Transforming Analytics for Single Page Apps

Common Challenges and How to Overcome Them

BEST BUY

Introduction

- Started career in digital marketing strategy and execution.

- Learned web development, built react and react native apps.

- Specialized after in analytics tracking for SPAs.
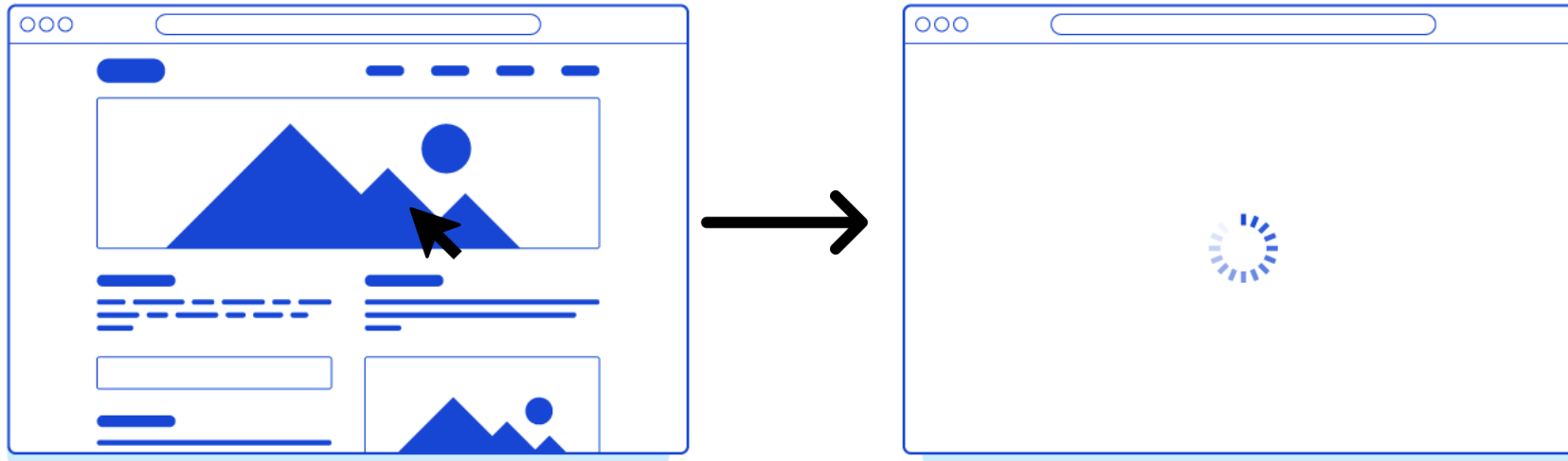
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Agenda

Single Page Apps vs Multi Page Websites

SPA Challenges with Tracking & Advanced Tracking Solutions

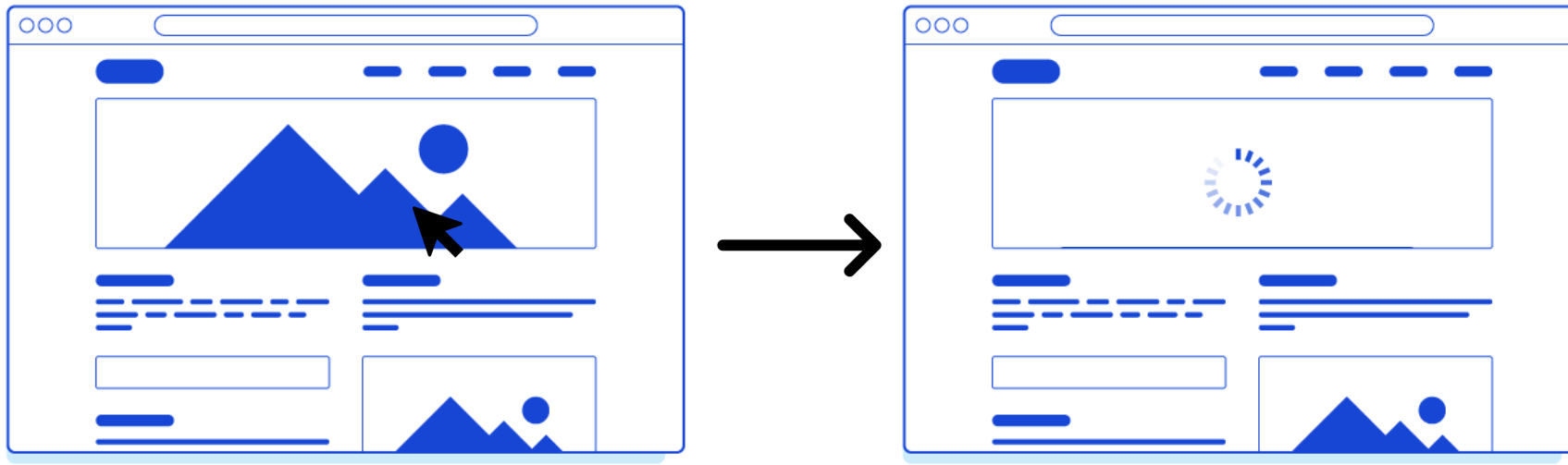Organizational Solutions

Q&A

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Single Page Apps vs. Multi Page Websites
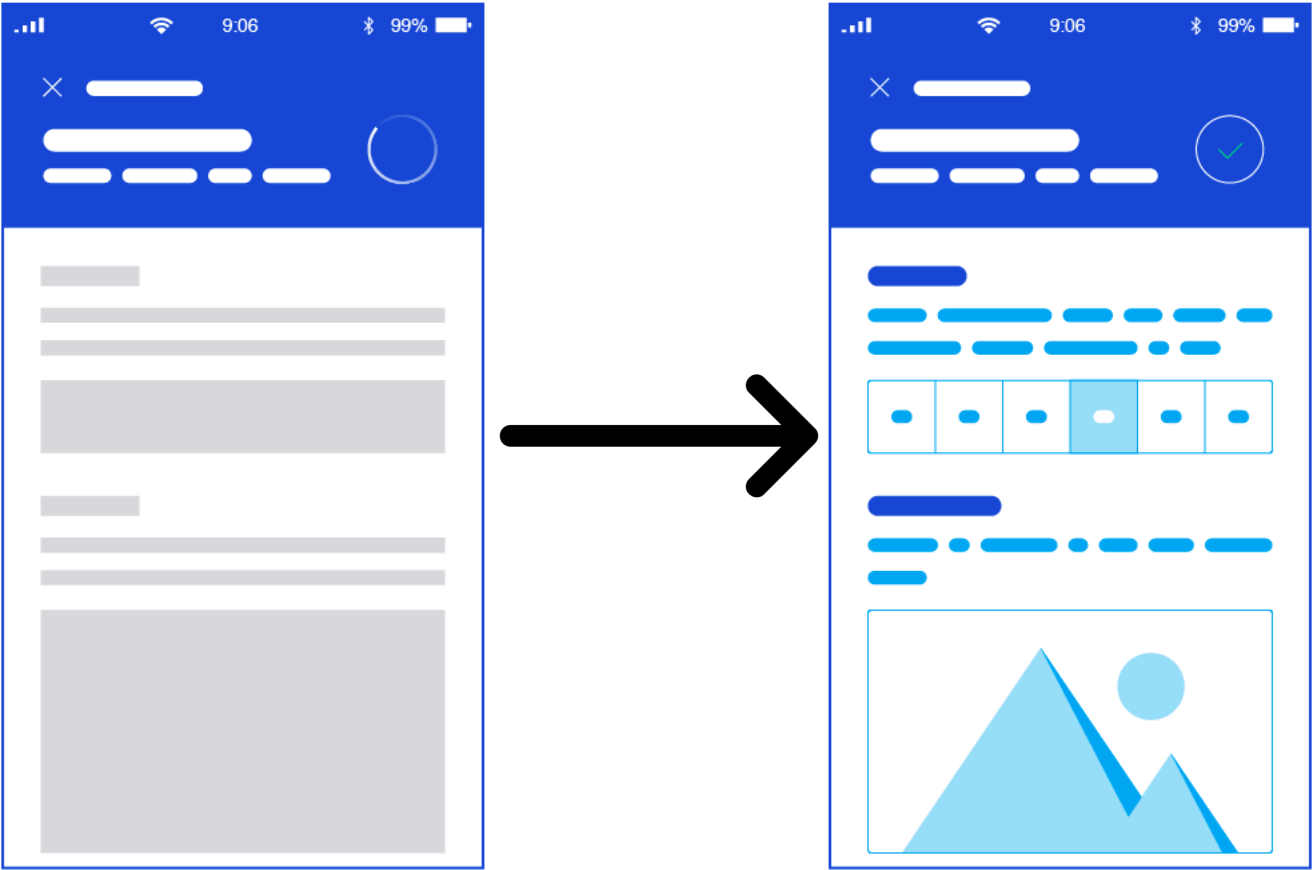
Multi Page Websites

Single Page Apps
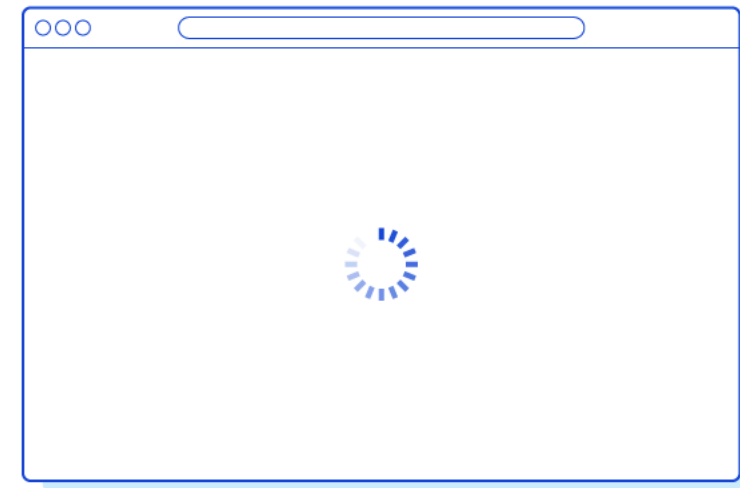
Single Page Apps

Multi-SPA-App

Within SPA.
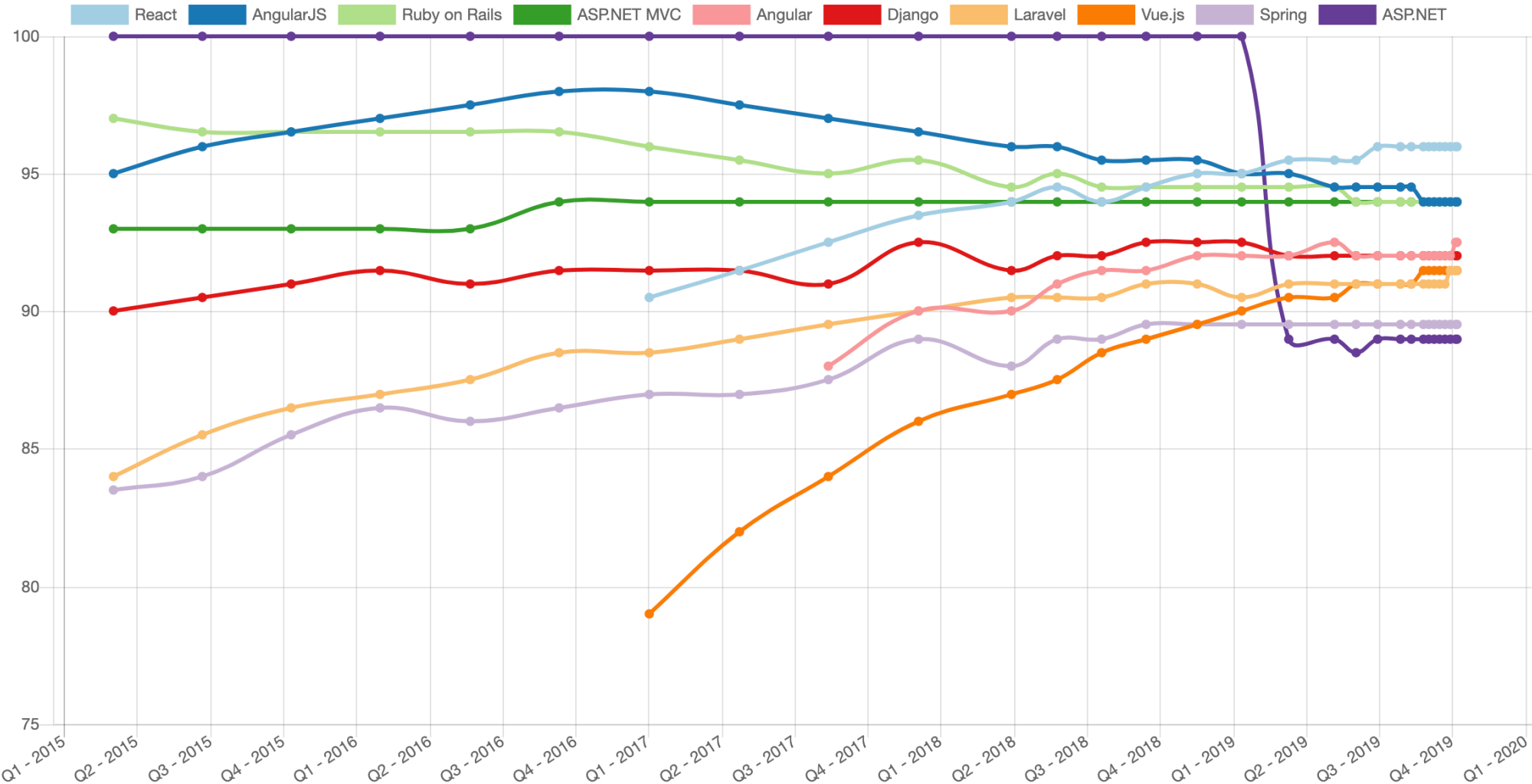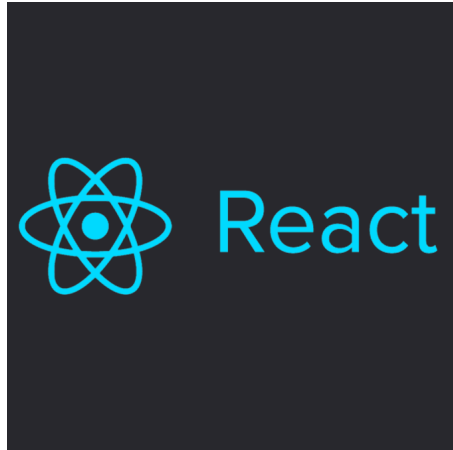
Load new SPA.

Benefits of a Single Page App

1. Single Page Apps are smooth and fast.

2. They are easy to develop and deploy.

3. SPAs are easier to debug.

4. Can repurpose the same backend code for a mobile app.

Web Framework Rankings

Source: https://hotframeworks.com/

Single Page Applications

Multi Page Websites vs SPA Architecture

Multi Page Lifecycle

SPA Lifecycle

Multi Page Websites vs SPA Architecture

Multi Page Lifecycle

Client

1. First-page request

2. First-page HTML

3. Send user data

4. Second page HTML

Page Reload

Server

vs

SPA Lifecycle

Client

1. Only page request

2. First-page HTML

3. Send user data

4. Get data to show

Server

SPA Challenges with Tracking

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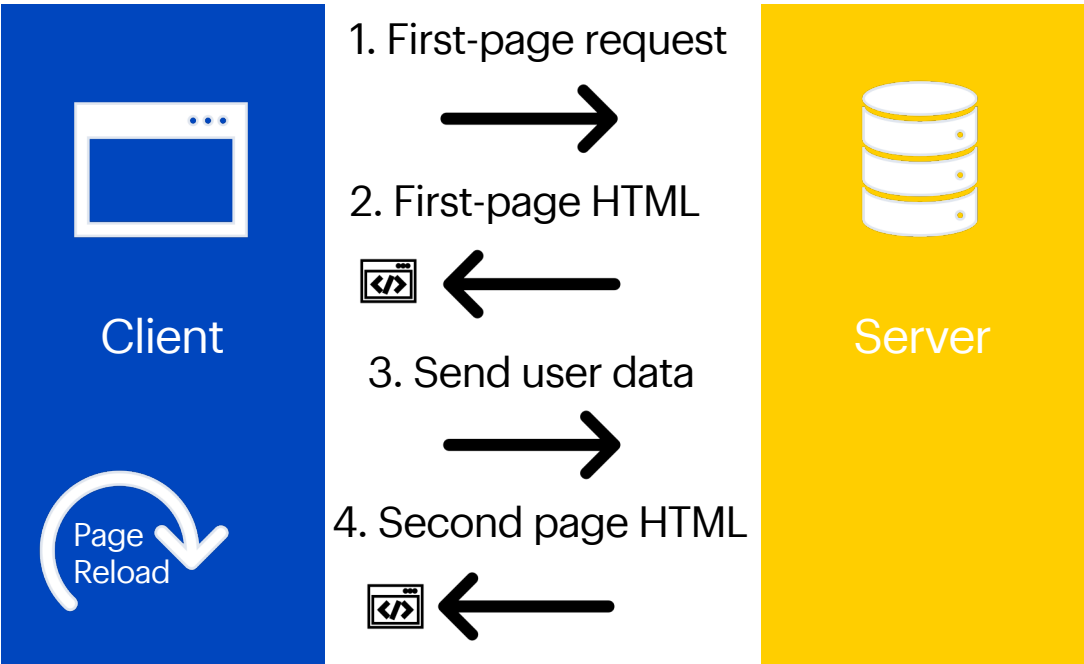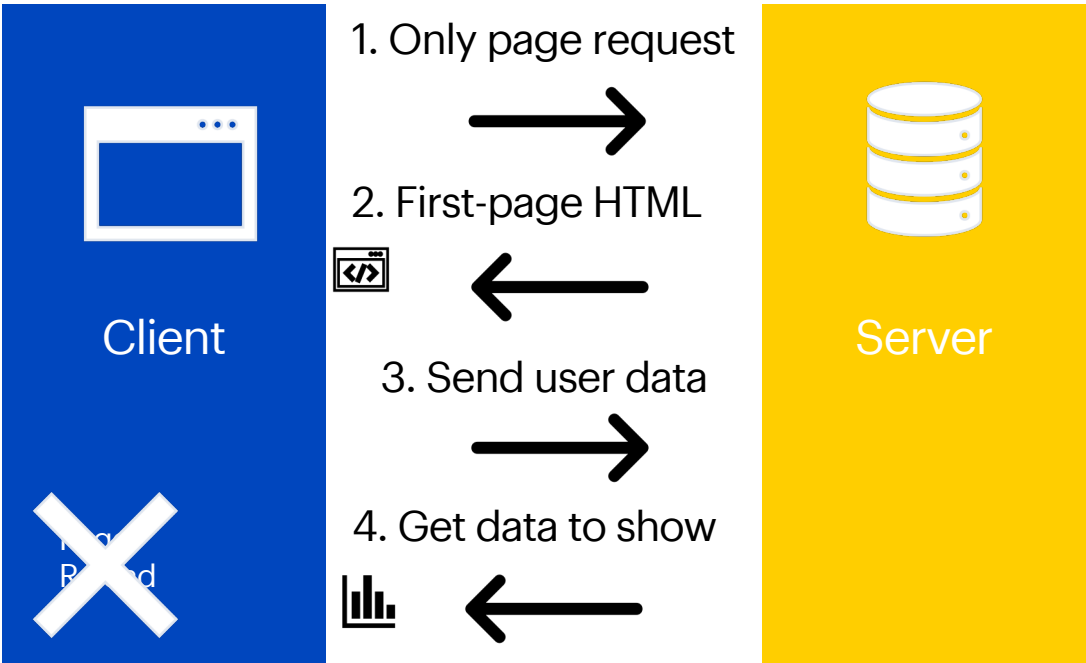
How Tracking Works at the Basics

Client

1. Page request

2. Page HTML

Server

3. Page Loads

4. Send this page load to analytics platform.

Google Analytics

Adobe Analytics
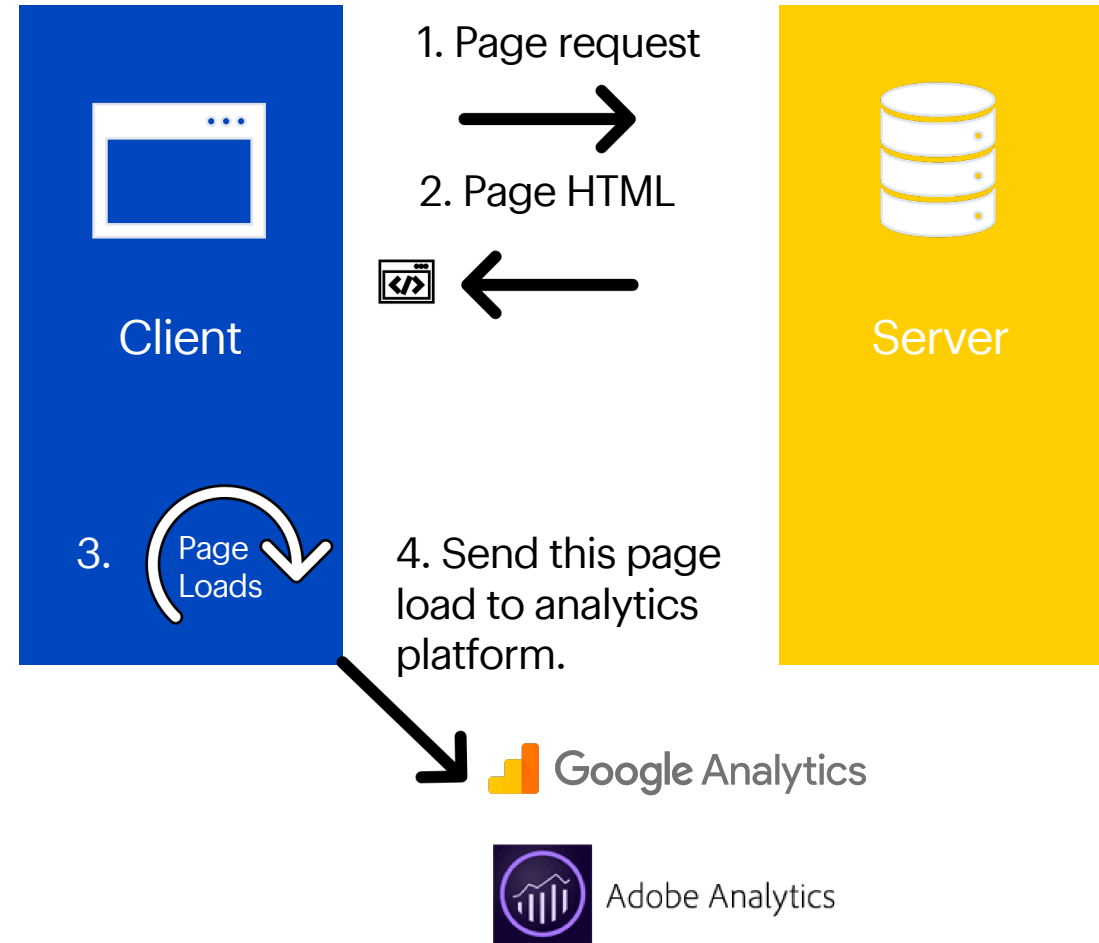
Scenario 1

A user opens twitter in their web browser and scrolls through their feed.

The user clicks on an image which opens in a pop-up, goes back and watches an auto play video, closes the browser.

How many pageviews did this user generate?

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Problem 1 – Without customization, SPAs will only have 1 page view.

Solution for Single Page View

1. **Use a page load + event based tracking strategy.**

   › Define key interactions on your app, and track them as events or custom links.

2. **Implement scroll tracking.**

Search Best Buy

Stores   Hi Julia!   2 Cart

Shop ⌄   Brands ⌄   Deals ⌄   Services

Home > TV & Home Theatre > Televisions > 53 - 59 inch TVs > Product Details

Samsung 55" 4K UHD HDR LED Tizen Smart TV (UN55RU7100FXZC)

★★★★☆ (13)   Write a Review >   **Model Number:** UN55RU7100FXZC   **Web Code:** 13407267

SAVE $150
$649.99
SALE ends: October 17, 2019

⚙ **3 Special Offers Available**

- Save $100 on Samsung HW-Q60R 5.1 CH 360W Sound Bar when you buy select Samsung 4K TVs

Show More Offers ⌄

Size: 55 in

| 43 in $449.99 | 50 in $549.99 | 55 in $649.99 |
| 58 in $899.99 | 65 in $999.99 | 75 in $1,699.99 |

Add to Cart

Reserve In Store

Benefits of a Single Page App

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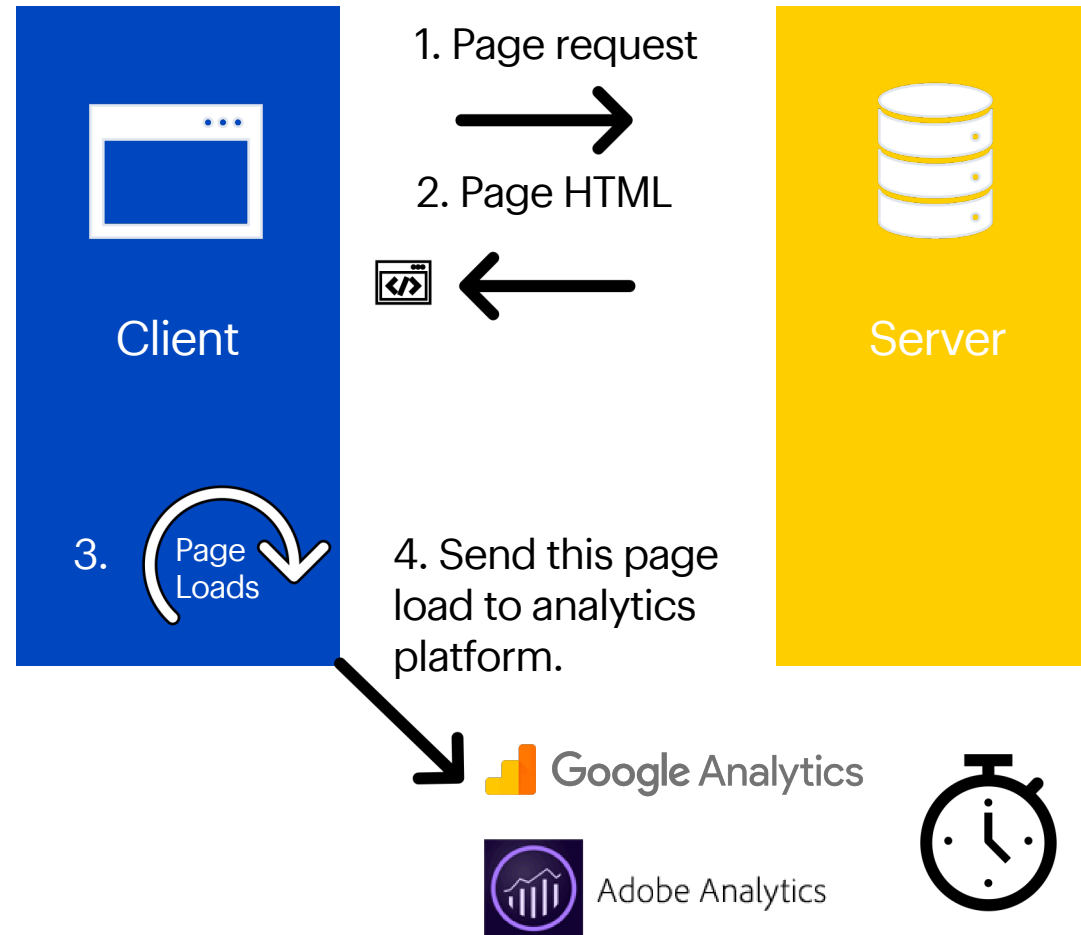4. Can be transited to mobile apps by reusing the same backend code.

Scenario 2

A user with 4G internet speed opens a site and accidently clicks on an internal link before the first page finishes loading, taking him to another url.

The first page load didn't fire until the user was already on the second page, the URL is grabbed dynamically from the page at time of page hit.

What is the URL for the entry?

Problem 2 - SPAs are fast. Sometimes too fast for analytics.

Client

1. Page request

2. Page HTML

Server

3. Page Loads

4. Send this page load to analytics platform.

Google Analytics

Adobe Analytics

Solutions for Timing Issues

1. Have a **data layer** to maintain a queue of data to send to

   your analytics platform.

2. Use a **tag management system** to streamline sending

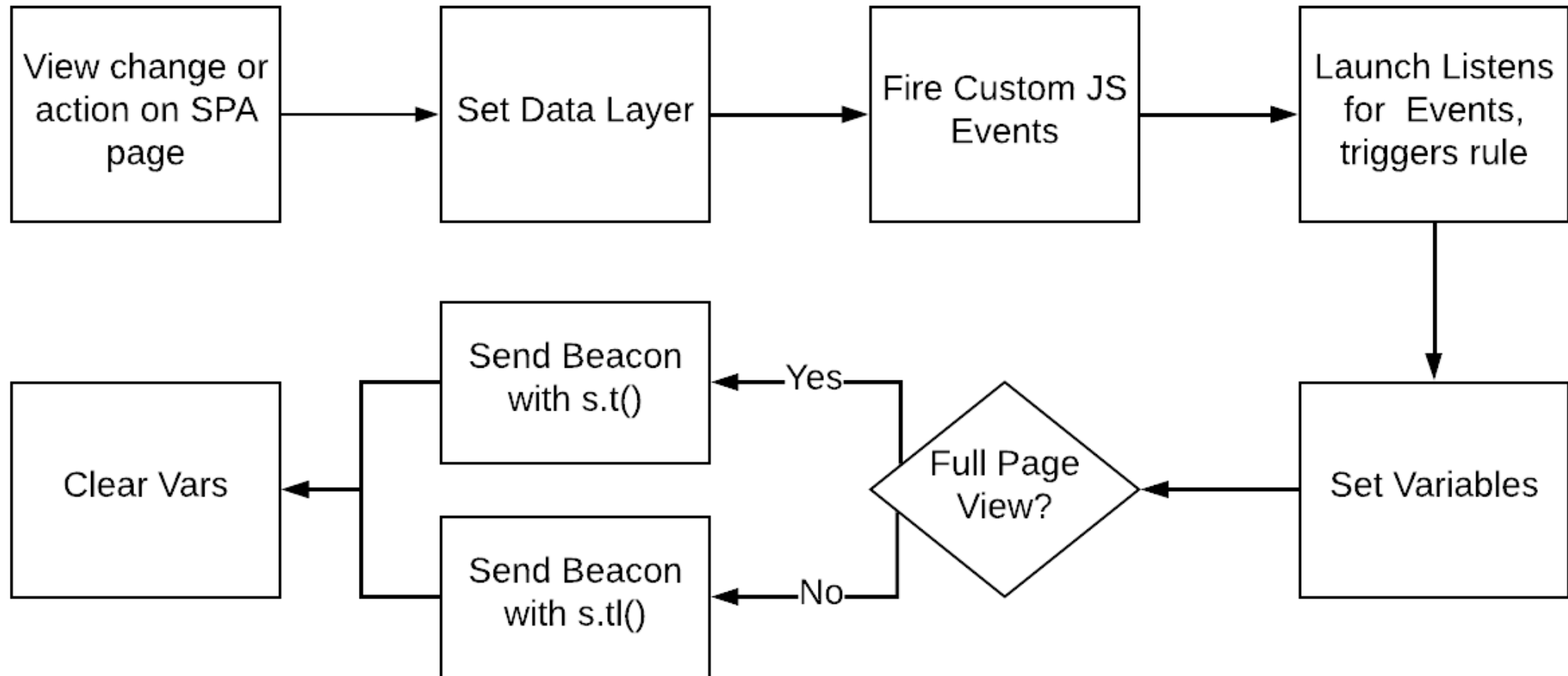   the same data to multiple platforms.

This is simplified. There are still potential timing issues within these solutions.

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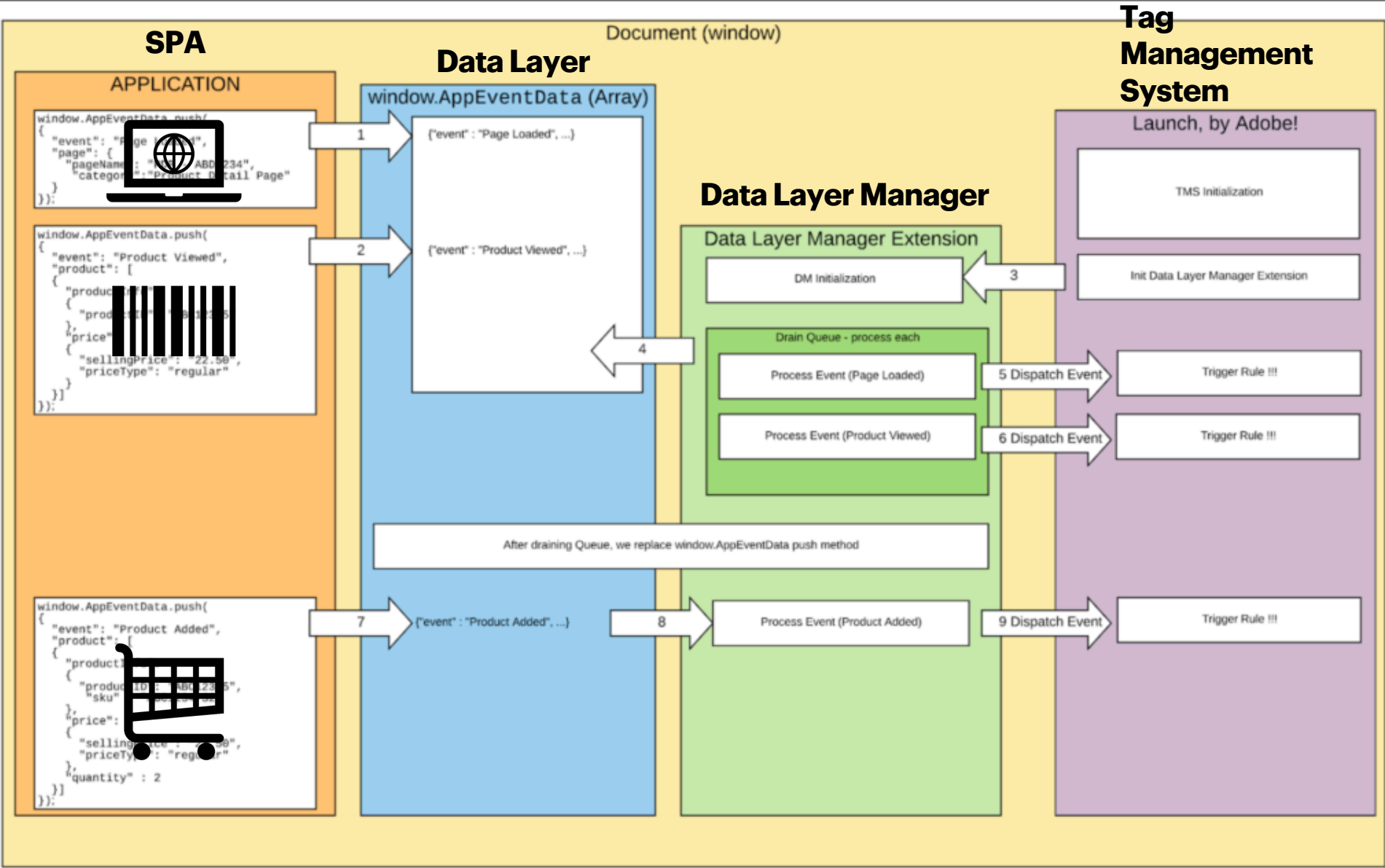# Adobe's Official Recommendation for Single Page Apps

Source: https://adobe.com/

Adobe's Official Recommendation for Single Page Apps

Source: https://adobe.com/

Data Layer Manager

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Scenario 3

You come to work and your boss asks "Hey, what happened to our

bounce rate? Why did it spike last night?"

You check with your implementation specialist and nothing was changed

last night.

What happened?

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Every deployment can severely break your data.

If an analyst isn't looking actively at the data, it could be weeks or months

until you catch the data bug.

Solutions for Monitoring Data Quality

1. Set up **alerts for KPIs** that change within a range or statistical significance.

2. Use an **analytics regression testing** tool. Integrate this as part of the release process.

More Advanced Tracking Infrastructure

1. Data Layer

2. Tag Management System

3. Page Load + Event Based Tracking

4. Analytics Regression Testing

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Organizational Solutions

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1. Decentralize the Data

Allow everyone to have access to your data.

Empower each individual to use that data to support their daily decisions.

Support individuals by validating their analysis and dashboards.

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2. Communities of Practice

- Analytics Developer Community

- Web Analyst Community

- Retail Analyst Community

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3. Site Wide Analytics Accountability

No feature can be deployed without analytics.

4. Stakeholder Clubs

Test Club:

For sharing the results of tests and expanding the A|B testing program with technology product owners.

Site Club:

For sharing and debating the performance of large site activities or initiatives.

Traffic Club:

Roundtable with traffic channel owners to discuss performance and trends.

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5. Ongoing Data Training and Education

Analytics Jam:

A weekly session hosted by the centralized Digital Intelligence Team to teach new features and office hours.

Data University:

A scalable training program that trains up individuals from the foundations of analytics to be able to utilize data in their daily routine.

Questions?

Thank you.

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