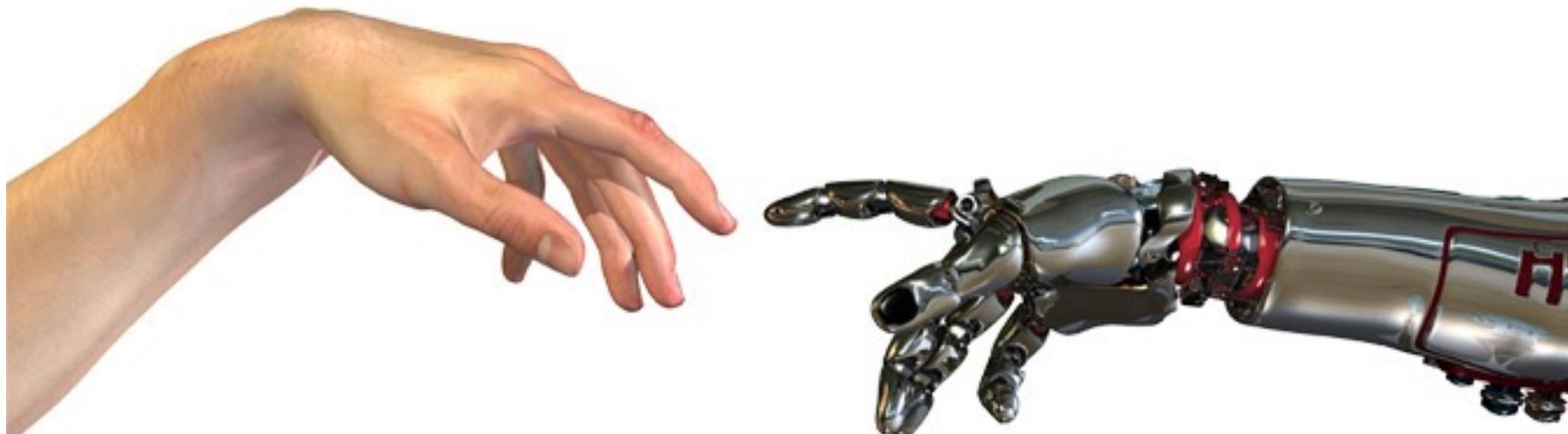


HUMAN-COMPUTER INTERACTION

UNIVERSAL PRINCIPLES OF HUMAN-COMPUTER INTERACTION DESIGN



OBJECTIVES

- 1.) Universal Principles of Design – *Visibility and Feedback and Pareto Effect*



VISIBILITY AND FEEDBACK



Principle #1: Make relevant parts visible.



Principle #2: Give each action an immediate and obvious effect



FEEDBACK

(+COMPLEXITIES IN CREATING NATURAL MAPPINGS IN FEEDBACK)

The screenshot shows the Zapier homepage. At the top, there are four sections: 'Top Searches' (Slack Integrations, Salesforce integrations, HubSpot CRM Integrations, PayPal Integrations, Asana Integrations), 'Popular Apps' (Gmail, Dropbox, Google Sheets, DocuSign, WordPress), 'Trending Apps' (Unbounce, Freshdesk, Airtable, Expensify, Insightly), and 'Top Apps by Category' (Project Management, Calendar, Email, Customer Relationship Management, Marketing Automation). Below these is a 'Top Integrations' section with links to Slack, Gmail, and others. The footer includes the Zapier logo, social media links, and navigation links for Pricing, Help, Developer Platform, and Jobs. It also features a copyright notice for 2019 Zapier Inc. and links to Terms, Privacy, and Brand.

zapier makes you happier :)

Follow us

Mobile button Hover effect

Mobile button Ripple effect

Ripple Effect Animation

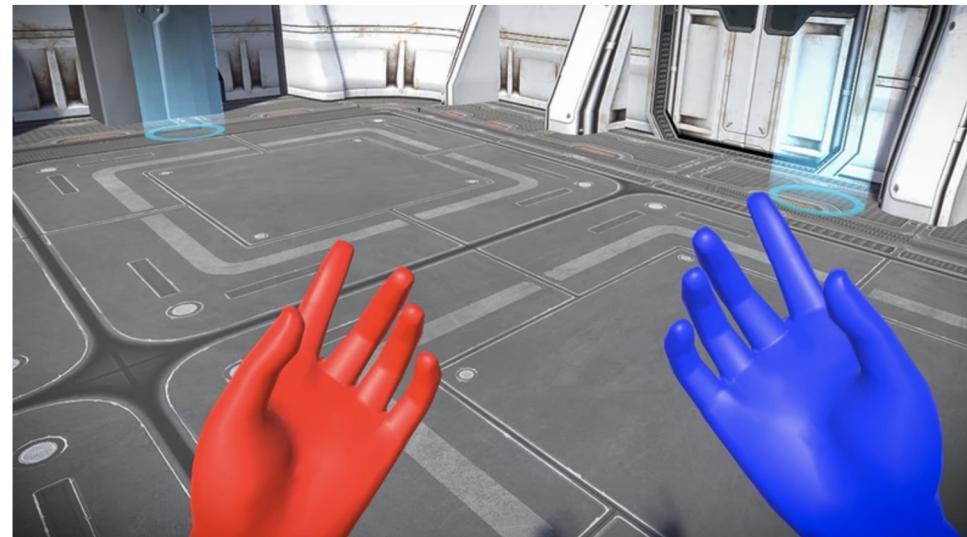
- 1
- 2
- 3
- 4

- Design should be interactive by nature. So, when a user clicks on something, she'll need a response from the product to understand that his command has been received.

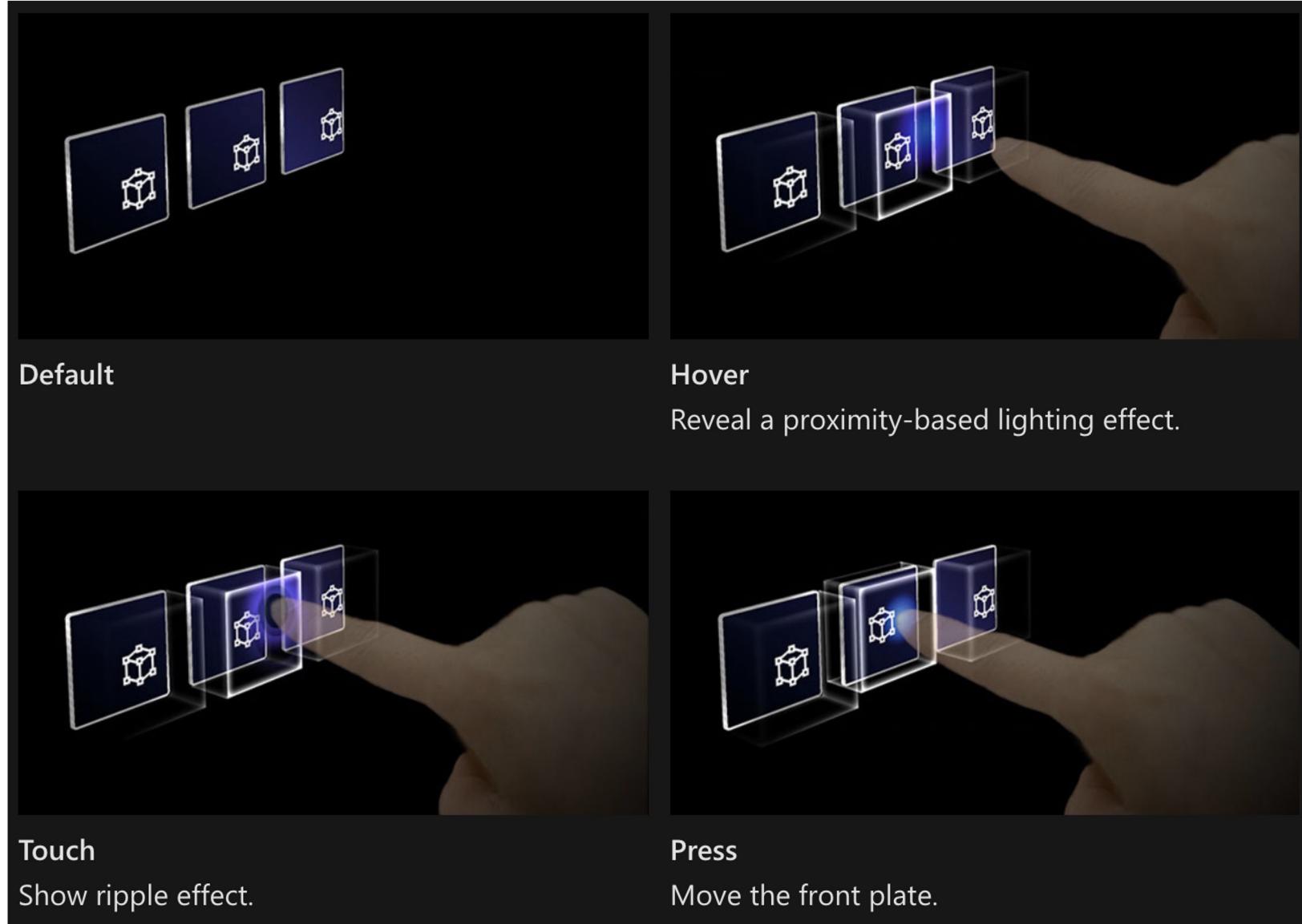
- Your design may respond in various ways. The clicked icon may change shape, vibrate, discolor, emit light, and so on. Notice how the color reacts as you click a link on the Zapier website:

FEEDBACK IN OTHER CONTEXTS - VR

- Provide haptic feedback to the user
 - Highlight areas which user can interact with
 - Provide feedback when a button is pressed by physically vibrating the controllers, audio and visual cues
 - More tangible experience

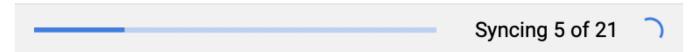


FEEDBACK IN MIXED REALITY



VISIBILITY OF SYSTEM STATUS

- Ideally, systems should always keep users informed about what is going on, through appropriate feedback within reasonable time.



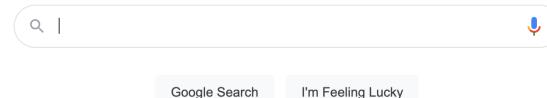
Processing uploaded file...



Uploading: 77%

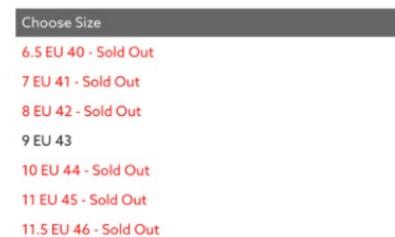
Example Data.csv

Google



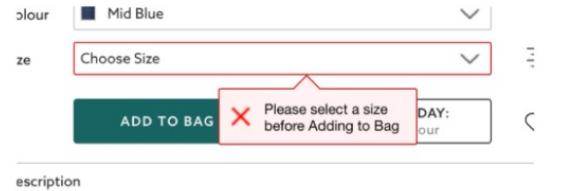
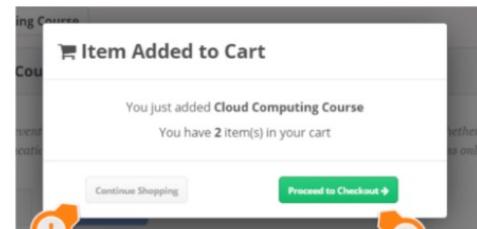
Google Search I'm Feeling Lucky

- Hiding certain functions can be advantageous in interface design.
- Certain functions are kept invisible until needed; also contained within a group of similar types.
- Google search makes it clear where to enter text.

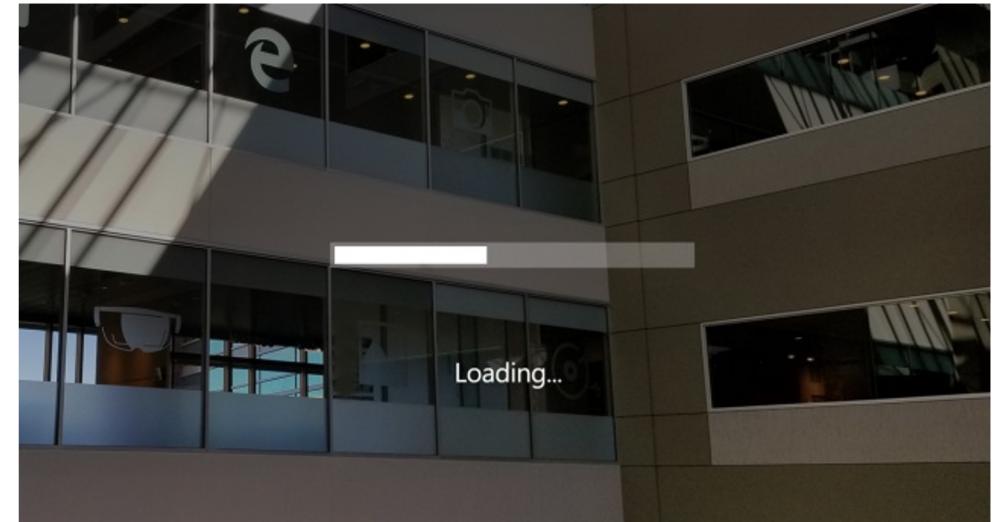


42 R - Order now for delivery within 5-6 weeks
30 L - Currently Unavailable

You just added 1 item to your cart



VISIBILITY OF SYSTEM IN OTHER CONTEXTS - MIXED REALITY



Cre8ivepark. (n.d.). Displaying progress - Mixed Reality. Retrieved December 09, 2020, from <https://docs.microsoft.com/en-us/windows/mixed-reality/design/progress>



VISIBILITY AND FEEDBACK

Sound can be used to provide similar information.

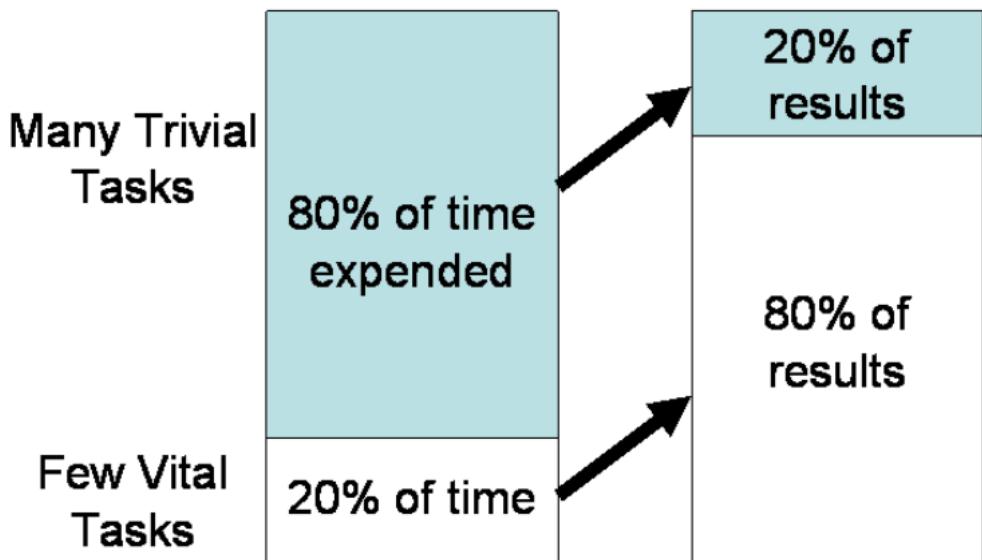


When the electric engine is engaged,
the Prius is quieter than a vacuum
cleaner.



80/20 RULE/Pareto Effect

- High percentage of effects in any large system are caused by a low % of variables.
- The 80/20 rule is useful for focusing resources and, in turn, realizing greater efficiencies in design.
 - Example: **critical 20% of product's features are used 80 % of the time, design and testing resources should focus primarily on those features.**



80 percent of a product's usage involves 20 percent of its features.
80 percent of a town's traffic is on 20 percent of its roads.
80 percent of a company's revenue comes from 20 percent of its products.
80 percent of innovation comes from 20 percent of the people.
80 percent of progress comes from 20 percent of the effort.
80 percent of errors are caused by 20 percent of the components.

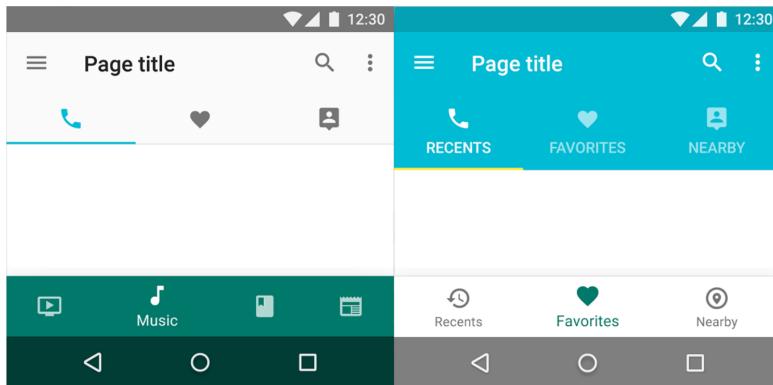
Project Managers know that 20 percent of the work (the first 10 percent and the last 10 percent) consume 80 percent of your time and resource



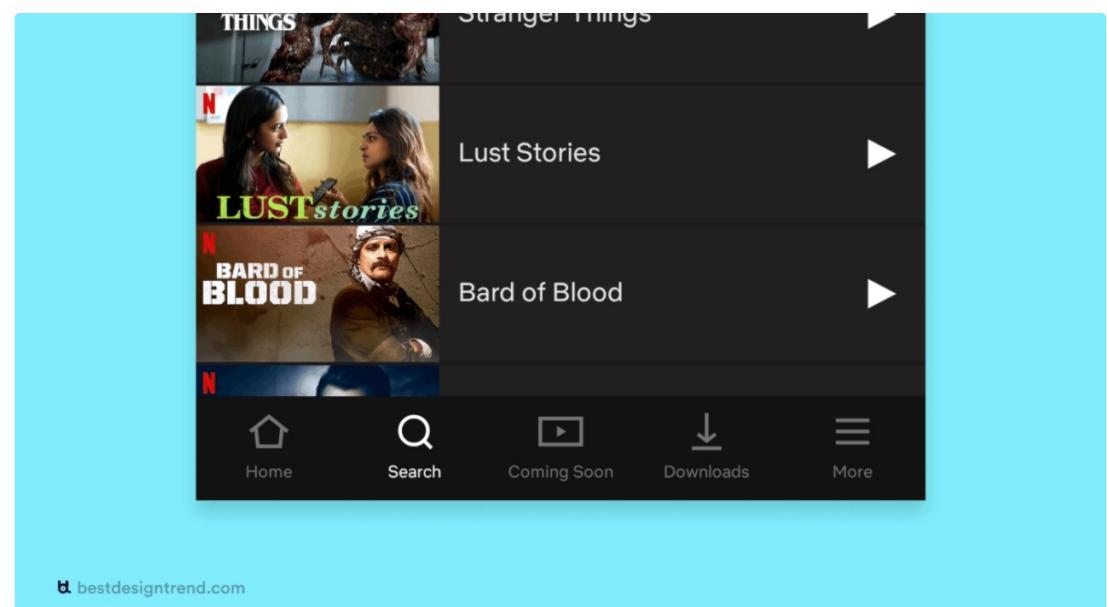
80/20 RULE/Pareto Effect Cont.

- 80% of the time is spent on 20% of the apps
 - 80% of users rely on 20% of the features of an app

Ex 1. Tabbed Menus



Ex 2. Hamburger menus



Netflix's mobile app uses a hamburger menu in navigation to hide advanced features.

3 REASONS WE CARE ABOUT 80/20 IN USER INTERACTION

- 1. First, it helps us recognize our most valuable features.**
- 2. Second, it optimizes our business model.**
- 3. Third, it helps us reflect and rethink our existing features.**

NOTE: Be sure to consider sample size when you use the Pareto Principle.

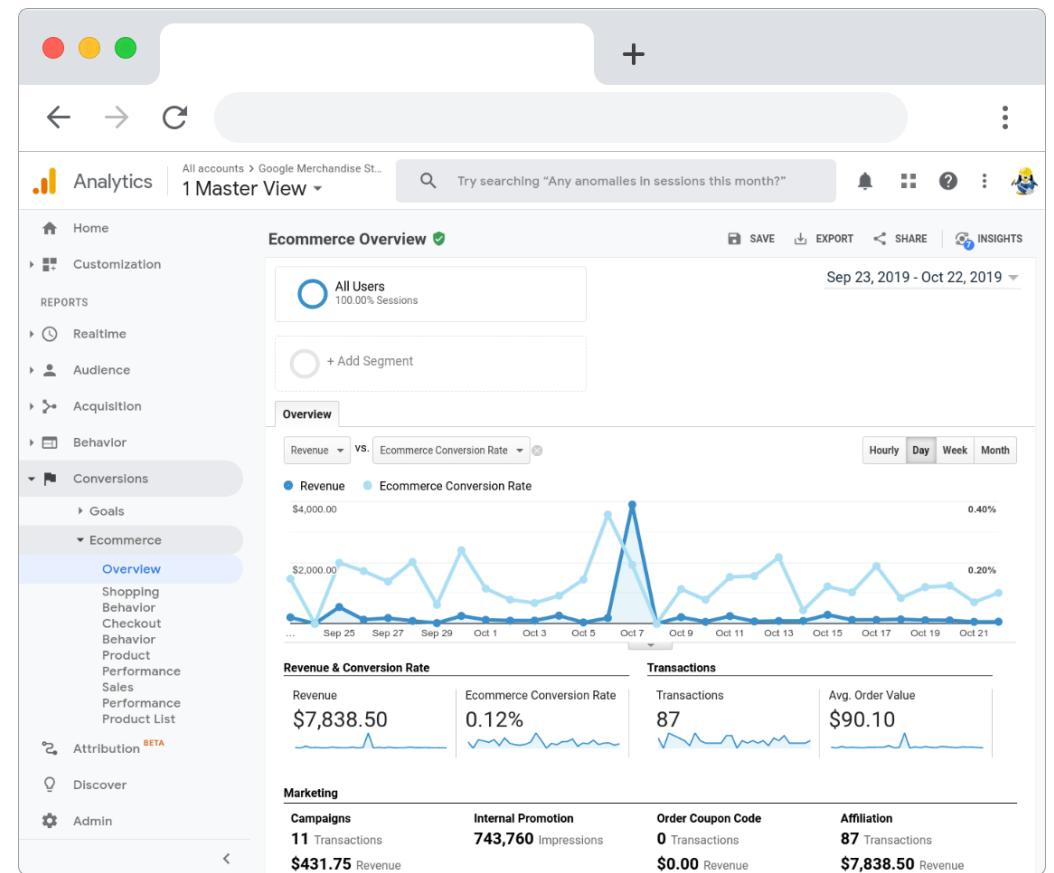
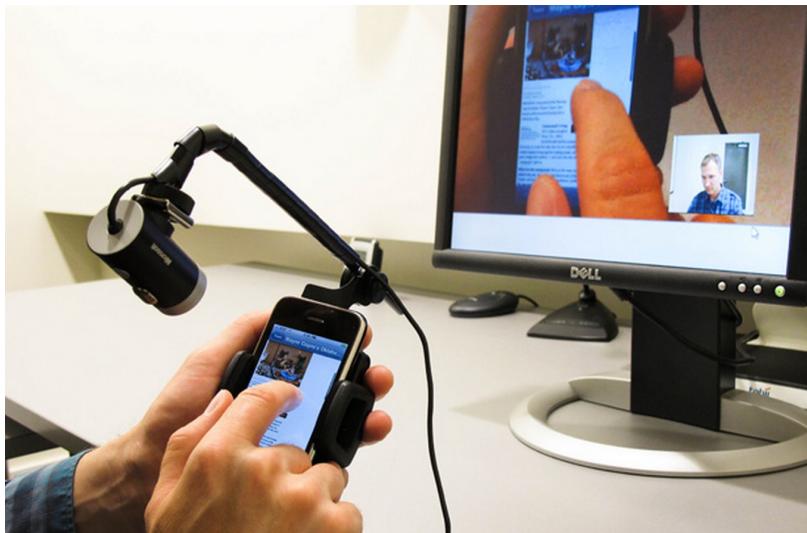
Ex. Helpdesk calls

HOW DO WE IDENTIFY THE 20%?



Google Analytics

1. Usability Testing
2. Analytics
3. Planning Phase



13% OF PROCEDURES OCCUR 80% OF THE TIME!

Emergency and Urgent Procedures Pareto Chart

