LIGHTING THE ROAD AHEAD

THE 55-MINUTE GUIDE TO USABILITY, ACCESSIBILITY AND SEARCH ENGINE OPTIMISATION

BY **WILLIAM HUDSON**

“William has packed some amazing wisdom in here for anyone who is looking to help their users get the best experience possible out of their designs. This is must-read material.”

JARED M. SPOOL, FOUNDING PRINCIPAL — USER INTERFACE ENGINEERING

“Fresh, honest and engaging, this book offers great insights into the core principles and practice of user centred design. What makes it different is the way William integrates specialist coverage of accessibility and search engine optimisation as well, delivering a highly comprehensive resource in an extremely lightweight package. Thoroughly recommended.”

TONY RUSSELL-ROSE, FOUNDER AND DIRECTOR — UXLABS

“This is a great package for anyone in charge of an e-commerce property. While serving up a disarmingly light-hearted reading experience, William’s insights are bang-on and reflect his deep understanding of the issues when it comes to improving usability, accessibility and findability.”

JOANNES VANDERMEULEN, FOUNDER AND PARTNER — NAMAHN

“This 55-Minute Guide does exactly what it says on the tin. In less than an hour you’ll get a clear introduction to the topics of usability, accessibility and SEO. More importantly, you’ll also get a whole raft of thoughts, ideas and tips to get you well on the way to best practice. Is there more to learn? Of course! But this is a great place to start.”

CRAIG HARRIS, IT DIRECTOR — ECONSULTANCY

“A comprehensive, digestible and no-nonsense guide to usability, accessibility and SEO. I’ve worked with web designers who scoff at accessibility, and web designers who don’t understand the most fundamental SEO principles. In joining the dots, this book will help to fill in the small but often crucial gaps in many web technology professionals’ knowledge.”

GEORGE HARRIS, EXECUTIVE VICE PRESIDENT — PAPERSTONE

“Succinct and extremely readable, this is a very useful guide to usability, accessibility, SEO and how they fit together. If you’re baffled by your local digerati and why they keep on about this stuff, read this!”

JEN TRUELOVE, FORMERLY RESPONSIBLE FOR DIGITAL CONTENT — UK MINISTRY OF JUSTICE

“Simplicity is the attribute of most good experiences and it’s certainly an attribute of this book. By focusing on broad principles and examples we can all relate to, it demystifies the complex and sometimes misunderstood fields of usability, accessibility and SEO. Read it to find out how you can benefit from more usable, accessible and findable websites, then take the next steps to make it happen.”

CHRIS ROURKE, MANAGING DIRECTOR — USER VISION

“Covering three major design-related topics – usability, accessibility, and SEO – in such a slim volume is no easy feat. But Hudson pulls it off with seeming ease and sovereignty. This book is extremely well written and to the point – veritable reduction sauce of decades of experience and knowledge. Not only is it a great primer for newcomers to the field, but it also serves as a reference work for experienced practitioners.”

JIM KALBACH, AUTHOR OF **DESIGNING WEB NAVIGATION**

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TO VALERIE AND KATHERINE
FOR THEIR ENDLESS PATIENCE AND DEVOTION

WHAT'S INSIDE

On every facing page you'll find a summary of core thoughts and ideas. Try adding them to presentations or the bottom of your emails and see if you can start a conversation.

1. INTRODUCTION

WHAT THIS BOOK'S ABOUT

We've all struggled to find information on a web site or wrestled to set the alarm clock in a hotel bedroom. This is usually due to poor usability – a measure of how well technology has been designed for its intended users.

The precise definition, according to ISO standard 9241-11 is, "The extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use."

But we're not going to be talking much about ISO standards in this book. Instead we'll be looking at what USABILITY, ACCESSIBILITY (for disabled users) and SEARCH ENGINE OPTIMISATION (SEO) mean in practice, with a focus on understanding the principles and applying them.

USABILITY ISN'T ROCKET SCIENCE. In many respects, ROCKET SCIENCE IS EASIER – it's governed by well-understood physical laws. While some aspects may be a little tricky (like re-entering the atmosphere without skipping off or burning up), the whole endeavour is well within the comfort zone of the technologists involved.

“To a rocket scientist, humans are the most irritating piece of machinery to deal with.” (Mary Roach, PACKING FOR MARS)

This is not so for interactive systems such as web sites and desktop or mobile applications. While the technology itself is not hard to master, knowing WHAT USERS WANT TO DO with technology – and HOW THEY WANT TO DO IT – requires a very different set of skills and knowledge.

There's a great temptation to think that usability is just common sense, but of course, one person's common sense is the next person's superstitious rambling. For some technologists and technology-driven organisations, the required focus on users and their needs is just plain foreign. Not only do they fail to see the point of it, but also the people skills required are often lacking.

Building usable systems is made even more difficult because people do not see and understand things the way we would like or expect (something we will cover briefly in the first chapter). Bear in mind that these are not insurmountable problems, but they are more difficult to address than they might appear at first glance. While some of the solutions – usability testing for example – are very simple to apply, acting on the results can be more challenging.

This book is an attempt to make the technological future a brighter and safer place by drawing attention to usable design.

WHO THIS BOOK IS FOR

You will find this book helpful if you're involved in producing technology solutions of almost any kind, although the latter chapters on accessibility and SEO address web sites and intranets more specifically. You might be a CEO who wants your organisation to make products that customers will find easier to use, or a technical writer who knows that something they're working on is more complex than it needs to be, without understanding why. You might also find this book helpful if you're already convinced about usability but are having difficulty persuading your team, managers or partner about its value.

HOW IT'S STRUCTURED

This book is different from the typical usability title in a few ways:

→ It's very short. 55 minutes means 55 minutes and I won't keep you a minute longer.

→ There are no screen shots. While looking at good and bad examples of a finished product can be extremely useful, it requires a much longer (and heavier) book than the one you're holding.

Usability testing and other techniques shouldn’t be treated as sacred rituals. There are plenty of other ways to improve usability.

→ This book is a-religious (some might say heretical). We're not going to treat usability testing and other techniques as sacred rituals. There are lots of ways to improve usability, with some more appropriate or cost-effective than others.

The first half of this book covers usability in general, as well as delving into some web and intranet specifics. The second half addresses accessibility and search engine optimisation together, since they are closely related (for reasons we'll discuss later). References to web sites and further reading appear throughout the text, and are also listed on page 100.

ABOUT THE TITLE

THE ROAD AHEAD was a 1995 book by Microsoft founder, Bill Gates, describing the technological future. In many cases, though, the future is shaped not only by what's possible, but also by what works in practice (see Geoffrey Moore's classic work CROSSING THE CHASM on this topic).

LIGHTING THE ROAD AHEAD is an attempt to make the technological future a brighter and safer place by drawing attention to usable design.

The more sophisticated the technology, the less the form-follows-function rule holds. When it comes to digital media, form and function can be entirely different things.

2. STUMBLING IN THE DARK (USABILITY)

FORM FOLLOWS FUNCTION?

A lot of technology gets built with no thought about how people will understand it. This applies to everything from alarm clocks to the latest social networking sites. The unspoken assumption is that FORM FOLLOWS FUNCTION. You build something and people will be able to work out what it is and how to use it just by looking at it.

Unfortunately, for anything even remotely complex, it's usually not so simple. As technology gets more sophisticated, the less the form-follows-function rule holds. So while a rock makes an excellent tool to smack things with (although it took our ancestors a little while to work this out), form and function can be ENTIRELY DIFFERENT THINGS when it comes to digital media.

Even my bottle opener manages to confuse people, because it looks like a gecko and I hang it on the kitchen wall. Somehow the fact that geckos are not indigenous to the British Isles doesn't help much, either.

To make technology more obvious and self-explanatory, we need to present it in a way that BUILDS ON PEOPLE'S EXPERIENCE. Before looking at some good examples of what this means, let's consider what happens if we fail.

FORM DOESN’T ALWAYS FOLLOW FUNCTION.

Conceptual models work best when they draw upon people's real world experience. What can you do with two keys but no lock?

LIVING IN THE REAL WORLD

Public Key Infrastructure (PKI) – a means of sending and receiving coded messages – is not well understood by most computer users, even though it has been around for decades. Part of the problem is that it uses a confusing conceptual model. PKI has public and private KEYS, but makes no mention of LOCKS. This is contrary to experience in the real world, where keys are ALWAYS used with locks.

To make use of our natural expectations, PKI needs PRIVATE KEYS and PUBLIC LOCKS. So, if I want to send you a coded message, I would get hold of a public lock for your email address and apply it to the message in the same way that I would secure a strongbox with a padlock. Once that lock is applied, only the right key can open it.

Similar fiascos have arisen with other popular technologies. When Bluetooth (named after a Danish king) first emerged as a means of interconnecting devices wirelessly, no thought had been given to how the technology should be presented to users. Consequently, the process and terminology used in binding (or mating or pairing or coupling) varied from one device to the next.

The phrase, “I am having some trouble with my Bluetooth...” still elicits groans and headaches from many a support desk to this day. Difficulties arose because the terminology was both

How would you like your Bluetooth: mated, paired or coupled?

inconsistent and misleading. Pairing, for example, suggests a relationship between two devices, but some devices can be paired more than once simultaneously. The more elaborate Personal Area Network (PAN) features of Bluetooth imply an absolute orgy of pairing, coupling or mating.

On the other hand, Wi-Fi encryption is just plain confusing. At least half a dozen terms have been made up, leaving most consumers wondering whether they should be using WAP, WEP, WPA, WPA2, AES or TKIP. And what the hell is a 'pre-shared key'? Is it like a pre-owned car? In reality, you should be using the strongest encryption that all of your client devices (laptops, smartphones, media players and so on) will support. But no one has provided an easy means to find out what that is without a great deal of head scratching and/or banging.

To overcome problems like these, we need to design technology with due regard to HOW PEOPLE WILL UNDERSTAND IT AND USE IT. Clearly, the easiest way of doing that is by building on people's previous experience. So, for example, Personal Video Recorders (that use hard disks and allow live programmes to be paused) are very similar in design to the Video Cassette Recorders of old. Consequently, anyone with experience of a VCR knows approximately how to use a PVR.

We owe the shopping basket metaphor to a chain of grocery stores called Piggly Wiggly. (See for yourself at pigglywiggly.com/about-us)

Unfortunately, technologists' ideas of previous experience are often very optimistic. If you live in a technological world, it's hard to understand that less techno-centric people may struggle with your designs. So, while the basic operation of a PVR is usually straightforward, the more advanced features can be very challenging.

For entirely new technologies, a great way to build on people's experience is to use METAPHOR, where we rely on the relationships between similar concepts. For example, Earnest Rutherford described electrons circling the nucleus of an atom in a similar way to the planets circling the sun (this later turned out not to be true, so don't quote this on your quantum physics exam!). Metaphor is a surprisingly controversial area in the field of Human-Computer Interaction, but possibly its most successful application is also one of the most popular uses of the internet – online shopping…

PIG IN A BASKET

Almost all e-commerce sites rely on the concept of a shopping basket. People generally know that they can put things in, take things out and that they have to make their way to the checkout to pay. It is a very strong and clear metaphor, even though some of the terminology is country-specific (Americans tend to

Early versions of Lotus Organizer used a magnet tool to move appointments between pages. Magnetic appointments? Really?

prefer ‘shopping cart’ while Brits opt for ‘shopping basket’). If consumers see a shopping basket/cart they know that they can buy things from this site and have a good idea how to do it.

Unfortunately, good metaphors are hard to come by. The alleged ‘desktop’ metaphor used by most personal computers is really nothing of the sort, with the only predictable behaviour coming from the much-debated ‘folder’ metaphor. Is it unnatural, too limiting, unimaginative? Who knows for sure, but it is a simple, familiar concept in an otherwise bewildering swamp of functionality.

And designers tend to get over-literal in their use of metaphor. One of the earliest ‘killer apps’ for Windows was a personal information manager called Lotus Organiser. On-screen, this looked just like a traditional ring-bound diary, complete with the rings down the centre, which took up valuable space on the small displays available at the time. Plus it had real-world limitations that made it hard to use. For example, you couldn’t just open up an appointment and change its date. You had to physically drag it through the diary to its new location – a multi-step process, since the developers hadn’t worked out an easy way of dragging the appointment while turning diary pages.

In most contexts, if I wrote on your wall you'd probably report it to the police.

Happily, metaphors are not the only way of improving usability. You can make your technology solution (such as a web site)…

→ SIMILAR TO RELATED SOLUTIONS. From a usability perspective, consistency is a good thing. If your site has similar concepts and behaviour to others like it, your users will find it familiar and easy to use. (This is not what the marketing people want to hear, but you could always differentiate your solution by making it BETTER rather than just DIFFERENT. Talking to real users is one way to achieve this – more on this later.)

→ SELF-EXPLANATORY. If your solution is entirely novel, the explanations need to be right in front of users as they attempt to interact with it – not buried in FAQs or help pages (something Don Norman, in his excellent book THE DESIGN OF EVERYDAY THINGS, calls "knowledge in the world" as opposed to "knowledge in the head"). Facebook, albeit very popular, is a good example of how NOT to make a site self-explanatory. A user's 'Wall', for example, could be easily confused with the 'News Feed' showing similar (but different) information.

Would you rather use a web site that shows firm evidence it will do what you want, or just muddle along in vain hope?

THE ROAD TO SUCCESS

What does a self-explanatory solution look like? Naturally, it depends on WHAT AND WHOM IT IS FOR but, ignoring the fine detail for the moment, a usable solution needs to answer the following four goal-mapping questions for any of its intended users:

→ How do I know I can achieve my goal (what evidence is there)?
→ How do I do it?
→ Is what I've done helpful (is it taking me closer to my goal)?
→ Am I done?

For each question there are four possible responses:

→ Implicit expectation (basically guessing)
→ Explicit expectation (something/someone told me)
→ Indirect match (something in the interface suggests an answer)
→ Direct match (something in the interface provides an answer)

When you are going through these questions for a specific user goal (called a COGNITIVE WALKTHROUGH in the trade), bear in mind that you need to be thinking of this from a user's perspective. Better still, do it with REAL USERS, expressing goals in terms that THEY WOULD EMPLOY – not the ones that you happen to have chosen for them.

	IMPLICIT EXPECTATION	EXPLICIT EXPECTATION	INDIRECT MATCH	DIRECT MATCH
1. HOW DO I KNOW I CAN ACHIEVE MY GOAL?				
2. HOW DO I DO IT?				
3. HAS WHAT I'VE DONE TAKEN ME CLOSER TO MY GOAL?				
4. AM I DONE?				

Here's a real example you can try. Go to the postal carrier web site of your choice (for example royalmail.com in the UK or usps.gov in the US) and find the cost of sending a first-class letter. For each step make a mark in the matrix opposite.

Start by looking at the home page. What evidence is there that you can find postal rates? If it has words like 'postal rates' and you're happy with that, then mark the DIRECT MATCH box. If there are words that suggest that postal rates might be available, then mark INDIRECT MATCH instead. If no evidence is present on the screen, you're stuck with an EXPECTATION. (I think we could safely call it an IMPLICIT EXPECTATION in this case. We'd both be surprised if postal rates weren't somewhere on the site.)

Still using the same matrix, decide what evidence there is for how to actually GET TO the postal rates (Question 2 in the matrix). If any words you saw earlier were an obvious link, then you have a DIRECT MATCH.

Since you haven't done anything yet, skip Question 3 for now. However, if by some miracle the rate of a first class letter is shown on the home page, then you're done already, and can mark the DIRECT MATCH column for Question 4 as well.

Chances are you are going to have to explore the site in order to find your answer. So start a new matrix for each action you perform and focus on Questions 3 and 4. With any luck,

Design for the scent of information. You won’t regret it.

or through sheer perseverance, you'll probably find the answer you're looking for. In this case, the answer is itself evidence that you're done. But for more complex activities – like taking a shopping basket through an e-commerce site's checkout process – you need firm proof that the transaction is complete (Question 4 in the matrix).

Assuming you made it to a conclusion, go back and see how the site performed for this task. Ideally, most of your answers should be DIRECT MATCH, with few or no IMPLICIT EXPECTATIONS. For each answer that isn't a DIRECT MATCH, what could be done to improve the design? Was the terminology confusing or hard to read? Was the navigation poorly organised, leaving you hunting high and low for meaningful links?

USE YOUR NOSE

You'll have noticed that one of the four goal-mapping questions above was "Am I getting closer?" The answer depends on whether what you saw provided encouragement that you were headed in the right direction.

Another way of looking at this issue is called the SCENT OF INFORMATION. Is the scent getting STRONGER OR WEAKER as we interact with a solution? It comes from the work of Marcia Bates and her 'berry-picking' model for information retrieval

Keep your users rewarded or they will leave.

that was developed into an ‘information foraging’ theory by Peter Pirolli and colleagues at Xerox PARC around the mid-1990s. Whatever we call it, the basic principle is that people will spend only a certain amount of time trying to reach their goal before they give up and use an alternative strategy. With berries, that means going to another bush. On the Internet, it means going to another site.

To keep users from bailing out, we need to make them think that their efforts are being rewarded by showing them words and images that make the scent stronger. For example, if you happened to visit the UK’s Royal Mail web site in the earlier activity, the home page would have provided no hint that postal rates were available. The first thing you’d see is a requirement to choose what kind of customer you are (personal, small business or corporate/public sector).

By contrast, the US Postal Service site has ‘Calculate Postage’ as the second item in the prominent top navigation bar. Follow the link, and you’ll be almost overwhelmed by the heady scent of postal prices!

Designing for the scent of information is pretty straight-forward. It involves providing clear directions and feedback that allows users to understand that they are going the right way.

Almost anything can be sorted – pictures, objects, bird songs and so on – but for usability, words on cards is the most common approach.

For web and intranet pages (which is where most information foraging takes place) ensure that:

→ PAGE TITLES REINFORCE THE ACTIONS USERS TAKE. So if I click on a link labelled ‘postal prices’ I arrive on a page with that title, not ‘buy stamps’ or ‘contact us’.

→ USERS ARE COMFORTABLE WITH THE TERMINOLOGY YOU USE. So while New Zealand Post might get away with the term ‘Prezzy Card’, it wouldn’t make much sense in North America.

→ NAVIGATION KEEPS RELATED CONCEPTS TOGETHER. So general information on postal prices isn’t far away from more specific detail, like the cost of sending a particular package, of a particular weight, to a particular destination.

In many cases, the concepts and terminology used – and how things are organised – are the key to success. We will talk about research and evaluation methods in more detail in a little while, but this is a good time to bring up CARD SORTING as a technique. No, not as in card games (although the use of playing cards has a long history in psychological testing). The card sorting we’re interested in involves nothing more than putting words on cards

It’s not uncommon for people to arrive on the correct page for completing their task, and still be oblivious to it. That’s because hiding things from users is surprisingly easy.

and then asking real users to organise them in ways that make sense. If they don't like the words, they can change them. In research, we can ask users if any words or concepts are missing. And we can use the group names they create in the design of our solution – not only in menus, but also in the layout of pages and forms.

EFFECTIVE SIGNPOSTING

This brings us to the topic of VISUAL DESIGN. Bear in mind that how we organise information and controls (such as buttons and text fields) affects EVERYONE, including those who cannot see the screen.

Watching users trying to achieve their goals is very educational (see USABILITY TESTING as an evaluation method in the next chapter). One very common scenario involves users arriving at the correct web page for completing their task, but not realising that it is the correct page. This is usually because the terminology isn't what they expected, or because important clues are hidden. It turns out that hiding things from users is SURPRISINGLY EASY. Here's how to do it:

→ PUT A WORDY INTRODUCTION AT THE TOP OF THE PAGE, ensuring that all useful information is 'below the fold'. Be sure not to split the prose up with headings or bulleted lists.

Where's the fold? Google Labs has a nice graphical tool for showing how much of your page will be visible without scrolling at browsersize.googlelabs.com.

(It's less than you think!)

→ DON'T GROUP INFORMATION LOGICALLY. Scatter it about the page in arbitrary groups (or preferably no groups at all).

→ MAKE IT HARD TO SEE OR NOTICE. This can be done easily with pastel colours, or by incorporating text into images that look like advertisements, called banner ads. The inability to notice these is called BANNER BLINDNESS (see the GLOSSARY OF TERMS for more information).

→ PUT IMPORTANT INFORMATION IN THE BOTTOM RIGHT-HAND CORNER OF THE PAGE. Users who read left-to-right scan pages in an F-shaped pattern, making the bottom right the best place to lose things.

→ USE GROUP HEADINGS THAT DON'T MEAN MUCH or misrepresent the items listed underneath. Users will often ignore the text under a heading if they think it isn't relevant, ensuring that the content or links remain hidden.

Aside from these issues of poorly organised information, the layout of pages also has a big effect. This isn't just about what is above or below the fold, but also whether people even notice that a page needs to be scrolled, since the scroll bars

Invert your pyramids. You know it makes sense.

themselves are not always obvious. In general, a good approach is to put essential information at the top of the page, with further detail and related items below. In prose, this is called the INVERTED PYRAMID style of writing – the broad base of the pyramid sits on top, providing the reader with a summary of what they really need to know, before delving into progressively greater detail.

For longer pages, consider including a brief ‘On this page’ summary at the top, where headings link to more detailed information on that same page, rather than taking you somewhere else. Explicitly calling it ‘On this page’ alerts the user to the fact that these links will behave slightly differently to normal.

The rest of that page should be divided into panels that reduce the number of different places people need to look. Give panels headings, where possible, to make visual searching even easier. Even better, use only a small number of different page layouts so that once they’ve figured out where things are and how your navigation works on one page, they don’t have to relearn it on the next.

Never rely on colour alone to convey meaning.

Finally, make sure that web links are CLEARLY DISTINGUISHABLE AS WEB LINKS. A few things worth considering:

→ COLOUR ALONE IS NOT SUITABLE. On many displays (particularly laptops or handhelds), colour differences may not be very apparent.

→ UNDERLINING MAY NOT BE ENOUGH EITHER. While it may work well for links in body text, underlining should not be used in closely-spaced lists, as it affects legibility. Also, because print media often use underlining to emphasise a heading, on-screen you might need to consider an alternative way to show that your heading is also a link.

→ USE A GRAPHIC OR SYMBOL TO PREFIX A LINK. For example, greater than signs (>>) are often good for this purpose, as is the right-angle quote (»). Remember that screen readers will present these verbally, so a graphic may be preferable (see the discussion of ACCESSIBILITY on page 63).

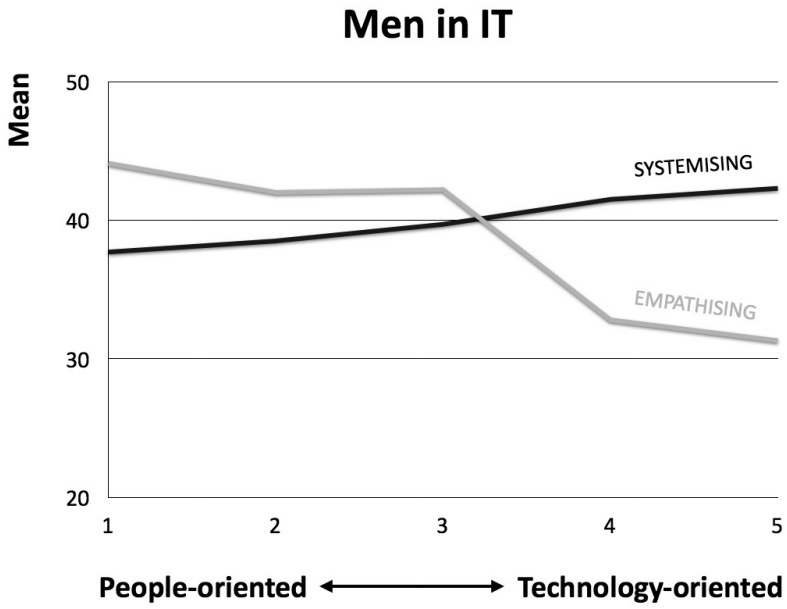
Usability needs to be considered from the outset. Too often it isn't, and that's probably why 90% of new products or services fail.

FESTIVAL OF LIGHTS

Lighting the road ahead (that is, improving usability) comes in three phases – RESEARCH, DESIGN AND EVALUATION. Unfortunately it's still the evaluation bit that gets most attention. It's not that usability testing isn't an important and valuable tool, just that it's often done too little, too late. To be effective, usability needs to be considered FROM THE OUTSET of solving a technology problem, with approaches that are USER-CENTRED and that promote EMPATHY WITH USERS.

Promote what?! You read me right – EMPATHY. For a whole host of reasons, usable solutions are the exception rather than the rule. As I said in the introduction, one of the reasons behind this is that many technologists don't appreciate that ordinary mortals can find systems hard to understand and use. Neither do they seem to understand the commercial implications of this. Most people won't waste their time struggling with technology that's hard to use, and around 90% of new products or services fail.

There are other factors too. Time and cost constraints, and development philosophies like Agile, often lead to an excessive focus on working code, at the expense of USABLE solutions (something that's hardly likely to improve matters!).


Men in IT
Mean
50
40
30
20
SYSTEMISING
EMPATHISING
1
2
3
4
5
People-oriented
Technology-oriented

THE EMPATHY GAP

MALE WORKERS IN THE IT INDUSTRY WHOSE MAIN JOB ROLE WAS TECHNICAL HAD MUCH LOWER EMPATHISING SCORES THAN AVERAGE WHILE THEIR SYSTEMISING SCORES WERE NOTICEABLY HIGH

If you want to know how to make people happy, go out and talk to them about their challenges.

What's required is an approach that promotes users and their needs in the development process. EMPATHY IS KEY TO THIS. Telling a developer that the feature they designed will be too confusing for users is likely to fall on deaf ears. Showing them video highlights of half a dozen users banging their head against the screen is a more persuasive approach (but not without its risks – a common reaction of a team that's new to usability is to ask "Where did you get such stupid users?"). So, how can effective user-centred design techniques promote empathy? Here's how...

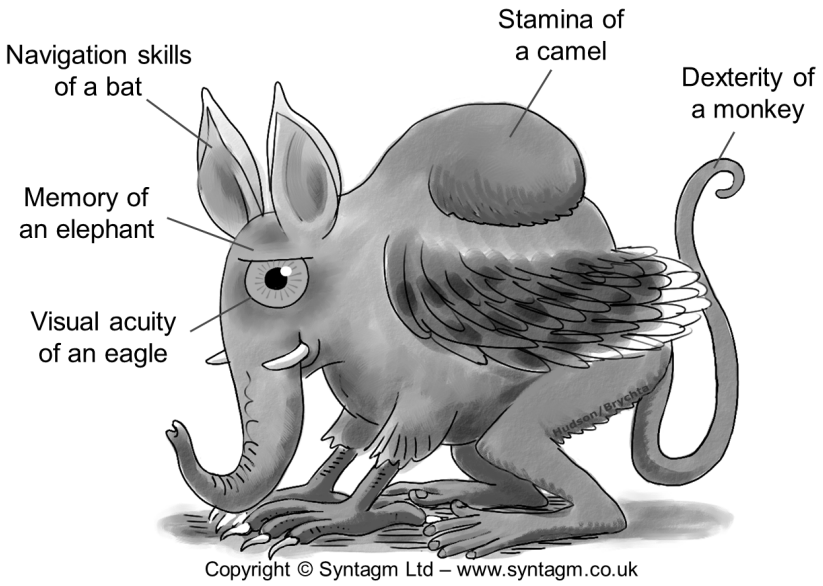
USER RESEARCH

Interviews and observation

If you want to know how to make people happy, GO OUT AND TALK TO THEM about their challenges. And don't just write up what you find and present it to the development team. TAKE TEAM MEMBERS WITH YOU in order to make users and their problems more real to them (an approach sometimes called CONTEXTUAL DESIGN).

Naturally, you can use focus groups and questionnaires to address specific topics, but bear in mind that the further you move away from an ethnographic approach (face-to-face with people in their natural environment), the poorer your findings will become.

“The Perfect User”



The Perfect User

"WHERE DID YOU GET THESE STUPID USERS?" MAY BE A POPULAR REFRAIN AMONG USABILITY NEOPHYTES. TROUBLE IS, THE PERFECT USER HASN'T BEEN INVENTED YET.

Don’t interrupt with questions during a walk-through. Take notes and ask later.

Some guidelines for user research:

→ OFFER PARTICIPANTS ANONYMITY. They will feel more comfortable telling you what really happens.

→ WALK PARTICIPANTS THROUGH THE PROCESSES they are involved with, whether it's shopping or dealing with insurance records.

→ DON'T INTERRUPT WITH QUESTIONS during a walk-through. Take notes and ask later.

→ INVOLVE OTHER DEVELOPMENT TEAM MEMBERS AND MANAGERS but insist that they do not offer 'helpful advice'.

→ DOCUMENT TERMINOLOGY, CONCEPTS, ISSUES (good or bad) and a list of goals that are important for each participant.

Card sorting

Remember we mentioned card sorting earlier? As a research tool, it is extremely flexible and can be used to find out how people think about particular problems or processes.

Card sorting can be done as part of face-to-face interviews or in larger groups (around 15 participants will give good results for most card sorts), often followed by focus group discussion. Particularly in one-to-one sessions, you have the opportunity to ask participants why certain cards were grouped together and what concepts lay behind their choice of group names.

We all relate better with individuals than with groups, so personas are a great way to help promote empathy with the user.

DESIGN

Personas

If you come across more general books on usability and user-centred design, you might see terms like ‘user needs analysis’ and ‘user profile’.

Unfortunately, these can be extremely dry reports that give no real feel for users as people with problems that they are trying to address with your solution. Consequently, as a tool for promoting empathy, such reports fail pretty miserably (especially if created by a third party as they sometimes are).

Personas, by contrast, are highly individual ‘pen portraits’ of people – based on research – that bring these problems into much sharper focus. They are much better for promoting empathy, since psychologists have shown that people can be much more positive about INDIVIDUALS than they can groups with similar characteristics (hence many of the negative aspects of national stereotypes).

Some guidelines for creating empathetic personas:

→ MAKE THEM FEEL REAL. The personas you create should seem like real people with names and other specific details. Real people live in one specific place and have a specific

Personas are a motivational tool – you and your team should want to solve their problems.

number of children and/or pets. (You don't have to provide this much background for a persona, but if you do it should be specific).

→ MAKE THEM LIKEABLE. Your personas and their photographs should not elicit negative reactions from others on your team. If someone objects to a name or photo, change it. (Personas are a motivational tool – you and your team should want to solve their problems.)

→ STAY FOCUSSED. Most things your solution does should be for a 'primary persona'. Secondary personas can exist, but they have only minor differences in what they need the solution to do.

User stories

To decide how a solution should work, we describe how people might interact with it. This has been done in various ways over the years, with something called USE CASES, which appeared in the late 1980s and gained popularity through the 1990s. They are still common today, but are seen as less suitable for Agile development since they take a lot of up-front effort to write, and then to maintain, as requirements change. User stories are a lighter-weight replacement for use cases. They are not as detailed and so act as place holders in the design process.

User stories should be realistic, targeted, concise and prioritised.

A user story really means ‘We have identified a requirement for certain personas to do this certain thing with our solution’.
In Agile development, the user stories go into a big to-do list where eventually they will be pulled out, elaborated into a more complete picture of interaction (sometimes called scenarios) and eventually implemented in the working solution.

User stories should be:

→ REALISTIC. Base them on what real users say and do.
→ TARGETED. Always identify who they are for (with one or more personas).
→ CONCISE. Stories should fit on an index card or sticky note.
→ PRIORITISED. Assign a priority to each user story. Higher priority stories should receive more detailed testing with real users, while other methods may be used for lower priority stories.

EVALUATION

This is where we might get into a slightly religious area. Some people feel that usability testing is the one true evaluation method and that all others are not worth considering.
However, that view is unnecessarily simplistic for a couple of reasons.

Usability testing can be expensive, time-consuming and can often miss big-picture issues.

The first is that usability testing is by no means perfect. It is typically done with small numbers of participants (around six for each primary persona), focussed on specific features and conducted in an artificial setting. So it can be hard to persuade some people they should spend money improving a design based on such a small sample and you may never discover that key features are missing (because you can't test what you haven't thought of). The artificial setting can mean that big-picture issues like trust and how well a solution fits into users' natural environment can be overlooked.

The second is that usability testing is relatively expensive and time-consuming for some purposes. For example, if you are trying to evaluate the design of a top-level web navigation scheme with over 100 items, usability testing is going to be prohibitively expensive and time consuming, while card sorting will be quick and inexpensive by comparison. (I don't pretend that card sorting is equivalent to usability testing for evaluation purposes, but it does provide a lot of useful feedback, including information on how to make the navigation meet users' expectations.)

Let's finish our discussion of usability with a list of some of the most common evaluation methods. Whatever methods you choose, BE SURE TO EVALUATE EARLY AND OFTEN.

Despite the quasi-religious belief in usability testing, there are other methods to assess and improve usability.

Cognitive walkthroughs and paper prototyping

A cognitive walkthrough is what we did with the postal prices activity back on page 25. You can present participants with sketches, wireframes or screen shots and ask them to complete a specific task. Ideally, the participants would be real prospective users, but you can do cognitive walkthroughs yourself in the early stages of development, with team members or volunteers from other sources. Paper prototyping is a little more elaborate, with someone taking responsibility for simulating the interaction – typically showing alternative responses to the user's actions.

Card sorting

We've already talked about card sorting as a research tool, but it can also be used for evaluation – particularly with menus and navigation. For this purpose, online sorting is extremely effective. Participants are presented with a list of items and asked to sort them into groups they make up (called an open sort) or into a set of groups you provide (a closed sort). The results can be compared with an existing or proposed navigation scheme. The number of participants can be very much larger for an online sort without affecting costs.

Expert reviews can be quick and cost-effective relative to usability testing, but the results can vary considerably between experts.

A related approach (and more effective for some purposes) is called ‘reverse card sorting’ or ‘tree sorting'. This simulates a menu hierarchy, allowing users to make a selection at each level. Success rate and completion times are recorded.

Expert reviews

An expert review is conducted by a usability specialist who has not been involved in the development of the solution. It can be quick and cost-effective relative to usability testing, but the results can vary considerably between experts.

Usability testing

While usability testing is not without its faults, it is still one of the most common and highly-regarded evaluation methods. Testing is typically done with six users for each separate persona (or user community), taking around an hour per participant. Video recording is not essential if you have a viewing room, but tools like Techsmith’s Morae software package reduce the need for specialist facilities.

Above all, take advantage of usability testing as a tool to PROMOTE EMPATHY. Almost nothing is more persuasive than first-hand observation of USERS STRUGGLING to complete a task.

Why talk about accessibility and search engine optimisation in the same breath? Because improving the former will almost certainly improve the latter too.

3. ACCESSIBILITY AND SEARCH ENGINE OPTIMISATION

It may seem a little odd to combine accessibility and search engine optimisation in a single chapter. After all, you're probably being beaten up by your colleagues or shareholders for not appearing in pole position in search results. But if you mention accessibility, everyone thinks you're talking about wheelchair ramps. In reality, ALMOST EVERYTHING YOU DO TO IMPROVE ACCESSIBILITY FOR DISABLED USERS WILL ALSO IMPROVE SEO (and to a large extent vice-versa). The reason is this: the search bots that index web pages, and assistive technologies such as screen readers, have a great deal in common.

Screen readers (JAWS and NVDA are two popular examples) speak the contents of web pages out loud but cannot process audio or visual material. Nor can they understand the structure of a page without help from clues about what is a heading, paragraph, list of items and so on. Search bots have the same problems. As a result, if you decide to put the most important text on a page inside an image file, not only will screen readers be unable to access that text, but search bots will also struggle to index your content.

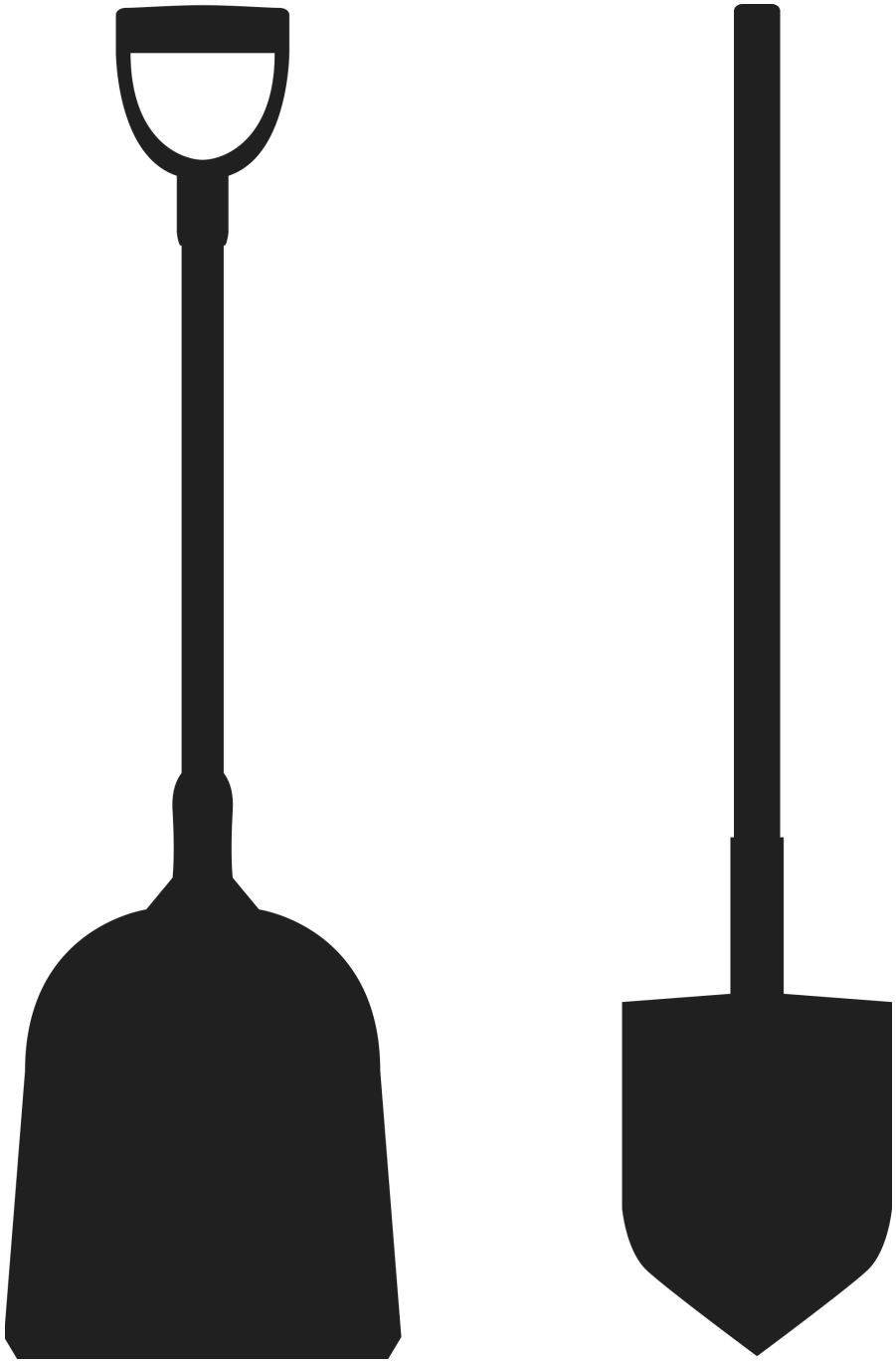
All users, whether search bots, assistive technologies or the more conventional sort, need to know what the current page is about and to understand its content.

Since accessibility and SEO have so much in common we'll deal with the overlapping areas first, then move on to separate sections covering issues specific to each topic.

WHAT USERS WANT

All users, whether search bots, assistive technologies or the more conventional sort, need to know what the current page is about and to understand its content. (These processes are a little different for search bots and assistive technologies than they are for real users, but let's gloss over that for the time being.) To address these issues we need to consider three factors:

→ TERMINOLOGY. Are you using the same words as your users? While modern search engines will make some allowances for spelling and singular versus plural words, their ability to find words with similar meanings is somewhat limited. For example, searches for 'shovel' and 'spade' turn up completely different sets of results, although many people will use them to mean the same thing. (Strictly speaking a spade is for digging, while a shovel is for moving loose material like snow or soil. That said, it's generally unwise to engage in semantic argument with anyone holding either).



STRICTLY SPEAKING, SHOVELS AND SPADES ARE DIFFERENT THINGS. THAT SAID, IT'S GENERALLY UNWISE TO ENGAGE IN SEMANTIC ARGUMENT WITH ANYONE HOLDING EITHER.

Style sheets are ignored by most assistive technology, so it's important that there's order to the underlying HTML.

→ WEB PAGE STRUCTURE. Do your pages have sensible titles, unique within the site? Is there a description that search engines can display to users? Is it easy for users to tell what the page is about from the title, headings and early content? Do your pages have sensible section headings?

→ WEB PAGE CONTENT. Is your content easy to see and read? For users relying on assistive technology like screen readers, does it make sense in the order presented? Style sheets are ignored by most assistive technology, so it's important that there's order to the underlying HTML. Is content cohesive, with related material together on a page, or is it disjointed, skipping from topic to topic?

The reason that these factors are important is that in its simplest form, finding information, products or services on the web is a three-step process:

→ Enter search words into your favourite search engine
→ Review the search results for evidence of relevant content (guess where this comes from)
→ Scan pages that look promising

Use the words your visitors use.

Step 1 is going to fail if the terms your site uses are not the same (or at least similar) to those entered by prospective visitors. Step 2 relies on the search engine summarising pages successfully. Step 3 requires that pages communicate their contents quickly and concisely. So these three steps highlight the most important aspects of getting (and keeping) visitors:

→ USE THE WORDS YOUR VISITORS USE. Tools normally associated with pay-per-click advertising (such as Google's Adwords or Microsoft's adCenter) can uncover what is most common in your area of interest. You can also look a little more generally at which searches are popular (using SearchEngineWatch or Google Trends) and, more specifically, at what users are searching for when they are referred to your site or use the site search. (Both of these are available using web analytics. There are a variety of free analytics solutions to choose from, but Google Analytics is quite popular.)

→ MAKE SURE THAT YOUR PAGES PROVIDE GOOD EVIDENCE OF RELEVANT CONTENT. You do this by using the right words (the ones your prospective visitors have just typed into their search) in the right places on your pages – the page address (URL), page title, page description, section headings and body text.

Make sure to provide a description for each page, using meta-tags. Make content easy to see and read too.

(And NEVER use yellow on white. EVER. Just trust me on this.)

→ PROVIDE A DESCRIPTION FOR EACH PAGE. HTML headers can include a description meta-tag that search engines will display on the results page and assistive technology can make available to users. It should be unique for each page (search on 'description tag' to find out more).

→ MAKE CONTENT EASY TO SEE AND READ FOR ALL USERS. This doesn't have to mean oversized fonts, but it does require that you take older users into account by avoiding anything less than about 10 point, particularly in low contrast colour combinations. For all users, don't make text more complex than it needs to be. Consider using READABILITY METRICS to identify difficult pages or paragraphs and rewrite them using simpler language (usually just SHORTER WORDS IN SHORTER SENTENCES). Also, meaningful images can be quite helpful, particularly for users who lack good reading skills – just be sure to provide the text alternatives described in the next section.

→ COMMUNICATE CONTENT QUICKLY AND CONCISELY. Once visitors land on your page your need to persuade them to stay. Pages must be well structured with appropriate headings, bulleted lists and relevant graphics. Be sure to use HTML

It is illegal to discriminate against people in the services, products or employment you provide.

title and heading (h1…h6) tags in a meaningful way. Each page title on your site should be unique and heading tags ought to help both users and search engines to know what the page is about.

→ TRY VIEWING YOUR PAGES WITH STYLE SHEETS TURNED OFF. This is easy to do in some browsers, notably Firefox and Opera. This will help you to see whether your pages make sense to assistive technology and search engines.

DIFFERENT STROKES (ISSUES SPECIFIC TO ACCESSIBILITY)

Whole books are written on the topic of web accessibility, and there are assorted standards and legislation that cover this topic, which can make it quite daunting. However, for most purposes there is one primary issue – in most countries it is illegal to discriminate against disabled people in the services, products or employment you provide (without just cause). This applies as much to what people experience in virtual spaces as it does to physical ones.

Some countries (such as the UK) implement very general disability discrimination legislation that simply reiterates this basic principle. Others – like Italy, Spain and the USA to name a few – have much more specific laws.

Most countries either use the basic non-discrimination principle or refer to the Web Content Accessibility Guidelines set by the World Wide Web consortium (W3).

In any case, you'll find copious supporting material for different jurisdictions in the guidelines set by the World Wide Web consortium (referred to as the W3). And, thankfully, version 2.0 of their Web Content Accessibility Guidelines makes a lot more sense to non-specialists.

For now, we'll focus on just one specific question:

→ Is your web site usable with assistive technology, such as screen readers, magnifiers and alternatives to the standard mouse?

Don't know? Try this simple test. Turn off pictures in your browser (under the 'Advanced' tab in the Internet Explorer 'Options' menu) and put your mouse in a desk drawer or somewhere equally inaccessible. Use the TAB and ENTER keys on your keyboard to navigate a web site.

Chances are that if the site you've tried uses simple HTML links, it still worked, albeit somewhat clumsily. Also, if it has sensible text descriptions of important images or icons, you will still be able to see where to go. But if the site relies on mouse events to do useful things like drop down a menu as you pass over it, or uses images for navigation without providing textual descriptions, you may find that you are stuck on the

Designing for accessibility improves usability and search engine optimisation generally.

home page. This can also be an issue on mobile devices like smartphones and tablets, where the concept of 'mousing over' something is foreign since they primarily use touch screens.

Happily, these are not intractable problems. But some are a lot easier to deal with while a site is being redesigned, rather than waiting for complaints from users. A few suggestions:

→ FOLLOW THE ACTION POINTS COMMON TO ACCESSIBILITY AND SEO listed above.

→ PROVIDE TEXT ALTERNATIVES FOR ALL MEANINGFUL NON-TEXT CONTENT like pictures, icons or videos (this point is relevant to SEO too, if you have important non-text content). Ideally, pictures should be links, since they are quicker to find and easier to click than those squirrelly little text links. And don't describe the content of the picture, but instead what the link leads to.

→ MAKE THE SITE WORK IN BASIC HTML. Use scripting and other more advanced features to improve the experience for those who can use it. Note that scripting does not work on many mobile devices and that search bots usually only index HTML. So again, DESIGNING FOR ACCESSIBILITY IMPROVES USABILITY AND SEO GENERALLY.

Some usability specialists think that the words ‘click here’ are the work of the devil. They can be made less demonic simply by including them in a fuller description. (As in ‘Click here to repent’.)

→ GIVE USERS CONTROL OVER ANIMATIONS. This is necessary for users relying on screen magnifiers to have time to adjust what they are looking at, and for all other users to return to the part of the animation they just missed.

→ ENSURE LINKS MAKE SENSE OUT OF CONTEXT. Screen readers and other assistive technology can present a list of links on a page. If all the links read 'click here' users will not be able to tell one link from another. So, use 'click here to…' rather than just 'click here', 'read more' or similar.

SOWING AND REAPING (ISSUES SPECIFIC TO SEARCH ENGINE OPTIMISATION)

As mentioned at the start of this chapter, SEO and accessibility have MUCH MORE IN COMMON than most people realise. So make sure you read the introductory section on issues common to both before diving in here.

As ye sow...

Google made its meteoric rise to fame by doing something no other search engine did at the turn of the millennium – it scored a site (in part) according to the number of other sites that linked to it.

Each search engine has its own method, and they change with time, so focus on the general principles.

This is now something that all search engines do as part of a complex calculation referred to as 'Page Rank' (confusingly, named after one of Google's founders, Larry Page, not web pages). Because each search engine has its own method of doing this – and they change with time, as any SEO specialist will be keen to point out – we are not going to go into specifics here. But we will deal with general principles.

The goal of a search engine is to return results relevant to the keywords entered. They do this by calculating a vast array of factors for each page, including (but by no means limited to):

→ REPUTATION. How many sites link to this one (referred to as BACKLINKS), taking account of the reputation of the linking sites themselves? Beware that paying for low quality backlinks can actually damage your reputation, rather than improve it.

→ QUALITY. How coherent does the content appear to be? A page that consists of long lists of popular search terms is actually going to score poorly on quality, compared with a coherent page of information on a specific topic.

→ RELEVANCE. Are the keywords searched for prominent in the page or web address (URL)? The most prominent location will be the title, followed by the hierarchy of

Spam links are a hotly debated issue in SEO circles. Google has claimed that they can't hurt your site, but some site owners say otherwise.

Encouraging backlinks from reputable sites is simple. Provide high-quality content that people want to link to.

heading tags (h1…h6). It's debatable how important it is for a keyword to be present in a page's URL (some search engines take this more seriously than others), but this is helpful for users in any case.

If you've arrived at this point without reading the first part of the chapter, GO BACK AND READ IT NOW! (Honest, you'll be sorry if you don't.) If you have good quality content and have made appropriate use of page titles and headings, what else is there to say? Just two points remain – a little more on REPUTATION, and our final topic, METRICS.

We just discussed how backlinks from high reputation sites are good, while those from low reputation sites (often referred to as SPAM LINKS) can be bad. The bottom line is that to do well in search results, your site should encourage other high reputation sites to link to it (called LINK BAITING). Typically, the best way of doing this is by providing high quality content that other sites want to link to, such as:

→ Authoritative articles and quick guides
→ Tools and utilities
→ News/humour/reviews
→ Promotional schemes/contests/puzzles

Don’t get obsessed with Page Rank. A more useful measure of your site’s effectiveness is your conversion rate:

Goal Achievements ÷ Visits

Clearly some of these suggestions will be more suitable to consumer-related sectors, but basically anything that gets someone thinking, “Hey, that’s cool, I’ll put a link to that on my site,” is what you’re after.

...so shall ye reap

The previous section brought up the terms PAGE RANK and METRICS. Google (among other search engines) can provide a page rank score for each page of your site. While this is useful as a diagnostic aid, don’t get too obsessed with these figures. What is more useful for most sites is to DECIDE WHAT IS IMPORTANT AND MEASURE IT (often referred to as a CONVERSION RATE), which is what metrics are all about. A conversion rate is expressed as the ratio of the number of visitors who did what you wanted (a ‘goal achievement’ – buying something, for example) to the total number of visits.

You’ll know when you are having a beneficial effect on your site when these figures improve. After all, being at the top of a search results list is of no real importance if users still don’t click on the checkout button or if they leave the page immediately after it is loaded.

Some metrics you will be able to measure yourself – such as how many orders get placed or the number of enquiries you

Often, a web hosting provider will make basic analytics available free of charge.

receive. Primarily, though, the issue of metrics draws us back to the topic of WEB ANALYTICS.

There are two basic methods for collecting web analytics. For smaller organisations, whose web site is running on a single server, it should be easy to use the web server logs to provide what are called ‘on-site’ analytics. The logs contain details of every page and page component requested, along with timing information and useful details such as the referring pages. Often, a web hosting provider will make basic analytics available free of charge.

For sites hosted across multiple servers, the basic concept is the same, but the analytics engine must use log files aggregated from multiple servers. This often means using more expensive tools. In either case, an issue with analytics based on server logs is that ‘caching’ – where web pages are stored temporarily – means that a page can be delivered without a resulting log entry. These results will not be as accurate as an alternative approach called ‘data tagging'.

Data tagging relies on code inserted into every page of a web site. While this may sound onerous, it is often easily implemented, through the use of page templates or ‘server-side includes’, where common content can be stored in a single location. The analytics code in the page makes reference to an

The advantage of data tagging is that the reference to the analytics server is made no matter how the page was obtained.

analytics server, which then records the required details. Google's free web analytics service works this way.

The advantage of data tagging is that the reference to the analytics server is made no matter how the page was obtained – whether it was already stored in the users' browser, cached on an intermediate server, or sourced from the original web address itself. Use a web analytics tool (free or otherwise) to measure the time users are spending on arrival and see if there are any patterns related to the search terms they used to find your site. If they're looking for shovels, and the site calls them spades, you have some work to do.

GETTING AROUND

Another recent development in web analytics takes into account references made to your site, product or service on social networking platforms such as Facebook or Twitter. If you have a presence on these platforms, it's possible to analyse social traffic yourself. For example, you can track the number of visitors who 'like' your product, service or event – that is, recommend it to their social network. Comments or tweets can also be analysed to calculate the ratio of positive to negative comments as well as their overall volume.

4. GLOSSARY OF TERMS

Most of the terms in this book should be pretty clear but, just in case, here's what I mean when I say...

ACCESSIBILITY – ensuring that a solution can be used by people with disabilities. These might include vision impairments, that make it difficult or impossible to see a display; hearing impairments that may render audio or video clips meaningless; or motor impairments that may prevent use of a mouse or keyboard.

AGILE DEVELOPMENT – a software development philosophy based on the approach taken at the Lockheed Skunk Works. It values working code over planning, documentation and big design, up front. Agile projects usually aim to deliver incrementally over short time scales (typically 2 to 4 weeks).

BACKLINK – a web site that refers to this one (usually in the calculation of reputation by Google).

BANNER BLINDNESS – the tendency for users to ignore information that is presented in graphics. First reported by Jan Benway and David Lane (see bit.ly/banner-blind).

BELOW THE FOLD – a metaphor that likens a web page to printed media. It refers to anything that isn't visible on screen without scrolling (the virtual equivalent of turning the page).

CARD SORTING – a user research method for establishing how users think about a particular problem domain by asking them to group and name related concepts.

COGNITIVE WALKTHROUGH – any time you think through the steps required to do something. (See the article on cognitive walk-throughs at Wikipedia).

COLOUR CONTRAST – the difference in effective brightness between the foreground and background colours on the screen. Because display technology works very differently from printed media, some colour combinations that are satisfactory for printed matter are not suitable for digital media. (See www.lighthouse.org and www.paciellogroup.com/ resources/contrast-analyser.html).

CONVERSION RATE – the number of users who achieve the desired goal as a ratio of all visitors to a site. (See http://index.fireclick.com/ for some average conversion rates by industry).

DISABILITY DISCRIMINATION – discrimination against disabled people in the provision of products, services or employment, without just cause. Some employers attempt to circumvent discrimination issues by providing 'equivalent services', but unless they are truly equivalent to a web- or intranet-based service (available 24/7 for example), they may still be open to prosecution. Most legislation refers to the WAI WCAG guidelines at www.w3.org.

EMPATHY – the ability to understand the feelings of another. Low empathy in technologists can mean that they don't appreciate the difficulties ordinary users can have.

ETHNOGRAPHY – the study of people and cultures, usually in situ. In user research, ethnographic studies are performed where the work or interaction is usually taking place.

HUMAN-COMPUTER INTERACTION (HCI) – the study of how people interact with technology, based primarily on cognitive psychology.

INFORMATION FORAGING – a theory of user behaviour similar to that of animals foraging for food. Am I getting adequate reward for foraging here (at a particular web site) or would I be better off foraging elsewhere? Much of the work on information foraging

has come from Peter Pirolli and Stuart Card at Xerox Parc (Palo Alto Research Center). The concept of information foraging also leads to the SCENT OF INFORMATION model (see below).

LINK BAITING – providing content on a web site that other people will want to link to.

METAPHOR – like the shopping basket on an e-commerce site, using a real-world experience to illustrate a concept in an interactive environment.

PAGE RANK – a measure of a page's popularity as calculated by search engines such as Google (named after one of Google's founders, Larry Page). Don't rely on page rank as a measure of success, though. Use CONVERSION RATES if you can, since that is really what you are interested in.

PAPER PROTOTYPING – mocking up a web site or other user interface on paper and walking users through specific scenarios. This is an extremely effective but low-cost way of evaluating potential solutions.

PERSONA – a fictitious person created to represent a user community; aids EMPATHY by encouraging people to relate to a specific individual, rather than referring to user community as an amorphous collective noun.

ROCKET SCIENCE – something that's actually a damn sight easier than designing effective interactive systems, because it relies on the universal laws of physics. As soon as human behaviour enters the equation, things tend to get messy!

SCENT OF INFORMATION – a model based on INFORMATION FORAGING theory (see above) that considers how well a solution persuades its users that they are getting closer to reaching their goal. This is primarily accomplished through good SIGNPOSTING (see below).

SEARCH ENGINE OPTIMISATION – the process of improving a web site's ranking in search engine results.

SIGNPOSTING – providing clear and obvious signals that users are headed in the right direction to reach their goal (page titles, meaningful headings and other feedback).

SPAM LINKS – links from low-reputation sites often as part of an attempt to deliberately manipulate search results. SPAM LINKS (often referred to as spamdexing) are generally frowned upon and may result in a site being omitted from search results altogether.

TAG – the elements of HTML are referred to as tags and usually appear enclosed in angled brackets. For example '<p>' is a paragraph tag.

USABILITY – defined by ISO standard 9241-11 as, "The extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use." In other words, understanding what users want to do with a particular technology, and how they want to do it.

USABILITY TESTING – a form of qualitative usability evaluation. It usually involves asking individuals users to work through a small number of specific scenarios with a web site or other interactive solution under consideration. Results recorded are success rates, time taken, number of errors made and notes of user comments resulting from encouraging users to 'think

aloud' during the process. (Note that an alternative term, USER TESTING, is often avoided within the usability community as it sounds as though the users are the object of the testing, rather than the technology under development!).

USE CASE – a term devised by Ivar Jacobson that has become a popular method of describing how a system should behave under all possible circumstances. Consequently, USE CASES can become numerous and complex, resulting in the increasingly popularity of user stories in AGILE DEVELOPMENT.

USER-CENTRED DESIGN – (sometimes referred to as "human-centred design") an overall approach to design that focuses on the needs of users and their "contexts of use" (how, when, where and why a process takes place). Described by numerous sources, including ISO standard 9241-210 (was ISO 13407).

WEB ANALYTICS – the measurement of traffic patterns through your web site (on-site analytics); or mentions, recommendations and comments on social networking platforms such as Facebook or Twitter (off-site analytics).

5. AFTERWORD

Usability, Accessibility and Search Engine Optimisation might have seemed strange bedfellows when you picked up this book. I hope that their relationship and the virtuous circle that can be created by focusing on them together has proven useful.

If you'd like to learn more, you'll find around 30 articles on related topics at www.syntagm.co.uk/design/articles. As for the books referred to in this text, here's a quick recap:

CROSSING THE CHASM – GEOFFREY MOORE

THE DESIGN OF EVERYDAY THINGS – DON NORMAN

PAPER PROTOTYPING – CAROLINE SNYDER

THE PERSONA LIFECYCLE – JOHN PRUITT AND TAMARA ADLIN

RAPID CONTEXTUAL DESIGN – KAREN HOLTZBLATT, JESSAMYN BURNS WENDELL AND SHELLEY WOOD

THE ROAD AHEAD – BILL GATES

THE USER IS ALWAYS RIGHT – STEVE MULDER

USER STORIES APPLIED – MIKE COHN

WEB USABILITY: ROCKET SURGERY MADE EASY – STEVE KRUG

You might also like to read:

THE ART OF SEO — ERIC ENGE, STEPHAN SPENCER, RAND FISHKIN AND JESSIE C. STRICCHIOLA

CLOUD ATLAS — DAVID MITCHELL

DESIGNING FOR THE DIGITAL AGE — KIM GOODWIN

DON'T MAKE ME THINK — STEVE KRUG

FAR FROM THE MADDING CROWD — THOMAS HARDY

FORMS THAT WORK — CAROLINE JARRETT AND GERRY GAFFNEY

LOLITA — VLADIMIR NABOKOV

NINETEEN EIGHTY-FOUR — GEORGE ORWELL

THE NON-DESIGNER'S DESIGN BOOK — ROBIN WILLIAMS

PRIORITIZING WEB USABILITY — JAKOB NIELSEN AND HORA LORANGER

SLAUGHTERHOUSE FIVE — KURT VONNEGUT

UNIVERSAL PRINCIPLES OF DESIGN — WILLIAM LIDWELL, KATRINA HOLDEN AND JILL BUTLER

(If you've observed that some of these books have nothing to do with technology, give yourself a gold star. Hardly anyone notices!)

A comprehensive list of USABILITY, SEO, ACCESSIBLITY and other resources can be found at www.lightingtheroadahead.com.

ABOUT THE AUTHOR

WILLIAM HUDSON is a User Experience Strategist who consults, writes and teaches in the fields of USER-CENTRED DESIGN, USER EXPERIENCE and USABILITY. He has more than 40 years' experience in the development of interactive systems, initially with a background in software engineering. WILLIAM was the product and user interface designer for the Emmy-award-winning "boujou," now an indispensable tool in major film studios.

WILLIAM has specialised in interaction design and HUMAN-COMPUTER INTERACTION since the late 1980s. He has written and taught courses that have been presented to hundreds of software and web developers, designers and managers in the UK, North America and Europe.

He is the founder and principal consultant of Syntagm, a consultancy specialising in the design of interactive systems established in 1985.

WILLIAM has presented papers, talks and tutorials at international conferences including CHI, UPA and Nielsen Norman Group Usability Week. He is the author of more than 30 articles and papers, including the Interaction Design Encyclodpedia entry on CARD SORTING and the Guerrilla UCD series of webinars introducing project teams to USABILITY, user experience and USER-CENTRED DESIGN.

William is also a contributor to the rational Unified Process and to Addison-Wesley's OBJECT MODELLING AND USER INTERFACE DESIGN. He is an Adjunct Professor at Hult International Business School, Courses Co-chair for the CHI 2013 conference in Paris and an organiser of the UCD 2012 conference in London.