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Issue 314 : January 2019 : net.creativebloq.com

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*WELCOME

EDITOR'S NOTE

 Given the web's aim is to bring us together, it's vital to ensure that we're all equally able to access it. According to the World Bank, over one billion people – or 15 per cent of the world's population – have a recognised disability (<https://netm.ag/2qKDLBX>). But evidence submitted by AbilityNet to the UK government's Work & Pensions Select Committee's Assistive Technology Inquiry found 90 per cent of sites don't even meet single-A compliance with the Web Content Accessibility Guidelines set by the W3C – meaning that they fall below the legal minimum of AA (<https://netm.ag/2RQ1zz0>).

Doing the bare minimum in terms of accessibility – whether it's supplying alt text for images or sticking to a 16-pixel font size for body text – is no longer enough. Which is why we've called in the accessibility experts to divulge some of the inclusive design secrets that often get overlooked.

But this isn't the only insight we're offering for building more solid sites. Darryl Bartlett digs into reusable components, showing how to design more efficiently and craft consistent UIs. And Matt Crouch gets his Gatsby on, sharing how it can render JS server side and deliver more secure, speedier sites.

Enjoy the issue!

FEATURED AUTHORS

CARL
CAHILL



Cahill is a UX and UI creative for brands. On page 60, he teams up with Joss Cook, design manager at Lush Digital, to help you navigate less familiar areas of accessibility.

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DARRYL
BARTLETT



Bartlett is a front-end developer specialising in JavaScript, PHP and mobile. On page 68, he breaks down reusable components and explores how you can build, style and manage conflicts when working with them.

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ANDY
DUKE



Duke is head of design and development at Stickyeyes. Having delivered successful projects for his share of big clients, he's the perfect person to advise how you can design for large organisations on page 20.

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MATT
CROUCH



Crouch is a software engineer at Vidsy and specialises in React, CSS-in-JS and accessibility. He takes a look at what makes Gatsby great for pre-rendering static sites on page 76.

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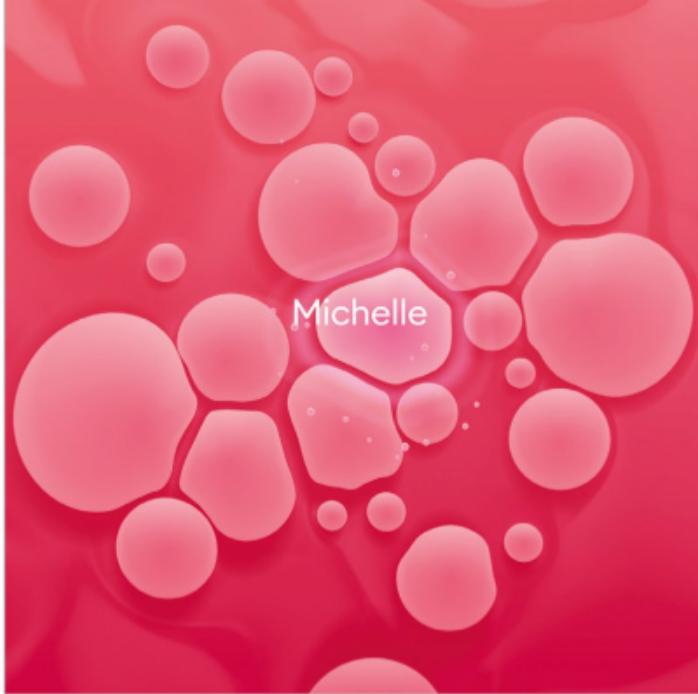
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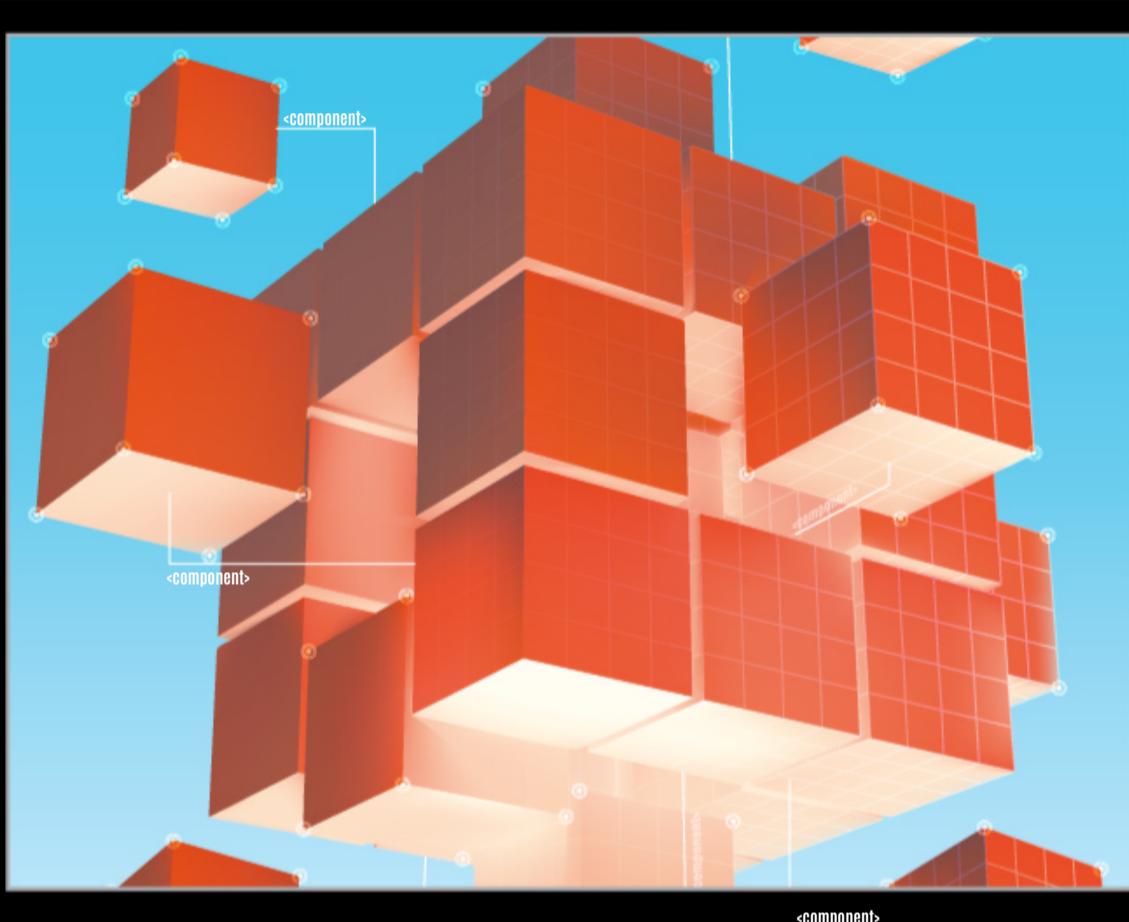
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Mark Billen runs down his favourite sites of the month, including a moving memorial to families affected by breast cancer



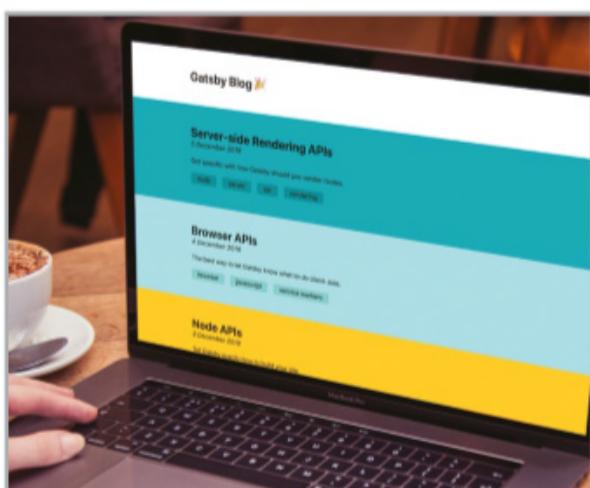
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EXCHANGE

Send your questions to netmag@futurenet.com

Practical
advice from
industry experts

THIS MONTH FEATURING...

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*QUESTION OF THE MONTH

The people behind fintech (financial technology) often boast about being 'disruptive'. But do we really want our economic life disrupted any further than it has been since the 2008 crash?

David Smith, Cork, Ireland

LF: Disruption in fintech terms is, I believe, about applying the latest technology to improve access to and experience of products and services. In fact, rather than undermine financial institutions, it is democratising access to data and information and empowering end users to make more informed decisions.

Look at online banking: that was disruptive 'fintech' when it first arrived but it revolutionised personal banking by making the process easier and more convenient. Today, with the new regulation in place, fintech and financial institutions are accountable in ways that are reassuring for customers. In this way, fintech can help both individuals and financial sector institutions keep up with technology and modern expectations of how we can engage with products and services.

The screenshot shows the TransferWise homepage with a dark blue header featuring navigation links like 'Send money', 'Receive money', 'Debit card', 'Business', 'About', 'Log in', and 'Sign up'. The main headline reads 'Bye bye bank fees, hello world.' Below it, a sub-headline states: 'You could save up to 80% compared to a bank when you send money, get paid in other currencies, or spend abroad on the TransferWise debit Mastercard.' A 'How it works' button is visible. On the right, there's a form for sending money: 'You send 1,000' (AUD), 'Recipient gets 550.31' (GBP), with a note 'Should arrive in 13 hours'. At the bottom, there are badges for 'ASIC regulated' and 'Over 4 million customers'.

TransferWise, an international money transfer provider, is one of countless fintech companies disrupting the way the financial system works. But is that necessarily a good thing?

Digital branding **FRIENDLY BRANDS**

What's the secret to making a brand connect emotionally?

Charlotte Brown, Adelaide, Australia

AC: Emotional connection is important for all brands to stand out in today's increased channels to market.

Emotional design takes a brand from

being simply functional or reliable, to pleasurable and holding meaning. It can influence buying decisions and transform audiences into advocates.

I would say most brands can and should connect emotionally with their audience; if it doesn't connect you've not really got a lot. Getting it right boils down to knowing your audience



Nike may court controversy with its branding and advertising but it always provokes an emotional response

and what motivates and inspires them. Testing design concepts and using ongoing insight is easier than ever with digital audiences. Brands can test something in the morning, then again in the afternoon, monitoring engagement. Brands that are capitalising on insight are succeeding in tapping into what matters to their consumers.

Images and videos, colours and fonts can all provoke emotional responses but tone of voice is vital. To truly rouse emotions, brands need to have personality or a strong identity.

Fintech

LONGEVITY OF FINTECH

Is fintech a good area for a developer to get into? Or is there a risk of it becoming a bubble, like blockchain seems to be?

Marie Weber, Leipzig, Germany

LF: New technologies are being developed all the time. Fintech came about as a result of advances in technology and infrastructure and, as long as they continue to evolve, new technologies, products and services will be created. Blockchain is topical partly because of the boom in digital currency that it underpins but also because it facilitates data security – a critical issue that will continue to need improvements in technology.

The wider picture reveals a world where digital products and services, regardless of technology, will only grow and become more integrated into our lives. Ambitious web developers who

want to work with the latest tech trends need to keep up with developments. While challenging in such a fast-moving environment, it's rewarding to work at the coalface of development.

Digital branding

OUTSIDE COMFORT ZONE

What's the secret of selling a client on a digital-first approach, if they're conservative and not keen on doing anything different from what they've done previously?

Emily Wilson, Nottingham, UK

AC: Generally, by the time clients are in conversation with us, they know something isn't working. They're already in the mindset that they need to improve their digital offering but either don't know where to start or have delayed digitalising their brand because of preconceived ideas around the expense and resources needed – this is something we educate them on.

We can demonstrate success stories of businesses that have taken a staged, phased approach to their digital transformation – starting with small changes, testing them and delivering gradual impact on the bottom line.

The great thing about this approach is that there's no guesswork. Brands have the opportunity to test and improve at each stage. Results are trackable and demonstrable. This in turn gets 'buy in' from all areas of the business, boosting everyone's confidence to continue to invest in a digital-first approach.

3 SIMPLE STEPS

What's the secret to digitalising a brand successfully?

Matteo Bless, Zurich, Switzerland

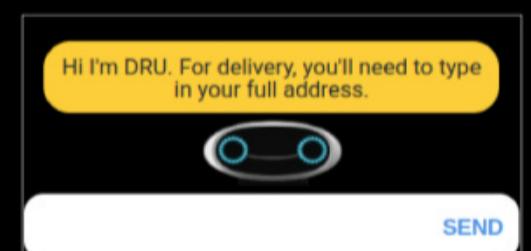


Think beyond websites

+ Follow Domino's example. Having brought its physical store online, it's now thinking beyond websites, enabling customers to order pizza through platforms like Alexa, Apple Watch, Xbox and Facebook Messenger, then track their order through an AI bot called DOM.

Don't shoehorn

+ Brands get it wrong when they shoehorn the offline brand into new channels, without giving thought to how digital design has a different set of rules and considerations.



Save people effort

+ Brands also need to change how they deliver information in online channels. Aim for design that requires little effort by the user, such as autoplay videos, as well as imagery and colour palettes that suit the brand personality and users' wants.

COOL STUFF WE LEARNED THIS MONTH

SAN QUENTIN'S WEB DEVELOPMENT SHOP GIVES INMATES A FRESH START

+ San Quentin has its own dev shop called The Last Mile Works, which has already taken on 10 projects and is designed to help inmates leave with marketable skills. The scheme pays just under £13 an hour, compared to 26p an hour for other prison work. netmag/2PE8Sxi

THIS FUTURISTIC DUTCH TRAIN FINALLY RENDERS YOUR OFFICE OBSOLETE

+ Many of us spend so long commuting, we may as well have our office on the train. A new idea from Dutch rail company, NS, provides exactly that.

It recently unveiled designs that show large office tables, standing desks facing the windows and social spaces where people can talk and have meetings. netmag/2ztGO09

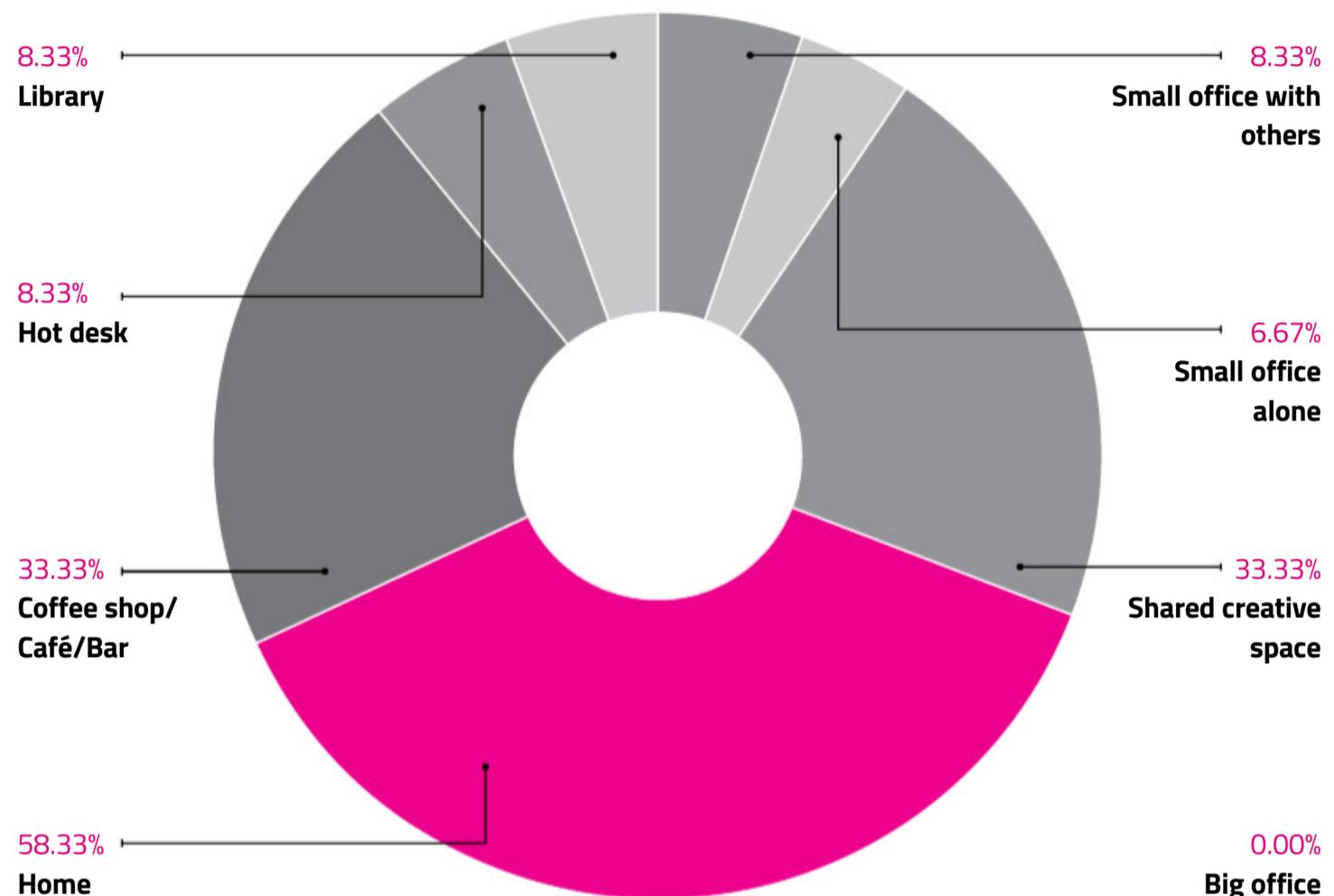
THE AVERAGE WEB PAGE IS NOW THE SIZE OF THE ORIGINAL DOOM

+ An average web page is now the same size as the video game Doom.

A compressed copy of the installer for the shareware version of the game takes 2.39MB of space, while an average webpage requires users to download about 2.3MB worth of data, according to HTTP Archive. netmag/2PB3P07

*THE POLL

WHERE DO YOU PREFER TO WORK?



From our timeline

What's your proudest achievement in the industry?



Having a project I worked on featured in @netmag
@kchoppin



Working for a small web company; my goal was to push the company far enough that we'd be able to secure a large international client. And we did.
@mcnally_liam



Running (probably!) the biggest Christmas information site on the

web – <http://www.whychristmas.com> (it turned 18 on the 1st Nov...)

@jpc101



Designing stuff that helped my clients gain funding. Nothing feels better than seeing projects you've worked on grow.
@zer0mike



Making the decision to grow a successful freelance career into a six-person agency that supports

families, communities and is recognised each year with accolades while competing against much larger agencies. Not bad for someone that never attended college.

@iamlucid



Starting the WordPress London meet-up group and growing it to over 1,500 members.
@keithdevon



From starting as a junior designer and now leading as a head of product. Only possible because of all the support and helping hands along the way.
@Benjieboo

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FEED

People, projects
& paraphernalia

THIS MONTH FEATURING...

CLIENTS FROM HELL 14

This month a web dev finds out their penny-pinching punter may have more moolah than he let on



BEYOND PIXELS

Michael R Lorek explains why healthy cooking combined with gardening ensures a work-life balance

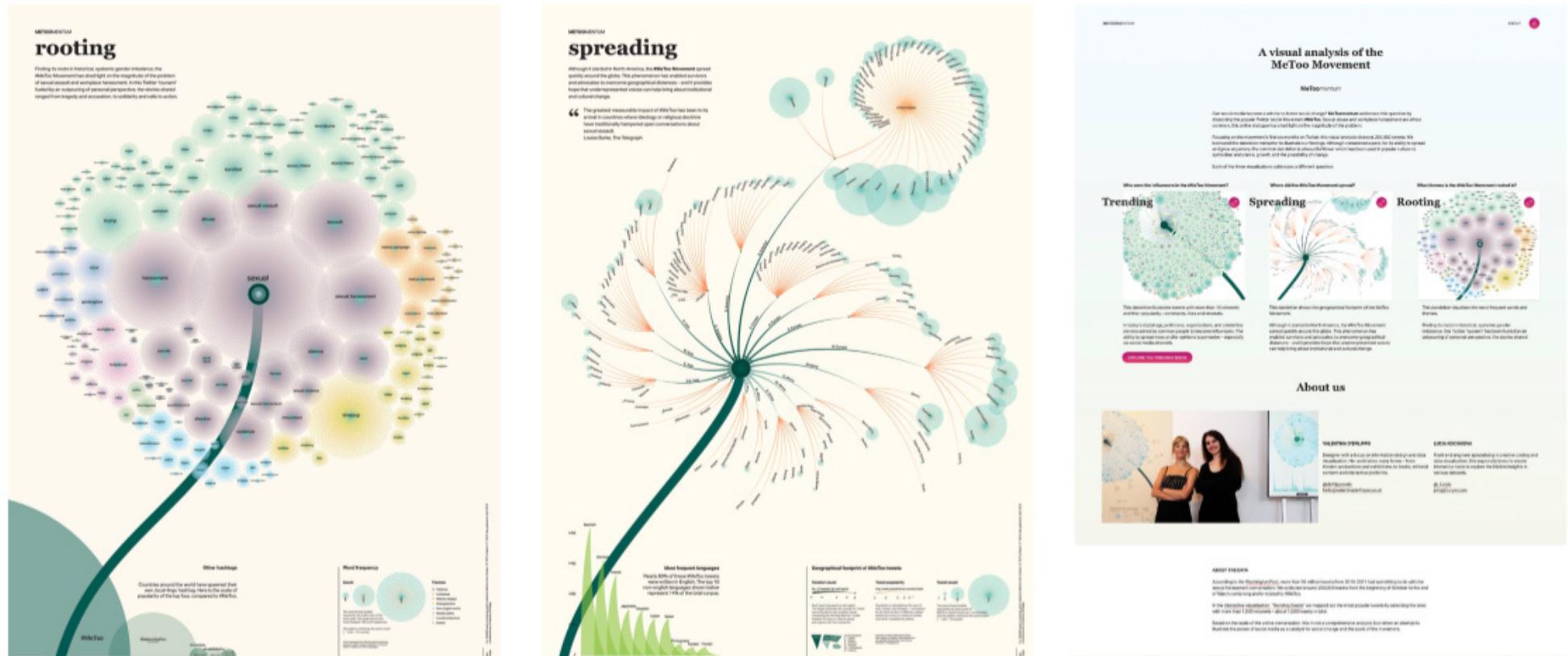
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METOOMENTUM

Valentina D'Efilippo demonstrates her data viz dissecting the #MeToo movement

* SIDE PROJECT OF THE MONTH



**VALENTINA
D'EFLIPPO**

job: Creative director at Signal Noise and co-author of *The Infographic History of the World*

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Tell us what MeToomentum does.

MeToomentum is a self-initiated data visualisation project exploring the themes, geographical footprint and key moments of #MeToo. The project's genesis was a simple question: can social media become a vehicle to foster social change and help reshape traditional views? MeToomentum addresses this question by dissecting the popular hashtag #MeToo. Focusing on the movement's first six months, we visualised around 200,000 tweets.

Why did you create it?

In a world where sexual abuse and workplace harassment are too common, #MeToo has become a powerful international movement shedding light on the magnitude of the problem. I wanted to capture the shape of these voices – I wished to archive and celebrate the bravery of all the people who have spoken up and share their very personal and difficult experiences to provide the possibility for change.

What were you hoping to achieve?

We wanted to show that our social media activity represents more than scrolling and liking. This project has never been intended for scientific research nor for accurate data analysis. Rather, our ambition

for this visual exploration was to capture the shape of the movement's voices and the impression of these shared experiences.

What technologies were used in building it?

I joined forces with colleague and kick-ass developer, Lucia Kocincova. We accessed Twitter API to collect our dataset. From the beginning of October until the end of March, we gathered a sample of tweets containing or related (responses and retweets) to the hashtag #MeToo. We used various tools – from rapid prototyping with pen and paper to coding the data primarily with SVG and D3.js. Adobe Illustrator was used to design the final three visualisations, while Adobe XD was used to define the interactive experience that was then built in code (HTML, CSS, SVG and D3.js).

How has it been received?

The project was exhibited in London in May during Signal Noise's Data Obscura exhibition. The conversations we had with visitors were deeply moving and encouraged us to publish the interactive and the prints online. Tweets and media attention have been great and the most rewarding aspect is to see user engagement. On average people have lengthy interactions with the website, meaning they are interested in learning and reading the content. You can explore the project at www.metoomentum.com.

What do you think you'll do next with it?

Just recently we were contacted by Twitter and have been discussing a way to expand our research to include a broader dataset, which would be amazing. ■



* HOW TO

DEAL WITH A CLIENT THAT HASN'T PAID

A downside of working for yourself can be getting clients to pay up on time – or sometimes even pay up at all. We asked @netmag's followers for their advice.

THREE STEPS

@halfnibble says there are three steps to use with clients. "Step 1: Force all clients to sign a NET15 contract with late fees starting on day 16. Step 2: Set up online payment options and automatic email reminders. Step 3: Don't work with clients who fail to follow the above."

DON'T STRESS

You live, you learn is an old adage that many self-employed have probably picked up the hard way. @kreativbeetle says accepting the fact that sometimes things don't pan out is simply part of the game.

"Make peace with the loss.

Mitigate it by putting in place preventions moving forward. After making peace with the loss, remind the client of their obligation (and hopefully a signed notarised contract). Perhaps show empathy and take a payment plan."

GET ADVICE

There are lots of people who've been there and done it when it comes to trying to get clients to pay up; look to them for advice.

@DarrenParlett says: "@Malarkey's example of a debt collecting email is great, personal and without the usual business formality." (<https://netmag.ag/2Pa27Uh>)



CASH OVERFLOW

Exclusively for net: The latest in a series of anonymous accounts of nightmare clients

* CLIENTS FROM HELL

A friend referred me a client who had written a book and needed a website to promote it. My friend told me that the client had – and I quote – "a lot of money" and that I shouldn't be modest with my estimates. He already had WordPress set up but needed a custom theme developed as well as a few features added.

Me: Given the scope, my estimate is \$XXXX.

Client: Oh, no, no. I can only afford a quarter of that. I can give you \$XXX and not a cent more.

Now, my friend said this guy was rich but I didn't know if that was true or not. Maybe \$XXX was a lot of money for him.

Me: Well, I can cut out some of those features.

Client: I absolutely need all of them. I can't pay what you quoted but I can give you plenty of exposure and referrals.

I should have seen the red flag then.

We compromised by raising his budget a little and reducing the feature list by a few items. He would pay in cash with a deposit up front.

During the design process, he was INCREDIBLY condescending, treating me like a

school girl even though I'm in my 30s. I hated working with him but I resolved to finish for the sake of my own integrity.

When we met for the final payment delivery, he asked me to wait for him behind a parking garage. That's where he rolled up in a car that looked like a small jet. I don't know what it was but it was the most expensive automobile I'd ever seen and it was also clear how grossly I'd undercharged him. In the next week, I saw him post about the upcoming book with a photo of him flying a plane. His plane. A plane he owned.

Whatever, I was glad it was over. Except it wasn't. A few weeks later he asked me to make a few changes. I charged him twice my normal rate. Of course, he complained that it cost him more than the site. To which I secretly laughed.

His book is about love, intimacy and how to be a respectful partner. It's not a bestseller.

CLIENTS FROM HELL
clientsfromhell.net

AYURVEDIC COOKING

Michael R Lorek explains why healthy cooking combined with gardening ensures a work-life balance

* BEYOND PIXELS

 It was in year seven when my school offered to teach me to cook – I was just 11. But at the age of 19 when I had my first flat, I found myself eating cold ravioli straight out of the can. I asked myself if I would continue having such a lazy junk food lifestyle or make some drastic changes. I decided to opt for a more quality approach. When I finally started doing something with my life a few years later and was drafted by the army as a medic, I began reading a lot about esoteric and natural health. It was that moment in time when Ayurveda caught my interest.

In Sanskrit, Ayur means life and Veda means knowledge. Compared with Western medicine, Ayurvedic wisdom goes back over 5,000 years. What struck me most was how it categorised food into three modes of nature: the mode of goodness (sattva), the mode of passion (rajas) and the mode of ignorance (tamas). Food in the mode of ignorance – like canned products, meat, eggs and sprayed, old, reheated or just overcooked food – simply needs to be avoided, as it takes far too much of the body's energy to digest. Since I became aware of this, I made the choice that from there on I would prepare and eat only foodstuffs that were in the mode of goodness and passion, ensuring that it was as

fresh as possible and preferably organically grown. I also took on Ayurveda's advice to regularly rest the body to digest and fast for a day instead of constantly shovelling food in. Mind and body for sure work much better when they are maintained and occasionally detoxed.

I came to realise it wasn't just about sourcing the best quality spices – they help vegetables and pulses digest better – but also about growing my own herbs for all the fine flavours. I was most fortunate when I moved to my North London address 16 years ago that it came with a very large garden. That allowed me not just to grow food but to grow colourful, fragrant flowers and therefore have a lovely place to relax, read and meditate. When you sit for hours in front of a screen, walking into the garden for some fresh air and, most importantly, real light gives me a healthy work-life balance. And experiencing nature throughout its seasons makes working creatively in digital very pleasurable. 



* PROFILE

Michael R Lorek (@m_lorek), is founder and digital consultant at Online Design Ltd and is passionate about web standards



STUFF I LIKE



ROB HAMPSON

Product designer

www.robhampson.co.uk

MASTERS OF SCALE PODCAST

I discovered this via Tim Ferriss's podcast. *Masters of Scale* is hosted by Reid Hoffman, co-founder of LinkedIn. Each episode reveals how companies like Google grew from zero to billions. The Airbnb episode is particularly interesting. <https://mastersofscale.com>

INVISION FREEHAND

Currently a favourite tool, Freehand lets you upload and share UI, encourages discussion and lets collaborators add notes in real time. Great for sessions with users and stakeholders. <https://www.invisionapp.com/feature/freehand>

MUZLI CHROME PLUGIN

Replace your default browser tab with design news and inspiration. The Muzli plugin lets you customise the feeds you have coming into your browser. It's a really nice, seamless way to keep your brain topped up with fresh ideas all day long. <https://muz.li/about/>



KINETIC

Jay Brandrup goes into how graffiti, geometric office spaces and rooftop games give the Alabamian agency an edge

* WORKSPACE

When trying to picture Kinetic's space, we find it best to imagine one of the oldest buildings in Birmingham, Alabama, juxtaposed with a *Cowboys & Aliens* themed interior. Since Kinetic started in 1995, we have been helping companies worldwide understand and apply the latest internet technologies in an innovative way and where we work has always been an extension of that same creativity. When we outgrew our original space down the street, we felt it was time to really let our creativity run wild. We teamed up with a local design-build firm that truly understood our vision. We started with a foreclosed building that had previously been a total of four restaurants and three nightclubs and this is the result.

Situated on one of the last cobblestone streets in Birmingham, a red caboose and commissioned graffiti mural [1] are the first clues that we don't work in a run-of-the-mill office space. We love when first-time visitors step into our space because the initial view does not disappoint. Immediately, you are greeted by a towering double-decker cube [2] and around the corner, two additional train boxcars arranged in a hub-and-spoke layout. From the start, we wanted our space to be specifically designed for flexibility and productivity. Collaborative break-out spaces complement the private office areas, including our Think Tank [3] and upstairs game room with retro pinball, arcade games, ping pong, basketball, foosball and billiards. In case we

aren't able to get away from the office, there is also an exercise room with sauna, shower and steam room.

Outside, the willow tree covered courtyard is a great place to grill a burger and have lunch while train watching. Above, the expansive rooftop [4] offers an outdoor adult playground of sorts, with, among other things, a putting green, life-size chess set and lounge area for taking an afternoon break or working on laptops during the summertime. In early autumn, we take advantage of the cooler temperatures, hosting an annual Wiffle ball rooftop golf tournament: The Kinetic Cup (www.kineticcup.com). Other unique elements are littered throughout – from the LED beverage bar, the custom K weather vane [5], to the homages to the building's past lives, such as the time the building spent as a British train-themed restaurant called Victoria Station. ■

PROFILE
Brandrup is founder and principal of Kinetic Communications (kinetic.com), a website design, development and marketing firm that has been helping clients since 1995.

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* BIG BUSINESS

DESIGN FOR GIANT ORGANISATIONS

Andy Duke shares his tips for effecting design change when working with large businesses



We'd all like to just work with small Silicon Valley startups, designing in the corner of a trendy coffee shop with nobody to answer to or please but ourselves – however the reality for most of us is working with huge, slow-moving, massive organisations.

These gigantic corporations are often epitomised by multiple layers of middle management, confusing silos of product ownership, lack of communication, huge amounts of regulatory red tape and risk aversion – the list goes on. So it's no surprise that a lot of these businesses are littered with unsuccessful design projects that have failed, not through any lack of design expertise but because of struggles to work within the constraints that come with a huge business environment.

So if you're given the opportunity to work on a design project within one of these monolithic organisations, what do you do? Whatever type of design task

you're working on within a massive organisation – whether it's redesigning a website or launching a new digital product – here are some great tips that I've uncovered over the years.

1: GET A SENIOR CHEERLEADER

One of the best ways to achieve successful design change within large and complex businesses is to find yourself a supporter or project sponsor at a very high level. They can leverage their position and influence to really help you out if you find yourself being challenged.

2: REALISTIC GOALS

If you try to steer an organisation that's the size of a supertanker as if it's a speedboat, you're doomed to failure. Make sure the level of design change you're looking to bring about matches what's possible. Try and aim for gradual change over time rather than changing the whole design landscape overnight. Go into the challenge with your eyes open – successful design within massive organisations is slow and you need to prepare for that from the get-go.

3: LEARN THE POLITICAL LANDSCAPE

One of the things most people neglect to do is invest time up front to understand the nature of the organisation that they're designing for. Instead of just raging against the machine, spend some time conducting short stakeholder interviews with key individuals to learn the inner workings of the organisation. Why is there so much regulation? Why is brand ownership split between three different teams? Investing this time at the start will enable you to respect design ownership as it exists but also to challenge it effectively at the same time.

4: LOW-HANGING FRUIT

A great way to set about your quest for design change within an organisation is to get some impressive wins under your belt early. Often within large organisations where design changes happen at a glacial pace, there are some design quick wins



you can pick off early and gain yourself some favour, which will come in very handy when you tackle the bigger changes that are needed.

5: OFFER VARIANTS

Another great way to increase the level of stakeholder engagement on your design quest is to ensure you offer multiple design variants and options to stakeholders and welcome their input. It really can make people feel as though they have a voice.

6: SHARED DESIGN PRINCIPLES

Creating a set of shared design principles across all stakeholders may seem like a fruitless task but it creates a great opportunity to have a shared vision, break down silos and can often be useful to refer back to if things get fractious.

7: DESIGN BY MICRO-COMMITTEE

'Design by committee' is traditionally the kiss of death in large organisations.

Having to create a design that 20 people all agree on invariably produces bland and uninspiring work. To combat this, you should look to thin down the crowd to only the absolute decision makers. By all means involve the wider group for awareness but you should only ever allow your design direction to be beholden to the smallest group possible.

8: HAVE AN ANSWER TO 'WHY?'

Whenever you present a new design direction or thinking to a massive organisation, always underpin it with a strong data-driven justification. Offering up a completely new site design because 'it's better' will always fail when under scrutiny from multiple layers of stakeholders, whereas a new design direction underpinned by rigorous analytics or user testing will succeed time and time again. ■

PROFILE
*

Duke is head of design and development at Stickyeyes. Over the last 10 years he's delivered successful projects for his share of giant clients.



* SECURITY

BUILDING A BETTER PASSWORD

Illustration by Kym Winters

Martin Gontovnikas (Gonto) discusses the importance of digital identity and what the future holds for passwords

> It feels like every day we are subjected to a story about a major data breach. But while it's easy to just see them as a statistic, it's the people behind the numbers that matter.

Just last month, Facebook was reported to have had a vulnerability that was exploited to access the data of at least 50 million users (<https://netm.ag/2StiTvB>); the US fashion retailer, SHEIN, was the subject of a hack that resulted in 6.24 million emails and passwords being taken (<https://netm.ag/2Rn8HmX>); and SingHealth, a Singaporean medical company, fell victim to a breach that saw 1.5 million patients' healthcare records stolen (<https://netm.ag/20W3wxU>). These are just a few examples of incidents from this year, representing everything from financial to health records. There are many more. The highest-profile password breaches in the past five years include: Adobe (2013) – 152 million customers affected; eBay (2014) – 145 million customers affected; and Sony (2011) – 77 million users affected (<https://netm.ag/2JpVRS8>).

The war against those who steal online data has been fought as long as there has been a digital battleground to fight upon. From the earliest passwords, through the introduction of encryption and eventually multi-factor authentication, technology companies have always looked to decrease the probability of a breach. However, the current landscape is the most dangerous it has ever been. As we move further from the physical world to the digital, we give more of ourselves away – there is little of our private lives we don't put at risk of being stolen.

Customers are becoming increasingly aware of these security and privacy concerns and demanding an

unprecedented level of accountability from technology companies. For companies, it's an issue of revenue. The moment a customer feels unsafe using a product, they will turn to a competitor. It's no surprise that marketing for the recently released Facebook Portal video device emphasised how the product was built with security and privacy in mind.

But despite this demand for more security, people are still terrible when it comes to passwords.

THE CURRENT STATE OF PLAY

No one likes passwords. And they never have, not even in the relatively early days of the internet when we had just a handful to deal with. Today, we have substituted almost every physical activity with a digital equivalent: online shopping with Amazon, placing bets online, paying for public transport with plastic travel cards, paying with contactless cards, streaming films and music online or ordering takeaway with an app.

All of these represent a crucial touchpoint where we share vulnerable information online. They all require an account – and therefore a password – to work, meaning the onus is on the consumer to create secure passwords.

Research has shown that there is an average of 130 accounts registered to each email address in the US, so it's not surprising to learn 73 per cent of users have duplicate passwords (<https://netm.ag/2RjQKWs>). The risk of using duplicate passwords is obvious: if there's one breach, then you open yourself up to being attacked across your full range of online accounts. What makes this statistic even more worrying is that people are still choosing weak passwords. Recent research found that a ➤

- quarter of more than 1,000 UK residents routinely use their name and birthdate as online passwords (<https://netm.ag/2SryzPY>).

We have a situation where people are facing the highest risk of online theft in history, yet seem unwilling to do anything but the bare minimum to protect themselves. So whose responsibility is it and what can replace conventional passwords?

BUILD IT AND THEY WILL COME

Technology companies must accept that the responsibility ultimately lies with them. They have built these new online services, made them slick and easy to use and must now accept that they need to bring all these same characteristics to the security that underpins them. This is not just a moral imperative but a financial one as well. If companies do not show their commitment to security and privacy concerns, then consumers will abandon them. We have already seen positive steps in this regard, with Google, Mozilla and Microsoft all announcing adherence to a new login standard known as Web Authentication (WebAuthn), which will enable websites

SO THERE'S NO SECURITY NOW?

There is some confusion with the phrase 'passwordless'. It does not mean you are using no security at all – that's perhaps the main thing to get out of the way, as the term can often lead to misconceptions from a consumer perspective. The best way to understand passwordless is thinking of it as a more modern and secure means of authentication that is still unique to each individual user but replaces old-school password methodology.

This is the exciting part about the future of passwords. As biometric technology becomes more widespread, powered in part by cognitive machine-learning abilities, the potential to verify a person's digital identity through advanced techniques will increase. This includes being able to flag unusual activity on a device if the user suddenly starts visiting different websites, or eventually through analysing the typing style being employed to gauge who is doing the typing.

These developments will not only improve the overall security of devices but will also make the experience of using technology easier and more enjoyable for users. Of course, there are privacy aspects to be considered

"Technology companies must accept that the responsibility ultimately lies with them... This is not just a moral imperative but a financial one as well"

to use apps, security keys or biometrics in place of a password (<https://netm.ag/2qdzs1U>).

Government also plays an important role. Recently, the state of California passed regulations that seek to improve the security of IoT devices. The law makes it compulsory for manufacturers to preprogram devices with unique passwords as opposed to uniform default login credentials (<https://netm.ag/2Q2l0d3>).

One popular enhancement to conventional password security is multi-factor authentication (MFA). This requires multiple (at least two) stages of authentication that provide additional security, using a combination of the following criteria (<https://netm.ag/2Q4zBjs>):

- Knowledge: something the user knows (password)
- Possession: something the user has (like a mobile phone)
- Inheritance: something the user is (like a fingerprint or retina scan)

As technology becomes more widely available across devices, the ability to bypass the knowledge part will become increasingly common, paving the way for passwordless authentication.

around physical forms of authentication. When you are asking users to share fingerprints, voice characteristics and retina scans with digital algorithms, you are asking for a great deal more than a conventional password. Companies must ensure that they are keeping all data secure, alongside communicating clearly with users around how it's being used.

IT'S ABOUT MORE THAN JUST A PASSWORD

Our digital identity is becoming as important as our physical one. We share our secrets, look for love, store our money, listen to our favourite songs, upload our health concerns and talk to friends. This means that we should be able to trust where we store those things, without having to always worry about their chances of being compromised. We are not just a bundle of words and numbers, nor should our passwords be. ■



Gonto is VP, growth and marketing and acting VP, product at Auth0, the universal authentication and authorisation platform.
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Joe Toscano

Words by Oliver Lindberg

Photography Apricity Photography (apricityphoto.com)

Joe Toscano explains why he left behind life in Silicon Valley in order to educate the masses about what's really going on in the tech industry and how we can create a better, ethical future



INFO

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Until a year and a half ago, Joe Toscano was an experience designer for an R/GA team embedded in Google. He and his team helped oversee and manage the Google product ecosystem to make sure products met its brand standards as they went to market. He also consulted on non-Google projects, as a member of the R/GA global network. “I got an incredible breadth of experience in the industry and got to see a lot of amazing technologies from different companies – it helped me understand their business strategies and how they plan to move forward,” he recalls. “But I also saw many things I thought could be thought through better.”

Toscano worked on various conversational designs and chatbots, which convinced him that conversation is the next big paradigm. “It’s the next step – a natural evolution of interfaces and human- to-computer interaction design,” he explains. “But for the first time in the history of computing, we’re not learning a language or a system – the system is learning us and our language.”

Toscano got so excited about the potential of the technology that he set out to write a book about it: an ultimate guide to chatbots. But the more he researched the topic and the more he saw the inside of Silicon Valley, the more worried he became about the potential impact of automation and poor privacy measures. His concern grew to such an extent that he left his role in the Valley.

“Eventually, experiences will be fully immersive, which is exciting but it also means that computing is in the background,” Toscano points out. “We’re entering an era of ambient computing, in which artificially intelligent machines are going to be consuming data as if they were human and acting on it on our behalf. There’s a danger people don’t realise when they’re immersed in a world of technology. Operations are often performed in a way that is invisible to the general public, hidden behind an algorithm that operates in a cloud server.”

There’s another side to what’s currently happening, which Toscano calls “the perfect efficiency in capitalism”. “These systems can do work without needing to pay the labour cost. You’re eliminating



huge overheads and from a pure business perspective, it’s brilliant. But it’s terrible because we’re stripping a lot of people of jobs and changing industries at a pace we’ve never experienced before. I left the Valley because there are parts of this that I believe need to be addressed before we move too fast and end up breaking society – if we haven’t already.”

Since leaving his job, Toscano has been focused on bringing technological literacy to the masses. As a first step, Toscano has set up Design Good (www.designgood.tech), a non-profit organisation on a mission to create a better future through technology. It’s modelled after the Better Business Bureau (www.bbb.org), also a non-profit whose self-described mission is to focus on advancing marketplace trust. “Earning trust back is going to be one of the biggest brand strategies of the future,” Toscano asserts. “How can I earn your trust, be transparent and ensure the data I’m collecting is not getting abused? It’s not going to be easy and a lot of businesses will have to reevaluate their KPIs but it’s doable.”

To do this for the internet, Toscano has come up with a three-part approach: inform the public of what’s going on;

support technologists in creating products that respond to informed consumer demand while also increasing revenue; and help policymakers create regulation that both protects consumers and enables businesses to operate successfully.

“And if I learned anything at Google it’s that the only way that budget gets created is through consumer demand. [Therefore] the consumers need to push these companies. But there’s a lot of stuff consumers don’t know how to demand, so I’m going to help them understand how to demand what they want.”

Toscano recently implemented a “Tech Check” on the Design Good site, which allows people to lodge a complaint about problems with the internet. “One of the biggest problems with the internet is that there are so many flaws but nowhere to report a problem,” he explains. “What do you do when you find a manipulative design pattern, for example? Maybe you tweet about it but you better have some influence. So I’m trying to create an area for people to organise and push back against these companies collectively. That way we can make social responsibility a priority within them. I have big plans for it but I believe this is a perfect MVP.”

Longer term, Toscano hopes to turn Design Good into a consulting agency that helps companies build a roadmap for the future, which includes their social responsibility. “I’m working with technologists to show them how they can make change. If there are humanitarian issues they don’t have the budget to do the research on, I will do it outside of their company and give them the numbers to sell to their boss, so that they understand how the change is going to increase their business. I’ll help them figure out how they can earn money in an ethical and sustainable way.”

Toscano is building Design Good from the ground up but, encouragingly, the project has been met with a lot of support and feedback across the industry; he’s currently accepting donations and seeking strategic partners to work with the organisation.

Toscano also thinks we have to change the way we measure success in the industry, which typically is by engagement. “It’s a proxy value,” he sighs. “It’s not proof of anything. Just because someone’s

“Engagement is a proxy value. Just because someone’s on your site for a long time doesn’t mean they’re enjoying it!”

been on your site for a long time or clicking on a lot of buttons in your app doesn’t mean they’re enjoying it! I could have just left the window open or be clicking a button a lot because it’s getting me stuck. It’s not a great metric

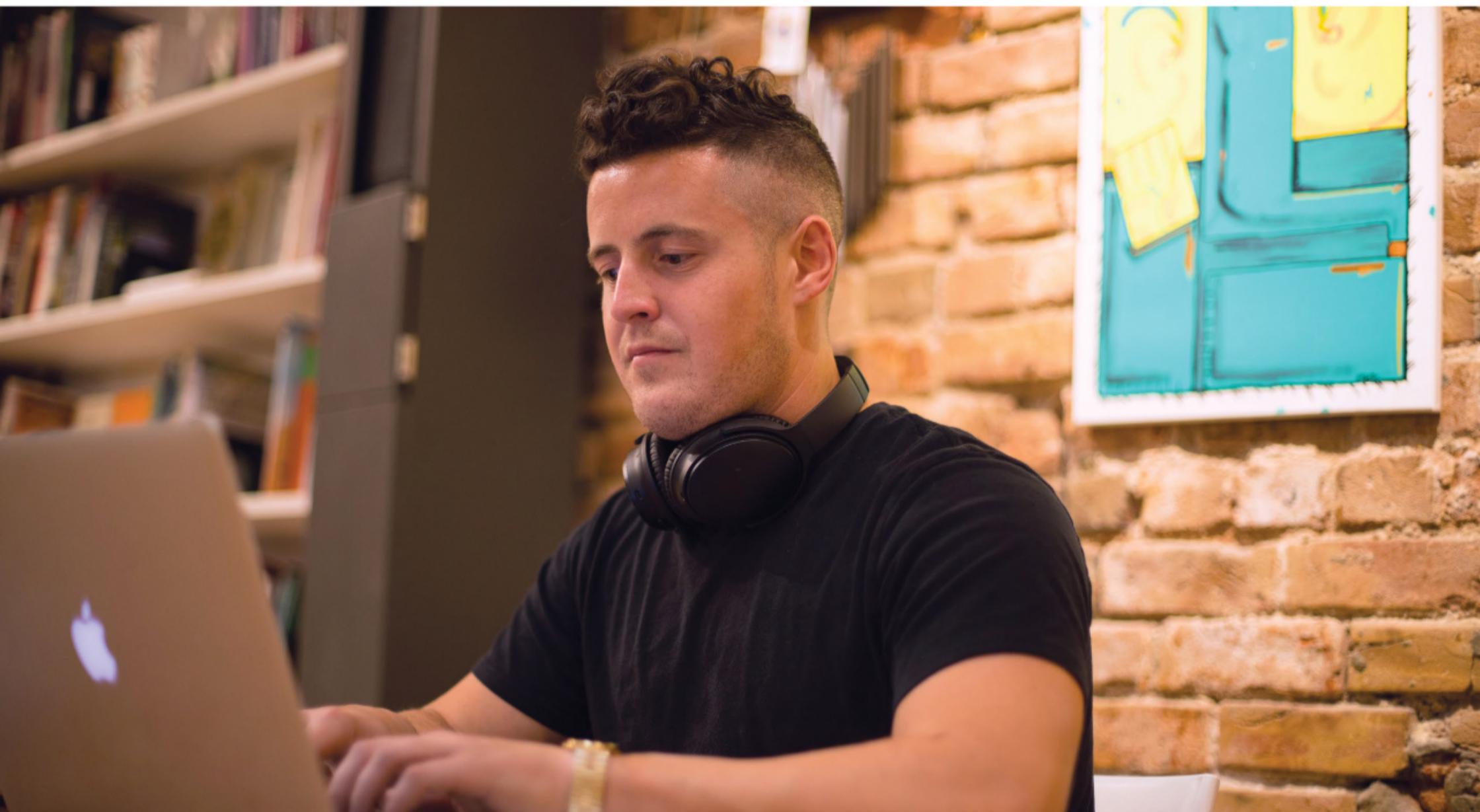
and it’s actually pretty easy to hack and handle unethically.”

Many measure success this way because we live in an economy in which attention has become the currency. Toscano warns, however, that it can become an illegitimate one – Facebook was recently accused in a class-action lawsuit of inflating its video metrics, for example – and it can be fed through legitimate business models like data brokering and product creation and turned into legitimate cash. “Our industry is being manipulated by the companies that own the data, so they set their own prices and completely control the market,” he says. “That’s a dangerous game.” Moreover, regulators are constantly forced to play catchup, trying to get their heads around new technologies there isn’t a legislative framework for. “Policymakers aren’t fully aware of what’s going on; that’s pretty obvious to people ►



A medium shot of a young man with dark hair, wearing a black t-shirt and dark trousers, sitting in a room with a brick wall and several white pendant lights. He is leaning forward, resting his left arm on a chair back, and smiling while looking towards the right.

“Our industry is being manipulated by the companies that own the data, so they set their own prices and completely control the market”



► who've watched the recent hearings," Toscano says. "We need to help them understand tech, so they're not doing anything that harms their constituents."

Toscano is currently travelling the world speaking about design ethics – in more than 19 states or nations across four continents in the past year – and has written articles for the likes of Smashing Magazine on how to sell privacy and make change (<https://netm.ag/2RLTk85>) and InVision on the legal and social responsibilities of being a designer in the 21st century (<https://netm.ag/2Qrg1hq>). His book, out now, called Automating Humanity (which can be ordered from Amazon), is a declassified brief of everything Big Tech doesn't want you to think about. It covers the impact of the addictions companies have fuelled at a global scale, the profits being driven by fake news and disinformation and the way companies are automating jobs at a scale we've never experienced before.

"Google went through a \$2.4 billion

antitrust lawsuit in Europe last year," Toscano explains by way of an example. "I found some info on a court case between a John Doe employee and Google, during which it was discovered that Google's contract practices are keeping people silent in many ways that we had no idea about." One practice that has recently been making waves is forced-arbitration clauses – although these aren't unique to Google and have been adopted by many other Silicon Valley firms. Requiring employees to settle grievances with a neutral arbitrator behind closed doors and forfeit their right to litigate, forced-arbitration clauses have drawn ire for the alleged chilling effect they've had on female employees wanting to challenge harassment and unequal pay. Ultimately this became a contributing factor to the mass walkouts from Google offices around the world at the beginning of November, leading the company to clarify in a statement that its clauses never required confidentiality and commit to making

arbitration non-mandatory (<https://netm.ag/2JPk7Jb>). "That's a huge issue that we need to talk about," Toscano says.

One of the reasons Toscano has left the world of Silicon Valley behind and moved back to Nebraska is to assist the local community. "I care about the people here and want to help them bridge what's coming in a meaningful way," he says. "It's going to be hard and this shouldn't be forced on them – or anyone." Toscano is helping start a new programme at the University of Nebraska, called the Johnny Carson Center for Emerging Media and Arts, and he's also helping the local business community progress however he can. "It makes me really proud: we need a morale boost right now, as a global society, and I believe it's our job as the people creating this industry to push back. I quit my job but we can all do little things and day by day create a better future." ■

Google was approached for comment in connection to this story.



*ETHICS IN DESIGN

ETHICAL MINEFIELD

Hilary Stephenson discusses how digital design may not be as ethical as we think

> Design for digital platforms has the potential to influence the lives of billions of people around the globe. It is, therefore, our ethical imperative to ensure that digital products and services are designed to be as inclusive as possible, by ensuring they can be used easily by everyone. However, despite being well-intentioned, organisations of all shapes, sizes and sectors currently fall short in this regard.

Considering our increasing reliance on tech and digital services, a world in which we do not consider the ethical consequences of our design decisions is a world in which many people may be discriminated against, excluded and potentially even harmed by the tech we increasingly rely upon.

As the saying goes: “the road to hell is paved with good intentions”. Unfortunately many well-intentioned designers and businesses are increasingly trying to do the right thing but letting bad design and development approaches get in the way. Take mindfulness apps as an everyday example.

Designed to promote calm and emotional wellbeing, these apps send the user periodic notifications to encourage them to meditate. But, rather than being a helpful reminder, these can cause feelings of stress, anxiety and shame in the user – the exact opposite of their intended effect.

A more disturbing example of unintentional unethical design is machine bias. This occurs when errors are made in machine learning processes and bear worrying similarities to human cognitive biases. While the study of machine bias is still in its infancy, there are already several prominent examples. Try entering the term ‘professional hair’ into Google Images and you’ll see the results are of predominantly Caucasian women. Now try entering the term ‘unprofessional hair’ and see what comes up. Worrying, isn’t it? Perhaps even more concerning is that this bias also extends to the software used to profile and predict future criminals. This is technology that is supposed to make us safer but in fact just furthers negative racial stereotypes. Investigative journalism

newsroom ProPublica ran a Pulitzer-prize nominated study on this phenomenon, which found that the algorithms were not only spectacularly unreliable but also biased in favour of white defendants, falsely flagging black defendants as future criminals at almost twice the rate of white defendants.

Unfortunately, not all bad design decisions occur by accident. Design can be an incredibly powerful means to influence user behaviour and many brands have woken up to this fact.

A worrying trend we’re seeing from some of the bigger brands is dark UX patterns. These are (for lack of a better term) ‘psychological tricks’ brands deploy to encourage users to give up their money, data, or even simply to stay on their site longer than they otherwise would.

This issue is prevalent across all sectors, but particularly in retail, leisure and travel, where there is a clear financial incentive to keep users engaged and steer them towards purchasing certain products. To use a common example, Amazon tempts customers into signing up for a free Prime trial by using a bright yellow ‘FREE one-day delivery’ button, while greying out the simple ‘Proceed to checkout’ button. Customers’ eyes are drawn to the colourful option, which doesn’t clearly stipulate that a subscription charge will be taken monthly as soon as the 30-day trial period is over.

To change the pattern of unethical design, we must look beyond simple inputs, processes and outputs. It’s time for us to start thinking more long-term.

Every output has an outcome. This outcome will have a longer-term impact we need to begin taking into consideration if we are to become ethical, human-centric designers and thus ensure that nobody is left behind or harmed by the technology that we design and build.

Remember, harm does not have to be something you do intentionally – sometimes it’s just the absence of good. If we have the opportunity to design more ethically and opt not to take it, we are contributing to harm. It’s time for this to change. ■

Stephenson is managing director at Sigma, which specialises in user experience consultancy, digital design and development
wearesigma.com

PROFILE
*



* Q&A

SIMON COLLISON

The veteran designer explains why the New Adventures conference is back with a bang



INFO

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t: @colly

Can you introduce yourself to those who might not know you?

I've been designing and building websites and digital products for 20 years, so I was an early web-standards advocate scarred by the browser wars. Way back, I wrote books about CSS and spoke at events all over the world. These days, I try to blend into the background, make sense of all the pace and complexity. I believe that designers should care for the arts and humanities and draw from a vast array of diverse inputs. I also think digital tech can be a force for good if we commit to that version of our future.

You're also known for organising the New Adventures conferences. Why do you think these were so popular?

New Adventures began as a trilogy between 2011 and 2013, targeting 'those who value design'. By holding it in Nottingham, we gave many their first chance to attend a big conference without the expense of a few days in London or Brighton. We always encouraged debate, eager to enthuse, challenge and move the agenda forward. We attracted world-renowned speakers and introduced new voices. What happened in the hall spread far and wide, kick-starting new thinking. Our audience grew more diverse each

year, with the attendees representing a broad mix of professions. We thought our third event would be our last as we wanted to go out on a high, just like our favourite bands.

Why are you relaunching the event now?

People always asked if NA would return and some were really desperate for it to happen! This last year it seemed almost inevitable and so, just like (some of) our favourite bands, we're reforming.

So much has changed and the time is right to explore an uncertain future together. Tools, frameworks, automation: what value do they offer and how will they alter the way we work? Will we be essential or expendable? Visionaries or victims? Are we losing sight of the broader purpose of design?

We'll talk about designing smarter and strategies that assist with whatever happens next. We'll consider labour and ethics, education and inclusivity. We'll look afresh at design and rethink its purpose. With all of this, we hope to offer useful guidance and establish a baseline for further discourse.

Will you be speaking yourself?

I will be MCing the day with my usual unscripted waffle, while we have some great speakers including the incomparable Ethan Marcotte, wise sage Jeremy Keith, Code Club founder Clare Sutcliffe MBE and newer voices like Helen Joy and Jessica White. We also have Jeremy's terrific progressive web workshop.

As ever, there'll be plenty of inclusive fringe events. Our friends JH will host our traditional bowling extravaganza. Another warm-up event is Design Exchange, featuring engaging presentations from new voices. The growth in local meetups will be represented by Tech on Toast and Women in Tech Notts. There'll be a huge party and cool-down events such as our inclusive football tournament, riverside run club, photo walk and coffee tour. As ever, NA is ultimately about community and friendship.

In general, what's exciting you most in the field of web design right now?

New approaches to layout and CSS Grid. It finally feels like we have a scaffold that lets us get truly creative without cumbersome frameworks or fallible floats. It feels so intuitive and open to me. That said, Grid seems like a thing AI could really excel at in the near future. It's probably not in our long-term interests to bring such computable logic to our typically organic design process. ■

New Adventures will be held from 23–25 January 2019 at Nottingham Albert Hall, UK. For details, see newadventuresconf.com.

★ HELPFUL ADVICE

WHAT ARE THE BEST LESSONS YOU LEARNED IN 2018?

We pick the brains of seven web professionals to discover what helpful gems they have learnt in the past year



**GUY
UTLEY**

Creative director, Tall
tall.agency

 I'm finding more and more that a straight-talking approach goes down better with clients than fancy words. As an industry though, there seems to be a constant urge to create overcomplicated words to present what we do. This has meant some agencies have pretty much constructed their own language. Examples include: 'Reach out, with our ideation' or 'Modern consumers movement'. Say what? I personally love the quote by Sir Winston Churchill: "If I had more time, I would have written a shorter letter."



**JEREMY
CLEMANS**

Back-end developer, FINE
www.wearefine.com

 We spend most of our time at work, so it needs to be somewhere we can be ourselves. My message to companies is to create an environment that inspires people to do great work and grow. For job seekers, it's to be authentic and focus on providing value to others. Many people think of job hunting as CVs and interviews but you want to find a connection both ways, and that's more about the people and company culture, less about checklists of skills.



**JENNI
SCHWARTZ**

Owner and creative director,
Solmark Creative
solmarkcreative.com

 At Solmark Creative, a branding and digital studio specialising in the wellness and fitness space, 2018 has become our year of retaining clients. While we were predominantly hired for one-time projects, we believed we were capable of so much more than just the initial build. The problem was that our clients were not aware of our full expertise. So we began to clearly define the specific services clients can benefit from, allowing them to budget for an ongoing relationship. In doing so, we've matured and shifted from being task-driven to results-oriented and our client relationships have become stronger and therefore more rewarding.

**ADAM INNES**

Senior PHP developer, 50000feet

50000feet.com

► The lesson I've learned this year is: 'stick with a stack'. The proliferation of new libraries, technologies and ways to do things is a dangerous path to time-wastery. The implications of learning a new thing can be far-reaching into the development process and have a major impact on the project budget and your programmers' sanity. So keep your core stack stable and experiment in increments. Throwing your team onto the latest technological trend is a decision that needs to be well planned.

**MARCO POLETT**

Front-end software engineer

www.marcopoletto.co.uk

► In the past 12 months, I've learned to implement new technology in every new project I start. Everything serves the purpose: new syntax, new tools, new framework. Little, few or many? That's not important as long as you can keep a good level of productivity and finish your project within your deadline. This approach helped me a lot in this fast-paced world and, thanks to these small, continuous inclusions, I've been able to reduce the time I spend keeping myself up-to-date outside my working hours. 2018 has been a very productive year and my passion for web development has been (and is) continually increasing.

**AMANDA SEAFORD**

US CEO, Mirum

www.mirumagency.com

► What's the most important lesson I've learned over the last 12 months as CEO of a digital agency? That has to be the power of saying 'no'. In other words, in order to accomplish more, you actually have to do less. In practical terms, that means fewer meetings, fewer emails, fewer initiatives and even fewer new business efforts – which might sound like you're achieving less. But in reality trying to do everything leads to many unfinished or poorly done tasks, whereas saying 'no' drives focus and focus drives results. With focus, we can accomplish anything we set our minds to.

**CHRIS DAY**Agency owner and Jaffaholic
www.daymedia.co.uk

► In 2018, one thing's become clear: marketing of WYSIWYG software packages has become so exaggerated that many of our clients believe they can deliver any functionality they can dream of in seconds, for free. So now we have to provide more education early on in our project processes and clearly define the level of flexibility they will get. In addition to this, we talk to them about the importance of brand consistency, accessibility and compliance, which can also suffer in a WYSIWYG environment.

RESOURCES

HOW TO STOP CLIENTS ASKING FOR ENDLESS REVISIONS

<https://www.creativebloq.com/career/stop-endless-revisions-81412587>

+ How do you say no when clients won't stop asking for revisions? In this article, Egle Karalyte explains how to break the cycle of a client who endlessly asks for revisions.

HOW TO MAKE YOUR DESIGN STUDIO A BETTER PLACE TO WORK

<https://netm.ag/20gF7xG>

+ Nick Carson outlines seven ways you can improve your working environment, from introducing flexible seating to improving the amount of natural light and the practical considerations that can make them achievable.

WHEN DESIGN JARGON GOES WRONG

<https://www.creativebloq.com/features/when-design-jargon-goes-wrong>

+ This article by Gary Evans lists the most egregious examples of industry buzz speak you need to cross off your list in favour of straight-talking, plain English.



*HTTPS

KEEP USERS SECURE

Simon Jones explores how you can – and why you should – offer users two-way encryption with HTTPS

> Everyone should be concerned about web security. Whether it's online banking or casual browsing, users should be confident that the connection they make to a site can't be eavesdropped on or tampered with.

HTTPS is the mechanism to achieve this and you've probably seen many HTTPS URLs. It provides two-way encryption between a client and server using a protocol called Transport Layer Security (TLS), which helps ensure that the website the client is communicating with is the real thing and that nobody can intercept and read or modify the communications.

Achieving this relies on both 'symmetric' and 'asymmetric' cryptography. Symmetric encryption is straightforward: you encrypt information with a key, share the key with someone else and decrypt it with the same key. Asymmetric encryption uses a pair of different keys generated simultaneously: information is encrypted with one key and can then only be decrypted with the other corresponding key. One of the keys is 'public'

and shared widely, while the other is 'private' and kept secret.

The TLS protocol uses asymmetric cryptography to securely generate and exchange a 'session key,' which is known to both the client and the server. This session key is then used to symmetrically encrypt information being exchanged and is discarded once the session is over. The exact mechanism by which this happens varies but you don't need to know all the details in order to use it.

There's something more needed here, though. We can encrypt traffic between client and server but how do we prove that the server is actually who it claims to be? This relies on a certificate authority (CA). A CA is a trustworthy third party that will provide a certificate for a domain if you can prove that you have control over that domain. This certificate includes the public key used by the server, which enables the client to validate that the key they're relying on for TLS is actually owned by the person they want to communicate with.

So you can see how HTTPS helps us stay secure. Fortunately, adoption is growing while unencrypted web traffic is declining. It's estimated that around 75 per cent of traffic is now encrypted, with a continuing upward trend. To further illustrate the ubiquity of encryption, when Google Chrome version 68 shipped in July, it started marking all non-HTTPS websites as 'Not Secure'. Google also factors in HTTPS when considering a site's search-engine ranking.

Arguments made in the past against using HTTPS across every site include cost and performance. Some companies charge for certificates but these days a good option is Let's Encrypt (<https://letsencrypt.org>), a free certificate authority, provided your web host will support it. Alternatively, a good way to get started for beginners is using Cloudflare (<https://www.cloudflare.com>), which offers a free service that lets you set up HTTPS for individual sites with very little effort. A video guide to setting up with Cloudflare is available at <https://httpsiseeasy.com>. Your users are unlikely to notice any performance impact and this is a more than worthwhile trade-off for improved security.

You may also see sites and companies out there who use HTTPS inconsistently. Perhaps their landing page is unencrypted but they link to an HTTPS login page? This is bad practice. As soon as there's any regular HTTP traffic to the site, this introduces the possibility of attacks. How can you be sure that the login page link you receive is genuine if it comes from a non-HTTPS page? This is a key thing to keep in mind – HTTPS isn't solely for secure items of data and there's really no good reason not to use it everywhere.

One of the most important things to remember, though, is that HTTPS does not guarantee you can trust a site. All it tells you is that the connection is private and (so long as the certificate is issued by a CA) that the identify of the server is as expected. As both a web developer and user, therefore, it's important to have a wider awareness of online security practices. However, make sure the basics are right first – and HTTPS really is basic. ■

PROFILE
*

Jones is a software engineering director with a background in banking and financial services. He leads teams working with Angular, React, Java and .NET.

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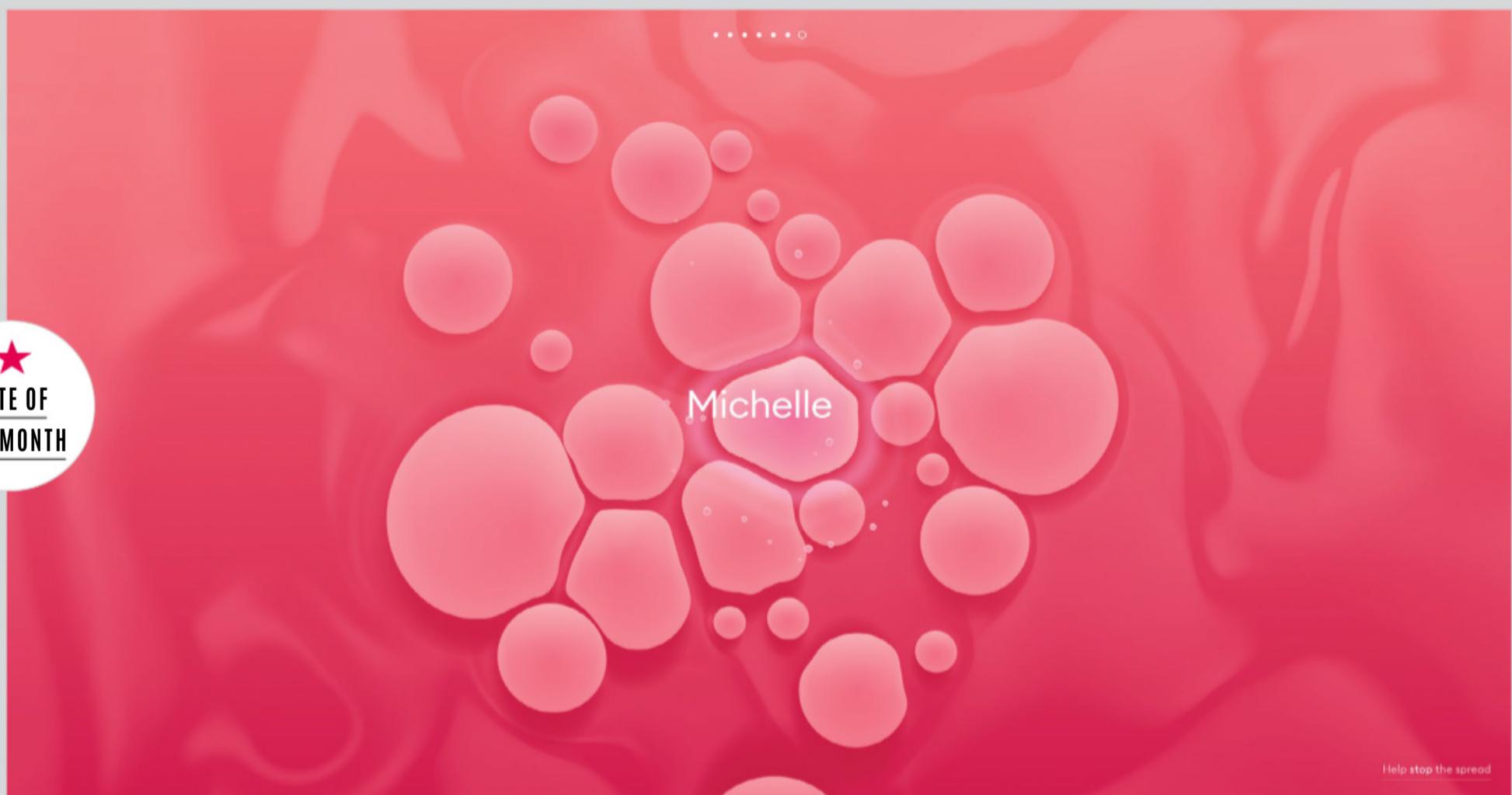


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GALLERY

Sensational design and superb development



* VUE.JS, THREE.JS (WEBGL), HOWLER.JS

TIME FOR A MAMMOGRAM

<https://timeforamammogram.breastcancerfoundation.org.nz/>

When it comes to health, government agencies and charities are increasingly innovating with their outreach channels. Keen to leave a lasting impression on the public, this compelling site on behalf of New Zealand's Breast Cancer Foundation achieves the goal thoughtfully.

Colenso BBDO's enlist of Resn has proven a genius move in blending custom fragment shaders and physics engine work with highly emotive storytelling. "Time for a Mammogram emphasises how breast cancer impacts not only the affected individual but the entire family," explains Dan Mercer, project creative lead at Resn. "The imagery and motion are symbolic of the cellular spread of the disease, while the simple interactions focused the narrative structure and messaging."

Visitors are encouraged to "help stop the spread" of the on and off-screen disease, as undulating pink lumps split off and grow. Clicking or tapping these forms spawn more, triggering narrative from families affected by the condition. The site's undeniable triumph is in handling a difficult social health subject with simplicity and sensitivity. While the visuals remain benignly beautiful, every synchronised audio snippet reveals context in a way few other mediums can achieve.

"Our mindful approach to the design ensured the audio stories would be the focal point of the experience."

DAN MERCER, CREATIVE LEAD, RESN

MARK BILLEN



Billen is a freelance writer who has been writing about web design and technology for over 15 years.

t: @Mark_Billen

w: markbillen.com

T I M E L E S S

BUSES ABOUT CONTACT US ENG

Home / Volvo B14 Autokori

Volvo B14 Autokori

11 | 3002

In 1938 our planet was already inhabited by humans and as they were so frightfully keen on communicating, an old green bus seemed like a perfect place for just that.

Horses would gallop on the roads quite chaotically, sometimes even freezing in the middle of traffic, while buses travelled as scheduled and served as reliable public transport in our land.

* JQUERY, SLICK JS, GSAP

TIMELESS BUSES

<https://timeless.ee/>

It would seem that Gallery-worthy websites are like buses; you wait a month for them and five arrive at once. However, this mobile-first example by Kiev-based agency Hexagon in fact delivers a fleet of 14 buses, representing the boutique rental service of Timeless. What we get is a mixture between museum brochure and vehicle-hire catalogue, built around a gorgeous array of professional photography.

Celebrating the classic retro appeal of each model, the site sticks to modestly modern colours and typography. Two column layouts react responsively to screen size, while the black versus white flipping of text and background keeps paragraphs legible. The content itself is then floated into view with all the grace of an Ikarus Lux, employing subtle GSAP effects on scroll.

The biggest highlight is one of the year's most inventive applications of slick.js, delivering a stunning carousel menu. Each bus is stacked for selection, automatically cycling through profile shots. Model names become preloaders, using CSS animations to fill Jean-Baptiste Morizot's Bluu Next typeface. Adding just enough wobbles and shakes fans still demand from a restored jalopy, this is a drive through timeless design.

T I M E L E S S

Ikarus 255
Setra S 80
TA 6-1
ZIS 127

Ikarus 55-52

RAF 2203 Latvija
Volvo B12 Cariņš
Volvo B14 A
Setra S 80
Mercedes-Benz O 303

08 | 3005

The only beautiful thing that happened in 1968 year was the Ikarus 55-52
that rolled out from a factory in Hungary. If there is one truly beautiful bus in the world then it must be this Ikarus.

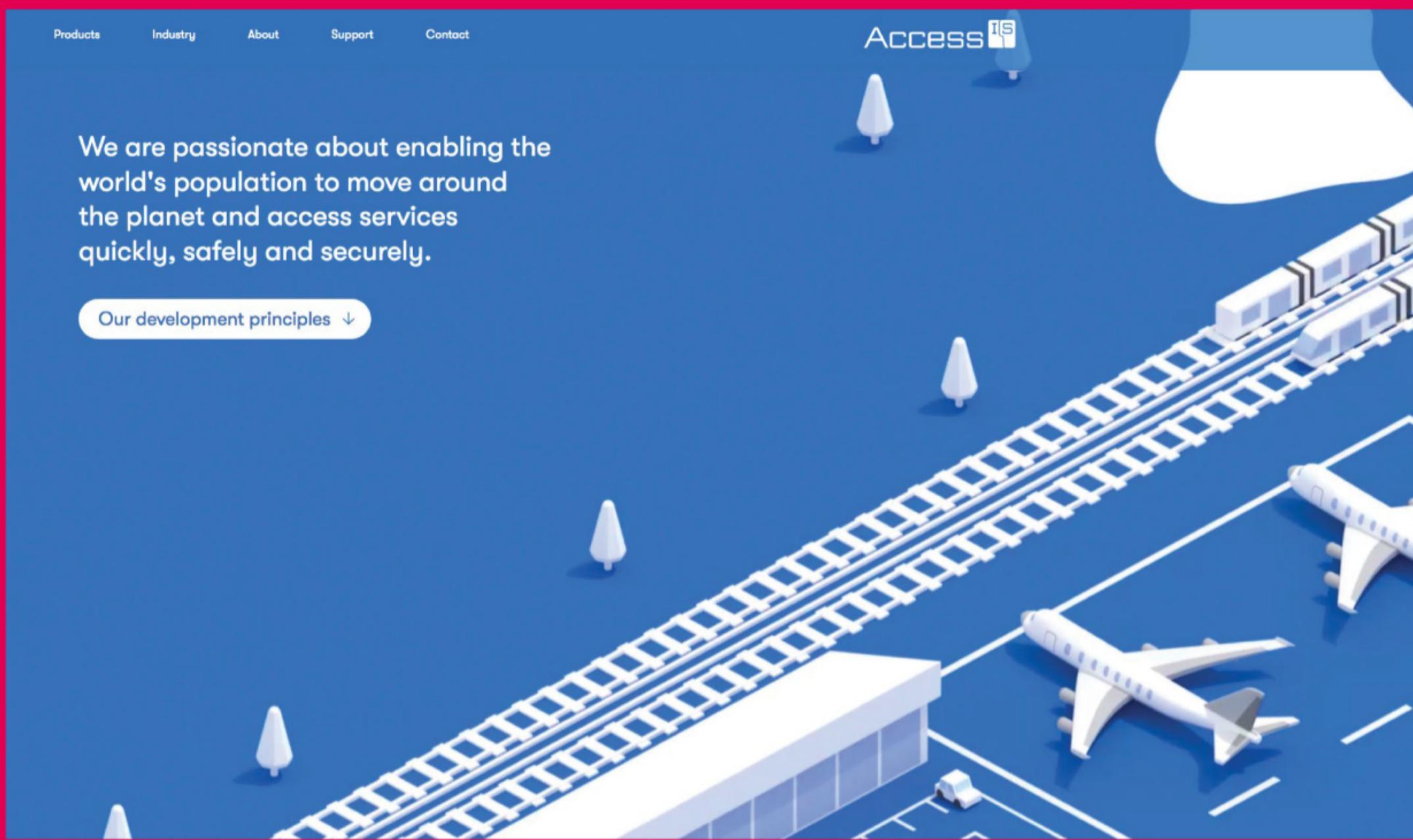
BOOK RETRO

T I M E L E S S

Taking a ride on a Timeless bus takes you on an exciting and remarkable journey

We are passionate about enabling the world's population to move around the planet and access services quickly, safely and securely.

[Our development principles ↓](#)



* SPRITE ANIMATION, BARBA.JS, BLENDER 3D

ACCESS IS

<https://www.access-is.com/>

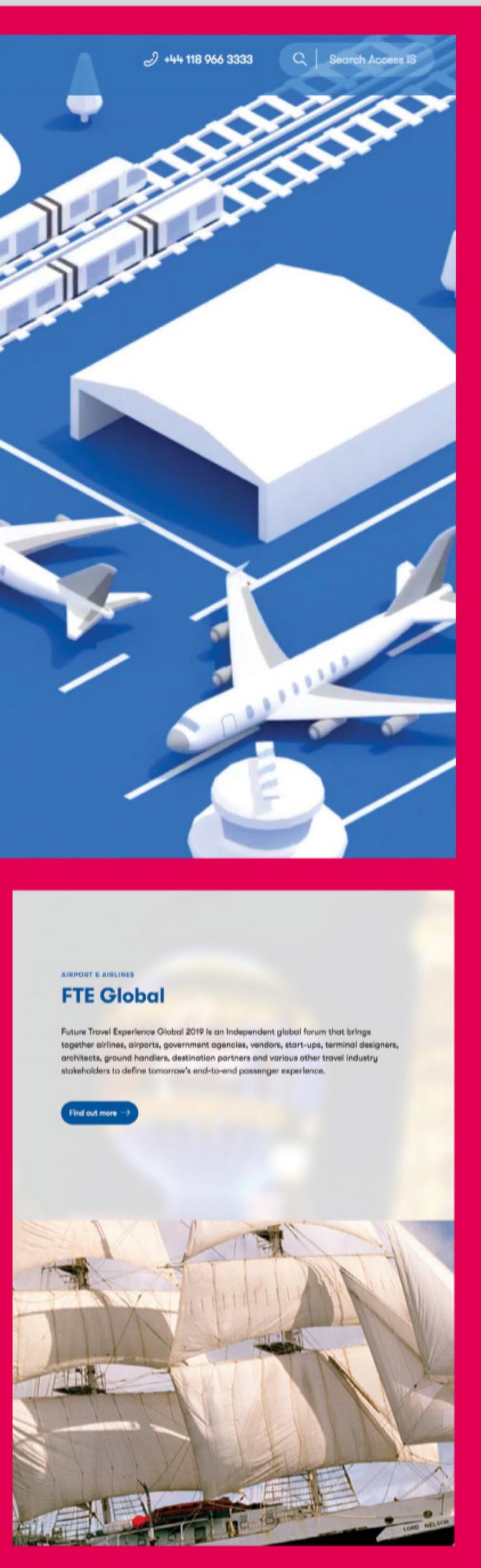
Without getting too political, this website could see some even bigger traffic spikes post-Brexit. That's because Access IS is a developer and manufacturer of those electronic systems that both enable – and presumably disable – the movement of people. Programmable keyboards, plus passport, ID and ticket readers are typical examples, targeting multiple industry sectors and global client brands. This new brochure site from Hampshire agency Bigger Picture, skilfully places those fairly dry technical products into a backdrop that immediately makes sense to every visitor.

"Our animated 3D digital city allows us, in 19 seconds, to show a variety of scenarios where people interact with Access IS products in everyday life," explains Bigger Picture's MD Simon Bonello. "Each target sector is clearly shown to ensure quick interest and engagement from home page entry."

Aside from looking great, the site ensures smooth passage by streamlining pathways to Airports, Identity and Transport markets. Micro animation is used to direct the eye, while transforming traditional hover buttons into little works of art. "At Bigger Picture we love to create digital experiences that put our customers on top of their sector. The Access IS website is a perfect example of the level of detail you can expect with us."

"In just two clicks, people can find the right product for them and easily make contact"

SIMON BONELLO, MANAGING DIRECTOR AT BIGGER PICTURE



* WORDPRESS, JQUERY, SVG

KOBU CREATIVE DIGITAL AGENCY

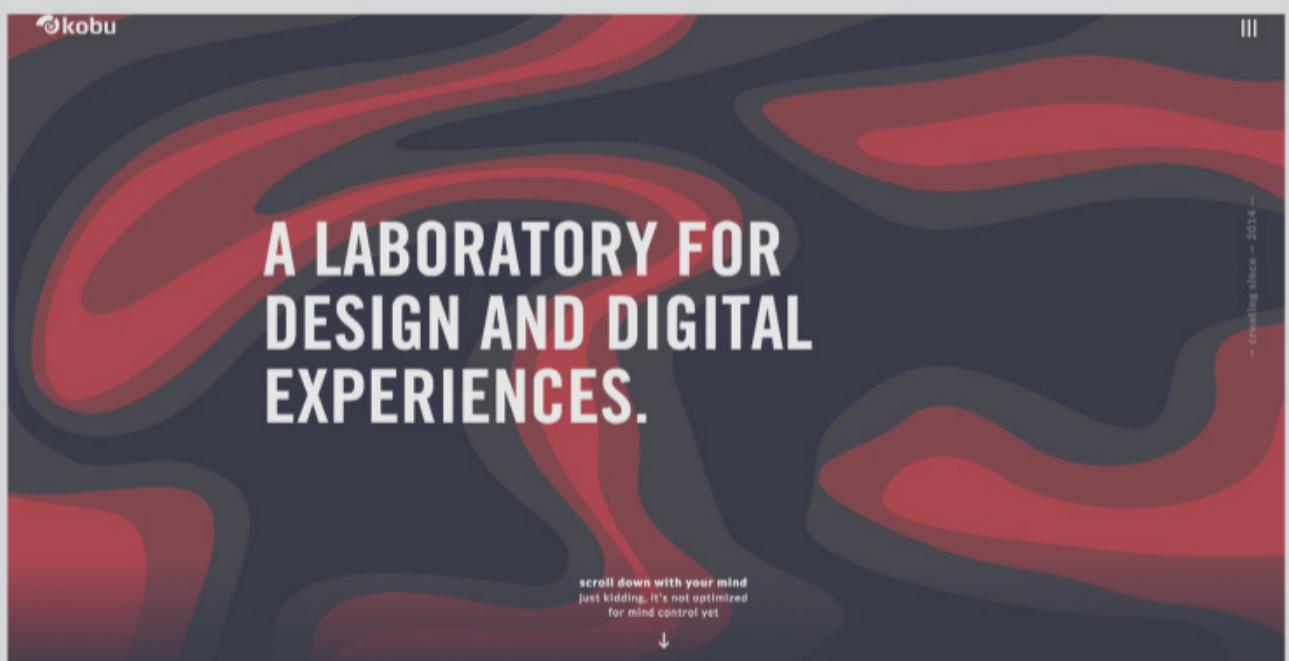
<https://kobu.agency/>

> Portfolio sites, unsurprisingly, continue to provide some of the web's most fertile ground for creative expression and inspiration. This online calling card for Portuguese agency KOBU follows that ethos with actually a very tasteful and restrained design, still bubbling with character. Calling itself a "brand laboratory" that is unafraid of experimentation, the technical work here instead demonstrates imagination over complexity.

Over a series of elements, we get a reminder of how CSS and SVG can be combined for maximum front-end character. Absolute positioning is used to overlay charming wireframe motifs, breaking up the lines between

bold background colour blocks and link sections together. A looped HTML5 video panel gets a unique wiggly edge using an SVG shape as a mask positioned above, before case study images have their border radius halved to go circular. The site makes neat use of the slick.js carousel library to 'trot' the KOBU team, with office horse, through the middle of the main page.

The zenith, though, is probably the bit we first see, opening on an undulating lava lamp-style header produced by manipulating SVG paths. Utilising the anime.js plugin, a polyvalent JavaScript animation engine, it's an eye-catching trick for establishing colour palette, if nothing else.



* WEBGL, UNITY, PBR SHADER

OLD SPICE - BIG LAVENDER GAME

<https://biglavendergame.com>

> Big Lavender Game is a hilariously engaging shoot-em-up to promote an Old Spice launch at Walmart. Produced by Wieden+Kennedy and those digital high priests at MediaMonks, players control bazooka-wielding Teven Garramondi. Reluctantly coaxed out of retirement, our hero travels to three locations to blast rogue plants and fill bottles of body wash with scintillating scents.

Built on a custom WebGL engine alongside Unity for level creation, the developers used a novel 2.5D solution to render background and static objects. “This is done by pre-computing a colour- and z-buffer of the static environment and rendering these buffers to the screen first,” reveals creative director Rhys Davelaar. “[This] makes the game run smoothly [and allowed] us to place the objects in the WebGL engine in 3D. Finally we worked with a PBR shader to give the guns a realistic feel.”

As a result, the game not only delivers a silky smooth frame rate on a broad range of devices but also a charming experience overall. High production values, attractive art design and witty voice acting make Big Lavender Game irresistible.





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†UNFAO, Global Forest Resources Assessment 2005-2015.

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THIS MONTH FEATURING...



PROFILE 50

Meet Parallax, an agency that's tried to topple Trump, is working on the future of street lighting and knows the importance of coffee

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HOW WE BUILT 56

Un.titled on how it created a site for Film Hub Midlands to reflect the organisation's mantra of removing barriers and promoting cinema

DESIGN CHALLENGE

This month...

TRAINER STORE

* PROFILES



DARRELL ESTABROOK

Estabrook designs, writes and mentors experience designers.

w: <http://purposedrives.design> t: @DesignResponds



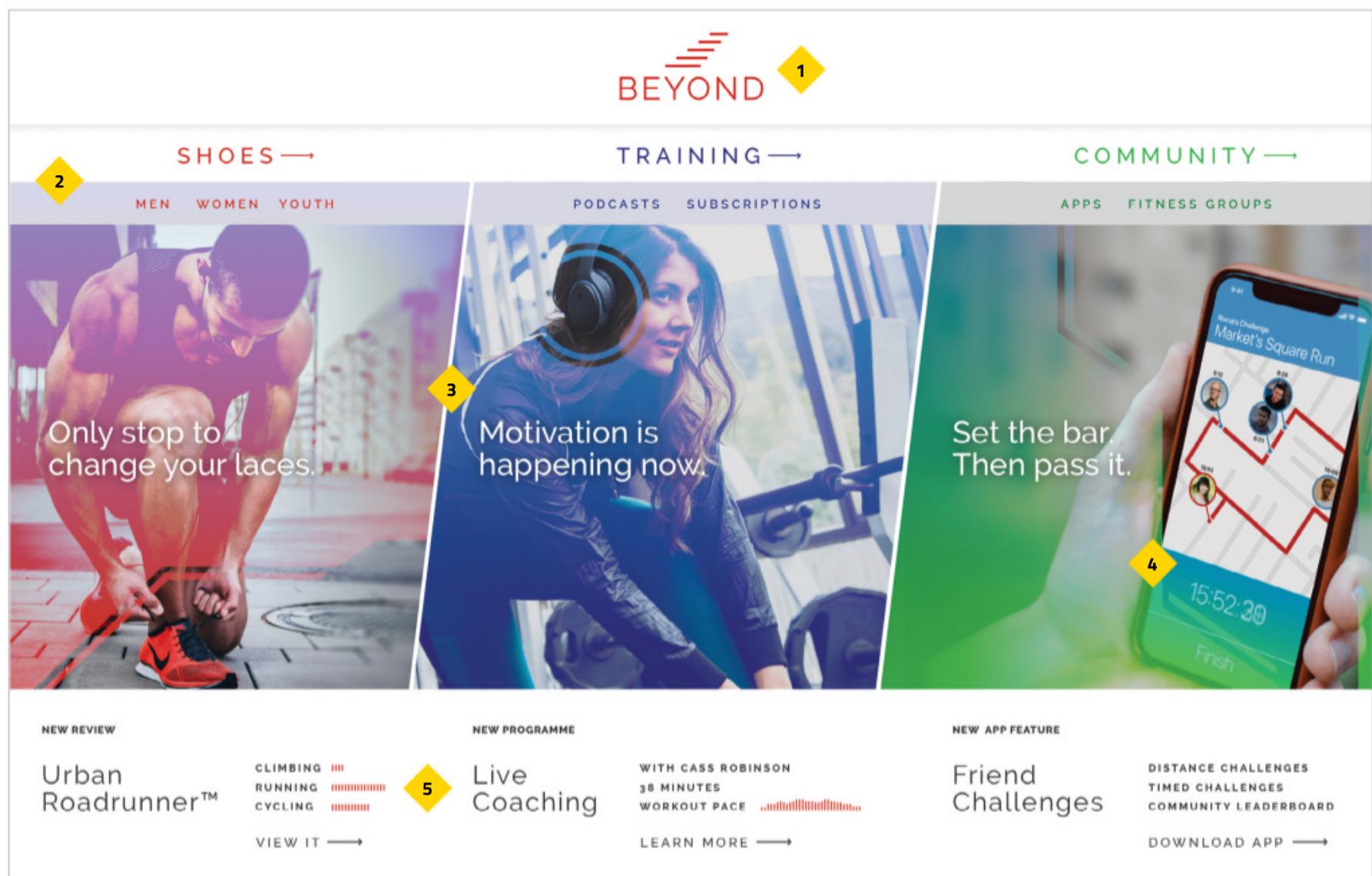
MARK KELLIE

Kellie is a product design lead for applications in the financial space.

w: www.fintechux.co.uk t: @FintechUX

BRIEF

This month we would like you to design a home page for an imaginary clothes store. The focus for the store will be selling shoes and trainers and any accompanying items you think customers want. Think big imagery, additional services and communicating your store's brand message.



* DARRELL ESTABROOK

BEYOND

A site that emphasises the quality of its products and design

> Beyond is a fitness brand for people who want to excel in their exercise effectiveness while using a high-quality product and service. ‘Going beyond the typical’ is the theme. So products are made of the highest grade material and services are designed well and tightly integrated. This homepage impresses the first-time shopper by showing the brand’s comprehensive offering: products, digital services and community connections all working together. Bright colours push photography beyond the normal spectrum. While this is laid out as a desktop view, the mobile view would be a hub-and-spoke navigation. The three main segments would be the hub in one screen and then users would navigate each segment spoke individually. This approach would also play well into web marketing links and promotional landing pages. The Beyond app would have its own ecosystem of Beyond users. This is where people connect to motivate each other.

CLOSE UP

(1) The Beyond brand. The typeface is made of simple lines and expresses refinement. The steps symbol is moving up, over and going off in perspective to give the sense of movement, progress and refinement. (2) The navigation has three main segments so the offerings are easily understood. The sub-navigation is also simple but gives a glanceable understanding of the topics without having to click-and-discover the options. Colours theme the segments. (3) Imagery is pushed to a new spectrum to draw attention. A cut appears wherever the product or service is in use. This connects an otherwise augmented reality back to the real world. (4) The app is shown with the latest feature in use. This demonstrates a mature product and draws future users to discover what other features it offers. (5) Each segment and photo has details about one product or service. This is written around one title and three supporting features. Certain features are shown with in-line data visualisation for understanding at a glance.

MY MONTH

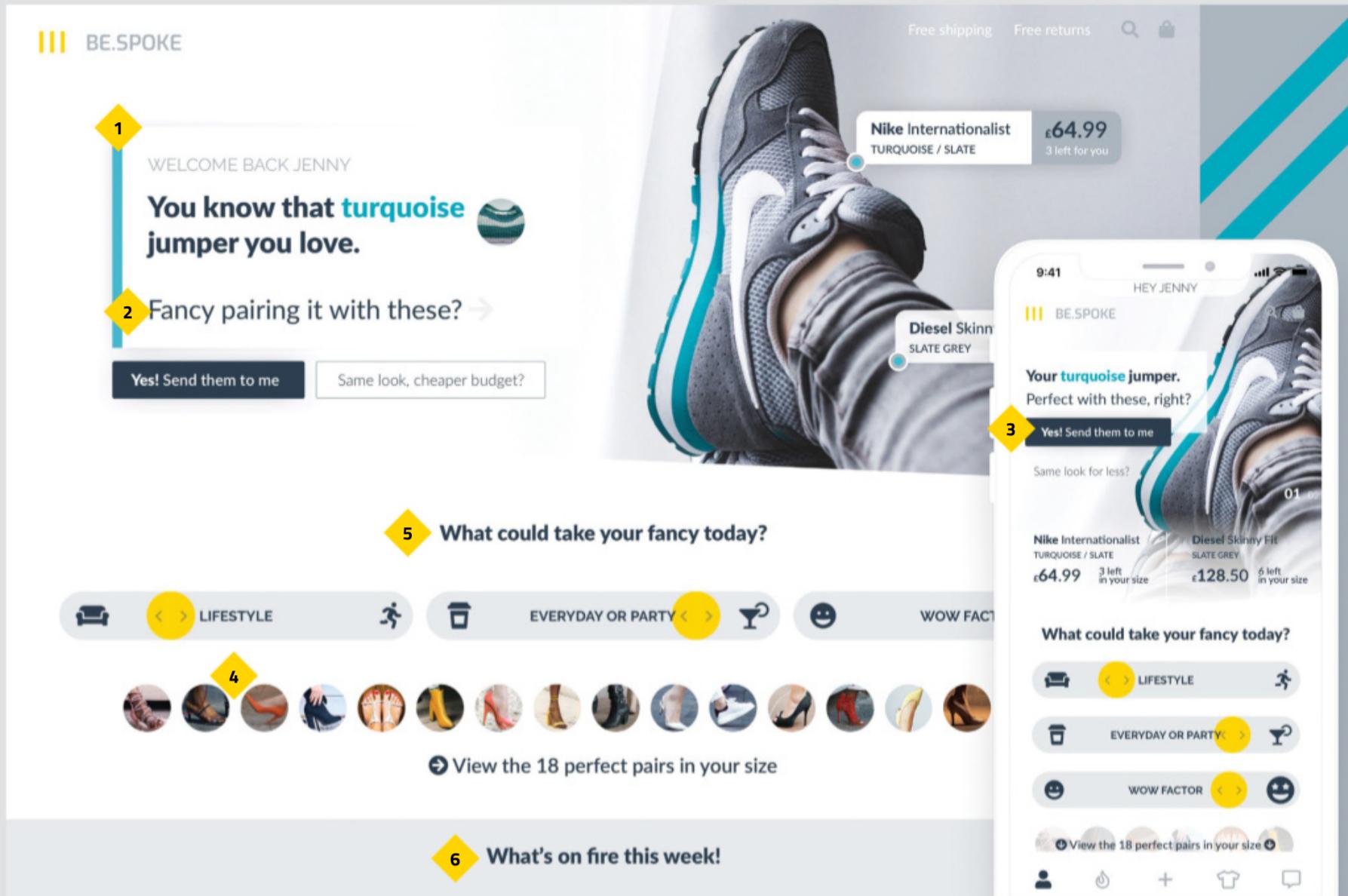
What have you been working on/doing this month?

Assessing new design and prototype tools and working on my portfolio site: <http://purposedrives.design>

Which two websites have you visited for inspiration? <fonts.google.com> for typeface direction and <unsplash.com> for the rich compositions.

What have you been watching? Videos on Skillshare and Udemy for traditional sketching and drawing techniques and a Vue.js series on YouTube to inform my front-end knowledge.

What have you been listening to? Acoustic Reflections by Steven Price.



MY MONTH

What have you been working on/doing this month?

I've been working at Onodox to make an app to help people manage their household bills in a single app.

Which two websites have you visited for inspiration?

I love Medium and I follow UX design-related hashtags on LinkedIn and Twitter for live feed of content.

What have you been watching?

Catching up on *The Americans*. Also *Silicon Valley* and I watched *Molly's Game*.

What have you been listening to?

Odesza, OTR, Eminem and Ben Howard.

* MARK KELLIE

BESPOKE

As its name suggests, this is a site built around the visitor's specifications

There seems to be a gap for a shoe-shopping destination that feels bespoke to shoppers for two main reasons: it matches new shoes and clothing to their existing wardrobe and it recreates a high-street decision-making process where decisions on which shop to visit depend on what that shop sells.

For the user, both of these would reduce the cognitive load required when making purchase decisions, increase engagement and margin through multiple purchases. Retention would also be higher with the option to get the same look for less.

All the first-look imagery is of people wearing shoes. Most sites have static product shots, which makes people have to think about how they would look on their own feet. As well as responsive imagery, the copy is responsive. Scrolling happens quicker on mobile so a more direct message to grab attention works well.

CLOSE UP

(1) Shoppers have a relationship with this site; they've uploaded pics of their clothing, so from the first moment they visit the site, it feels personal. It triggers a memory about an item of clothing you love. (2) It speaks in a natural way. It's not salesy: no 'BUY NOW'. Just a question and two simple options. (3) This site knows a shopper's size, payment options and delivery preferences. Visitors can purchase in one tap, the other option is to see the same look for less. (4) Real photos of people wearing shoes makes it more engaging for the shopper. Products are highlighted so shoppers can click for a full product view. (5) This isn't a site that will show you hundreds of shoes. Instead, based on the shopper's preferences that day chosen with the decision sliders, it reveals the best pairs of shoes for the shopper's choices and current wardrobe. (6) It also features a curated list, not of product shots but shoes out there on Instagram, Snapchat, Pinterest or seen in hit TV shows.

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INFO

Location: Leeds, United Kingdom

Established: 2010

Team size: 30

Expertise: Digital marketing and product innovation

Clients: Lucy Zodion, Cauldron Foods, Unilever, Yorkshire Energy, British Airways

Awards: Top 50 Fastest Growing Tech Companies in the North, Awwwards Site of the Day x 2, AWS Community Hero



*PROFILE

PARALLAX

parall.ax

Meet a Leeds agency that's tried to topple Trump, is working on the future of street lighting and understands the importance of good coffee

> In the midst of a recession and a terrible jobs market, a meetup for drinks and cocktails in Leeds, United Kingdom, in 2010 eventually led to the formation of Parallax (*parall.ax*). Between its four founders there was a salesman, designer, front-end and back-end developer – enough to band together and start earning for themselves by making bits of the internet. Since then Parallax has grown into a well-respected digital marketing and product innovation agency with clients located all over the world. We spoke to the team – Dario Grandich, director; Liam Bush, head of marketing; Jack Sails, account director; and Jamie Sefton, head of back-end development – to get the inside story.

How would you describe your studio philosophy?

Sails: We're always looking for ways to improve and every member of the team can really make a difference to how things are run. [That could be anything from] introducing new processes and tools to challenging how we do things. We have a close-knit team inside and outside of work with regular social events, team lunches and trips to the pub. We also have a pretty good five-a-side football team.

How do you approach the business of getting to know new clients?

Sails: For me, it's important that we



spend lots of time with them right from the off. Because we work in digital, it'd be easy to just do everything via the internet but you still can't beat a good face-to-face meeting. We've developed a great process over the last few years for asking some of the really important questions (using Typeform – little questionnaires work really well); that will not only make the project itself go smoothly but a massive part of it is to learn about the people you're going to spend the time with – what makes them tick, what they love about the company they work for and so on.

Ultimately, the more we know about – and spend time with – the people themselves, the more we can make the whole experience more enjoyable for them. This counts for our whole team internally as well; we don't believe in only letting our account management team be the ones to spend time with our clients, for example.

Your work for Lucy Zodion is starting to take off. What's the story behind that?

Sefton: Lucy Zodion (www.lucyzodion.com) has a long history of manufacturing street lights with over 90 per cent of UK street lights including their technology. Our aim was to work with Lucy Zodion in creating street lights for smart cities using IoT connectivity.

Throughout the project there have been some extreme difficulties, mainly due to the limitations of LoRaWAN technology. The issue is due to it being radio signals and the size of the data needing to be extremely small for it to successfully transmit across a city. We had to work with decimal to binary conversions to utilise the data we could send and receive and then apply context to each individual byte and bit. This made updating the street lights over the air near impossible. But after a lot of hard work from both Parallax and Lucy Zodion, we've created a rigorous testing suite to enable us to update multiple street lights at once over LoRaWAN.

The future of the project is huge. We are looking to expand the platform to communicate with many different devices. There is a new standard that has



The Parallax crew dedicate time to side projects, which is how its interactive campaign website that poked fun at Trump's presidential campaign came about

been created, which creates a standardised way that IoT devices and the cloud should communicate.

We are very excited to be building this support into the platform and making it become one of the most flexible city-wide IoT platforms.

Your own site is a vital calling card. What were your priorities when building it?

Grandich: We needed to show off all of our capabilities, our work to clients and demonstrate our values to potential staff. Our goal was to create a highly interactive website using CSS animations that were lightweight and brought our brand to life but loaded super fast. Then, we added Expose, our custom CMS, to make editing a breeze. The result has been amazing. It helped us pick up some amazing clients like Trax in Singapore and Clear Channel in the UK.

IconInc delivers luxury student accommodation in a number of cities.

What were its requirements for its site?

Grandich: IconInc (www.iconinc.co.uk) offers a new way of living for well-off students. It's like living in a luxury hotel while you're at university and the website needed to reflect that. Gen-Z types expect amazing digital experiences

so everything we did needed to be very polished. Essentially the website is a load of carefully crafted content pages in a beautiful, interactive design.

Sefton: This neatly tied into a booking flow to find and secure an apartment online. To do this we had to engineer a custom booking front-end and management back-end that matched IconInc's unique workflow. The hardest part of the project was the complex availability logic that uses data from past bookings to calculate when an apartment is available for the next academic year, as well as what is available for short-term summer lets.

What were the challenges of working with a well-known brand like easyGroup on the digital marketing for easyGym?

Grandich: When we started working with easyGym (www.easygym.co.uk), they were still using brand guidelines from 2009. It looked stale! Other brands such as easyJet had since created their own style and we felt that we needed to do the same. If you visited the gyms, you could see the quality and sheer volume of kit, not to mention how passionate the members were.

Bush: A central part of the digital marketing strategy was to reposition



As part of the work with Lucy Zodion, Parallax developed a system for updating multiple street lights over LoRaWAN, which it plans to expand to communicate with different devices

their brand to be a bit more premium. We created a design-led website to show potential members how good the gyms were and implemented social features to build a community, showing what the current members were doing. We carried out engaging campaigns such as Set to Sweat, where we gave females a totally free workout programme to get them started.

You attempted to Topple Trump back in 2016. What's the background to this award-winning site?

Bush: Every year, we try to put some time aside for side projects, bringing everyone together to try and make something special – mostly just for the fun of it but also to showcase our talents. During the 2016 US presidential election campaign, we were amazed by the increasingly unbelievable things Donald Trump was saying and quickly realised that there was huge potential in using those sound bites to create a unique online experience.

Taking cues from games like Cards Against Humanity and Fibbage, the idea quickly ballooned into a fully-fledged interactive quiz, complete with quirky animations, playful music and game-show host narration. We always saw

'Topple Trump!' (parall.ax/hub/topple-trump) as an awareness-raising tool, a piece of satire and an appeal to common sense. But above all else it had to raise a smile and actually be fun to play.

Not only did it go on to pick up Site of the Day from both Awwwards and CSS Design Awards, it was also featured on the AV Club, VICE Creators and the front page of Smashing Magazine. We may not have managed to alter the course of history but we're still pretty proud of that one.

You're part of a collective of Leeds agencies – All In. Leeds. Has it made a difference to your business?

Sails: For years, Leeds' agencies have been very insular and kept themselves to themselves. All In. Leeds (allinleeds.com) set out to change that, creating a collective of over 90 agencies, united by a five-point manifesto to encourage the creative sector to work together for the good of the city and show the UK what we can do. It's in its infancy at the moment but I've found it great to have a platform that allows us to spend time getting to know the leading creative minds in the city and work with them to make a difference to the individual agencies and the city overall.


SPOTLIGHT



DARIO GRANDICH, DIRECTOR

What's on your desktop today?
A statement of work I need to approve before sending to a client.

What do you have on the walls?
Some bicycle prints that we designed.

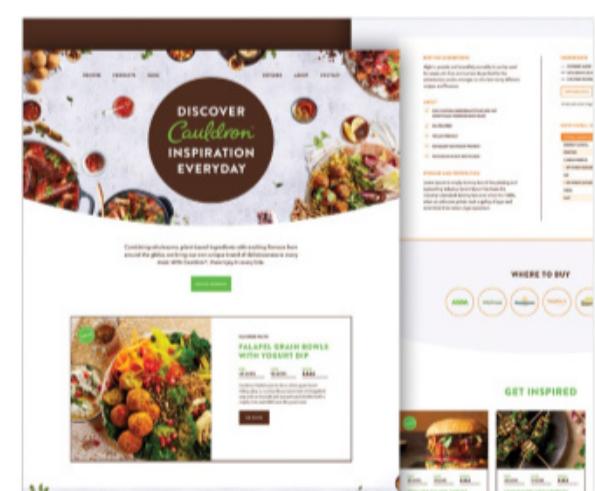
What will you do for lunch?
Sushi box from Itsu. Think I'm addicted.

What hours do you work?
It really varies. Try to do standard office hours but have to be flexible when I have deadlines.

What else do you do in the office?
Play FIFA and drink many flat whites.

How often do you all hang out?
A lot. There's always something going on.

Describe your office culture in three words
Innovative. Fun. Techie.





★ TIMELINE

Key dates for Parallax

LATE 2009

James Hall, Lawrence Dudley, Andy Fitch and Dario Grandich meet up for a few pints (and cocktails).

SEP 2010

Hires its first member of staff (who has since become a director).

NOV 2010

Officially merges Snapshot Media with Limaromeo, becomes a LTD company.

JAN 2011

Deploys first version of proprietary CMS, Expose, on a client's website.

MAY 2012

Moves to The Old Brewery office in Leeds.

JUL 2013

Rebrands to Parallax and launches its innovation proposition.

SEP 2014

Hires its 15th member of staff.

JAN 2016

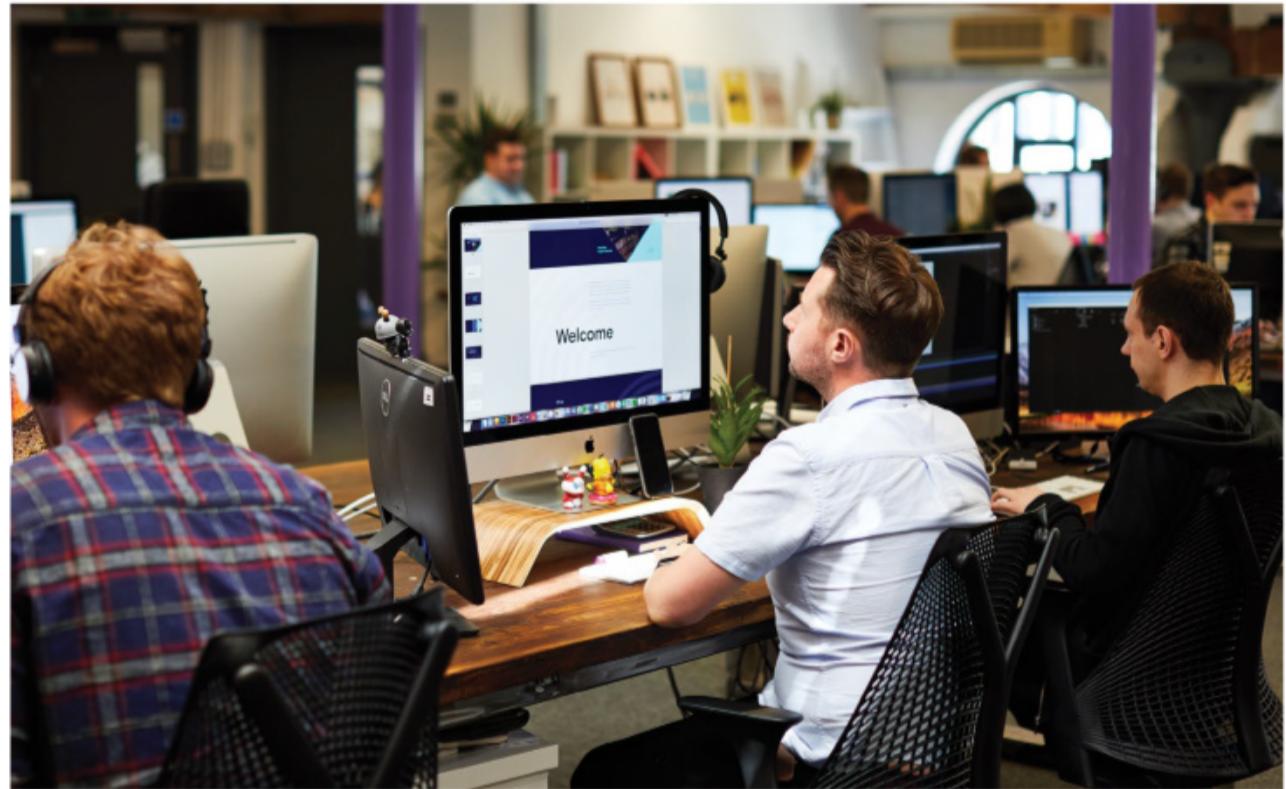
Launches 'This One's for You' featuring David Guetta with UEFA and PERFORM.

MAY 2018

Lands a two-year contract with Unilever.

OCT 2018

Hires its 30th member of staff.



With a policy of 'buy the best', Parallax staff can enjoy working on high-end iMacs and MacBooks, with some Bose noise-cancelling headphones thrown in for good measure

► **You've built your own products rather than rely entirely on third-party tools; tell us about them.**

Sefton: Our primary product is Expose CMS (parall.ax/products/expose). The majority of our websites are built upon this and it gives our developers massive flexibility when building a site, as well as great user experience for our clients. The reason we chose to not use an off-the-shelf CMS such as WordPress is the lack of flexibility it gives our developers. In addition, our CMS allows the client to edit their content where it is on the page, rather than using a common admin panel interface.

What do you think about the state of the industry at the moment? Is it a good time to work in the online sector?

Grandich: It seems to be booming. There are a lot of business challenges that we can help with, so there should never be a shortage of work on the innovation side. Also, brands will always need better digital marketing to engage and win customers but also to build a loyal customer base.

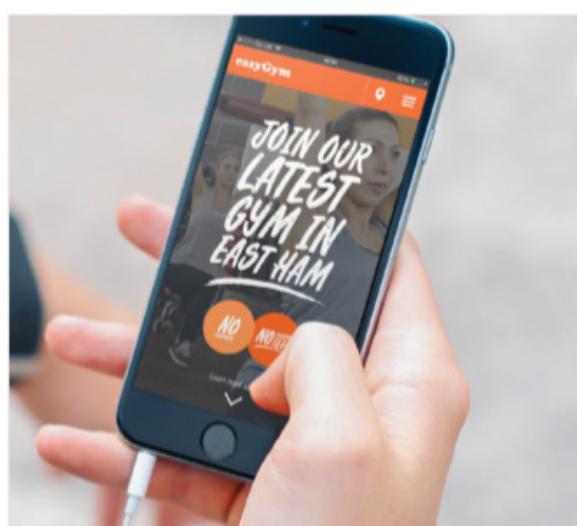
I'm seeing many companies building in-house digital teams but it'll be a long time before these can compete with agencies, if ever.

What directions do you see Parallax taking in the future?

Grandich: We're already hard at work refining our proposition and moving towards the bigger web projects and marketing clients. Websites have become a bit of a commodity these days so we tend to focus on ones that require innovation to achieve great commercial results. We're an agency that tackles some of the hardest challenges and this is what we want to be known for.

How do you keep your expanding team organised and motivated?

Grandich: We know a happy team is a better team so we regularly collect feedback from every member of the team and tackle any issues head-on. We understand that everyone is different so we've taken away the constraints of the regular 9-5 working day and brought in flexi-time hours. We also have a 'buy the best' policy. No working on a slow computer or using out-of-date tools to do your job. The majority of us work on top-end iMacs or MacBooks with extra monitors. Everyone gets a pair of Bose wireless noise-cancelling headphones. We also get a monthly delivery of fresh coffee beans from a local roaster to keep people going. ■



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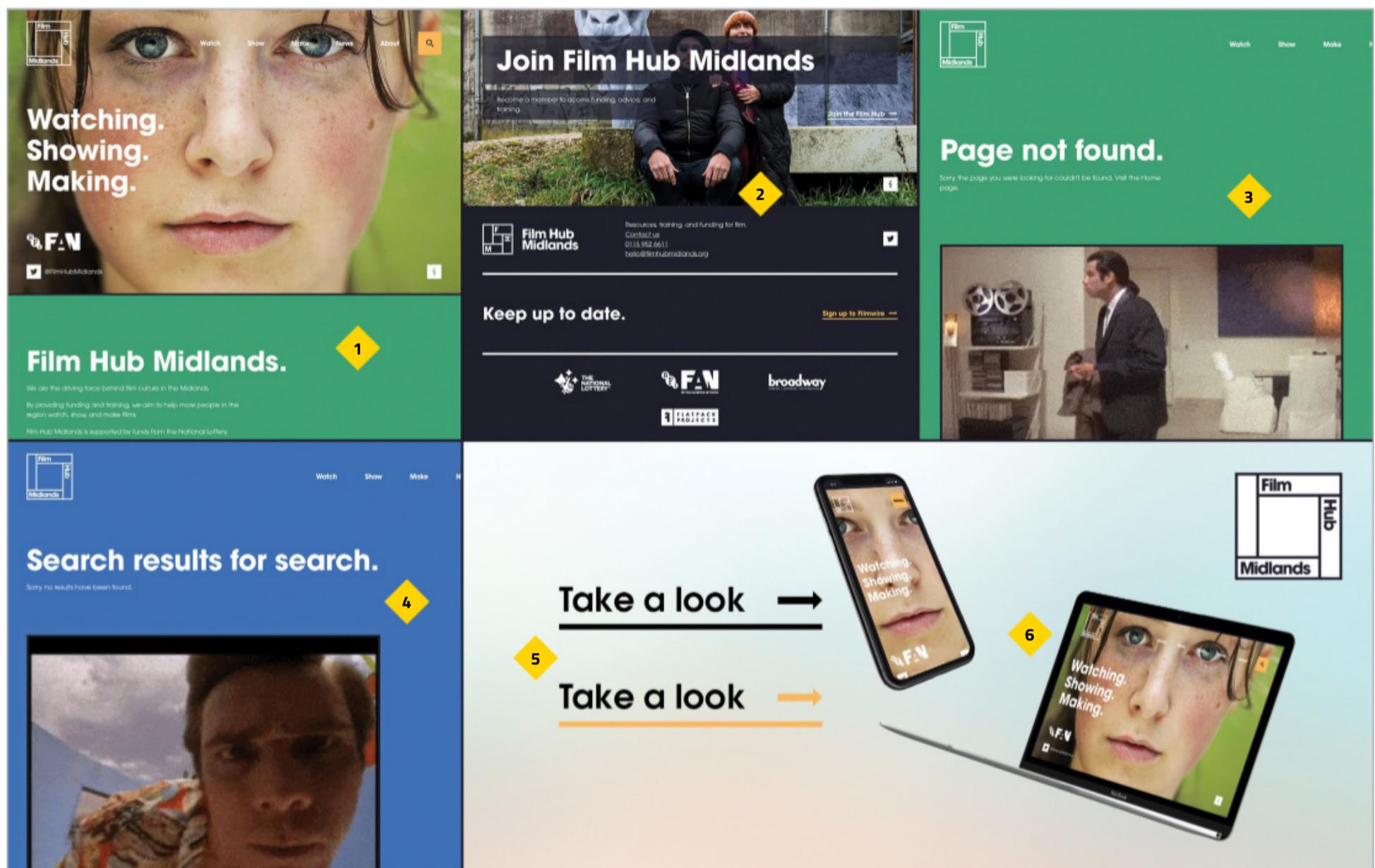


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★ HOW WE BUILT

FILM HUB MIDLANDS

Un.titled explains how it created a site for Film Hub Midlands to reflect the organisation's mantra of removing barriers and promoting cinema



CLOSE UP

BRIEF

Film Hub Midlands needed a site that would build awareness of itself as an organisation, promote its activities, engage audiences and drive attendance and member activities, all while reflecting its aesthetic and style. And Un.titled was ready for action.

(1) The homepage features a large-scale image region, which gives an immediately visual, cinematic element to the site. This region can also support video content.

(2) Every page has a unique footer reveal featuring important information for visitors. This gives the effect of having the rest of the site overlaid on this footer. (3) Rather than just have bog-standard text, the 404 page features an iconic scene from a cult film, providing a relevant, surprising and

comic element for visitors. (4) The no search results page also features an animation in line with the website's audience that is both funny and on topic. (5) Links feature micro interaction as the bar changes colour before the arrow moves when hovered over. This delayed animation adds extra refinement to the overall look and feel of the website. (6) The responsive build of the site means it is accessible and adaptable across all devices and browsers.

JAMIE HUNT



Hunt is lead front-end developer at Un.titled and prototyped some of the larger effects on the site using CodePen.
t: @jamiehunt87

DARREN BARRETT



Barrett is lead digital designer at Un.titled. The Film Hub Midlands project taught him a lot about translating brands online.
w: darren-barrett.co.uk

BRIAN HEALY



Healy is head of agency at Un.titled. He was responsible for bidding for and securing the Film Hub Midlands contract.
w: un.titled.co.uk

> Established in 2012, Film Hub Midlands (filmhubmidlands.org) is part of the British Film Institute's Film Audience Network. The organisation uses National Lottery funding to provide support and training with the aim of creating a connected approach to the development of the film industry in the British Midlands. Wanting to create an online presence that reflected its dynamic ethos, the organisation engaged Un.titled (un.titled.co.uk) to create a new website built on WordPress. We caught up with Un.titled to take a look behind the scenes.

How did Un.titled become involved in this project?

BH: Un.titled's CEO Rob Williams found out about the tender opportunity and told me about it. I contacted Film Hub Midlands, submitted a proposal, got shortlisted and we were delighted to then be awarded the project.

Film Hub Midlands told us that what appealed about Un.titled was the development process we exhibited. It also appreciated how much we'd looked to familiarise ourselves with its work and our ideas around solving its challenges.

Talk us through your UX process.

DB: Our main UX guy, Ben Henshall, took the lead on the UX process during a series of hands-on workshops in which we identified objectives, goals and audience; user journeys and tasks; content modelling; and layouts. The key goals identified included providing access to resources; encouraging the

consumption of information; and also driving applications for projects, bursaries and newsletter sign-ups.

We worked through a number of key user tasks and journeys to identify any pain points that could arise and looked at how to change them into opportunities. This also highlighted how the content needed to be user-focused. Another task was to work through a number of layouts that supported the key user journeys.

The culmination of the workshop process gave us a clear understanding of how Film Hub Midlands' online offering should work, from audience to structure to functionality, tone of voice, imagery and design.

What are the site's big design features?
DB: Some of the site's biggest design features occur within the smallest details. For example, the delayed hover on the 'take a look' calls to action; the changing of the background colour and text highlight to something more on brand; and the increasing image border thickness on hover. Going the extra mile with this level of detail makes for a bigger impact overall.

We maximised image regions to allow for movie posters/artwork to become a real showstopper. Modular scale and the golden ratio was applied to determine the font sizes. The best font was set to 16px for accessibility purposes. This meant the typographical rhythm worked harmoniously with the style and irregular layout.

We also can't forget our 404 and no search results page! These have a film-



*TIMELINE

Key dates in the Film Hub Midlands project

1 MAY 2018

The project kick-off meeting sees a review and update of the initial brief and any assets for the project, such as audience data and brand materials.

3-10 MAY 2018

Workshops sessions commence, enabling the project team to work closely with the client and carry out user experience exercises. This leads to the creation of technical specifications and the sitemap.

14 MAY 2018

Wireframes are developed and presented for feedback and approval.

28 MAY 2018

Once the wireframes are given the green light, the Un.titled team draw up the design before presenting it to the client for review.

11-29 JUNE 2018

As soon as the Film Hub Midlands team approves the design, the site development stage commences. This sees the technical build of the Film Hub Midlands site take place and the content management system (CMS) created. Training is then given to Film Hub Midlands on the CMS.

1-18 JULY 2018

Content is loaded onto the Film Hub Midlands site.

18-31 JULY 2018

User acceptance testing is then carried out to ensure the site operates as desired before final pre-flight checks take place.

1 AUGUST 2018

The new Film Hub Midlands site launches and goes live.

1-15 AUGUST 2018

The post-launch bedding-in period allows for any bugs to be fixed and small changes to be made. A project review meeting then takes place and the final sign off is given.

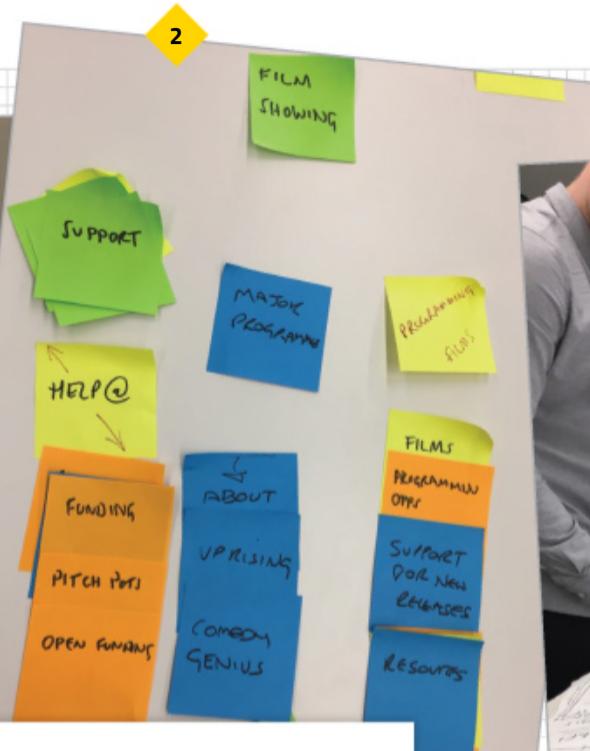


SHOWCASE

How we built



1



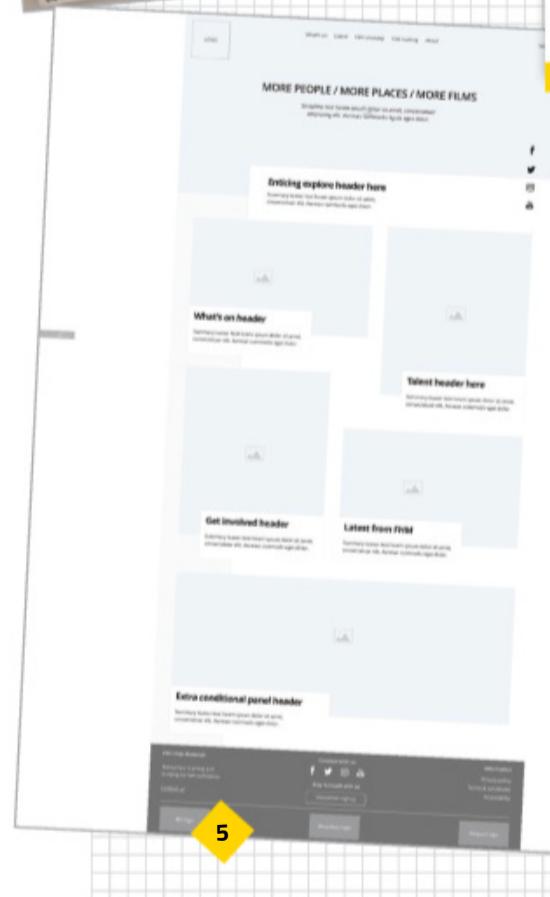
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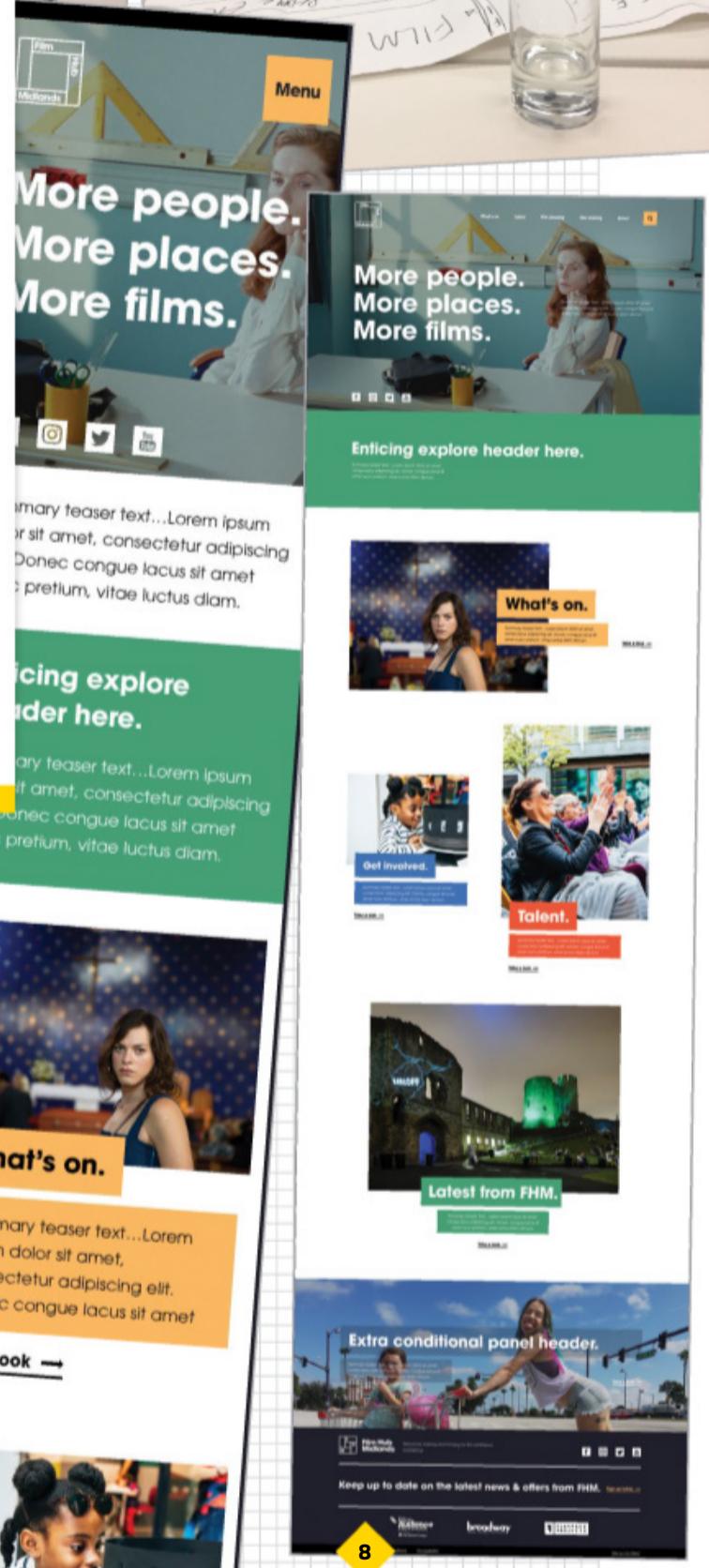
4



5



6



8



*EVOLUTION

(1) Un.titled worked with Film Hub Midlands on a card-sorting exercise during a workshop session to determine the content they wanted to highlight and prioritise on the site. **(2)** The card-sorting exercise helped identify and clarify how the site should be laid out in line with Film Hub Midlands' aims. **(3)** A low-fidelity wireframe workshop was then carried out to advance the site's layout. **(4)** Following this wireframe client workshop, low-fidelity wireframes were created. **(5)** Once low-fidelity wireframes were available, more polished wireframes were developed. **(6)** These 'polished' wireframes were developed across the site before sending on to Film Hub Midlands for sign off. **(7)** The final mobile homepage uses blocks that are regular and adaptable across mobile devices. **(8)** However, the desktop homepage features an irregular grid layout below banner to add a dynamic element. There is of course a continuous stylistic element linking the mobile and desktop versions.

- related, quirky touch and we like them very much!

How did you strike a balance between looks, usability and performance?

JH: After the design phase, it was clear that Film Hub Midlands would be going in a minimalistic direction. We wanted to choose interactions and animations that would complement the overall vibe of the build. From the outset, Darren had a good idea on what effects he wanted to use across the site and we had several discussions about this before and during the build phase. I would then rapidly prototype some of the larger effects in CodePen and collaborate with Darren on the feasibility of these effects. This gave us a guide on what effects to choose and how much of them to use.

What technologies are running the site?

JH: I used ES6-ES7 for the mobile navigation interactions including a page reveal effect, which was inspired by Codrops' full-page reveal effects. Vanilla JS was also used for the footer reveal, modal gallery and video embeds alongside a very helpful and lightweight JS library known as Tingle.js to handle the modal behaviour.

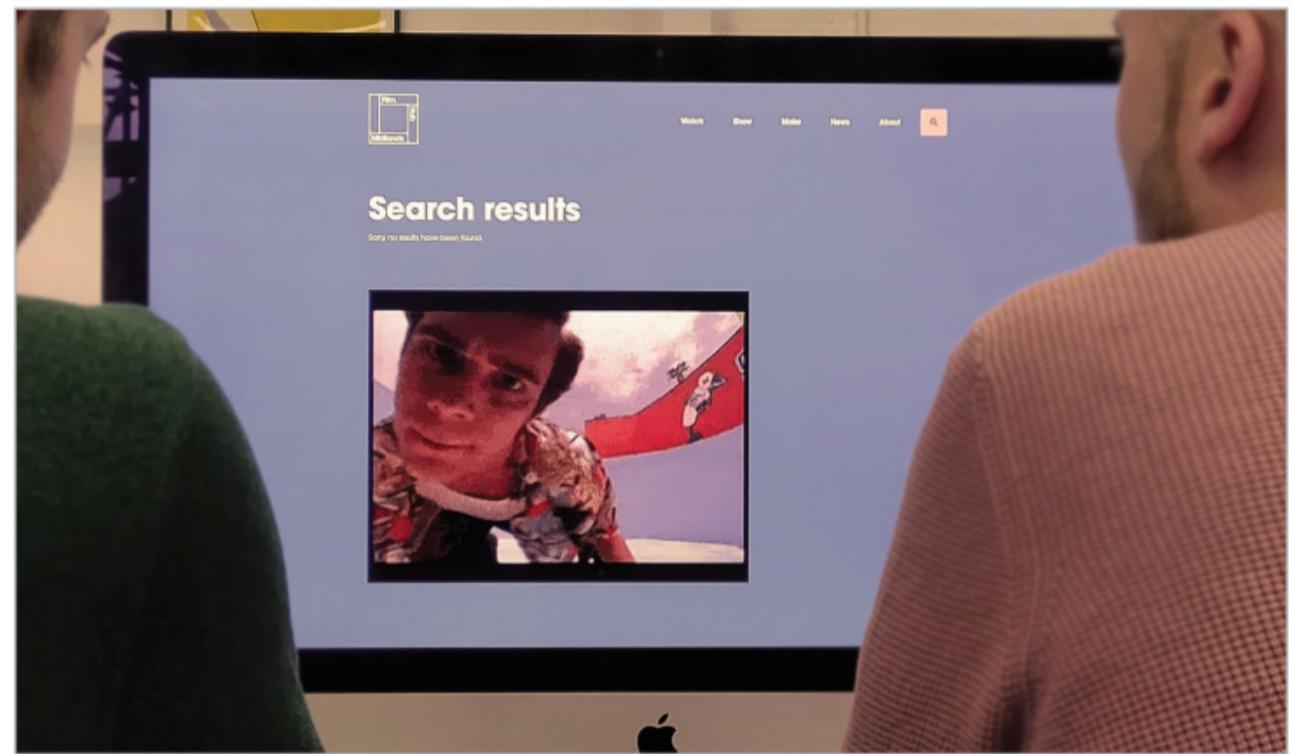
I was also able to implement a few lazy-loading techniques across the site to improve performance. These doubled as subtle animation, which resulted in a very noticeable performance increase during the testing phase.

How did you approach testing?

JH: During the build phase the design was split into blocks, which formed CMS sections inside WordPress. Each feature was tested during development against the functional and user requirements set down in the brief, before being browser tested across a range of devices. After I was happy that the feature met these expectations, it was deployed to staging for testing by the other team members and Film Hub Midlands.

Did you learn any useful lessons during this build?

DB: The main lessons I learned from a design perspective was ensuring the new



Above Once a block was built, it was critiqued by Barrett from a design perspective, before being tested by Hunt and then sent to the client for approval. By taking this agile approach, any tweaks were made quickly

Above This associated content region showcases more information for site visitors, and encourages and increases awareness of Film Hub Midlands' work

brand translated well online. We were given a number of bold colours and had to be clever in our choices. Too many would mean a dramatic clash but too few would not represent the brand well enough. We struck a balance by including colour blocks for the headers and introducing different background colours on regions and pages.

JH: We focused heavily on customising WordPress to match the client's expectations. This forced me to learn a few tricks such as user role management

and moving core WordPress meta boxes for better placement and access.

What feedback have you had?

BH: Film Hub Midlands has been really positive with its feedback. It feels it has realised its digital vision and is now able to connect with audiences in a more meaningful way. The client also said the first discovery phase gave it a greater insight into its brand, audience and aspirations. Additionally, Film Hub Midlands has received great feedback from users and peers. ■

Discover accessibility secrets August centre

There's a lot more to consider than just clear content hierarchies and high-contrast colour schemes when making a site accessible. Which is why we've asked some experienced accessibility and UX experts to offer up their insider secrets on areas of inclusivity that often get overlooked.



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t's nothing new to promote the notion that accessibility should be a key consideration at the start of any design project. In reality, tight budgets and timescales can often render the big features needed to make our digital products fully accessible either neglected or considered 'something to add in later'.

The end result is that while broad-brush accessibility best practices get implemented, many of the finer elements of accessibility or inclusive design can often be overlooked. Fortunately, as you'll see, many of these oversights can be addressed with minimal effort.



FEATURES

Discover accessibility secrets

- Taking just a handful of these points into consideration may help empower an additional percentage of your audience to better engage with your digital products in ways that they otherwise wouldn't have been able to.

Remember the alt

In a world in which uploading visual assets to the internet is as commonplace as starting your day with a coffee – Instagram alone estimates 40 million images are added daily to its platform (<https://netm.ag/2z61XmN>) – we can easily overlook the need for alt text on images and videos when adding content to our own websites and apps. Consider the percentage of your audience that may be using screen readers to consume your content; if you're anything like GOV.UK, you may not be catering for 29 per cent of your users (<https://netm.ag/2QoBAIZ>). When choosing your visuals, be sure to consider the alt text that will accompany them in order to provide context in relation to the rest of the elements on the page. You'll be catering for screen readers, users viewing as text-only and failed loading states. Naming your image layers in your design files with their alt text labels will challenge you to really question the suitability of the images you're selecting, as you'll read them for what they are.

Gone overboard with animations?

Those gorgeous parallax sites and GIF-tastic web pages you've been designing have certainly pushed the online storytelling experience no end but with 35 per cent of people over the age of 40 suffering from a vestibular disorder, there's a chance you may make users suffer nausea and motion sickness by going too heavy on the animation (<https://netm.ag/2RNFdza>). The Arche 68 front page menu is an amazing experiment in animated typography but can leave even those with the strongest stomachs feeling a little giddy after a minute or two of scrolling (<https://netm.ag/2OF4SI2>).



netm.ag/2JXLx4r). To address this you could consider providing the option to either disable scrolling animations or to provide a static alternative for viewing your content. Slack provides the option to hide animated images and emojis, demonstrating that motion can be an optional enhancement rather than a must-have feature for all users (<https://netm.ag/2JWRIpI>).

Speak their language

Not all projects you work on are going to require the content to be translated into multiple languages but remember that accessibility and inclusivity extends beyond the need to cater for those with visual or auditory impairments.

Making your line heights too tight can cause all manner of issues when translating into French, for example, as character accents such as the accent grave (à, è, ù) may be overlapped and get lost, rendering an entirely different meaning – for example à = 'to' versus a = 'has' (<https://netm.ag/2JWRIpI>). Other languages like Arabic read right to left so will have a big impact on the way blocks of text are rendered and consequently the way that page flows will be read.

Discover accessibility secrets

When designing for a global audience, your templates and design systems have a better chance of scaling if you consider the myriad ways alternative languages can affect type layout at the start of the design process. Try mocking up your design files in one or two alternative languages to see if they'll stand up to translation; it'll make things easier should this requirement be added later.

Keep it straightforward

Given the estimation that around one per cent of the UK population may be on the autistic spectrum (<https://www.autism.org.uk/about/what-is/myths-facts-stats.aspx#>), it's important to consider words at face value. Emojis and quirky copylines are great fun and help give brands

Ways to check and test

It's always best to test accessibility with real users and refer to guides and checklists to make sure you have everything covered. Here's a list of some of the most important criteria from the 18F Accessibility guide (<https://accessibility.18f.gov/checklist/>):

- Critical
 - Site is keyboard accessible
 - All interactions can be accessed with a keyboard
 - The keyboard focus is never trapped in a loop
 - All form inputs have explicit labels
 - All relevant images use an img tag
 - All images have alt attributes
 - Multimedia is tagged
 - Text has sufficient colour contrast
 - All text has a contrast ratio of 4.5:1 with the background
- Less critical
 - Site never loses focus
 - Focus is always visible when moving through the page
 - Tab order is logical
 - Form instructions are associated with inputs
 - Site doesn't timeout unexpectedly
 - Identify elements that may 'timeout' and verify that the user can request more time
 - Tables are coded properly
 - Tables have proper headers and column attributes
 - Headings are nested in a logical way

Top: Slack's animation accessibility settings

Above: Accents overlapping when translating from English to French with a tight line-height

FEATURES

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Above: The Spectrum plugin for Chrome lets you simulate different levels of colour blindness.

The 4 Accessibility Principles

In the UK alone, it is reported that there are over 11 million people with recorded disabilities. Many of these people require assistive technologies to help them perceive content. Also, more than 2 million people in the UK are living with sight loss (<https://netm.ag/2ZRC75Q>). With these numbers, it's hard to believe that so many overlooked. The web grants us permissions to provide enriched content, but we can get carried away. When thinking about accessibility, there are four key principles to be aware of that were introduced by W3C 2.0. These four principles can be helpful reminders:

1. **Perceivable** Information and user interface components must be presentable to users in ways they can perceive.
2. **Operable** User interface components and navigation must be operable.
3. **Understandable** Information and the operation of user interface must be understandable.
4. **Robust** Content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies.

personality but when addressing serious subjects, writing in plain English will help negate any ambiguity for users, especially when helping them to make important decisions. Be mindful of the diversity of your audience and the tone in which you intend the copy to be read in to keep your message on point.

The colour and the shape

Shapes and colours are so important for various reasons and can have a huge effect on a user's experience.

When we consider the autistic spectrum, colour blindness and other visual difficulties, your choices of colour can be extremely challenging to differentiate between or even recognise. It is considered that bright and high-contrast arrangements of colours can be hard and overwhelming for autistic users to process; their attention can be easily lost, so try to use simple colours and shapes. Equally, a user with colour blindness will rely heavily on contrasting colours. In the UK, approximately one in 12 men and one in 200 women are affected by colour blindness (<https://netm.ag/2PpIAiQ>). Choices like red and green, green and blue, blue and purple and green and brown can be troublesome. Try using a colour-testing tool like the Chrome plugin Spectrum (<https://netm.ag/2qL6Ltj>). This enables you to analyse your web pages and simulate colour blindness scenarios. You could also use Userway's Contrast Checker (<https://userway.org/contrast-checker>) to test your text and background colours and see if they are WCAG 2.0 AA or AAA compliant.



Empower the user

Imagine a digital experience that gives you the opportunity to consume content in the way that best suits your needs. With Harry Potter, you can read the book, watch the film or listen to the audiobook. These three methods empower fans to enjoy the story in the way that suits them and is inclusive of those that are deaf, dyslexic or visually impaired. Reveal News does this brilliantly with a number of its online long-form articles, *Night Shift* being a great example (<https://netm.ag/2zVDhgL>). Here it offers up the options to either read, watch or listen to the same story all within the same interface. Next time you're planning your content strategy it may be worth considering the multiple ways it can be served up, as you'll not only benefit those with disabilities, you'll

actually provide a much more flexible way for all users to enjoy your offering.

What's your preference?

Communication can be challenging for users with visual or hearing difficulties. It may be that a user is hard of hearing or

Discover accessibility secrets

deaf and requires the option to respond to a request in writing, or that they have a visual impairment, in which case a phone call may be the preferred means of contact. Providing communication preferences can be a really important consideration to successfully engage with people who face these challenges, so always keep this in mind when designing your next contact page.

Customise me

It's so easy to get caught up with how a brand should be visualised online. Sometimes your brands, typography and colour may not be enough or just obstruct an accessible experience. Ideally, you should enable users to customise their viewing preferences, changing themes (light / dark or colour variations) and text sizes. A study by E-Check concluded 70 per cent of websites are potentially breaking the law and are at a significant potential commercial, PR or legal risk (<https://netm.ag/2PnEnMt>). There are many factors but providing the user with a customisable experience can help them visualise content better. Take the Guide Dogs website as an example, where users are able to alter text size throughout the website and even change the colour modes (<https://netm.ag/2qJ9F1O>). It is known that contrast is very important for users with visual restrictions, so providing alternative themes can be really useful.

Tabbing

Over 50 per cent of internet traffic now originates from mobile devices (<https://netm.ag/2JWTQxf>), though as a designer you're pretty likely to still be equipped with a keyboard and mouse, much like the remaining half of the population. Of that population there are a number of people (an estimated 7 per cent of working adults) with 'severe dexterity difficulty,' rendering them reliant on a keyboard alone to navigate menus and webpages on their computers (<https://netm.ag/2FrxePQ>). The impact this has on design is twofold. The first concerns

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- ▶ page layout: can users with a keyboard tab through your page in the order you intended the content to be read? Ever tried tabbing through Pinterest's masonry grid (<https://netm.ag/2DAoolg>)? It's near impossible to work out where you are in the flow of the page because the focus jumps.

The second concern for tabbing is the actual visual representation of the focus state. Most browsers have default focus states out of the box but some websites like Smashing Magazine have gone the extra mile to create their own style that adopts a thick dashed red line rather than the generic light blue boxes of Chrome or Safari, which don't work so well if your backgrounds or buttons are light blue themselves. To truly cater for keyboard-only users, it's worth taking the time to consider how each of the components of your design system or style guide will appear in their focused state and then work with your developers to perfect these in the browser.

Hierarchy and flow for the bots

Human beings are not the only ones that read websites; bots do too. Consider voice-controlled devices and those clever little Google bots that crawl the web every waking hour. Websites are being scanned and analysed by many technologies, including assistive software. Screen readers are just one of the many types of this assistive software and are used by 90 per cent of people with varying levels of visual impairment (<https://netm.ag/2T8KkuW>).

The way your website is structured is really important. The formatting of content and alt text is what is mostly read by screen readers. Think about how the HTML is ordered and if the flow of content matches your own visual experience of the web page.

Don't overwhelm with words

Engagement is needed to capture an audience's interest but it's easy to forget that words matter when it comes to



"If a line of text is too long the reader's eyes will have a hard time focusing, as the line length makes it difficult to gauge where the line starts or ends"

too long the reader's eyes will have a hard time focusing, as the line length makes it difficult to gauge where the line starts or ends. It can also be difficult to continue on to the correct line in large text blocks. Furthermore, if a line is too short the eye will have to travel back too often, breaking the reader's rhythm. Shorter lines also tend to stress readers, making them begin on the next before finishing the current one. To help with this, it is considered that 50 to 60 characters per line will ensure comfortable reading.

Take a look at Medium for a masterclass in how reading can be a pleasure (<https://medium.com>).

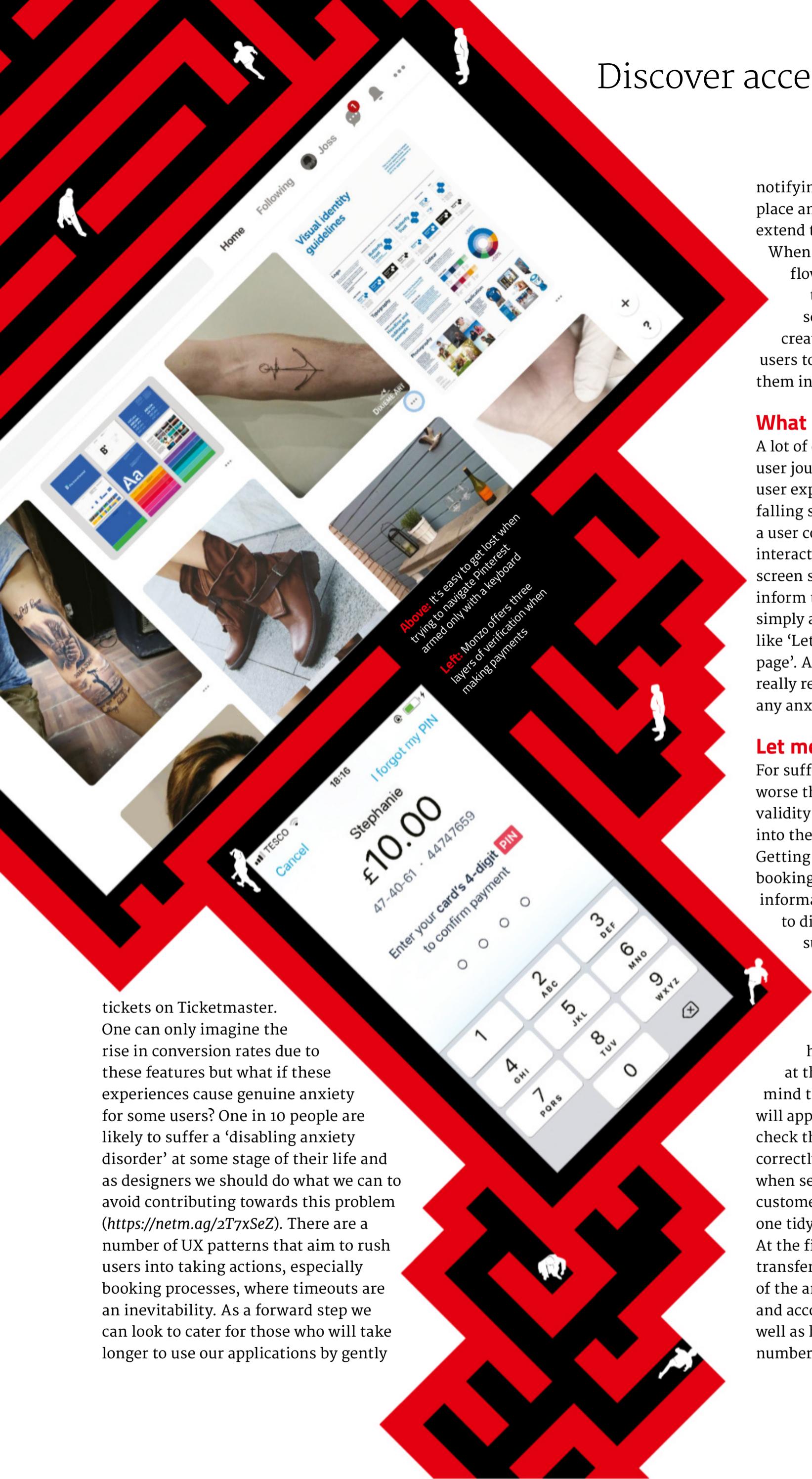
Don't make me anxious

We're all familiar with the flashing 'In high demand!' and 'Last chance!' messages on Booking.com. We're also distinctly aware of the countdown in the corner of the screen when ordering

keeping your user focused. The challenge is to write enough to be informative, while at the same time keeping reading fairly light work. Large textual areas can be quite intimidating.

It's not just about how much text you have though; it's the way you display it that can often make reading a challenge for some users. The line length for your text can help with that. If a line of text is

Discover accessibility secrets



tickets on Ticketmaster. One can only imagine the rise in conversion rates due to these features but what if these experiences cause genuine anxiety for some users? One in 10 people are likely to suffer a 'disabling anxiety disorder' at some stage of their life and as designers we should do what we can to avoid contributing towards this problem (<https://netm.ag/2T7xSeZ>). There are a number of UX patterns that aim to rush users into taking actions, especially booking processes, where timeouts are an inevitability. As a forward step we can look to cater for those who will take longer to use our applications by gently

notifying them that a time limit is in place and giving them the option to extend the time needed as appropriate.

When designing your next booking flow, make sure you include the timeout scenario as part of the sequence and that you strive to create an interface that empowers users to complete, rather than sending them into a panic.

What happens next?

A lot of energy can go into understanding user journeys and providing the best user experience but you can find yourself falling short in some scenarios. When a user comes to the end of a process, interaction or submission, the final screen should confirm their actions and inform them of what's next, even if it's simply a message that says something like 'Let's take you back to the home page'. Any form of confirmation can be really rewarding to the user and lower any anxieties they may have.

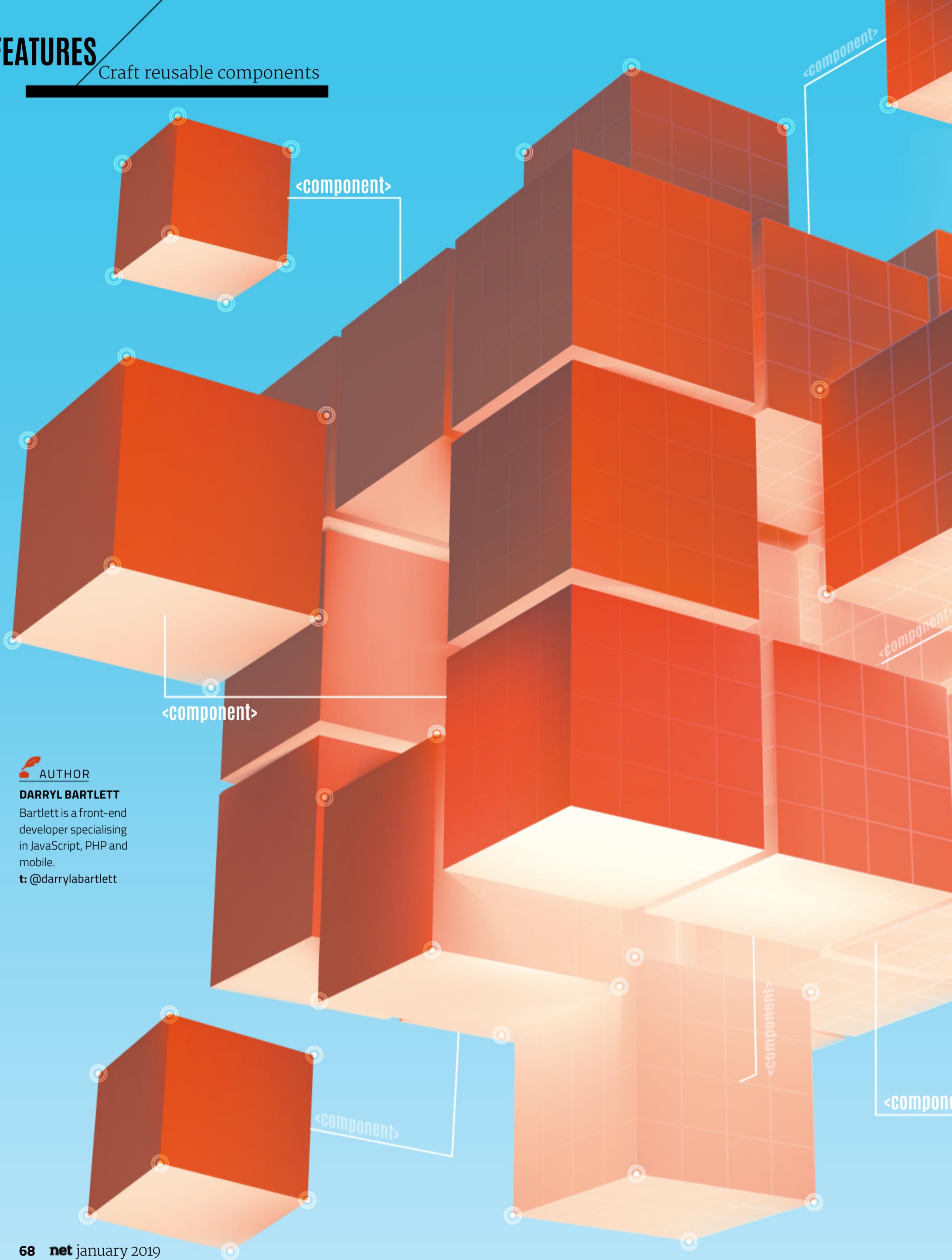
Let me verify and double-check

For sufferers of anxiety there is nothing worse than being left to question the validity of information or data submitted into the digital ether unintentionally. Getting to the end of a lengthy form or booking process rich with important information and pressing 'next' only to discover that your data has been submitted without the option to undo can be a stressful experience, especially when money is involved.

When designing flows that have a consequential call to action at the end, it's well worth bearing in mind that users suffering from anxiety will appreciate the option to double-check that they've filled everything out correctly. Monzo does this brilliantly when sending payments, offering customers three layers of verification in one tidy interface (<https://monzo.com/>). At the final stage of making a bank transfer, you can perform a final check of the amount to be sent, the sort code and account number of the recipient, as well as having to enter your card's PIN number to confirm the transaction. ■

FEATURES

Craft reusable components



AUTHOR

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Bartlett is a front-end developer specialising in JavaScript, PHP and mobile.

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CRAFT REUSABLE COMPONENTS

Darryl Bartlett explains why component reusability is important when building out new web applications

In the past, developers have often approached their new web projects with the mindset of developing everything from scratch. When we would begin a new project that called for similar functionality to an

existing project, we would simply copy and paste the relevant code from the older project into the new one, whether it be a simple button or something much more extensive such as a full login form. Some of us developers still follow this approach and there is nothing wrong with that.

The concept of component reusability is nothing new but it has probably only attracted most developers' attention over the last couple of years. Let's not get confused about what component reusability actually is. You should always think of code reusability as a development strategy. Components are built from the ground up with reusability in mind from the start and a strategy is put in place to how these will be used throughout the organisation for current and future projects.

If you think of a car, it's made up of several small components like seat belts, buckles and then larger components like the engine. These components are used across multiple models, which cuts costs and speeds up development. This is the same as a web application. It's

pretty much a collection of different-sized components that we can use across multiple projects.

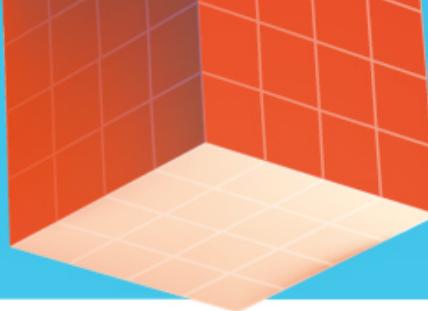
Why should you reuse components?

Duplication costs both time and money. These are the key things that need to be taken into consideration with every project in any industry.

Every time you start a new development project, you don't need to spend time building out the same website components. If you start reusing your components, then your development team will spend significantly less time having to repeatedly build out the same elements. This frees up much more time for developers to spend improving existing functionality and working on newer projects. Reusing components will also lead to faster development times overall, as well as keeping a much higher level of consistency and efficiency throughout multiple projects.

But that's not all. Your QA process will also run a lot more smoothly. Because you are working with one component that has already been tested in isolation, you only need to worry about integration concerns. If there is a bug, then it can all be fixed in one place by one developer and outside of the main project, causing fewer headaches.

For example, if you had two website projects where both developers were



► building separate login systems, they would both need to be tested. If it was discovered that they both had different bugs, then these would need to be fixed separately as two different issues. Having just one login component helps resolve this problem.

Let's have a look at an example. Let's say you worked for a big organisation that has a number of different ecommerce websites. The functionality for the following components is going to be the same across all sites:

- Checkout
- Login
- Account area
- Item details view

The only thing that is really going to be different is the styling of each website, which you can still do separately. However, when it comes to these components, we still need to break these down even further.

Atomic design

You should think about using atomic design when building out reusable components because it encourages you to design a component library at multiple levels. There are five stages for atomic design but we will only concentrate on three of them:

Atoms

Atoms are the basic building blocks; they cannot be broken down any further.

For example, if we go back to thinking about cars, a spring would be considered an atom because you can't break it down any further. If you think of this on a web application level, an atom could be a button, link or a label.

// ATOM

```
<Label>Search</Label>
```

Molecules

A molecule is a group of two or more atoms, so taking the car analogy, this would be a spring combined with the top hat and mount to create a full shock absorber. In terms of development, a molecule could be a navigation bar with

several links or a form section made up of several atoms.

```
// MOLECULE
<Form onSubmit={ onSubmit }>
  <Label>Search</Label>
  <Input type="text" value={ search } />
  <Button type="submit">Search</Button>
</Form>
```

Organisms

Organisms are a group of molecules functioning together. For example, if you connect the shock absorber with a trailing arm and hub in a car, it creates a basic steering assembly. In terms of development an organism is a larger component, so this could be a section of a website such as a header.

“
Atomic design
and component
reusability go
hand in hand from
a workflow point
of view
”

```
// ORGANISM
<Header>
  <Navigator>
    <Brand />
    <NavItem to="home">Home</NavItem>
    <NavItem to="about">About</NavItem>
    <NavItem to="services">Services</NavItem>
    <NavItem to="contact">Contact</NavItem>
  </Navigator>
  <SearchForm />
</Header>
```

Atomic design and component reusability go hand in hand from a workflow point of view because you think about your lower-level components that can compose higher-level molecules and organisms. Begin with small atoms

and then nest in the higher-level components (molecules and organisms). Don't forget though: it's much easier to make a reusable atom than it will be to make a reusable organism because the surface area is so much greater on an organism. So starting with an atom and working upwards from there will be the best solution.

Building components

The first step is to pick a good front-end framework – of course you are free to use anything you like. Your company might already be building using a particular tech stack. A good option is to use React (<https://reactjs.org>) because its component model encourages code reuse and it is also quite lightweight compared to the other frameworks available.

It's a good idea to get in the habit of building your components independently and away from any ongoing projects. If you are working in a large organisation, you might decide it's sensible to have a dedicated team that just builds and updates components. If you are working in a smaller agency, you might have one or two developers who are dedicated to this task.

When coming up with a plan, road mapping is always going to be a crucial part of development in any industry. If you are working in an agency, it can be harder to predict what you might need and when but knowing what components and technologies are going to be required in the next 12 months is crucial, so you know what type of components will have to be built out.

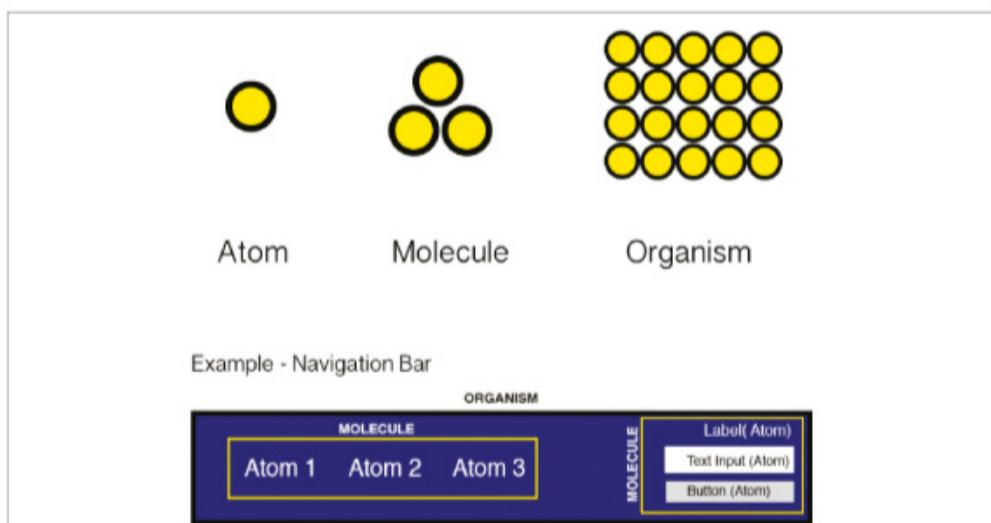
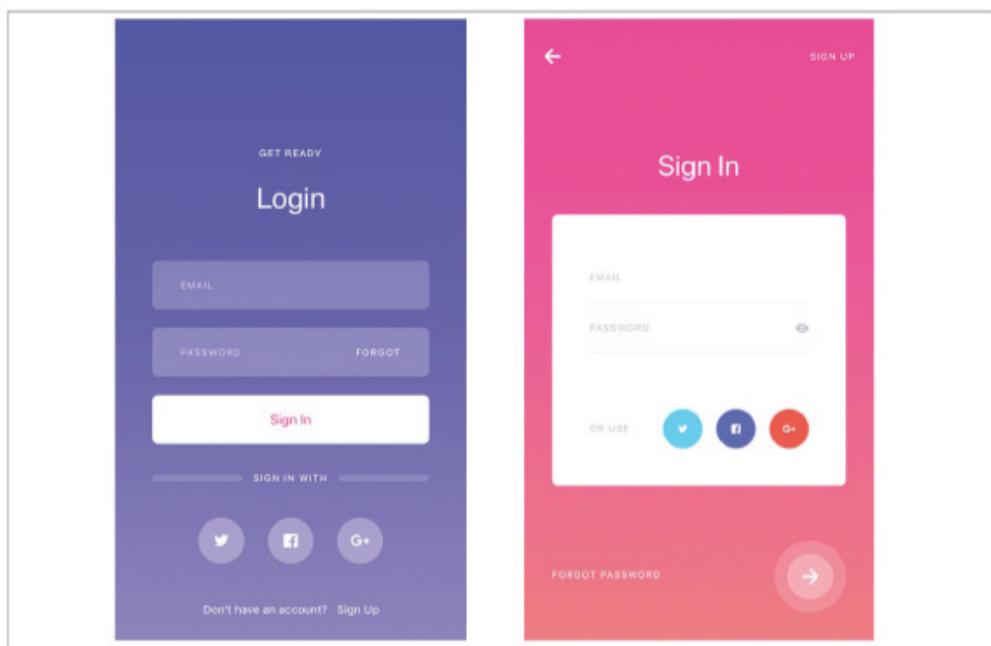
So how will your component work?

How many times do developers use buttons across the same application? It's important to break down every detail, such as where are your components going to be and what it is they are going to interact with.

If you were building out a button for multiple uses across one project, it might work similar to the following code:

```
const Button = ({ children, onClick, className, ...props }) => {
```

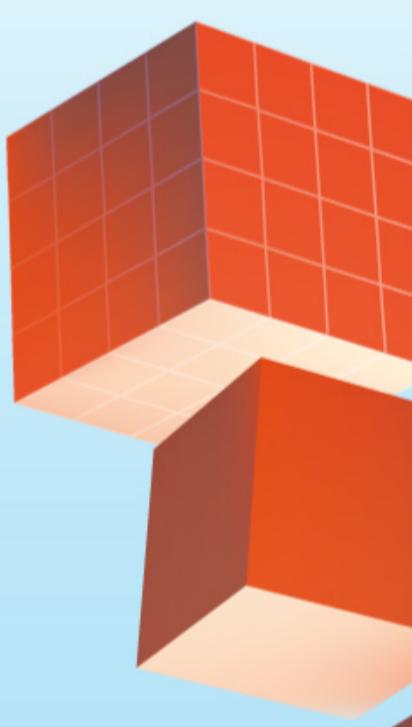
Craft reusable components



```
return (
  <button className={className}
onClick={onClick}>
  {children}
  </button>
);
};
```

You can then use that basic button component like this:

```
const ParentComponent = (props) => {
  const color = props.isDisabled === false ?
  '#999999' : '#1274b8';
  const btnClass = props.region === 'gb' ?
  'btn_red' : 'btn_yellow';
  const onClick = () => { // do something }
  <Button className={btnClass}
onClick={onClick}>
  <Icon>
    styles={props.icon}
    width={props.width}
    color={props.color}
  </Icon>
  Do This
};
```



Development time experiment

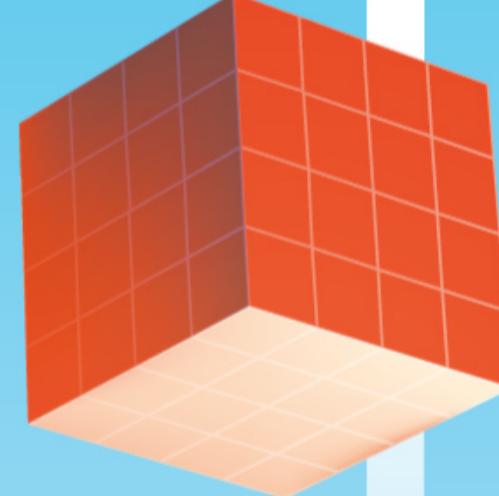


As a brief experiment, we wanted to test out the development time comparison between two projects. Both projects are exactly the same, the only difference is that one is created from scratch and the other one is using components already built, so no extra time was spent styling this particular application.

Brief: To build a geolocation web application that pinpoints different areas of interest. The application itself displays different markers on the map and a pop up for each marker, which includes a title and a hyperlink. There is also an external form that enables users to submit location data and an admin area for the website admin to approve and remove markers that were submitted.

Components already created:

- Website admin
- Login/logout component
- Approval/in review table
- Website submission form
- Submission form
- Map view
- Map with markers
- Location list

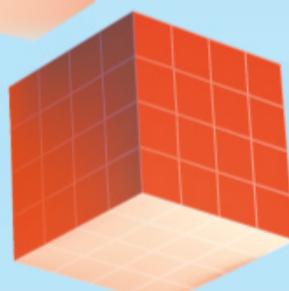


Time taken:

Build geolocation application from scratch: one week
Build geolocation application with reusable components: one day

It's amazing that so much time was saved when using existing components. Obviously time would still be needed to style each particular section. The main tweak that had to be made with all sections was the database configuration details and also the database fields to keep consistency. The map itself (created with Google Maps) would be styled differently in both applications, depending on client requirements.

It goes to show it can make a huge difference if you have components already there but it's just as important to know what components you may eventually need for existing and future projects.

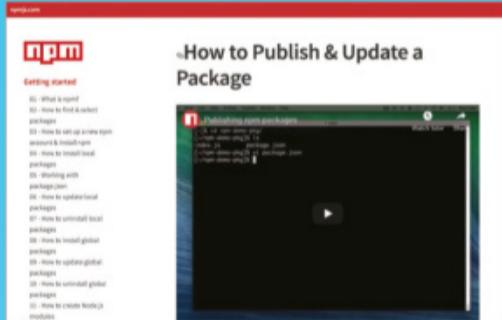


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Craft reusable components

Resources

Below is a useful list of tools and resources that will help you on your way to understanding how to make the most of component reusability



NPM – publishing packages

<https://docs.npmjs.com/getting-started/publishing-npm-packages>

If you are unfamiliar with publishing your own NPM packages, then this documentation is the best place for you to get started.

Continuous integration (CI), explained

<https://www.atlassian.com/continuous-delivery/continuous-integration-intro>

Some developers may be new to CI, so this guide by Atlassian will give you much more of a breakdown of how continuous integration works and what it is used for.

Electrode Explorer

<http://www.electrode.io/#electrode-tools>

Electrode Explorer is an excellent tool to help demo and document your component library.

GitHub

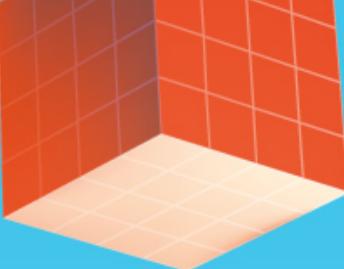
<https://github.com>

Most developers use some form of version control for their project and it's probably your most important tool when it comes to constructing any kind of development.

Atomic Design by Brad Frost

<http://atomicdesign.bradfrost.com>

Atomic design is important when it comes to component reusability. To learn more, Brad Frost has released an interesting book that goes into great detail on the subject.



> `</Button>`
}

Version control

Version control is a huge part of development and even more so when it comes to developing components. There should be a dedicated area where your developers can find all of your organisation's components. All components should be well away from ongoing projects and documented from a technical standpoint. You might decide on creating a separate repo for each category or individual component. For example, a header folder may contain things like all your navigation link components or a search form component.

Structure

It's important to keep a similar structure for every component that you create. Again, this is good for consistency.

There should be a folder that more or less matches the component name, which contains the component with all of the code, component tests and an index.js for imports. Don't forget to add a readme with all the various documentation. So for our button example, the structure would appear like this:

Button

....index.js

...Button.js
...Button.spec.js
...ReadME.md

Content changes

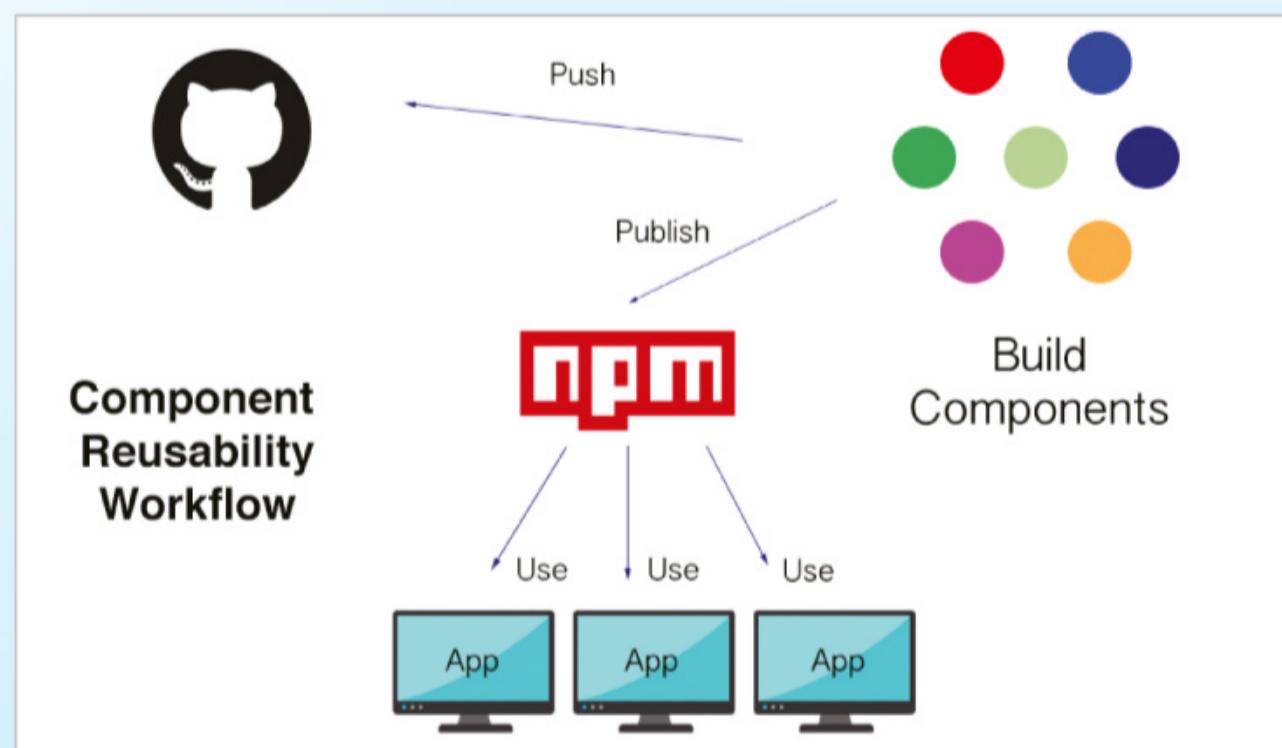
You constantly need to be aware of content changes that you need to make. Just because you are reusing a component, it doesn't mean content is going to be the same. If you were building out a website and wanted to use the same reusable button, then the text of the button is going to be different. It might not matter so much for smaller changes but it can get tricky when changing things on a larger scale, even if they happen to share the same functionality.

If you look at Netflix as an example, when you select a movie it takes you to a separate UI screen where the information for that movie is displayed. This is exactly the same UI every time; the only thing that changes each time is the actual content.

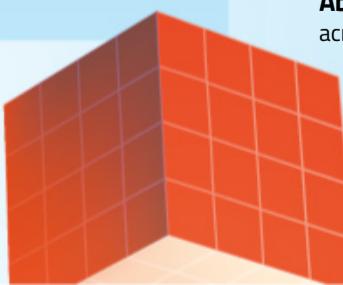
Styling

When it comes to styling, you might have separate style folders inside your component folder. This would contain the styles for each company that you are building for.

▪ styles
- company 1



Above: This diagram illustrates a simple but effective workflow to aim for if you need to create and share reusable components across a company





Craft reusable components

- company 2
- company 3

Of course, this is only most likely to apply if you have several websites for one brand. If you were building out a brand new website, then you would only need one set of styles. Try to keep this approach consistent for each project you build out, that way you only need to change the styles themselves rather than the class types.

Sharing your component

The best way for applications to install your components is through NPM, so make sure they're all published there and are all versioned – major, minor, etc. All future projects that want to use the component can run npm install.

Before publishing, make sure you go to your component folder and check that package.json is up to date, with attributes like name, description and author. Remember that you are going to need to create an account if you don't have one already. You can do this at <http://npmjs.com/>. Ensure that you keep your NPM registry private!

Then all you need to do is log in, enter your username and password and finally publish using the following commands:

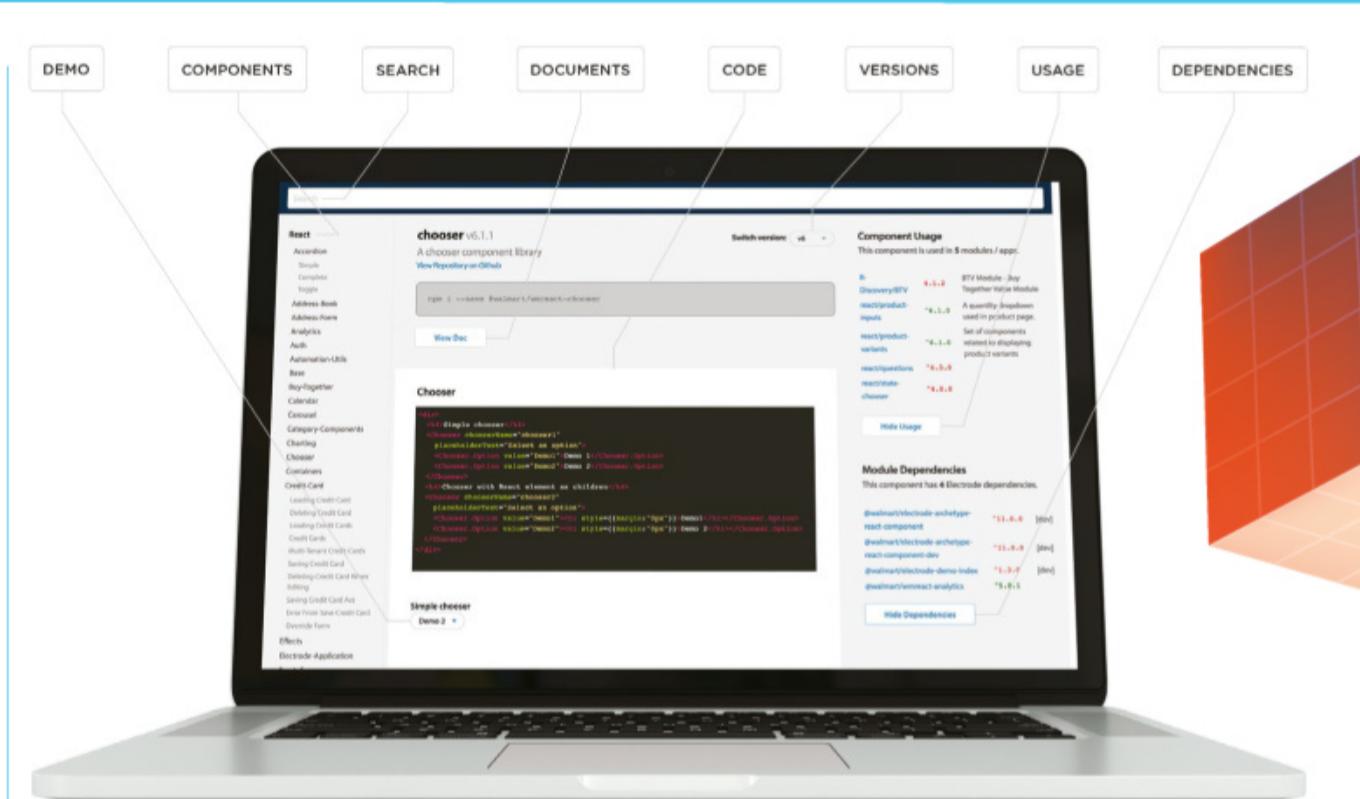
```
npm login
npm publish
```

Continuous integration server

Setting up a continuous integration server (CI) is crucial when it comes to using components across multiple applications. This is to make sure you don't break any existing applications. You can use CI to run your tests and create automated builds. CI builds your app the moment you commit and makes sure it runs on another machine.

Technology challenges

One challenge is that there are always going to be new libraries and technologies. How are you meant to innovate when everyone is using the same thing? A carousel that is developed in 2018 might be completely different



Above Electrode Explorer enables you to automatically run a demo of each component, so that you can get a better idea of how it might integrate

in 2020 and there might be better ways of showcasing your products. You have to accept that there is always going to be change; as a developer you need to be able to know what's coming and plan accordingly. You can always build out a separate component later down the line or even build upon the existing component. Remember that it's easier to

“
Just because you
are reusing a
component, it
doesn’t mean
content is going to
be the same
”

tackle component by component, rather than all at once.

Conflicts

You may experience conflicts when it comes to versioning. If you go with React, make sure your company is on the same page. Decide what version of React you

want to use (that's if you decide to use React). Having your own starter kit can really help the process along.

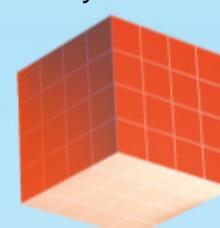
Discoverability

Sometimes one of the biggest challenges is discoverability, especially in larger organisations with separate development teams. Your developers may not find what they are looking for or be unsure whether or not the component works exactly how they need. This can lead to them building out something new for themselves, which then involves more time and money.

A great way to avoid this is to have an external tool that showcases the component using demos and screenshots. A good example of this is Electrode Explorer, which you can read more about here: <https://www.electrode.io/site/web.html#electrode-tools>.

Conclusion

If you are only now thinking about reusing code, then it might take some time to get the structure in place. You have to consider how you think reusability would suit your business in the future. Can you train and restructure your current workforce and how long will it take? In the long run, it is likely to pay off and save you both time and money whether you are an agency or an organisation with a chain of websites. ■



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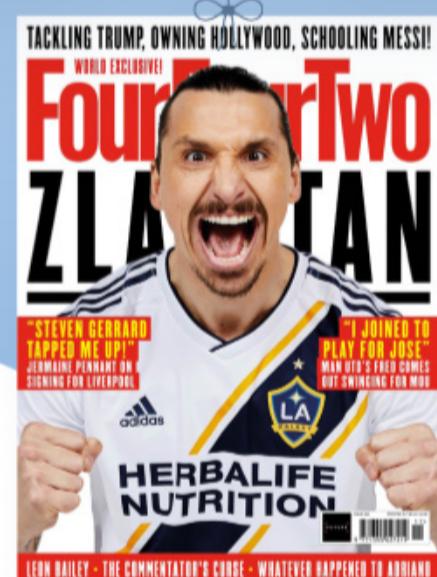
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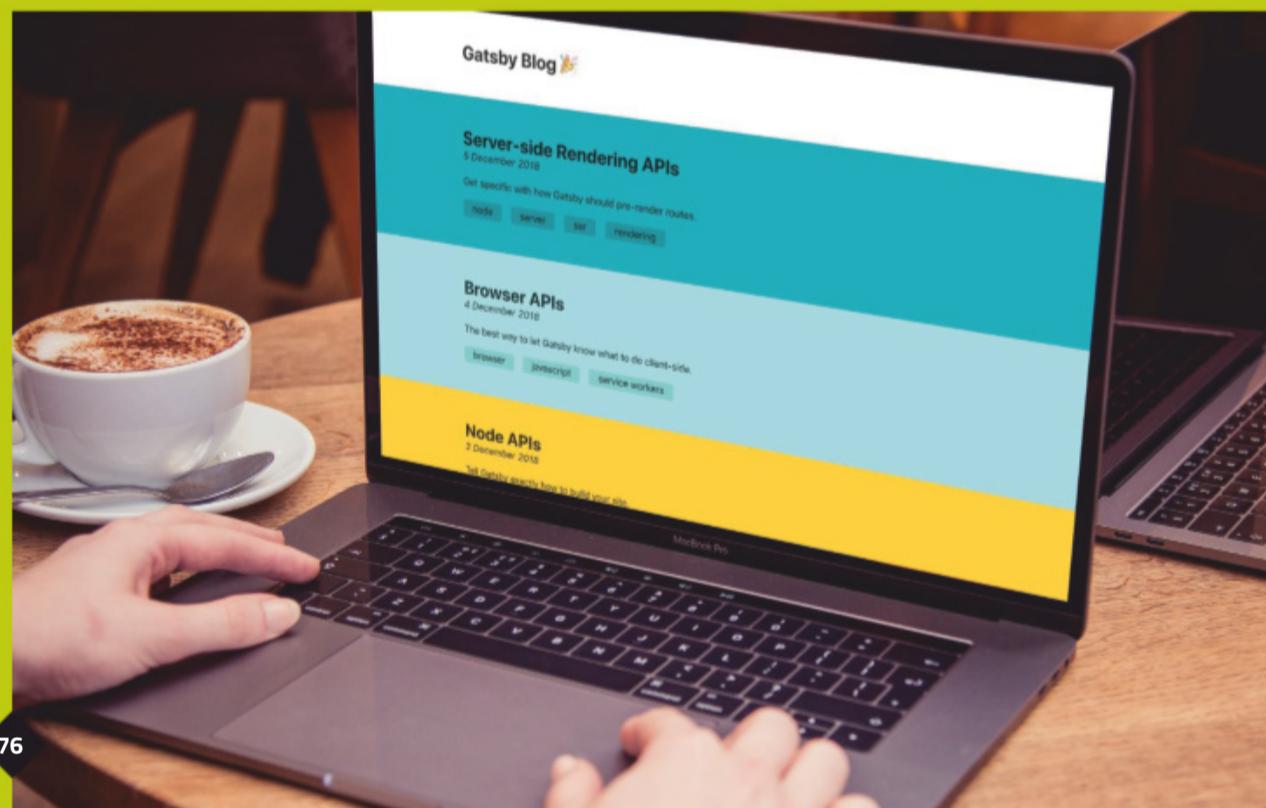


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Tips, tricks
& techniques

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A screenshot of the Whimsical app's "The Visual Workspace" section. It features a purple header with the text "The Visual Workspace" and "Collaborate visually. Fast and delightful." Below the header are three cards: "Flowcharts" (with a flowchart icon), "Wireframes" (with a wireframe icon), and "Sticky Notes" (with a sticky notes icon). The bottom of the screen shows a footer with logos for Shopify, Netflix, Intercom, Deliveroo, Microsoft, and Salesforce, along with the text "Whimsical is enjoyed by folks at".

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ABOUT THE AUTHOR

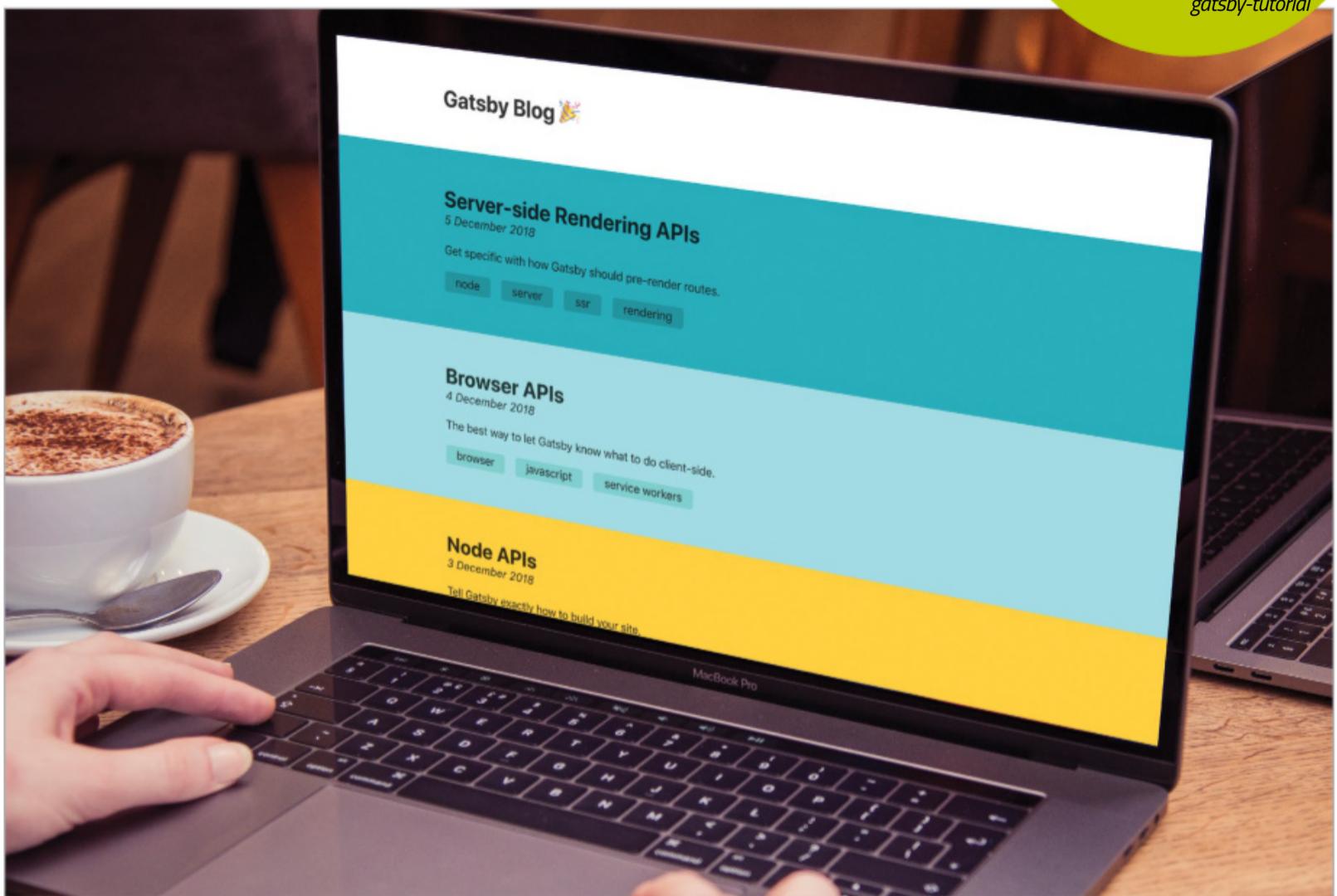
MATT CROUCH

job: Software engineer at Vidsy

areas of expertise:
HTML, CSS, JavaScript,
CMSes) React, TypeScript
and Websockets

w: mattcrouch.net

t: @mattcrouchuk



* GATSBY

BUILD A BLOGGING SITE WITH GATSBY

Matt Crouch shows how Gatsby uses the power of React and GraphQL to create speedy, pre-rendered websites that can be deployed anywhere

Frameworks like React only send JavaScript down to clients, which is then used to create the elements onscreen. The HTML that loads on the page is minimal, as all of the content is generated on the client side after everything has loaded.

In projects that have dynamic data, such as a blog or a shop, the JavaScript has to come down first before any other data can be fetched. Even when using speed-boosting techniques such as code splitting, if the bundle fails to download, the entire site will stop working.

Static-site generators take dynamic content and create pre-built pages ready to serve. If the data

does change, the project can be rebuilt and the new content served. The end result is improved speed, scalability and – without constant connections to a database – security. While the approach is not ideal for constantly changing data such as a rolling news site, many projects can benefit.

Gatsby is a static-site generator that is built upon React. Through the use of GraphQL and plugins, it can take data from different sources and pass them into components. Once this is done, it analyses the project and generates HTML files to serve to clients, while React and the application logic gets downloaded in the background.

[View source](#)

files here!

All the files you need for this tutorial can be found at
<https://github.com/MattCrouch/gatsby-tutorial>

GET STARTED

To start off, we can have Gatsby scaffold out a basic project for us. It provides a development server we can use along with a few useful developer tools. Make sure Node and npm are up-to-date and run `npx gatsby new gatsby-site` on the command line, with “gatsby-site” being the folder to build into.

Within that folder, Gatsby provides a few commands as part of the initialisation process. Running these will make building the site much easier. Run `npm run develop` to start the development server and see any changes update automatically in the browser.

All content lives within the `/src` folder and any setup files are prefixed with “gatsby-” in the project’s root. Everything works through

“It’s possible to make a page component for each new post but this creates a barrier for those not used”

components, which do not need to have any additional structure or behaviour in order to be pre-built with Gatsby.

The contents of the `/src/pages` folder is special. Gatsby will pick up any component within that folder to create a page. Open up `index.js` and clear out the contents of the component. Notice that the page updates in the browser as we save.

```
const IndexPage = () => (
  <Layout>
    {/* Empty */}
  </Layout>
)
```

BUILD A PAGE

Each blog post needs its own page. It’s possible to make a page component for each new post but this creates a barrier for those not used to React and will also require more maintenance in the future as designs change.

Gatsby has a library full of plugins ready to change the way it generates pages, which can be found at gatsbyjs.org/plugins. There we can find two types of plugin – ‘source’ and ‘transformer’.

A source plugin will take data from a source and convert them into ‘nodes’ which is how Gatsby deals

Gatsby Default Starter

Hi people

Welcome to your new Gatsby site.

Now go build something great.



with the information within a site. The data can be fetched locally for files like images or remotely for external data such as a database.

A transformer plugin can then take these nodes and create new ones to make things easier for Gatsby to work with. For example, YAML files can’t be parsed by default but a transformer plugin can turn the nested syntax within them into objects to read inside components.

Markdown is a common format used for text because it’s versatile, easy to read and can be converted to HTML. The source plugin “gatsby-source-filesystem” can take files locally and convert them to nodes, while the transformation plugin “gatsby-transformer-remark” uses Remark to convert Markdown into something we can pick up and query with GraphQL.

The starter project already comes with the source plugin. Install the other by running `npm install gatsby-transformer-remark`. Please note that the development server may need to be restarted for it to be picked up.

SET UP PLUGINS

With the plugin installed, Gatsby needs to be told how to use it. All this logic is held within the “gatsby-config.js” file generated at the start. It comes with a few plugins already set up out of the box but we need to add ours to the mix to be able to pick up and use Markdown.

Simple plugins that have no set-up procedure can be added in as strings. As the transformation plugin has only one job, it does not need setting up. However the source plugin has to be told where

Above After it has been initialised, Gatsby provides an example site to get started, including two basic page components

Gatsby Blog

The screenshot shows the Chrome DevTools Elements tab. The left pane displays the DOM structure of a Gatsby blog page. Key elements include:

- `<link rel="prefetch" href="/component---src-templates-blog-blog-js.8da1853...css">`
- `<link rel="prefetch" href="/component---src-templates-blog-blog-js-768bc94...js">`
- `<link rel="prefetch" href="/static/d/609/path---post-ssr-apis-727-022-QRae2HJf2wDtTEcMfC2exvLU8k.json">`
- `<link rel="prefetch" href="/static/d/576/path---post-node-apis-b-90-eb3-qpiADrl4CHeGnxhw81TSWzs04.json">`
- `<link rel="stylesheet" type="text/css" href="/component---src-templates-blog-blog-js.8da1853...css">`
- `<script charset="utf-8" src="/component---src-templates-blog-blog-js-768bc94...js"></script>`
- `... <meta name="keywords" content="node,server,ssr,rendering" data-react-helmet="true"> == $0`

The right pane shows the Styles tab with the following CSS rules:

```

element.style {
}

component---src...e3a22e9...
*, :after, :before {
  box-sizing: inherit;
}

*, :after, :before {
  box-sizing: inherit;
}

me user agent stylesheet
+>

```

Above Helmet can be used to add `<meta>` elements on a per-post basis, such as using post tags as keywords

- ▶ to find the posts. Add them to the bottom of the plugins array.

```
plugins: [
  ...
  "gatsby-transformer-remark",
  {
    resolve: `gatsby-source-filesystem`,
    options: {
      name: `pages`,
      path: `${__dirname}/src/pages`
    }
  }
]
```

Because each post will become its own page, it makes sense to add them to the `src/pages` folder. These setting options are telling Gatsby to look into that folder and pull out any files.

CREATE A BLOG POST

With the plugins in place, we can create our first post. Create a folder called “my-first-post” and add a “my-first-post.md” Markdown file within it. This convention enables us to add any related files – such as images – alongside the post itself.

We need to add some Markdown to this post so we know that it’s working as expected.

```
---
path: /post/my-first-post
date: 2018-12-01
summary: Post summary
tags: [my, first, post]
```

title: My First Post

This is my first post!

The content between the dashes at the top of the file is called ‘front matter’. This will contain metadata around the post that is being written, such as the date and title. All of this data will be picked up by Remark and can be queried for within GraphQL.

The crucial piece of front matter in this case is the `path` value. This is where the post will live and will need to be unique. Gatsby will read the path and make a new page there.

Before we can show the posts, we need a page component to display the post. It will need to be able to take the values as props and display the content as a block of HTML.

Create a new component at “src/BlogPost.js”. The information about each post will come through as a `data` prop from GraphQL.

```
import React from 'react'
import { graphql } from 'gatsby'
import Helmet from 'react-helmet'
import Layout from '../components/layout'
export const Blog = ({ data: { markdownRemark } }) => {
  const { frontmatter, html } = markdownRemark
  return (
    <Layout>
      <Helmet title={frontmatter.title} />
      <div dangerouslySetInnerHTML={{ __html: html }} />
    </Layout>
  )
}
```

The “react-helmet” package bundled with Gatsby enables us to update values that would usually live within the `<head>` of a HTML page. Here we are setting the title of the post to be the `<title>` of the page itself. There are plenty of other options it accepts, which you can find out more about at github.com/nfl/react-helmet.

QUERY FOR DATA

At this point Gatsby has no data powering this page. We need to fetch data from the Markdown files to populate this information. To do this, we can use GraphQL – a querying language created by Facebook that pulls in relevant data into React components. In short, GraphQL defines the structure the data will be returned through the use of nested objects. That way, we only query for data we will actually be using.

Gatsby provides a template literal function that can interpret the queries. It will detect any use of it and pass its results as props into the component.

“Because each post will become its own page, it makes sense to add them to the `src/pages` folder”

This means we can add the query within the same file and keep related logic together.

```
export const pageQuery = graphql`  
query($path: String!) {  
  markdownRemark(frontmatter: { path: { eq: $path } }) {  
    html  
    frontmatter {  
      date(formatString: "D MMMM YYYY")  
      title  
    }  
  }  
}
```

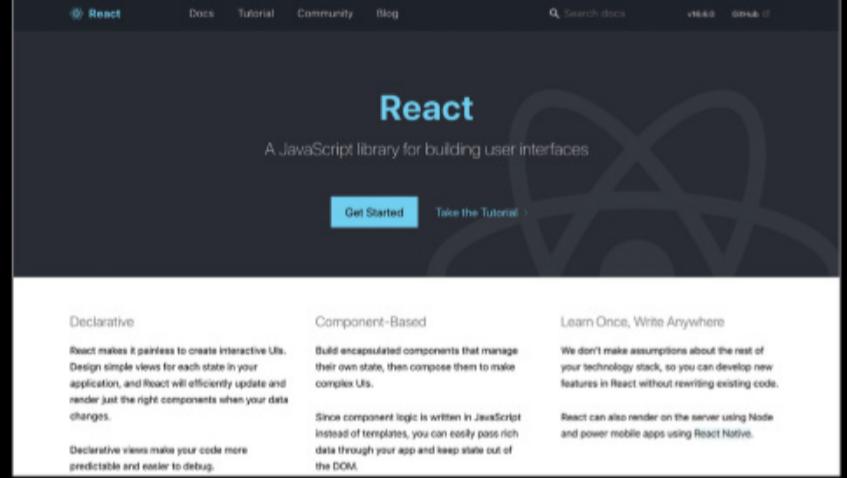
Inside this query, we are asking Gatsby for all the Markdown nodes with a path that matches the page we are on. If it finds one, it will then pass the rendered HTML, date and title of the post on to the component.

Writing queries this way is limited only to page components. Any other components that need query for nodes must use `<StaticQuery>` and load it up front. At this point, the development server may ➤

★ RESOURCES

GATSBY IN ACTION

+ There are plenty of sites already making use of Gatsby's powerful rendering system. Here are some of the best.



React reactjs.org

React itself uses Gatsby for its site. In order for bots to easily crawl the documentation, the React team needed a solution that involved server rendering. The solution was to use “gatsby-plugin-feed” to generate a fresh RSS feed for the blog each time an update is posted. Every update automatically builds a new version, enabling others to preview the changes.

State of JavaScript stateofjs.com

The annual State of JavaScript survey collects information from developers about the tech they use. Each year a microsite is generated to display the results. Gatsby enables the core data to be displayed while the JavaScript-powered charts load in the background. Each page is its own component, which Gatsby uses to split the code up into smaller bundles.



Vidsy creative.vidsy.co

Vidsy's creator-focused site makes use of Gatsby's pre-rendering feature to get fast delivery on mobile devices. Through use of plugins, it was able to make use of its existing React component library for a quick turnaround time. By using React Helmet, it can easily provide Open Graph tags for social sharing.

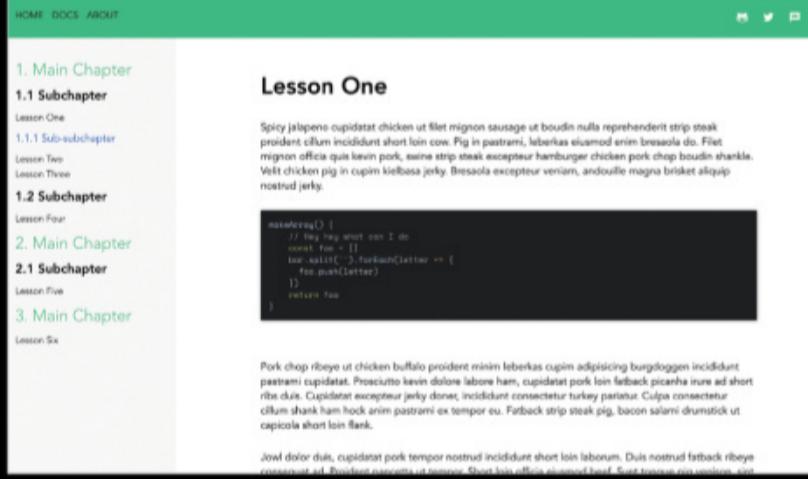
★ RESOURCES

GATSBY STARTERS

+ When starting a site for the first time, Gatsby asks for any starters it should use. A 'starter' is a ready-made package with a set of features ready to go. They can be a great way to try out Gatsby without having to set anything up.

Here are some starters that are great for a few common scenarios.

Gatsby Starter Deck github.com/fabe/gatsby-starter-deck
 It's always a good idea to have presentation slides hosted online. What's even better is if these can be cached offline and easily digested for use in bookmarking sites. This starter will generate slides for content written in Markdown.



Gatsby Docs Starter github.com/ericwindmill/gatsby-starter-docs
 API developers will always need a way to be able to document their code. This starter provides a layout suited to quick referencing and code snippets. The included components use metadata from each page in order to create a table of contents to help visitors find the content they need.

Starter Netlify CMS
github.com/netlify/templates/gatsby-starter-netlify-cms
 While static site generators are useful for developers creating websites, they are a barrier to less technical users who need a CMS to update the site. The static site hosting service Netlify has a solution to generate fresh Gatsby builds using its CMS. This starter sets up all the necessary hooks to tie into its system.

Find more about starters and get a list of those available at gatsbyjs.org/starters

► warn about this for the BlogPost component, but this is because it is not aware it will become a page component yet. Let's change that.

GENERATE PAGES

By default, Gatsby only makes pages for components within `/src/pages`, meaning that we need to create pages some other way.

Gatsby exposes a few methods from its build process to help access the data nodes. These can be accessed through "gatsby-node.js" in the root of the project. In this case, we will use GraphQL to fetch all the blog posts and let the `createPages` callback generate a page for each one. As this is an

“The “Link” component supplied by Gatsby enables it to know which components it needs to render”

asynchronous action, we need to return a Promise so Gatsby can carry on with the build process.

```
const path = require('path')
exports.createPages = ({ actions, graphql }) => {
  return graphql(``)
```

The first part of the callback is a query that fetches the path for each post, as each individual page will then get its own data. The GraphQL call returns a Promise that will contain all the posts. We can use the data from that to generate some pages.

```
.then(result => {
  if (result.errors) {
    return Promise.reject(result.errors)
  }
```

```
const blogPostTemplate = path.resolve('src/components/BlogPost.js')
result.data.allMarkdownRemark.edges.forEach(({ node }) => {
  actions.createPage({
    path: node.frontmatter.path,
    component: blogPostTemplate,
  })
})
```

If the query encounters an error, halt the build process to figure out why. If everything is fine, fetch the component made and call the `createPage` method to generate a page at the provided path.

With the pages generating, all that's needed now is a way to find them. We can use a query on the existing index page component to do that.

```
export const pageQuery = graphql`query { allMarkdownRemark(sort: { fields: [frontmatter___date], order: DESC }) { edges { node { frontmatter { path title } } } } }
```

In this query, we are only interested in the titles and path to the post. We also pass some parameters to Remark to get the most recent posts in reverse order. This query in particular is checking the date from the front matter on each post. The syntax for each query will depend on the plugin used to generate it.

Lastly, the component needs updating to make use of the data. The “Link” component supplied by Gatsby enables it to know which components it needs to render that link and will make sure it fetches the right bundles accordingly.

```
const IndexPage = ({ data }) => {
  return (
    <Layout>
      {data.allMarkdownRemark.edges.map(({ node: { frontmatter: { path, title } } }) => (
        <Link key={path} to={path}>
          {title}
        </Link>
      ))}
    </Layout>
  )
}
```

The screenshot shows the GraphiQL interface. The query is:

```
query($path: String!) {
  markdownRemark(frontmatter: { path: { eq: $path } }) {
    html
    frontmatter {
      date(formatString: "D MMMM YYYY")
      title
    }
  }
}
```

The variables are:

```
{
  "path": "/post/my-first-post"
}
```

The results show a single node with the following data:

```
{
  "data": {
    "markdownRemark": {
      "html": "<p>This is my first post!</p>",
      "frontmatter": {
        "date": "1 December 2018",
        "title": "My First Post"
      }
    }
  }
}
```

The screenshot shows an error message and a stack trace:

```
error getNodesByType is not a function
TypeError: getNodesByType is not a function
- extend-node-type.js:177
[graphql-error]/[gatsby-transformer-remark]/extend-node-type.js:177:29
- Generator.next
- debugability.js:313 Promise._execute
[graphql-error]/[bluebird]/js/release/debugability.js:313:9
- promise.js:483 Promise._resolveFromExecutor
[graphql-error]/[bluebird]/js/release/promise.js:483:18
- promise.js:79 new Promise
[graphql-error]/[bluebird]/js/release/promise.js:79:10
- extend-node-type.js:272
[graphql-error]/[gatsby-transformer-remark]/extend-node-type.js:272:28
- debugability.js:313 Promise._execute
[graphql-error]/[bluebird]/js/release/debugability.js:313:9
```

Gatsby Blog 🎉

My First Post

1 December 2018

This is my first post!

```
)}
</Layout>
)
}
```

With that, our blog is done. All that remains is to smarten it up and have Gatsby build a production-ready website. By running `npm run build` it can strip out any enhancements used for development and generate bundles ready to deploy. Once finished, the “public” folder can then be uploaded anywhere that can serve static sites. ■

Top Gatsby comes with GraphQL, which can be used to help test out queries. Run the development server and head to `localhost:8000/__graphql`

Middle If you see a “`getNodesByType is not a function`” error, an outdated version of Gatsby has been downloaded. Running `npm update` fixes this

Above With the content in place, the blog can be styled using any CSS technique, including CSS-in-JS solutions such as `styled-components`



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The Visual Workspace

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Flowcharts

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Sticky Notes
COMING SOON!

Whimsical is enjoyed by folks at

shopify NETFLIX INTERCOM deliveroo Microsoft salesforce

*** WHIMSICAL**

CREATE WIREFRAMES AND FLOWCHARTS

Daniel Schwarz shows us how to create wireframes and flowcharts using Whimsical and where they fit into the design process

> Creating sitemaps, user flow diagrams and wireframes as part of the UX design process serves two main motives. To begin with, it helps designers plan design projects so that they don't become too complicated later down the line.

It's really easy to think of an app or website design as simplistic when we're designing the first few screens but as the number of screens increases, it's not uncommon to wish that we had dedicated more time to planning, as taking steps backwards is a lot harder the further we get into a project.

What's more, breaking down the development of UX into smaller steps offers designers more opportunities to involve users and stakeholders in the core decisions, which is really an opportunity for the designer to collect valuable feedback that can

validate whether or not the design is going in the right direction.

In this tutorial, we'll learn how to develop the core UX of a design using flowcharts and wireframes made with Whimsical (<https://whimsical.co/>), a new(ish) browser-based design tool commended for making diagramming more fun and less clunky.

CREATE A NEW FLOWCHART

Before kicking things off, we'll assume that the functional requirements of the design have already been revealed via user research, so with this knowledge in mind, creating a sitemap will help us decide what needs to appear on each screen.

For apps and websites that already exist – and that we may be trying to improve in terms of usability or

conversion rate optimisation – we can use analytics to monitor the behaviour of users we already have and create user flow maps that depict this behaviour. Either way, the end result in this step is a map that depicts how users should use (or how they already use) the design.

In a real-world example, I'm going to create a map of my online store in an effort to determine how customers are buying the ebooks to see if there are opportunities for improvements or features that haven't yet been considered.

Start by creating a Whimsical account (it's free, without trial) and choose “+ New Flowchart”.

“Connectors depict the relation between objects – use these to illustrate how the user flows between the screens”

GET STARTED WITH DIAGRAMMING

After that, use the vertical toolbar in the top-left corner of the canvas to add objects to the canvas. Here are the different objects (shapes, connectors and text layers are the main ones to focus on for now), with their respective keyboard shortcuts:

- **Shape:** R
- **Connector:** C
- **Text:** T
- **Image:** I
- **Icon:** X
- **Link:** K

Mentally, different shapes can have different meanings and a shape doesn't necessarily have to equal a screen; for example, we can use circles to represent a step in the customer journey where the customer asks us a question via social media. Essentially, how you decide to illustrate the map is up to you.

Drawing an object reveals a contextual, horizontal toolbar that enables you to style, duplicate or add a comment to the object.

Connectors are used to depict the relation between different objects – use these to illustrate how the user flows between the various screens and touchpoints. If depicting information architecture, organise objects to show the hierarchy of the various screens (for example, “home > /blog > /article”) would be a logical way to organise a blog). If creating ➤

KEY INFORMATION

WIREFRAMES VS FLOWCHARTS

+ Wireframes and flowcharts are basically diagrams created early on in the design process as a way of developing the core UX of a design.

A wireframe is the skeletal structure of a screen (or series of screens) that show the content and user interface in its most basic form. Fundamentally, wireframes consist of text, lines and shapes. They are designed to help develop the most important aspects of usability, accessibility and the overall user experience before starting to think about visual aesthetics.

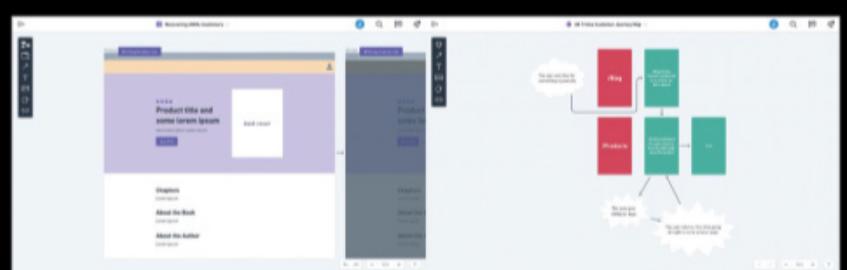
When designers refer to mid-fidelity design (or sometimes low-fidelity design), they're often referring to creating wireframes. High-fidelity would be considered fairly detailed with the addition of colour, fonts and other visual aesthetics. We'd typically move up to screen design tools for that.

But how do we decide which content to display on which screens? How many screens do we even need? We need to plan our design first and this is exactly where flowchart tools become a tremendously useful asset in a designer's toolbox.

With the functional requirements of a design already in mind (collected from user research earlier on in the process), organising the content and functions in a way that corresponds with the user's mental expectations (i.e. according to how users expect them to be organised) is much easier when we're mapping out the design with logical, easy-to-understand diagrams that illustrate the user flows and architecture of information.

We do this with what's called a sitemap, depicted as a flowchart that describes the breakdown of functions and information across various screens, as well as how users might flow from one screen to the next as they digest this information and complete their objective in logical steps.

By using flowcharts to map out our design first, we're ensuring that when we begin wireframing the screens, we know what we're wireframing and the specific role that each screen plays in helping the user complete their objective.



Comparing wireframes (left) vs flowcharts (right). Flowcharts help to map out the design before wireframing them

TIPS

SITEMAPPING AND WIREFRAMING POINTERS

+ Fundamentally, the objective of wireframing is to experiment with designs in low- to mid-fidelity and validate them before moving up to high-fidelity – and before that, flowcharts are used to plan the design before mocking up the wireframes.

General considerations include:

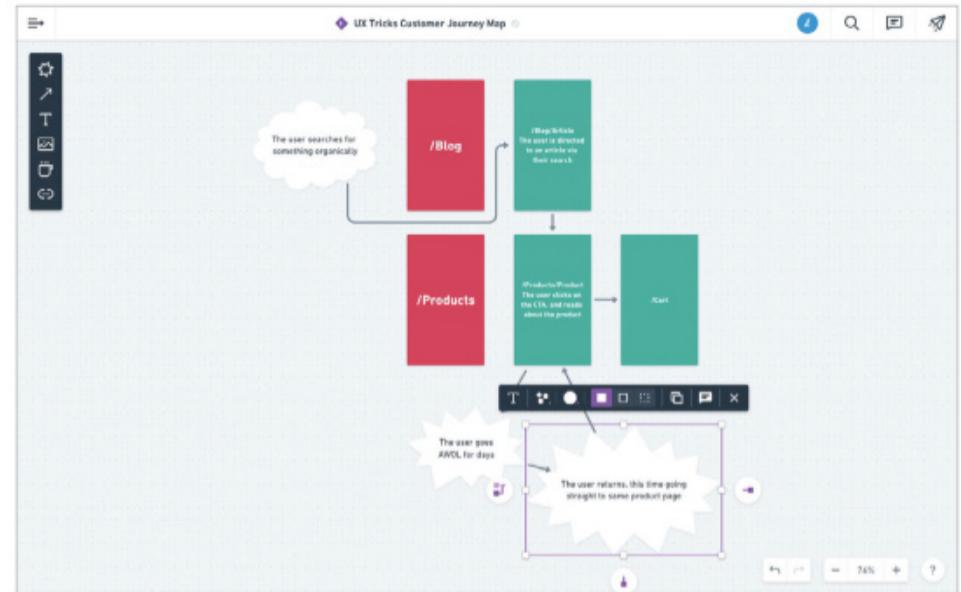
- Usability – how easy is it to use?
- Accessibility – how physically accessible is it?
- Inclusivity – can everybody use it, regardless of disability?
- Scannability – can the user summarise information quickly?
- Clickability – can the user interact with tap targets easily?

But more specifically (to name a few):

- Can the user find what they're looking for easily?
- Is human error communicated well and easily resolved?
- Are forms, navigations and micro-interactions simplified?
- Are tap targets at least 44px and do they look clickable?
- Are tap targets within comfortable reach of thumbs/fingers?
- Is the design responsive? Does it work well on all devices?
- Is the UX copy clear, actionable and translatable?
- Does the design contain tricky UI elements like dropdowns?

Sitemapping and wireframing with the above tips in consideration means that our design is more likely to be driven with the user in mind, as opposed to being driven by our personal tastes.

It's recommended to test any sitemaps, user flow maps and wireframes against the different types of usability tests: <https://netm.ag/2AR5dE4>



Above A cross between a user flow map and a customer journey map, made with Whimsical's flowchart tools

- ▶ customer journey maps to map existing apps and websites, don't use connectors to illustrate user flows that aren't being taken.

OBSERVING INSIGHTS

If creating a customer journey map, there'll be insights to reap where certain touchpoints might indicate a UX flaw.

In our online store example, we realised that while users were reaching the ebook screens as desired, they weren't actually buying the ebook until three to 16 days later, leading us to believe that we may be losing customers who forget to come back and buy them. Our map has helped us identify an area of interest. We can then make the decision to investigate this theory during user tests.

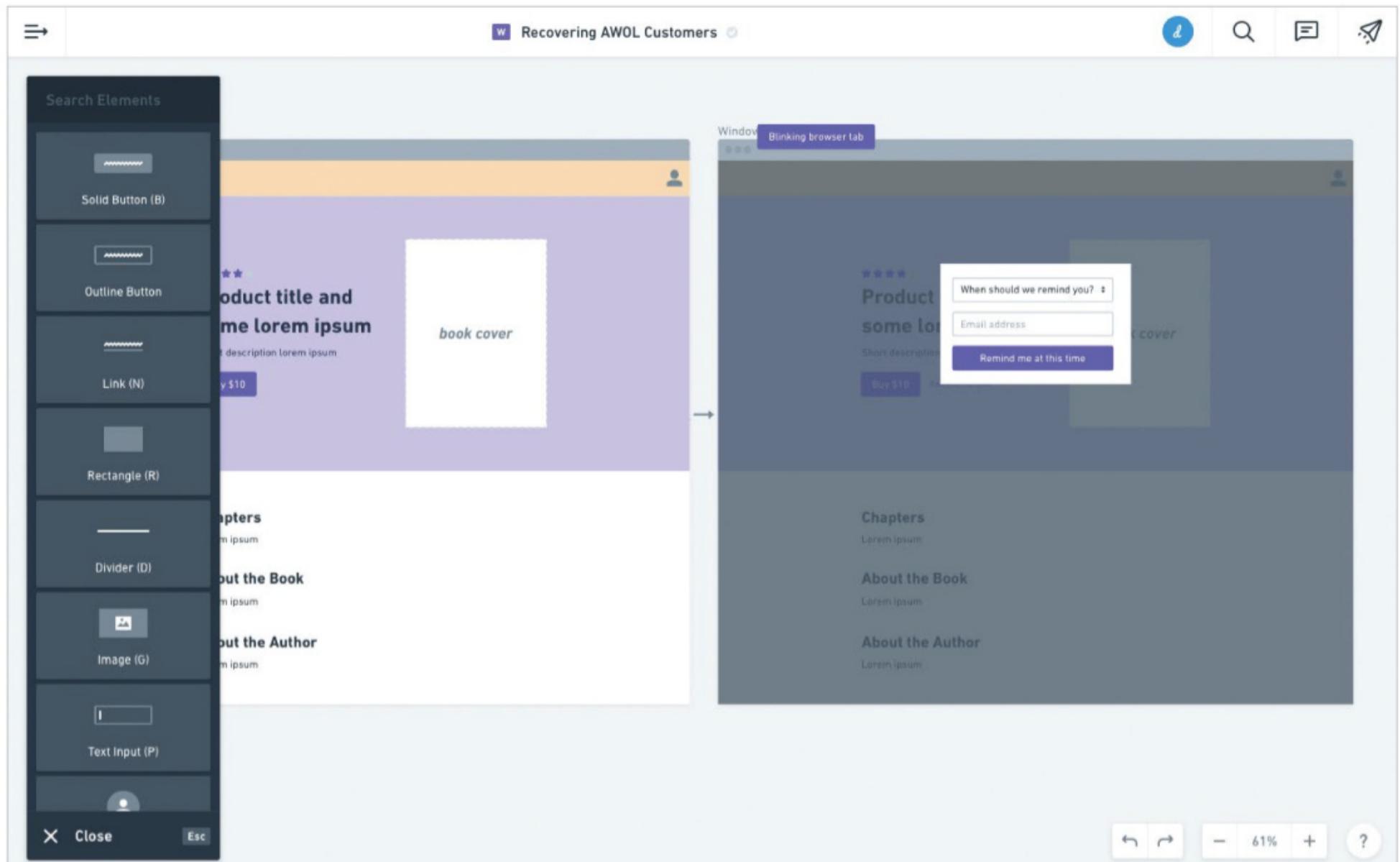
Fast-forward a little more, we found out (via the user tests) that customers are often too busy to properly assess the value of our ebooks and end up either bookmarking the web page or leaving it in their browser tabs for later. Another user flow told us that customers who immediately check out tend to do so on a Saturday, when they're less busy.

So, in this next step we'll use wireframes to design features that help users remember to go back and buy the book when they're less busy. Note: abandoned cart recovery is useless here because customers aren't actually adding ebooks to their cart.

CREATE WIREFRAMES

Wireframes are used during the low-fidelity and mid-fidelity stages of design – they're for experimenting with ideas when we haven't quite figured out the user experience yet.

In the case of the store, we eventually came up with two ideas. One of the ideas was to add a flashing favicon to catch the user's attention and remind



Above A mid-fidelity mockup that was made using Whimsical's wireframe tools

them that the browser tab still exists – this feature is for those who keep the web page in their tabs with the intention of going back to it later. The other idea was to design an on-site ‘remind me later’ feature.

Navigate back to the home screen (in Whimsical), and this time select “+ Create Wireframe”. You’ll notice that creating wireframes isn’t too different to creating flowcharts. We still have many of the same objects available and placing/arranging/styling them on the canvas is much like any other design tool. What’s different is that we have two new objects:

- **Element: E**
- **Frame: F**

Elements are pre-made wireframe components that save us the hassle of having to mock up common design elements such as tables, buttons, menus and so on. Frames are like artboards, used to represent a specific device screen or browser window.

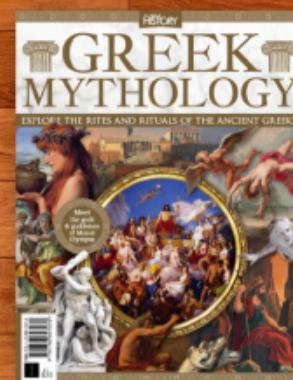
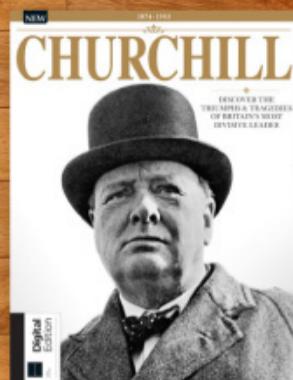
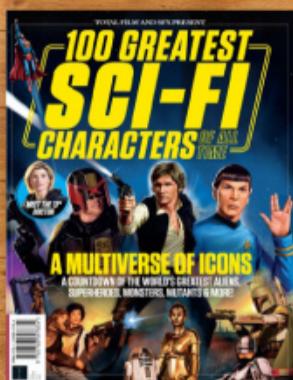
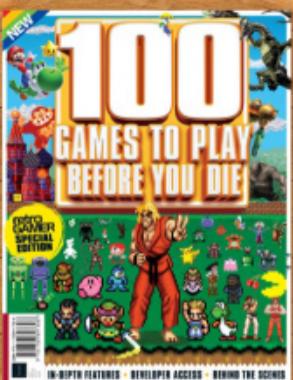
I couldn’t find anything to represent a browser tab, but a generic-looking button did the trick. Simply select elements, then click to add them to the canvas as with other objects. Next, mock up the required screens as wireframes. We decided to opt for a

‘Remind me later’ text link that appears alongside the call-to-action buttons, which then reveals a modal where the user can set up an email reminder. Remember to use connectors to convey how the user flows between these screens.

COLLECT FEEDBACK

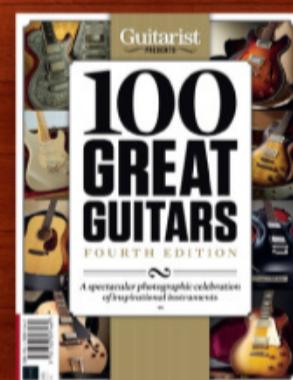
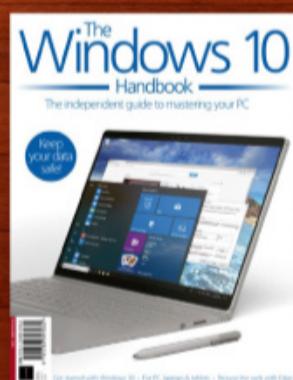
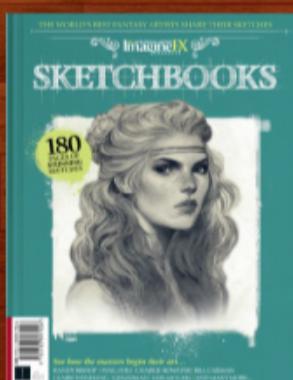
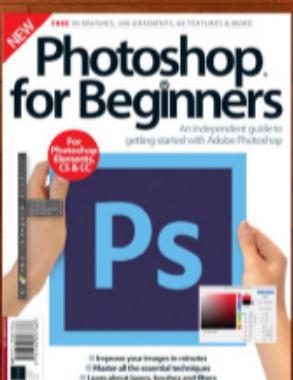
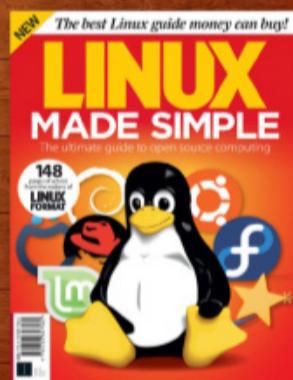
Next, we need to collect feedback. Don’t worry about how the wireframe looks, as long as the concept is easy to understand for those offering their feedback (that being said, Whimsical makes the wireframes look quite impressive). Click the share icon in the top-right corner, then choose Get Sharable Link, accessible from the drop-down list. Give this link to anybody that wishes to weigh in with their thoughts and feedback.

To add a comment, first click on an object on the canvas, then click the comment icon from the contextual toolbar. Comments can be replied to (creating a thread) and then resolved when amendments have been made or matters have been cleared up. We can do this several times, iterating over and over and collecting feedback each time until we’re sure that the user flow, information architecture and overall UX is top-notch. ■



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*ACCESSIBILITY

ACCESSIBILITY'S HIDDEN DIMENSION

Vladimir Khokhlov shares Little Voice's approach for delivering accessible type across multiple devices

➤ Typography has to be accessible and consistent, regardless of what platform or device it is viewed on. Office printers, smart-home displays and smart watches are viewed within different contexts and from different distances. Furthermore, the physical size of the rendered font depends on the font metrics. This means Roboto will be different in size to Avenir, even when both are set to the same point size. To complicate matters, the same font will differ in size depending on the rendering engine.

Little Voice believes accessibility needs to go beyond guidelines and consider how the user ends up seeing something. This said, we struggled to determine what font size was best for readability. So, we drew on scientific research published in 2011 by G Legge and C Bigelow (<https://netm.ag/2zk29yc>).

The Legge–Bigelow study, *Does Print Size Matter for Reading? A Review of Findings from Vision Science and Typography* found restrictions to the range of font sizes that offer optimal readability. It argued that to be accurate in measuring font size, you have to consider the angular size in degrees (projected image

size at the eye retina) and how it is contingent on the physical size of type and viewing distance. An approximate conversion is as follows: angular size in degrees = $57.3 \times \text{physical size} / \text{viewing distance}$.

We combined the research with the context and distance users interact with devices. A user is three metres away from a TV, 65cm away from a monitor, 45cm away from a laptop, 30cm away from a mobile phone and 18cm away from a watch. This led us to a distinct approach to defining a font size in the UI.

We identify a range in the viewing distance by the user and calculate the physical dimensions of the font based on viewing distance and the angular size for optimal reading speed. The physical size can be calculated as: physical size = viewing distance × angular size / 57.3. Once we have the desired physical size range, we measure the rendered font used on the particular device to find the corresponding point sizes to be used in the UI software code.

The science and the method enables Little Voice to choose the right font size and avoid the pitfall of designing for accessibility in two dimensions. ■

PROFILE
*

Khokhlov is creative director and founder of UX/UI design firm, Little Voice. Find out more about the company's work at: littlevoice.io



ABOUT THE AUTHOR

RICHARD MATTKAw: richardmattka.comt: [@synergyseeker](https://twitter.com/synergyseeker)job: Interactive director,
designer, developerareas of expertise:
Shaders, VFX, WebGL

* THREE.JS

CREATE FOG VFX POST-PROCESSING SHADERS

Richard Mattka continues his series on shader programming, showing you how to create fog and smoke post-processing effects for your 3D projects using Three.js and GLSL

 In our previous articles, you have learned all about shaders and how to get them into your 3D projects. You learned how to make cool glitch and blur FX shaders as well. This tutorial continues the series by showing you how to add post-processing effects via the EffectComposer in Three.js to create your own creepy fog or smoke effects.

The effect you will be creating can be applied to 3D scenes as a post-processing effect. It's written as a graphics shader and can be used in other frameworks such as Unity, openFrameworks or Processing.

PART 1: SET UP A 3D SCENE

GET A 3D MODEL

Go to Sketchfab (<https://sketchfab.com/models/>) to grab a 3D model. We used Crypt Location by bocharova for

this tutorial. Use GLTF as the format. It's super fast and very easy to work with, as you'll see.

INSTALL THREE.JS

If you don't already have it, install Three.js. Also download the Examples folder. You can find the library and supporting classes here: <https://github.com/mrdoob/Three.js/>. You'll see exactly which files you need to include in the next step.

Note: The code in this tutorial has been tested on the latest release of Three.js, v97.

CREATE A BASIC HTML FILE

```
<!DOCTYPE html>
<html lang="en">
```

```
<head>
<style>
  html, body { margin: 0; padding: 0; overflow: hidden; }
</style>
</head>
<body>
<script>
  // 3D Code Here
</script>
</body>
</html>
```

ADD REQUIRED FILES

In the head of your HTML file, add the following files. You can find them all in the Examples folder from within the Three.js repository. You also need to include a link to the FogShader.js, which you will create shortly.

```
<script src="libs/three.min.js"></script>
<script src="libs/OrbitControls.js"></script>
<script src="libs/GLTFLoader.js"></script>
<script src="libs/EffectComposer.js"></script>
<script src="libs/CopyShader.js"></script>
<script src="libs/RenderPass.js"></script>
<script src="libs/ShaderPass.js"></script>
<script src="libs/FogShader.js"></script>
<script src="libs/SMAAPass.js"></script>
<script src="libs/SMAAShader.js"></script>
```

GLOBAL VARS AND CLOCK

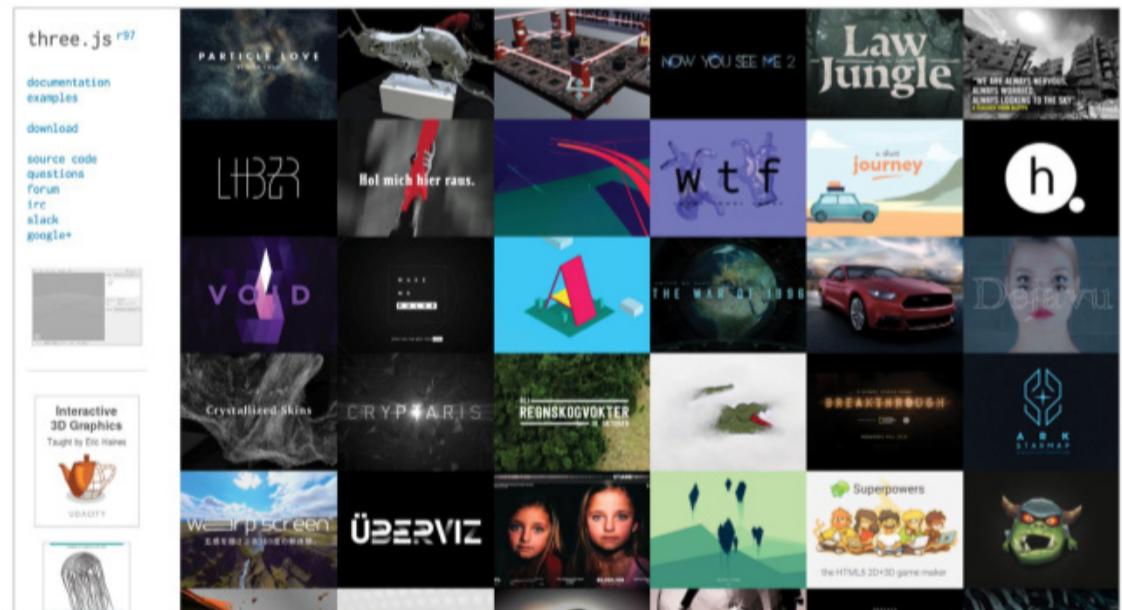
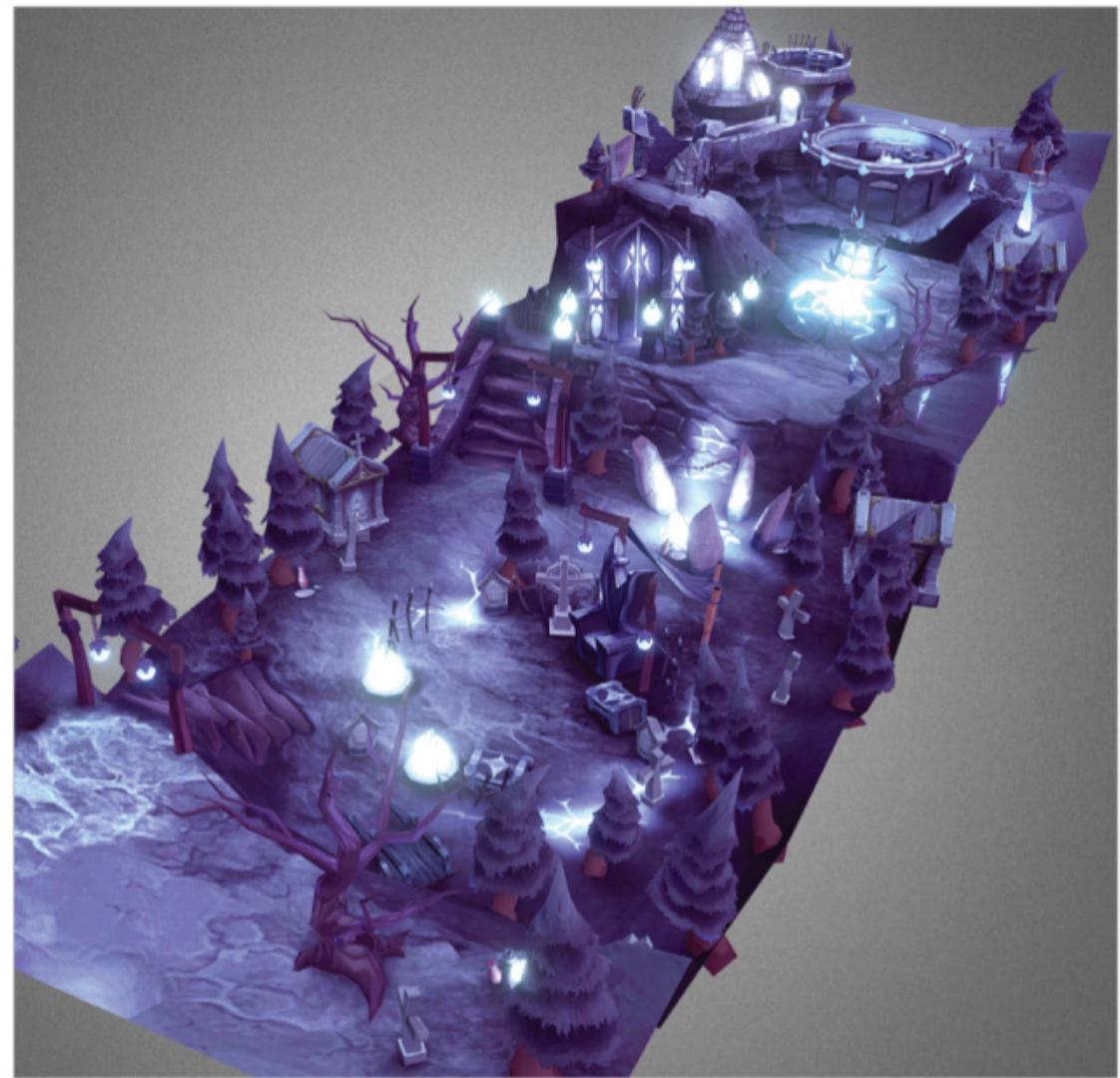
Inside your script tags, you can add begin to add some JavaScript code. Start off by adding the following global variables that you will need and then create a clock class using Three.js's built-in Clock class.

```
// global variables
var camera, scene, renderer, object, controls;
var clock = new THREE.Clock();
```

SCENE, CAMERA AND RENDERER

Next, you need to add a scene, camera and renderer as usual. Add this code next.

```
var scene = new THREE.Scene();
camera = new THREE.PerspectiveCamera( 75, window.innerWidth / window.innerHeight, 1, 2000 );
camera.position.z = 20;
scene.add( camera );
renderer = new THREE.WebGLRenderer();
renderer.setPixelRatio( window.devicePixelRatio );
renderer.setSize( window.innerWidth, window.innerHeight );
document.body.appendChild( renderer.domElement );
```



USE ORBIT CONTROLS

To make it easy to look around, you need to add some basic orbit controls.

```
// add orbit controls
controls = new THREE.OrbitControls( camera );
controls.target.set( 0, 0, 0 );
controls.update();
```

BRING IN SOME LIGHTS

Next you need a little light for your scene. We added an ambient light to control basic overall light and some directional light to emulate moonlight.

Top Our 3D model of choice was a creepy game model, Crypt Location, created by bocharova

Above Three.js is the world's most popular WebGL library for 3D



Above A GLTF model loaded into Three.js, lit and ready for effects!

```
► // add ambient light
var light = new THREE.AmbientLight( 0xffffffff, .4 );
scene.add( light );
// add light
var light = new THREE.DirectionalLight( 0xfffffaa, 1.0 );
light.position.set(3,10,5)
scene.add( light );
```

LOAD YOUR 3D MODEL

Next, you can load that nice model you grabbed from Sketchfab. Use the built-in loading manager and load the GLTF model.

```
// create load manager
var manager = new THREE.LoadingManager();
// model
var loader = new THREE.GLTFLoader();
loader.load( 'assets/crypt_location/scene.gltf', function (
gltf ) {
gltf.scene.position.y = -9;
scene.add( gltf.scene );
});
```

NOISE MAP FOR FOG SHADER

You'll also need a noise map (image) for the fog shader you'll create. So load that now and we will pass it into the shader.

```
var loader = new THREE.TextureLoader( manager );
var noise = loader.load("assets/noise.png");
```

INCORPORATE THE EFFECTCOMPOSER

Now add the `EffectComposer` class to enable adding render passes to your final render.

```
// postprocessing
composer = new THREE.EffectComposer( renderer );
composer.addPass( new THREE.RenderPass( scene,
camera ));
```

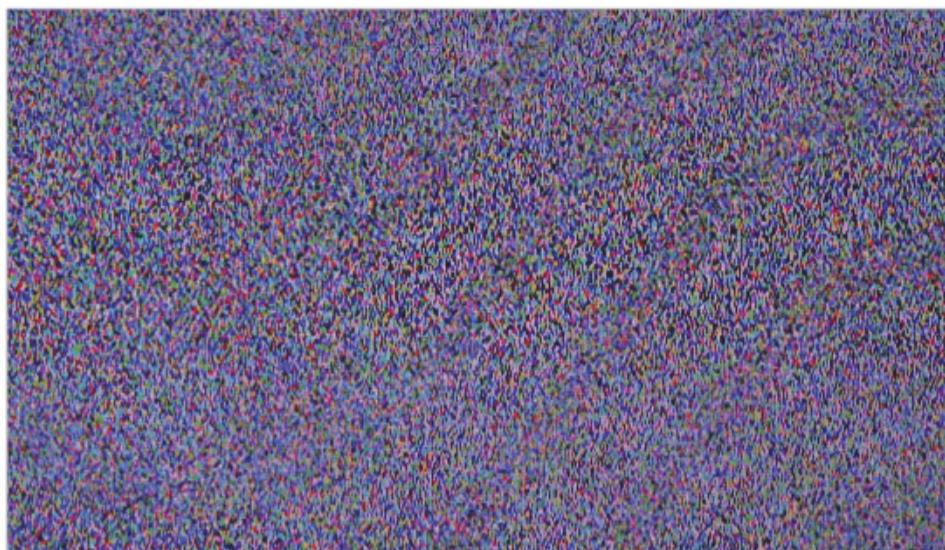
ADD YOUR FOG SHADER

Now add your fog shader as a pass to the `EffectComposer`. You can add as many passes as you need, just be sure to out the last one to the screen. We also pass in our 'noise' image here.

```
// add fog shader pass
fogPass = new THREE.ShaderPass( THREE.FogShader );
fogPass.uniforms.iChannel1.value= noise;
fogPass.uniforms.resolution.value = new THREE.Vector2(
window.innerWidth, window.innerHeight );
fogPass.uniforms.resolution.value.multiplyScalar( window.
devicePixelRatio );
composer.addPass( fogPass );
```

UTILISE THE SMAA PASS FOR SUBPIXEL SMOOTHING

To make everything look nice and smooth, use the SMAA pass last to correct the fact we can't use the renderer's built in antialias property when using the `EffectComposer` class.



Above A noise image for creating pseudo randomness in the effect

“Animate around the noise texture in order to create a beautifully smooth-flowing random fog effect”

```
// for subpixel antialiasing pass
pass = new THREE.SMAAPass( window.innerWidth *
  renderer.getPixelRatio(), window.innerHeight * renderer.
  getPixelRatio() );
pass.renderToScreen = true;
composer.addPass( pass );
```

CREATE AN ANIMATION LOOP

Finally, you can add your animation (render) loop. This updates the shader's iTIME uniform to enable the shader to use time to animate as well. Add this following code to your HTML file.

```
function animate() {
  fogPass.uniforms.iTime.value += clock.getDelta()*.1;
  composer.render();
  requestAnimationFrame( animate );
}
animate();
```

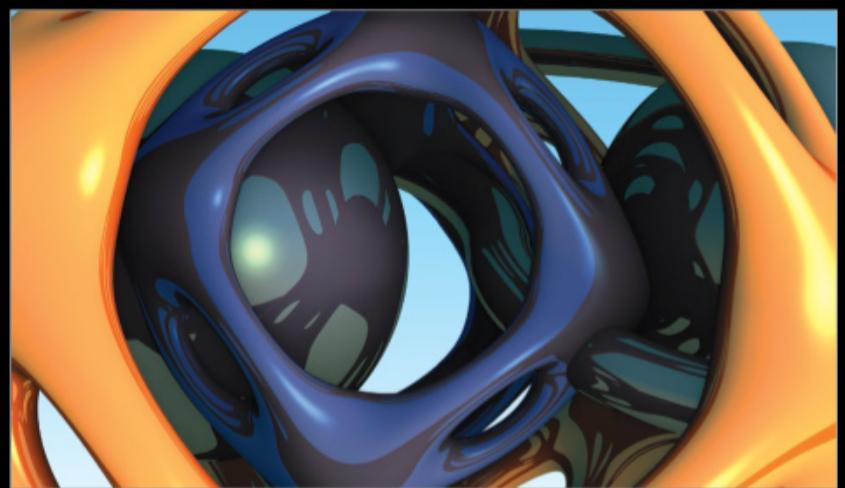
PART 2: CREATE THE FOG SHADER THE FOG SHADER FILE

If you haven't done so already, create a new file called FogShader.js and add it to your 'libs' folder. The code we'll be using here is inspired and modified from a variety of amazing effects that can be found on Shadertoy (<http://shadertoy.com>). Open up your newly created file and you can begin coding in it.



★ INFORMATION

THREE.JS PRIMER



+ You are using Three.js as the WebGL renderer in this tutorial. If you are not familiar with Three.js, here is a quick primer on the elements you will be using.

The scene

The scene is a container object that encapsulates the other objects and elements that we wish to show.

Camera

Three.js has a few different camera classes, including a perspective camera, which we will use for 3D, and an orthographic camera, used for rendering 2D scenes or UI elements.

Renderer

The renderer handles the display of the 3D scene using WebGL. It targets an HTML <canvas> element to draw into. Typically you will call the renderer to render each frame.

Materials

Three.js comes with several materials, such as Normal, Basic, Lambert, Phong and Shader. Materials are used to texture the faces of an object's geometry. Attributes include elements such as textures maps, colour and opacity.

Geometry

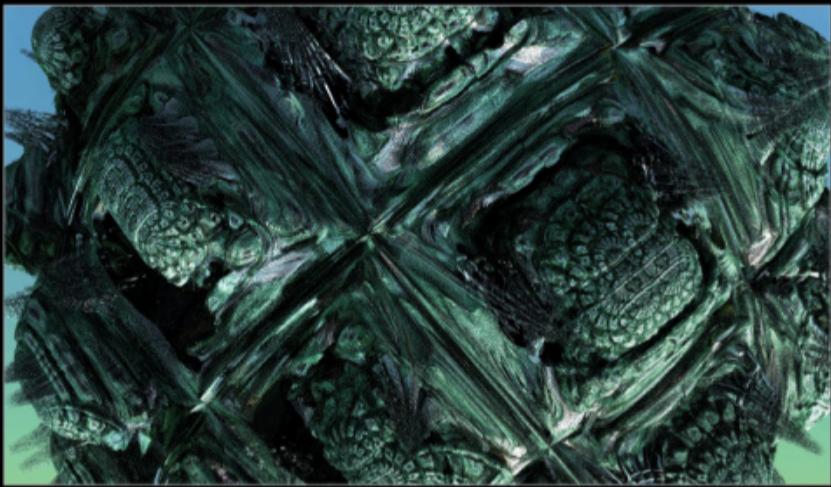
Geometry defines the vertices of an object to draw it. Faces created by these vertices are also defined, which can be filled by a material. It can be defined manually through code or as predefined primitives such as Planes or Spheres. It can also be loaded from external files exported from 3D modelling software.

Mesh

A mesh is the combination of a geometry and a material. This mesh object is what we would typically think of as a physical object because it now has enough information to be seen.

INFORMATION

GRAPHIC SHADERS PRIMER



+ GLSL (OpenGL Shading Language) shaders compile and run on a wide range of platforms. You can apply what you learn to any environment that uses OpenGL, OpenGL ES or WebGL. This means you can use this knowledge for websites, Three.js, iOS games, interactive installations, Unity, openFrameworks, Processing and many others.

The graphics pipeline

Multiple shaders work together in the graphics pipeline. Some are programmable, some are locked to the hardware. We're most interested in two shaders in the pipeline – vertex shaders and fragment shaders. These are the core of the OpenGL shading language and the WebGL graphics pipeline.

Vertex shaders

Vertex shaders handle the processing of individual vertices, which can be thought of as points on the triangles that form a mesh. Vertex shaders are used to transform the attributes of vertices from their original space to the display space. This includes attributes such as colour, texture, position and direction. These are the focus of this tutorial.

Fragment shaders

This shader, which is typically the last in the pipeline, instructs each fragment or pixel what colour it should be. It does this by setting a value for `fragColor` in the code's main function. It's where we'll create our photo filters, animations, effects and so much more, by manipulating the colours of the pixels.

► THREE.FogShader = {
 // code for shader goes here
};

ADD THE UNIFORMS

Set up the `uniforms` for your shader next.

```
uniforms: {  
  "tDiffuse": { value: null },  
  "resolution": { value: null },  
  "iTime": { value: 0.0 },  
  "iChannel1": { value: null }  
},
```

THE VERTEX SHADER

Now it's time to add your vertex shader. When using this method you'll see that we are making use of a simple JavaScript join to concatenate all the lines wrapped in double quotes.

```
vertexShader: [  
  "varying highp vec2 vUv;",  
  "void main() {",  
  "  vUv = uv;",  
  "  gl_Position = projectionMatrix * modelViewMatrix *  
  "  vec4( position, 1.0 );",  
  "}"  
].join( "\n" ),
```

INCORPORATE FRAGMENT SHADER UNIFORMS AND VARYINGS

The next step in the process is to add your fragment shader, some initial uniforms and then the standard `vUv` varying.

```
fragmentShader: [  
  "uniform sampler2D tDiffuse;",  
  "uniform float iTime;",  
  "uniform vec2 resolution;",  
  "uniform sampler2D iChannel1;",  
  "varying highp vec2 vUv";
```

CREATE DEFINITIONS

The next task is to add a few simple definitions to use later in your code.

```
#define TAU 6.28318530718,  
#define time iTime*.3,  
mat2 m2 = mat2(.80, 0.60, -0.80, 0.80);
```

APPLY MATRIX, NOISE AND GRID FUNCTIONS

We'll be using a simple matrix and a noise function to work with our incoming noise values from our loaded noise map. We'll use `sin` and `cos` to animate

around our noise in our grid function. You need to add this code next:

```
"mat2 makem2(in float theta){",
"float c = cos(theta);",
"float s = sin(theta);",
"return mat2(c,-s,s,c);",
"}",
"float noise(in vec2 x){",
"return texture2D(iChannel1, x*.01).x;";
}",
"float grid(vec2 p){",
"float s = sin(p.x)*cos(p.y);",
"return s;";
}"
```

SET UP THE INITIAL FOG FLOW FUNCTION

It's now time to move on to our most complex function of this tutorial, which will animate the flow of our fog over time. It uses the functions that you just created to animate around the noise texture in order to create a beautifully smooth-flowing random fog effect.

```
"float flow(in vec2 p){",
"float z=4.;",
"float rz = 0.;",
"vec2 bp = p;",
// adjust number passes for detail level
"for (float i= 1.;i < 7.;i++){",
// more code here
"}",
"return rz;",
}"
```

ADD MORE PASSES TO THE FOG FLOW FUNCTION

Now is time to address the placeholder “more code here” from the last step, by adding in our code to execute with each pass. More passes will result in more detailed fog.

```
"bp += time*1.0; // adjust speed of fog
"vec2 gr = vec2(grid(p*3.-time*2.),grid(p*3.+4.-
time*2.))*0.4;";
"gr = normalize(gr)*0.4;";
"gr *= makem2((p.x+p.y)*.3+time*10.);";
"p += gr*0.5;";
"rz+= (sin(noise(p)*1.)*.5+.5) /z;";
"p = mix(bp,p,.5);",
"z *= 1.7;";
"p *= 2.5;";
"p*=m2;";
"bp*=2.5;";
"bp*=m2;";
```



Top Your fog shader working with adjustable colours and intensity

ROTATION FUNCTION

Next we have a rotation function, which will add another layer of animation to the fog by rotating it over time.

```
"float rotate(vec2 p,float scl){",
"float r = length(p);",
"r = log(r);",
"float a = atan(p.y, p.x);",
"return abs(mod(scl*(r-2./scl*a),TAU)-1.)*2.;",
"}";
```

ADD MAIN FUNCTION

Now add your `main` function to tie it all together and output your final `FragColor`.

```
"void main( void ){
// get original colour
"vec4 orgCol = texture2D(tDiffuse, vUv);",
// get uv normalised
"vec2 p = gl_FragCoord.xy / resolution.xy;",
"p.x-=.5;",
// intensity, adjust to taste
"float intensity = flow(p);",
"p /= exp(mod(1.1,1.1));",
"intensity *= (9.0-rotate(p,1.0)).4;";
// colour of fog
"vec3 col = vec3(.06,.06,.07)/intensity;";
"col=pow(abs(col),vec3(1.1));",
// combine original and fog
"gl_FragColor = orgCol + vec4(col,1.0);",
}"
```

TRY OUT YOUR NEW FOG SHADER

You can now run your new shader. If you'd like, you can adjust the colour and intensity. There are comments in the last step's code to show you where to do this. Have fun adding this into your scenes and exploring new ways to use fog, smoke or mist! ■



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* ATOMIC DESIGN

PUT ATOMIC DESIGN INTO PRACTICE

Ben Read explains how taking an atomic approach can simplify the creation of styled components

> Structuring components in a reusable, discoverable way is a challenge across teams with diverse requirements. It can be difficult for developers unfamiliar with your library. They need to learn quickly how to adopt, use and discover the features it has. How do you help them do that without overburdening your components with too much documentation? One possible approach is using React, atomic design and styled components.

Atomic design is an approach to design that Brad Frost came up with a few years ago. He's published an excellent book about it that you can buy or read online at <http://atomicdesign.bradfrost.com/>

THE ATOMIC DESIGN APPROACH

Brad Frost's book outlined a way to structure the design of a project based on building things up from the smallest component part.

For example, this could be an input field. Input fields should never be used on their own. Instead, you make sure you have a label associated with them for the sake of accessibility. In our analogy, the input field would be the atom and the atom and label together would be a molecule.

You could keep building upwards in this way so that you eventually had a fully designed page using not only atoms and molecules but also organisms (for example, a complete form) and templates that contain multiple organisms, for example the form with a page heading and introduction.

ATOMIC DEVELOPMENT

On a recent project I decided to investigate if this approach could be used in development. In my React projects, I often use styled components to write CSS styles. I therefore structured my project like this:

- Components/
- Atoms
- Molecules/
- Organisms/
- Templates/

ATOMS

I designated atoms as constants that could receive props. For example, a paragraph that had a prop for the text colour.

```
export const Paragraph = styled.p`  
  ${props => props.textColor ? `color: ${props.textColor};` : null }  
  font-size: ${variable.REGULAR};  
  margin-bottom: ${variable.SINGLE};  
  & small { color: ${variable.BRAND_HIGHLIGHT}; }  
}
```

MOLECULES

Molecules consist of stateless functional components, often comprising of several atomic elements, and can contain some custom atoms that relate to that specific molecule.

In the example that follows, we have a `PopOut` section that uses the atom `Container`. It can accept multiple props and additionally is able to wrap other components.

```
const PopOut = props =>  
  <atom.Container>  
    <Inner {...props} style={ props.background ?  
      {backgroundImage: `url(${props.background})`}: null } >  
      {props.children}  
    </Inner>  
  </atom.Container>
```

```
)
```

```
export default PopOut
```

ORGANISMS

Organisms introduce larger elements, bringing in several molecules and atoms, often with components that render on the front-end as well as server and data that might come in from an external source.

“Molecules consist of stateless functional components, often comprising of several atomic elements”

TEMPLATES

Templates are layouts for pages that are programmatically created from other data sources, such as the following one I made for a side project about my favourite musician:

```
const AlbumTemplate = ({ data }) => (
  <Layout>
    <Helmet>
      <title>{ data.title } | { data.site.siteMetadata.title }</title>
      <meta name="description" content={ data.about } />
    </Helmet>
    <atom.Container>
      <ColumnsTwo>
        col1={{ imageUrl: data.coverimg }}
        col2={{ heading: data.title,
          content:
            <>
              <atom.Paragraph>{data.about}</atom.Paragraph>
              <atom.SpotifyViewer dangerouslySetInnerHTML={{ __html: data.spotify }}/>
            </>
          } />
        </atom.Container>
        <atom.Band
          backgroundColor={variable.BRAND_SECONDARY} >
          <atom.HeadingSecondary textColor="white">
            Featured
          </atom.HeadingSecondary>
          <atom.Paragraph textColor="white">Recently voted by fans on the Mike Oldfield Facebook page as their favourite album of all time, Ommadawn is undoubtably
```

★ INSIGHT

MODULAR DEVELOPMENT

At Zopa.com we build apps that start small but often scale up to millions of users. Therefore we must carefully consider organising our code so it's easy to use and maintain.

Senior developer Alexis Mangin shares his experience: "Categorising files based on what they represent is an easy way of partitioning your project and has become a popular practice with developers who use patterns such as MVC. In our experience, that's okay when you work on small applications but it can have a tremendous effect on the team's velocity as the application grows. One way to avoid poor-planning headaches is to structure your codebase around the concept of modules, each with its own responsibility. Creating a module means you will group a set of related components, methods and assets together."

See this post for the full article: <https://netm.ag/2DCAmxB>

```

graph TD
    Security((Security)) --> Payments((Payments))
    Security --> Login((Login))
    Security --> Tools((Tools))
  
```

Mike Oldfield at his best.</atom.Paragraph>

</atom.BandSplit>

</Layout>

)

```
export default AlbumTemplate
```

USING ATOMIC DEVELOPMENT AT ZOPA

Coincidentally, Gerard Brull, a colleague of mine at Zopa, had also come across this idea. We've discussed it as a team and decided to try to implement it in a future iteration of our shared component library. We hope it will help our team collaboration and also assist the onboarding experience for newer developers that join us.

Have you tried this approach? I'd really like to hear more about that, so please get in touch via the form at <https://deliciousreverie.co.uk/contact/>

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"We have several servers from Netcetera and the network connectivity is top-notch – great uptime and speed is never an issue. We would highly recommend Netcetera"

Suzy Bean

* EXPERT TIP

CLOUD TECH TIP...

If you're going to fully utilise cloud technology, before deciding on a service provider ask whether monitoring comes as standard and whether management is included in the price. A fully managed cloud can make your business fly; an underutilised cloud will be a waste of money.

CONTACT

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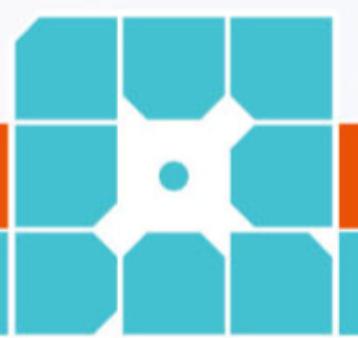


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