

DEAR  
DEVELOPER, THE  
WEB ISN'T  
ABOUT YOU

- Charlie Owen
- [sonniesedge.co.uk](http://sonniesedge.co.uk)
- @sonniesedge

# WHO THE HELL ARE YOU?

- Charlie Owen
- [sonniesedge.co.uk](http://sonniesedge.co.uk)
- [@sonniesedge](https://twitter.com/sonniesedge)

- Might be asking who I am
- Right to ask.
- But I've been orbiting around this industry for over 20 years.
- British
- Love Europe



- That's why I live in Berlin, Germany



- Most sophisticated place on earth



- A place of privacy and restraint



- Incredibly stereotypically German city.

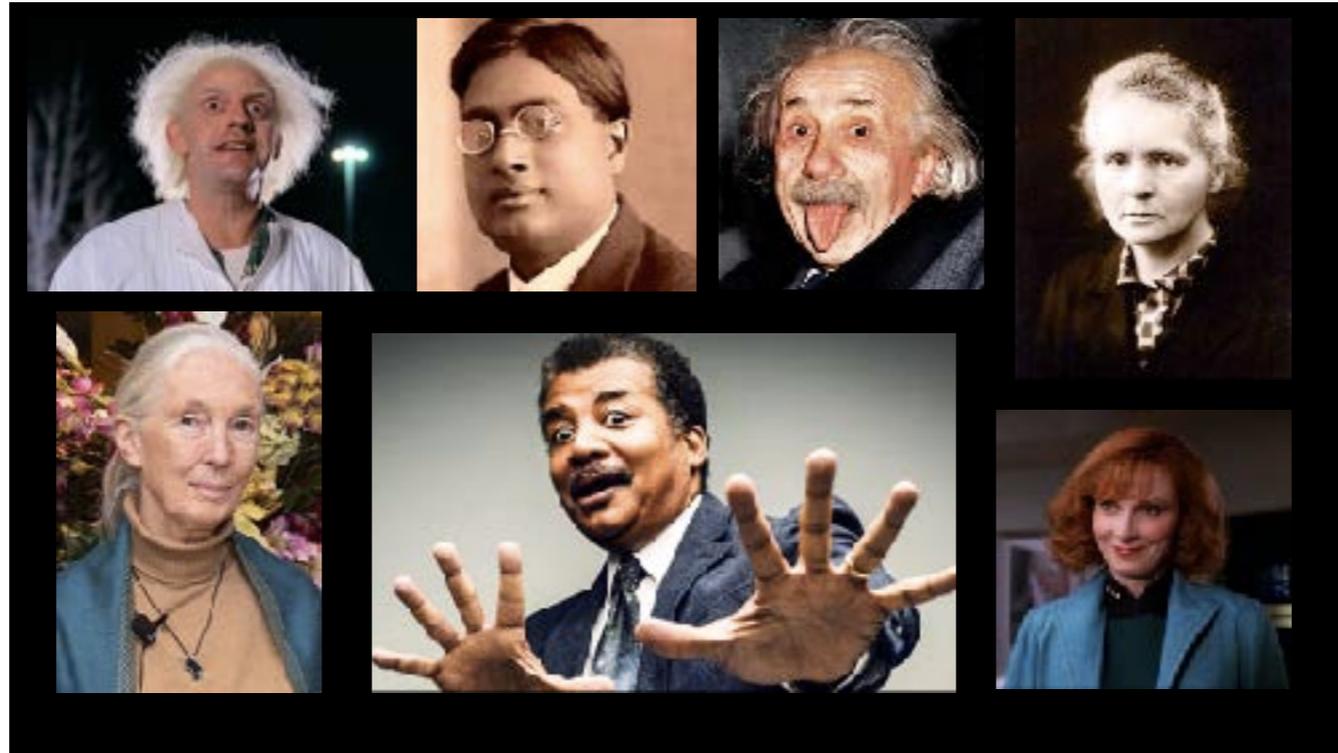
The logo for Springer Nature, featuring the word "SPRINGER" in blue and "NATURE" in red, both in a bold, sans-serif font, centered on a black rectangular background.

**SPRINGER NATURE**

- In Berlin work for Springer Nature
- Lead Front End Dev in our new Berlin dept
- Maybe not many of you have heard of it?
- one of largest academic & scientific publishers on the planet



- Biomed Central, Scientific American,
- as well as NATURE
- which has been around since 1869
- Most cited scientific journal on the planet



- Goal is to help scientists get their work seen by other scientists
- I think they're all real



# A (VERY) BRIEF HISTORY OF THE WEB

- But not here to talk about Science
- quick chat
- single biggest invention in recent human history
- THE WEB!

# THE WEB IS STUPID



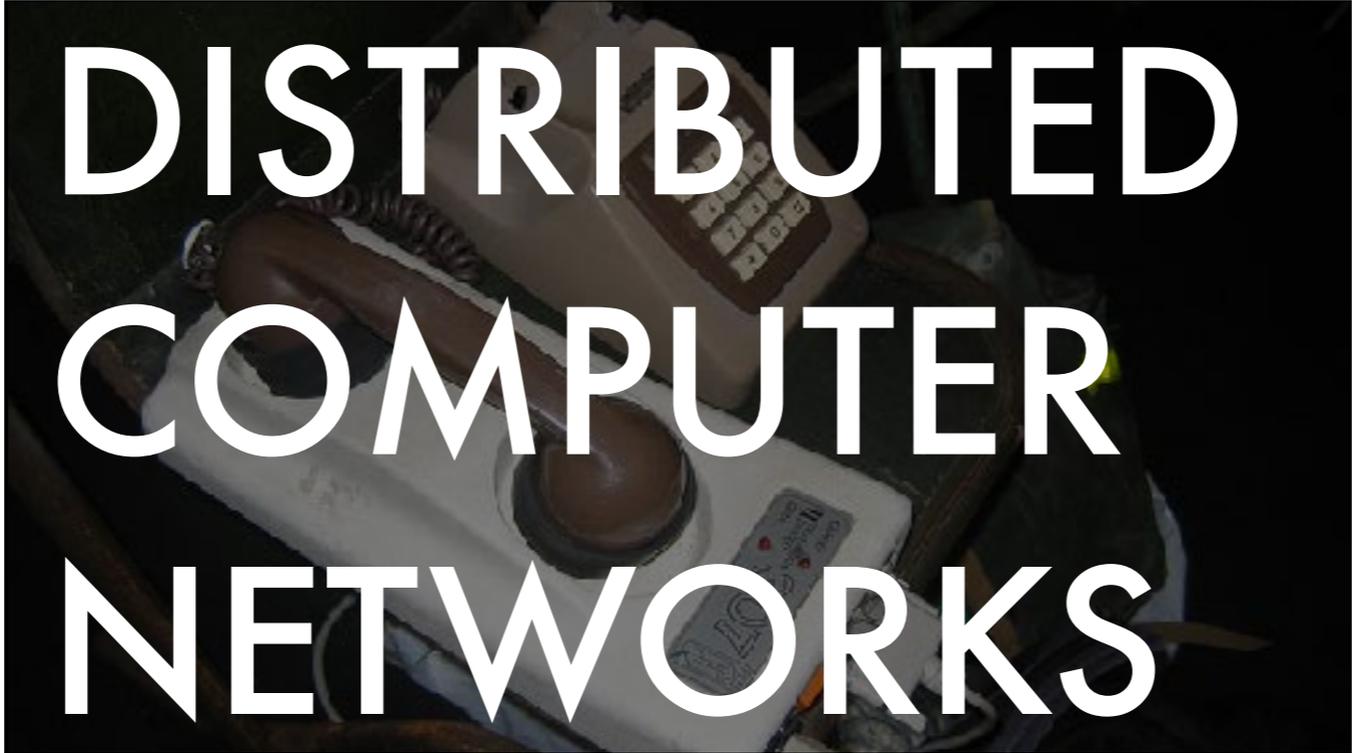
- **Web is incredible**
  - incredible because it's stupid
  - bunch of stupid, simple technologies put together
- **credit to Jeremy Keith**
  - because this is stolen from his book and talks
  - But needs repeating, it's so important
- **very simplified history**



- We can say proto-web started here
- started with telegraphs
- completely changed global communication.
- messages from weeks, to seconds



- telegraphs allowed the invention of telephones
- used the same wires
- Layered on top



# DISTRIBUTED COMPUTER NETWORKS

- which allowed the invention of crude distributed computer networks
- Wargames | acoustic couplers!
- The modem scream



# NETWORK STANDARDS

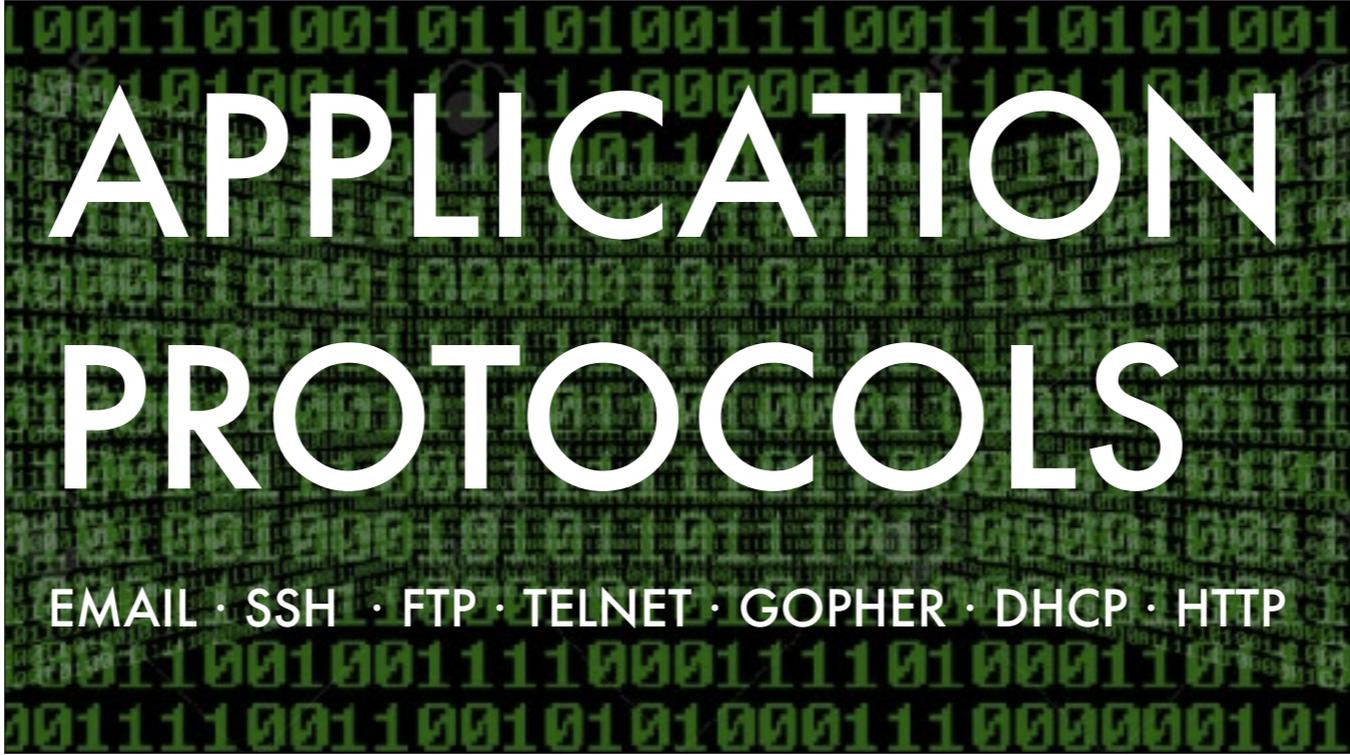
TRANSMISSION CONTROL PROTOCOL · USER  
DATAGRAM PROTOCOL · INTERNET PROTOCOL

- networks standardised way they talked
- Protocols
- which allowed one network
- to talk to any other network



# THE GLOBAL INTERCONNECTED NETWORK

- Eventually did talk!
- Interconnected Networks merged
- the internet!
- The foundation of everything else



# APPLICATION PROTOCOLS

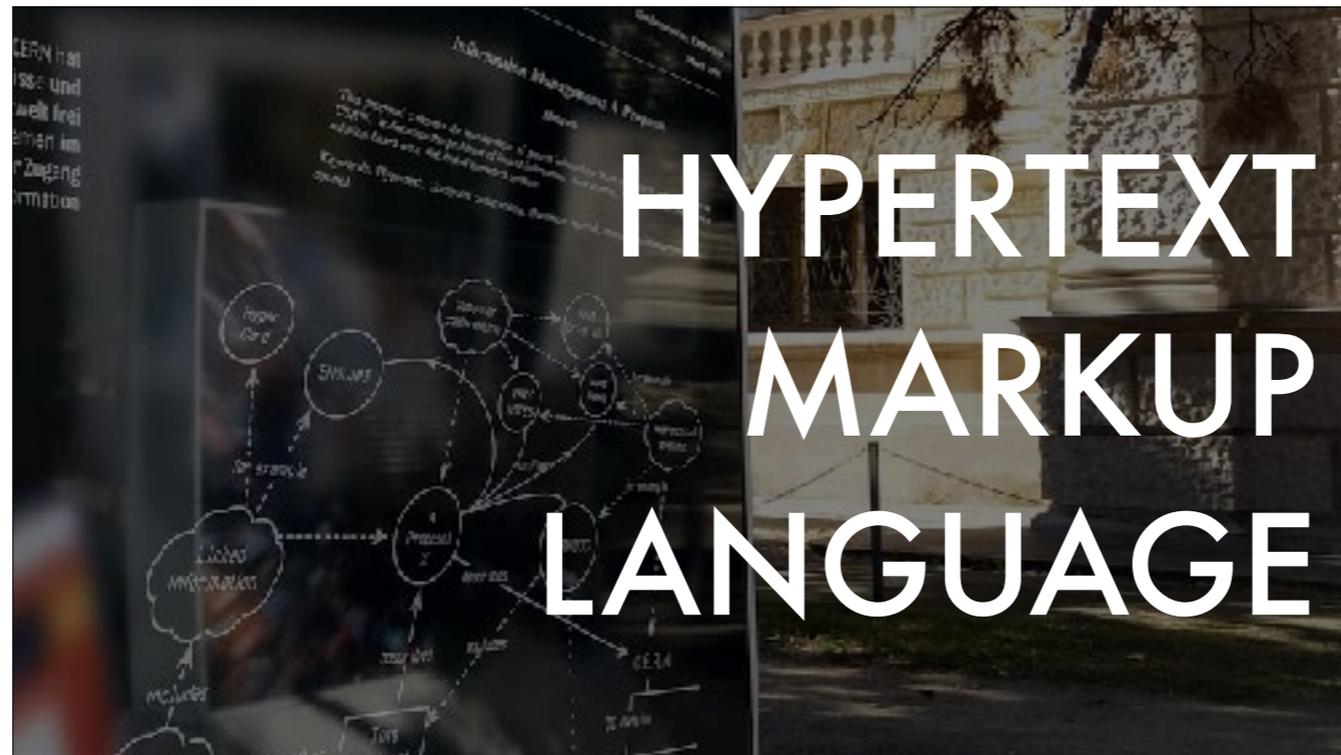
EMAIL · SSH · FTP · TELNET · GOPHER · DHCP · HTTP

- we built on top of these initial networks
- created common application protocols

# UNIFORM RESOURCE IDENTIFIERS

scheme:[//][user[:password]@]host[:port]][/path][?query][#fragment]

- URIs allowed us to identify things
- naming conventions
- [whatthehell@whitehouse.gov](mailto:whatthehell@whitehouse.gov)



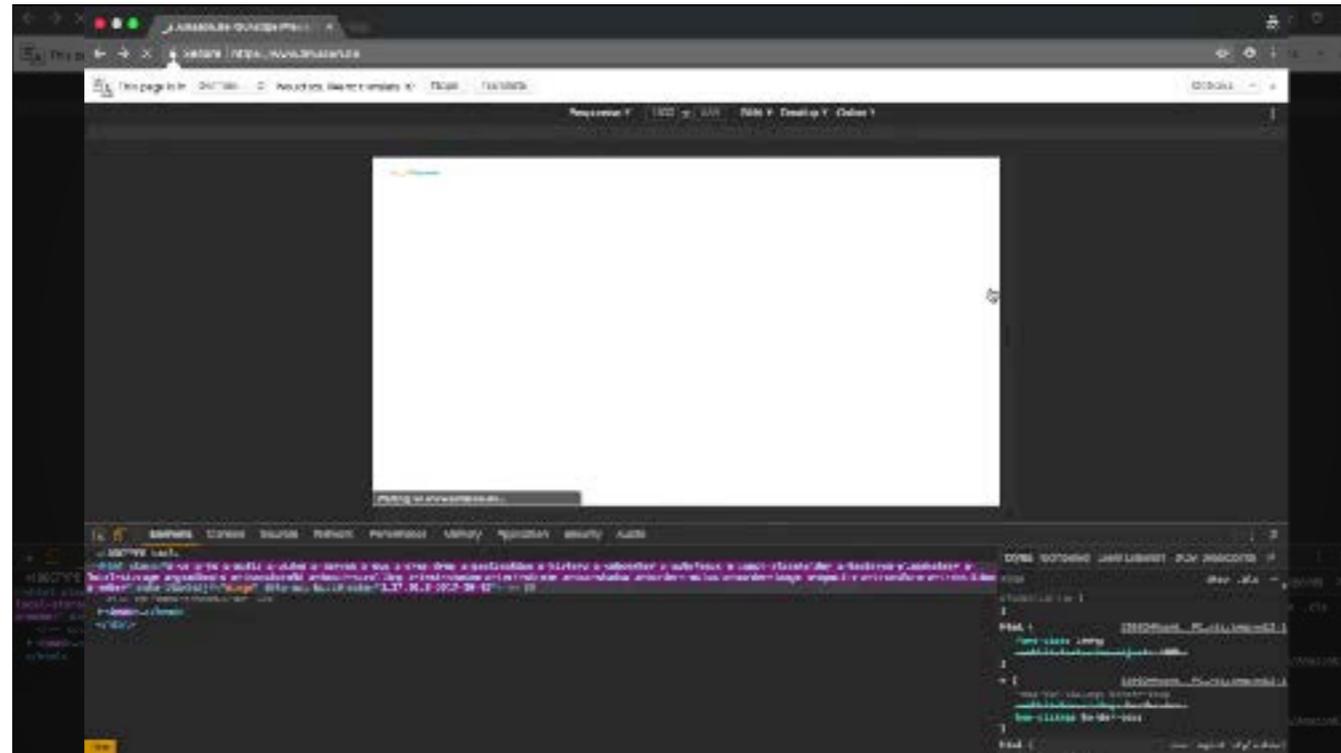
- and finally HTML
- Hypertext markup language
- Built on top of the HTTP application protocol
- Naturhistorisches Museum



- WWW amazingly strong
- stop to appreciate this!
- because of simplicity
- because of those simple technologies



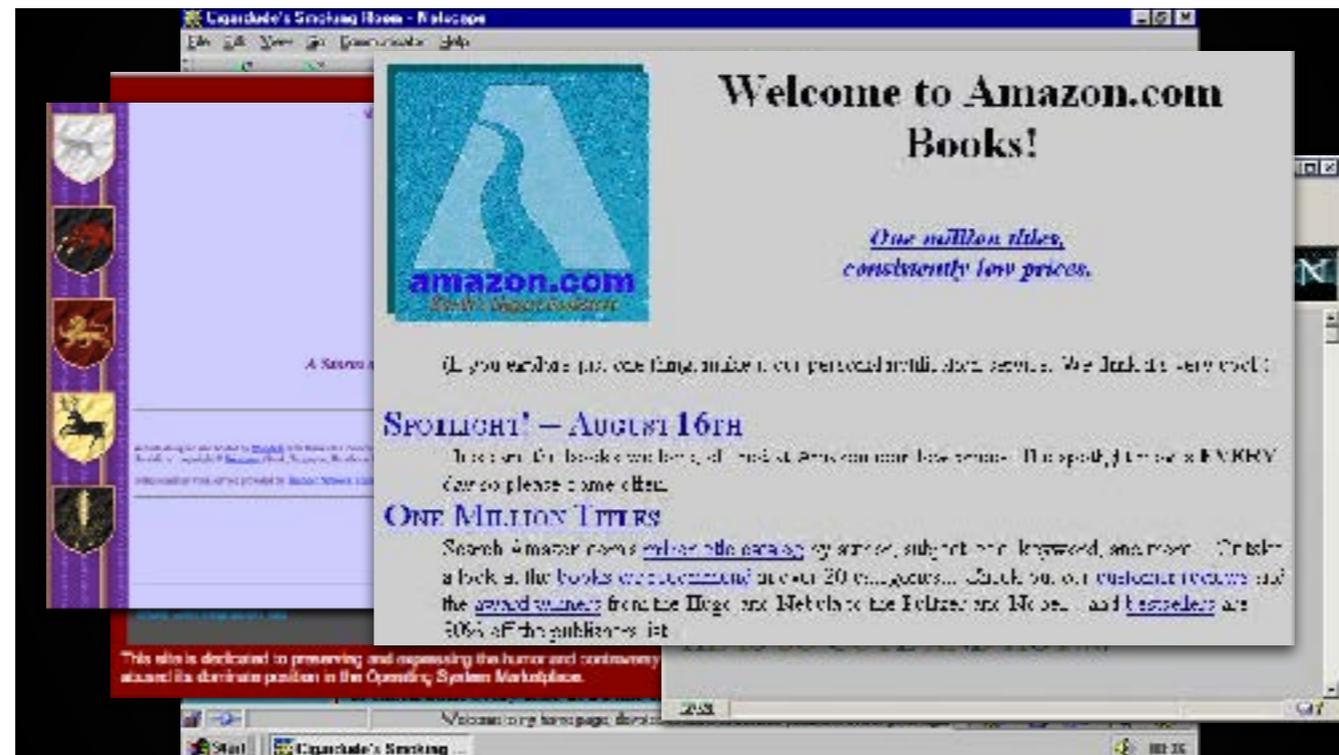
- especially HTML
- simple, declarative language
- What is that?
- utterly unlike other programming languages
- bit flirty, bit suggestive



- this makes HTML incredibly robust
- you can pull a page apart as it is running
- there is nothing else like it
- I pulled out most of the working code
- But I could still access the login and basket at the end



- WWW became popular immediately
- Dominates because of robustness
- Heterozygous world - muddy waters, grey areas.
- Strict language would have broken 100%



- anyone could publish
- early web was weird!
- geocities, neopets, angelfire
- famous authors
- famous companies
- The early web was absolutely amazing!



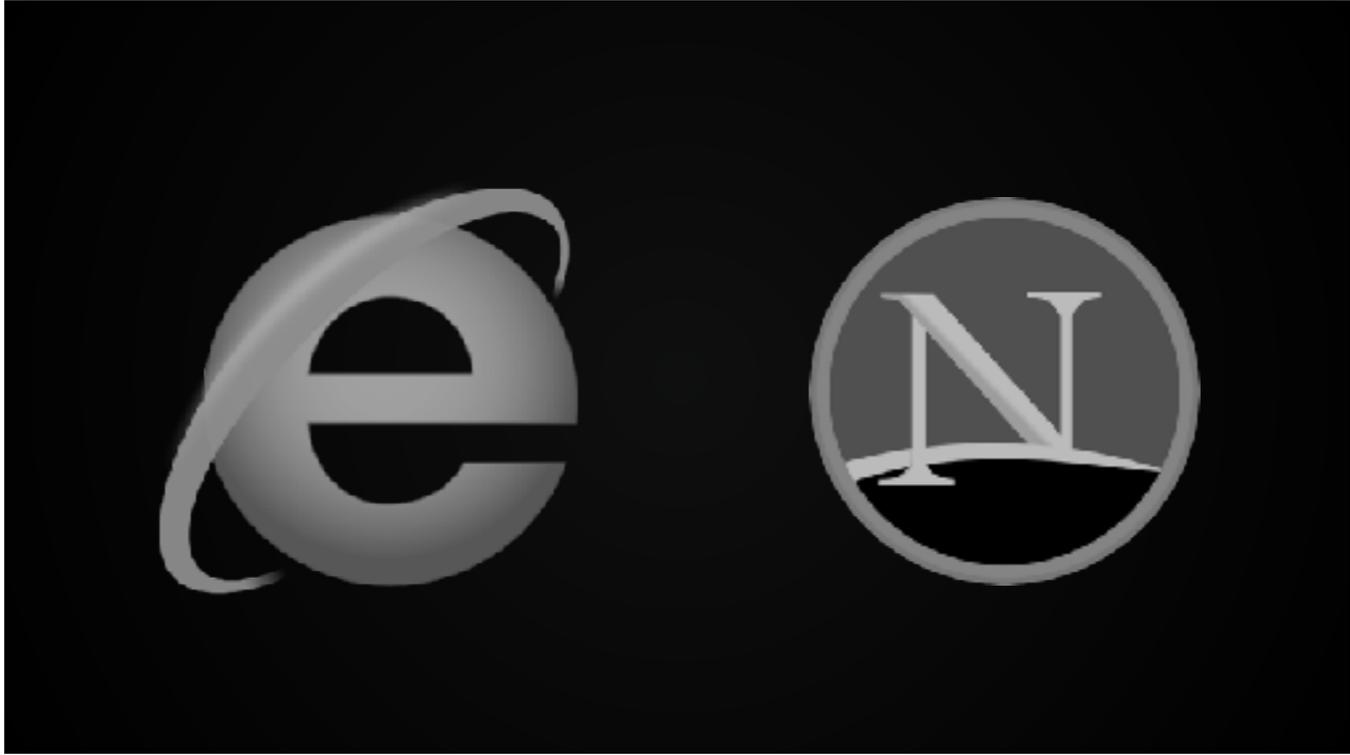
- but the bad times surely follow



- what used to be free and weird
- became balkanised and locked in
- commercialised



- who can remember this stuff?
- the web got split between these two
- devs had to build two versions,
- users had to pick one for loyalty
- browser wars!





- Browser development froze
- innovation stopped
- crappy times for years
- lot of us left industry



- But then history restarted
- from an unexpected direction
- ....
- The first iPhone appeared
- I'm not an Apple lover
- But iPhone was a gift
- diversity lesson



- our sites had assumed one of two browsers
- couldn't cope with this new diversity
- had to learn RWD
- we didn't want to exclude people!

## THE PROGRESSIVELY ENHANCED PYRAMID OF AMAZING ROBUSTNESS!®



- It's a time that gave us incredibly robust website
- When sites had distinct separation of concerns
- you've seen this?
- put the most reliable and durable things at the bottom
- taking the weight
- put the most fragile things at the top
- Served the web incredibly well, made pages work everywhere



- Good times
- Diversity, empathy
- Loved, embraced new and different users and devices
- Web's SUMMER OF LOVE

“

**THOSE WHO CANNOT  
REMEMBER THE PAST  
ARE CONDEMNED TO  
REPEAT IT**

- George Santayana

- but
- are we starting the dark times cycle again?
- different aspects,
- same results: choosing to exclude some people



**53% OF USERS  
ABANDON SITES THAT  
TAKE MORE THAN 3  
SECONDS TO LOAD**

<https://www.doubleclickbygoogle.com/articles/mobile-speed-matters/>

- But performance is now a real issue on sites
- We know 53% leave a site if loading > 3 seconds
-

AVERAGE PAGE  
LOAD TIME ON  
3G IS 12   
SECONDS

[http://www.seochat.com/c/a/  
Google-Optimization-Help/  
Average-Page-Load-Time-of-Top-  
Ranking-Websites-in-Google/](http://www.seochat.com/c/a/Google-Optimization-Help/Average-Page-Load-Time-of-Top-Ranking-Websites-in-Google/)

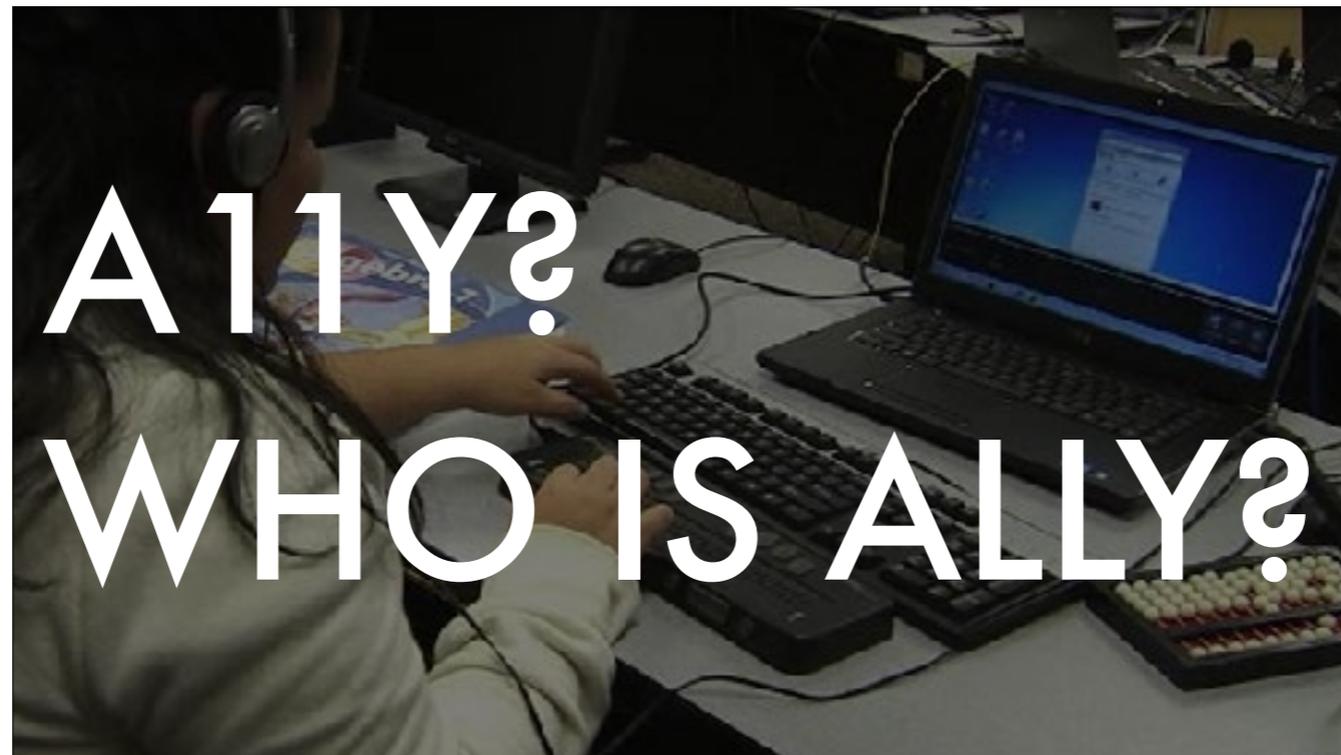
- Yet most of these 3mb sites take over 12 seconds to load!
- [CLICK]
- WTF?
- “that’s just on mobiles...” you might say
- well, guess what most connection most people in all the developing markets are on?
-



# THE AVERAGE DEVICE ON THE PLANET IS A MOTO G4

[https://building.calibreapp.com/  
beyond-the-bubble-real-world-  
performance-9c991dcd5342](https://building.calibreapp.com/beyond-the-bubble-real-world-performance-9c991dcd5342)

- they're on this
- Moto G4 - the most average phone on the planet
- On 3G
- Developing markets
  - high-latency 3G and lower-end devices
- so is 50% of USA!



- We're still collectively terrible at accessibility
- Unknown to most devs
- somehow not a core requirement of being a front end developer

# DELIVERY BY JAVASCRIPT AS A DEFAULT

- JS as a default delivery mechanism
- just to deliver HTML!
- permission to rant

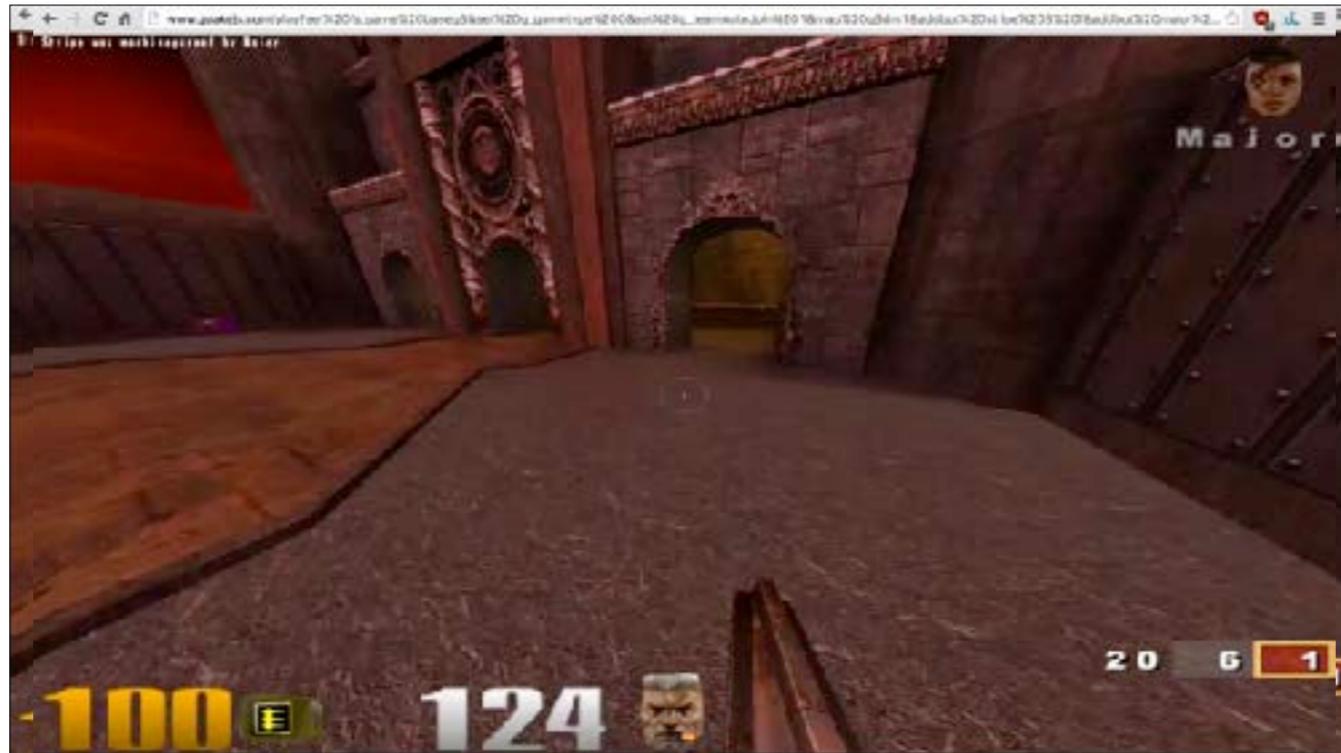
A red flying car is shown in flight against a blue sky. The car is sleek and aerodynamic, with a transparent canopy. The text is overlaid on the image in a large, white, sans-serif font.

# JAVASCRIPT-FIRST IS LIKE COMMUTING TO WORK IN A SELF- BUILT FLYING CAR

- like building a flying car to commute to work.
  - Technically amazing
  - I admire your work
  - BUT.....



- but better to have a bicycle ?
- Technically amazing but...
- MASSIVELY over engineered
- We're building sites that we want to build
- Not sites that users need or want



- Not talking smack
- Not talking about applications
- Some things are impossible to do PE
- Client-side drawing, games

# CONTENT SITES SHOULD NOT RELY ON JAVASCRIPT FOR DELIVERY

- Talking about content-driven sites
- 99% of the web is about

# THE WEB !== JAVASCRIPT APPLICATIONS

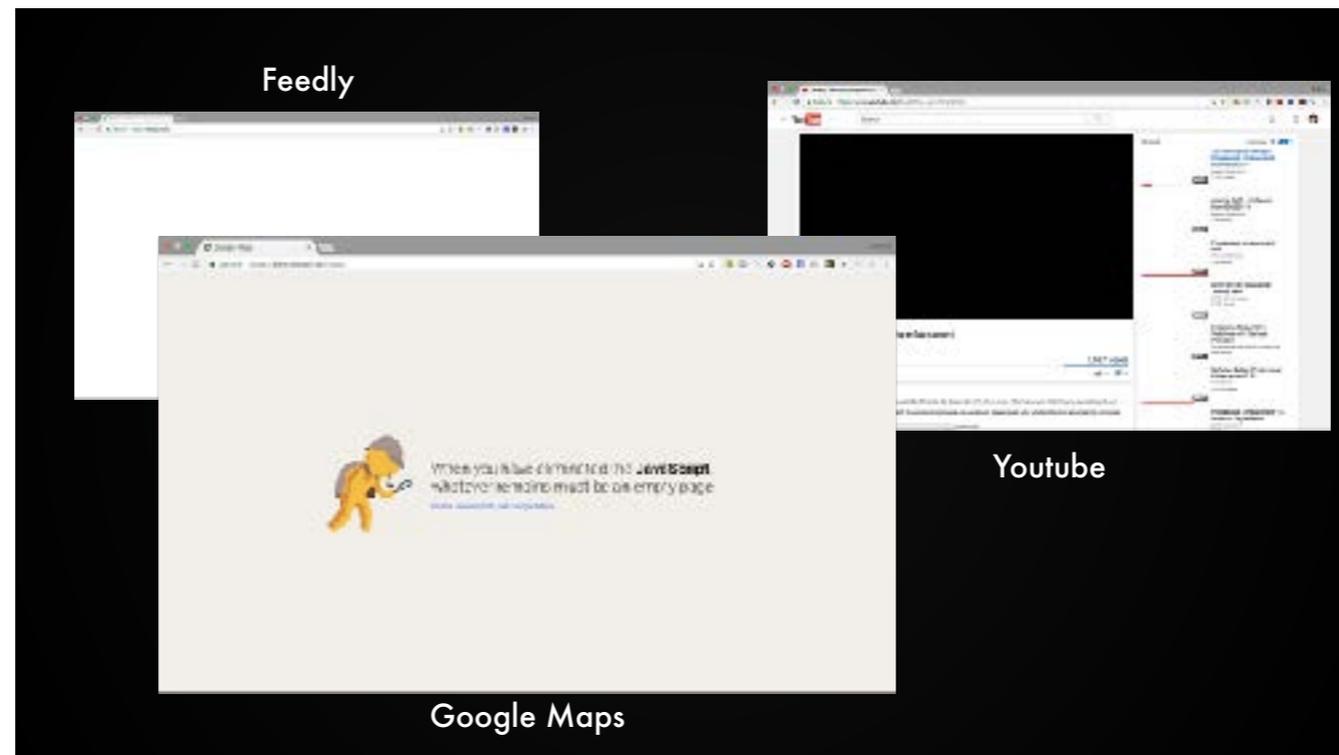
- Peer pressure
- Feels like everything is a fancy single page app
- Not true!

# TOP 15 GLOBAL SITES

1. google.com	Search engine
2. youtube.com	Social media - video
3. facebook.com	Social media (Sucking your soul away)
4. baidu.com	Search engine
5. wikipedia.org	Content
6. yahoo.com	Portal (they're still around?)
7. qq.com	Portal
8. taobao.com	Shopping
9. tmall.com	Shopping
10. amazon.com	Shopping
11. twitter.com	Social media (making you angry)
12. google.co.in	Search engine
13. instagram.com	Social media
14. sohu.com	News
15. jd.com	Shopping

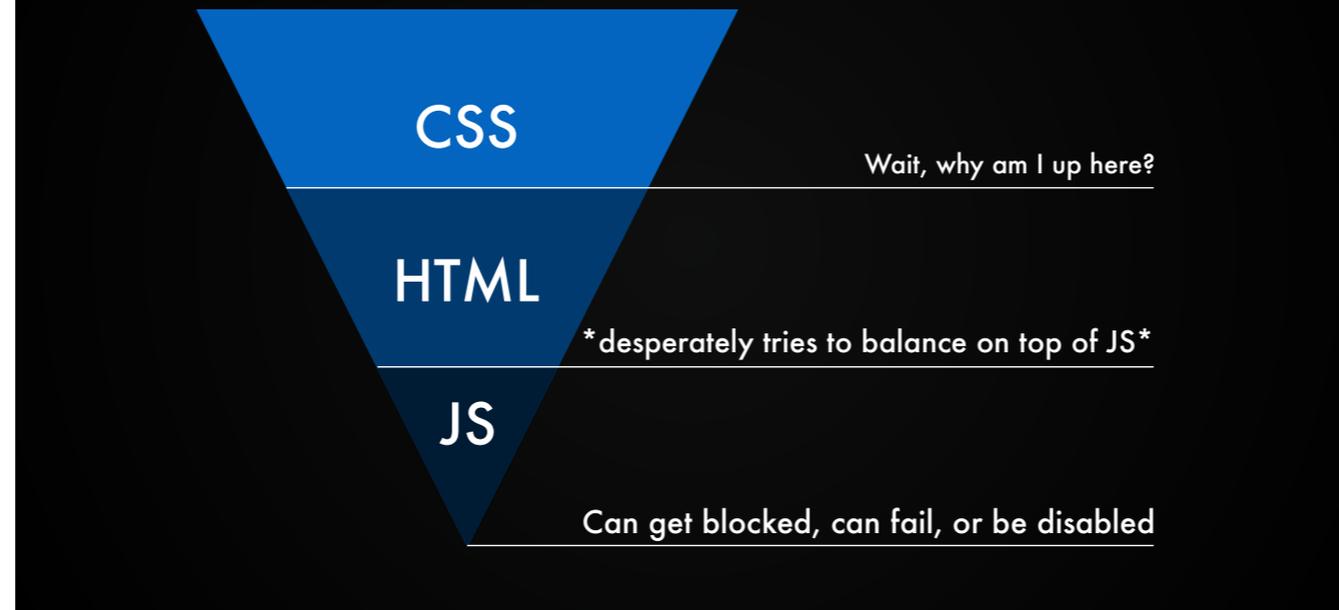
<https://www.alexa.com/topsites>

- They're content sites
- Text, images and video.
- Sites, not apps.
- Now reliant on JS, for reading and administrating
- led to this awful situation



- sites that are no longer robust
- sites used to be resilient and tough
- now die easily. network, turn off, blocked
- fragile

# WHAT HAVE YOU DONE TO ME? 🤖



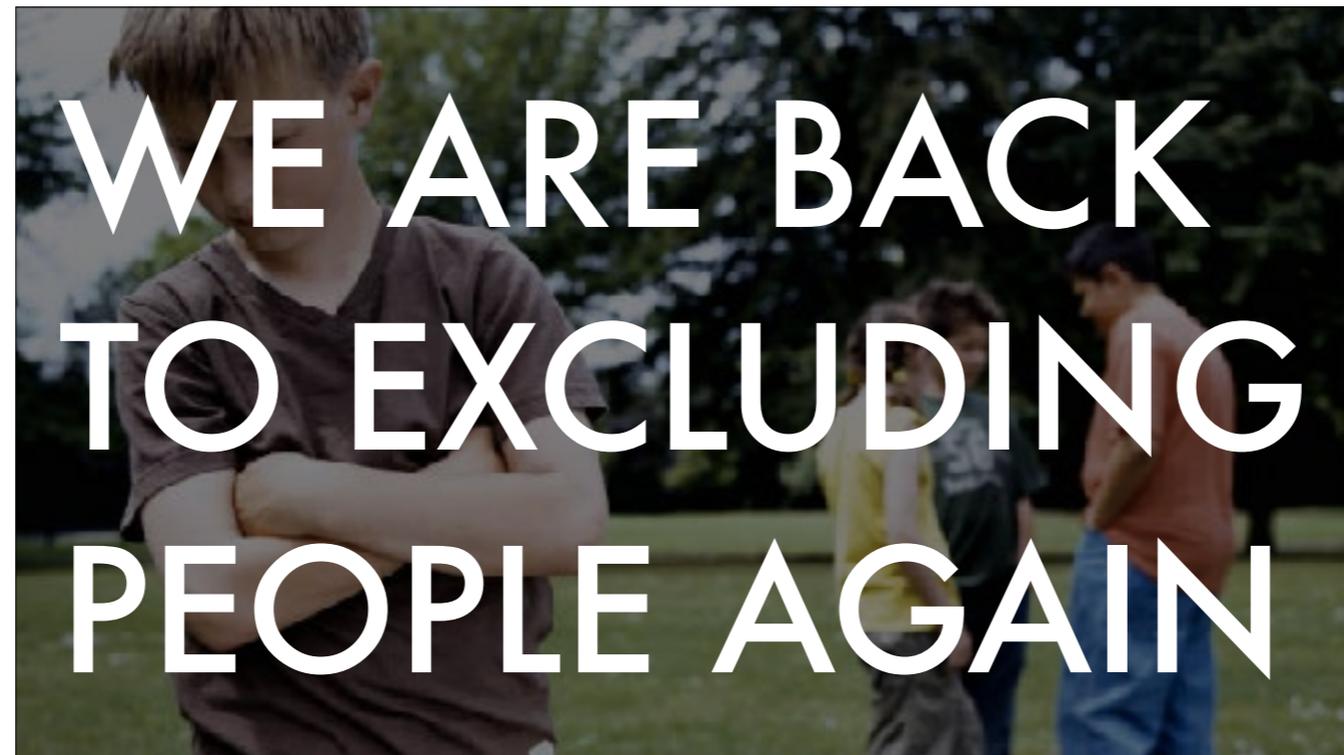
- IT'S LIKE WE'VE TURNED THE PYRAMID OF ROBUSTNESS UPSIDE-DOWN
- most fragile things are at the bottom
- taking all the weight
- the most likely to shatter
- [CLICK]



- I'm no engineer...
- But there's a reason they didn't build pyramids like this...



- collectively we have new focus
- on tooling, packaging, build tools
- Things that look good on our resume
- “users” has suddenly gone missing



- means we're back to building sites that are not for everyone
- we explicitly say "we deny entry to these users"
- because we want to have our fun with tech...



- but hang on, that's a bit negative
- there's things we can do, before it's too late
- so what can we do, to stop this cycle from restarting?
- how can we make the web better?
- I think there's a lot we can do



- In general we can slow down
- Slow down
-

**"MOVE FAST  
AND BREAK  
THINGS"**

- This attitude can fuck off
- We've seen the effects Facebook has had on the world with that attitude
-

**"MOVE AT AN  
APPROPRIATE  
SPEED AND MAKE  
THINGS WORK"**

- How about "Move sedately and make things work?"
- This doesn't mean a return to waterfall!
- This doesn't mean giving up on agile methods.
- Quite the opposite.

# TRUE AGILITY

- It means becoming truly agile, integrating working products into every iteration of a product, by building as simply as possible.
- Building products that reflect the pyramid of robustness.
- Not going for hugely complex solutions immediately.

# CODING IS NOT THE ONLY FRUIT

- Recognise that coding is not the centre of the world
- We put code on a pedestal
- "Code is the hard part"
- "Rockstar developers"

# EQUALITY

- Design and UX as equal to Coding
- Yet a dysfunctional relationship
- Too often take mockups from designers and just implement

# RESEARCH AND LEARNING ARE NOT DIRTY WORDS

- We need to get better at treating research as a step before any coding takes place
- We need to listen to users and figure out their needs
- ALL users
- Task list your designs, run user flows!
- THIS IS NOT A/B TESTING
- Remove culture of “just code it ship it and see what works”



- Which is the equivalent of throwing paint at a wall and hoping something good will come of it
- We need to stop jumping to technological solutions AS THE FIRST STEP
- Not abandoning technology, but not making it our master
-



- Half the time we have no idea what we're building!
- We joke about pivoting, but that's exactly what we do, when we learn what we've built is shit
- If we can plan ahead perhaps we can recognise what we need to build

# RECOGNISE THE HETEROZYGOUS WEB

- I talked about this before
- But it's vital to recognise that the web is NOT a platform
- A platform is a set of known conditions that you can code against



- The web is the exact opposite of that
- It's a million different runtime platforms that all operate in different ways
- Once we recognise that, I think we'll have a better web



- Simplicity
- It's become a dirty word, hasn't it?
- Web is the only industry that craves complexity
- Science, engineering, construction - simple is desired. Not us.
- Probably because we've suddenly become such a young inexperienced industry
- Codecamps, influx of "engineers"



- The web is a hostile coding environment
- Like in any real world env, the simple survives
- Once you ramp up complexity, things break

# RULE OF LEAST POWER

- Have you heard of this?
- Vital for this approach
- “If something can be built with a tech lower down in the tech stack, IT SHOULD BE”



- We need to be aware of the complexity that we're introducing to our products and processes
- Unintentional!



- When I talk about simplicity
- I don't mean "everything should be simple and brutalist"
- I mean "do only as much as is needed"
- Designing progressively is part of that

A list of tags associated with this document.

- Ebook Collection

## Chemistry and Materials Science

Editors:

A/for Kala  
Valeriy V. Skorskyev  
Anatoly P. Shpink  
Bogdan Burakovskiy  
Dmitry V. Schur  
Svetlana Yu. Zepinakova  
T. Neat Nataraja  
T. Neat Nataraja

The 2005 International Conference "Hydrogen Materials Science and Chemistry of Carbon Nanomaterials" (ICHMS'2005) was held in September 5-11, 2005 in the remarkable city Sevastopol (Crimea, Ukraine) known for its historic and unique. In the tradition of the earlier ICHMS conferences, this 5 ICHMS'2005 meeting served as an interdisciplinary forum for the presentation and discussion of the most recent research on various hydrogen-based energy systems, technologies for hydrogen production, storage, utilization, materials processing and chemical behavior, energy and environmental problems. The aim of ICHMS 2005 was to provide the wide overview of the latest scientific results on basic research and technological applications of hydrogen interactions with metals and other materials. The articles representatives from industry, research/academic organizations and governmental agencies, countries, discuss and present the most recent advances in hydrogen concepts, processes and systems, evaluate current progress and to exchange academic information, to identify research needs and future development in this important area. This conference should help further the progress of hydrogen-based science and promote the role of hydrogen in the energy field. The ICHMS 2005 was the conference, where a related main important topic of considerable current interest on fullerene-related materials as hydrogen storage was included into the conference program. This meeting gave an opportunity for researchers to cover the entire range of basic and applied materials focusing on synthesis, structure, properties and applications of diverse carbon materials ranging from nanotubes and fullerenes to carbon fiber composites and aerogels.

## Metrics

- Downloads: 22,115  
- Citations: 51  
- Reviews: 0

- boils down to only building as much as needed
- In practise this means HTML-first
- Server side rendered
- Testing these pages with users
- (Yes, just HTML)
-



- Only then adding on CSS and JS as they are needed
- We do that at Springer Nature
- We build HTML first, making pages that work for EVERYBODY
-

```
<link rel="stylesheet"
href="advanced.css" media="only screen
and (-webkit-min-device-pixel-ratio:0) and
(min-color-index:0), (-ms-high-contrast:
none), only all and (min-moz-device-
pixel-ratio:0) and (min-resolution:
3e1 dpcm)" id="advanced-css">
```

- Only after making our pages work for everyone do we add on extras.
- And we do that via some simple techniques
- Such as this media query, so that we only capture modern browsers
-

```
var linkEl = document.getElementById('advanced-css');
if (window.matchMedia
    && window.matchMedia(linkEl.media)) {
    var appScript = document.createElement('script');
    appScript.src = 'appbundle.js';
    appScript.async = true;
    document.body.appendChild(appScript);
}
```

- And then loading our JS based upon that status as a modern browser
- Because “100% support” does not mean “making it look the same in all browsers”
- The users ability to read and interact is what’s important
- Our pages work in the worst network conditions and for people in the hardest situations
- We’re proud of that

“

# SPRINGER NATURE FRONTEND PLAYBOOK

”

- And it's not something that requires new tech, or new training.
- In fact it just means NOT using tech!
- Deliberately kept this short - could talk for hours
- Go and read up on the SN FE playbook

# STOP ASSUMING THE HAPPY PATH

- And finally, we're near the end now, stop assuming the happy path
- Everyone does this
- Designers and developers
- But the real world is not a happy path
-



- The real world is pitfalls and bad things happening, amongst the joy
- So many challenges
- So we need to start using our products as people in these cases do



- Stop saying “Edge case”
- Eric Myer talks about stress cases
- Stress as in “have empathy for stressful situations”
- And stress as in “stress testing your product”
-



- We need to start making screen readers part of our daily dev lives
-



# NAVIGATE YOUR SITE WITH THE KEYBOARD

- Using keyboards
- Come on, you've all got a tab key



- And using real broken, awful hardware
- Because THAT is reality

**DEV'S JOB =  
ACCESSIBILITY,  
PERFORMANCE,  
USABILITY, AND  
ROBUSTNESS**

- And if you want to say “that sounds boring”
- Or if you think “that’s not what we do”
- Then you need to GET OUT OF FRONTEND DEV LIFE
- Because we build things that are used by people
- Not things that are consumed by machines
-



- **So, in summary.**
- **WWW is strong**
  - and everywhere because of robustness
- **Robustness from simplicity**
- **Simple technologies and techniques**
  - working together in a layered manner
- **Each one building on the other**



- The web has become essential for everyone
- We principles of simplicity and robustness at our collective peril
- Let's not not make it about us, and our tech fun
- Let's make it about the diverse and amazing, weird wild web.

# THANK YOU

Charlie Owen | @sonniesedge | sonniesedge.co.uk

Springer Nature Front-end Playbook  
<https://github.com/springernature/frontend-playbook>

Special thanks to #WOCinTechChat for use of many photos  
<http://www.wocintechchat.com/blog/wocintechphotos>

- Thank you