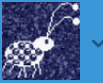
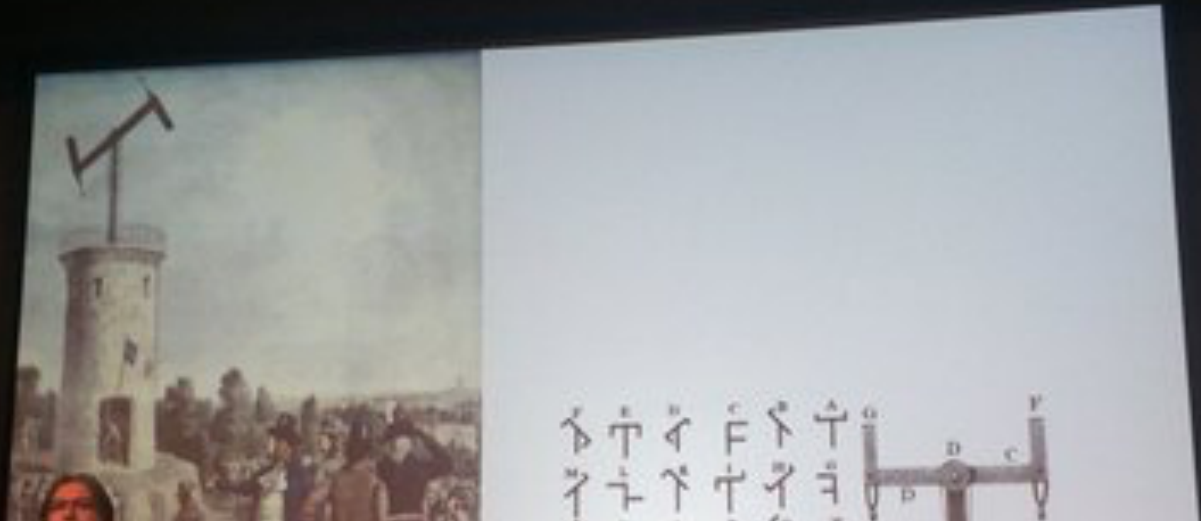


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AEASEA 2016 - Resilience

Notes from Jeremy Keith's presentation on the history of the web, its resilience, progressive enhancement, and the future of the web, from An Event Apart 2016.

by  Anne Gibson a year ago 18 Views ▾



Anne Gibson

@perpendicularme

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As he is wont to do, @adactio is starting us off with an awesome history lesson on signal towers in England and France
[#AEASEA](#)

12:00 PM - 5 Apr 2016



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Everything changed with the electrical telegraph. No line of sight problems. Instantaneous. Transcontinental [#AEASEA](#)

12:01 PM - 5 Apr 2016



Christa Dickson

@IowaCodeNinja

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As a history nerd, I always love @adactio's presentations. I just learned that the analog telegraph was a thing. [#aeasea](#)

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Heather
@_hmig

 Follow

Very cool. Optical telegraph in France. Weather permitting communication. Some things never change. [#aeasea](#)

12:09 PM - 5 Apr 2016



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@perpendicularme

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When a transatlantic cable went across the ocean, it started our modern world. Instantaneous communication [#AEASEA](#)

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“There will be no need for war anymore”. Well, it revolutionized war - news was much faster. It changed culture. [#AEASEA](#)

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The vast majority of Internet traffic goes by cables. Follows telegraph cable paths underseas [#AEASEA](#)

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The intranet wasn't entirely created to withstand a nuclear attack - DARPA was looking for resilience in general [#AEASEA](#)

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Packet switching was created to give resilience to ARPANET, which later became the Internet. [#AEASEA](#)

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Christa Dickson

@IowaCodeNinja

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If you want a signal to be resilient, break it up into tiny bits, e.g. network packets. @adactio #aeasea

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By the time we went international, it became really important that the packets had standards. TCP/IP was born #AEASEA

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Christa Dickson

@IowaCodeNinja

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'lo' was the first signal sent via the Internet (supposed to be 'login', but the system crashed after 2 letters). @adactio #aeasea

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There is no central authority to the intranet, by design, to protect against censorship, etc. #AEASEA

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The network does not care what's in the packets. No information is prioritized over other information [#AEASEA](#)

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""-(๖_๖)~""
@whozzawuzza

 Follow

"Deliver the bits, stupid" - David Isenberg [#aeasea](#) @adactio

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Christa Dickson
@IowaCodeNinja

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TCP/IP creators were focused on resiliency against censorship/control, so they decentralized authority. @adactio [#aeasea](#)

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Christa Dickson
@IowaCodeNinja

 Follow

The Internet's secret sauce is that it's a dumb network; it doesn't know what's in the packets, and it doesn't care. @adactio [#aeasea](#)

12:08 PM - 5 Apr 2016





Jay Wintermeyer

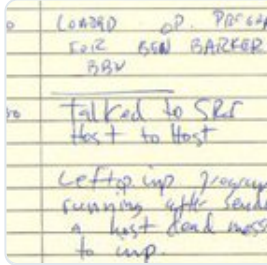
@jaywintermeyer

Follow

Unique bit of tech history that crashed the "internet."

thisdayintechhistory.com/10/29/first-me... #aeasea

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First Message on the Internet - This Day in T...

October 29, 1969 UCLA student Charley Kline attempts to transmit the text "login" to a computer at the Stanford Research Institute over the first thisdayintechhistory.com

1



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On top of TCP/IP you can build any other protocol you like.

Email, gopher, telnet, FTL, HTTP. #AEASEA

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It's one thing to create a protocol, but without users, you're dead in the water. @adactio #aeasea

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The trick is getting people to use your network. Metcalf's law kicks in [#AEASEA](#)

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Tim Berners-Lee was trying to solve the problem of huge amounts of information at CERN when he created the World Wide Web [#AEASEA](#)

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Resistosaurus Max 
@JeremyWard33

 Follow

"The creation of the internet was just a side note to the things that CERN cares about doing." [#AEASea](#)

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Tim Berners-Lee started with a network called Equire, but it didn't take off. Years later, he proposed WWW [#AEASEA](#)

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Christa Dickson

@IowaCodeNinja

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Tim Berners-Lee had chutzpah to name his protocol the World Wide Web when it only existed on one computer. @adactio #aeasea

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  23  35



James 🤖 Cliburn

@JCFGD

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Information Management (WWW) in 1989: "Vague but exciting..." #aeasea #aea16

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Arthur C Clark, who created the idea of geostationary satellites, was the child of two telegraph operators #AEASEA

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  3  6



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The tech is just good enough and just simple enough to get people to use it. HTML started as a list of 21 tags, not a standard #AEASEA

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  1 



""-(ಠ_ಠ)""
@whozzawuzza

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TBL borrowed from an existing markup language to create 21 HTML elements... 121 elements today [#aeasea](#)

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HTML was based on the SGML that was already in use in CERN. Now it's 121 elements. [#AEASEA](#)

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HTML can grow because it handles unknown elements by rendering the content w/o throwing an error. A design decision! [#AEASEA](#)

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We know exactly how older browsers that don't understand the elements will behave, so we can keep adding new elements [#AEASEA](#)

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HTML's innate dumbness ends up being a form of built-in backward/forward compatibility. @adactio #aeasea

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  1  12



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Because of this design we can create fallback content.

<canvas>

Hide me

</canvas>#AEASEA

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Images: "I just shipped it, it's called image, and it's in the browser now". Rough consensus & running code. #AEASEA

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  1 



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Browsers that see attributes they don't understand ignore them, so srcset works. But you must provide a fallback #AEASEA

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Backwards compatibility is built in by design. Error handling is very lax. CSS is similar [#AEASEA](#)

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If you give a browser a selector it doesn't understand, it skips it. Same with properties and values. That's how we can add to CSS [#AEASEA](#)

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  3  5



Zeldman 
@zeldman

 Follow

Jeremy Keith ([@adactio](#)) on the resilience of networks...and HTML. So begins [@AnEventApart](#) Seattle Day II. [#aeasea](#)

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  3  13



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The biggest advances in CSS in the last 5 years have been in how we write, not how the language is written [#AEASEA](#)

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Jessica Tate
@missjessicatate

 Follow

While we may hate writing “fallback code” it’s actually allowing us to advance the internet without breaking it. [#aeasea](#)

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Pre processors and naming conventions don’t require standards bodies or browser changes [#AEASEA](#)

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What else is there that we’re not seeing the potential of? [#AEASEA](#)

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Christa Dickson

@IowaCodeNinja

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HTML/CSS follows Jon Postel's law: "Be conservative in what you send, be liberal in what you accept." @adactio #aeasea

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Don't worry if you see a packet that's badly formed if you can still understand it, but write good packets #AEASEA

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@IowaCodeNinja

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Postel's law was designed for networks, but applies to formats (HTML/CSS) and UX issues, e.g. web forms. @adactio #aeasea

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 Follow

Postel's law for UX: Use as few forms as possible, don't make users format form fields to meet your standards. #AEASEA

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Christa Dickson

@IowaCodeNinja

 Follow

HTML/CSS can be liberal because they're declarative languages; they don't do logic, they simply state the desired outcome. [@adactio](#) [#aeasea](#)

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   1



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Declarative languages: you state the desired outcome, not instructing what to do with it. "This is a paragraph" is a suggestion [#AEASEA](#)

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Jessica Tate

@missjessicatate

 Follow

CSS is a suggestion to the browser. [#aeasea](#)

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  1  3



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Declarative languages are pretty easy to learn and are lax in syntax. JavaScript is imperative: exact instructions to computers [#AEASEA](#)

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Imperative languages can't have lax error handling (JS is as lax as it gets). You need to be able to debug, so it must be stricter
[#AEASEA](#)

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JavaScript will stop parsing a script and throw an error if it sees things it doesn't recognize. Less resilient to mistakes [#AEASEA](#)

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Christa Dickson
@IowaCodeNinja

 Follow

CSS/HTML tend to be more resilient, whereas the JavaScript layer is more fragile. [@adactio](#) [#aeasea](#)

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@IowaCodeNinja

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XHTML 2 almost took HTML to an extremely fragile place by adopting the error handling model of XML. [@adactio](#) [#aeasea](#)

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@perpendicularme

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JavaScript is fragile. HTML is robust. XHTML 2 was the worst of both worlds - fragile, throws errors, draconian [#AEASEA](#)

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10 years later lots of websites rely on JavaScript, fragile draconian error handling model [#AEASEA](#)

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Every time you add JavaScript to a link you're pushing the fragility of JS into the lax layer of HTML. [#AEASEA](#)

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Hand in hand with Postel's law is Murphy's law - anything that can go wrong will go wrong. Shit happens. [#AEASEA](#)

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There are tons of reasons why someone's JS isn't working. Crappy wifi, on a train, etc. We should approach JS like crash tests [#AEASEA](#)

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If they stopped crash testing cars because we think people don't want to drive into walls? Bad! [#AEASEA](#)

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The web has inherent variability - we don't know all the details of the browser, edge cases all the way down on the WWW. [#AEASEA](#)

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3 step program for resilience:
1. Identify the core functionality.
2. Make that available using the simplest tech.
3. Enhance![#AEASEA](#)

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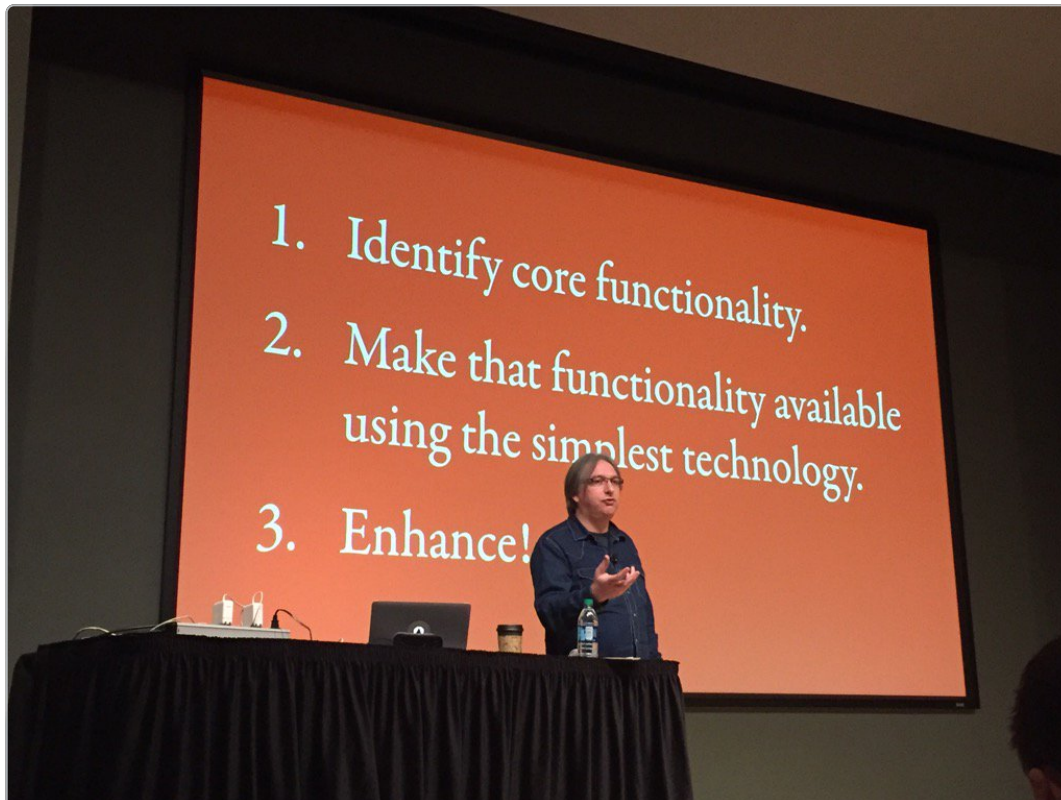


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@perpendicularme

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3 is where yo differentiate from the competition, but 1 and 2 have to work first [#AEASEA](#)

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Jessica Tate
@missjessicatate

 Follow

Thinking about web development in these three steps is refreshing. [#aeasea](#)

12:47 PM - 5 Apr 2016





Christa Dickson

@IowaCodeNinja

 Follow

The trick to successful web projects is in the enhancement. As long as you have a simple baseline to fall back on. @adactio #aeasea

12:37 PM - 5 Apr 2016



Anne Gibson

@perpendicularme

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Display the news: Plain text is the simplest possible technology. Markup is probably where you want to start though. #AEASEA

12:35 PM - 5 Apr 2016



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If we stopped at straight HTML, we'd probably have a pretty dull site, but we'd have a baseline. #aeasea

12:37 PM - 5 Apr 2016



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 Follow

Now we can safely go crazy with cutting edge! CSS! Layout! Webfonts! AJAX! Websockets! File APIs! CSS filters! #AEASEA

12:38 PM - 5 Apr 2016





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 Follow

Local storage! Service worker for offline capabilities! Service worker will be as game-changing as AJAX #AEASEA

12:39 PM - 5 Apr 2016



Christa Dickson
@IowaCodeNinja

 Follow

"The feeling I get from service workers is what I got from AJAX 10 years ago. It's game-changing stuff." @adactio #aeasea

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Jessica Tate
@missjessicatate

 Follow

When building a website ask "Does provide the intended core functionality?" If yes, then everything else is an enhancement. #aeasea

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Anne Gibson
@perpendicularme

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Spending a little time on step 1 and 2 means you can devote the vast amount of your energy to step 3 because you have a baseline #AEASEA

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Anne Gibson
@perpendicularme

 Follow

This design pattern works for URLs, components, providing an address on a website, etc. [#AEASEA](#)

12:41 PM - 5 Apr 2016



James Cliburn
@JCFGD

 Follow

It comes back to establishing structure first, then enhance that set structure - to me, that's been the major theme of [#aeasea](#) [#aea16](#) so far

12:41 PM - 5 Apr 2016



Anne Gibson
@perpendicularme

 Follow

You're not choosing between basic functionality and whiz-bang experience, you're doing both [#AEASEA](#)

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 Follow

"This means you'll spend all your time in old browsers" - no, the old browsers already work! [#AEASEA](#)

12:42 PM - 5 Apr 2016





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 Follow

Pushback: "this is too simplistic. It can't possibly scale" Yeah we said that about CSS and RWD too. [#AEASEA](#)

12:43 PM - 5 Apr 2016



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@perpendicularme

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Pushback: "this is too hard! I have to make everything work twice?" It does take more time & work. That's why it's called work [#AEASEA](#)

12:45 PM - 5 Apr 2016



Christa Dickson
@IowaCodeNinja

 Follow

"But this is really hard!" "I'm sorry; cry me a river. It's not about you; it's about the user." [@adactio](#) [#aeasea](#)

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Anne Gibson
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It doesn't have to always be hard. CSS was hard because it was new, RWD was hard because it was new. This will be too. [#AEASEA](#)

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Once you make it the way you build things, well, that's just how it's done. It gets easier as you go [#AEASEA](#)

12:46 PM - 5 Apr 2016



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Step 1 and step 2 are like "technical credit" - banking for the future. The opposite of technical debt! [#AEASEA](#)

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Replaces assumptions about what's available in the browser with an acceptance of the chaos of the web [#AEASEA](#)

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When JavaScript is a requirement for rendering text on a screen, that's a bit silly. When it's a 3mb JS file, that's ridiculous [#AEASEA](#)

12:49 PM - 5 Apr 2016



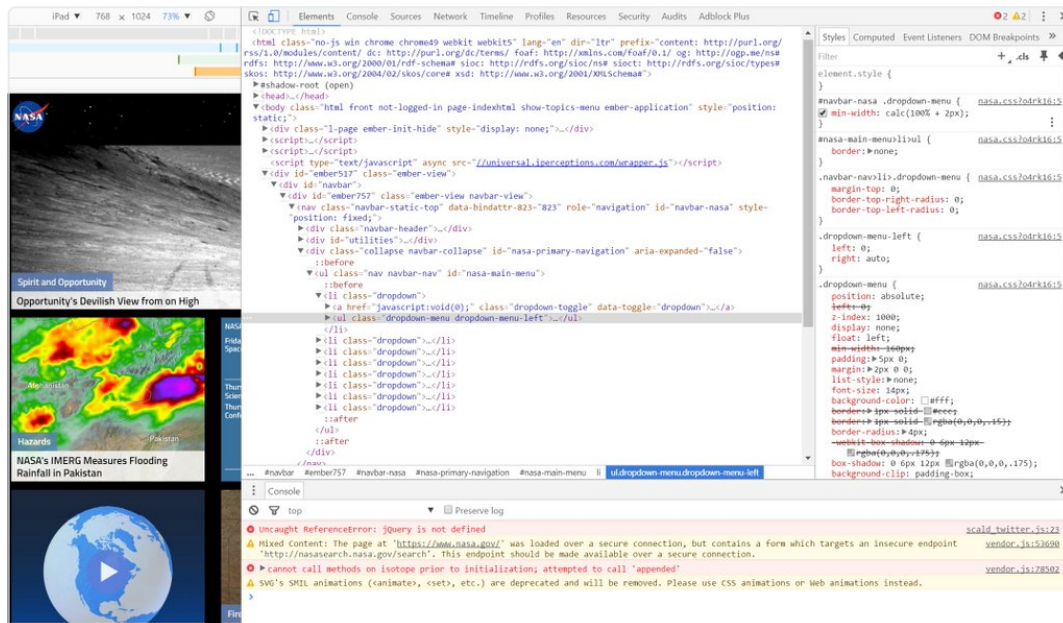


Anne Gibson
@perpendicularme

Follow

If it's a .gov site, like NASA, they're spending (most of) our tax money to not show us simple text [#AEASEA](#)

12:49 PM - 5 Apr 2016



Matt Michaels
@fungkmonk

Follow

"It's the taxpayer's money..." [@NASA](#) [#aeasea](#)

12:49 PM - 5 Apr 2016



Anne Gibson
@perpendicularme

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People are beginning to value developer convenience over user need. Our work is hard, convenience is importance. Still!
[#AEASEA](#)

12:50 PM - 5 Apr 2016





Anne Gibson
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 Follow

Developer convenience can't trump user needs, and user needs are "show me the text w/o JavaScript" [#AEASEA](#)

12:50 PM - 5 Apr 2016



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If I have a choice between making it a user problem or my problem, it's my job to make it my problem every time [#AEASEA](#)

12:51 PM - 5 Apr 2016



Christa Dickson
@IowaCodeNinja

 Follow

Any framework where the user pays the performance cost for developer convenience (e.g. by downloading the library) is backwards. [#aeasea](#)

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"90% of everything is crud" - Theodore Sturgeon, Sturgeon's law. If most websites are crud, though, good sites can't stand out [#AEASEA](#)

12:52 PM - 5 Apr 2016





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We have a need to fit everyone into a bucket “everyone has JS”, “everyone has a 640x480 screen”... Consensual hallucinations
[#AEASEA](#)

12:53 PM - 5 Apr 2016



Zeldman 

@zeldman

 Follow

If most developers, for their own convenience, create bloated sites, then people will blame the web. [#tragedyofthecommons](#)
[#aeasea](#) [@adactio](#)

12:53 PM - 5 Apr 2016



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“Things will be so much better after this next technology!” “If everyone would just upgrade!” Always something [#AEASEA](#)

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Arthur C. Clarke “He’ll take it for granted as much as we do the telephone” — we live in the future! [#AEASEA](#)

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Resistosaurus Max ⚡️

@JeremyWard33

 Follow

[#aeasea](#)

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Any sufficiently advanced technology is indistinguishable from magic - Arthur C. Clarke — at first, then we take for granted

[#AEASEA](#)

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  1 



mike

@mandrewnz

 Follow

World Wide Web: "Everything is amazing and yet no one is happy" [#aeasea](#)

12:56 PM - 5 Apr 2016

  2  1



Jonathan Schofield

@schofeld

 Follow

See that tiny pony? frankchimero.com/writing/there-... ht
[@codinghorror](#)

3:06 AM - 1 Apr 2016



Anne Gibson

@perpendicularme

 Follow

URLs are magical tiny ponies. URLs are permanent addresses for things on the web. Amazing! [#AEASEA](#)

12:58 PM - 5 Apr 2016



Christa Dickson

@IowaCodeNinja

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The web spans time. It allows us to time travel to the future... IF we build it in a resilient way. [@adactio](#) [#aeasea](#)

12:58 PM - 5 Apr 2016



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We're already starting to talk about how we'll protocol information when we leave the planet [#AEASEA](#)

12:59 PM - 5 Apr 2016





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The dinosaurs died out because they didn't have a space program [#AEASEA](#)

1:00 PM - 5 Apr 2016



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We need to be good ancestors. We need to leave a web that lasts. We need to leave a web that's resilient. [#AEASEA](#)

1:00 PM - 5 Apr 2016



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