work, for example during interaction with customers. When observing the users, remember your focus. You may need to ask the participants to do certain asks that are important to your objectives, but are irregular. Note down as much as

possible, even if you are not entirely convinced at the time that it's relevant to your objectives; it's all part of the bigger picture.

- *The wrap-up:* during interviews summarize what you have learnt. Be attentive to participants' reactions to your summary; they will not always tell you that you are wrong, so you have to figure it out yourself. If you didn't get it right, ask them questions and build the story with them.

Here are some important tips:

- Try to avoid interpreting as you listen. Spend time analysing and coming up with implications after the interview and observation session. This can be difficult as it is normal human behaviour to process and analyse while taking notes. A good tactic is to separate facts from any assumptions or interpretations in your notes by using a different colour highlighter, or using quotation marks to indicate the words used by your participants.
- If customers are part of the participants' interaction, make sure that you get their consent; if that is not possible, do not record.
- Contextual inquiries must take place where participants normally perform their tasks. If participants won't do a session in their usual context, politely cancel their session.
- Try to offer people the highest degree of anonymity. For example, I avoid using people's names in reports or documents. However, I also have to alert people in some cases that it may be possible for others to deduce who made particular comments. It's also the case that some people specifically don't want anonymity, and want their voices to be heard clearly, and perhaps acknowledged. You'll need to make your own decisions on how to deal with these factors.

It's worth reading through the interview and ethnography chapters – 9 and 12; see also Čengija, 2014; Gaffney, 2015; Interaction Design Foundation, 2016; Ross, 2012; Sauro, 2016, UsabilityNet, 2006; Webcredible, 2011.

## Tools

Before you go on site visits, there are a few things you need to prepare. If you are audio or video recording, you will need to make sure your equipment is fully functional. Be prepared to abandon recording if your interviewee is uncomfortable or reluctant.

## *References and further reading*

- Čengija, D (25 April 2014) Usability: What is contextual inquiry? UX Passion. Available from: <http://www.uxpassion.com/blog/usability-contextual-inquiry/> (last accessed: 27 May 2017)
- Gaffney, G (11 August 2015) Conducting Contextual Enquiry (or Site Visits). UX Mastery. Available from: <http://uxmastery.com/conducting-contextual-enquiry-or-site-visits/> (last accessed: 27 May 2017)
- Herzon, C, DeBoard, D, Wilson, C and Bevan, N (2010) Contextual Inquiry. Usability Body of Knowledge. Available from: <http://www.usabilitybok.org/contextual-inquiry> (last accessed: 27 May 2017)
- Interaction Design Foundation (September 2016) Contextual Interviews and How to Handle Them. Available from: <https://www.interaction-design.org/literature/article/contextual-interviews-and-how-to-handle-them> (last accessed: 27 May 2017)
- Ross, J (4 June 2012) Why Are Contextual Inquiries So Difficult? UX Matters. Available from: <http://www.uxmatters.com/mt/archives/2012/06/why-are-contextual-inquiries-so-difficult.php> (last accessed: 27 May 2017)
- Sauro, J (16 August 2016) The Essentials of a Contextual Inquiry. Measuring U. Available from: <https://measuringu.com/contextual-inquiry/> (last accessed: 27 May 2017)
- UsabilityNet (2006) Contextual Inquiry. Available from: <http://www.usabilitynet.org/tools/contextualinquiry.htm> (last accessed: 27 May 2017)
- Webcredible (1 September 2011) Contextual inquiry research: A guide. Webcredible. Available from: <https://www.webcredible.com/blog/guide-conducting-contextual-inquiry-user-research/> (last accessed: 27 May 2017)

# A/B testing 14

A user research technique to compare different options

## What is A/B testing?

A/B testing (also known split testing) is comparing two versions of the same thing to see which one performs better. You can compare two web pages by showing the variants (A and B) to similar visitors at the same time, helping you choose between different design and content options. Rather than deciding based on opinion, you have data. In an A/B test you only test one new thing at a time in order to find out which option is more effective for your users. Half of your visitors are shown the original version of the page (known as the control) and half are shown the modified version (the variation).

## What A/B testing is good for

A/B testing is used to replace gut feelings when deciding between two potential solutions. The winners in A/B tests are often surprising or unintuitive. Your goal with the test is establishing which option yields a better conversion rate, so don't reject the results because of your arbitrary judgement.

In an online setting, the types of content people test are extremely varied. Some of the many testing examples include:

- calls to action;
- headlines;
- images;



- display ads;
- layout;
- content structure;
- forms;
- e-mail copy;
- landing pages.

What your focus should be depends on your product/service. For instance, a media company may want to increase readership and the amount of time readers spend on its site, and to amplify its articles with social sharing. To achieve these goals, it may test variations on e-mail sign-up models, recommended content and social sharing buttons. A travel company may want to increase the number of successful bookings completed on its website or mobile app, or may want to increase revenue from add-on purchases. To improve these metrics, it may test variations of clickable homepage hero images, search results page and add-on feature design.

As further examples, an e-commerce company may want to increase the number of completed checkouts, the average order value, or number of sales, so it could test homepage promotions, navigation elements and checkout funnel components; while a technology company may want to increase the number of high-quality leads for its sales team, increase the number of free trial users, or attract a specific type of buyer. It may test lead-form components, free trial sign-up flow, homepage messaging and call-to-action.

## What A/B testing is not good for

If you want to test out a number of different features, in different combinations, all on one page, this is multivariate testing. A/B testing is limited to just one or two changes or versions of an item so is less valuable for assessing multiple variables.

A/B testing can identify which of two options performs better in some way, but it cannot tell you why. If you are interested in understanding why something performs better, you can use a combination of research methods to figure this out. A classic example would be

combining A/B testing with moderated usability testing, so you can watch participants use your product or service and talk to them about what does or doesn't work for them in a certain context.

## When to use A/B testing

A/B testing is useful when you want to choose between two variants. As visitors are served either the control or the variation, their engagement with each experience is measured and collected in an analytics dashboard and analysed through a statistical engine. You can then determine which experience had a positive, negative, or no effect on visitor behaviour.

## Effort required to do this kind of research

The effort required to do A/B testing is not just about learning the method; it's also understanding analytics and what patterns can be identified in them, and selecting useful things to A/B test (we are back to problem scoping again). This is a specific skillset: if you aren't a performance analyst or in a similar analyst's role, it's worth trying to learn from whoever does this in your organization. If you aren't able to do that, there are a lot of online resources available. If your organization uses Google Analytics for example, there is a wealth of online support resources to help you learn (<https://support.google.com/analytics#topic=3544906>); other analytics packages will provide similar resources. There are independent online analytics courses such as can be found at [https://www.lynda.com/allcourses?f=meta\\_topic\\_facet%3aAnalytics](https://www.lynda.com/allcourses?f=meta_topic_facet%3aAnalytics). There are consultancies that provide training if your organization needs to get to grips with analytics. Also, if you aren't the designer who is creating the variations to be tested, you will need to factor in coordinating and collaborating with whoever is undertaking that task.

In summary, if you aren't already familiar with analytics and your organization doesn't have A/B testing processes in place, setting up and running useful A/B testing won't necessarily be quick or easy. However, it is an iterative process and you will learn over time.

## How to do A/B testing

### *The test process*

It's a good idea to conduct A/B testing on a regular basis. In fact, it's a cyclical process: you redesign, test, redesign, and test again. As with any research method there is a process to be followed:

- 1** *Collect the data:* use your analytics for insight. Look for pages with low conversion rates or high drop-off rates. You may need to investigate new content, design or concepts, or adding a new feature, etc.
- 2** *Identify the goals:* your conversion goals are the metrics that you are using to determine whether or not the variation is more successful than the original. Goals can be anything from clicking a button or link to product purchases and e-mail sign-ups.
- 3** *Generate the hypothesis:* once you've identified a goal you can begin generating A/B testing ideas and hypotheses for why you think A will be better than B. What do you think will happen at the conclusion of your test? Once you have a list of ideas, prioritize them in terms of expected impact and difficulty of implementation.
- 4** *Create the variations:* you can use your A/B testing software to make the changes to an element of your product/service. Many leading A/B testing tools have a visual editor that will make these changes easy. Ensure you note down the changes you make for each variant.
- 5** *Conduct the test:* when will you do your test? Do you have known peaks and troughs in visitor volumes to consider? How long will you run it? There's no hard and fast rule for the amount a time a test should run for. A/B testing is not an overnight project. Depending on the amount of traffic you get, you may want to run tests for a few days or a couple of weeks, and you'll only want to run one test at a time for the most accurate results. Giving a test insufficient time can mean skewed results, as you don't get a large enough group of visitors to be statistically accurate. Running a

test for too long can also give skewed results, since there are more variables you can't control over a longer period. Be aware of anything that may affect your test results, so that you can account for any statistic anomalies when reviewing your results. If you're in doubt, it's perfectly reasonable to retest. Considering the impact A/B testing can have on your bottom line, it's worth taking a few weeks to properly conduct tests. Visitors to your site or app will be randomly assigned to either the control or variation of your experience. Their interaction with each experience is measured, counted and compared to determine how each performs.

- 6 *Interpret the results:* once your test has concluded, it's time to analyse your results. If your variation is a clear winner, go ahead and switch to that version. If not, start the process all over again. Your A/B testing software will present the data from the experiment and show you the difference between how the two versions of your page performed, and whether it is statistically significant.

Most tools will guide you through the process of setting up your test. Best practice in A/B testing includes the following:

- *Always test both variations simultaneously.* If you test one version one week and the second the next, you won't collect accurate data, as the variations weren't tested under the same circumstances. Always split traffic between two variations.
- *Wait for statistical significance.* Most A/B testing tools report statistical confidence.
- *Show repeat visitors the same variations.* Your tool of choice should have a mechanism for remembering which variation a visitor has seen. This prevents confusion, such as showing a user a different price or a different promotional offer.
- *Make your A/B test consistent across the whole website.* If you are testing a sign-up button that appears in multiple locations, a visitor should see the same variation everywhere. Showing one variation on page 1 and another on page 2 will skew the results.

## Tools for A/B testing

A number of tools are available for A/B testing, with different focuses, price points and feature sets. Here are some for you to investigate. Like any type of tool these will change and improve over time. If A/B testing is useful for you, keep an eye on developments in the field:

Google Analytics Optimizer: <https://www.google.com/analytics/>

Visual Website Optimizer: <https://vwo.com/>

Unbounce: <http://unbounce.com/>

Webtrends Optimize: <https://www.webtrends.com/products-solutions/optimization/>

Five Second Test: <http://fivesecondtest.com/>

Convert Experiment: <https://www.convert.com/>

Maxymser: <https://www.oracle.com/marketingcloud/products/testing-and-optimization/index.html>

Kissmetrics: <https://www.kissmetrics.com/>

Adobe Target: <http://www.adobe.com/marketing-cloud/testing-targeting.html>

## References and further reading

Armour, H (22 September 2015) What is A/B Testing? Digital Marketing Magazine. Available from: <http://digitalmarketingmagazine.co.uk/articles/what-is-a-b-testing/2597> (last accessed: 27 May 2017)

Chopra, P (2010) The Ultimate Guide To A/B Testing. Smashing Magazine. Available from: <https://www.smashingmagazine.com/2010/06/the-ultimate-guide-to-a-b-testing/> (last accessed: 27 May 2017)

Constine, J (29 June 2014) The Morality of A/B Testing. Tech Crunch. Available from: <https://techcrunch.com/2014/06/29/ethics-in-a-data-driven-world/> (last accessed: 27 May 2017)

Fung, K (10 December 2014) Yes, A/B Testing Is Still Necessary. Harvard Business Review. Available from: <https://hbr.org/2014/12/yes-ab-testing-is-still-necessary> (last accessed: 27 May 2017)

Kissmetrics (2011) A Beginner's Guide To A/B Testing: An Introduction. Available from: <https://blog.kissmetrics.com/ab-testing-introduction/> (last accessed: 27 May 2017)

- Koh, M (4 May 2016) How to do an A/B test. Optimal Workshop.  
Available from: <https://blog.optimalworkshop.com/how-to-do-an-ab-test> (last accessed: 27 May 2017)
- Kreimer, I (23 March 2017) A/B Testing Ideas. Optimizely Blog. Available from: <https://blog.optimizely.com/tag/ab-testing-ideas/> (last accessed: 27 May 2017)
- Rosenfeld, L (2011) *Search Analytics for Your Site. Conversations with your customers*, Rosenfeld Media, New York
- Smith, G (2015) 10 A/B testing tools to help improve conversions. Mashable. Available from: <http://mashable.com/2015/01/30/ab-testing-tools/#c950K6q4taqt> (last accessed: 27 May 2017)
- Visual Website Optimizer (2017) The Complete Guide to A/B Testing. Wingify. Available from: <https://vwo.com/ab-testing/> (last accessed: 27 May 2017)

# Getting the best 15 out of stakeholder workshops

## What is a stakeholder workshop?

Stakeholder workshops are a way of engaging those who have an interest in the project you are working on. ‘Stakeholders’ are people in the organization(s) who are key to getting your project done and includes people with expertise and in-depth knowledge of the domain you are working in. The term also includes your users: they want you to get things right, so they can do what they want and need to do.

## What stakeholder workshops are good for

There are several different kinds of stakeholder workshops you can run, but they all have the same aim and benefits, such as building consensus amongst various parties within your organization who have potentially opposing views and objectives. They can be used to establish a shared understanding of what certain things mean. They can create a sense of ownership of the outcomes of the project (as well as the process that will get you there).

Workshops are often important milestones in projects that kick-off certain stages or become the decision-making points. Stakeholder alignment and avoiding conflicts and misunderstandings are key at these points. Workshops are an investment of time and effort for many people, but have the benefit of collecting information in a single day that can otherwise take weeks or months to accomplish.

Workshops allow stakeholders to collaborate; generate ideas, gather requirements, draft designs and solutions, agree on priorities, and identify risks and constraints. Group dynamics can generate better discussions than you would have when talking with people individually. Stakeholders react to each other and bring up questions and issues that would never occur to you, whether they have similar or different types of roles.

## **What stakeholder workshops are not good for**

Stakeholder workshops are not designed for gathering raw data about opinions and preferences; they are not focus groups. It's best to avoid treating workshops as group usability testing as it's difficult to get useful insights from this, but it is worth demonstrating prototypes and other things that have been created during the development lifecycle. Workshops aren't about everyone agreeing in a committee meeting style; participants need to be willing to engage in activities to move thinking along and gain consensus (Pickering, 2015).

## **When to use workshops**

If you read the 'what workshops are good for' section above, you may have formed the impression that workshops can be utilized at multiple points in a project, because of the diversity of things that can be achieved:

- At the beginning of project to agree the scope and objectives.
- When strategic direction is needed; used to identify priorities and timelines. This should be done early in the project.
- Reporting when key milestones have been reached and shaping the next stage in the project.
- You need multidisciplinary input, this can be internal with different expertise or it could be external with your users.



There are a few factors to consider when deciding when and where you can use workshops during your development lifecycle:

- *Project schedule and budget.* On smaller projects you may have time to conduct only one workshop with everyone who is involved; on larger projects you may have enough time to conduct multiple workshops.
- *Size and complexity.* On larger, more complicated projects, you may have too many stakeholders and too much to discuss for a single session. Twelve is an ideal number of people to include in a single session: with more than that, the discussion can become unmanageable, and some people can get left out of the discussion. Having said that, I have run workshops with 60 people but that size needs different activities and helpers to help you facilitate the workshop.
- Depending on the kind of thing you are working on, you can run different kinds of workshop at different stages.

## Effort required to do this kind of research

Workshops can be hugely valuable but they also require a lot of time and investment. Facilitating a workshop and moderating group discussion requires skills that take time to develop. While it can be learnt and practised on the job, in the beginning it's likely to require a lot more preparation and consideration. If you are running workshops with a large number of people, be mindful of keeping things on track and encouraging everyone to contribute and engage. Whoever is in the room, try to make it a level playing field.

You will have to factor in the time it takes to organize and prepare, especially if you are trying to get several busy people in the same room at the same time. As the researcher, you will invest time and effort in organizing, preparing, running and analysing the output of the workshop. To be effective, the participants also need to engage in the activities you include. Workshops are not talking shops; they are focused on encouraging creativity through sharing and creating tangible outputs.

## How to run a workshop

During your workshop preparation, it can be worth:

- Reviewing existing research and documentation (you may want to share an overview of this in your workshop).
- Getting an in-depth understanding of what you are working with (get to know the bits that you don't normally work on).
- Interviewing some stakeholders beforehand (or after), especially if they can't attend the workshop. Doing interviews *before* could give you a feel for attitudes and expectations; doing interviews *afterwards* may allow you to explore certain topics and issues in more detail.

### ***Planning and practicalities***

Preparation is key. Get everything ready for each activity you will run before the workshop starts. Workshops need to be interactive; it's not just about you talking or having a group discussion. What activities will you use to achieve your goals? Here is a checklist for smooth running workshops:

- Have a clear agenda. Establish the workshop goals: why you are having the workshop and what the agenda will include. Share this with participants before the workshop starts (ideally with the invitation), to set their expectations. If you want people to prepare something beforehand make sure you give them enough time to do so.
- Decide on the timing of each activity and try to stick to it. It's quite easy to overrun when creativity and discussion are flowing.
- Try to keep workshops to about three hours. They will be three hours of hard work, so include breaks and have refreshments to hand. Having said this, I have run all-day workshops, it's tough (on everyone) but doable. Try to do the workshop before or after lunch: a long break of 30–60 minutes can kill momentum.
- Make sure you can access the venue before the workshop starts so that you can set up everything in advance.

- It is difficult to run a workshop on your own – facilitating and moderating, capturing information, setting up exercises, etc. It takes two or three people to run a good workshop.
- Have a ‘no phones’ policy, to help people focus on the task at hand.
- Keep instructions and output visible for all in the workshop.
- Check people’s understanding by inviting questions.
- Include individual, small and large group exercises if possible. This will cater for how different people like to interact and think.
- When doing group activities try to have a representative range in each group, so people interact with those they don’t necessarily work with every day.
- Photograph everything; you may want to do a video or audio recording as well.
- It can be useful to include your photos in any reports you may be writing about the workshop.
- At the end of the workshop gather every output. Any paper with Post-its should be photographed before you take them away, as things are likely to move during transport.
- Focus on the users: when people are disagreeing due to their differing opinions or priorities, bring the focus back to the users. There needs to be a balance between organization and user needs; but user needs can often break an organizational stalemate.

### ***What kind of workshop can you run?***

The workshop research format can be used in a multitude of situations. Generally, any kind of workshop can be used to diverge and converge: get all the ideas and assumptions (diverge) out there and synthesize them into something achievable and agreed (converge).

#### **Kick-off workshops**

At the beginning of a project or a new, distinct stage of a project, workshops can be used to agree the scope and objectives. In a few hours, you can start building consensus among various parties with

potentially opposing views and objectives. This is a good time to identify where there are disparities in people's thinking, understanding and assumptions; get these on the table and then establish a shared understanding for this particular project or milestone.

### Engagement (milestone) workshops

When a milestone has been reached, it's good to share the progress that has been made (whether this is positive or negative). This can create a sense of ownership of the outcomes and the work done to achieve them, even for those who aren't directly involved in the work but have a stake in the outcome. This is a good time to check the strategic direction and to validate the priorities and timelines.

### Requirements gathering

This kind of workshop is another to run early on in the development lifecycle. These workshops are about gathering assumptions, identifying what your organization thinks is required to achieve the objectives through sharing expertise and knowledge from relevant areas of the business. If your organization doesn't already have insight into the users this work is focused on, this is a good time to sketch out who you think the users are (personas), their attitudes, behaviours, motivations and needs. Any requirements and personas created during the workshop should be validated by subsequent user research.

### Design workshops

Gather the internal expertise in the room to sketch out initial designs for your project. This kind of workshop is not just for designers or the technical people: there will be others who have insights into how things can be developed.

### Co-design workshops

Also known as 'participatory design', co-design workshops are where you are designing with your users, who can be included at any stage of the design process. You can include the users to gain insight and ideas on attitudes, motivations, context, preferences, needs and

issues. You can create or refine outputs such as experience and journey maps, scenarios and storyboards, and discuss designs not only in the visual sense, but anything that needs to be created to achieve the outcomes, such as content, process and experience. These workshops can highlight any disconnect between your organization and your users (Anić, 2015).

## Content workshops

If you are a content designer or strategist you may already be using content workshops; if not it's definitely something you can start doing. Content workshops can be used to:

- Review and challenge content styles, strategies, workflows and governance.
- Agree what needs to be done to improve existing content and what content types are needed.
- Train people in content best practice and organization style guides.
- Draft governance documents, style guides, workflows for content creation and improvement.

To learn more about running workshop activities to achieve your objectives, see the Further Reading section at the end of the chapter.

## ***Who needs to be there?***

The kind of workshop you are running will determine the appropriate group. Who is important to achieving the desired outputs and what kind of activities are you doing? Don't invite everyone; that won't be productive. Who actually needs to be there? You will need those who:

- make decisions;
- have information you need;
- have 'clout', ie those you need to keep on side to ensure the project gets backing, continuous funding, etc;
- are involved in making the thing happen (worker bees).

## ***Basic structure of a workshop***

- The introduction should set the tone of the day. It should be welcoming and make people feel comfortable. It should set out who you are, the agenda, the objectives and who is present.
- What you know so far (audience, current situation, design, research you and others have done, issues); this is optional.
- Warm up activities.
- Core activities.
- Summing up. Try to make your summary uplifting and positive, so that people go away from the workshop feeling energized and productive.

## **Workshop tools**

The tools you need will depend on the kind of workshop you are running. The workshops I have covered usually require all or some of the items in this checklist (Pickering, 2015; Sharma, 2012):

- Post-its. Lots and lots of Post-its, of different colours and maybe different sizes.
- Pens. Different colours and sizes. Board markers and Sharpies generally work well.
- Paper. For sketching, noting down what's been said and agreed (or not).
- Blue-Tac. To stick things on the wall, so it's easy to share what has been generated.
- Flipcharts. Again, a good way to capture ideas and share with others.
- Sticky dots. Used for voting and prioritizing.
- Camera. Photographs are extremely useful for documenting what's happened in a workshop. Optional: video camera to capture workshops.

- An appropriate space to hold the workshop. Definitely big enough for the number of participants to sit and move around in. Ideally, away from the office and somewhere you are allowed to use Blue-Tac on the walls.
- Refreshments.

### **Ode to Post-Its**

An easy way to capture ideas.

Having one idea per Post-it forces people to be concise and focused.

They are easy to move around and group.

Post-its are your friend in user research.

## ***References and further reading***

- Anić, I (05 November 2015) Participatory Design: What is it, and what makes it so great? UX Passion. Available from: <http://www.uxpassion.com/blog/participatory-design-what-makes-it-great/> (last accessed 20 August 2017)
- Boag, P (4 August 2015) 10 ways to get more from your UX workshop. Boag World. Available from: <https://boagworld.com/usability/10-ways-to-get-more-from-your-ux-workshop/> (last accessed: 27 May 2017)
- Buley, L (18 November 2013) UX Method of the Week: Strategy Workshop. Rosenfeld Media. Available from: <http://rosenfeldmedia.com/ux-team-of-one/ux-method-of-the-week-strategy-workshop/> (last accessed: 27 May 2017)
- Cao, J (2017) The Practical Guide to Empathy Maps: 10-Minute User Personas. UX Pin Studio. Available from: <http://www.tadpull.com/how-to-use-empathy-map-for-user-experience-mapping/> (last accessed: 27 May 2017)
- Flowerdew-Clarke, M (15 September 2014) How to Run Successful Stakeholder, User and Content Workshops. Building Blocks. Available from: <http://blog.building-blocks.com/insights/how-to-run-successful-client-user-content-workshops> (last accessed: 27 May 2017)
- Gamestorming (2017) <http://gamestorming.com/> (last accessed: 20 August 2017)

- Gilbert, K (30 November 2016) The Co-Design Workshop: The Facilitator's Pocket Guide. Connections. Available from: <https://connection.domain7.com/the-co-design-workshop-the-pocket-facilitators-guide-e36a6c9e08d4> (last accessed 20 August 2017)
- Government Digital Service (2016) Analyse a research session. Service Manual. Available from: <https://www.gov.uk/service-manual/user-research/analyse-a-research-session> (last accessed 20 August 2017)
- Gray, D and Brown, S (2010) *Gamestorming: A playbook for innovators, rulebreakers, and changemakers*, O'Reilly Media, Sebastopol
- Kaner, S (2014) *Facilitator's Guide to Participatory Decision-making*, 3rd edn, Jossey-Bass, Hoboken, NJ
- Knox, N (27 June 2014) How to Use Persona Empathy Mapping. UX Magazine. Available from: <http://uxmag.com/articles/how-to-use-persona-empathy-mapping> (last accessed: 27 May 2017)
- Leavy, P (2017) *Research Design: Quantitative, qualitative, mixed methods, arts-based, and community-based participatory research approaches*, Guilford Press, New York
- Mazur, M (26 July 2016) The power of workshops in the UX process. User Testing Blog. Available from: <https://www.usertesting.com/blog/2016/07/26/workshops/> (last accessed: 27 May 2017)
- Myhill, C (20 August 2014) Running a kick-ass kick-off workshop. Just UX Design. Available from: <http://justuxdesign.com/blog/running-a-kick-ass-kick-off-workshop> (last accessed: 27 May 2017)
- O'Keefe, B (26 February 2015) How to Facilitate a Design Workshop for Stakeholders. Effective UI. Available from: <http://www.effectiveui.com/blog/2015/02/26/how-to-facilitate-a-design-workshop-for-stakeholders/> (last accessed: 27 May 2017)
- Pedalo Web Design (2017) Stakeholders Engagement Workshops. Available from: <http://www.pedalo.co.uk/services/user-experience-ux/stakeholder-engagement-workshops/> (last accessed: 27 May 2017)
- Pickering, K (20 May 2015) What is the value in stakeholder workshops? Numiko. Available from: <http://numiko.com/blog/what-value-stakeholder-workshops> (last accessed 20 August 2017)
- Ross, J (4 May 2015) Understanding Stakeholders Through Research. UX Matters. Available from: <http://www.uxmatters.com/mt/archives/2015/05/understanding-stakeholders-through-research.php> (last accessed: 27 May 2017)
- Sauro, J (9 September 2014) 7 Techniques for Prioritizing Customer Requirements. Measuring U. Available from: <https://measuringu.com/prioritize-requirements/> (last accessed: 27 May 2017)



- Sharma, A (24 April 2012) Creativity-based Research: The Process of Co-Designing with Users. UX Magazine. Available from: <https://uxmag.com/articles/creativity-based-research-the-process-of-co-designing-with-users> (last accessed 20 August 2017)
- Sharma, A (30 August 2016) Participatory Design as a Research Method. Available from: <https://medium.com/the-making-of-appear-in/participatory-design-as-a-research-method-bc42c01943b1> (last accessed 20 August 2017)
- Sharon, T (2012) *It's Our Research: Getting stakeholder buy-in for user experience research projects*, Morgan Kaufmann, Burlington
- Tadpull (2017) Empathy Maps for UX. Available from: <http://www.tadpull.com/how-to-use-empathy-map-for-user-experience-mapping/> (last accessed: 27 May 2017)
- Turner, N (11 December 2014) How to plan and run the perfect UX workshop. UX for the Masses. Available from: <http://www.uxforthemasses.com/ux-workshops/> (last accessed: 27 May 2017)
- Turner, N (16 May 2016) 5 techniques for prioritising features (or user stories) to try out. UX for the Masses. Available from: <http://www.uxforthemasses.com/5-techniques-prioritising-features/> (last accessed: 27 May 2017)

# Guerrilla research

# 16

Running fast-paced research in the real world

## What is guerrilla research?

Guerrilla research is a quick, flexible and low-cost method of conducting research; the ‘just do it’ approach (Foolproof, 2014). It is ‘the art of pouncing on lone people in cafés and public spaces, [then] quickly filming them whilst they use a website for a couple of minutes’ (Belam, 2010).

## What guerrilla research is good for

Guerrilla research is useful for a variety of reasons:

- It’s low cost.
- It’s quick to get results.
- It answers small-scale design questions quickly.
- You can involve your wider team in doing research.
- It can help you understand the real-world context of use, especially when testing on mobile devices outside.
- Unexpected research encourages people to be open and honest.

## What guerrilla research is not good for

Because guerrilla research is a quick and dirty method it can often only provide high-level insight and it can be difficult to get the right cross-section of participants. You also need to consider:

- Environmental challenges such as the weather.
- Competing for people's attention as they go about their day.
- The potential to experience technical issues during the research.

## When to use guerrilla research

Guerrilla research is not detailed and rigorous enough to be the sole source of data. It can give just enough insight to make informed decisions, in the early stages, when exploring problems and opportunities. It can also increase your understanding and build initial hypotheses for more in-depth research and design (Foolproof, 2014).

## Effort required to do this kind of research

If you feel comfortable with the fundamentals of user research, guerrilla research can be done very quickly. Some preparation should be carried out so that you have a focus, but you need to be prepared to be flexible and react to unexpected situations as this kind of research is less structured and controlled than others. It is therefore useful to be familiar with what you are testing and the format you are using (whether it's on a digital device, on paper, etc).

To be honest, for me the biggest barrier to using guerrilla research techniques is having the confidence to stop people on the street, at an event, etc. I don't find it easy asking strangers for help. You may want to do this research in pairs, with one person doing the recruiting and the other doing the research. I know which one of the two I'd rather be!

# How to do guerrilla research

Below are some of the ways you can use guerrilla research.

## ***Guerrilla usability testing***

The essence of guerrilla research is that you go to your users, rather than making them come to you. You can take your product or service out on a laptop, phone or sketchpad to wherever your users may be and approach them.

## ***Contextual user interviews***

These are short interviews with people in their own environment: their home, place of work, etc. Doing the interview this way can yield insight into how users' environments affect how they use your product or service.

## ***Cut-down ethnography***

Ethnographic observation is a good way to capture how things are used in real life. You don't need to get too hung up about formalized notes. Most of the time your scribbles will work just fine: it's about triggering memories that you can turn into insight and actions.

## ***Tips for recruiting and conducting effective guerrilla research***

Success lies in the planning. Have an agreed list of questions or tasks to focus on for achieving your research objectives. Prioritize your tasks/questions; it's difficult to know how much you can get through and how long people are willing to spend with you, when you have just approached them. Agree beforehand the kind of data you aim to capture; there will always be things you didn't expect, so it helps to be focused in your short research sessions. Establish the top issues, task completion (if you are usability testing), etc.

Prepare a short introduction that quickly communicates what you are doing and why you want them to take part. You'll need a cut-down version of the ethical and legal points you have to cover (see Chapter 2) and an explanation of how the research is going to run.

Choose your locations carefully, based on the target groups you are recruiting and, before approaching participants, assess their body language and behaviour. Hailing people in the street, café or conference hall is challenging. At times it can be demoralizing, but you just need to keep on keeping on.

Be flexible in your approach: scale, refocus and modify your tactics according to how it's going. It can be more iterative than doing research in the lab. Also, keep sessions short – they shouldn't really be more than 15 minutes – and keep it casual: offer food and/or a coffee in exchange for people's time, if appropriate to the setting.

## Tools for guerrilla research

The tools required really depend on what you are testing. You may need a digital device or just a paper notebook. It's generally best not to have too much equipment to carry round and present to participants. Keep it relatively low key. You could use video, audio and photography (but this is optional). Guerrilla research can produce compelling stories about real users. However, it's not always appropriate to capture data in this way, and it can sometimes put people off participating.

## *References and further reading*

Belam, M (3 June 2010) 10 tips for ambush guerrilla user testing.

Currybet. Available from: [http://www.currybet.net/cbet\\_blog/2010/06/10-tips-for-ambush-guerilla-us.php](http://www.currybet.net/cbet_blog/2010/06/10-tips-for-ambush-guerilla-us.php) (last accessed: 27 May 2017)

Foolproof (18 March 2014) The hidden value of guerrilla research.

Available from: <http://www.foolproof.co.uk/thinking/the-hidden-value-of-guerrilla-research/> (last accessed: 27 May 2017)

- Interaction Design Foundation (May 2017) The Pros and Cons of Guerrilla Research for Your UX Project. Available from: <https://www.interaction-design.org/literature/article/the-pros-and-cons-of-guerrilla-research-for-your-ux-project> (last accessed: 27 May 2017)
- Myhill, C (30 September 2014) Guerrilla Research Tactics and Tools. UX Booth. Available from: <http://www.uxbooth.com/articles/guerrilla-research-tactics-tools/> (last accessed: 27 May 2017)
- Pirker, M (24 March 2016) 7 Step Guide to Guerrilla Usability Testing: DIY Usability Testing Method. User Brain Blog. Available from: <https://userbrain.net/blog/7-step-guide-guerrilla-usability-testing-diy-usability-testing-method> (last accessed: 27 May 2017)
- Simon, D P (2 July 2013) The Art of Guerrilla Usability Testing. UX Booth. Available from: <http://www.uxbooth.com/articles/the-art-of-guerrilla-usability-testing/> (last accessed: 27 May 2017)
- Webcredible (2017) Guerrilla Research. Available from: <https://www.webcredible.com/services/investigate/guerrilla-research/> (last accessed: 27 May 2017)

# How to combine user research methodologies 17

As I have mentioned before, user research is an iterative and continuous process. Throughout the development lifecycle, whatever you are working on, there will be different methodologies that are appropriate at different times. There isn't one correct way to combine methods, but there are some common ways of working that I will outline here to give you an idea of how you could combine methods yourself.

## Where to start when advocating user research

If carrying out user research is not usual in your organization, it's possible that you'll be experiencing difficulty getting time, resource and budget signed off to do some. I have been in this situation myself and I know it can be difficult to get buy-in for something when it's at the theoretical stage, ie the research will in theory benefit the organization/project. Also, people may not want to admit there's a problem with your product or service. In my experience, the best way to get across the benefits of user research is to show people the evidence of what it can do – but you can't do that until you've done some actual research, right? It's a tricky situation to be in.

## *Use guerrilla research to kick start the process*

This is a good time to do some guerrilla research (Chapter 16). You can quickly and cheaply gather some initial evidence and insight to demonstrate:

- The issues being experienced by users.
- How users think and feel about a topic, which may be at odds with the organization's position.
- How people behave and do things in the real world.
- Some insight into how things could be progressed and improved.

### **Show don't tell**

In my experience, evidence is the most powerful way to advocate user research.

Showing colleagues the insight you can get from a quick and dirty piece of research is a great way to build support for more in-depth and structured research. You can use guerrilla research as a small glimpse into the potential of user research as a business tool.

---

## **CASE STUDY** Example of guerrilla research

I was working on a website redevelopment project, for a site that had not changed for many years. The organization in question had little awareness of agile and user-centric ways of working, and I was a lone user-centric warrior.

There was enough budget available to work with an outside agency to do most of the initial (discovery) research to understand who the users were, what they needed and what had to be done. However, there wasn't enough budget to do research with all of the presumed primary user groups. How were we going to choose who we would include in the research?

It was assumed that the large internal audience and their needs was the most important group for this public website. I had a hunch but no evidence that this wasn't a valid assumption: we didn't really know anything about what they needed, how they went about doing their tasks, or the issues they might



experience, nor what their mental models were. I took it upon myself to do some guerrilla user research with this audience. In the space of two weeks I visited three different locations in the UK and carried out a combination of interviews, usability testing and card sorting with 15 people. By the end of the two weeks I had gained these insights into the internal users:

- What tasks they performed.
- How they did those tasks.
- The issues they experienced.
- Their mental models and how they associated and grouped information.

All these things would be a useful grounding to start the main project work. The most critical thing that I learnt was that most of this group of users weren't using the website! Only a small sub-section were using it and even then they did so irregularly in a specific time-sensitive context. They had other means of doing the things they needed to do, and could therefore be considered a secondary rather than a primary audience.

This guerrilla research helped to make decisions on which audiences to include and exclude. All it cost was my time and effort, plus some travel expenses.

---

## ***What to do when guerrilla research isn't appropriate***

There are always going to be situations and environments where guerrilla research isn't appropriate; a prime example would be doing research with patients in a hospital. In such cases, you can do some desktop research: has anyone published work about a similar organization or situation that shows how user research was used and the results that were achieved?

It can be useful to show that equivalent organizations in your field/industry have experienced similar issues and successfully done some user research and benefited from it. Not only does it show that it's possible, it also shows that others have a competitive edge.

## ***Combining guerrilla research and desktop research***

What is better than one piece of evidence? Multiple pieces of evidence! If you can, do some guerrilla research to show what you can do

yourself and combine this with evidence others have published in related areas. I hope this will help you on the road to getting support for doing regular user research.

## Common research scenarios and combining methodologies

### *Developing and/or improving a product or service*

Whether you are building something entirely new or improving an existing item that is suboptimal, a similar iterative approach can be used. Table 17.1 shows which methods could be used in this scenario.

**Table 17.1** Developing or improving a product or service – combining methodologies

Steps	Method	Scenario and explanation
1	Stakeholder workshop (Chapter 15)	Start your project by getting all the relevant people in the same room at the same time to share the understanding of the current situation, agree the scope of the project and gather initial requirements.
2	Interviews (Chapter 9) or contextual inquiry (Chapter 13)	Once you have internal agreement of the scope, it's time to get feedback and insight from the actual users. I have given interviews and contextual inquiry as methods here, but it really depends on the work you're doing. Ultimately you are validating (or overturning) stakeholder assumptions from the workshop and gaining insight into users' behaviour and their barriers.
3	Design a prototype	Combining the outcomes of step 1 and 2, it's time to do an initial draft of the new product/service or draft several potential options.
4	Usability testing (Chapter 5)	You don't want to invest too much time in designing and building anything before you test it with users to see what is and isn't working.
5	Iterate	The insight gained from usability testing should be used to improve the prototype, which can be tested again to validate the changes made. Once a new or improved product or service has been launched, the insight, improve, validate cycle should continue.

# Reorganizing content and structure

Table 17.2 gives an example of which methods could be used in an iterative approach to content and information architecture development (and improvement).

As I mentioned above, there are no strict rules for how to combine methodologies in iterative research; it really depends on the situation and the work you are doing. So, I have included another example (Table 17.3) of a content and structure improvement project.

**Table 17.2** Reorganizing content and structure – combining methodologies, example 1

Steps	Method	Scenario and explanation
1	Usability testing (Chapter 5)	For existing products or services, if a problem has been identified through analytics or feedback, you may want to gain insight into why there is a problem before going any further. Whether you are working on a digital or non-digital item, you could do some usability testing, setting people tasks to work through so you can observe them and the issues they are experiencing.
2	Closed card sorting (Chapter 7)	Imagine that you have established that certain parts of your product have labels and a structure that don't match how the users think. You've gained enough insight that you have a good idea how to resolve these problems. You can do some closed card sorting (with your predefined groups) to see if your new structure and labelling work with a small sample of your user groups.
3	Draft information architecture	Insight from the closed card sort will allow you to fix any initial issues and create a draft information architecture.
4	Tree test (IA validation) (Chapter 11)	The draft information architecture can then be tested with a much larger sample of relevant users (with something like Treejack from Optimal Workshop).
5	Content testing (Chapter 6)	You can also test content for users' understanding. This is particularly useful if the work done up to this point has shown that there is a mismatch of language used between users and your organization.

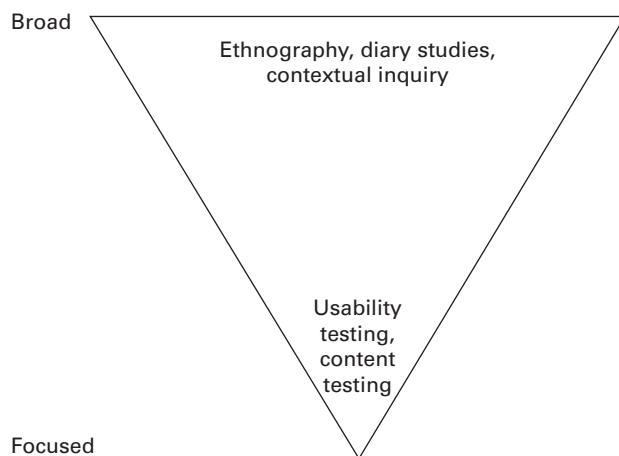
**Table 17.3** Reorganizing content and structure – combining methodologies, example 2

Steps	Method	Scenario and explanation
1	Content testing (Chapter 6)	You have anecdotal feedback (from frontline staff/call centre staff/survey/etc) that some of your content is confusing. You do some content testing, gathering evidence to demonstrate that users can't complete certain tasks because critical content is missing.
2	Open card sorting (Chapter 7)	Your team has identified what new content needs to be written and agreed some initial names for this content. While this content is being drafted, you can do an open card sort to understand how users would group new content items and if they comprehend the draft labelling.
3	Content testing (Chapter 6)	The draft content can be tested with users. Is it understandable? Can they take appropriate action based on what they have understood?
4	Closed card sorting (Chapter 7)	You can do some closed card sorting with a small sample of your defined groups, based on insights from the open card sort and content testing, to see if your new structure and labelling work for them.
5	Tree test (IA validation) (Chapter 11)	The draft information architecture based on closed card sort results can then be tested with a much larger sample of relevant users (using something like Treejack from Optimal Workshop).
6	Content testing (Chapter 6) and/or usability testing (Chapter 5)	The new content can be iteratively tested, and research (such as usability testing) can be done, combining the new structure and the new content together (with existing content) to understand if it all works holistically in real-life form with realistic tasks.

### ***Figuring out if a new concept is worth investing in***

Whether you don't really know what the problem is or you are trying to figure out if something new is worth investing in, it is likely that you will start with broad research and progressively become more focused (as visualized in Figure 17.1). Table 17.4 shows an example of moving from asking broad to specific questions in your research.

**Figure 17.1** A visualization of board to focused research and some example research methods that may be appropriate



**Table 17.4** Developing a new concept – combining methodologies scenario

Steps	Method	Scenario and explanation
1	Stakeholder workshop (Chapter 15)	You can kick off with a workshop to share examples of similar concepts in other industries, generate ideas and agree the scope of the initial work to be done on the new concept.
2	Ethnography (Chapter 12), diary study (Chapter 10), contextual inquiry (Chapter 13)	Depending on the time you have available you can choose a user research method suited to asking broad questions, finding out how things work in the real world, in a particular context.
3	Stakeholder workshop (Chapter 15)	You may want to check with the stakeholders to share the insights gained from the broad research and agree the direction you will move in.
4	Prototyping	Assuming that the research has indicated it's worth pursuing this new idea, you can start to sketch out some thoughts.

(continued)

**Table 17.4** (Continued)

Steps	Method	Scenario and explanation
5	Usability testing (Chapter 5)	You may want to start getting feedback on your ideas from users very early on, for example doing usability testing on a paper prototype and sketch storyboards.
6	Iterate	As work progresses, and prototyping becomes more high fidelity, you can continue to do iterative research. At some point you may want to include a co-design workshop (designing with end users) and the process will include regular checks with stakeholders at workshops, retrospectives or show and tells.

## Summary

We have worked through just a couple of scenarios of how you might combine different methodologies during the lifecycle of a project. Choosing the right methodology or combination will depend on what you're trying to achieve at each stage.

The main thing to keep in mind is that there isn't one method to rule them all. There isn't one method that is suitable in every circumstance. This also means that if you're going to be taking on the responsibility of iterative user research, you will be learning how to use multiple methods. This may sound scary, but we humans are good at the learning thing; the experience you have gained from one piece of research can be taken into another with a different methodology. There will still be a learning curve associated with the new methodology, but it'll be less steep. Every time you do some user research you'll learn something new about the methodology itself, as well as the topic of your research. This is just one of the many reasons I love doing user research.

## Part Two summary

I assume you have now read through a method or two that may be relevant to your research needs. You may have already decided what kind of research you're going to do and started preparing for it. Even if you haven't started your preparation or decided exactly what kind of research you need to do, hopefully it's been a useful trip through how to do the research part of user research. We've looked at:

- usability testing;
- content testing;
- card sorting;
- surveys;
- interviews;
- diary studies;
- information architecture validation;
- ethnography and mobile ethnography;
- contextual inquiry;
- A/B testing;
- stakeholder workshops;
- guerrilla research; and
- combining methodologies.

Just as the methodologies themselves weren't the beginning of the story, they are not the end either. Now that we have a better idea of how to do the research with people, in Part Three we'll learn what to do with the data that you have.

# PART THREE

## Analysing and presenting your data

Now that you have done the research, you'll probably have huge amounts of data and you need to work out what to do with it: not only how to analyse the data, but also how best to share the results to have the most effective impact. What you do with it depends on several factors:

- The purpose of the research.
- The kind of research you've done.
- The audience for the research results.
- How much time and resource you have.

The methods of analysis we'll go into are:

- *Content analysis*: making sense of and coding lots of qualitative data.
- *Identifying themes* (affinity diagramming): are the problems/insights you have uncovered related to each other?
- *Cataloguing and prioritizing issues*: once you have gathered the evidence, identifying the serious issues.
- *Creating a user needs backlog and writing user stories*: this is a neat way of summarizing who the users are, what they want to do and what they want to achieve.



It's easy to spend a long time making your data analysis look pretty, which may not be where your efforts are best employed. It's true that good looking data and reports can help 'naive' stakeholders take the work more seriously, but prioritize substance over style. Make sure you've done all the right analysis and know the story you want to tell before you do what seem like endless iterations of design for your output. An appropriate amount of effort to make your work easy to read and easily digestible is worth it, but glossy, high-quality graphics often aren't. The methods of presentation we'll go through are:

- *Executive summaries and detailed reports*: different stakeholders will have varying amounts of time to understand your research. We'll look at the level of detail to provide to different audiences.
- *Personas and mental models*: these are ways of describing who your user groups are and how they think and feel about certain topics, helping you to identify gaps and opportunities.
- *Video playback*: creating videos of particular topics is another powerful way of communicating your findings.
- *Customer journey mapping and experience mapping*: plotting and visualizing a user experience with your product/service from the users' point of view.
- *Scenarios and storyboards*: these explore the usage of your product or service in greater detail than in visualization maps. They are often combined with personas to describe the typical or ideal experience of a specific user group.
- *Infographics*: these are suitable for making your numbers and statistics accessible.
- *Refining the design*: how to go about changing information architectures, interaction designs and visual designs.

## Further reading

Government Digital Service (2016) Sharing user research findings. GDS Service Manual. Available from: <https://www.gov.uk/service-manual/user-research/sharing-user-research-findings> (last accessed: 12 June 2017)

- Inchauste, F (29 January 2010) UX Storytelling For A Better User Experience – Part One. Smashing Magazine. Available from: <https://www.smashingmagazine.com/2010/01/better-user-experience-using-storytelling-part-one/> (last accessed: 12 June 2017)
- Inchauste, F (11 February 2010) Better User Experience With Storytelling – Part 2. Smashing Magazine. Available from: <https://www.smashingmagazine.com/2010/02/better-user-experience-through-storytelling-part-2/> (last accessed: 12 June 2017)
- Martinez Salmeron, J (28 October 2013) Recent Trends In Storytelling and New Business Models for Publishers. Smashing Magazine. Available from: <https://www.smashingmagazine.com/2013/10/recent-trends-in-storytelling-and-new-business-models-for-publishers/> (last accessed: 12 June 2017)
- Quesenbery, W and Brooks, K (2010) *Storytelling for User Experience. Crafting stories for better design*, Rosenfeld Media, New York

THIS PAGE IS INTENTIONALLY LEFT BLANK

# Content analysis 18

A method of coding and making sense of your qualitative data

Table 18.1

Method summary
<b>Suitable for data generated from:</b> qualitative methods such as interviews, contextual inquiry, ethnography and diary studies, usability testing and open text field survey questions. Can be used in agile and lean environments.
<b>Use if you want to:</b> analyse and make sense of large amount of qualitative data.

We looked at content testing in Chapter 6, but content analysis is not limited to whether your written content is effective: it can offer some techniques to help you get a grip on large amounts of semi-structured data and interpret what you have. Content analysis is a way of codifying and categorizing qualitative data.

## How to do content analysis

- 1 *First get to know your data.* If you have time, re-read or re-listen to any content you have to become familiar with it.
- 2 *Identify what data will be coded.* You may want to take a transcript of a whole dataset, or you may want to break down separate questions (from interviews, for example) into separate datasets; it really depends on how focused or wide-ranging the objectives and topics of your research are.
- 3 *Establish a set of categories relevant to the dataset.* Categories are created by considering the objectives (pre-set categories) and scanning through some of the data (emergent categories). Categories

need to be comprehensive and mutually exclusive, and you may need to include non-instance categories, ie categories you expected to occur but which did not.

- 4 *Make sure the categories are understandable to others.* As the data you are dealing with is often going to be transcripts of conversations, category names can be subjective, eg, related to emotions. Your categories need to be clearly described and agreed upon. Also agree whether you are going to include synonyms of certain words if you are doing analysis in a group.
- 5 *Categorize the data.* Identify themes: ideas, concepts, behaviours, interactions, incidents, terminology or phrases used. The pieces of data being coded can be one sentence or a segment (it is unlikely to be whole paragraphs); it is a sequence of words that are related to one theme. Give the emergent categories names and identify each time they occur. Keep revisiting the emergent categories to ensure they are mutually exclusive and coherent. Identify where pre-set categories occur. As you code your data you may identify subcategories.
- 6 *Count the instances that fall into each category.* This will show the relative importance of the information. If doing this analysis manually, for reliability get more than one person to code the data. You may need to analyse a single dataset multiple times until the category list is stable.
- 7 *Identify patterns and connections within and between categories.* It is helpful to write a summary for each category that describes the key ideas being expressed, then review the relationships between categories. Do certain categories consistently occur together? You may wish to develop a table or matrix to illustrate relationships across two or more categories.
- 8 *Reflect on what it all means.* What you have learnt? What are the major lessons? What will those who use the results of the evaluation be most interested in knowing? (Based on the Taylor-Powell and Renner's 2003 approach).

You may be wondering what content analysis categories (code schema) look like. Table 18.2 is an example of a made-up research question: 'What is the benefit of the summer drama workshop programme?'

**Table 18.2** Example of a coding schema

Category	Sub-category	Abbreviation
Improved knowledge of acting		A
	Improving performance skills	AIS
	Increasing confidence	AIC
	Getting to know self better	ASB
	Increased range of methods to use	ARM
Improved knowledge of genres		G
	Understanding storytelling options	GUS
Benefits of working with peers		P
	Learning from each other's experience	PLE
Benefits of working with experts		E
	Role modelling	ERM
	Learning from experts	ELE

asked of fictional students in a pretend summer programme (this example was adapted from an actual example of research conducted by Taylor-Powell and Renner, 2003).

## Software and tools

When I was a poor doctoral student, I did this kind of analysis manually. It's extremely time-consuming, especially if you have a large amount of data. For small datasets, it's worth doing it manually to really understand how the method works. For large datasets and the time-poor, there are tools and software that can do this for you, such as Reframer from Optimal Workshop (<https://www.optimalworkshop.com/reframer>) and NVivo (<http://www.qsrinternational.com/product>). These are both powerful tools for analysing your qualitative data (not just textual content, but all sorts of content) and they can help you visualize your data once it has been analysed.

## Advantages of content analysis

Content analysis is a way of quantifying qualitative data:

- Uncovering of text, identifying terminology use and frequency of occurrence.
- It is relatively cheap to do, as it can be done by hand. Although it can be labour-intensive if you have a large amount of text, it can be done in a group and is therefore adaptable to agile and lean ways of working.
- It can be highly reliable if done systematically.
- It can be adapted to cover imagery, video and audio (Get Revising, 2013).

## Disadvantages of content analysis

It is possible that important themes are missed because they were not included in your code schema. The reliability and effectiveness of the results are related to the quality of the categories you have created and how they have been interpreted.

## References and further reading

- Cotton, S (10 January 2016) Content Analysis Coding. YouTube. Available from: <https://www.youtube.com/watch?v=wilBzZLjZ1M> (last accessed: 12 June 2017)
- Get Revising (17 May 2013) Advantages and disadvantages of content analysis. Available from: [https://getrevising.co.uk/grids/advantages\\_and\\_disadvantages\\_of\\_content\\_analysis](https://getrevising.co.uk/grids/advantages_and_disadvantages_of_content_analysis) (last accessed: 12 June 2017)
- Silverman, D (2011) *Interpreting Qualitative Data*, 2nd edn, Sage, London
- Sommer, B A (2006) Content Analysis. University of California Davis. Available from: <http://psc.dss.ucdavis.edu/sommerb/sommerdemo/content/doing.htm> (last accessed: 12 June 2017)
- Taylor-Powell, E and Renner, M (2003) Analyzing Qualitative Data. University of Wisconsin Extension, Program Development and Evaluation. Available from: (<https://learningstore.uwex.edu/assets/pdfs/g3658-12.pdf>) (last accessed: 12 June 2017)

# Affinity diagramming

# 19

Understand your data through identifying its themes

Table 19.1

Method summary
<p><b>Suitable for data generated from:</b> usability testing, interviews, diary studies, qualitative survey results, ethnography, contextual inquiry, guerrilla research.</p> <p><b>Use if you want to:</b></p> <ul style="list-style-type: none"><li>• identify and group user functions as part of design</li><li>• show the range of a problem</li><li>• uncover similarities among problems from multiple customers</li><li>• give boundaries to a problem</li><li>• identify areas for future study</li><li>• if used correctly it can be used to create personas (discussed in chapter 22)</li><li>• as a brainstorming tool, allowing a group to codify ideas, hypotheses, and predictions</li><li>• allows a design team to take into account the primary pain points, concerns, and needs of users</li><li>• for information architecture ideas, that haven't come from card sorting</li></ul> <p>This method is suitable for agile and lean ways of working.</p>

Affinity diagramming (also known as affinity mapping) is useful for when you need to identify patterns in qualitative data. Writing ideas on sticky notes and grouping them around themes can identify patterns and insights from large amounts of qualitative data. It is a participatory method (something to do collaboratively as a team, rather than in isolation). This is a method you can use as a part of your analysis in any user research method that generates qualitative data.



Content analysis and affinity diagramming are very similar methods. Content analysis could be considered more ‘rigorous’, especially if done using software, and can be done by an individual. Affinity diagramming is a visual method of analysis, done through collaboration and physically moving pieces of data into groups.

## How to do affinity diagramming

### *Combining individual and group work*

- Go through all the data and highlight each interesting piece relevant to the purpose of the project.
- Write down each discrete piece of data on a Post-it.
- At this point, include slight variations on similar themes on the Post-its; additional analysis of this will be done as a group.

## Analysis through group work

- You may decide to do this work with your immediate team, those working directly on the product/service, or with your wider stakeholders depending on where you are in your project.
- Share out all your raw data among the group.
- Get each participant to highlight interesting discrete pieces of data relevant to the purpose of the project.
- *Optional and time permitting*: when all of the wider dataset has been reviewed once, get the participants to swap and review someone else’s initial analysis, highlighting anything else they think is relevant that has been missed (in a different colour, to show where the differences are; you may have time to review this and you may not).
- *Optional*: now the group are becoming familiar with the data, if time allows have a discussion about any differences that have been highlighted by different people and why some thought them important and some did not. It’s possible this will bring to the

surface some assumptions or priorities that people have for the research and the results that can be addressed, discussed and clarified within the group. It may also indicate the need for some wider clarification.

- Either get the group to swap data again and write out each of the discrete pieces of data (that have been highlighted) or write out discrete pieces of data that they have highlighted themselves.
- For certain types of data/research/objectives (discussed below) it may be useful to note where the data has come from on the Post-it or use different coloured Post-its to indicate different sources of data.

## Putting it all together

- You'll probably need a couple of hours for the group session (the amount of time depends on how large the dataset is and whether you are extracting unique pieces of data from the larger dataset together, or whether you are doing this as preparation for the group session).
- At the beginning of the group session explain the purpose of the session as well as the overall project objectives, to help people understand the context for what they are doing.
- Once all the data is on Post-its (whether this was done as a group or individually before the group session) give an equal number of Post-its to each participant (try and mix up who gets what data).
- Ask for a volunteer to start the grouping process. Get them to read out and stick each Post-it on the wall (or whatever you are using to do your grouping, eg, a large table). If possible, ask them to start grouping similar things together and to explain why they consider the things they are grouping to be similar.
- Each participant in turn should follow the same process, reading out each piece of data and explaining where he or she is putting it and why.

- Encourage and facilitate constructive discussion and questions about the groupings to gain consensus along the way.
- If there is duplication or Post-its with subtle variations, you will need to discuss whether the Post-its are describing the same or different things. If there are multiple versions of the same thing, agree on a definitive version (it may require writing out a new Post-it, combining elements of the various descriptions, or there may be one existing Post-it that articulates it best).
- Depending on the size of the overall dataset and the number of groups emerging, you may want to agree temporary names for groups to make it easier to keep track.
- Once all the data has been sorted into groups, look at each group in turn, reading out everything that is in the group. There may be outliers that have to be discussed and moved to another group. Are each of the groups coherent? If a group seems too wide-ranging you may need to split it up to make the groups more consistent.
- Once the groups are stable, give them names, describing what the group consists of, agreed through moderated discussion.
- There may be a hierarchy in the groups, but this should only be considered once the groups are relatively stable. Try to avoid adding this kind of complexity too early in the grouping process: it could restrict your thinking and creativity.
- Take photos of each group so that you can create and share representations in the group (this can be done with something as simple as PowerPoint).

Affinity diagramming is a relatively simple process, but it can take substantial time to break large amounts of text data into units of information, especially if you have data from many sources. Large affinity projects can require hours or even days to complete and the interpretation of the resulting groups of data can require lots of focused effort.

## Advantages of affinity diagramming

- Involves the whole team, helping everyone to feel they own the data.
- Helps to build collaborative teams.
- Consolidates lots of data into meaningful groups and themes.

## Disadvantages of affinity diagramming

It can be time-consuming. It can also be exhausting (Bevan *et al*, 2009). For groups new to affinity diagramming and other kinds of group analysis, it is worth planning in time for you to analyse the data yourself, to make sure everything has been captured for the analysis. It is still worth doing the group analysis for the team to gain insight into what's going. The group will identify things that you wouldn't have on your own. But additional analysis is usually needed.

## Reference and further reading

- Bevan, N, Shor, K and Wilson, C (June 2009) Affinity Diagram. Usability Book of Knowledge. Available from: <http://www.usabilitybok.org/affinity-diagram> (last accessed: 12 June 2017)
- Government Digital Service (August 2016) Analyse a research session. Service Manual. Available from: <https://www.gov.uk/service-manual/user-research/analyse-a-research-session> (last accessed: 12 June 2017)
- Spencer, B (25 March 2016) UI/UX Principle #16: Use Affinity Diagrams to Collaboratively Clarify Fuzzy Data. Fresh Consulting. Available from: <https://www.freshconsulting.com/uiux-principle-16-use-affinity-diagrams-to-collaboratively-clarify-fuzzy-data/> (last accessed: 12 June 2017)

Prioritizing  
issues and user  
needs

20

What’s important and what  
to work on next

Table 20.1

Method summary
<p><b>Suitable for data generated from:</b></p> <ul style="list-style-type: none"><li>• moderated face-to-face user testing</li><li>• moderated remote user testing</li><li>• unmoderated face-to-face user testing</li><li>• guerrilla research (user testing)</li></ul> <p><b>Other possible sources:</b></p> <ul style="list-style-type: none"><li>• contextual inquiry</li><li>• ethnography</li><li>• diary studies</li><li>• content testing</li></ul> <p>This methodology is suitable for agile and lean ways of working.</p> <p><b>Use if you want to:</b> identify usability issues and user needs from your data.</p>

If the aim of your work has been identifying and prioritizing issues, the processes you use depends on whether you have gathered qualitative or quantitative data or a combination of the two.

Cataloguing issues from qualitative data

You will probably have reams of written notes on things you have observed and things the participants said. It can be useful to review

data after each research session to synthesis and identify key themes. Once all the research sessions are complete, you can use a process similar to that described in the content analysis chapter.

- 1 *First get to know your data.* If you have time, re-read or re-listen to any content you have to become familiar with it.
- 2 *Identify all issues* in each transcript without categorizing or counting them at this point.
- 3 *Group similar issues together:* you can use software like Reframer (optimalworkshop.com) to do this for you, or write issues on Post-its (one issue per post) and then create groups (see Chapter 19 on affinity diagramming).
- 4 *Identify patterns and connections within and between groups.* You may need to go back to the original recordings (if available) to understand if the same problems have been described in different ways (in different research sessions) or if there are subtly different issues. What are the similarities and differences in the issues that have been identified? What are the relationships between categories? Do certain categories consistently occur together? It is possible there is a cause and effect relationship.
- 5 *Count the instances that fall into each group:* this is one way to show the relative importance of an issue.
- 6 *Consider the context:* you may have some low-frequency issues that are important (or critical) to fix. This happens sometimes in qualitative research as there can be variations in how users complete tasks. If an issue was serious for one or two participants, it's worth considering its importance. Was this just an issue for them or will it be a much wider issue for others? You may show it to others, try to replicate it yourself or get others to replicate it. If you aren't certain, you may need to do some more research focusing on this area. You should have noted down whether the participants needed your assistance during a task; this will also help you identify the seriousness of the issue.
- 7 *Prioritize your issues.* Once you are confident you have a comprehensive list of issues, prioritize them: what is most important to fix first? You can create a table to catalogue your issues, such as the simple one shown in Table 20.2 (you can simplify further by not

including the cost of fixing the problem, initially). A more complex table may be appropriate for your needs: rather than just numbering the issues, highlight how they are related to each other.

**Table 20.2** Cataloguing your user needs backlog

Issue	Priority	Issue description	Recommendation	Cost of fixing
-------	----------	-------------------	----------------	----------------

In the following chapters we'll look at other ways to present this data to bring to life the issues for your intended (internal) audience.

### ***User needs backlog and writing user stories and needs***

Users' stories describe the users and why they need to use the product or service you're building. User stories are written to track what you need to do, think and talk about your work from a user's perspective and to prioritize your work (Government Digital Service, 2016).

In the agile development lifecycle, at some point each user story should be 'done' and completed, then you move on to the next user story. User needs are never really 'done'; we're just better or worse at meeting them. User needs are usually written in the format:

I need/want/expect to... [*what does the user want to do?*]

So that... [*why does the user want to do this?*]

If it's helpful, you can add:

As a... [*which type of user has this need?*]

When... [*what triggers the user's need?*]

Because... [*is the user constrained by any circumstances?*]

User needs are written from a personal perspective, so use words that users would recognize and use themselves. Focus on what's most important for your users, so you don't create an unmanageable list of needs. It can also be helpful to group them, by persona, stage in the process of using the product/service, or another relevant theme.

User needs tend to be high level, broad in scope and stable over time. You can use them to write user stories. User stories describe a specific feature (content, functionality, etc) and should include enough information for your product manager to decide how important the story is. They should always include the person using the service (the actor), what the user needs the service for (the narrative) and why the user needs it (the goal). User stories are usually written in this format:

As a... [*who is the user?*]  
 I need/want/expect to... [*what does the user want to do?*]  
 So that... [*why does the user want to do this?*]

The most important part of a user story is the goal. This helps you make sure you're solving the right problem and decide when the story is done and a user need is met. If you're struggling to write the goal then you should reconsider why you think you need that feature.

User needs can be combined with a product backlog, if you are working in an agile environment. A product backlog is a complete and constantly maintained list of requirements currently in development; see Table 20.3. If you aren't working in an agile environment, this is still a useful thing to create.

**Table 20.3** Cataloguing your user needs backlog

User story	Priority	Persona	Content type	Functional requirement	Acceptance criteria

### Jobs to be done

User stories are not the only format for expressing user requirements. Depending on your product/service and what makes sense to you, you might want to consider looking at 'jobs to be done':

When [*situation happens.*]  
 I want to [*do something.*]  
 So I can [*achieve goal.*]



## ***Advantages of cataloguing issues and user needs***

These methods are a great way to keep track of what work needs to be done and the barriers that currently exist that need to be removed. This is an essential part of the development lifecycle.

## ***Disadvantages of cataloguing issues and user needs***

Although the context and the user group are considered in this method, it's not designed to give you an in-depth understanding of who the users are and how they behave. There are other more suitable methods for this, such as personas (Chapter 24) and mental models (Chapter 25).

## **Cataloguing issues from quantitative data**

**Table 20.4**

Method summary
<p><b>Suitable for data generated from:</b></p> <ul style="list-style-type: none"><li>• unmoderated face-to-face user testing</li><li>• unmoderated remote user testing</li></ul> <p>This methodology is suitable for agile and lean ways of working.</p> <p><b>Use if you want to:</b> identify usability issues.</p>



## ***Usability metrics***

In general, usability metrics let you:

- *Track progress between releases.* It's hard to improve something if you don't know how well you're doing.
- *Assess your competition.* Are you better or worse than others? Where are you better or worse?
- *Make decisions before launch.* Is the design good enough to release to an unsuspecting world? (Nielsen, 2001)

Usability metrics include a combination of system and user performance measures:

- system response times;
- number of errors made;
- time take to complete the task;
- task completion success rate; and
- user satisfaction ratings.

These can be summarized in three points that make up the ISO usability standard *ISO/IEC 9126-4 Metrics*:

- *Effectiveness*: The accuracy and completeness with which users achieve specified goals.
- *Efficiency*: The resources expended in relation to the accuracy and completeness with which users achieve goals.
- *Satisfaction*: The comfort and acceptability of use (Mifsud, 2015).

### Measuring effectiveness

Effectiveness = (number of tasks completed successful ÷ total number of tasks undertaken) × 100.

We'd all like to achieve 100 per cent task completion rate but a 2011 study of 1,200 usability tasks shows that the average completion rate is 78 per cent (Sauro, 2011).

### Measuring efficiency

Measuring time efficiency, for example, can get very complicated (if this is something that you are interested in, see Mifsud, 2015). Errors can be unintended actions, slips, mistakes or omissions that a user makes while attempting a task. You should ideally assign a short description, a severity rating and classify each error under the respective category. (For measuring satisfaction, see Chapter 8.)

Efficiency = (number of errors made ÷ number of steps in the task) × 100

### Measuring satisfaction

See Chapter 6, section 2, for surveys of satisfaction metrics.

## Other metrics to consider

There are many other metrics you can consider. I've given a few examples below, but this is not an exhaustive list.

### **For measuring effectiveness:**

- ratio of successes to failures;
- percentage of tasks completed successfully on first attempt;
- number of persistent errors.

### **For measuring efficiency:**

- time to complete a task;
- time to learn;
- time spent on errors;
- frequency of use of help or documentation;
- number of repetitions or failed commands;
- time taken on first attempt;
- time to achieve expert performance;
- time spent on correcting errors.

Choosing the right metrics really depends on the product/service you are delivering, as does deciding what success is. For example; if you are delivering an online application for credit cards, time taken on a task is very different to a site aggregating news content. Make your Key Performance Indicators (KPIs) relevant to your product/service, otherwise the data and analysis will be at best meaningless or even detrimental to your business. KPIs should link to your business goals and be based on the relative performance of your product/service and aim for a reasonable rate of improvement.

## ***References and further reading***

Christensen, C M, Hall, T, Dillon, K and Duncan, D S (September 2016) Know Your Customers' 'Jobs to Be Done'. Harvard Business Review. Available from: <https://hbr.org/2016/09/know-your-customers-jobs-to-be-done> (last accessed 11 July 2017)

- Government Digital Service (23 May 2016) Writing user stories. Service Manual. Available from: <https://www.gov.uk/service-manual/agile-delivery/writing-user-stories> (last accessed: 16 July 2017)
- Mifsud, J (22 June 2015) Usability Metrics – A Guide To Quantify The Usability Of Any System. Usability Geek. Available from: <http://usabilitygeek.com/usability-metrics-a-guide-to-quantify-system-usability/> (last accessed: 12 June 2017)
- Nielsen, J (21 January 2001) Usability Metrics. Nielsen Norman Group. Available from: <https://www.nngroup.com/articles/usability-metrics/> (last accessed: 12 June 2017)
- Pavliscak, P (2 June 2014) Choosing the Right Metrics for User Experience. UX Matters. Available from: <http://www.uxmatters.com/mt/archives/2014/06/choosing-the-right-metrics-for-user-experience.php> (last accessed: 12 June 2017)
- Sauro, J (21 March 2011) What is a Good Task-Completion Rate? Measuring U. Available from: <https://measuringu.com/task-completion/> (last accessed: 12 June 2017)
- Seeley, J (15 March 2010) Usability Testing Metrics. Design + Research. Available from: <https://designandresearch.wordpress.com/2010/03/15/usability-testing-metrics-jeff-seeley/> (last accessed: 12 June 2017)
- Strategyn (2017) Jobs-To-Be-Done Theory and Methodology. Strategyn. Available from: <https://strategyn.com/jobs-to-be-done/jobs-to-be-done-theory/> (last accessed: 11 July 2017)
- Travis, D (2 May 2003) Discount Usability: Time to Push Back the Pendulum? User Focus. Available from: <http://www.userfocus.co.uk/articles/discount.html> (last accessed: 12 June 2017)

# Making 21 recommendations

## How to make your research findings actionable

Before looking at how to present your data and conclusions, we need to consider the recommendations you are going to make. To make your ‘report’ as practical as possible, you’ll need to make recommendations about how to fix problems and issues, or how to maximize opportunities that have been identified, how to progress the project, etc.

It’s unlikely that you’ll have all the solutions and recommendations yourself. To make these recommendations as realistic as possible and to get buy-in from the people who will either be signing off what happens next or doing the actual work to make the changes, consult those people before you formally share your suggestions. Who you talk to depends on what you initially think the solution/recommendation will be. If you do not know where to start with your recommendations, you could run a workshop to share your findings and brainstorm initial solutions/recommendations/next steps.

### **What kinds of things can you recommend?**

- You may need to do more research into a specific area. This can be difficult to hear if time and money have just been spent doing research. Be very clear about why more research is needed and give a summary of the intended approach and hypothesis.

- Changes to internal processes.
- Changes to digital product front- and back-end.
- Brand realignment.
- Realignment of product/service proposition.
- Changes to communications and content.

This is not an exhaustive list of things that may come out of your research. Some of what you recommend could be quick fixes; others may be fundamental changes that are going to be expensive. It can be useful to identify the different types of recommendations you are making, using labels such as those shown in Table 21.1.

User research reports and recommendations can be overwhelming and sometimes people are frozen by the thought of the effort required to improve things. Labelling the types of recommendations you have made gives people something to work with. It’s easy to identify what can be done now, quickly and easily, and what needs to be planned for, where additional budget will have to be found for large pieces of work.

**Table 21.1** Categorizing your recommendations

Long term	Expensive	Hard to fix
Medium term	Medium budget	Medium fix
Short term	Cheap	Quick fix

# Creating executive summaries and detailed reports to present results

Table 22.1

Method summary
<p><b>Method suitability:</b> any user research.</p> <p>Executive summaries are suitable for agile and lean ways of working; however, you are unlikely to do a detailed polished report in these circumstances.</p> <p><b>Use if you want to:</b> reports and summaries are the most ‘generic’ type of presentation that can be applied to any type of research you’ve done, to explain the objectives, the research conducted, the conclusions draw from it and what should happen next.</p>

The length and level of detail you should go into in your report depend on your objectives, the stage you’re at in your project, time available and the audience. For example, if you are doing usability testing during agile sprints you may want to do a brief write-up of the issues and recommendations and video playback (see Chapter 23). If you have the CEO, directors, business analysts and developers as your audience you’ll probably want to do an executive summary for the CEO and directors, and a detailed report for the business analysts and developers, so they know what work needs to be done to progress the project.

## Report structure

When I worked at Bunnyfoot as a consultant, the mantra was always to make reports as practical and useful as possible. This often meant presenting reports in graphical format, normally in PowerPoint rather than as a thesis in Word. If you are going to write a report on your research, you might want to include:

- 1 Title page
- 2 List of contents
- 3 Executive summary
- 4 Research objectives and methodology
- 5 Test materials
- 6 Participant summary (if appropriate)
- 7 How to read this report (ie, understanding the issues and recommendations)
- 8 Detail of results grouped logically into sections
- 9 Research limitations to consider
- 10 Summary: conclusions and next steps

### ***Executive summaries***

The executive summary should be written last and should work as a standalone document that could be shared separately with the appropriate audience. A good executive summary will cover (ideally in one page) a short context-setting piece and:

- Research purpose.
- Research and analysis methods.
- Main focus of the summary: findings and recommendations.
- Bringing it altogether briefly: limitations and a positive summary sentence.

### ***Participant details***

When sharing participant details, it's important to ensure anonymity, however many people you are sharing the data with. Don't include



**Table 22.2** Anonymized participant details

Participant #	Persona / audience type	A couple of relevant demographics	Digital literacy	Other relevant characteristics or behaviours
P1	Project Manager	Female 31 Married	Expert	Does research online before talking to anyone about the service

names and contact details in your reports; this will breach the confidentiality of your participants, even if you are sharing video of them. Share just enough to show they are relevant to your organization and research. Table 22.2 shows some anonymized participant details you could include in your report.

### ***How to read the report***

For those new to user research, you can include brief guidance on reading the report, aiding understanding of the information you are sharing. For example, if you are writing a report about qualitative user testing, you may want to equip the reader with an understanding of how the report is broken down into issues and recommendations (as shown in Figure 22.1).

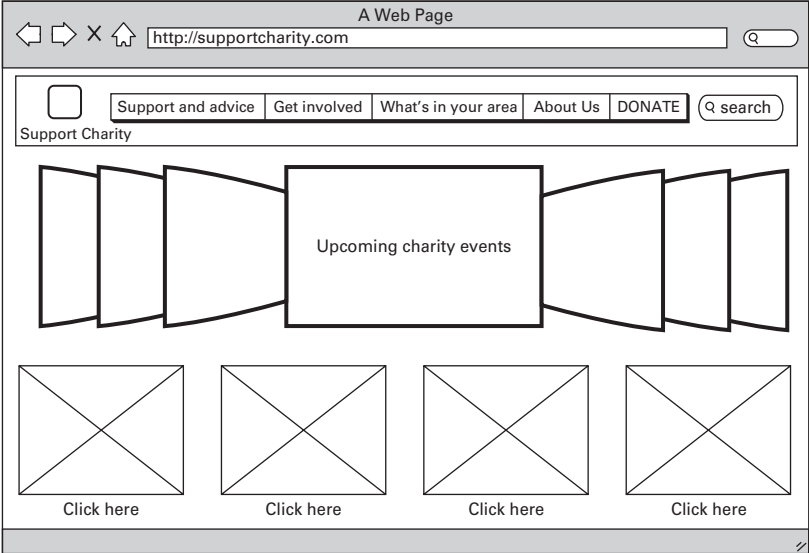
In your report, it's also useful to give a written description and, where appropriate, include graphics and visual mock-ups of findings and recommendations (this will be considered in more detail in Chapter 25). People process information in different ways, so using both text and visuals will help most people digest your report; also, having text and graphics together is less off-putting than seemingly endless reams of text.

### ***Ordering your findings and recommendations***

If you have a lot of information to convey, give some thought to how best to structure your findings and recommendations. If your research has focused on a service/product where sequential order is important, you may want to present your report in this order. Alternatively, you could place whatever you want to have the most impact first, followed by items of decreasing importance (see Figure 22.2).

**Figure 22.1** An example of how to set out your report

Descriptive title: issues & recommendations



**Good:** Best practice worth highlighting, features that contribute to excellent usability or user experience.

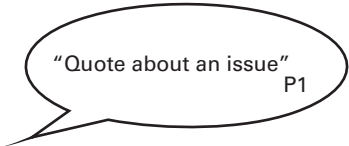
**Issue:** First summarize the issue in one sentence if possible.

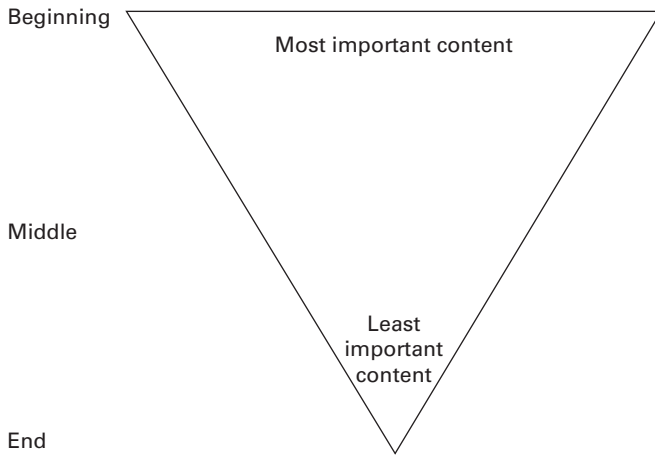
Then describe the issue in more detail if necessary. You may want to take a screenshot or include video of the issue.

**Recommendation:** Describe your suggested recommendation for improving the user experience.

Only include recommendations that have been reviewed and discussed for appropriateness.

You may want to include a sketch of the recommendation if appropriate.



**Figure 22.2** An example of how to structure report content

Your readers are likely to run out of steam at some point, so it makes sense to include the most critical things first.

There are lots of ways to structure your reports; I can't cover them all here. The best advice I can give is to think about the story you want to tell and how to arrange your content to tell it.

Using video playback to present your research results

23

Table 23.1

Method summary
<p><b>Method suitability:</b> any user research that has been video recorded. This methodology is suitable for agile and lean ways of working.</p> <p><b>Use if you want to:</b> a powerful way to quickly make a point about the user experience of your product/service/experience.</p>

Videos are a powerful way to communicate your findings, to see the participants, and to show the context of what you have recommended, especially if people haven't been able to observe the research. Videos can be used as part of a report that you are writing, in agile retrospectives at the end of a sprint, and as part of a workshop or presentation you are giving. In an ideal world, all stakeholders would watch the relevant videos, but this is wishful thinking, especially when you are likely to have hours of footage.

If you want to be hard line about it, and I hope you do, get buy-in from the project owner (if that isn't you) to require anyone with decision-making powers who didn't observe the research to watch a certain amount of video before they have a say. That could be two or three representative videos of the research in full, or whatever seems appropriate.

## How to edit your user research videos

If you have chosen to go down the route of video highlights, I have a few useful tips. Before you start, be aware that making video highlights can be time-consuming. There are a few things you can do to help the process:

- First identify what you need videos of – a particular issue, interaction, attitude, etc.
- Read through your notes to identify key observations and quotes for each of the participants and then find them in the footage rather than going through all the videos.
- Try to time stamp your notes during the research, if you think you've just observed or heard something you may want to include in your video report.

### ***What to include in your videos***

- Make each snippet of video as short as possible.
- Try to include enough context to make it clear what the participant is doing or talking about. This might involve editing the video and/or including a title for each video describing the theme or what is occurring.
- If possible find more than one example of the issue, interaction, attitude, etc. It can be useful to show something that happened multiple times to emphasize its importance.
- If including a montage of lots of participants, apply a label to identify who said what (such as the participant's number).
- Only create and present videos for the most important points you are making.

# Using personas 24 to communicate user characteristics and behaviours

Table 24.1

Method summary
<p><b>Method suitability:</b> qualitative user research where you have gathered data on the demographics, attitudes, behaviour, tasks and other characteristics. This methodology is suitable to agile and lean ways of working.</p> <p><b>Use if you want to:</b> bring your user groups to life, allowing your organization to engage with them on a human level to build better products and services for them.</p>

## What are personas?

Personas are fictional profiles (based on real data) that represent a group of users with shared interests, goals, characteristics, etc. Each persona provides a specific example of someone within a segment of your audience: what they do, how they behave, their attitudes and preferences. Personas are characters for your teams to engage with and they help ensure that products/services aren't designed for your organization but the intended users (unless your organization is the intended user, hello intranets). In the process of your research, you'll learn a lot about your users; even if this wasn't the main focus of the research it's inevitable – it's user research (Stickdorn and Schneider, 2014).

As already discussed in Chapter 3 (on who should be involved in your research), useful personas go beyond demographics and represent people's motivations, wants, needs, tasks, etc. There is no set information that has to be included in your personas. As with so much else in this book, it depends on your product/service and the purpose of your research and results.

### Top tip

*Personas should not be created once and used forever more. Personas should be iterative and seen as living, breathing things that change over time. Each time user research is done, your personas should be revisited and revalidated. Is the information they contain still true? Have your customers' behaviour, attitudes or tasks changed? Do you have a new set of customers that you haven't taken into account before? It is also possible for primary and secondary personas (depending on who your key focus is) to change over time. As people, society, technology, etc, change, so your business adapts to the new.*

## What to include in your persona

Table 24.2 shows components that you can pick and choose from to make up what will be the most useful personas for you.

If you are going to include a picture in the persona, here are some good practices and what to avoid.

### Good practice

- You may consider having someone draw portraits of your theoretical users or shapes with facial expressions.
- Be diverse but realistic in your representative of your users.
- You may want to consider whether gender is important. Do you need to include demographic characteristics to represent the users?

**Table 24.2** What data to include in your personas

Persona components	
Component	Essential or Optional
<b>Backstory and narrative</b>	
Name	Essential
Photo	Optional
Persona quotes	Optional
Role	Essential
Demographics	Essential but keep minimal
Background history	Essential but keep minimal
Day in the life of	Optional
Attitudes and beliefs	Optional
Profile	Optional
Current life situation	Optional
<b>Project-specific attributes</b>	
Scenarios (see chapter 27)	Optional
Attitudes and beliefs towards product/ service	Essential
Current situation of using product/ service	Essential
Emotions	Optional
Sources of information / current way of doing things	Recommended but Optional
Responsibilities	Optional
Frustrations / constraints	Essential
Anxieties / fears	Optional
Prior knowledge	Optional
Experience with product / service	Essential
<b>Behaviour and Context</b>	
Tasks or goals	Essential
Triggers (what causes them to do a task)	Recommended but Optional
Motivations (emotional and rational)	Essential
Needs	Essential
Wants (different to needs!)	Optional



### Bad practice

- Don't use actual photos of your participants.
- Don't use photos of staff members.
- You may want to avoid stock photography.

## ***Anti-personas***

Anti-personas are groups of people that you aren't designing/writing for. They are created in the same way as a persona. If you are tight on time and budget, focus on creating your personas first; you can invest effort in anti-personas at a later stage.

## **How to present your personas**

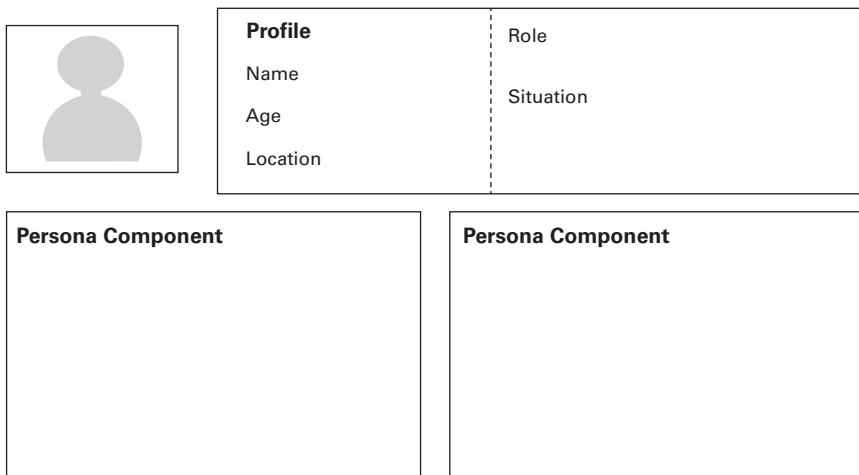
If you search for examples of personas online, you will generally see very glossy, poster-like representations that have probably been made by a graphic designer. This level of presentation isn't necessary, but it is worth spending some time to make the personas engaging and the information easy to digest.

Personas can be information-rich (or perhaps information-dense). You are including a lot of information in just a few pages, so it's important the personas are in some way visually appealing, breaking down information in a coherent way. There is a common format that tends to be used, which you can follow and adapt to your needs, not only to help you create your personas, but also to help those you are sharing the information with to understand the personas; see Figures 24.1 and 24.2. If you're wondering what a completed persona looks like, Figure 24.3 provides a very basic example.

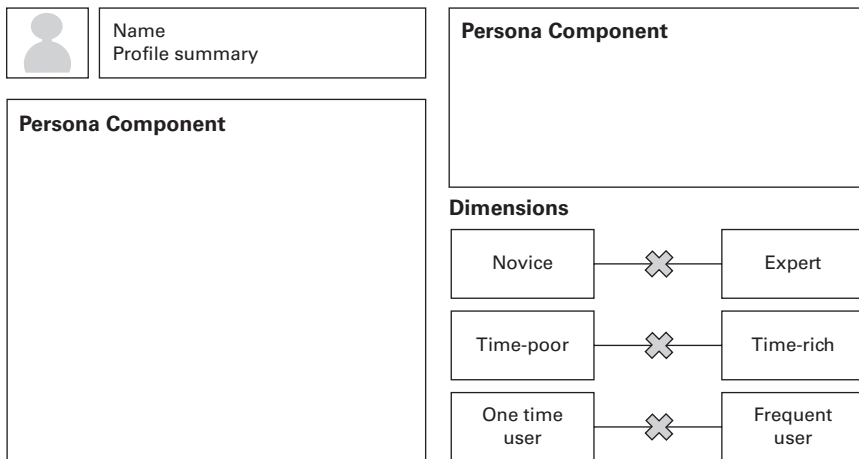
You may not be able to include everything on one page if you have a lot of information to convey. If this is the case I would try to limit it to two or three pages per persona, to make the content easy to digest and memorable.

Using 'dimensions' can be a useful and simple way of summarizing certain characteristic of each persona and can be compared across personas. Dimensions are a way of identifying where a persona lies on

**Figure 24.1** A simple example of how to present your personas




**Figure 24.2** An example of how to present your personas with more information



a particular continuum. For example, how time-rich or time-poor is this group of users? How novice or expert are they at doing or using something? If you have more complex characteristics or elements that you want to compare and summarize, there are useful graphical ways to do this. I recommend trying to summarize visually for the personas you create, rather than having large amounts of text.

**Figure 24.3** An example of basic persona

	<p><b>Profile</b></p> <p><b>Name:</b> Jasmine</p> <p><b>Age:</b> 43</p> <p><b>Location:</b> London</p> <p><b>Role:</b> Small business owner.</p> <p><b>Situation:</b> Owns marketing &amp; PR company.</p> <p>Experienced in marketing. Still learning about and getting to grips with online &amp; social media.</p> <p>Married, no kids. Has Master's degree.</p>
<p><b>High-level user needs</b></p> <p>Save time online &amp; maximize resources.</p> <p>Find interesting content to share.</p> <p>Schedule posts. Cross-post where relevant.</p> <p>Evaluate impact of work.</p> <p>Network with other professionals online.</p>	<p><b>Current solutions and frustrations.</b></p> <p>Using multiple tools; Hootsuite, native analytics, etc.</p> <p>Have to learn how to use multiple tools.</p> <p>A lot of stuff still being done manually.</p> <p>Paying another company to measure influence, doesn't know how accurate it is.</p> <p>Using LinkedIn for networking.</p>

## References and further reading

- Bernstein, G (26 May 2015) How to Create UX Personas. UX Mastery. Available from: <http://uxmastery.com/create-ux-personas/> (last accessed: 12 June 2017)
- Cable, S (28 June 2017) Don't use photos in your personas. CX Partners. Available from: <https://www.cxpathners.co.uk/our-thinking/dont-use-photos-in-your-personas/> (last accessed 11 July 2017)
- Rowley, N A A Jr (20 March 2013) Include Your Clients in the Persona Research Process with Affinity Mapping. Iacquire. Available from: <http://www.iacquire.com/blog/include-your-clients-in-the-persona-research-process-with-affinity-mapping> (last accessed: 12 June 2017)
- Stickdorn, M and Schneider, J (2014) *This Is Service Design Thinking*, BIS Publishers, Amsterdam
- Zhao, T (6 September 2016) Using Activity Theory to build effective personas. GDS User Research Blog. Available from: <https://userresearch.blog.gov.uk/2016/09/06/using-activity-theory-to-build-effective-personas/> (last accessed: 12 June 2017)

Using mental models to visualize how users think and identify opportunities

25

Table 25.1

Method summary
<p><b>Method suitability:</b> mental models can be created from a variety of data. For example, usability testing observations, interview data, diary studies, contextual inquiry.</p> <p>This methodology is suitable for agile and lean ways of working.</p> <p><b>Use if you want to:</b> visualize and understand how your user groups think about your product/service and identify where the gaps and opportunities are.</p>

A mental model is a person’s intuitive understanding of how something functions, based on their past encounters, exposure to information, everyday experience and judgement. Mental models are about belief rather than fact. Here we are considering what the users believe about how your product/service works: their mental model will affect how they decide to use it, the way they behave while using it and the decisions they’ll make about it.

User experience mental models are a visual representation of how people think and feel and can be a useful representation of how people approach using your product/service. The questions that customers have at various stages of their journeys are listed and ideas for the type of content, functions, etc, required are mapped to these questions.

The mental models are then used to help inform such things as the information architecture, wireframe generation and content provision if you are focusing on a digital item. In reality, a user interface can never correspond to every user's mental model. However, you can create user interfaces that match the mental models users would most likely have. It is often useful to have a mental model for each persona for a particular journey or experience, but bear in mind that mental models are not static. People's mental models can change as a result of everyday experiences.

To appreciate why mental models are so important in designing things, you need to understand conceptual models. A conceptual model is the actual model of the product/service the user experiences (ie, through an interface) – the reality rather than the belief. If the conceptual model and the user's mental model don't match, the user will find the item hard to learn and use, so your conceptual model needs to take into account the user's mental model. However, we are rarely talking about a single mental model. You have multiple user groups with differing mental models and your conceptual model needs to make your product/service easy to use for all your primary user groups. That sounds like a daunting prospect; unachievable perhaps?

This is a great example of why user research is so important. Analysing your data will show you where the user groups overlap in their mental models and where they diverge. You can design, refine and validate concepts through user research to meet the needs of different mental models; ultimately having a better understanding of what works for the majority of users, although it will never be perfect. It is also useful to combine them with personas to have an in-depth view of who your users are and how they think.

---

## **CASE STUDY** Web browser URL and search bars

Jakob Nielsen highlights potential confusion in mental modelling, when users fail to recognize key differences between similar (but not identical) parts of a system (Interaction Design Foundation, 2017; Nielsen, 2010).

Many users seem unable to distinguish between the search field on Google and the URL entry field in a browser. They will use Google to search for the name of a well-known website in order to click the link rather than simply entering the name plus '.com' in the URL bar. It's a problem that Google Chrome tries to resolve by making the URL bar a search tool.

It appears that users know that they can type stuff into a box and get taken to where they want to go but are uncertain as to the functionality of any given box. This offers an explanation of why browsers have evolved to treat the URL box as a search box in many cases. The functionality of the browser had to change to meet the users' mental model as the mental model itself was too confused to easily adapt the design pattern that users encountered.

### **Smashing Magazine cartoon**

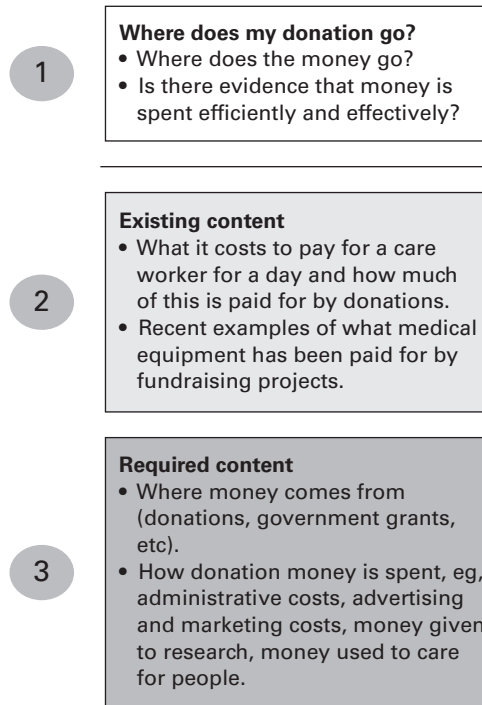
Smashing Magazine has a great 'mental models' cartoon that explains what mental models are and why they are useful, using the example of a health tracking app. Definitely worth a read; see Young and Colbow (2012).

---

*Important note:* if you are innovating, pushing the boundaries and providing people with something they haven't seen or considered before, you can change their mental models. There is a certain amount of inertia to overcome, as it takes time and effort to change a mental model. This should be taken into account when developing something new: it should inform your underlying understanding of users' reactions during testing and after initial launch. If the product/service is providing a valuable experience for users they will make the effort to learn the new ways. If they do not consider it valuable they will walk away and find something else.

## **How to create your own mental model**

In a mental model visualization (see Figure 25.1), how people behave (think/feel) is represented as a column above the horizontal line (box 1). The functions/features/content of your product/service are represented below the horizontal line, in boxes 2 and 3, in support of the users' box. Where there are no supportive columns, there are gaps in your offering and opportunities to improve what you provide to the users.

**Figure 25.1** An example of a mental model column

Using the ‘Support Charity’ scenario I created in Chapter 3, Figure 25.2 is an example of questions identified from interviews with users on how they feel about donating to charities. It shows the column in Figure 25.1 in the wider context of a donation mental model. The boxes are in the sequential order of the likely thought process:

- Box 1 is the questions that the users have when they are trying to decide which charity to donate to, if they don’t already have a strong affinity to one particular charity.
- Box 2 is the existing content on the Support Charity website that supports the questions the users have.
- Box 3 is the content that is required to support the user’s mental model of the donation process.

You can use the methodologies discussed in this part of the book to identify the users’ actions and questions to make up the top column (box 1). Establishing what currently exists requires an audit of what

**Figure 25.2** A simple example of a mental model, for Support Charity

I want to make a donation	Who should I donate to?	How should I donate to?	Make a donation
<b>I am in interested in charities that support people through illness.</b> <ul style="list-style-type: none"> <li>• Which charities do that?</li> <li>• I want to make a donation rather than do an event, I don't have time.</li> </ul>	<b>Where does my donation go?</b> <ul style="list-style-type: none"> <li>• Where does the money go?</li> <li>• Is there evidence that money is spent efficiently and effectively?</li> </ul>	<b>What's the best way to make a donation?</b> <ul style="list-style-type: none"> <li>• Is it safe to make a donation online?</li> <li>• If I donate online, can I do gift aid?</li> <li>• Can I use PayPal to donate?</li> </ul>	<b>I want to make a donation now.</b> <ul style="list-style-type: none"> <li>• What details do I need to share.</li> <li>• How much is the donation worth with gift aid?</li> <li>• I don't want to sign up for a newsletter.</li> </ul>
Existing content and functionality	<b>Existing content and functionality</b> <ul style="list-style-type: none"> <li>• What it costs to pay for a care worker for a day and how much of this is paid for by donations.</li> <li>• Recent examples of what medical equipment has been paid for by fundraising projects.</li> </ul>	Existing content and functionality	Existing content and functionality
Required content	<b>Required content</b> <ul style="list-style-type: none"> <li>• Where money comes from (donations, government grants, etc).</li> <li>• How donation money is spent, eg, administrative costs, advertising and marketing costs, money given to research, money used to care for people.</li> </ul>	Required content	Required content



you have in terms of content, functions and other relevant assets in category box 2. Comparing box 1 and box 2 will identify the opportunities you are currently missing, to complete box 3.

## ***References and further reading***

- Ballav, A (17 May 2016) Mental Models and User Experience. UX Matters. Available from: <http://www.uxmatters.com/mt/archives/2016/05/mental-models-and-user-experience.php> (last accessed: 12 June 2017)
- Interaction Design Foundation (September 2016) We Think Therefore It Is – Conceptual Modelling for Mobile Applications. Available from: <https://www.interaction-design.org/literature/article/we-think-therefore-it-is-conceptual-modelling-for-mobile-applications> (last accessed: 12 June 2017)
- Interaction Design Foundation (May 2017) A Very Useful Work of Fiction – Mental Models in Design. Available from: <https://www.interaction-design.org/literature/article/130558> (last accessed: 12 June 2017)
- Nielsen, J (18 October 2010) Mental Models. Nielsen Norman Group. Available from: <https://www.nngroup.com/articles/mental-models/> (last accessed: 12 June 2017)
- Weinschenk, S (8 October 2011). The Secret to Designing an Intuitive UX. Psychological concepts underlying good user experience and usability. UX Magazine. Available from: <http://uxmag.com/articles/the-secret-to-designing-an-intuitive-user-experience> (Last accessed: 12 June 2017)
- Young I (2007) *Mental Models. Aligning design strategy with human behaviour*, Rosenfeld Media, New York
- Young, I and Colbow, B (23 April 2012) Mental Model Diagram – Cartoon. Smashing Magazine. Available from: <https://www.smashingmagazine.com/2012/04/mental-model-diagrams-cartoon/> (last accessed: 12 June 2017)

Using journey  
and experience  
maps to visualize  
user research data

26

Table 26.1

Method summary
<p><b>Method suitability:</b> data for experience maps can be gathered from multiple sources. If you are looking at a digital product/service you may start with your analytics, looking at users’ journeys and paths. You can draw on other sources you may have such as customer satisfaction and feedback data and social media data, combined with user research data using contextual inquiry, ethnography, usability testing, interviews, diary studies and workshops. These methods are suitable for agile and lean ways of working.</p> <p><b>Use if you want to:</b> provide visualizations of users’ experience of a service/ organization.</p>

The terms ‘journey map’ and ‘experience map’ are often used interchangeably, so from now on we’ll just use ‘experience map’. These maps visualize the touchpoints where users interact with the product/ service and are generally used to construct the journey. The maps can also represent the users’ emotions, expectations, motivations and questions at each interaction. Experience maps usually represent a certain period of time, for example from initial contact through engagement into a long-term relationship.

It is useful to have a separate map for each of your personas/user groups. These maps provide a high-level overview of factors influencing users' experience, constructed from their perspective, and they are time-based, although the time is not necessarily linear. Importantly, the touchpoints can be across multiple channels, both digital and non-digital.

As the maps synthesize the circumstances, motivations and experiences of the user/service interaction, they can be used to identify problem areas and opportunities for innovation, as well as what the service is doing well, across channels, departments, journeys and devices. Maps are particularly useful when the experience takes place over several weeks or months and involves:

- lots of separate steps or events;
- more than one location;
- different people or teams;
- several related services or touchpoints (Government Digital Service, 2017).

UX Mastery (2014) and Adaptive Path (2011) suggest that, as experience maps cover doing, thinking and feeling, the 'must have' components of a customer journey map are:

- *Personas*: the main characters that illustrate the needs, goals, thoughts, feelings, opinions, expectations, and pain points of the user.
- *Timeline*: a finite amount of time (eg, one week or one year) or variable phases (eg, awareness, decision making, purchase, renewal).
- *Emotion*: peaks and valleys illustrating frustration, anxiety, happiness, etc.
- *Touchpoints*: customer actions and interactions with the organization; ie what the customer is doing.
- *Channels*: where interaction takes place and the context of use (eg, website, native app, call centre, in-store); ie where customers are interacting.

## How to create an experience map

Once you have gathered your data, the next step is to think about the layout of your experience map. There are no hard and fast rules for this, but there are two main types of visualization (Churruca, 2013): *timeline*, where touchpoints are located over a path, organized either left to right or top-bottom, which is the most common kind of experience map; or *wheel*: used where interaction phases are more relevant than touchpoints, used mainly for reflecting an overall experience.

The success and clarity of your experience map will depend largely on choosing the right layout and graphic elements. You can find out more about this in Churruca (2013), where you can also see classic examples of both wheel visualizations (Lego Experience Map) and timeline visualization (Starbucks Service Experience). Here we will focus on the timeline visualization; even within this format there are various ways to design it. Adaptive Path is an authority on experience maps; the Rail Europe visualization is an excellent example that can be seen on Adaptive Path's website (Risdon, 2011).

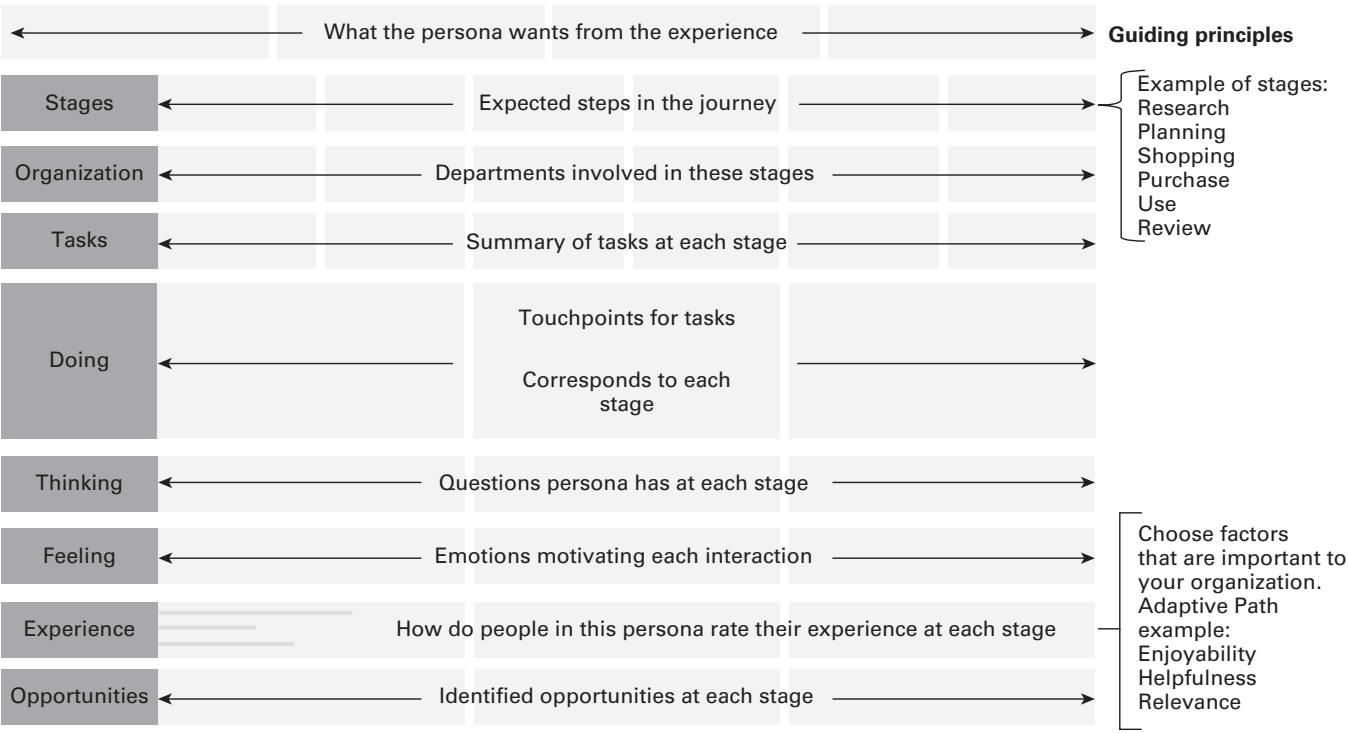
I have laid out the main components of an experience in Figure 26.1. It is a 'blank' map to show you what components generally go where on your visualization. Figure 26.2 is an enlarged version of the icons that can be used in the experience map.

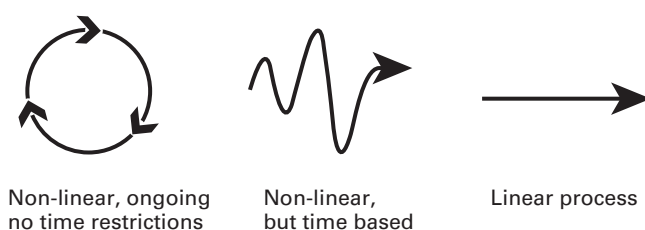
You may not want to include all these elements in your experience map; it really depends on your product/service and what you need to visualize. Your map doesn't necessarily need to look like Figure 26.1; you can find lots of examples online, and for some thoughts on the differences see Churruca (2013).

### Map variations

If you are concerned that these maps look very complicated and difficult to create, you could simplify them to meet your needs or current level of experience; see Figure 26.3 as an example. You can also create maps for competitors, as a visual way of benchmarking how you are doing against them.

**Figure 26.1** Example of what to include in your experience map



**Figure 26.2** A close up of the ‘doing’ icons**Figure 26.3** Simple experience map

Date or likely timeline	Date of interaction	Date of interaction	Date of interaction
Touchpoint	Email	Phone	Written note
Description	Description of the interaction, the intention and emotions experienced	Description of the interaction, the intention and emotions experienced	Description of the interaction, the intention and emotions experienced
Emotion	:-)	:-(	:-
Outcome	What happened as a consequence on the interaction and potential next steps and options	What happened as a consequence on the interaction and potential next steps and options	What happened as a consequence on the interaction and potential next steps and options

Another variation is the customer lifecycle map that represents multiple journeys over time, visualizing key events in the use of the service from initial contact to when the customer leaves or no longer has use for the service provided. These kinds of maps are holistic overviews: it's important to represent change over time, rather than just taking snapshots (Interaction Design Foundation, 2017).

Experience maps are not service blueprints, but they can be a starting point for them. Service blueprints are a visual schematic that incorporates users, the provider and other relevant parties, the users' touchpoints and behind-the-scenes processes. Such work needs to be created collaboratively (as in stakeholder workshops; see Chapter 15) and using contextual inquiry (Chapter 13). Each team represented on

the blueprint needs to be involved in its creation. Service blueprints can reveal areas of overlap, duplication and where things are missing, and can be used to coordinate people and resources (Stickdorn and Schneider, 2014).

## **References and further reading**

- Adaptive Path (2017) Mapping Experiences. Available from: <http://mappingexperiences.com/> (last accessed: 12 June 2017)
- Boag, P (15 January 2015) All You Need To Know About Customer Journey Mapping. Smashing Magazine. Available from: <https://www.smashingmagazine.com/2015/01/all-about-customer-journey-mapping/> (last accessed: 12 June 2017)
- Churruca, S (17 March 2013) Experience maps, user journeys and more. UX Lady. Available from: <http://www.ux-lady.com/experience-maps-user-journey-and-more-exp-map-layout/> (last accessed: 12 November 2017)
- Government Digital Service (April 2017) Creating an experience map. GDS Service Manual. Available from: <https://www.gov.uk/service-manual/user-research/creating-an-experience-map> (last accessed: 12 June 2017)
- Grocki, M (16 September 2014) How to Create a Customer Journey Map. UX Mastery. Available from: <http://uxmastery.com/how-to-create-a-customer-journey-map/> (last accessed: 12 June 2017)
- Interaction Design Foundation (July 2017) A simple introduction to lean UX. Available from: <https://www.interaction-design.org/literature/article/a-simple-introduction-to-lean-ux> (last accessed 26 August 2017)
- Ivey-Williams, K (21 April 2016) How to make a user journey map. GDS Design Notes Blog. Available from: <https://designnotes.blog.gov.uk/2016/04/21/how-to-make-a-user-journey-map/> (last accessed: 12 June 2017)
- Risdon, C (30 November 2011) The Anatomy of an Experience Map. Adaptive Path. Available from: <http://adaptivepath.org/ideas/the-anatomy-of-an-experience-map/> (last accessed: 12 June 2017)
- Stickdorn, M and Schneider, J (2014) *This is Service Design Thinking*, BIS Publishers, Amsterdam

# Using scenarios and storyboards to represent the user journey 27

Table 27.1

Method summary
<p><b>Method suitability:</b> any user research.</p> <p><b>Use if you want to:</b> <b>Scenarios</b> are hypothetical stories created with sufficient detail to meaningfully explore an aspect of the service, experience (or product usage). Scenarios describe the stories and context behind why a specific user group comes to your product/service and can be depicted as plain text, videos or storyboards.</p> <p><b>Storyboards</b> are a series of drawings/pictures that visualize a sequence of events (a journey or a scenario) where the service is used. Storyboards can be used for existing journeys or the hypothetical implementation of a new product/service/experience. They allow stories about user experience to be brought into the design process. They can be used to represent both what is currently happening and what should be happening (issues and recommendations).</p> <p>These methodologies are suitable for agile and lean ways of working.</p>

Scenarios and storyboards are often combined with personas to put the user at the heart of the design and development process (Stickdorn and Schneider, 2014; Usability.gov, 2017).



## How to create scenarios

Good scenarios are concise and include the following elements:

- *Who is the user?* Each persona will have different motivations and behaviours when using your product/service.
- *Why does the persona use your product/service?* What motivates the user to come to you and what are their expectations upon arrival?
- *What goals do they have?* What does the user want to achieve? And what does your product/service have to do to provide a satisfactory experience?

You may also want to include how the users can achieve their goals. Identify the various possibilities and any potential barriers; more specifically, for each persona consider:

- 1 *Goals.* What is the user trying to accomplish? How do the user's actions fit into the objectives of the organization?
- 2 *Process.* What are the steps the user will follow? How does information flow from one step to the next? What are the various roles (such as creator, contributor, editor or approver) that are involved?
- 3 *Inputs and outputs.* What materials and information will users need to successfully use the thing (eg interface)? What will they need from the interface to continue with their overarching goals?
- 4 *Experience.* What similar things has the user done in the past? How has the organization survived without this design in the past?
- 5 *Constraints.* What physical, temporal, or financial constraints are likely to impose themselves on the user?
- 6 *Physical environment.* How much room do the users have to do what they need to do? What materials are on their desk? What access do they have to necessary information (such as user manuals)? What notes are taped to their monitor?
- 7 *Tools in use.* What tools does the user currently use?
- 8 *Relationships.* What are the interconnections between the primary user and other people who are affected by the tool? (US Department of Health and Human Services, 2017; Wechsler, 2010).

## How to create storyboards

Storyboards are a great way to step through a potential experience for our emerging personas: to further understand their context, needs, motivations, and behaviours. You can get small groups to sketch the scenes of a future scenario (story) across six to 10 boxes (or more if required); blanks are shown in Figure 27.1. When filling in your storyboard, caption and title every scene to help explain what is happening, and convey emotion and dialogue through speech/thought bubbles and emoticons.

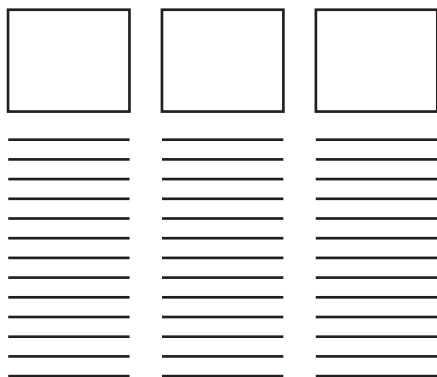
(This section is based on and adapted from work done by Lagom Strategy, 2106.)

### *Useful pointers*

Each scenario should focus on one persona: ‘This is yy’s story about using the xx...’. You may want to give the groups specific questions to cover in their storyboard:

- What triggers and motivates them to come to xx? What needs do they want to address?
- What do they already know about how to solve their need/s?
- How do they expect the xx to help them?
- How many times do they come to the xx during their story?

**Figure 27.1** Blank storyboard template



- What do they do on the xx? What content do they look at? Do they interact with anything?
- Which sites and sources (on- and offline) do they visit during their story?
- Who else helps or influences them during their story?
- What encourages and discourages them from using the product or service?
- How does the site eventually help them solve their need/s?
- When does their story end and what do they consider to be a successful user experience?

Remember to consider these questions:

- What is motivating them at each stage?
- What emotions are they feeling at each stage?
- What are their key decision points?
- What is the interplay of off- and online activity in their story?
- What are their hurdles and pain points? How do they overcome them?

## ***References and further reading***

- Lagom Strategy (2016) [www.lagomstrategy.net/](http://www.lagomstrategy.net/) (last accessed: 27 August 2017)
- Lichaw, D (2016) *The User's Journey. Storymapping products that people love*, Rosenfeld Media, New York
- Stickdorn, M and Schneider, J (2014) *This is Service Design Thinking*, BIS Publishers, Amsterdam
- US Department of Health and Human Services (12 June 2017) Scenarios. Usability.gov. Available from: <https://www.usability.gov/how-to-and-tools/methods/scenarios.html> (last accessed: 12 June 2017)
- Wechsler, J (30 November 2010) Using Scenarios. UX Think. Available from: [http://jaxwechsler.com/using\\_scenarios/](http://jaxwechsler.com/using_scenarios/) (last accessed: 12 June 2017)

28

# Using infographics to translate numerical and statistical data

Table 28.1

Method summary
<p><b>Method suitability:</b> you can use infographics for a wide variety of data you’ve collected:</p> <ul style="list-style-type: none"><li>● Quantitative surveys</li><li>● Quantitative user testing</li><li>● IA validation</li><li>● A/B testing</li><li>● Card storing</li><li>● Quantitative user testing</li></ul> <p><b>Use if you want to:</b> infographics can be used to visualize journeys, patterns and trends, hierarchies and architectures, concepts and plans.</p>

## How to make effective infographics

An effective infographic:

- has a clear purpose and is engaging;
- makes sense to its intended audience;
- does not distort or misrepresent the data or the truth;
- is in a fit-for-purpose format (Parry, 2015).

The experience maps discussed in Chapter 26 are an example of an infographic. The kind of infographic you need depends on the objectives of your research, your intended audience and what story you want to tell.

If you aren't an analyst or graphic designer, try to collaborate with them. You could hold a workshop to come up with the most useful ways to visualize your data. If this isn't possible, you could start by doing some rough sketches of the visualizations you think may be useful. Show them to some colleagues and ask them what they get from the data; this will help you to understand if each visual is effectively conveying what you want it to. If the visuals don't do this, iterate and try again.

Here are a few useful rules to help you make effective graphics:

- *Show don't tell.* If you need a lot of text to explain what's going on, your infographic isn't likely to be effective. That doesn't mean there can't be any text; rather, you need a balance between the textual and the visual within the infographic.
- *Stick to three colours.* Choose three primary colours. Of the three, one should be the background colour (usually the lightest), and the other two should break up the sections. If you need to add other colours, use shades of the three main colours. This will keep the palette cohesive and calming, rather than jarring.
- *Stick to two fonts and three sizes* (heading, sub-heading and body). Typography can be used to highlight facts and figures.
- *Give your main point prominence in the graphic.* Every good infographic has a hook or primary take-away that makes the viewer say, 'Aha!' What is the thing you most want people to remember?
- *Keep it simple and focused.* Try not to overload your infographic: tell one coherent story in one infographic. It may be that to tell your complete story you need more than one, or an infographic plus other kinds of analysis and presentation.
- *Consider the flow of the graphic.* In the same way you check your written reports and stories, see if the presentation flows. Does it convey the information in the right order? Placement of information will, to a certain extent, determine the order in which people consume the data.
- *Be consistent.* Stick to one theme.

Some bad practices:

- Dominant dark colours do not translate well on infographics.
- Avoid white as a background whenever possible. Infographics are often shared on multiple websites and blogs, most of which have white backgrounds. If your infographic's background is also white, deciphering where it begins and ends could be difficult.
- Some data should not be simplified to use in an infographic. Taking really complicated data and over-simplifying it can cause misunderstanding and defeat the purpose of any research done. An infographic may not be a great format to explain the intricacies of string theory, for example.

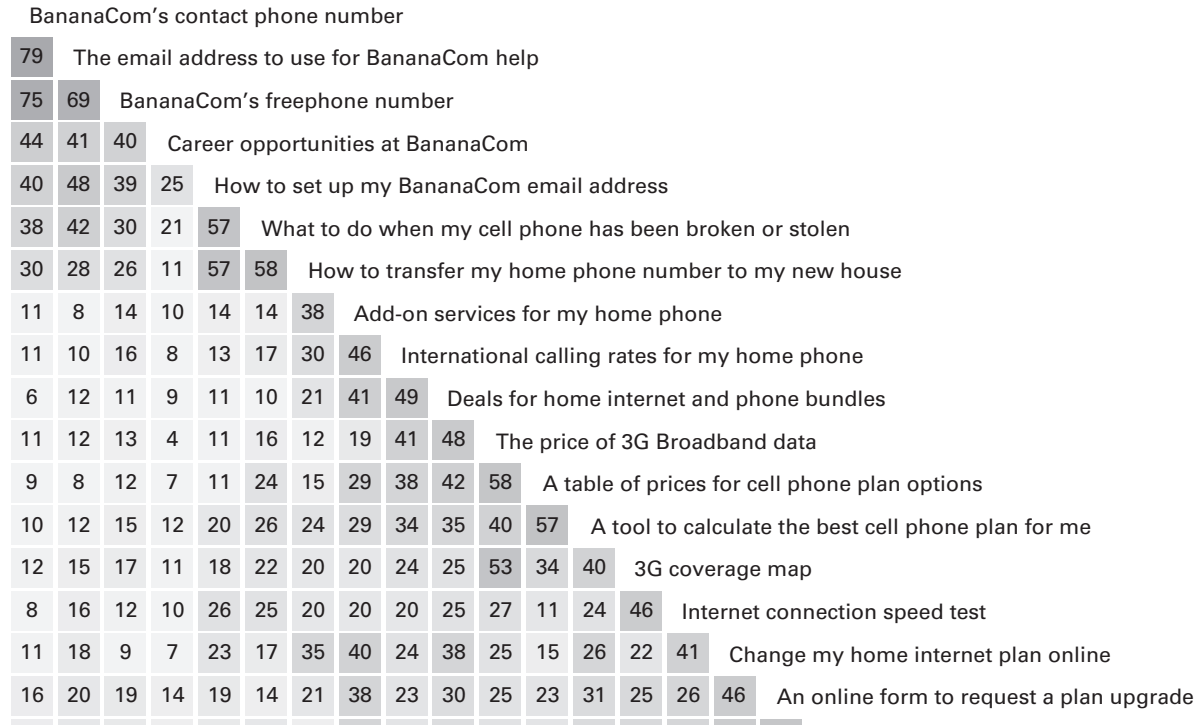
## Making use of available tools

Often you don't have to create visualizations/infographics yourself. Many of the tools that have been highlighted in the various chapters of this book have visualization options to help you make sense of your data. For instance, Optimal Workshop has a visualization option for tree testing results (IA validation/Treejack), for card sorting results and for the various other tests it offers.

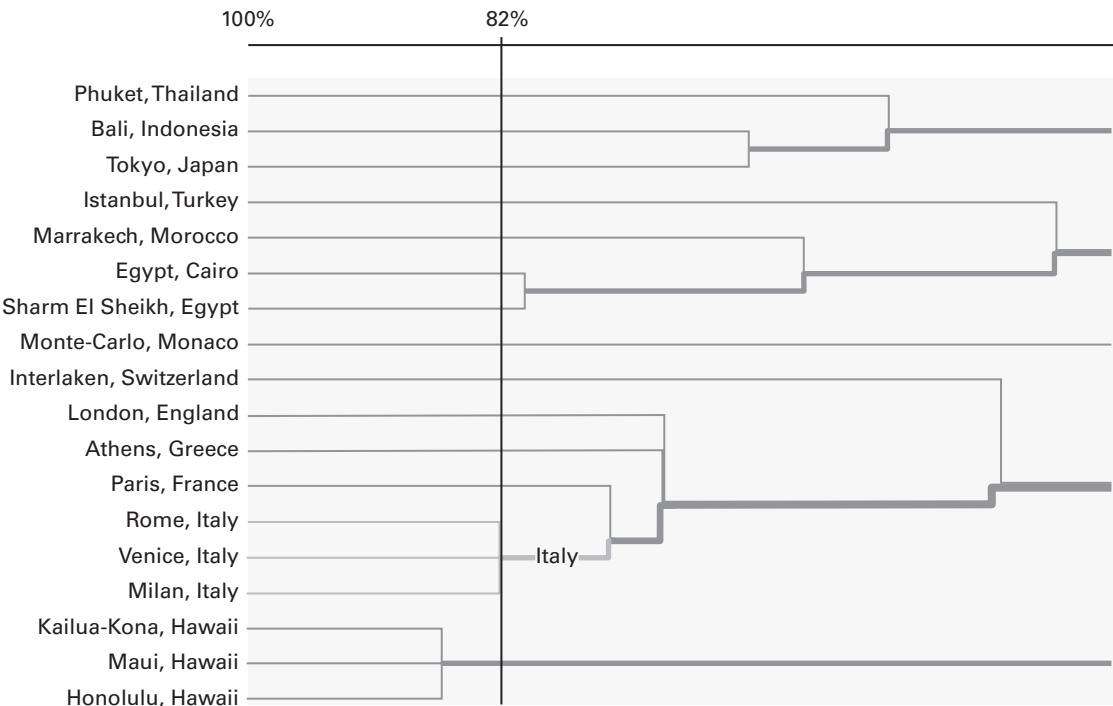
Its card sorting data visualization is known as a Similarity Matrix (Figure 28.1). The matrix clusters together the strongest card groups along the diagonal edge; the darker the colour the more related the cards are, helping you identify obvious clusters and groupings, and things participants don't consider to be related. Figure 28.2 is another example of a card sort data visualization known as a Dendrogram, which is used to visualize content groups and the top labels by participants.

The IA validation (tree test) visualization known as a pie tree (see Figure 28.3) depicts detailed path analysis. Figure 28.4 shows you the choices your participants made to find content and where they all selected their final answers

UserZoom also offers tree test and other UX metrics visualizations to help you understand your data. Many tools such as Survey Monkey and SurveyGizmo offer analysis, visualization and interactive/graphic

**Figure 28.1** Similarity matrix visualization**SOURCE** Optimal Workshop, 2017

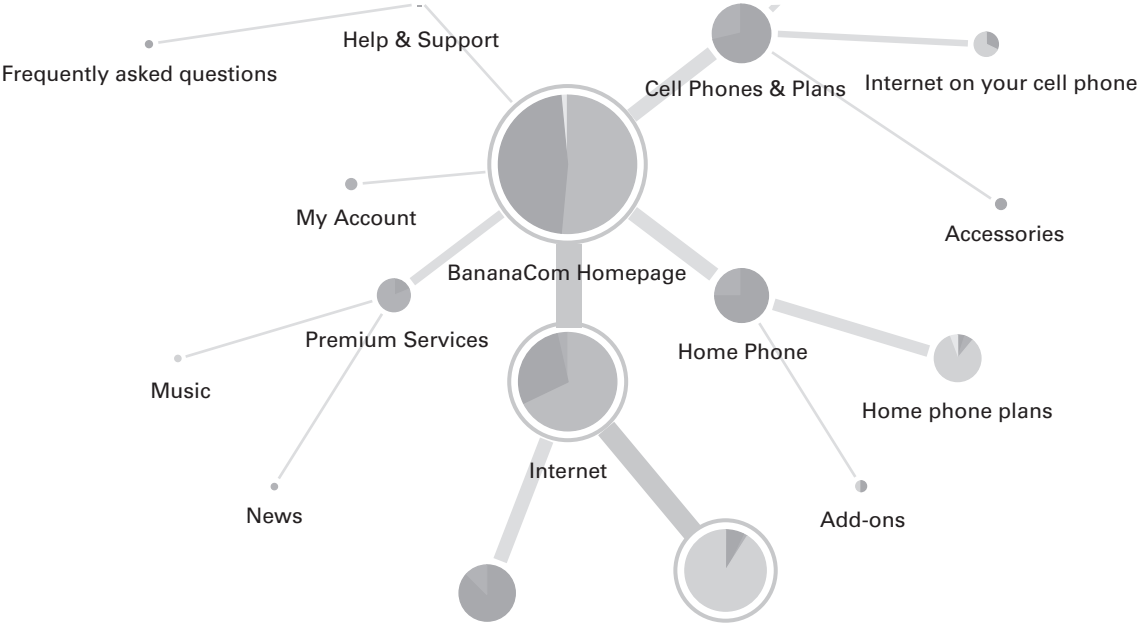
**Figure 28.2** Dendrogram visualization



**SOURCE** Optimal Workshop, 2017

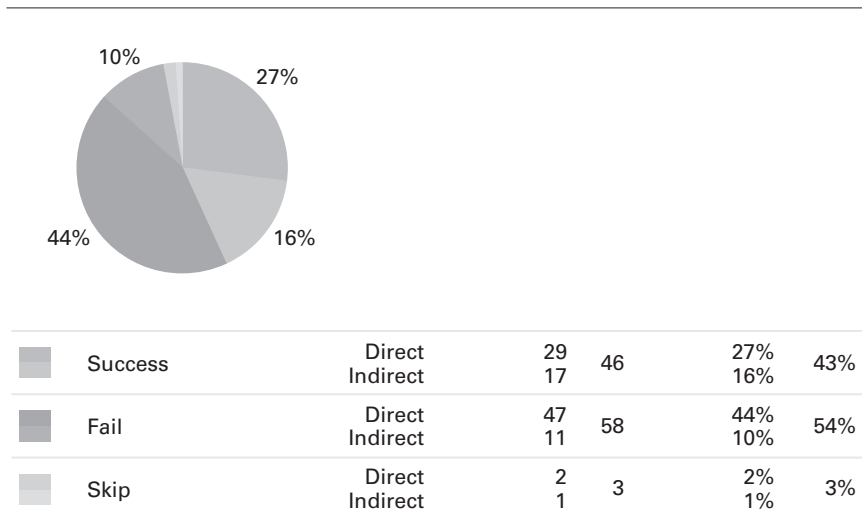


**Figure 28.3** Pie tree visualization



**SOURCE** Optimal Workshop, 2017

**Figure 28.4** Another IA validation (tree test) visualization; showing the success rate of an individual task.



**SOURCE** Optimal Workshop, 2017

options for your survey data. Some A/B testing tools will also provide visualization options for your data, such as Google's Data Studio, Visual Website Optimizer and Kissmetrics.

## References and further reading

- Balliet, A (14 October 2011) The Dos And Don'ts of Infographic Design. Smashing Magazine. Available from: <https://www.smashingmagazine.com/2011/10/the-dos-and-donts-of-infographic-design/> (last accessed: 12 June 2017)
- Bowmast, N (2017) Bowmast.com Available from: <http://www.bowmast.com/about/> (last accessed: 12 June 2017)
- Cheng, K (2012) *See What I Mean. How to use comics to communicate ideas*, Rosenfeld Media New York
- Easel.ly (15 June 2015) The 6 Best Practices for Designing an Infographics. Available from: <https://easel.ly/blog/the-6-best-practices-for-designing-an-infographics/> (last accessed: 12 June 2017)
- McCandless, D (2017) Information is beautiful. Available from: <http://www.informationisbeautiful.net/> (last accessed 26 August 2017)
- Meyer, A (29 April 2015) Best (and Worst) Practices for Infographics. Marketer Gizmo. Available from: <http://www.marketergizmo.com/whats-the-deal-with-infographics/> (last accessed: 12 June 2017)
- Optimal Workshop (2017) [www.optimalworkshop.com](http://www.optimalworkshop.com)

- Parry, G (5 June 2015) When and how to create an effective infographic. PwC Digital New Zealand. Available from: <https://digital.pwc.co.nz/ideas/when-and-how-to-create-an-effective-infographic/> (last accessed: 12 June 2017)
- Patel, N (6 January 2015) 12 Infographic Tips That You Wish You Knew Years Ago. Kissmetrics Blog. Available from: <https://blog.kissmetrics.com/12-infographic-tips/> (last accessed: 12 June 2017)
- Rum, J (05 July 2016) How to Make Beautiful and Effective Infographics. Social Media Today. Available from: <http://www.socialmediatoday.com/marketing/how-make-beautiful-and-effective-infographics> (last accessed 26 August 2017)
- Tufte, E (2001) *The Visual Display of Quantitative Information*, Graphics Press, Cheshire, CT
- Usability.gov (2017) System Usability Scale (SUS). US Department of Health & Human Services. Available from: <https://www.usability.gov/how-to-and-tools/methods/system-usability-scale.html> (last accessed 21 May 2017)
- Zhang, D (23 September 2015) 10 Infographic Best Practices. W Promote. Available from: <https://www.wpromote.com/blog/10-infographic-best-practices/> (last accessed: 12 June 2017)

How to

29

recommend

changes to visual,

interaction and

information design

Table 29.1

Method summary
<p><b>Method suitability:</b> IA validation, card sorting, A/B testing, quantitative and qualitative usability testing. This methodology is suitable for agile and lean ways of working.</p> <p><b>Use if you want to:</b> visually explain the improvements you are recommending.</p>

If the research you are doing is focused on improving a product, for example, you'll probably want to make recommendations on how aspects of the design can be made better as part of the report or presentation. As mentioned previously, any suggestion of potential changes you make should be agreed with those who will make them. There is no point making suggestions that aren't technically possible, for example, we've already thought about other useful ways to visualize what you talking about, for instance:

- infographics to depict the numbers from the research;
- maps and models to visualize the gaps and opportunities in an experience; and
- personas to synthesize and depict the user group as actual people.

In this vein, if you are suggesting changes to interaction, visual design or the information architecture, it can be useful to depict the specific changes or the options you are recommending.

## Tools

You can use software and apps to ‘sketch’ your recommendations. Examples include Balsamiq (which I have used to do the sketches in this book). You can use it to sketch out ideas and create simple clickable low-fidelity prototypes (<https://balsamiq.com>). Axure is a more powerful prototyping tool, in which you can create both low- and high-fidelity interactive prototypes (<https://www.axure.com>). There are many different prototyping tools available with varying functionality, costs and ease of use. I’ve highlight these two as I have had experience with them, but as with all the tools I have mentioned in this book, what’s out there is ever changing and easily searchable online.

PowerPoint, Keynote and Google Slides generally have enough functionality to create simple sketches. If you are recommending changes to an information architecture, you can also utilize various tools to visualize the changes. You can make use of the tools already mentioned; others you may want to consider are:

- Excel and other spreadsheet programmes: cells, columns and rows lend themselves nicely to representing your new information architecture.
- There are specific information architecture tools out there and you can also make use of process mapping tools if they are available to you: <https://dynamapper.com/blog/13-create-sitemaps/269-22-of-the-best-information-architecture-tools-for-creating-sitemaps> (Bigby 2017).
- If you have made use of the tools in Optimal Workshop to test your existing IA, you can also use of them to visualize your recommended IA: <https://www.optimalworkshop.com/>.

Of course there is always pen, pencil and paper. These are especially useful for when you are figuring out your initial concepts. Depending on who you need to share these with you may be able to keep your

recommendation on paper. You know your audience best and you'll know if it's worth spending some time and effort making your recommendations look 'professional'. The infamous idiom is often true in user research: a picture can be worth a thousand words.

## ***References and further reading***

Bigby, G (30 April 2017) 22 Awesome Information Architecture (IA) Tools for Creating Visual Sitemaps. Dyno Mapper. Available from: <https://dynamapper.com/blog/13-create-sitemaps/269-22-of-the-best-information-architecture-tools-for-creating-sitemaps> (last accessed: 12 June 2017)

Optimal Workshop (2017) [www.optimalworkshop.com](http://www.optimalworkshop.com). (last accessed: 12 June 2017)

# Conclusion

I hope you have found this to be a helpful and practical book to support you in doing user research yourself, or in being a better customer when buying in from user research services.

You may find that you get to know certain methods of research and analysis better than others, depending on what your organization's product/service requires. You may get to know certain methods so well you don't need this book any more. That's great; although it's good to remind yourself of the key principles now and again. Once you start to become experienced in certain aspects of user research, you will come to understand that the methods you are more practised in aren't necessarily the most appropriate, especially when a new situation arises. I hope when that happens you will come back to this book for guidance on selecting a different but suitable method of user research that will help you understand your users better.

There are some user research techniques that are not considered in this book that may be relevant to your needs. As long as this book is, it's not exhaustive. You may want to find out about task analysis, multivariate testing, desktop research, expert reviews, competitor benchmarking and content audits, to name a few examples. You may also want to look into using segmentation rather than personas. The main thought I want to leave you with, which by now you already know but I'm going to say it again, is that user research is an iterative process. It's something you'll need to come back to, and hopefully *want* to come back to again and again.

Please let me know what you do and don't find useful in this book; it will help me learn. You never stop learning with user research. I'm always interested when people adapt methods in different ways or use them in new ways, so I'd love to hear about that too. Find me on Twitter @Steph\_Marsh81. I look forward to hearing from and talking to you.

## Further reading

- Albert, W and Tullis, T (2013) *Measuring the User Experience: Collecting, analyzing, and presenting usability metrics*, 2nd edn, Morgan Kaufmann, Burlington, MA
- Baxter, K, Courage, C and Caine, K (2015) *Understanding Your Users. A practical guide to user research methods*, 2nd edn, Morgan Kaufmann, Burlington, MA
- Buley, L (2013) *The User Experience Team of One. A research and design survival guide*, Rosenfeld Media, New York
- Garrett, J J (2002) *The Elements of User Experience: User-centered design for the web*, Peachpit Press, San Francisco, CA
- Goodman, E, Kuniavsky, M and Moed, A (2012) *Observing the User Experience. A practitioner's guide to user research*, 2nd edn, Morgan Kaufmann, Burlington, MA
- Krug, S (2005) *Don't Make Me Think: A common sense approach to web usability*, 2nd edn, New Riders Publishing, San Francisco, CA
- Sauro, J and Lewis, J R (2016) *Quantifying the User Experience. Practical statistics for user research*, 2nd edn, Morgan Kaufmann, Burlington, MA
- Walter, A (October 2011) Designing for Emotion. A Book Apart. Available from: <https://abookapart.com/products/designing-for-emotion>
- Young, I (2015) *Practical Empathy. For collaboration and creativity in your work*, Rosenfeld Media, New York



THIS PAGE IS INTENTIONALLY LEFT BLANK

# INDEX

- A/B testing 173–79
  - effort required to research 175
  - how to do: the test process 176–77
  - using 175
  - what it is, is good for *and* is not good for 173–75
- A/B testing tools 176, 177, 178
  - Google Data Studio 263
  - Kissmetrics 263
  - Visual Website Optimizer 263
- affinity diagramming 213–17, 213
  - advantages of 217
  - analysis through group work 214–15
  - through combining individual and group work 214
  - disadvantages of 217
  - and putting it all together 215–16
- agile, definition of 13
- analysing and presenting your data (Part 3) 205–07
- Anić, I 186
- Bailey, J 164
- Ball, I 96
- Barker, I 136, 137
- Belam, M 191
- best practice in user research (and) 31–64
  - accessibility and inclusion 61–63
    - automated accessibility testing 61
    - getting specialists to audit your work 62
    - inclusion 62–63
    - manual accessibility testing 61–62
    - usability testing with assistive technologies 62
  - asking the right kind of questions, rules for 50–53, 59–60, 61
    1. be inclusive 50–52, 59
    2. use neutral open-ended questions, and example 51–53, 59
    3. avoid key words – scenario 53, 59, 54, 55, 56, 57, 58
    4. knowing when to break rules, scenarios for 59–60
      - i. the non-responsive participant 60
      - ii. usability testing intervention 60
      - iii. surveys 60, 61
  - finding the right participants (by) 33–39
    - recruitment screening 37–39
      - see also subject entry and top tips*
    - writing a recruitment brief 33–36, 34, 35, 36
  - incentivizing people to take part *and* screener example 39–47
    - ‘about you’ 42, 42–44
    - availability for session times 42
    - confidentiality and disclosures 47
    - how you book your travel 45, 46
    - introduction and welcome 41
    - next steps 47
    - online experience 46, 46
    - preferred methods of transport 44, 44–45
    - research details 41
    - your access needs 47
    - your technology and devices 47
  - observation, understanding the importance of (and) 48–50
    - see also case studies*
    - considering opinions 48
    - as saying and doing can be two different things 48
    - self-reporting 49
    - usability testing 48
  - user groups: scenario for/types of 31–32
    - quick fact and top tip for 32
- Bevan, N 217
- Bigby, G 267
- Bryant, A 143

- card sorting, ways of 109–18
  - moderated: face-to-face *and* remote
    - (and) 109, 113–17
    - introduction 113–14
    - pre-task interview questions 114
    - probes and questions *and*
      - explaining a face-to-face sort (box) 114–17
    - short post-task interview questions 117
  - moderated, preparing cards for 110
  - numbers of participants 112 *see also* case studies
  - renaming or not 110–11
  - selecting your cards 111
  - unmoderated: face-to-face *and* remote 109–10, 117–18
- card sorting (and) 106–20 *see also* case studies
  - effort required 109
  - summary 119–20
  - timing of/four methods for 107–09
    - closed sorting 107, 108
    - hybrid testing 107, 108
    - iterative sorting 108–09
    - open sorting 107–08
  - tools for 118–19
  - ways of *see* card sorting, ways of
  - what it is, is good for *and* is not good for 106–07
- case studies (on)
  - best practice: difference between behaviour and opinion 49–50
  - card sorting 112
  - combining user research methodologies 197–98
  - contextual inquiry 167–68
  - ethnography in airport design 161
  - guerrilla research 197–98
  - usability testing 78
  - user interviews: knowing when to stop a research session early 131
  - user interviews: using paired interviewing 136
  - using mental models: web browser URL and search bars 242–43
- Čengija, D 171
- Churruca, S 249
- Colbow, B 243
- Colville Hyde, B 162
- combining user research methodologies (and) 196–203
- common research scenarios and combining methodologies 199–201
  - developing and/or improving a product or service 199, 199
  - figuring out if a new concept is worth investing in 201, 202, 202–03
  - reorganizing content and structure 200, 200, 201
- summary 203
- where to start when advocating user research (and) 196–99
  - see also* case studies
  - combining guerrilla research and desktop research 198–99
  - using guerrilla research to kick start the process 197
  - what to do when guerrilla research is not appropriate 198
- content analysis 209, 209–12
  - advantages of 212
  - disadvantages of 212
  - how to do 209–11, 211
  - software and tools for 211
- content testing (and) 100–105
  - effort required 101
  - how to test the effectiveness of content (and) 101–04
    - A/B (comparative) testing 103–04
  - before starting your research 102
  - cloze testing 102–03
  - comprehension testing 102
  - guerrilla content testing 104
  - highlighting content 104
  - language, personal choice of 103
  - what it is, is good for *and* not good for 100–101
  - when to use 101
- contextual inquiry (and) 166–72
  - see also* references and further reading
  - effort required for researching 168–69
  - four principles: focus; context; partnership *and* interpretation 169
  - planning (and) 169–70

- participants 169
  - time required and scheduling sessions 169–70
- running a contextual inquiry session *and* tips 170–71
- tools for 172
- what it is, is good for *and* not good for 166–67
- when to use 167–68 *see also* case studies
- creating executive summaries and detailed reports 228–32, 228
- report structure for 229–30, 232, 232
- executive summaries 229
- how to read the report 230, 231
- ordering your findings and recommendations 230, 232, 232
- participant details 229–30, 230
- Cribbett, S 163
- diary studies 141–51 *see also*
  - references and further reading
- effort required for 143–44
- focus of 143
- planning and preparation for 144–45
- and post-study interview 147
- pre-study briefing for 145–46, 147
  - check in with participants 147
  - logging period 145–46
- tools for 147–51 *see also* top tips
  - digital diaries 148–49, 149, 150
  - mixture of diary capture methods 151
  - paper diaries 148
- usefulness of 142–43
- what they are, are good for *and* what they are not good for 141–42
- Emerson, R M 162
- ethnography (and) 141, 160–65
  - see also* references and further reading
- effort required for researching 161–62
- how to do 162
- mobile ethnography: what it is *and* when and how to use it 162–63
- tools: the narrative clip;
  - Experiencefellow *and* others 163–64 *see also* SurveySwipe
- traditional 160
- what it is, is good for *and* what it is not good for 160–61 *see also* case studies
- when to use 161
- Flaherty, K 143, 145, 147, 150
- Ford, H 50
- the fundamentals: what good research looks like (Part 1 *and* summary) 11, 69
- Gaffney, G 171
- Government Digital Services 22, 27, 69
- Gray, C 7, 121, 123, 124
- guerrilla research 191–95 *see also*
  - references and further reading
- effort required for 192
- how to do (using) 193–94
  - contextual user interviews 193
  - cut-down ethnography 193
  - guerrilla usability testing 193
- tips for recruiting/conducting effective 193–94
- tools for 194
- what it is, is good for *and* not good for 191–92
- when to use 192
- Herzon, C 166, 169
- how to recommend *see* recommendations (on)
- Hudson, P 163
- the importance of user research (and) 1–10
  - defining user research 1
  - readership of the book 1–3
  - reason for user research 3–4
  - what you will learn from the book 5–10
  - A/B testing 8–9
  - card sorting 7
  - content testing 6–7
  - contextual inquiry 8
  - diary studies 7–8
  - ethnography/mobile ethnography 8
  - guerrilla research 9

- the importance of user research (and)
  - (*Continued*)
  - how to combine user research methodologies 9–10
  - information architecture validation 8
  - stakeholder workshops, getting the best from 9
  - surveys 7
  - usability testing 6
  - user interviews 7
- infographics used to translate
  - numerical and statistical data (and) 257, 257–64
  - how to make effective infographics 257–59
  - making use of available tools 259, 263, 260, 261, 262, 263
- information architecture validation
  - 152–59 *see also* references and further reading
  - effort required for the research 153–54
  - how to do (by) 154–58
    - deciding what to test 155
    - running the test 158, 158
    - size of structure, cutting down your IA *and* labels 155–57, 156, 157
    - validation exercise: recruiting participants *and* test materials 154–55, 155
  - survey tools for 158
  - timing of 153
  - what it is *and* what it is – and is not – good for 152–53
- journey and experience maps for
  - visualizing user research data 247, 247–52 *see also* references and further reading
  - creating an experience map 249, 251, 250, 251
  - map variations 249, 251
  - ‘must have’ components of customer journey map 248
- Korostoff, K 163
- Lallemand, C 143, 146, 147
- Larsen, B 161
- Lewes, J 37–38
- Lohm, D 137
- Loosemore, T 104
- McKay, A 154
- making recommendations (on)
  - see* recommendations (on)
- managing user research logistics
  - 65–70
    - budgets for hiring agencies, choosing facilities *and* signing contracts 67–69
    - large 68–69
    - medium 68
    - small 68
    - very small 68
  - logistics (and) 65–67
    - appearance and perception in face-to-face research 66
    - awareness of cultural differences 66–67
    - safety first 65–66
    - user research with children 67
- Mayfield, A 118
- mental models, using 241, 241–46
  - see also* case studies *and* references and further reading
  - and creating your own mental model 243–44, 246, 244, 245
- Mifsud, J 223
- Moule, J 143, 147
- Naranjo-Bock, C 137
- Nielsen, J 49, 50, 76, 222, 242
- O’Brien, D 153, 155–58
- Parry, G 257
- personas *see* using personas
- Pickering, K 181, 187
- planning, objectives and legalities in
  - user research 13–30 *see also* definitions
  - clarity on research subject – what is your problem? 15
  - ethical and legal issues (and) 15–18
  - gaining legal consent from users *and* examples 16–18 *see also* top tips
  - information for participants 16
  - transparency 15–16

- planning your user research (and/by)
  - 19–29 *see also* top tips
  - importance of pilot testing 25–26
  - inviting people to observe/getting them involved in research sessions 26–27
  - location of research 22, 24, 22–24
  - options for remote research 25, 25
  - planning for analysis and sharing of work 28
  - recruiting people to do the research 27
  - scheduling: 30-minute, 45-minute, 60-minute interviews 19–22
  - when working agile or lean 28–29
  - the right time for user research *and* agile/user-centric environments 13–15
- Ploughman, J 104
- Preece, J 129, 131, 133
- prioritizing issues and user needs 218–25, 218
  - advantages of cataloguing issues and user needs 222
  - cataloguing issues from qualitative data 219–22, 220
    - user needs backlog and writing user stories and needs 220–22, 221
  - disadvantages of cataloguing issues and user needs 222–24
  - cataloguing issues from quantitative data 222–24
  - measuring effectiveness 223
  - measuring efficiency 223
  - other metrics to consider 223–24
  - usability metrics 222–23
- recommendations (on)
  - changes to visual, interaction and information design 265, 265–67
  - tools for 256–67
  - how to make research findings actionable 226–27
  - what kinds of things can you recommend? 226–27, 227
- recruitment screening 37–39 *see also* Lewes, J
  - accessibility 39
  - confidence level 38
  - confidentiality and disclosures 39
  - demographics and behaviour 38
  - introduction 38
  - logistics and timings 38
  - questionnaire 37
  - technology and devices 38–39
- references *and* further reading for
  - A/B testing 178–79
  - affinity diagramming 217
  - analysing and presenting your data 206–07
  - best practice in user research 63–64
  - card sorting 120
  - conclusion 269
  - content analysis 212
  - content testing 104–05
  - contextual inquiry 172
  - diary studies 151
  - ethnography 164–65
  - guerrilla research 194–95
  - the importance of user research 10
  - information architecture validation 158–59
  - journey and experience maps 251–52
  - managing user research logistics 70
  - mental models 246
  - planning, objectives and legalities in user research 29–30
  - prioritizing issues and user needs 224–25
  - scenarios and storyboards used to represent user journey 256
  - stakeholder workshops 188–90
  - surveys 128
  - user interviews 139–40
- Reichelt, L 97
- Renner, M 210, 211
- Richardson, C 95
- Risdon, C 249
- Ross, J 166, 171
- Sauro, J 171, 223
- scenarios and storyboards used to represent user journey 253, 253–56 *see also* references and further reading
  - creating scenarios 254
  - creating storyboards 255–56, 255
  - useful pointers for 255–56

- Schneider, J 235, 251, 253  
 selecting and using user research  
     methods (Part 2) 71–72, 74,  
     72, 73, 204
- Sharma, A 187
- stakeholder workshops (and) 180–90  
     *see also* references and further  
     reading  
     effort required for 182  
     how to run (and) 183–87  
         basic structure of a workshop 187  
         co-design workshops 185–86  
         content workshops 186  
         design workshops 185  
         engagement (milestone) workshops  
         185  
         kick-off workshops 184–85  
         planning and practicalities –  
         checklist 183–84  
         requirements gathering 185  
         who needs to be there? 186  
     Post-Its 188  
     tools 187–88  
     what they are, are good for *and* are  
         not good for 180–81  
     when to use 181–82
- Stickdorn, M 235, 251, 253
- Stockwell, A 28
- surveys 121–28 *see also* references and  
     further reading  
     designing (and) 123–27  
         content and questions 124–25  
         doing your own recruitment 126  
         giving incentives 126–27  
         pilot testing 126  
         questions to be avoided 125  
         recruitment agencies 125  
         targeting and objectives 125  
     and effort required for research  
         122–23  
     note on types of 123  
     online tools for 127  
     timing of 122  
     what they are, are good for *and* are  
         not good for 121–22
- SurveySwipe: <http://www.surveyswipe.com> 164
- System Usability Scale (SUS) 93
- Taylor-Powell, E 210, 211
- Thomas, N 93
- top tips (for)  
     asking for opinions 49  
     diary studies 150  
     gaining consent from participants 18  
     paper diaries 148  
     personas 236  
     recruitment screening 37 *see also*  
         *subject entry and* Lewes, J  
     scheduling interviews 20  
     user interviews 133  
     user research 32
- Turner, N 124
- usability testing 75–99 *see also* case  
     studies  
     fundamentals of moderated 76–89  
         *see also* usability testing:  
         protocols  
         and effort required for the research  
         78  
     how to do moderated usability  
         testing 79  
     what it is good for 76–77  
     what it is not good for 77  
     when to use moderated usability  
         testing 78–79  
     fundamentals of unmoderated  
         89–96  
         choosing type of unmoderated  
         testing 92  
         definition of unmoderated testing  
         89  
         draft your unmoderated protocol  
         92–94  
         and effort required for the research  
         91  
         and example of face-to-face  
         unmoderated usability 96  
     face-to-face unmoderated usability  
         testing considerations 95–96  
     how to do unmoderated usability  
         testing 91–92  
     thank you statement 94  
     tools for unmoderated usability  
         testing 96  
     what it is good for 89–90  
     what it is not good for 90–91  
     when to use unmoderated usability  
         testing 91

- moderated and unmoderated 75–76
  - post-task interview and examples of questions 85–86
  - post-test crib sheet 86
  - remote testing considerations 87
  - remote testing example 88–89
  - summary of 97–99
    - building confidence in small samples 97
    - moderated and/or unmoderated 97
  - tools for moderated 87–89
    - equipment checklist 87
    - optional items 87–88
    - and tools for remote testing 88–89
  - usability testing: protocols 79–85
    - changing your protocol, quick note on 80
    - content of a protocol 80–84
      1. introduction 81
      2. short pre-task interview questions 81–82
        - and quick note on prompts 82
      3. research task (and) 82–85
        - using ‘think aloud’ 84–85
    - creating a protocol or script 79–80
  - user interviews (and) 129–40 *see also*
    - references and further reading
    - effort required for research 130–31 *see also* case studies
  - interview length 138–39
  - interview structure 132–34
    1. introduction 132
    2. warm-up questions 132
    3. main questions/focus of interview *and* top tips 133
    4. wrap-up questions 133
    5. closing and thank you 134
  - interview tools 139
  - moderating an interview: individual participants 134–35
    - awkward silences/not answering questions 135
    - using prompts *and* prompt questions 134
  - moderating an interview: two participants 136–38 *see also*
    - case studies
    - getting the most from a paired interview 137
    - recording the data 137–38
  - question design 132
  - timing of 130
  - tools for 139
  - what they are, are good for *and* are not good for 129–30
- using
- infographics *see* infographics used to translate numerical and statistical data
  - journey and experience maps *see* journey and experience maps for visualizing user research data
  - mental models to visualize how users think and identify opportunities *see* mental models, using
  - scenarios and storyboards *see* scenarios and storyboards used to represent user journey
- using personas (and) 235, 235–40
- anti-personas 238
  - personas 235–36 *see also* top tips
  - presenting your personas 238–39, 239, 240
  - what to include in your persona 236, 238
    - bad practice for 238
    - good practice for 236, 237
- using video playback to present your research results (and) 233, 233–34
- how to edit your user research videos 234
  - what to include in your videos 234
- Wechsler, J 254
- Weston, D 147
- Young, I 243



THIS PAGE IS INTENTIONALLY LEFT BLANK