

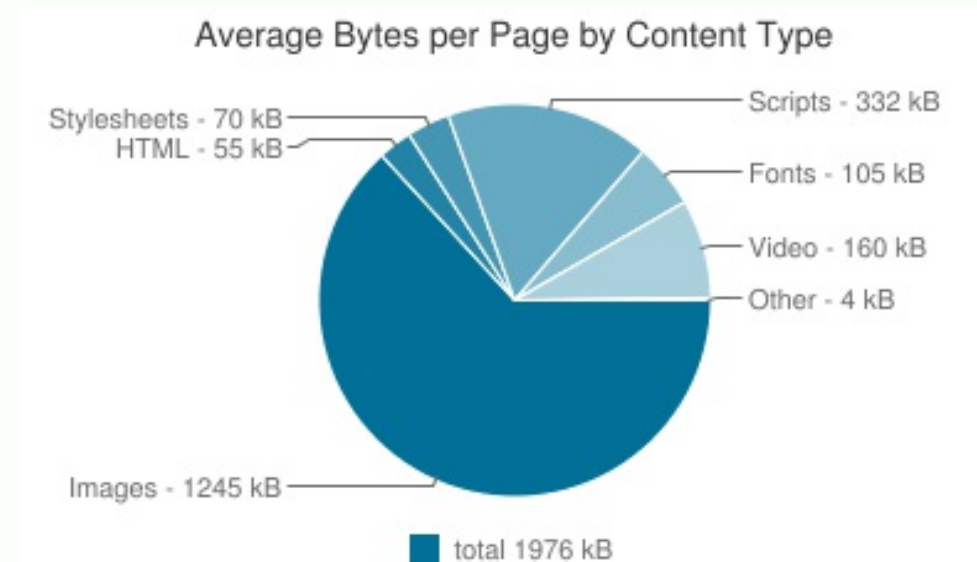
USING RESPONSIVE IMAGES (NOW)

By [Chen Hui Jing](#) / [@hj_chen](#)

SO YOU WANT TO BUILD A RESPONSIVE WEBSITE?



THE OBESITY PROBLEM

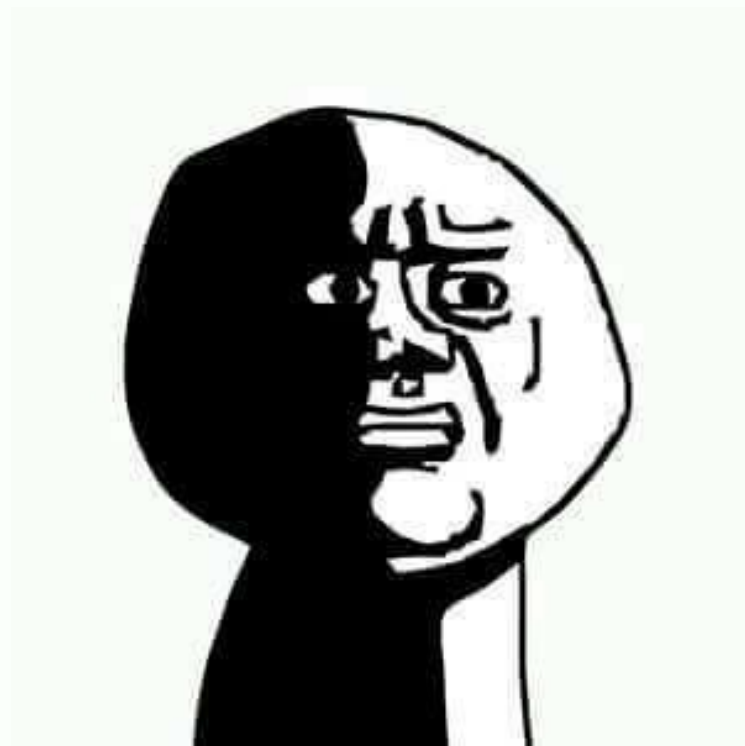


Source: [http archive](http://archive)

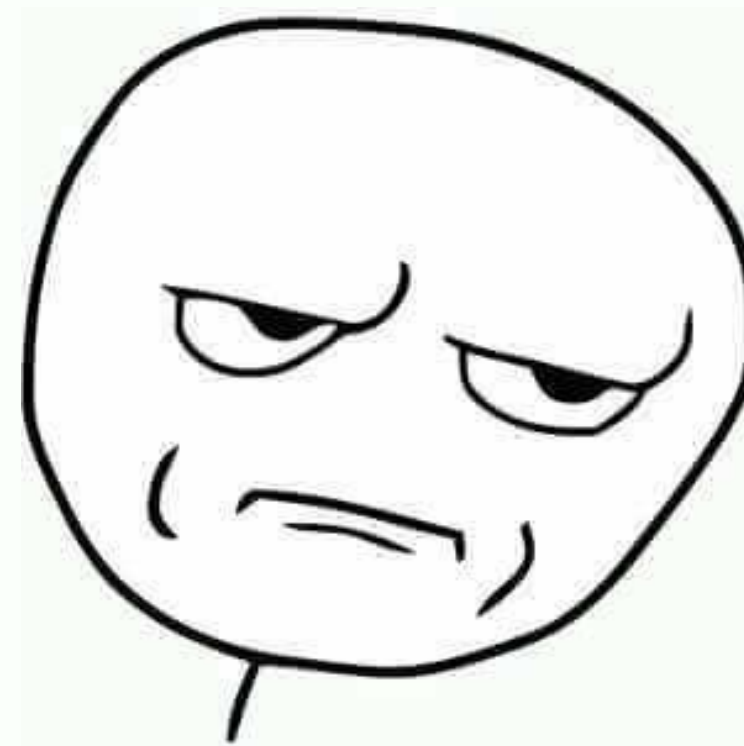
>60% from images

LOSE-LOSE SITUATION

Blurry image on HD 5K display?



5mb pixel-dense image on 3.8inch Nokia phone?



POTENTIAL SOLUTIONS

WURFL.js	Requires additional development effort for it to place nice in your project
Adaptive image	Server-side solution; Dependent on PHP; May need to mess around with server configuration
Using cookies	Mostly experimental; Not advisable for production sites
Hack 	Not scalable for image heavy sites; Fails validation; Not semantic

<SRCSET> AND <PICTURE>

Responsive image solution native to the browser.



SOME BACKGROUND



My name is Chen Hui Jing.

Self taught designer and developer.

Works at Nurun Singapore.

Write blog posts from time to time.

THE <SRCSET> ATTRIBUTE

Declare comma-separated list of image sources, which browsers will serve according to certain conditions we specify using descriptors.

DESCRIPTORS

x descriptors indicate the pixel-density of an image

w descriptors indicate the width of an image

THE <SIZES> ATTRIBUTE

Must be present if w descriptors are used

Syntax: <media-condition> <CSS length>

You can't use percentages for the second condition.
The only relative CSS lengths you can use are viewport units.

```
sizes="(max-width: 400px) 100vw,  
(max-width: 960px) 75vw,  
640px"
```

FIXED WIDTH IMAGES



```

```

FLUID WIDTH IMAGES



```

```

THE <PICTURE> ELEMENT

A wrapper for the image and its sources.

```
<picture>
  <source media="(min-width: 40rem)"
    srcset="full-large.jpg 1024w,
            full-medium.jpg 640w,
            full-small.jpg 320w"
    sizes="33.3vw" />
  <source srcset="cropped-large.jpg 2x,
                cropped-small.jpg 1x" />
  
</picture>
```


THE <SOURCE> ELEMENT

Allows us to declare multiple sets of image sources.

Syntax: <media attribute>|<type attribute> <srcset attribute>

The <media attribute> and <type attribute> are optional for a single source, but either one is required when using multiple <source>s.

```
<source media="(min-width: 1280px)" srcset="wide-large.jpg 1280w, wide-medium.jpg 960w, wide-small.jpg 720w">  
<source media="(min-width: 960px)" srcset="cropped-large.jpg 960w, cropped-medium.jpg 720w, cropped-small.jpg 480w">  
<source srcset="narrow-large.jpg 2x, narrow-small.jpg 1x">
```

ART DIRECTION USE-CASE



```
<picture>
  <source media="(min-width: 960px)" srcset="ticker-tape-large.jpg">
  <source media="(min-width: 575px)" srcset="ticker-tape-medium.jpg">
  
</picture>
```

IMAGE FORMAT USE-CASE

Order of source matters.

Falls back to original element.

```
<picture>  
  <source type="image/vnd.ms-photo" src="wwc2015.jxr">  
  <source type="image/jp2" src="wwc2015.jp2">  
  <source type="image/webp" src="wwc2015.webp">  
    
</picture>
```

CAN I USE...SRCSET?

Srcset attribute

- LS

Global

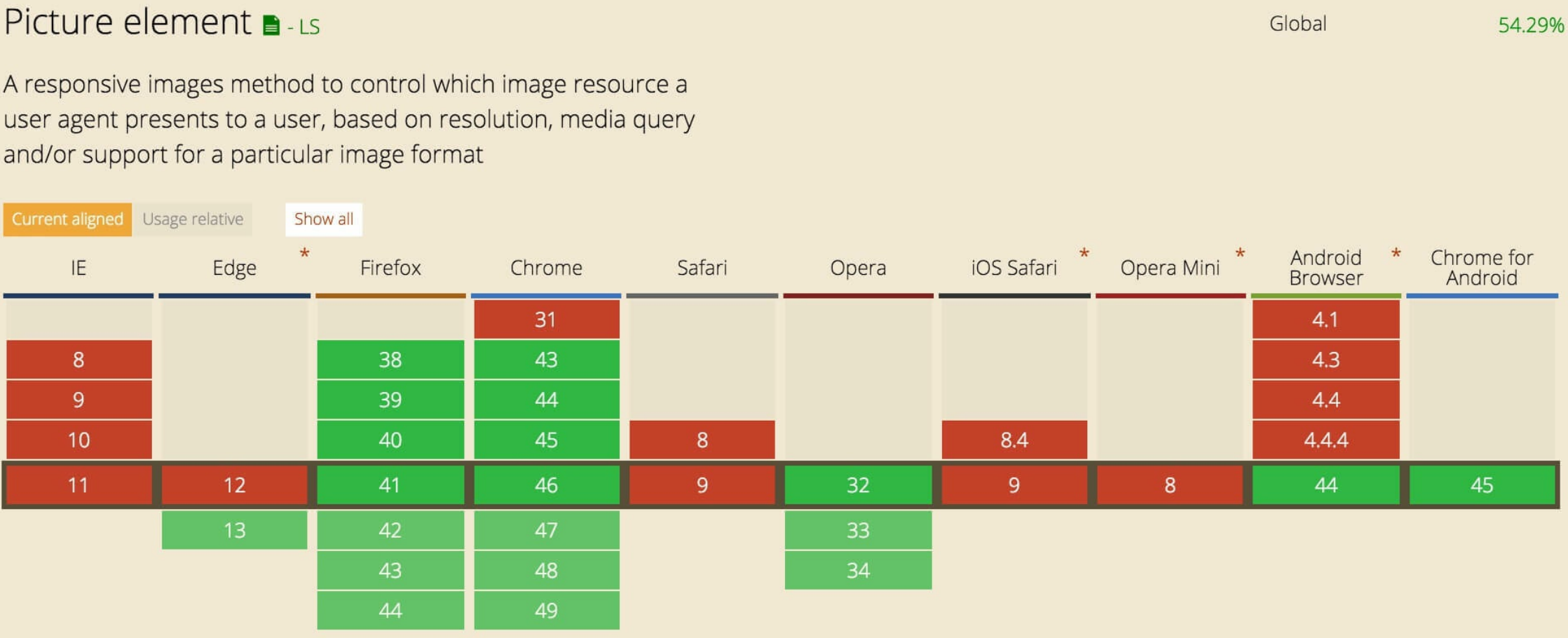
56.46% + 7.72% = 64.17%

Allows authors to define various image resources and "hints" that assist a user agent to determine the most appropriate image source to display (e.g. high-resolution displays, small monitors, etc).

Current alignedUsage relativeShow all

IE	Edge	Firefox	Chrome	Safari	Opera	iOS Safari	Opera Mini	Android Browser	Chrome for Android
			31					4.1	
8		38	43					4.3	
9		39	44					4.4	
10		40	45	28		28.4		4.4.4	
11	212	41	46	9	32	9	8	44	45
	13	42	47		33				
		43	48		34				
		44	49						

CAN I USE...PICTURE?



POLYFILL

The go-to polyfill for responsive images is [Picturefill](#)
by [Scott Jehl](#).

TO FIND OUT MORE...

Native Responsive Images by Yoav Weiss

Responsive images get real with Mat Marquis

The anatomy of responsive images by Jake Archibald

Srcset and sizes by Yoav Weiss

Responsive Images 101 by Jason Grigsby

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THE END

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