

## **Introduction to Digital Analytics**

# Class I: Web Technologies and Analytics Infrastructure

Aaron Baker



2001

**WAL-MART®**

Home Page | Help | Your Account | Cart & Checkout

Search for:  In: Entire Site

### Get More Bike for Your Buck

Ride into spring on this year's hottest new bikes! Find bikes and accessories from Mongoose, Huffy, Bell and Rhode Gear, all at Every Day Low Prices.

**26-inch MGX by Mongoose Bicycle \$116.67**



**Bell Mystral Pro Helmet \$39.88**



**Kryptonite Mega U-Lock \$19.96**



★ See our entire selection of [Adult Bikes](#), [Kids' Bikes](#) and [Accessories](#).

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**Electronics**  
Digital Photography, Computers & Peripherals, TV, DVD & Video, Portable Audio, Personal Electronics, Phones, and more

**Music**  
Best Sellers, New Releases, Coming Soon, and more

**Books**  
Best Sellers, New Releases, Coming Soon, and more

**Sporting Goods**  
Bikes & Scooters, Camping, Exercise & Fitness, Sports Equipment, Golf, Fishing, and more

**Apparel**  
Men's, Women's, Jewelry & Watches, and more

**Lawn & Hardware**  
Patio Furniture, BBQs, Lawn & Garden, Power Tools, Home Improvement, and more

**Baby**  
Nursery, Out & About, Baby Apparel, and more

**Health & Beauty**  
Beauty & Spa, Personal Care, Health

**Automotive**  
Accessories, Tools & Equipment, Care & Maintenance, and more

---

**How may we help you?**

- [Track Your Orders](#)
- Visit our online [Help Desk](#)
- Order by Phone  
Call 1-800-966-6546,  
24 hours a day.

**Store Finder**  
To find a Wal-Mart store near you, enter a zip code.

**NEW Items!**

**Kodak Digital Camera \$499.68**

**Augusta Wooden Play Center \$349.88**

**10kt Gold Split Heart Bracelet \$19.94**

**Krups ProChef Plus Toaster Oven \$58.88**

**Garmin eMap Deluxe \$349.97**

2018

https://www.walmart.com

Search

New customer? [Click here](#) to get started!

**Walmart.com PhotoCenter**  
Share photos online and more!

**Specialty Shops**

**Outdoor Living**  
Great grills and comfortable furniture

**Sony Electronics Center**  
Handycam™, Discman™, and more at great prices

**Outdoor Play**  
From inflatable pools to sandbox tools

**ROLLBACK**  
See extra-special values in:

**Electronics**

**Home**

**Sporting Goods**

**Free Grocery Pickup**  
Start an Order

**Trending near Raleigh**

Raleigh Supercenter  
4500 Fayetteville Rd, Raleigh

**Get clean.**

**ONLY AT WALMART**

**INTRODUCING EV1**  
from Ellen DeGeneres

Discover the spring collection inspired by love & inclusivity.

[Shop now](#)

**Free 2-day delivery**  
on millions of items  
On orders of \$35 or more.  
[See How](#)

How does a business go from old to new?  
 How do they strategize the change?  
 How do they justify the investment?

# EXPERIMENTATION + TESTING

**WAL-MART®**

Home Page | Help | Your Account | Cart & Checkout

Search for:  In: Entire Site

**Get More Bike for Your Buck**  
 Ride into spring on this year's hottest new bikes! Find bikes and accessories from Mongose, Huffy, Bell and Rhode Gear, all at Every Day Low Prices.

**26-Inch MXL by Mongose Bicycle \$116.87**

**Bell Mystral Pro Helmet \$39.88**

**Kryptonite Kona U-Lock \$19.96**

\* See our entire selection of [Adult Bikes](#), [Kids' Bikes](#) and [Accessories](#).

**Electronics**  
 Digital Photography, Computers & Tablets, TV, DVD & Video, Portable Audio, Personal Electronics, Phones, and more

**Movies**  
 DVD Movies, VHS Movies, and more

**Toys**  
 Poses & Outdoor Play, Preschool & Infant, Electronic Toys & Learning, Video Games, Dolls, Construction, and more

**Home**  
 Appliances, Kitchen, Bedroom, Bath, Décor, Furniture, and more

**Health & Beauty**  
 Beauty & Spa, Personal Care, Health

**Automotive**  
 Accessories, Tools & Equipment, Cars & Maintenance, and more

**How may we help you?**  
 • Track Your Orders  
 Visit our online [Help Desk](#)  
 Order by Phone  
 Call +1 800-966-6346,  
 24 hours a day.

**Store Finder**  
 To find a Wal-Mart store near you, enter a zip code.

**• Track Your Orders**  
 Visit our online [Help Desk](#)  
 Order by Phone  
 Call +1 800-966-6346,  
 24 hours a day.

https://www.walmart.com

New customer?  
[Click here to get started!](#)

**Specialty Shops**

- Outdoors Living** Great grills and comfortable furniture
- Sony Electronics Center** Handycam™, Discman™, and more at great prices
- Outdoor Play** From inflatible pools to sandbox tools

**ROLLBACK**  
 See extra-special values in:  
[Electronics](#)  
[Home](#)  
[Sporting Goods](#)

**EV1**  
 from  
 Ellen DeGeneres  
 Discover the spring collection inspired by love & inclusivity.

**Shop now**

**ONLY AT WALMART**

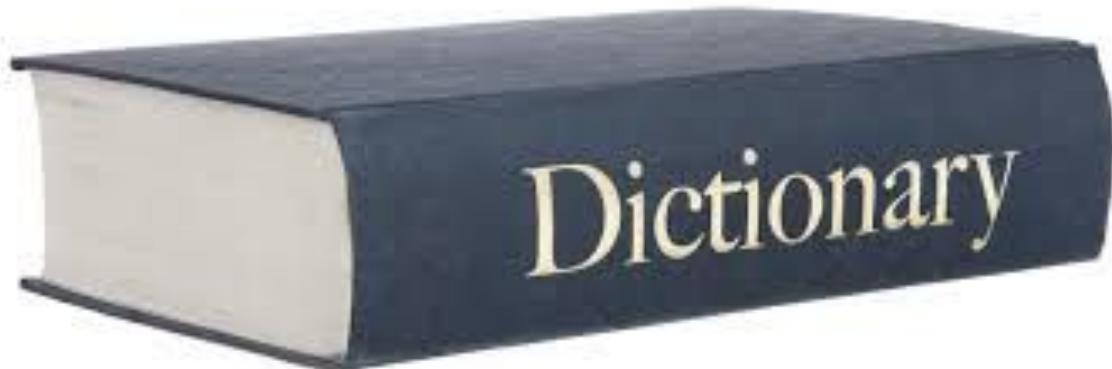
**Free Grocery Pickup**  
[Start an Order](#)  
[Shop Your Store](#)  
[Pickup Today](#)

Raleigh Supercenter  
 4500 Fayetteville Rd, Raleigh

**Trending near Raleigh**

**Free 2-day delivery**  
 on millions of items  
 On orders of \$35 or more.  
[See How](#)

**Get clean**



Site Terminology

The screenshot illustrates the Walmart.com homepage with several user interface components highlighted:

- Navigation**: The vertical sidebar on the left containing links like "Free Grocery Pickup", "Reorder Items", "Track Orders", and a "Departments" section.
- Hamburger**: The icon at the top left of the main content area.
- Search Bar**: The search input field at the top center.
- Iconography**: Icons for account, location, and shopping cart in the top right corner.
- Banner**: A promotional banner for "SOFÍA JEANS BY SOFIA VERGARA™".
- Category**: The main category "Movies, Music & Books" under the "Movies & TV" section.
- Subcategories**: Subcategories listed under "Movies & TV" such as "Music", "Books", "Musical Instruments", and "DJ Equipment".
- Flyout**: A flyout menu for "Free Grocery Pickup" with options like "Start an Order", "Shop Your Store", and "Pickup Today".
- Carousel**: A horizontal carousel of images showing trending items near Raleigh.
- Modules**: A collection of small modules including a "Baleigh Supercenter" info card, a "Trending near Raleigh" section, and a "Free 2-day delivery" offer.
- Ad Banner**: An advertisement for Persil ProClean laundry detergent.

## Content Terminology

# Category Page

Movies & TV Shows

Shop All Movies & TV Oscar Favorites New Releases Shop by Price Shop by Format Shop by Franchise TV Shows Series & Boxed Sets Walmart Exclusive Top Vudu Digital Movies

Shop by Category

- Instawatch Movies
- Movies
- TV Shows
- Boxed Sets & Collections
- Movies & TV
- DVD
- Blu-ray
- 4k Ultra HD Movies
- Disney
- Instawatch Movies By VUDU
- All 4K Ultra HD Movies

Movies by Genre

- See Less
- The Lego Movie (DVD)
- The Incredibles 2
- Blockers
- A Quiet Place

Shipping & Pickup

- Show all
- 2-day shipping
- Ship to Home
- Free Pickup + Discount
- FREE Pickup
- FREE Pickup Today

New Releases

- Last 90 Days

Format

- RD

# Product List Page (PLP)

Ninja Professional Chef Blender (CT800) ★★★★ \$149.00 Shop Now

Movies & TV Shows / Instawatch Movies By VUDU

1-40 of 1,000 products Refine by Price Top Brands Store Availability

Sort by Best Sellers

Departments

- Instawatch Movies
- Instawatch Drama Movies
- Instawatch Action & Adventure Movies
- Instawatch Kids and Family Movies
- Instawatch Comedy Movies
- Instawatch Romance Movies
- Instawatch Sci-Fi & Fantasy Movies
- See All Departments

Sponsored product

The Lego Movie (DVD) The Lego Movie (Blu-ray)

★★★★ 1 \$9.35 \$9.96 2-day shipping

\$12.02 Sold & shipped by MovieMars Free shipping

How to Train Your Dragon Blu-ray + Digital

★★★★ 2 \$9.99 List \$12.96 2-day shipping

\$7.65 List \$28.00 2-day shipping

The LEGO Ninjago Movie (2017) (DVD)

★★★★ 6 \$9.42 \$19.95 2-day shipping

The LEGO Ninjago Movie (Blu-ray + DVD + Digital)

★★★★ 10 \$9.42 \$19.95 2-day shipping

The Final Destination: Shattered Collection

# Page Types

# Product Detail Page (PDP)

The screenshot shows a Walmart Product Detail Page (PDP) for 'The Lego Movie (DVD)'. At the top, there's a navigation bar with links like 'Shop All Movies & TV', 'Oscar Favorites', 'New Releases', 'Shop by Price', 'Shop by Format', 'Shop by Franchise', 'TV Shows', 'Series & Boxed Sets', 'Walmart Exclusive', and 'Top Vudu Digital Movies'. Below the navigation is a search bar and a shopping cart icon.

The main product listing for 'The Lego Movie (DVD)' includes a 2-disc special edition cover image, a rating of 4.5 stars, a price of \$259.26, and a 'Shop Now' button. Below the listing, there's a section for 'Shark ION RV700 Robot Vacuum with Easy Scheduling Remote'.

The central part of the page features the product title 'The Lego Movie (DVD)', its price (\$9.35), and a 'Add to Cart' button. It also mentions 'Free 2-day shipping on orders over \$35' and 'Arrives by Fri, Feb 22'. There are social sharing icons for Facebook, Pinterest, and Twitter.

Below the main listing, there are sections for 'Pickup not available', 'Sold & shipped by Walmart', and 'Add to List' or 'Add to Registry' options. A sidebar lists '2 other sellers from \$14.63' with their respective prices and shipping information.

At the bottom, there's a recommendation for 'How to Train Your Dragon (4K Ultra HD)'.

# Search Results Page (SRP)

The screenshot shows a Walmart Search Results Page (SRP) for the search term 'lego'. The top features a large banner for 'THE LEGO® MOVIE 2™' with the tagline 'Get exclusive sets & more inspired by Emmet & Lucy's next adventure.' Below the banner, there's a search bar and a navigation bar with links for 'Toys', 'Walmart', and 'Walmart.com'.

The main search results area displays 1-20 of 1,000 results. It includes a sidebar for 'Refine by' options like 'Price' and 'Store Availability', and a 'Sort by' option set to 'Best Match'. The results are categorized under 'Departments' such as 'LEGO', 'LEGO Classic Building Sets', 'Building Blocks', and 'See All Departments'.

One specific product listing is shown for 'LEGO Movie Emmet's Builder Box! 70832', which is 'ONLY AT WALMART'. It has a price of \$29.84, a 5-star rating, and the text '2-day shipping Free pickup today'.

Another product listing is shown for 'LEGO Movie Lucy's Builder Box! 70833', also 'ONLY AT WALMART', with a price of \$29.84, a 1-star rating, and the text '2-day shipping Free pickup today'.

# Page Types

# Cart Page

Save \$25\* when you open an account online & spend \$75 on online purchases today. Paid as a statement credit.

Purchase Amount: \$15.97  
Credit on Billing Statement: -\$0.00  
Cost after Statement Credit: \$15.97

\* Can't be combined with other offers.  
Subject to credit approval.  
[Learn more](#) | [Open account](#)

Your cart: 1 item

	The Lego Movie (DVD)	Qty 1	\$15.97
			<b>\$9.35</b> 2-day shipping
<a href="#">Remove</a>   <a href="#">Save for later</a>			

Saved for later

You have no saved items right now.

Customers also bought these products



# Page Types

# Checkout

Checkout

Subtotal (1 item)	\$9.35
Shipping	\$5.99
Est. taxes & fees (Based on 27603)	\$0.63
Est. total	<b>\$15.97</b>

[Check Out](#)

Want free shipping? Add \$25.65 more.  
[Learn more](#)

Sign in

Email address\* (Required field\*)

Password\*

Show

[Forgot password?](#)

Keep me signed in  
Uncheck if using a public device.

[Sign In](#)

No account? No problem.

Continue to checkout without an account.

[Continue](#)

If you're using a promo code, sign in or [create an account](#).

1 Shipping and pickup options

2 Enter shipping address

3 Enter payment method

© 2019 Walmart Inc.

[Leave feedback](#)

## **A typical site hierarchy (taxonomy) will be constructed as:**

- i. Home
  - i. Search Results (SRP)
    - i. Successful Search
    - ii. Failed Search
  - ii. Category (Category-List) (CLP) e.g. *Movies and Music*
    - i. Sub-Category e.g. *Movies & TV Shows*
      - i. Sub-Sub Category *Kids Movies*
        - i. Product Detail Page e.g. *The Lego Movie*
  - iii. Account
  - iv. Cart
    - i. Checkout
      - i. Checkout I
      - ii. Checkout ...
      - iii. Order Confirmation



## Digital Platforms

## Websites - Desktop / Tablet / Mobile

- “www” version of a site, interacted with via a web browser.
- Historically Desktop + Tablet was a separate website from Mobile. The separate mobile being referred to a “m-dot” or “m.” website.
- More commonly now are **Responsive** architectures; they dynamically change depending on the **screen size**.
- Emerging is **Reactive** architectures; they dynamically change given the **device type**.

## Device Types

# Desktop

The screenshot shows the Walmart homepage with a responsive header. At the top, there's a search bar and user icons. A promotional banner for "INTRODUCING EV1 from Ellen DeGeneres" is displayed. Below the banner, there are sections for "Free Grocery Pickup", "Trending near Raleigh", and "Free 2-day delivery". A sidebar on the left lists categories like Electronics, Toys, Home, and Sports. A main content area features a grid of products including a Samsung TV, LEGO blocks, a KitchenAid mixer, and a bicycle.

# iPhone 5

The screenshot shows the Walmart website as it appears on an iPhone 5. The layout is adapted for a smaller screen, with the promotional banner and delivery information being the most prominent features. The main content area displays two women modeling clothing items.

# iPhone 5 Horizontal

The screenshot shows the Walmart website on an iPhone 5 in horizontal mode. The layout is wider, showing more of the promotional banner and delivery information. A woman is shown sitting on the floor, wearing denim jeans and a denim jacket.

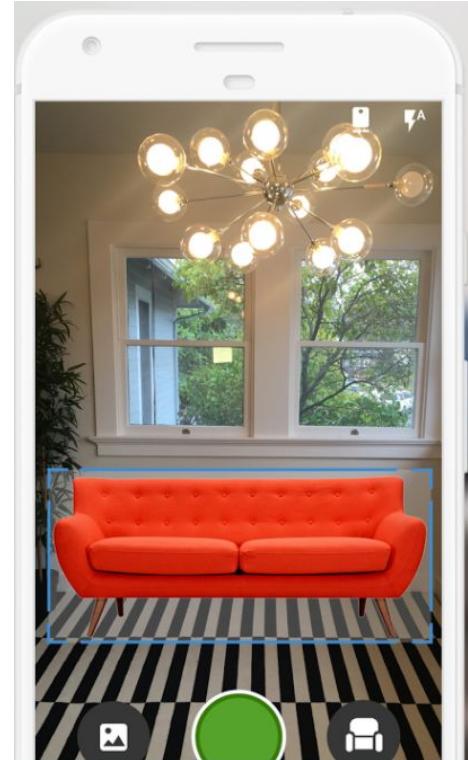
# iPad Horizontal

The screenshot shows the Walmart website on an iPad in horizontal mode. The layout is very similar to the iPhone 5 horizontal view, but the overall width allows for a clearer view of the promotional banner and delivery information. It also includes a section for "The new denim line by Sofia that celebrates every shape & style".

# Device Types

## Applications

- Stand-alone applications downloaded on mobile devices. Also referred to as “Native” apps.
- Usually contains deeper features that can utilize the mobile device functions, such as geolocation and push notifications.
- Unique visitor detection issues are reduced due to a consistent device ID and/or login.
- **Changes to the application require the user to re-download or update to utilize.**



## Applications (Apps)

## Emerging Digital Platforms

- **Over-the-Top (OTT)(Digital TV)** - Extension of native app technology but displayed via a TV or mobile device.
- **Wearables** - Digital devices worn by a consumer that can be utilized for data collection and push notification.
- **Augmented Reality** - Blend of real time vision and digital display to allow the user to interact via the environment.
- **Digital Gaming** - Emergence of real-time eSports and game streaming technology.



## Emerging Technology



## chiefmartec.com Marketing Technology Landscape ("Martech 5000")

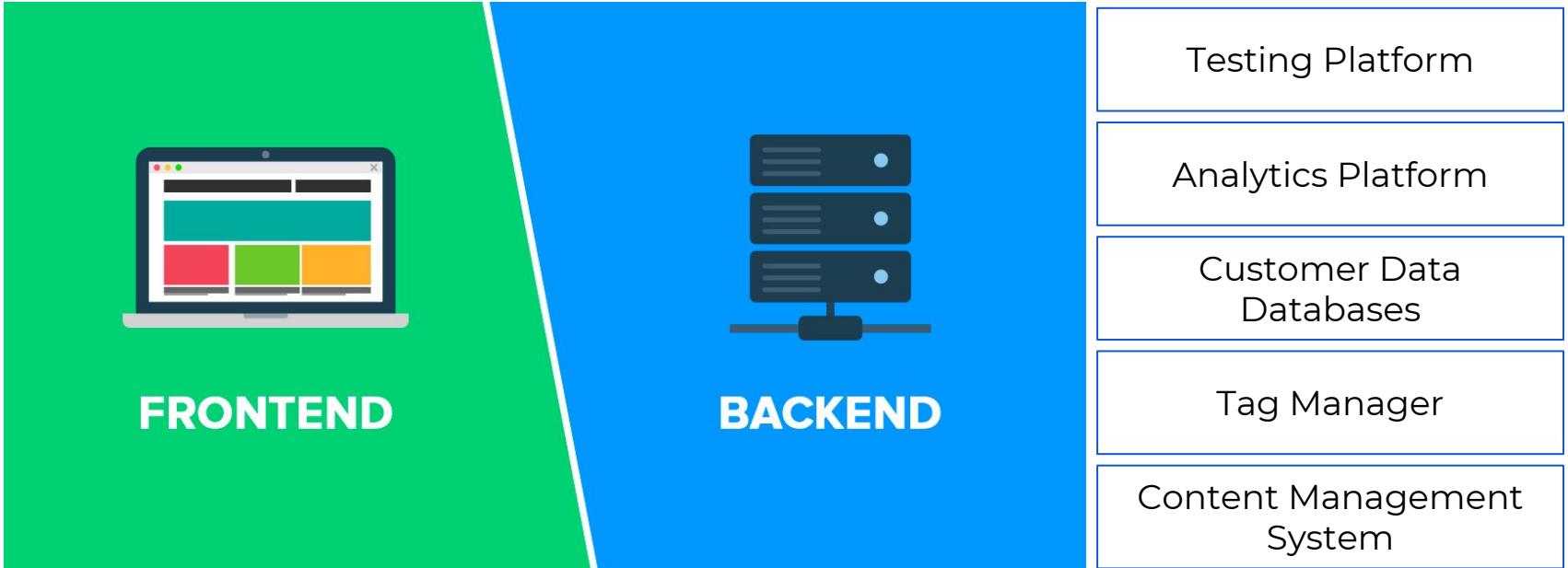
April 2018



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Produced by Scott Brinker (@chiefmartec), Anand Thaker (@AnandThaker), and Blue Green Brands.

Digital Technology, Tools, and Vendors



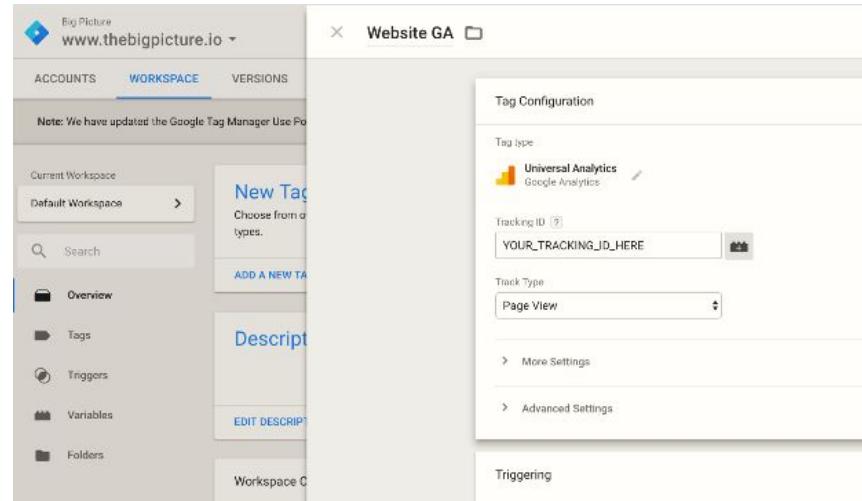
## **Content Management System (CMS)**

- Provides the structure of the website
- Makes it easier for publishers to manage and deploy content without specific need for coding every change
- Modules/widgets are often deployed via the CMS
- Can include order processing, inventory, search, merchandising, customer audiences, and other functionalities

## **Site Components**

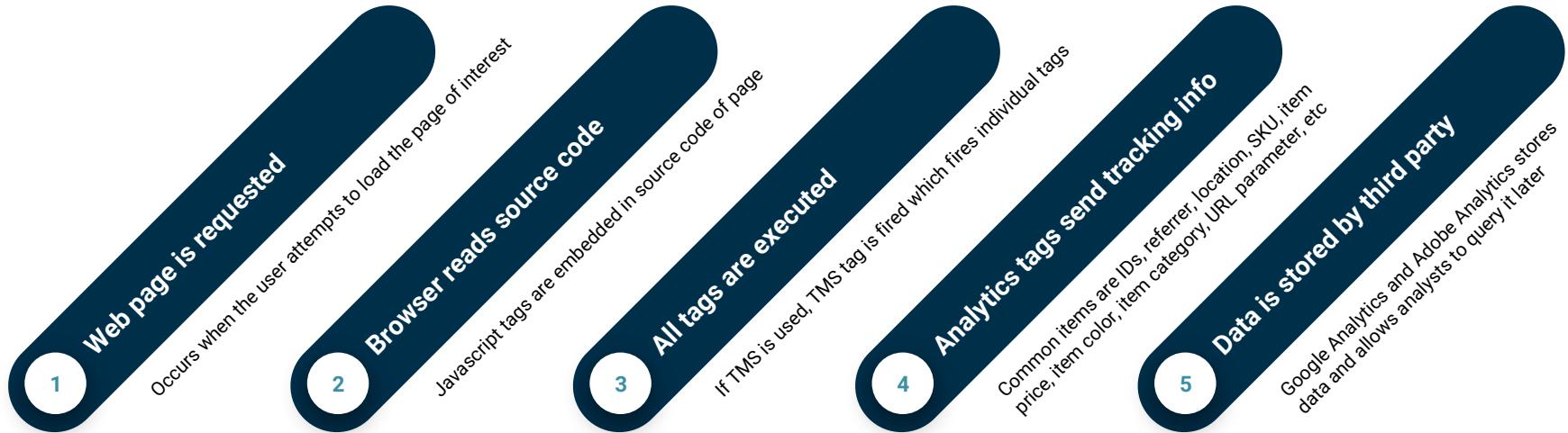
## Tag Management Software

- Makes it simple for users to implement, manage, and maintain tags with web interface.
- Synchronous Load - sequential load; no flicker but potentially slow load
- Asynchronous Load - simultaneous load; fast but with flicker potential
- Tag Placement - placing in <head> loads faster, placing in <body> lets others execute first
- Vendors: Adobe DTM/Launch, Google GTM, Tealium IQ



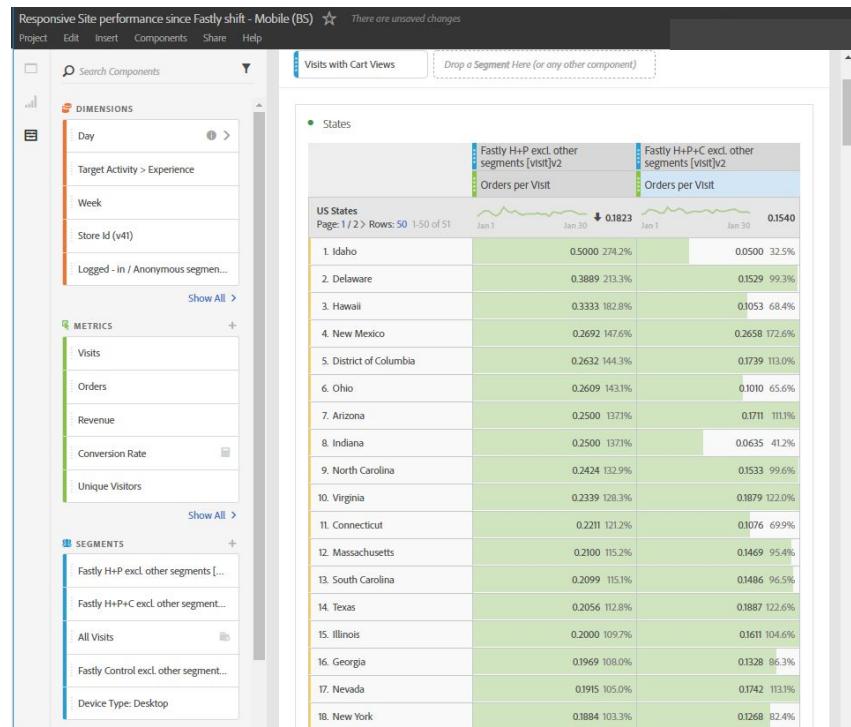
## Site Components

## How tags (aka pixels) collect and transmit data



## Analytics Software

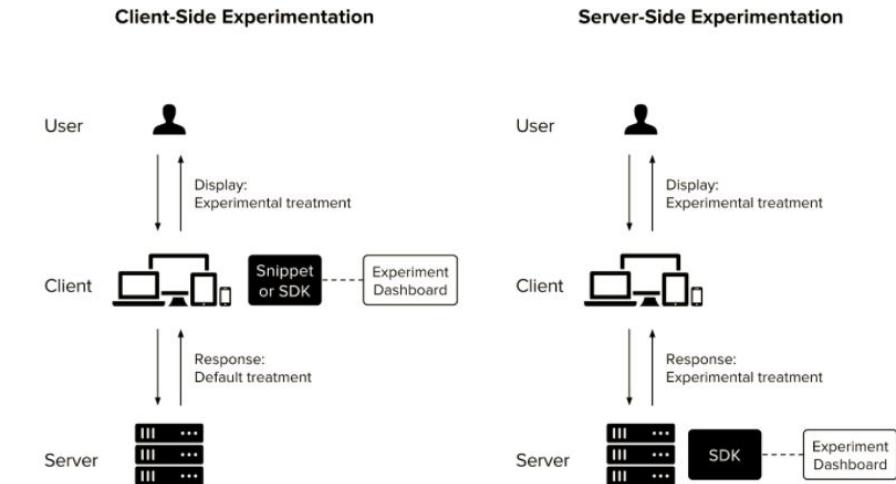
- Captures the behaviors users conduct on the website
- Can be extremely customizable or entirely black-box
- Data is owned-by and stored-by the vendor, requiring additional expense to store as 1st party data
- Some non-analytics vendors collect and expose analytics data
- Vendors: Adobe Analytics/Omniture/SiteCatalyst, Google Analytics



## Site Components

## Testing / Optimization Software

- Changes the content sent by your server to users in the browser.
- Allows you to send different experiences to different users
- Can randomly, or selectively, send experiences allowing for execution of experiments
- May contain analytics, test design, and test analysis functions within the tool
- Vendors: Adobe Target, Optimizely, Google Optimize, Monetate



## Site Components

## **Personalization Software**

- Generally started as product recommendation engines
- A combination of recommendation algorithms, online-learning models, testing methodologies wrapped into a single platform
- Attempts to address the “One-to-One” need - predicting and serving the optimal experience to each individual user who hits the website
- Vendors: Adobe Target, Optimizely X, Evergage, Dynamic Yield, Reflektion

### Areas of Site:

Landing Pages  
Hero Images/Banners  
Content  
Navigation  
Product Recs  
Interstitials  
Search

### Common Algorithms:

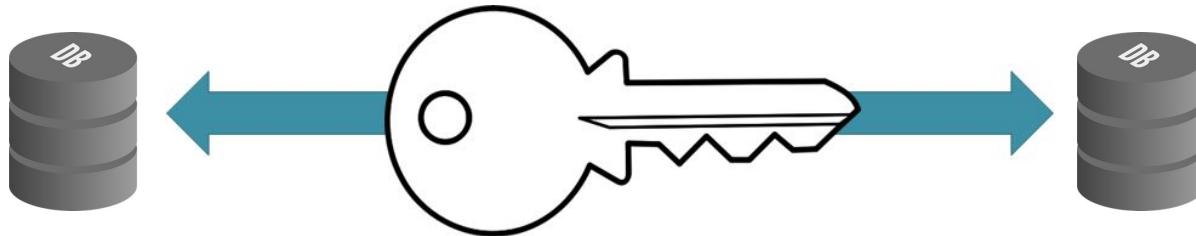
Trending  
Recently Added  
Soon to Expire  
Co-browse, Co-buy  
Similar Items  
Collaborative Filtering  
Clustering  
Decision Trees  
Multi Armed Bandit

## **Site Components**

## **Customer Data Platforms**

- **Data Management Platform (DMP)**
  - Primarily for targeting ads for customer acquisition
  - Builds a temporary profile around an anonymous cookie ID
  - Can incorporate 3rd party and 1st party data
  - Vendors: BlueKai (Oracle), Audience Manager (Adobe), Krux(Salesforce)
- **Customer Data Platform (CDP)**
  - Primarily used for targeting / personalization efforts for customer retention
  - Primarily utilizes 1st party data, across channels joined by common ID, to create a “single view of the customer”
  - Joins online, email, mobile, social, in-store, CRM data to create company specific data asset
  - Vendors: AudienceStream (Tealium), Evergage, Segment
- **Customer Data Warehouse (CDW) / Customer Relationship Management (CRM)**
  - Primarily used for offline customer data activities, such as direct email
  - Predecessor to CDPs and DMPs
  - Can contain 1st and 3rd party data, but linked to a known customer ID

## **Site Components**



**First Name:** Reid  
**Last Name:** Bryant  
**Address:** 711 Hillsborough St  
**Email:** longhairrocks@fleetingyouth.com

**First Name:** Kenneth  
**Last Name:** Bryant  
**Address:** 711 Hillsborough St  
**Email:** longhairrocks@fleetingyouth.com

## DETERMINISTIC



0 , Reid <> Kenneth

## PROBABILISTIC



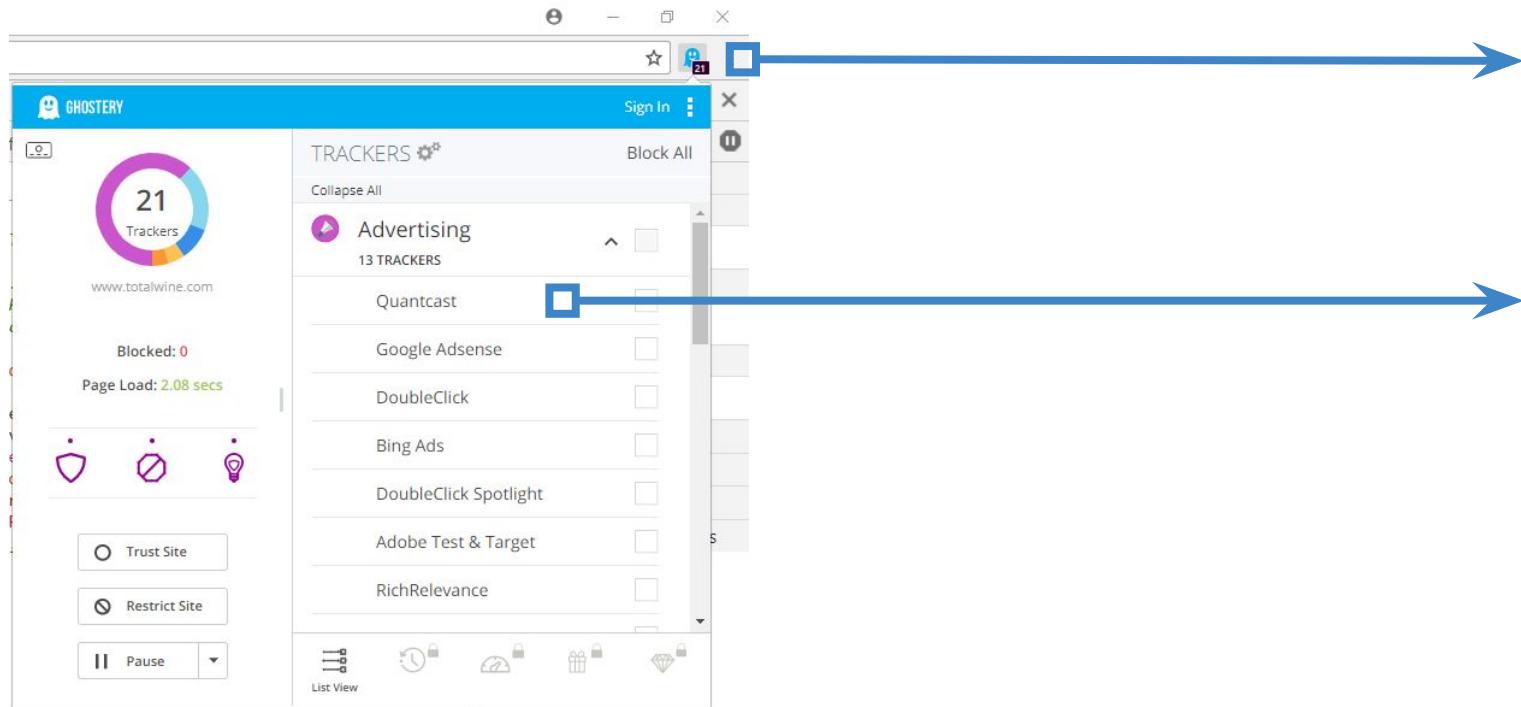
0.95%



Developer Console

How do you know technology is being used on a website?

Download **Ghostery Chrome extension** to see the pixels on a website



Click to open interface

The pixels on the site

Use the console to find and explore these further

Open Google Chrome and hit **Ctrl + Shift + I** or go to a website and **Right-Click -> Inspect**

Search  AMERICA'S  
BEST  
TOY  
SHOP

1-40 of 117 products

Sort & Filter

The LEGO Movie 2      Captain Marvel      Dolls & Dollhouses      Ride On Toys      Action Figures      Building Sets

ONLY AT WALMART      ONLY AT WALMART      NEW

LEGO Movie Emmet's Builder Box! 70833      LEGO Movie Lucy's Builder Box! 70833      LEGO Creator Expert Vestas Wind Turb ...

★★★★★ 5      ★★★★★ 1      ★★★★★ 23

\$29.84      \$29.84      \$199.95

2-day shipping      2-day shipping      2-day shipping

Free pickup today      Free pickup today      Free pickup

NEW      NEW      NEW

Elements    Console    Sources    Network    Performance    Memory    Application    Security    Audits    EditThisCookie

Filter: Hide data URLs (All) XHR JS CSS Img Media Font Doc WS Manifest Other

2000000 ms 4000000 ms 6000000 ms 8000000 ms 10000000 ms 12000000 ms 14000000 ms 16000000 ms 18000000 ms 20000000 ms 22000000 ms 24000000 ms 26000000 ms 28000000 ms 3000

Recording network activity...  
Perform a request or hit **Ctrl + R** to record the reload.

Console    Search    What's New    X

Highlights from the Chrome 72 update

Visualize performance metrics  
Performance metrics like DOMContentLoaded and First Meaningful Paint are now marked in the Timings section of the Performance panel.

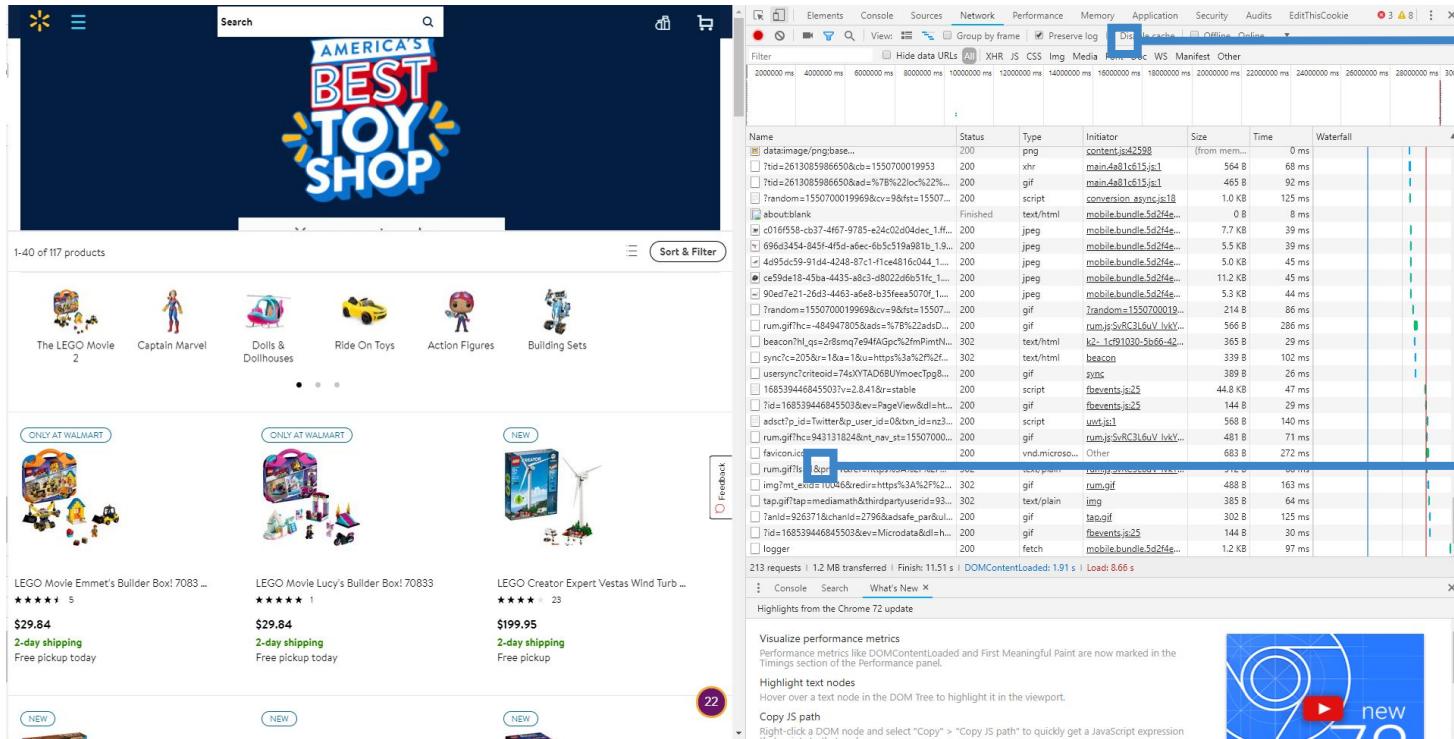
Highlight text nodes  
Hover over a text node in the DOM Tree to highlight it in the viewport.

Copy JS path  
Right-click a DOM node and select "Copy" > "Copy JS path" to quickly get a JavaScript expression

new

Developer Console

Check **preserve log** and reload the page



The screenshot shows the Walmart homepage with a search bar and a banner for "AMERICA'S BEST TOY SHOP". Below the banner, there are categories like "The LEGO Movie", "Captain Marvel", "Dolls & Dollhouses", "Ride On Toys", "Action Figures", and "Building Sets". The developer console's Network tab is open, displaying a list of network requests. A blue arrow points from the "preserve log" checkbox at the top of the Network tab to the list of requests, indicating that without this option, the logs would clear on each page load.

Without preserve log, the calls will clear each page load.

The list of calls being made upon page load

## Find and explore the Adobe analytics call

The screenshot shows a Walmart toy shop website on the left and the Chrome Developer Console on the right.

**Website (Left):** A toy store homepage with a search bar, a sidebar for departments like Toys and Office, and a main area for "Shop New Toys" featuring categories like The LEGO Movie, Captain Marvel, Dolls & Dollhouses, Ride On Toys, and Action Fig.

**Developer Console (Right):** Shows the Network tab with a list of requests. One request, with the URL `/s36326235415331?AOB=1&ndh=1&t=20...`, is expanded to show its Headers, Preview, Response, Cookies, and Timing details. The Response tab displays a large amount of Adobe Analytics tracking code.

**Annotations:**

- A blue arrow points from the text "Place 'adobe', 'metrics', 'omniture', or 'pagename' to find Adobe analytics calls" to the search bar in the developer console's top navigation.
- A blue arrow points from the text "Click the Adobe call to see the information passed" to the expanded Adobe Analytics call in the developer console.
- A blue arrow points from the text "Data passed in the call" to the detailed response body in the developer console.

Place  
“adobe”, “metrics”,  
“omniture”, or  
“pagename” to  
find Adobe  
analytics calls

Click the Adobe  
call to see the  
information  
passed

Data passed in  
the call

# Google Analytics

The screenshot shows a web browser window with a search bar at the top. Below it, a shopping cart summary is displayed for Cary, NC. The cart contains one item: Cruz Alta Cabernet Sauvignon Reserve, 2017. The total estimated cost is \$11.79. A "Secure Checkout" button is visible. To the right of the browser window, the developer tools are open, specifically the Network tab. A blue arrow points from the text on the right towards the "collect?" entries in the Network panel. The Network panel lists several requests, with the last few being "collect" requests. The details pane shows the query string parameters for one of these collect requests, including parameters like \_v, \_t, \_a, \_r, and \_z.

What can we help you find today?

My Location  
Cary, NC

Your Shopping Cart (1 items)

**Order Summary**

Picking up in Cary, NC  
Open today 10:00 am - 9:00 pm

**Pickup:** Ready in 2 hours or less

**Subtotal:** \$10.99  
Estimated Tax: \$0.80  
(Final taxes will be calculated at checkout)

**ESTIMATED TOTAL:** \$11.79

**RECENTLY VIEWED ITEMS**

22

4 / 582 requests | 761 B / 2.5 MB transferred...

Highlights from the Chrome 72 update

Visualize performance metrics  
Performance metrics like DOMContentLoaded and First Meaningful Paint are now marked in the Timings section of the Performance panel.

Highlight text nodes  
Hover over a text node in the DOM Tree to highlight it in the viewport.

Copy JS path  
Right-click a DOM node and select "Copy" > "Copy JS path" to quickly get a JavaScript expression

new

Place “google” or “doubleclick” or “collect?” in the filter to find Google calls.

# Homework

1. Download Ghostery or another pixel monitoring extension
2. Find a website with Adobe or Google Analytics
3. Take a screenshot of Ghostery with the vendor pixels.
  - i. What tag manager is being used?
  - ii. What analytics platform is being used? Are there multiple?
  - iii. What testing tool is being used?
  - iv. Is there a vendor we didn't cover? If so, research and describe what service the vendor offers.
4. Find an analytics call and provide a screenshot
  - i. What data do you think is being collected?
  - ii. Click around the site, does it appear that any data is not collected? If so, what?
5. Collate the previous information and submit on Moodle prior to next class.