



Beyond the waterfall

meaningful web performance visualisations

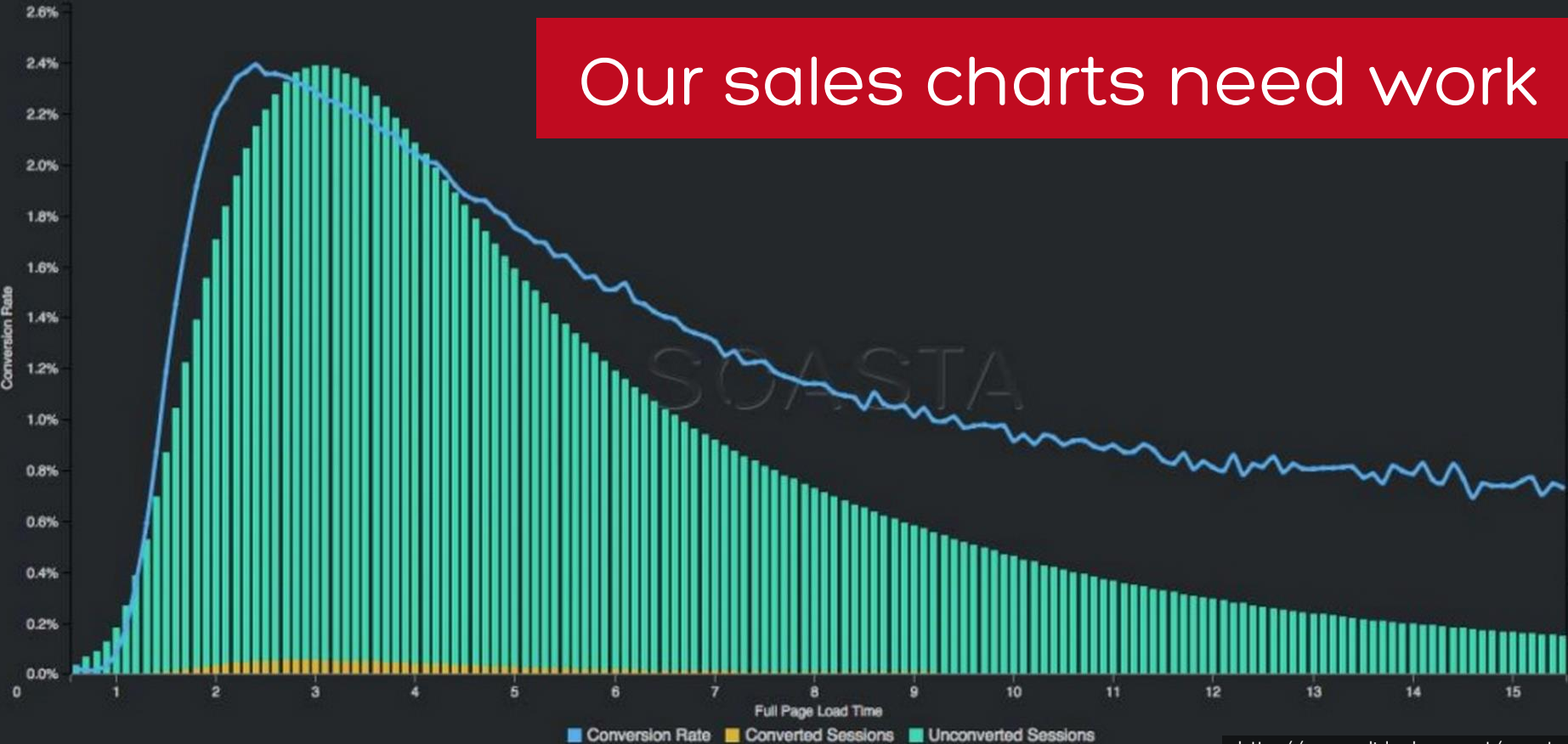
A picture is worth a thousand words,
and we are all storytellers

A picture is worth a thousand words,
and we are all salespeople

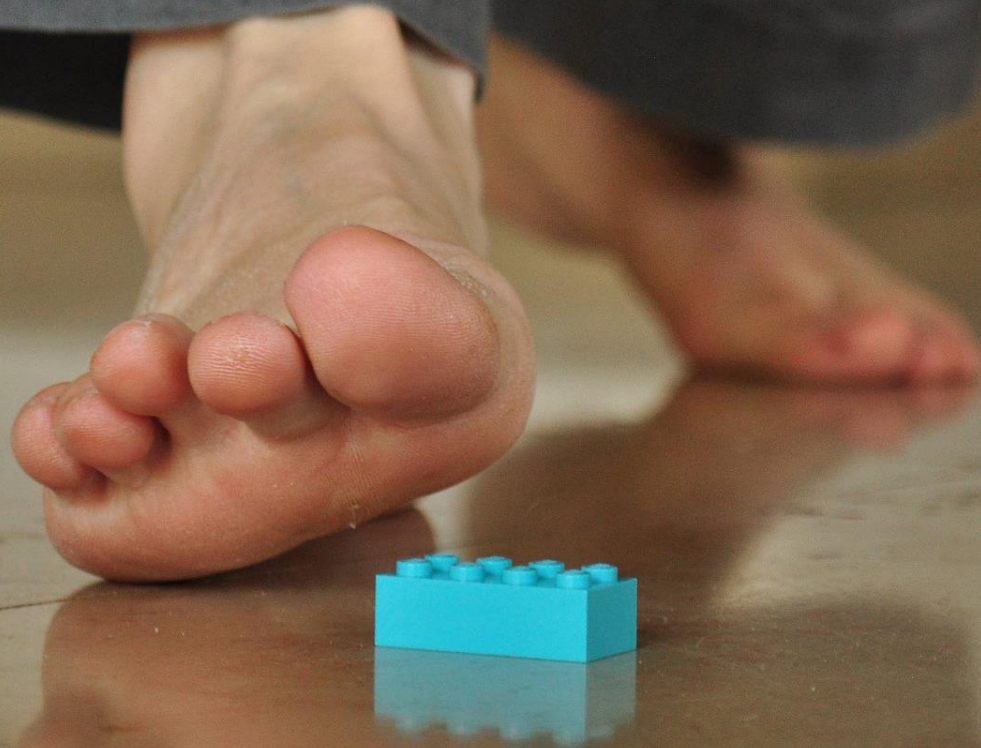
#perfmatters
#webperf
#devops
#sitespeed
@VelocityConf

Conversion Rates vs Average Load Times

Our sales charts need work



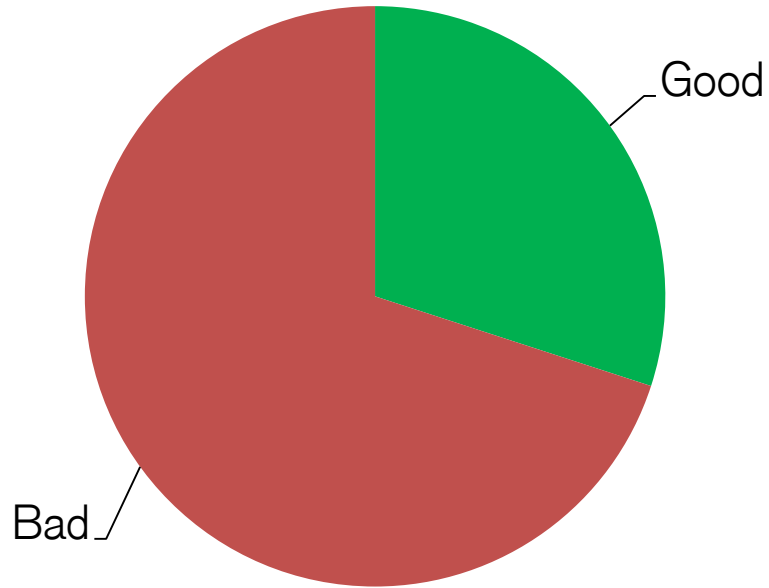
Some images are universal



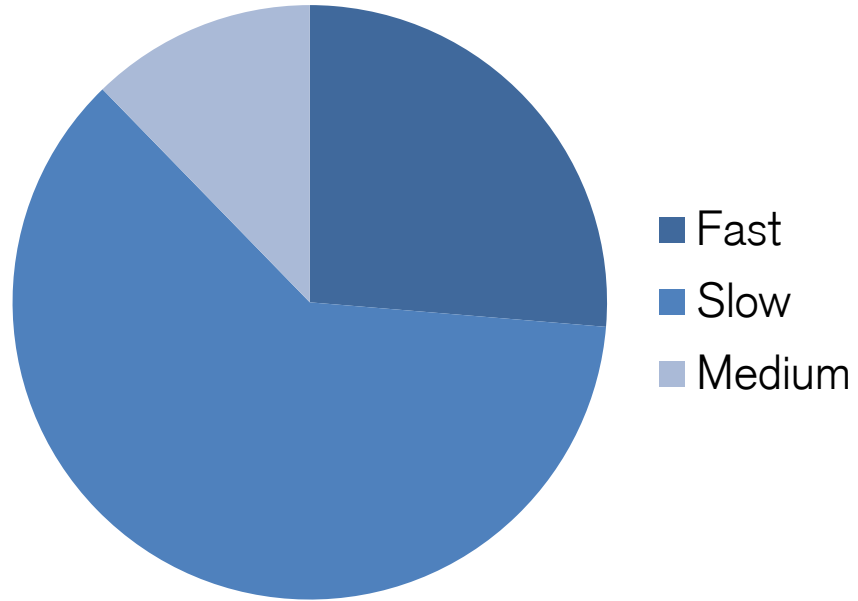
Some images are universal



Some images are easy



And some are hard



it is our job to find the best
visualisations to support our story

Information is Beautiful



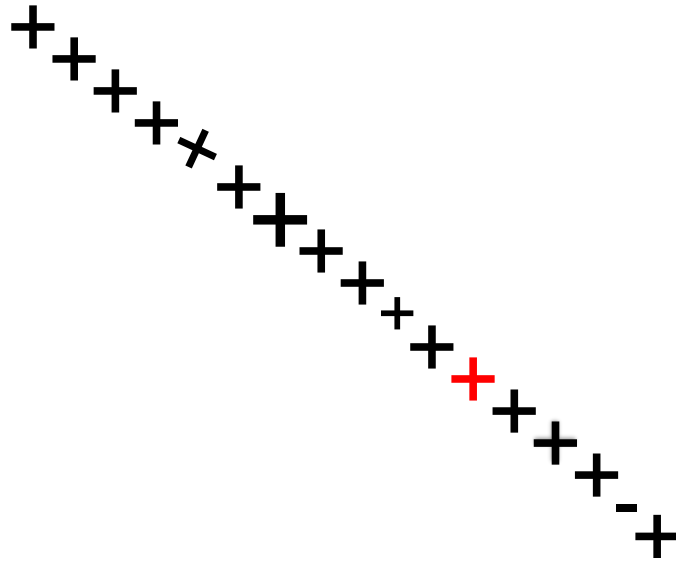
David McCandless



We've been doing it for a while

it doesn't matter in what order the
letters in a word are, the only
important thing is that the first and
last letter be at the right place

We're rubbish at parsing letters



We process patterns, outliers, shapes...

...faster than the speed of thought

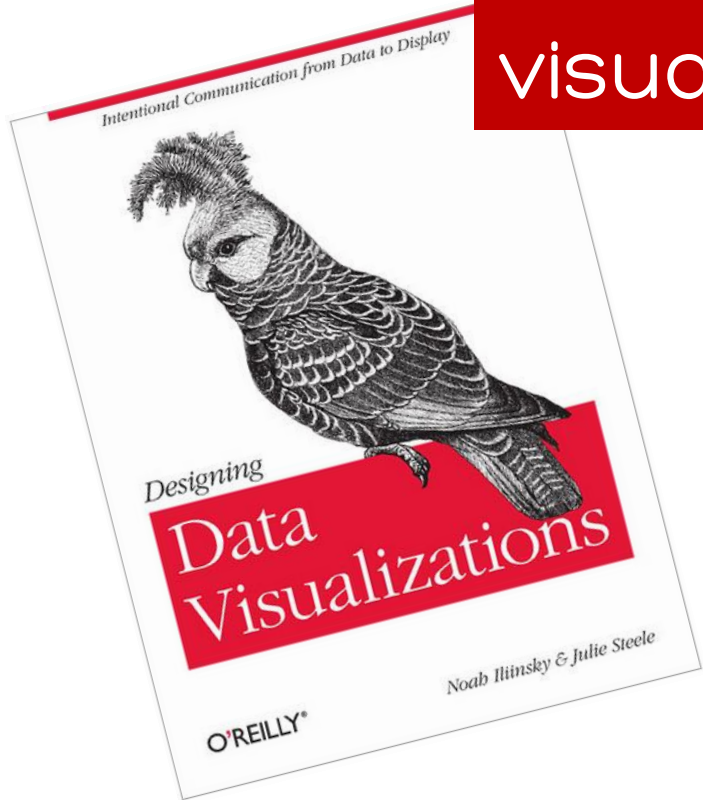
Billion Euro-o-gram



So... infographics!

giving spending earning fighting accumulating owing bailing out

infographic = hand-made
visualisation = computer-made



Size

Position

Colour & **Contrast**

Shape

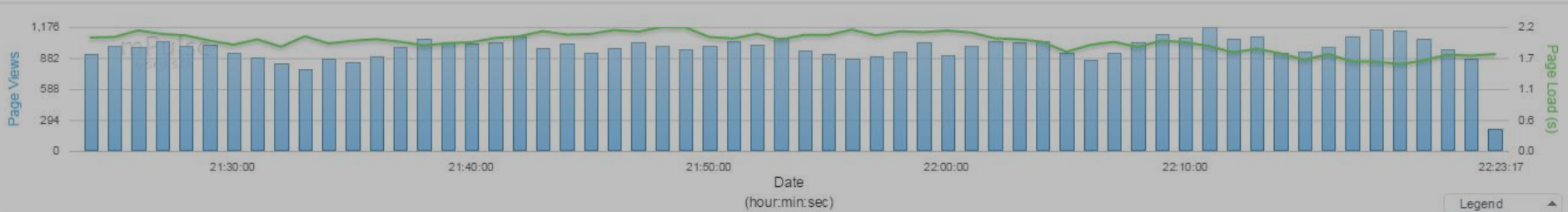
Animation

- Weight, scale, importance
- Relationship, inheritance
- Importance, categorisation, value
- Categorisation, importance
- Movement, importance

We have got a lot to work with

So what about web performance?

Measurements Over Time vs. Page Load



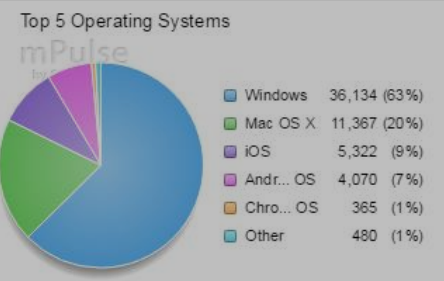
Countries & Page Groups



Summary

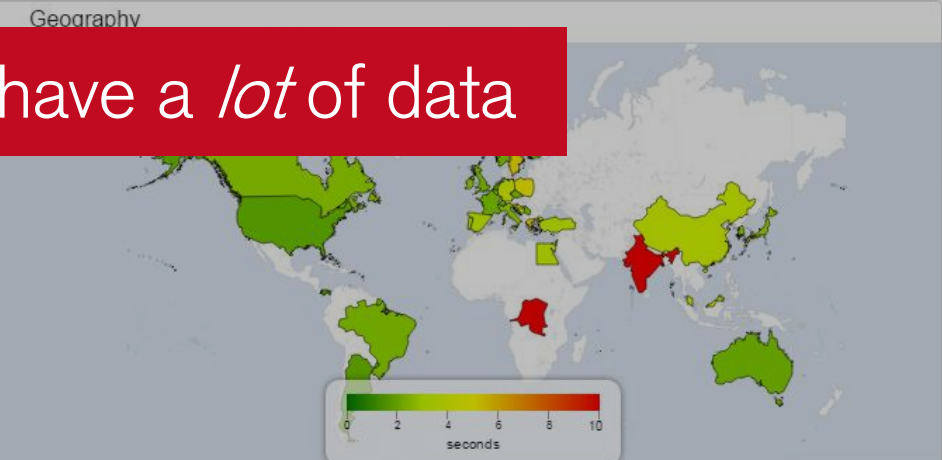
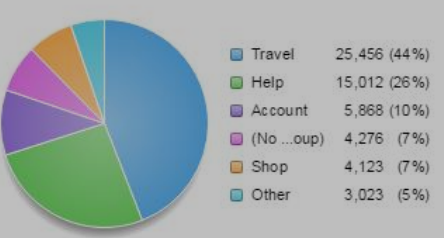
Page Views	Page Load	Bounce Rate	Network Errors
58.3K	1.97s	15%	0%

Browsers & Operating Systems

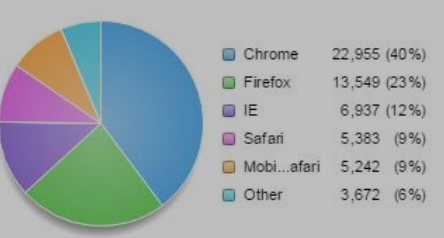


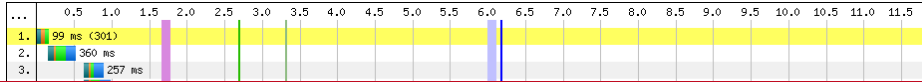
we now have a *lot* of data

Top 5 Page Groups

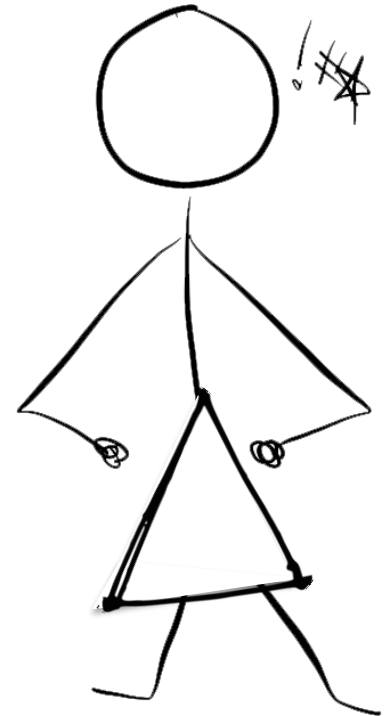
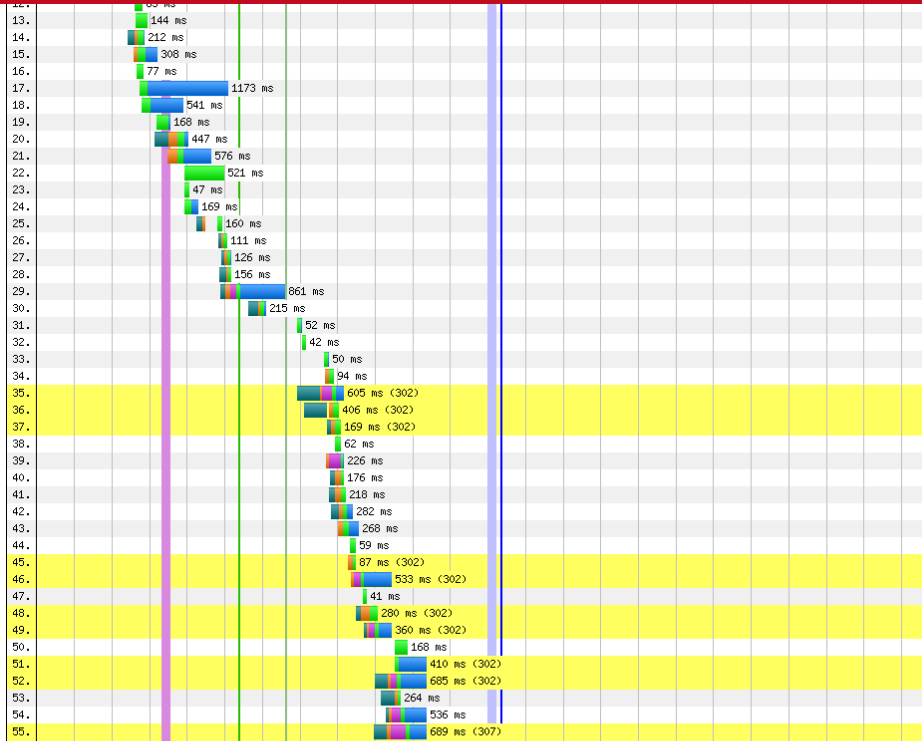


Top 5 Browsers





And our data can have a high entry-level



52.2s

Mum, can I have a taste of your wine?

It doesn't have to be this way...



LIVE UPDATES

LAMAR ODOM IN CRITICAL CONDITION

By the way, he's not as "found" as you might think. * Nevada 10/27/13



KYLE JENNER HALLOWEEN OUTRAGE

It's not all about the "found" as you might think. * Nevada 10/27/13



LAMAR ODOM >

OK! FUN BINGO £7 FREE PACK 1,000 COINS & 50 VOLTS FREE GET THE FREE APP NOW >



Sainsbury's Great Value

WIST You

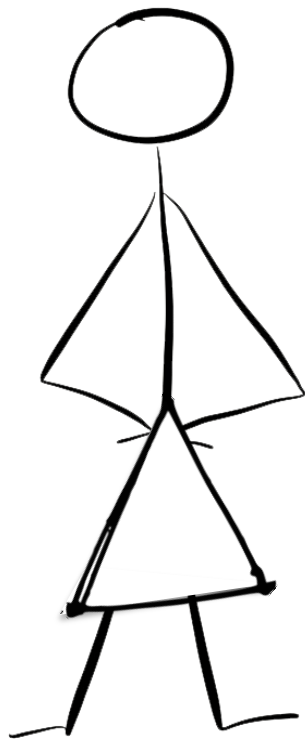
By continuing to use the site, you agree to the use of cookies. You can find out more by following [this link](#)



it is imperative that we
present our data well
in a *business context*

Ecommerce Director
Large UK Publisher

Meet Jane



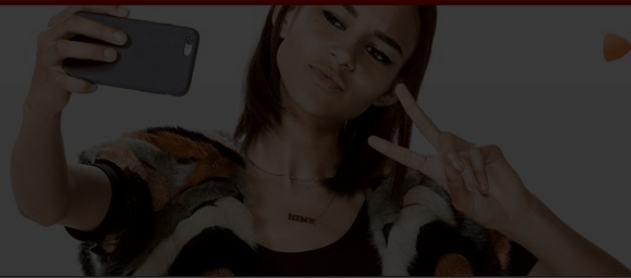
Jane's challenge(s)
Using visualisations to prove a point
Using visualisations to increase awareness
Using visualisations to create value
Using visualisations to track performance
Building visualisations into business processes



Publishing is changing



BE AN INSPIRATION
#SHAREYOURSTYLE



EXPLORE MORE >

LIVE UPDATES



LAMAR ODOM IN CRITICAL CONDITION
Khloe Kardashian's ex found unresponsive at Nevada brothel >



THE APPRENTICE: DAN CALLAGHAN FIRED FIRST
Entrepreneur responds to early exit on Twitter in the best way ever >

LATEST CELEBRITY PICS



LAMAR ODOM >



EXPLORE MORE >

OK! FUN BINGO

£7 FREE PACK
1,000 COINS & 50 VOLTS FREE



GET THE FREE APP NOW >



Advertisement

Sainsbury's
live well for less

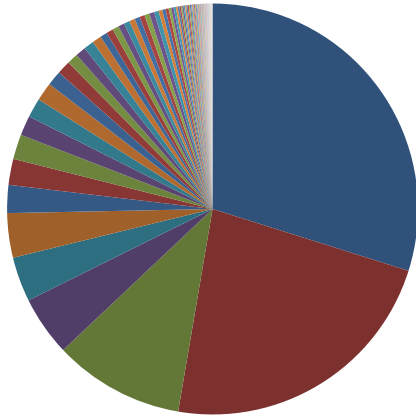
TWIST YOUR FAVOURITES



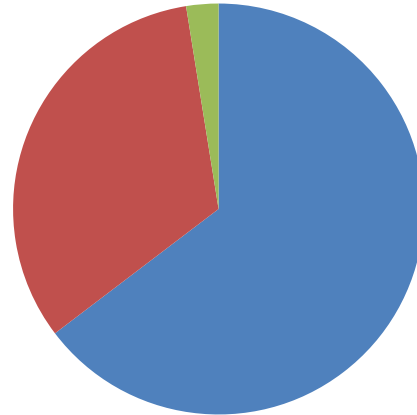
“we have no third-party
management strategy”

PIE Charts FTW?

Content breakdown by domains



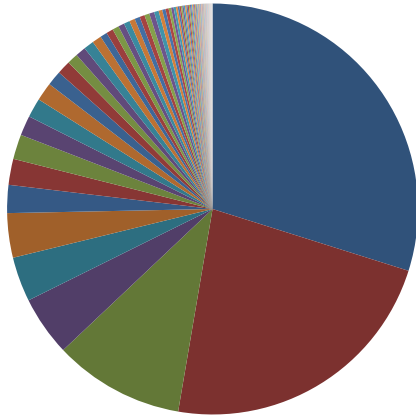
Third-parties Enabled



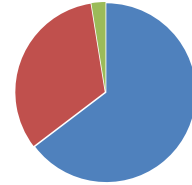
Third-parties Disabled

PIE Charts FTW?

Content breakdown by domains



Third-parties Enabled

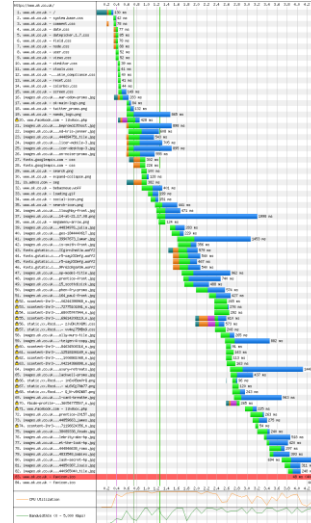
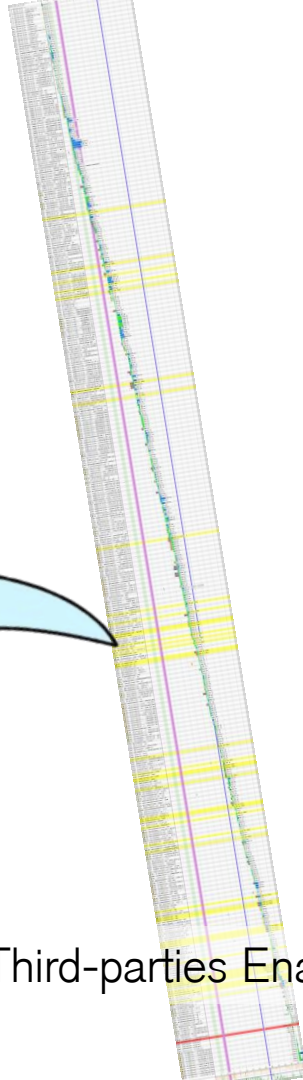


Third-parties Disabled

Waterfalls FTW?



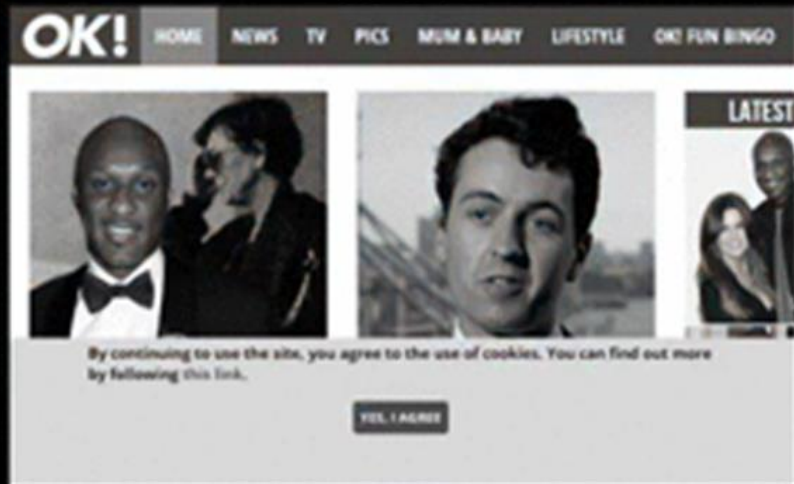
Third-parties Enabled



Third-parties Disabled

“The Last Resort”

SPOF



OK! HOME NEWS TV PICS MUM & BABY LIFESTYLE OK! FUN BINGO

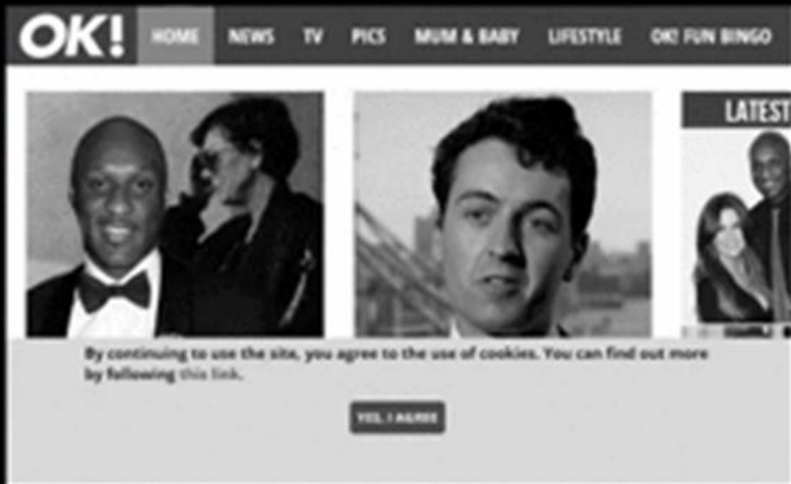
By continuing to use the site, you agree to the use of cookies. You can find out more by following this link.

YES, I AGREE

This screenshot shows the OK! website with a dark grey overlay. The navigation bar includes 'OK!', 'HOME', 'NEWS', 'TV', 'PICS', 'MUM & BABY', 'LIFESTYLE', and 'OK! FUN BINGO'. Below the navigation bar are three image thumbnails: a man in a tuxedo, a man's face, and a 'LATEST' section with a couple. A cookie consent message is displayed at the bottom of the overlay, with a 'YES, I AGREE' button.

26.2

Ok



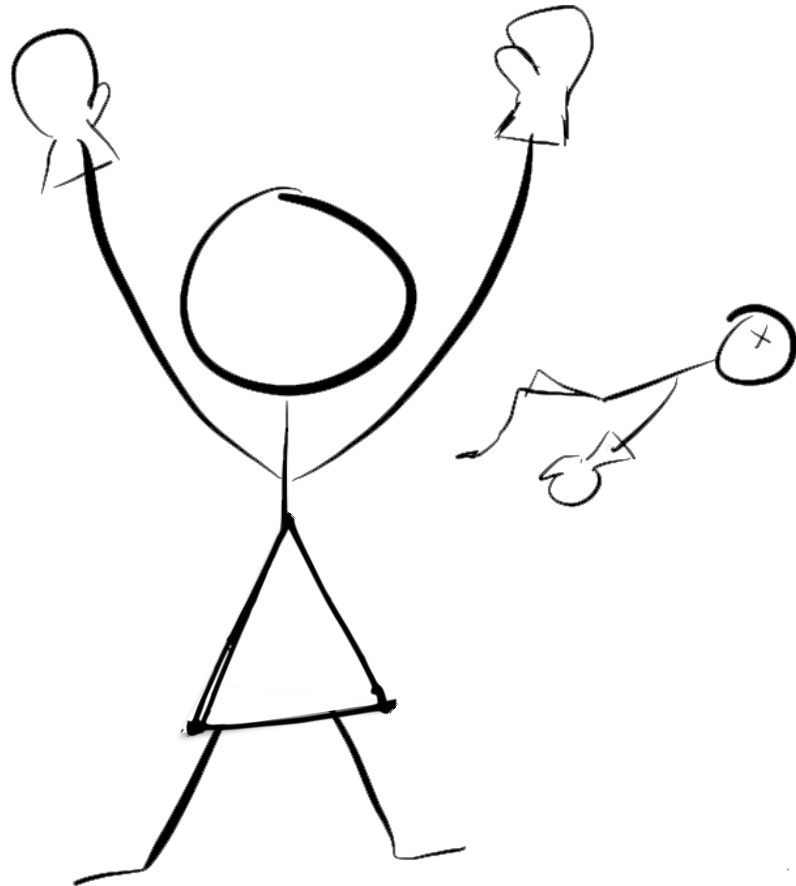
OK! HOME NEWS TV PICS MUM & BABY LIFESTYLE OK! FUN BINGO

By continuing to use the site, you agree to the use of cookies. You can find out more by following this link.

YES, I AGREE

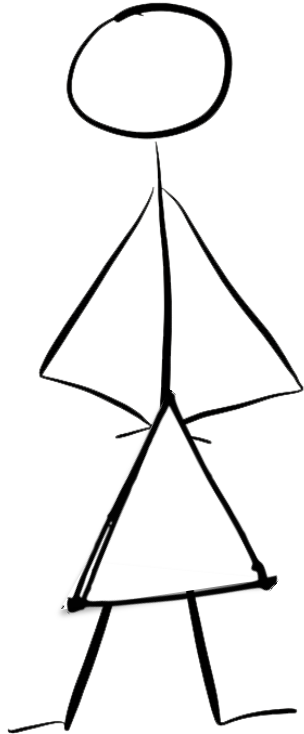
This screenshot shows the OK! website with a dark grey overlay. The navigation bar includes 'OK!', 'HOME', 'NEWS', 'TV', 'PICS', 'MUM & BABY', 'LIFESTYLE', and 'OK! FUN BINGO'. Below the navigation bar are three image thumbnails: a man in a tuxedo, a man's face, and a 'LATEST' section with a couple. A cookie consent message is displayed at the bottom of the overlay, with a 'YES, I AGREE' button.

6.7



Success!

Meet Jane



~~Jane's challenge(s)~~

~~Using visualisations to prove a point~~

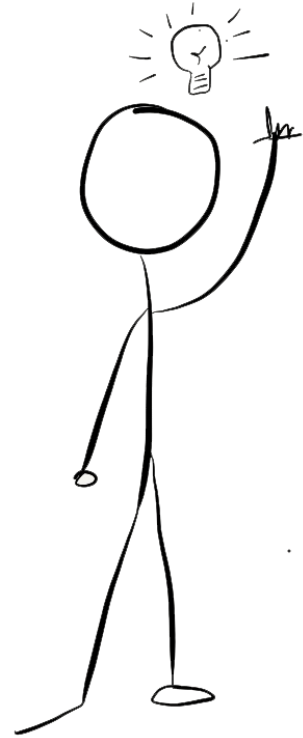
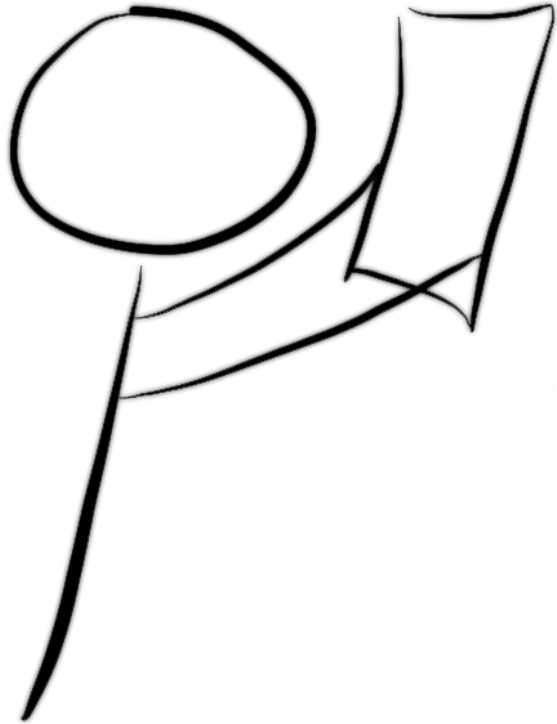
Using visualisations to increase awareness

Using visualisations to create value

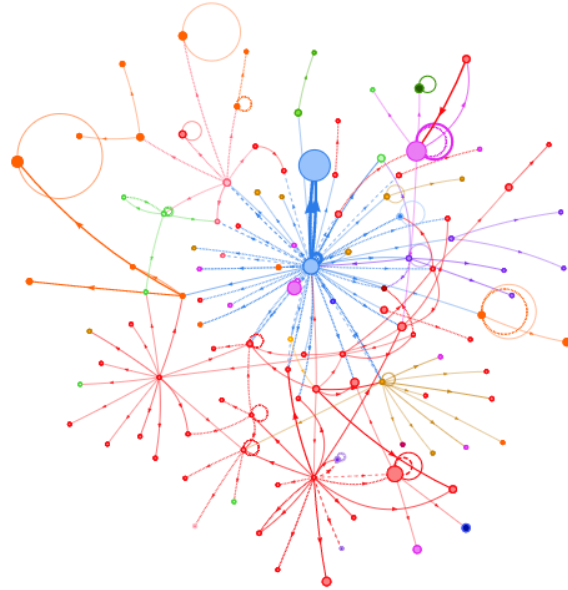
Using visualisations to track performance

Building visualisations into business processes

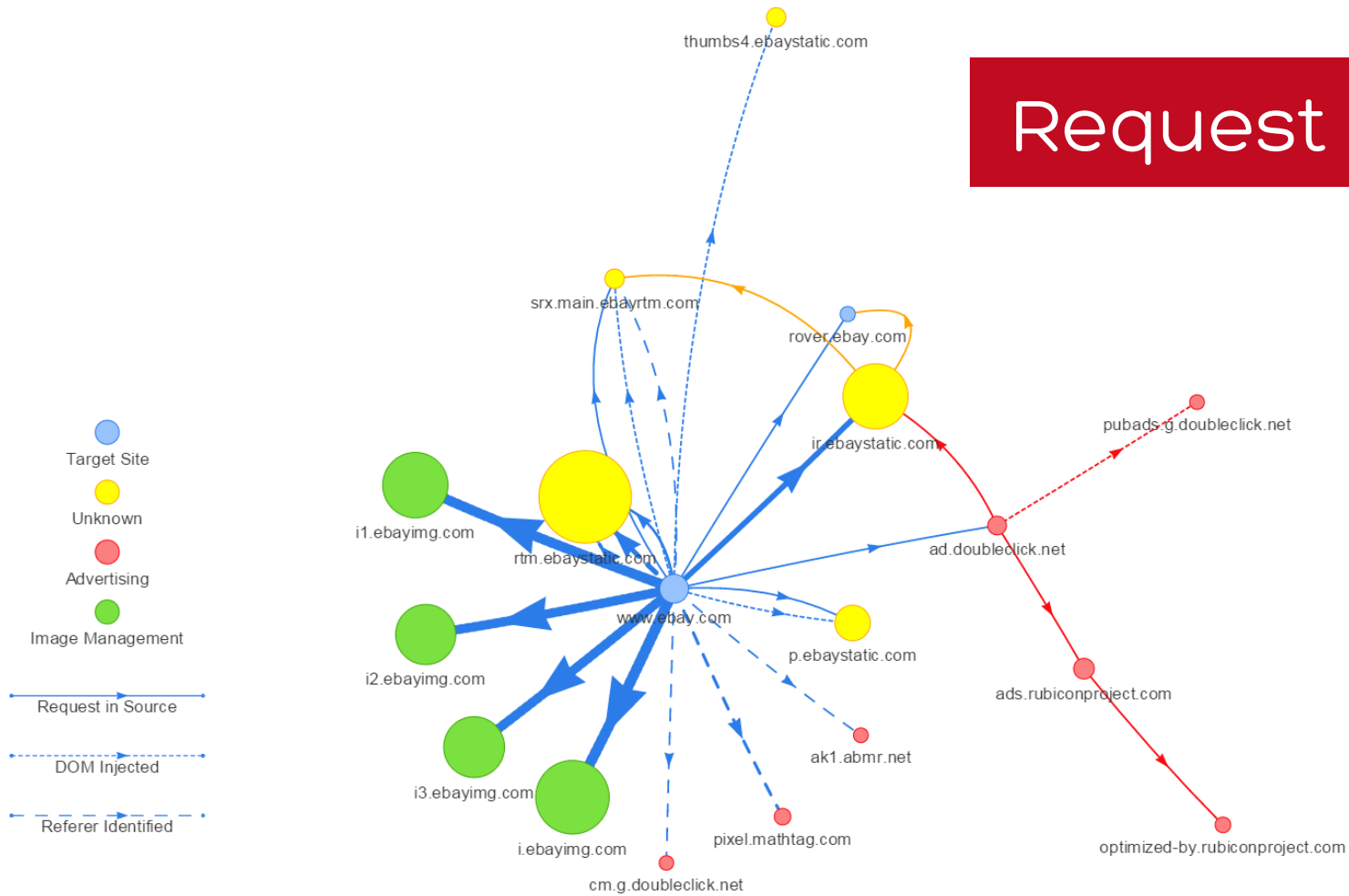
“We don’t have that many third-parties!”



Can we plot the relationships?



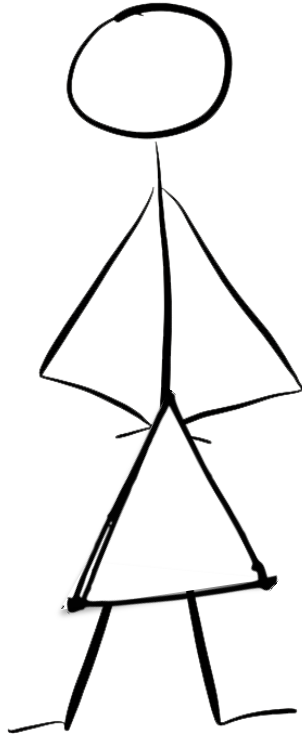
Request Map



“requestmap is the most powerful visualisation we have”

“it has been fundamental in the performance mind-set shift at Marks and Spencer”

Meet Jane

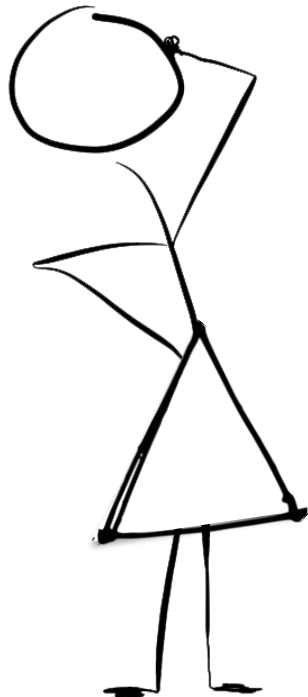


~~Jane's challenge~~
~~Using visualisations to prove a point~~
~~Using visualisations to increase awareness~~
Using visualisations to create value
Using visualisations to track performance
Building visualisations into business processes

We need the ads for revenue



Can we show when the ads appear?



...without trawling filmstrips...



Realise the potential*

Representative
22.9% APR Variable

And up to 1.25% cashback thereafter.*



The Platinum Cashback Everyday Credit Card

Apply

Perfmap



5157ms (2934ms)

LIVE UPDATES

LAMAR SQUEEZES KHLOE'S HAND

Khloe Kardashian's ex found unresponsive at Nevada brothel >

5139ms (2916ms)

CAROLINE IN A SLING FOR THE LIVE SHOWS?

A Factor presenter shocks fans with a snap of her injury >

LATEST CELEBRITY NEWS

4614ms (2391ms)

NORTH WEST'S BEST FACES >

.0s



29.0s



30.0s



31.0s



32.0s



52.2s

Mum,
can I have a taste of your wine?

Heatmap

LIVE UPDATES
LAMAR ODOM IN CRITICAL CONDITION
NFL star Lamar Odom is found unresponsive in Nevada hospital >

KYLIE JENNER HALLOWEEN OUTRAGE
Kylie Jenner's Halloween look sparks outrage because for 2015 >

LATEST CELEBRITY PICS

LAMAR ODOM >

OK! FUN BINGO **£7 FREE PACK** 1,000 COINS & 50 VOLTS FREE GET THE FREE APP NOW >

Sam's Club
Special Offers

WIST YOU?

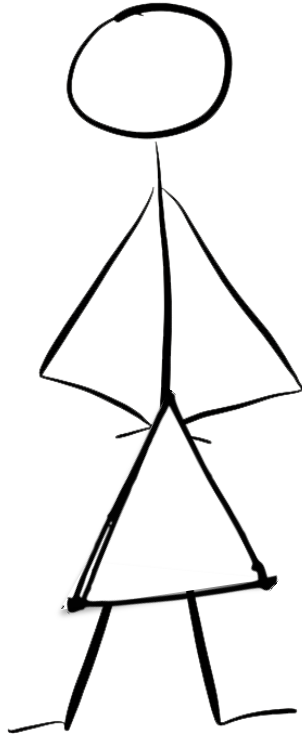
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Performance - sold to business



Meet Jane



~~Jane's challenge~~

~~Using visualisations to prove a point~~

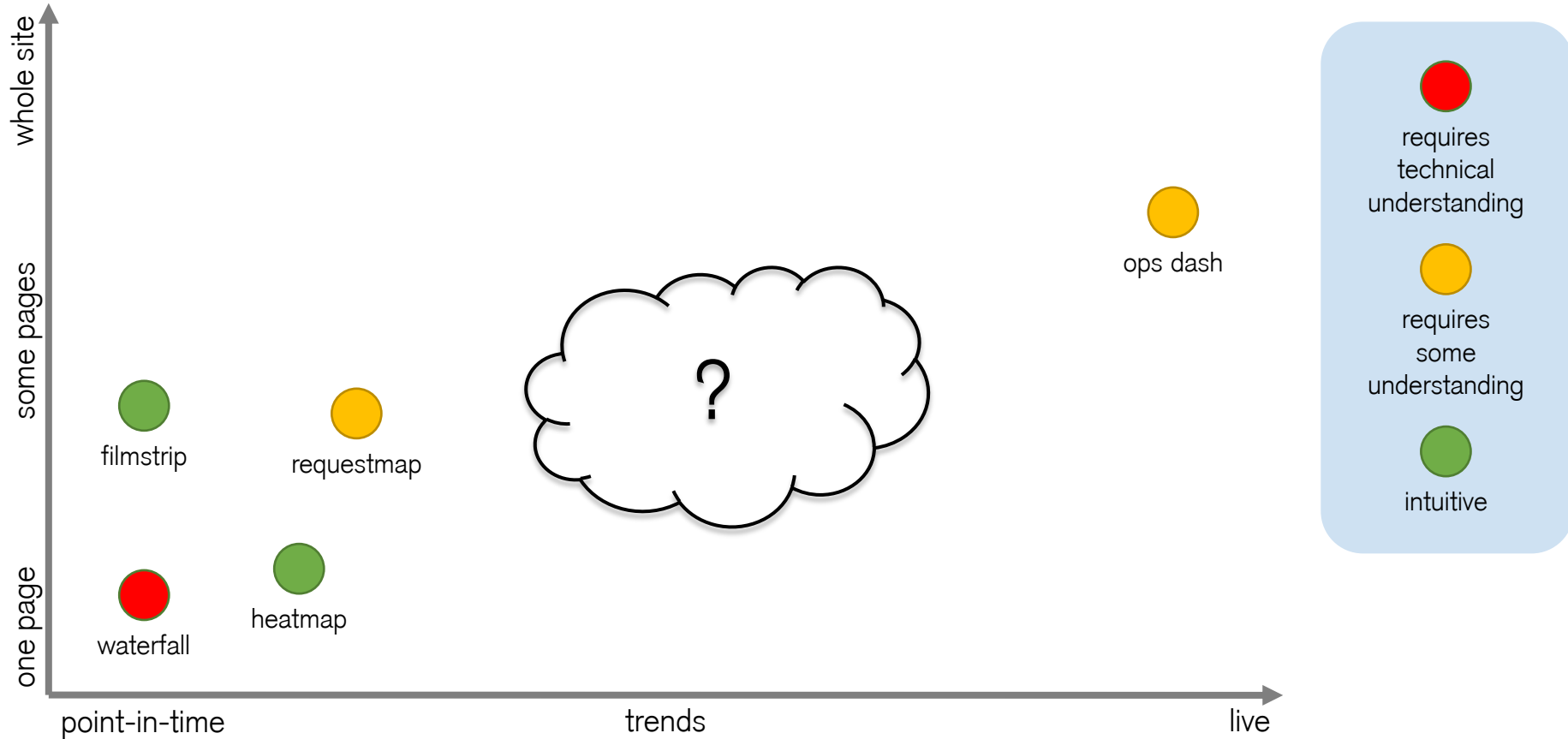
~~Using visualisations to increase awareness~~

~~Using visualisations to create value~~

Using visualisations to track performance

Building visualisations into business processes

So what have we got?



Requests per page

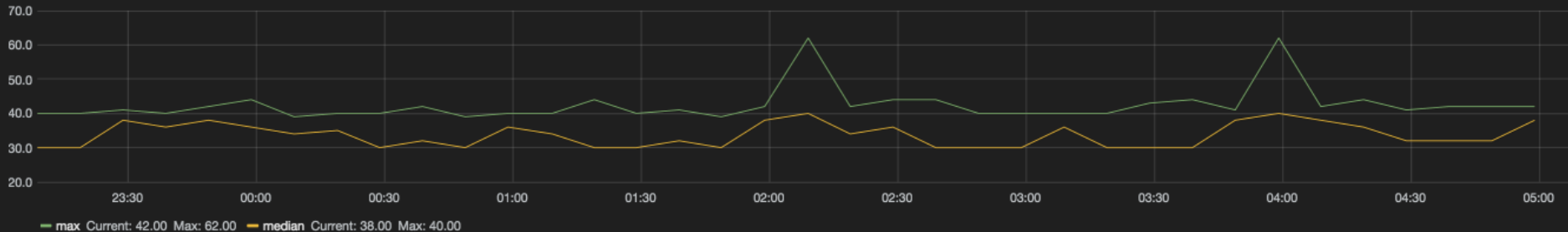
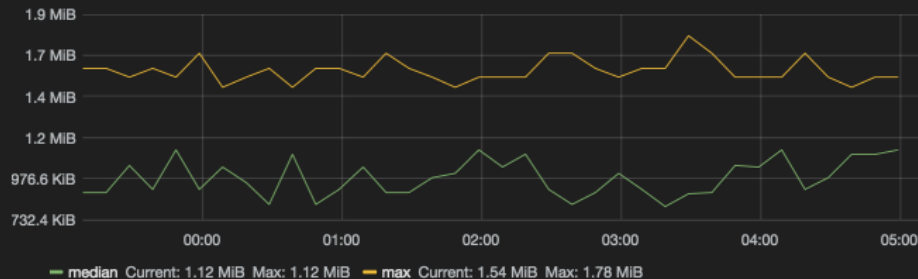


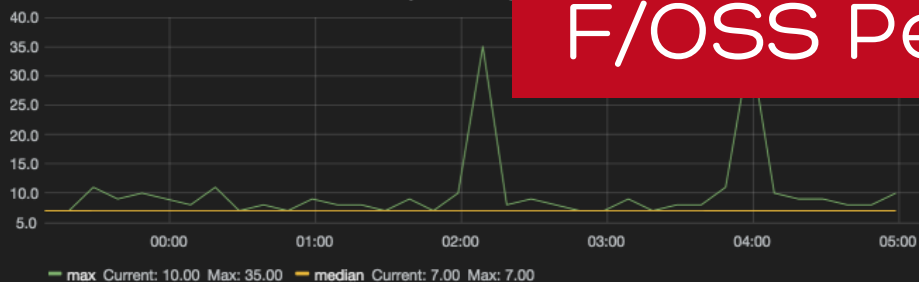
Image weight per page



Page weight



Requests missing



F/OSS Performance Dashboard



GUARDIAN BETA AND HOME IN CHROME IN IRELAND LAST 30 DAYS ▾



MEDIAN PAGE TIMES

Backend

0.1s

Start Render

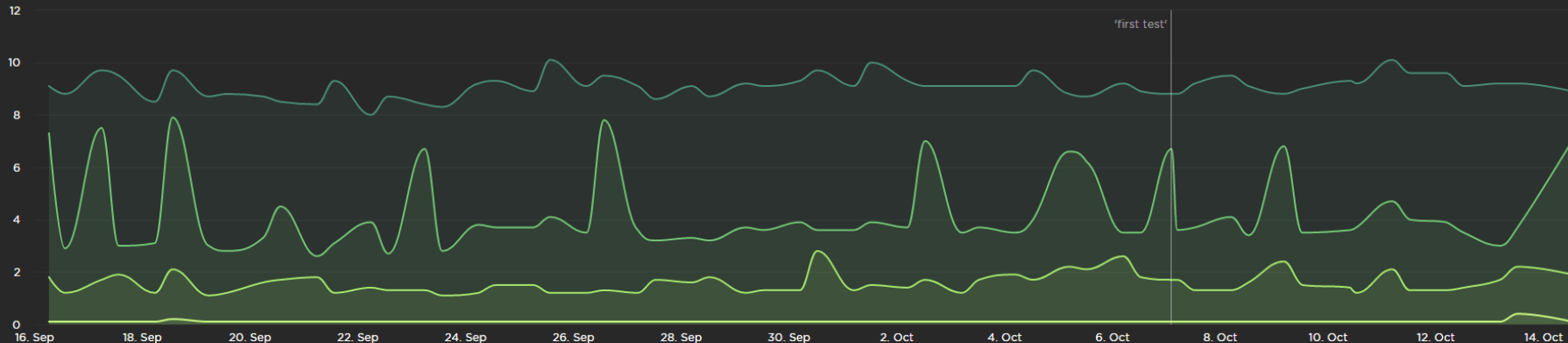
1.5s

Page Load

3.7s

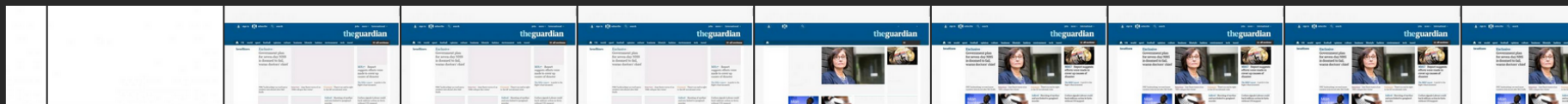
Fully Loaded

9.1s



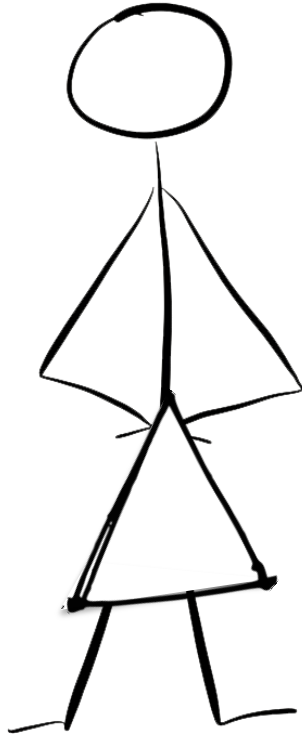
LATEST FILMSTRIP

1.5s



Commercial Performance Dashboard

Meet Jane

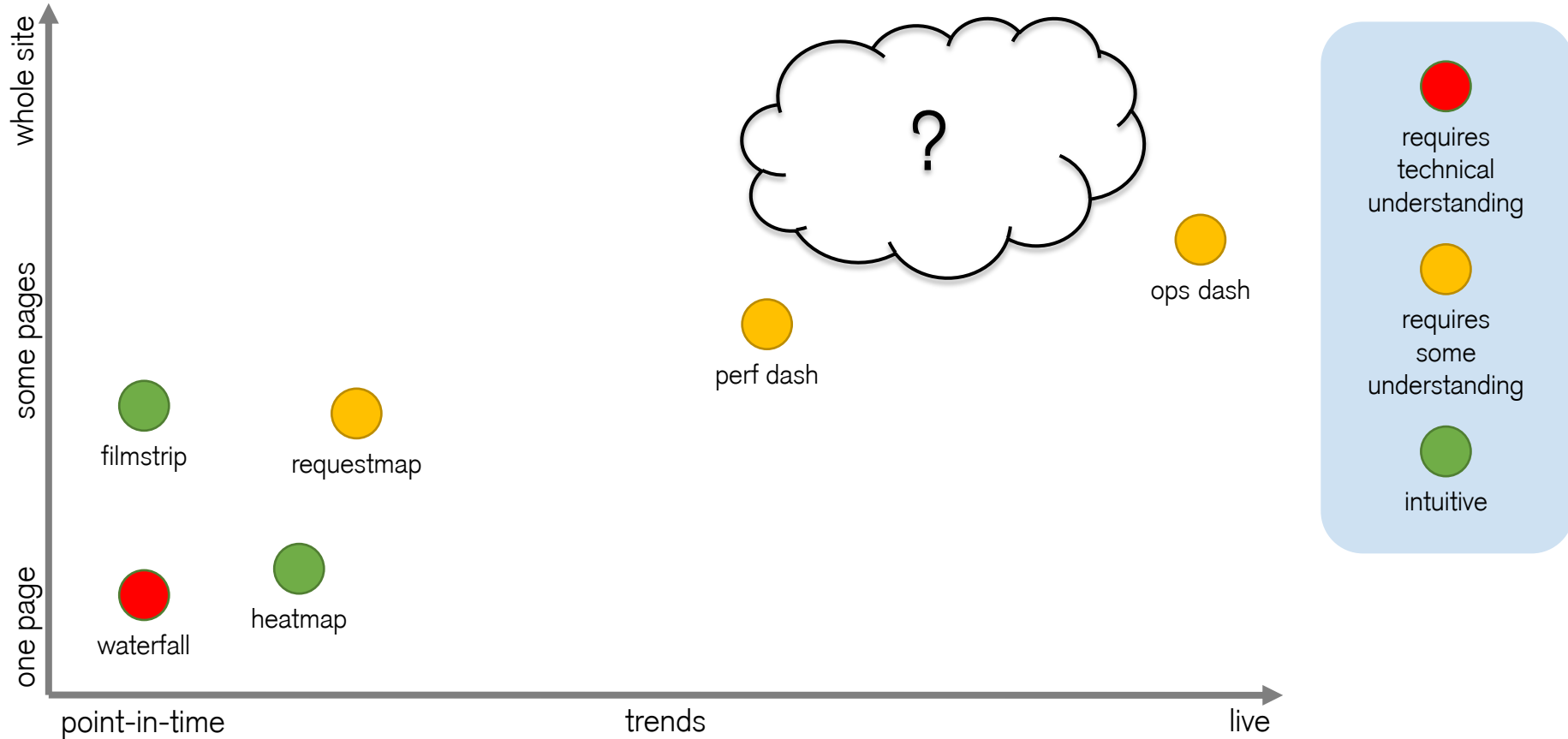


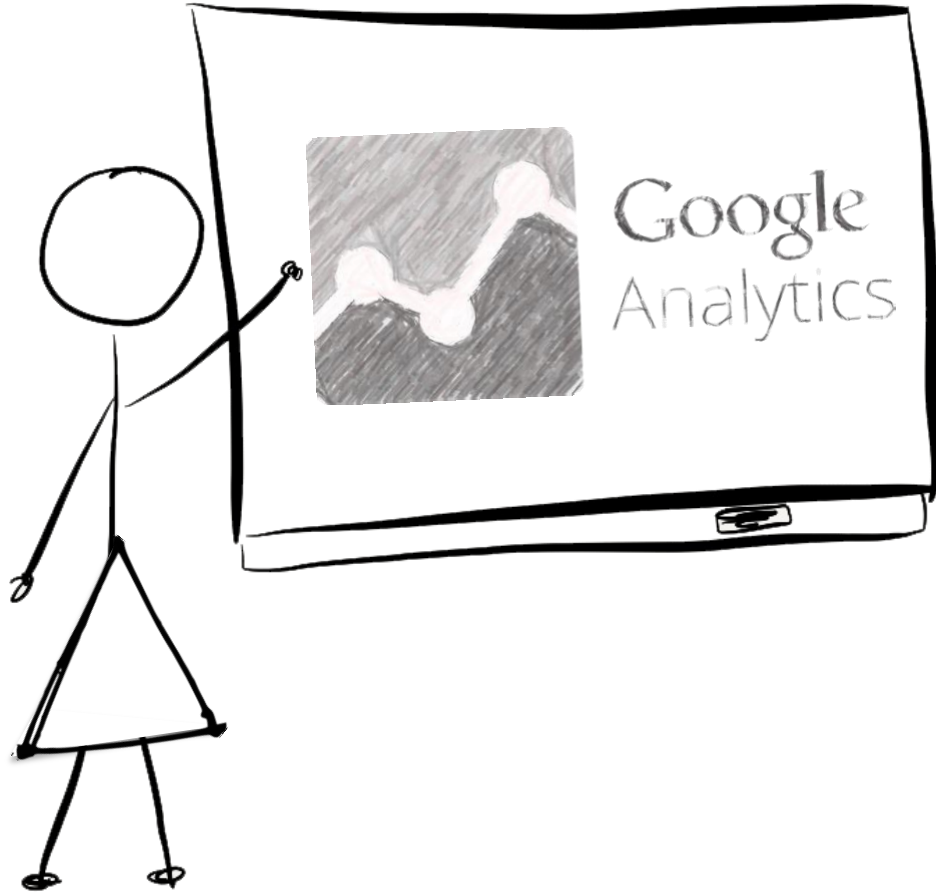
~~Jane's challenge~~
~~Using visualisations to prove a point~~
~~Using visualisations to increase awareness~~
~~Using visualisations to create value~~
~~Using visualisations to track performance~~
Building visualisations into business processes



Too focussed?

So what have we got?





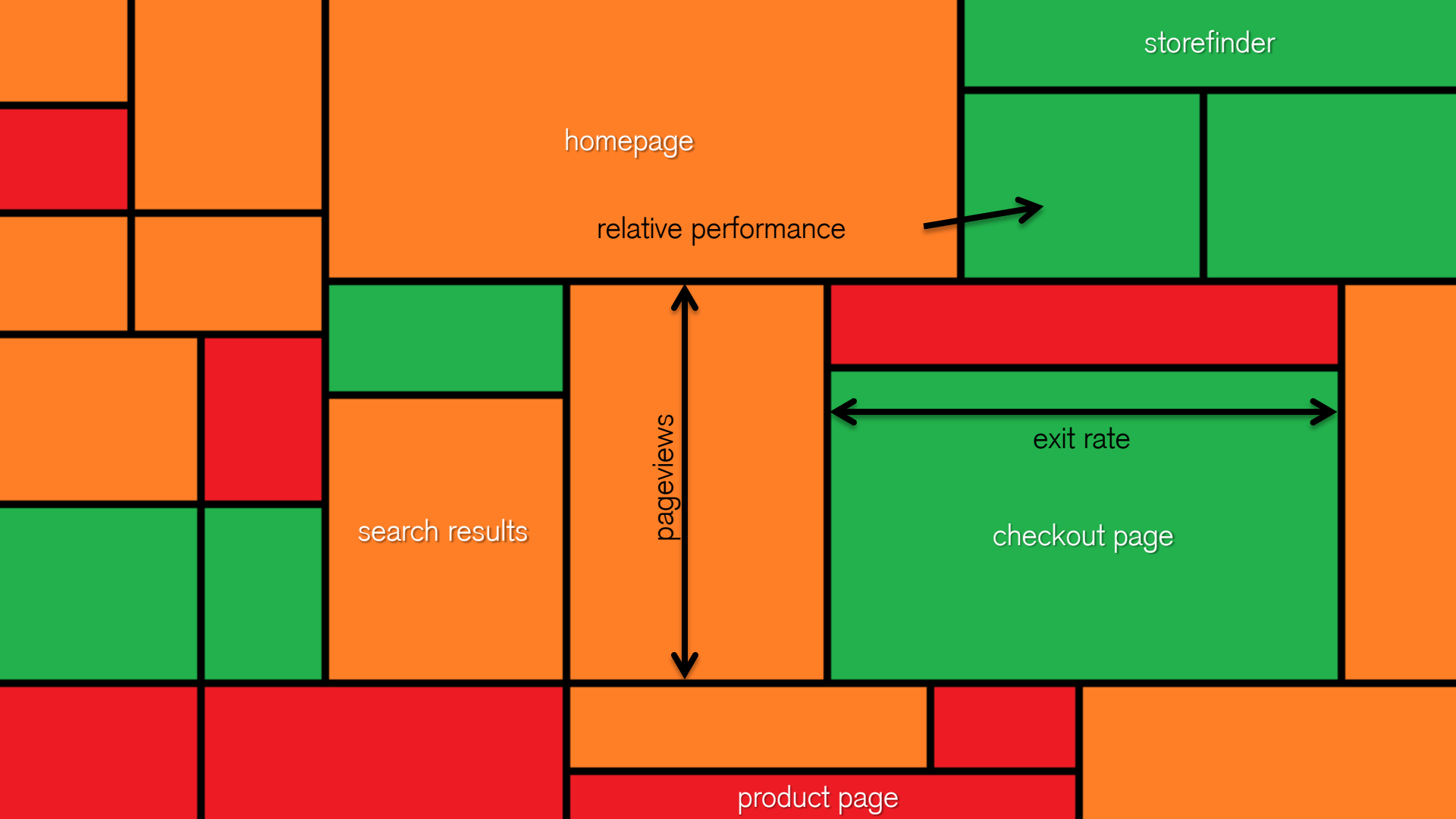
Using RUM Data

Google Analytics - ga-dev-tools.appspot.com/query-explorer/

New Relic - rpm.newrelic.com/api/explore

mPulse - cloudlink.soasta.com/t5/Knowledge-Base/mPulse-Query-API/ba-p/17077 ☹️

Pingdom - ☹️



homepage

storefinder

relative performance



pageviews

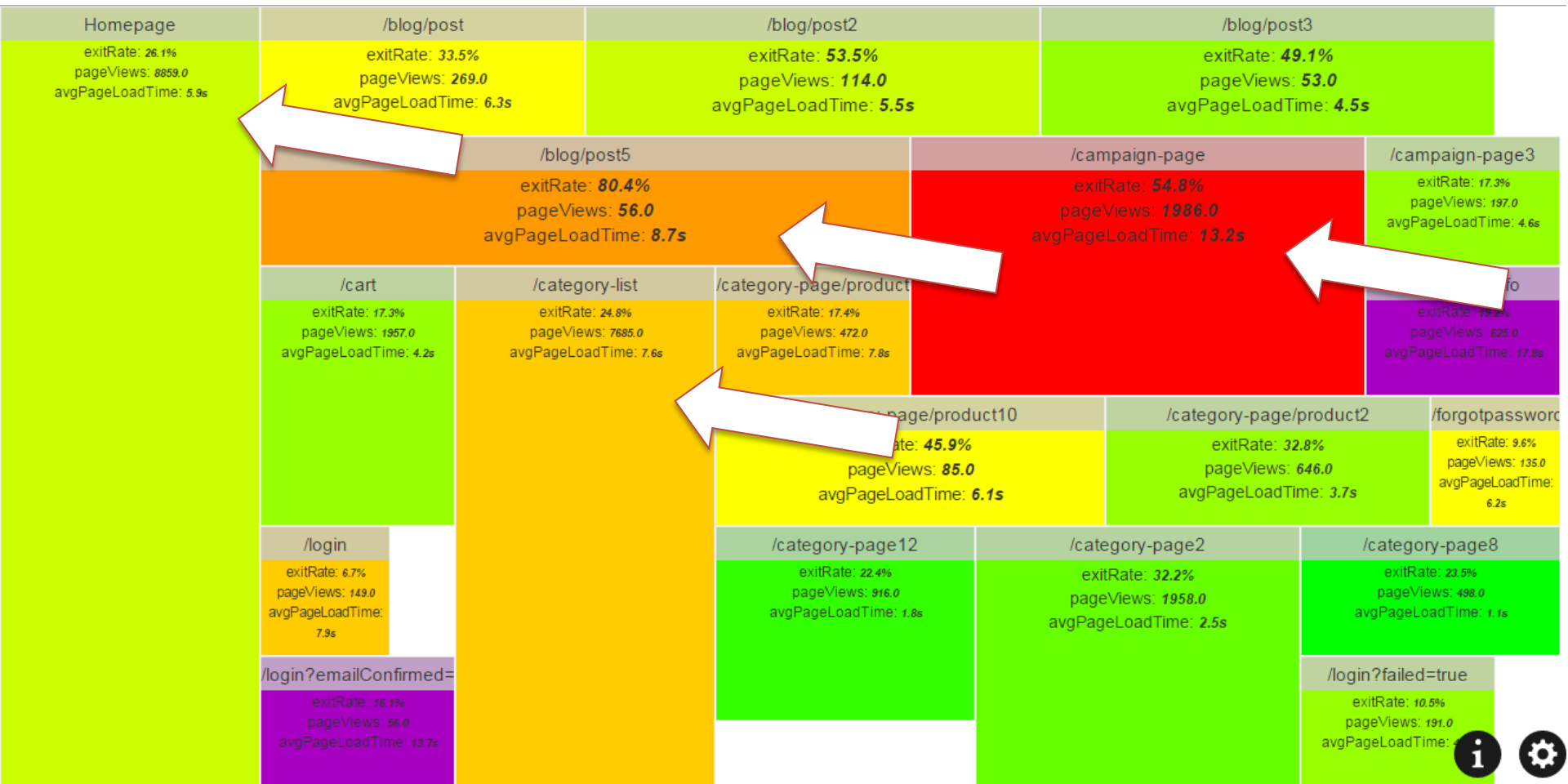


exit rate

search results

checkout page

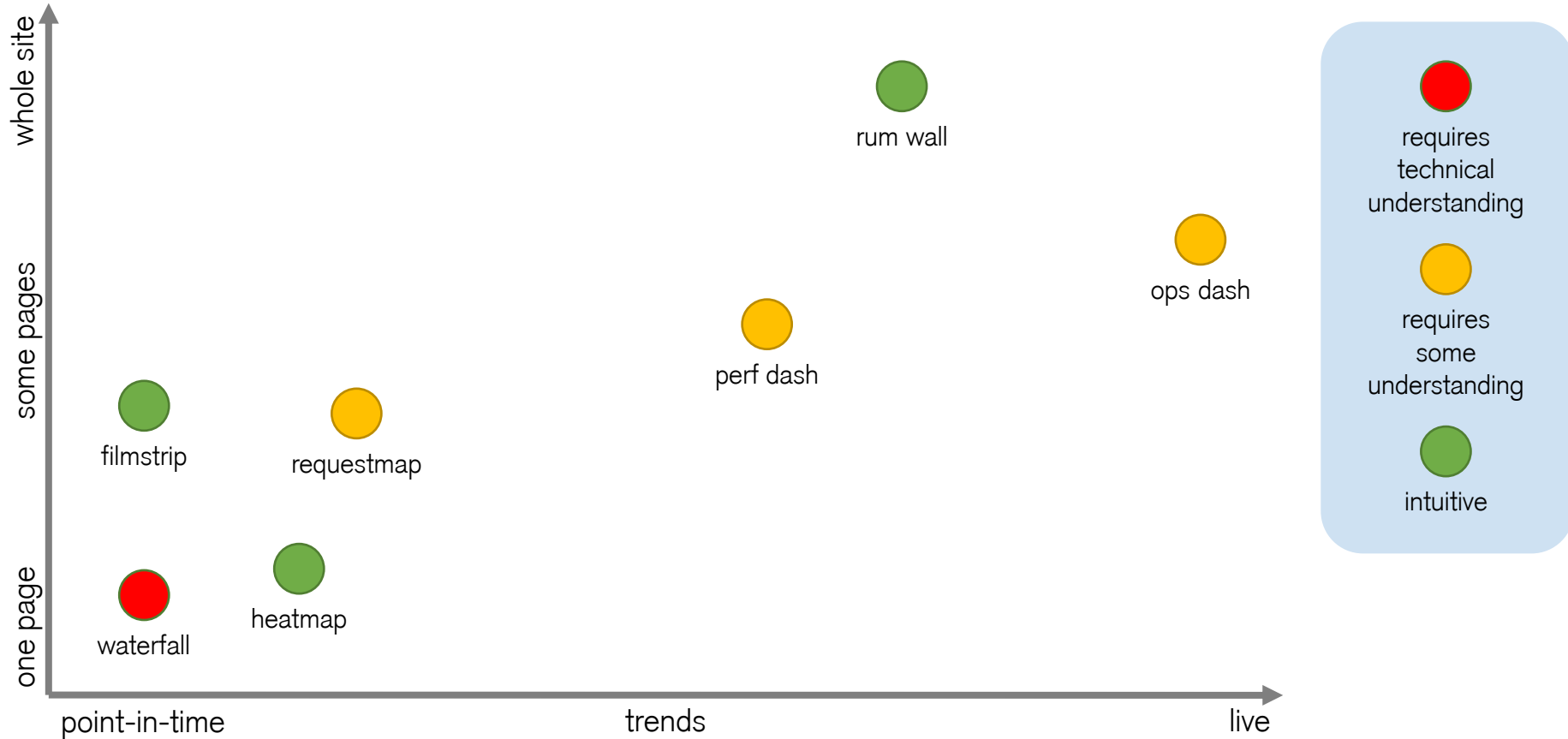
product page



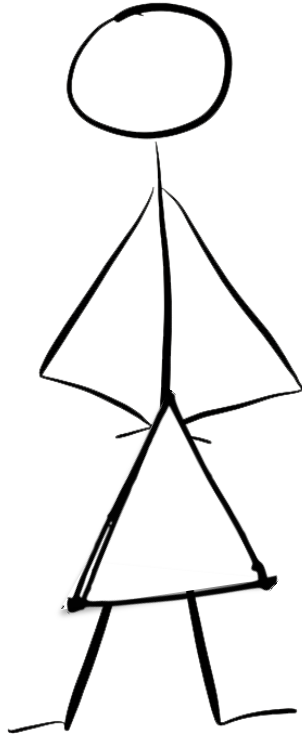


Use what you've got & make your own visualisations

So what have we got?



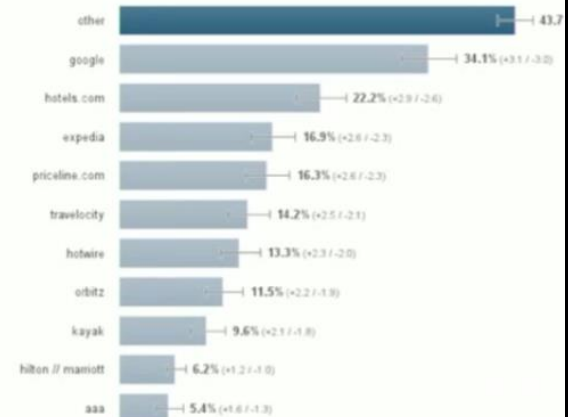
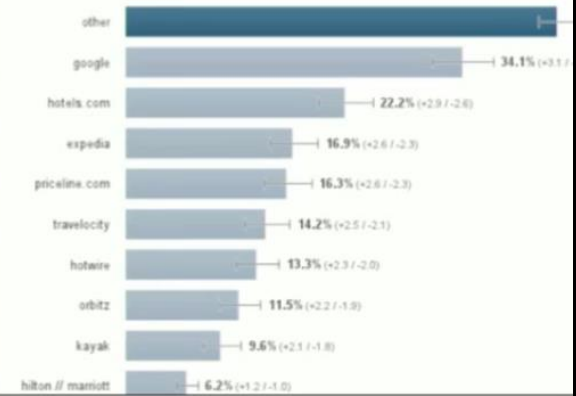
Meet Jane



~~Jane's challenge~~
~~Using visualisations to prove a point~~
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~~Using visualisations to track performance~~
Building visualisations into business processes

analysis is only the beginning..

Visualize build changes



Visualize on error

cart_purchase performance is at CRITICAL levels

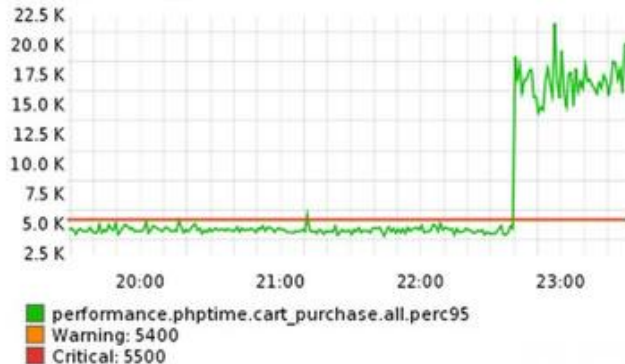
nagios@etsy.com

to perf-alerts

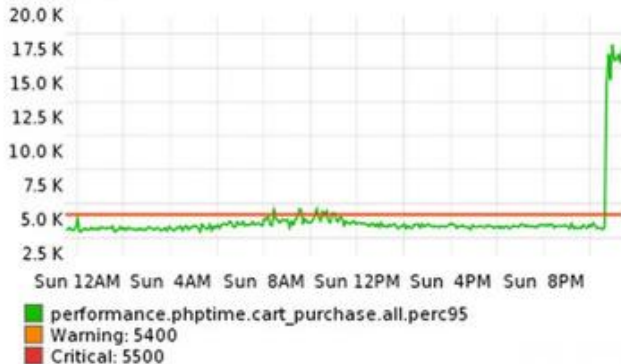
cart_purchase perc95 is at **17887 ms**, 231% above alert threshold (5400 ms).
cart_purchase has been above critical levels (5500 ms) for **46 minutes** (was: critical)

Additional information

View from '-4h' ago

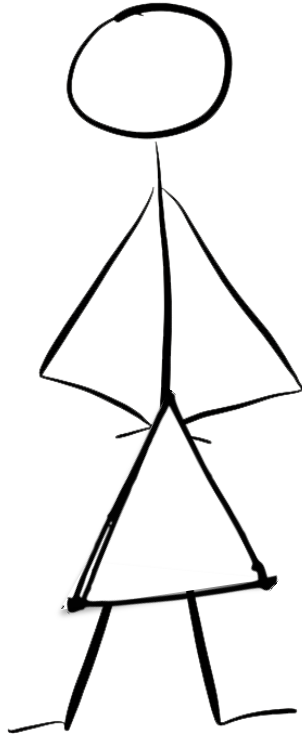


24-hour View



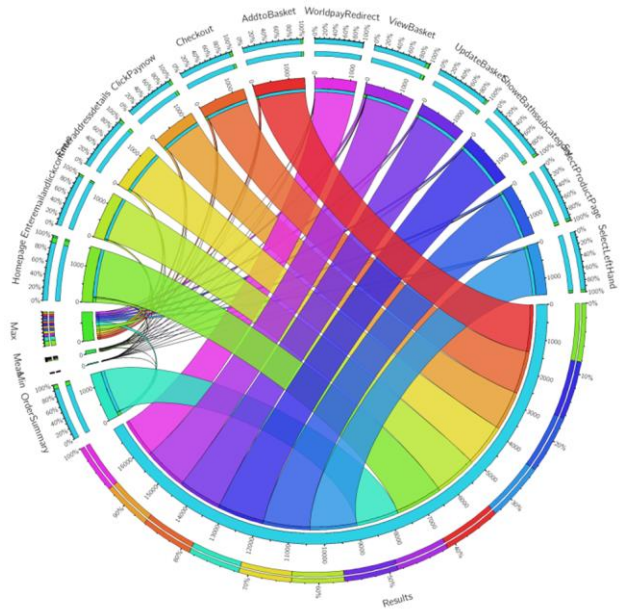
See this page on the perfnag dashboard [here](#).

Meet Jane

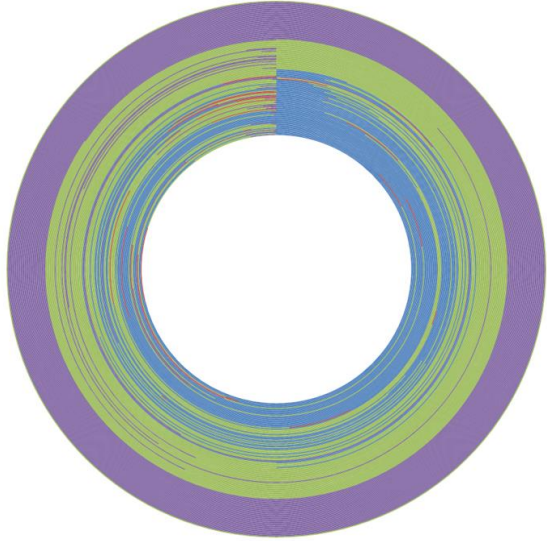


~~Jane's challenge~~
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~~Building visualisations into business processes~~

Don't fear failure



Time Spent By Page Phase



- Time before Render
- Time between Render and DOM
- Time between DOM and OnLoad
- Time between OnLoad and Total

Help is there

HELPMEVIZ

Helping people with everyday data visualizations

Home

How It Works

RECENT POSTS

Design Help

Bubble Map

Helping a Heatmap

Waffle Charts

Avocado Pit Charts

HELPME

HelpMeViz@gmail.com

CATEGORIES

Area Chart (1)

Bar Chart (6)

Blog Post (1)

Box and Whisker (1)

Bubble Chart (5)

Choropleth Map (1)

Column Chart (9)

Combination Chart (1)

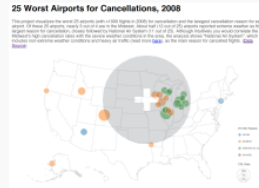
Dashboard (2)

Hackathon (4)

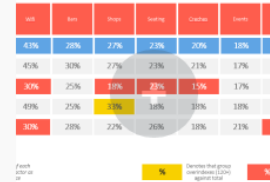
Heatmap (1)



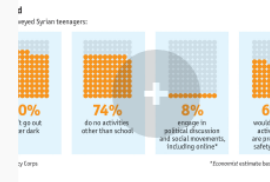
Design Help
Bar Chart, Excel



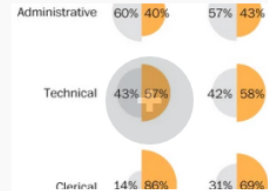
Bubble Map
d3, Map



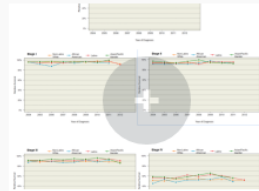
Helping a Heatmap
Heatmap, Table



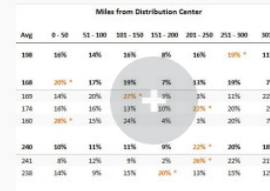
Waffle Charts
Waffle



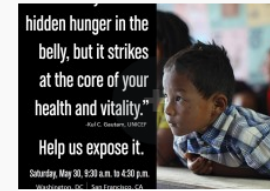
Avocado Pit Charts
Uncategorized



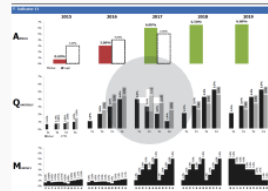
Cancer Survival Rates
Excel, Line Chart, Small Multiples



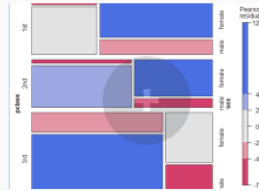
Distribution Network
Dashboard



The 2015 HelpMeViz Vizathon
Hackathon



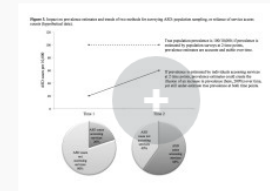
Dashboard Help!
Dashboard



Mosaic Plot of the Titanic?
Mosaic



Vizathon with Bread for the World
Institute
Hackathon



Combination Chart
Combination Chart

Use the right tools for the job

- webpagetest.org - you know this one
- heatmap.webperf.tools - red means slow
- requestmap.webperf.tools - plot your domains
- rumwall.webperf.tools - dashboard your analytics

Create your own

- graphite - graphite.wikidot.com
- graphene - github.com/jondot/graphene
- and more - bit.ly/foss_viz

Homework

Information Is Beautiful - *David McCandless*

Data Visualizations - *Noah Iliinsky*

Storytelling with Data - *Cole Nussbaumer Knaflic*



Thanks!

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You are here



Break



Break