Choosing the web's future

Peter-Paul Koch
http://quirksmode.org
http://twitter.com/ppk
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Opinion warning (throughout)

Also: work in progress

Four problems

1. Web developers want to emulate native apps, which I think is not possible.
2. This causes browser vendors to add more and more features.
3. Also, we get more tools that become a problem instead of solving one
4. People who’re new to the web often think the web is just one platform

I Emulating native apps

What went before

In 2006-8, several successful web apps were built that emulated native desktop apps; most importantly Google Docs took on Microsoft Office.

Quality was generally good (enough), so this was rightfully seen as a victory for the web.

What came after

After those successes, web developers thought they could do better than native mobile apps as well.

This, generally speaking, has turned out not to be the case

but our feature priorities and the general direction of web development still point towards ever more complicated apps

Not possible

Technically, it’s simple.

Native apps communicate directly with the OS.

Web apps communicate with the browser, which communicates with the OS.

Therefore web apps will always be a bit slower and coarser than native apps.

Not possible

Sure, the web is adopting native feature after native feature, and improving performance by a lot.

It will have caught up with native in … I don't know, two years?

But by that time native will also have progressed and we'll still be behind.

It is impossible for the web to ever become as good as native.

Consequences

"You destroy basic usability by hijacking the scrollbar. You take native functionality (scrolling, selection, links, loading) that is fast and efficient and you rewrite it with 'cutting edge' javascript toolkits and frameworks so that it is slow and buggy and broken. You balloon your websites with megabytes of cruft. You ignore best practices. You take something that works and is complementary to your business and turn it into a liability."

Baldur Bjarnason - https://www.baldurbjarnason.com/notes/media-websites-vs-facebook/

Consequences

But wait…

Am I saying that it’s all the fault of trying to emulate native apps?

Not quite, though that does play a role.

It’s the mindset of making everything more complicated that I object to. And the attempt to emulate native apps started that mindset.

2 Too many features

Name all features browsers added in 2015

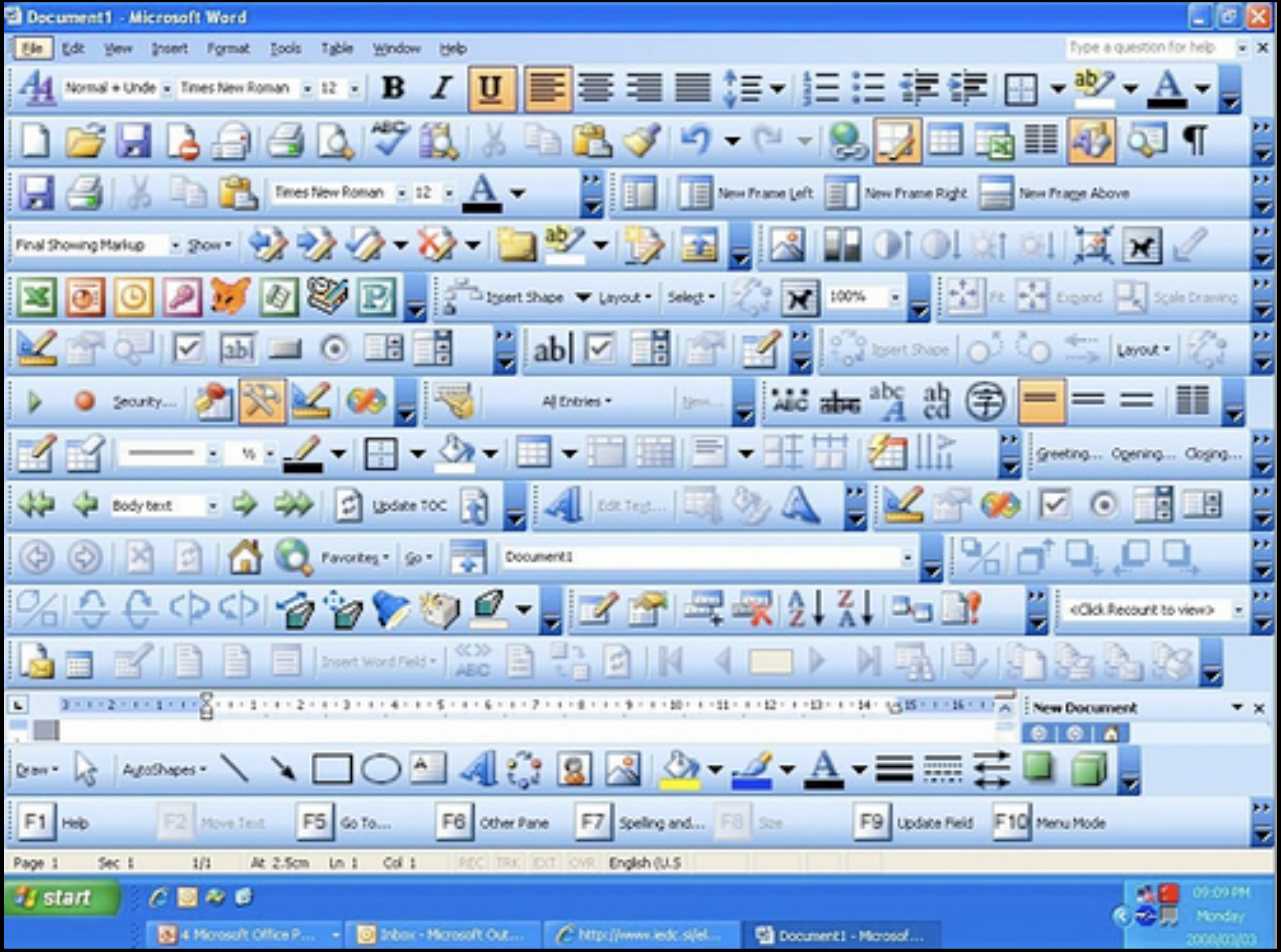
Features

I think browsers are implementing too many features.

This is tricky, though.

It’s not individual features that I object to. Most individual features are a good idea, and they solve some kind of issue.

The problem is that there’s so MANY of them.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Update TOC
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Many features

With many clever minds working on many features, overspecialization becomes an issue.

You know all about the feature you’re developing, but lose track of other features that are being developed at the same time.

Tunnel vision.

Polyfills

New features are frequently not supported in many (most?) browsers.

So we add another polyfill. So clever!

Except that it increases our tool footprint once again - possibly even without good cause. Do you REALLY need that new feature?

Also, it makes web developers lazy. Why not force them to write their own? That'll teach them a lot more than just copying code.

Software market maturity

Users = **web developers**, and not visitors!

1. Technology focus. Concentrate on the fact that it works at all.
2. Feature focus. Concentrate on new features users may need.
3. Experience focus. Concentrate on the overall experience users get.

by Jared Spool

Software market maturity

We’ve been stuck in the feature focus phase for far too long.

I’d say it’s time to move to the experience focus stage.

I’d say we want to improve the overall experience of creating websites.

What does that mean? I have no clue.

Moratorium

That’s why I propose a moratorium on browser features of about a year.

During that year, browsers may not implement new features.

However, browsers are allowed to copy features other browsers already support

and write bug fixes

while developers learn the previous set of features

Stifling innovation

Won’t a moratorium stifle web innovation?

Well yes, it would.

In fact, that’s the point. Since web innovation is currently defined as “making the web even more app-like” it could do with some stifling.

Until we’ve given the whole thing a little more thought.

3 Too many tools

Speed

The web has a speed problem, especially on mobile.

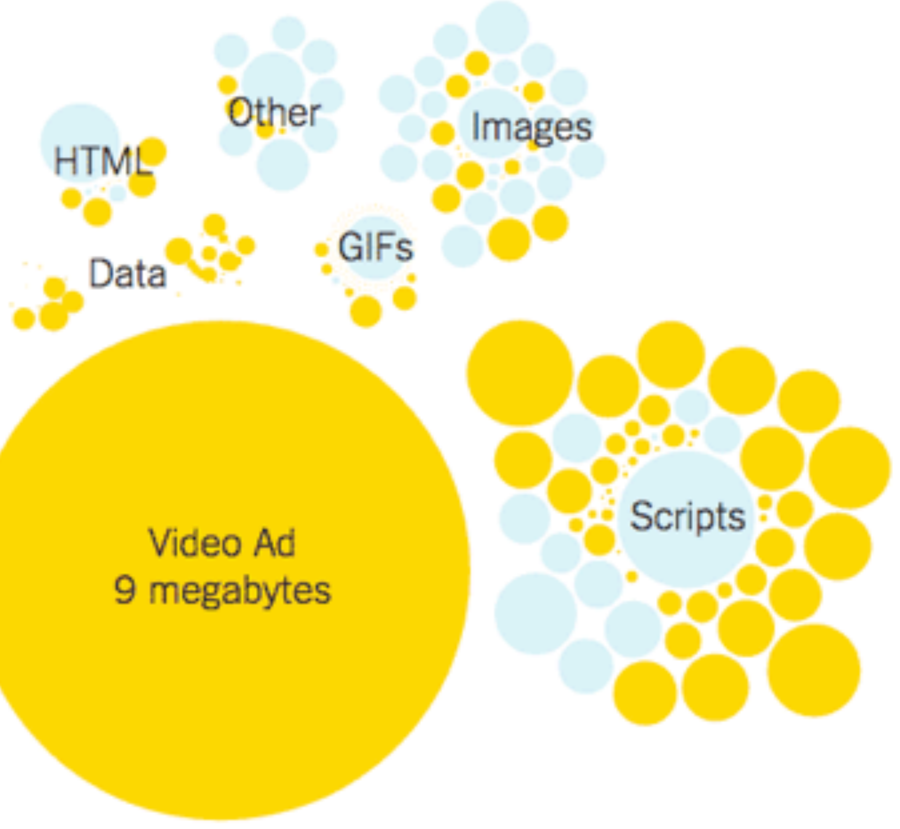
Ads are part of the problem. Or rather, maybe not even the ads themselves, but the associated scripts.

The other part of the problem is the tools we use. We’re using way too many of them.

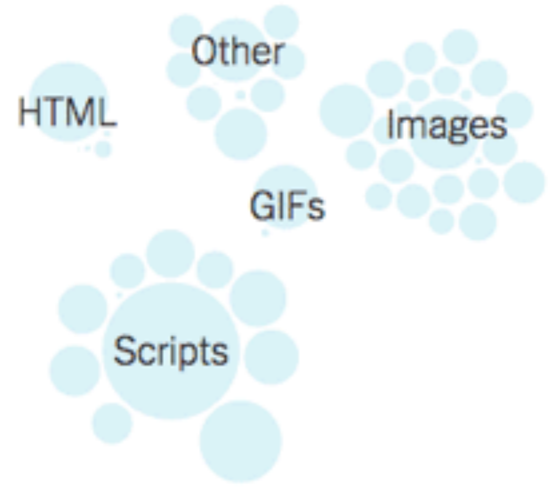
boston.com | Without ad-blocker | With ad-blocker

Here are all the files that made up the Boston.com data during one visit, including one large video ad and many script files used by ad networks. With an ad blocker, those files were gone.

389 files, 16.3 megabytes, 33 seconds



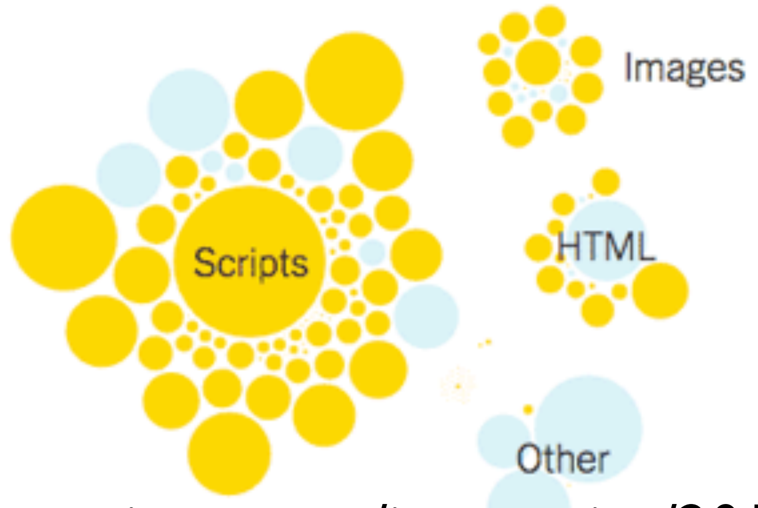
52 files, 3.5 megabytes, 7 seconds



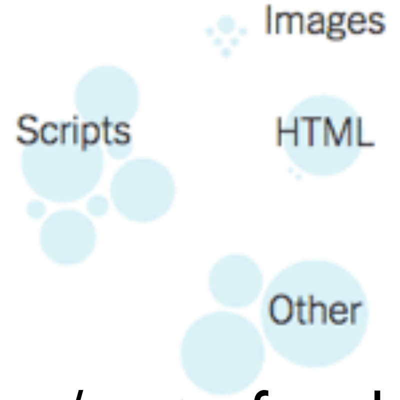
Los Angeles Times | Without ad-blocker | With ad-blocker

The Los Angeles Times showed smaller ads but included large scripts used by ad networks.

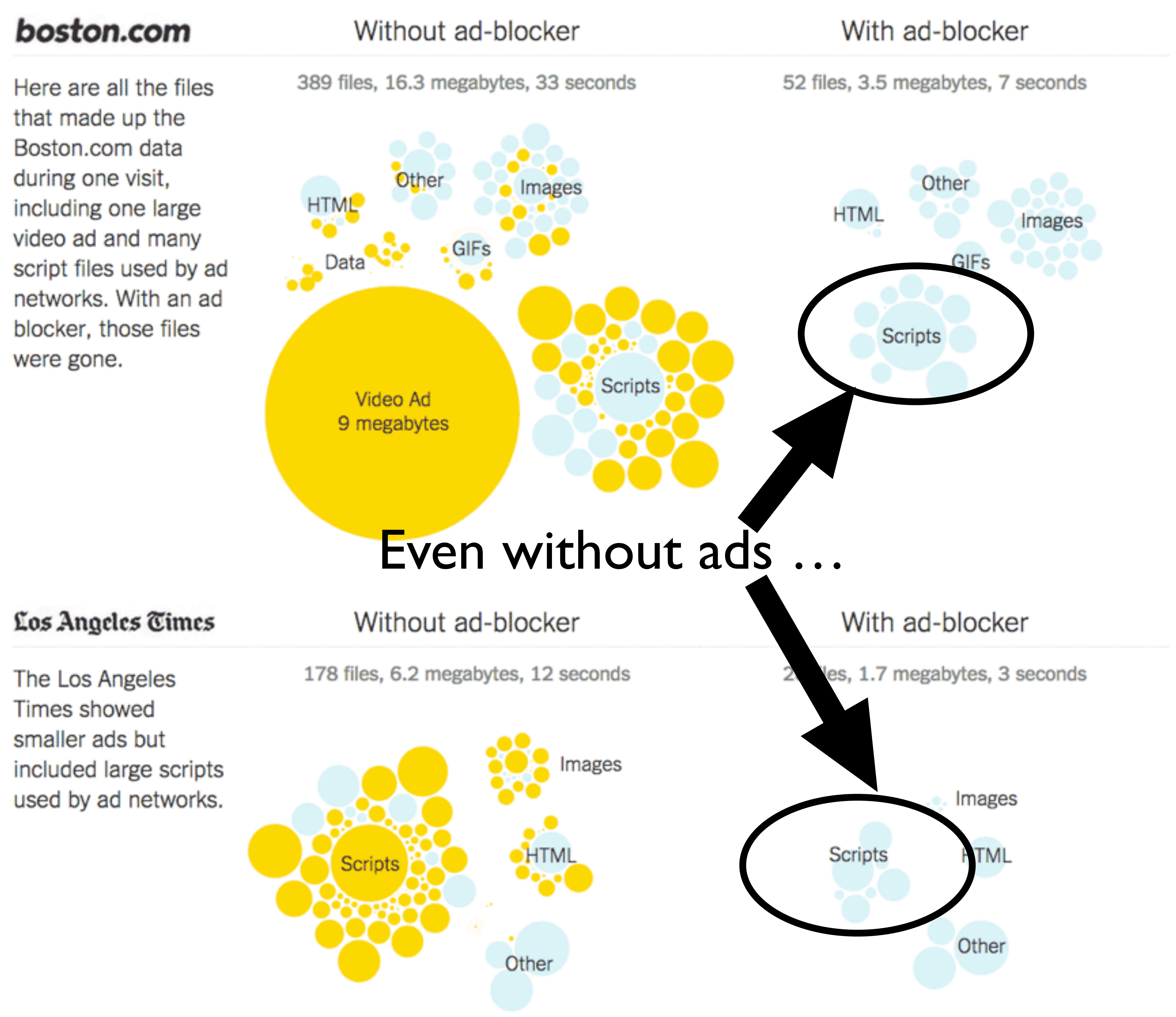
178 files, 6.2 megabytes, 12 seconds



20 files, 1.7 megabytes, 3 seconds



http://www.nytimes.com/interactive/2015/10/01/business/cost-of-mobile-ads.html



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Even without ads …

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Tools

- Polyfills (for exciting new features)
- MV* frameworks
- UX libraries
- Dependency thingies
- Other thingies with weird names
- etc.

Why so many?

Opinion warning!

I think we’re using this many tools because we want to show web app development is a Serious Thing

and Serious Developers use long toolchains

but these long toolchains run on a server

except on the web, where we force *all of our users* to run them

even when they’re on a crappy mobile phone

Modularization encourages over-design

John Daggett

The true JavaScripter

- uses libraries and frameworks when he needs
- but studies them in detail before doing so
- and prefers to use a single one per project
- is able to write a medium-complex application without any libraries or frameworks
- which gives him the technical background to change a library or framework if necessary

Learning

“When in doubt, learn CSS over any sort of tooling around CSS. Learn JavaScript instead of React or Angular or whatever other library seems hot at the moment. Learn HTML. Learn how browsers work.

[…] Focusing on the core helps you to recognize the strengths and limitations of these tools and abstractions. A developer with a solid understanding of vanilla JavaScript can shift fairly easily from React to Angular to Ember.”

Tim Kadlec - http://timkadlec.com/2015/09/the-fallacy-of-keeping-up/

If you can’t do without tools you’re not a web developer

4 The web platforms (plural)

Browsers are the most hostile development platforms in the world

Douglas Crockford

Web platforms

I feel back-end developers underestimate the web platform, and thus front-end development

because they misunderstand one crucial aspect.

The web is not one platform.

It is a multitude of platforms, most of which you'll never test on.

Environments

- Why do back-enders expect the web to be one platform?
- They usually work for one known environment, where languages, libraries, power and memory, and tools are pre-defined.
- They expect front-end to be one environment that they have to learn, but that's not fundamentally different
- But it *is* fundamentally different.

Environments

- Also, if there’s a mature toolchain available, it must be one platform, and those pesky browser problems must have been solved for us.
- Also, web developers talk about the Web Platform and the One Web. So there’s only one web, right? One platform.

5 We’re going wrong

Four problems

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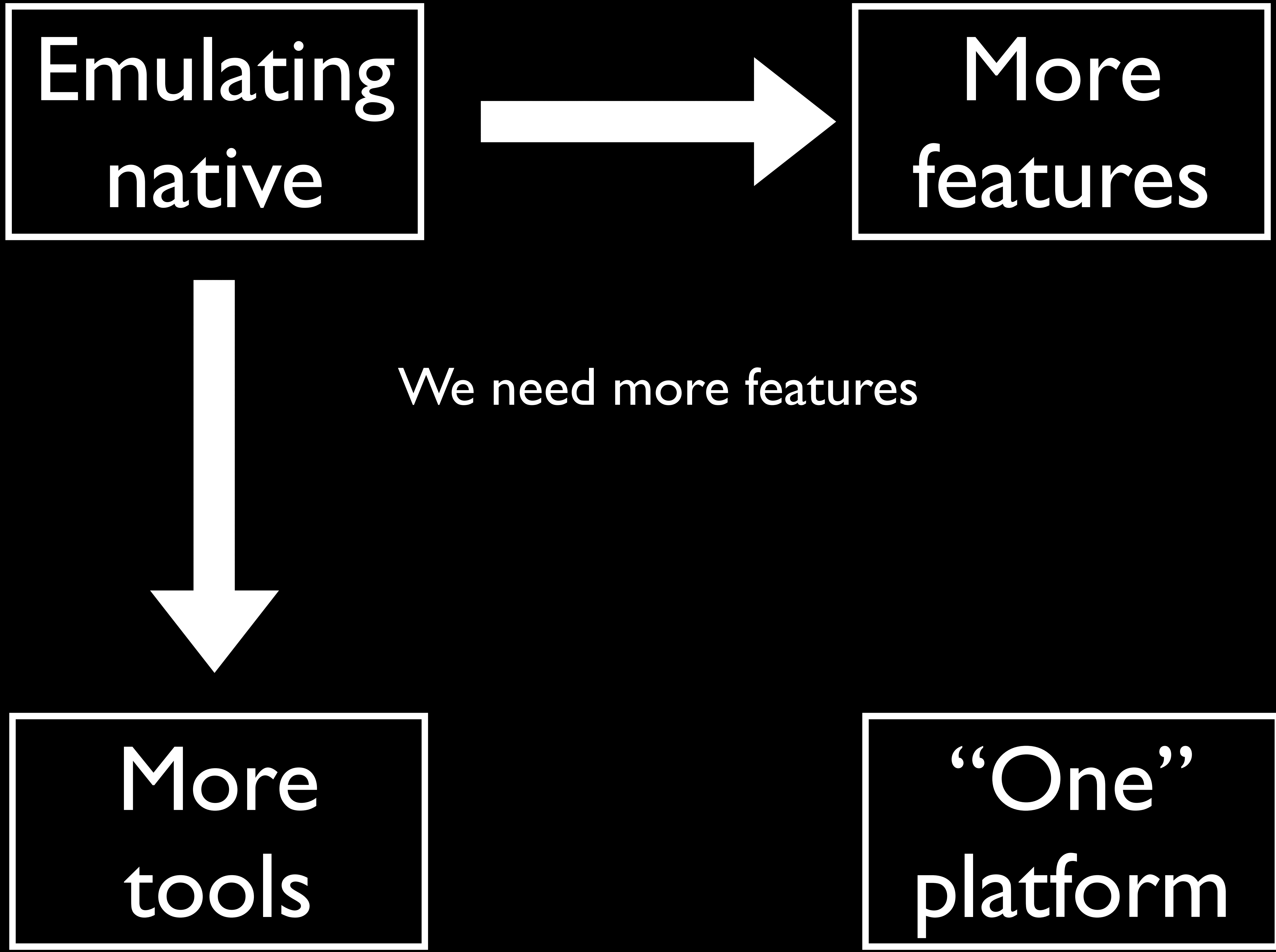
Emulating native

More features

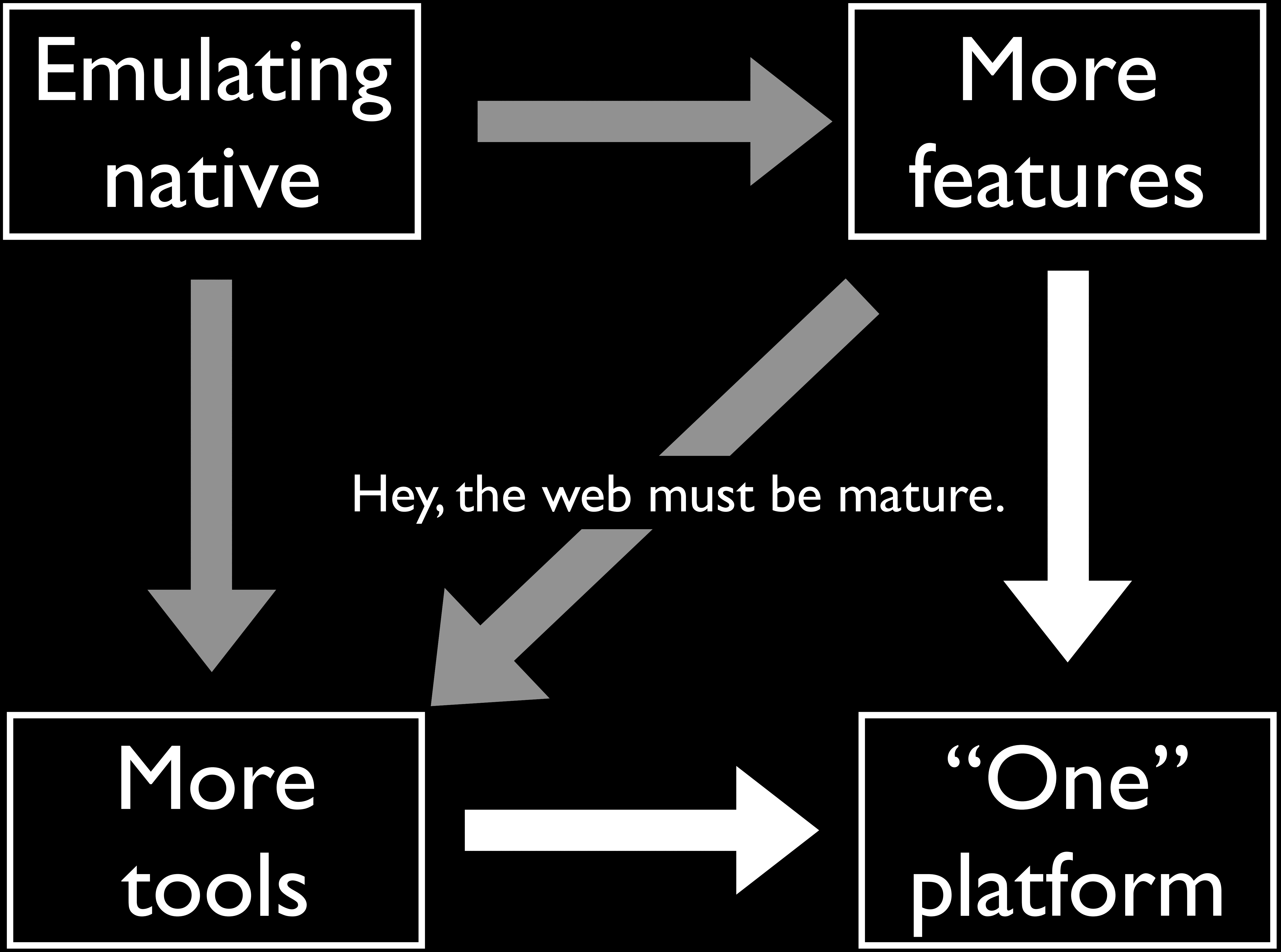
More tools

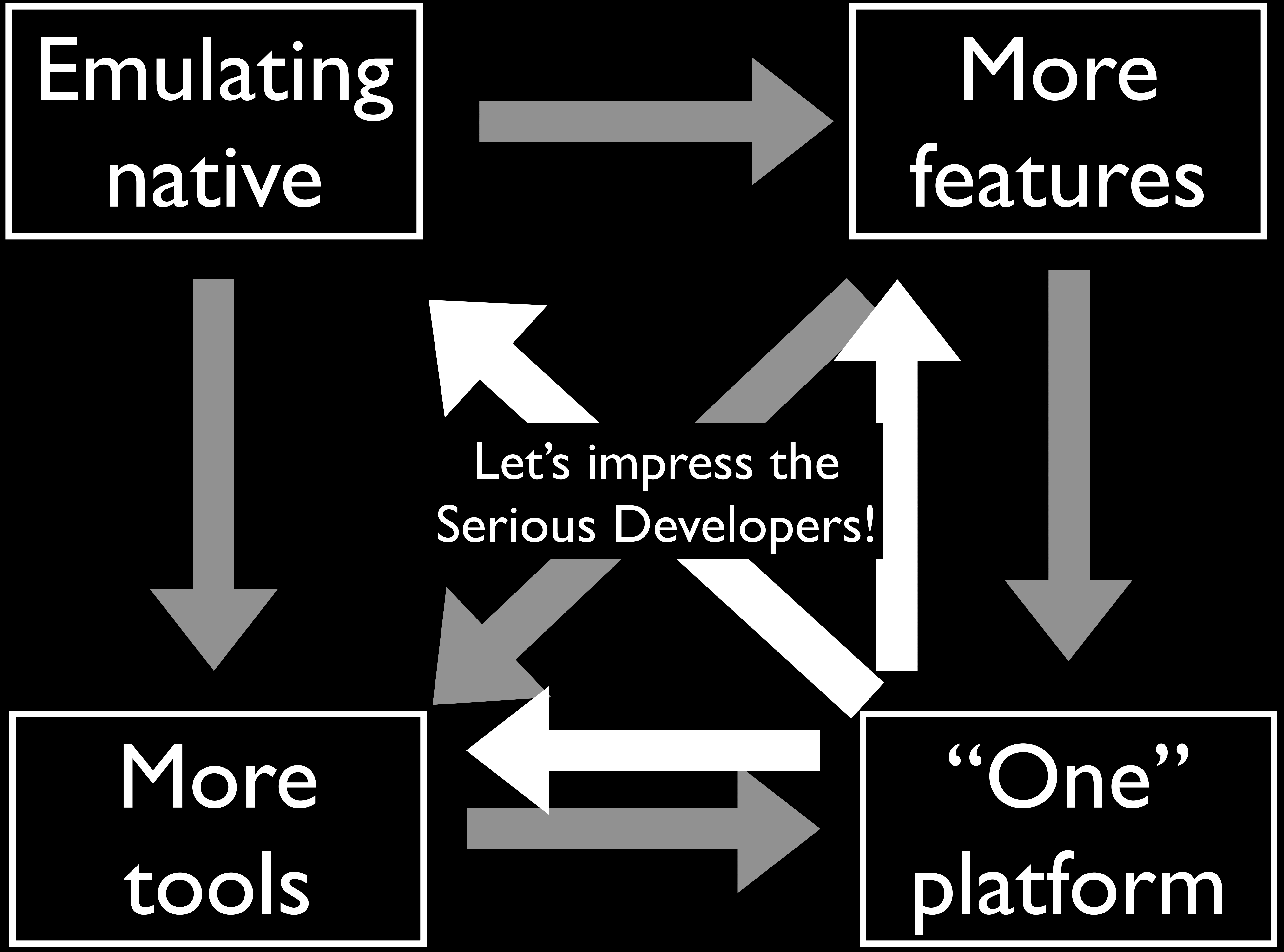
“One” platform



We need more features

$$\begin{tikzcd}
\boxed{\text{Emulating native}} \arrow[r] \arrow[d] & \boxed{\text{More features}} \arrow[dl, "\text{We need more polyfills}"] \\
\boxed{\text{More tools}} & \boxed{\text{“One” platform}}
\end{tikzcd}$$


Emulating native
More features
Hey, the web must be mature.
More tools
“One” platform


Emulating native
More features
Let's impress the Serious Developers!
More tools
"One" platform

The web’s strengths

Let’s address our featuritis.

That doesn’t mean ditching all tools and features.

Instead, it means thinking about how each individual tool and feature furthers the web’s core strengths:

- URLs
- Reach
- Simplicity

Thank you

I’ll put these slides online

Questions?

Peter-Paul Koch
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