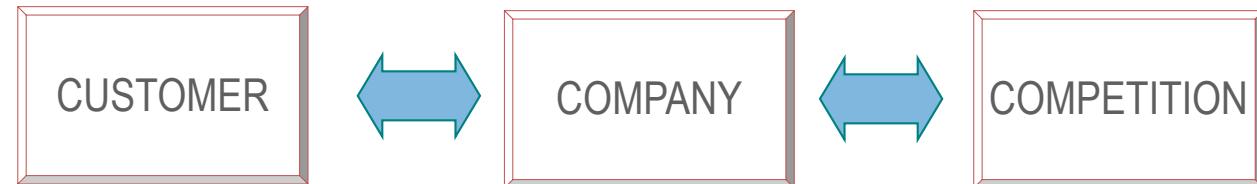


Introduction to Marketing Analytics

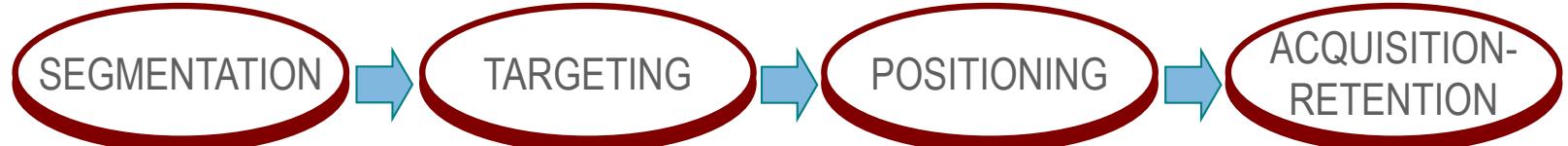
Session 5: Pricing

Professor Ricardo Montoya

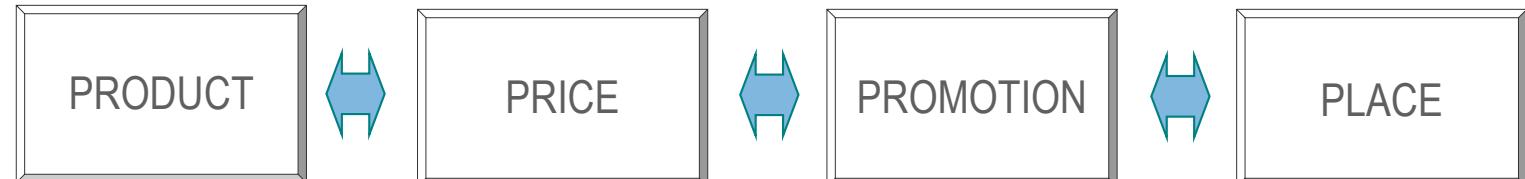
Identify Market Opportunities



Set Strategy



Formulate Marketing Program



How Would You Price This Product?



Example: Time-based pricing

SYMS.com AN EDUCATED CONSUMER IS OUR BEST CUSTOMER®

ABOUT US STORE LOCATIONS SYMS CHARGE CARD DESIGNER NAMES EMPLOYMENT INFO. EVENTS



Ladies
NAMES YOU MUST KNOW

Ladies
From separates, dresses, outerwear to lingerie and shoes you'll find designer names galore, even couture items. Featured on our dresses is the unique AUTOMATIC MARKDOWN SYSTEM. Every automatic markdown price tag is dated and marked in advance to show you when and how much each markdown will be. The price you pay is determined by the date on the ticket.

Mens Clothing Ladies Children Haberdashery Shoes Front End Luggage/Domestics

[privacy policy](#) . [terms&conditions](#) . [contact Sy & Marcy](#) . [tech. help](#) . [investor info](#) . [site map](#) . [sign in](#)

Example: Time-based pricing

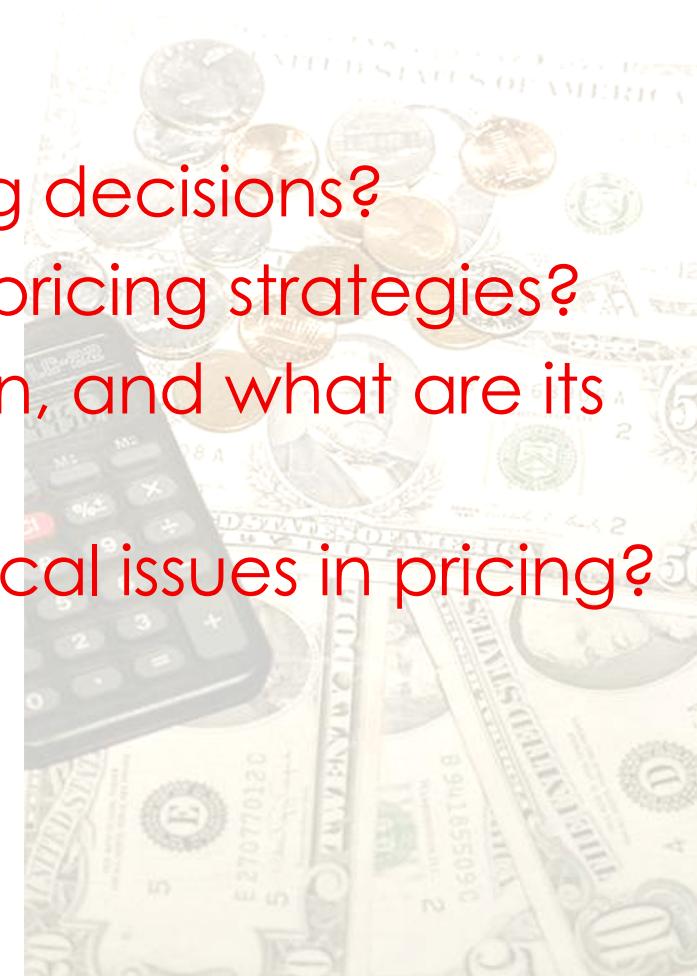
SYMS

Ladies
From separates, dresses, outerwear to lingerie and shoes you'll find designer names galore, even couture items. Featured on our dresses is the unique AUTOMATIC MARKDOWN SYSTEM. Every automatic markdown price tag is dated and marked in advance to show you when and how much each markdown will be. The price you pay is determined by the date on the ticket.



Agenda

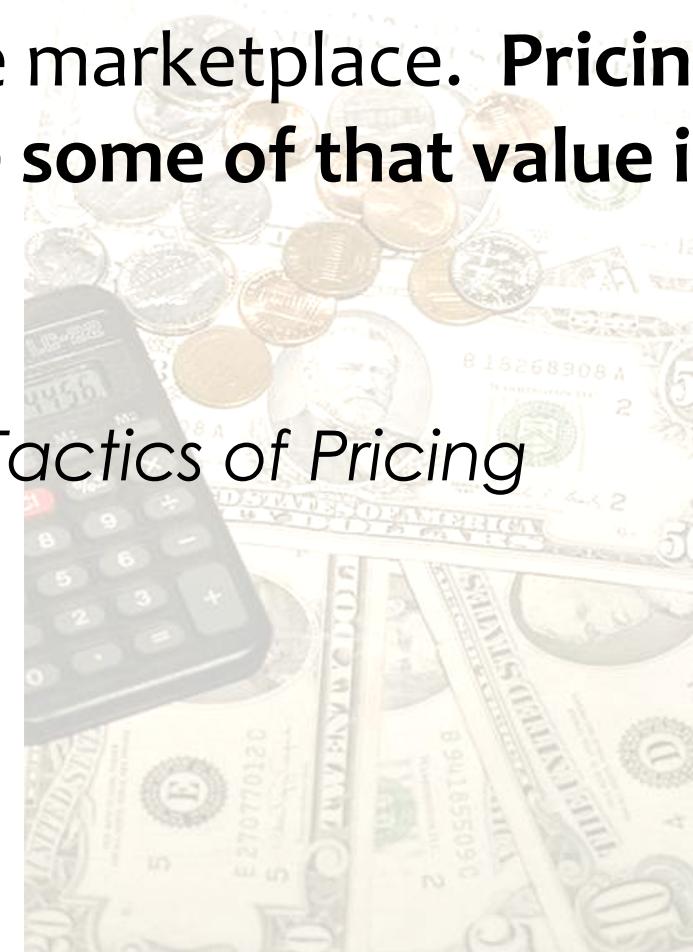
- **Pricing**
 - Why is pricing important?
 - What factors affect pricing decisions?
 - What are some common pricing strategies?
 - What is price discrimination, and what are its objectives?
 - What are some of the ethical issues in pricing?



Pricing: Capturing Value

“Product, promotion and distribution ... are a firm’s attempt to create value in the marketplace. **Pricing is the firm’s attempt to capture some of that value in the profit it earns.**”

~ Nagle, *The Strategy and Tactics of Pricing*



Factors Affecting Pricing Strategy

- **Company** Factors

```
graph LR; CF[Company Factors] --> C[Costs]; CF --> CS[Company Strategy]; CF --> PC[Positioning (Consistency)]
```

Costs
Company Strategy
Positioning (Consistency)

- **Customer** Factors

```
graph LR; CF[Customer Factors] --> EVC[EVC]; CF --> PS[Psychological]; CF --> PS[SPrice Sensitivity]
```

EVC
Psychological
Price Sensitivity

- **Competition** Factors

```
graph LR; CF[Competition Factors] --> S[Substitutes]; CF --> R[Reaction]; CF --> S[Signaling]
```

Substitutes
Reaction
Signaling

- Ethical/Legal Issues

Customer Factors Affecting Price Sensitivity

- Individual preferences
- Perceptions of uniqueness and relative value
- Income/wealth
- Awareness of substitutes
 - comparison effects (categorization)
- Switching costs
- Ability to compare
- Inventory
- Structure of payment

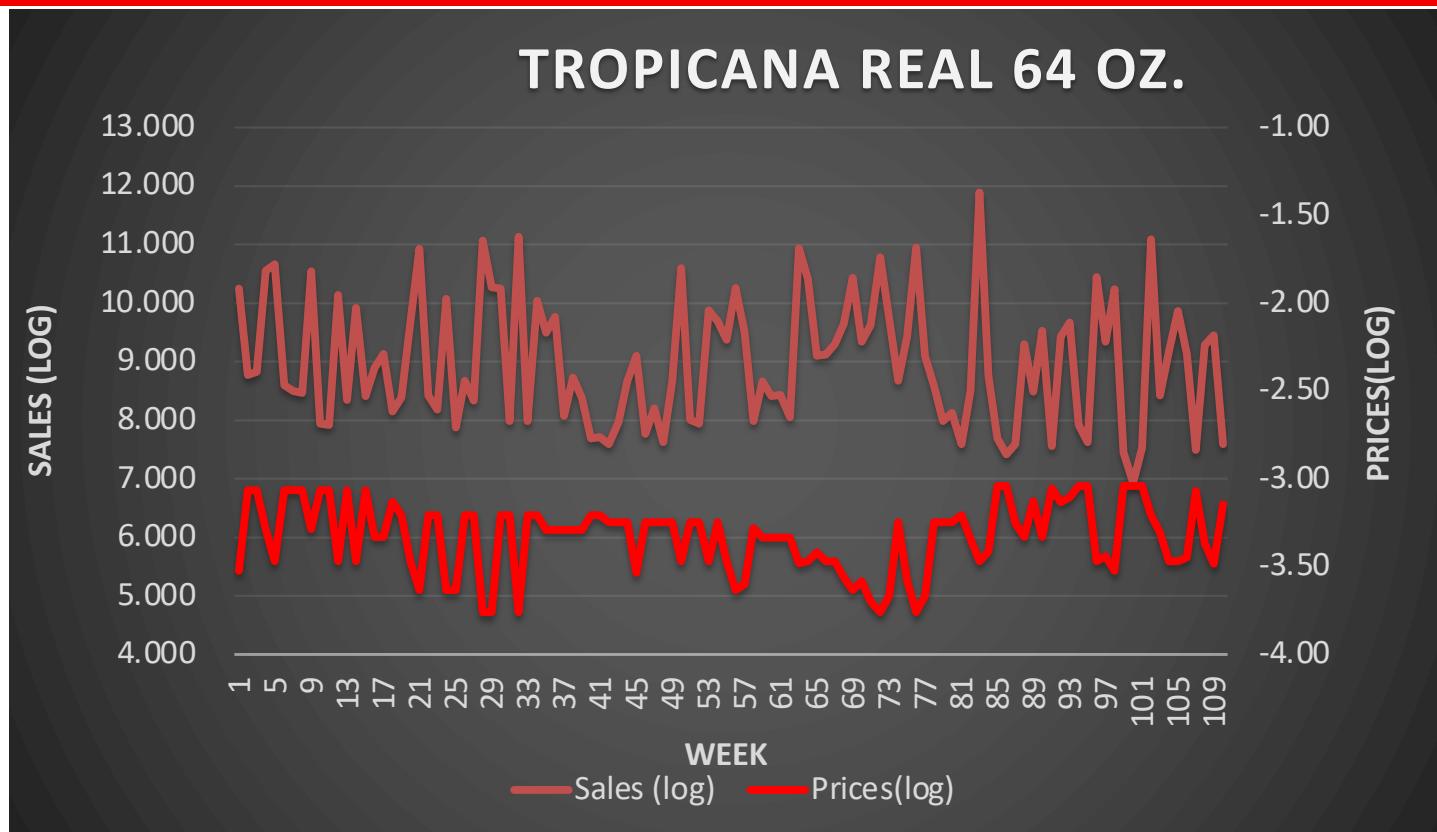


Measuring Willingness-To-Pay (WTP) and Price Sensitivity

- Revealed Preference
 - (Simulated) Test markets
 - Historical data
 - Supermarket scanners
 - Sales data
 - Auctions
- Price Experiments
- Stated Preference
 - Surveys
 - Conjoint analysis



Historical Data



Weekly Store Sales and Net Prices

Sales (or log sales) as a function of price (or log price)

$$Sales_t = \alpha + \beta Price_t + Controls_t + \varepsilon_t$$

Auctions

- **Types of Auctions:**
 - First-price sealed-bid
 - Second-price sealed-bid (Vickrey auctions)
 - Open Ascending-bid auctions (English auctions)
 - Open Descending-bid auctions (Dutch auctions)

Using Conjoint Analysis

- Utility for a product = Sum of utilities for its attributes
$$U = u(a_1) + u(a_2) + u(a_3) + \dots$$
- Consumers differ in their utilities for product attributes
- Utilities can be measured by consumer evaluation of hypothetical products (profiles)
- Estimates of the utilities can be used to make market share predictions for new products prior to development

Example: Carpet Cleaner

Attributes

Package Design

Brand Name

Price

Good Housekeeping Seal

Money-back Guarantee

Levels

A, B, C

K2R, Glory, Bissell

\$1.19, \$1.39, \$1.59

Yes, No

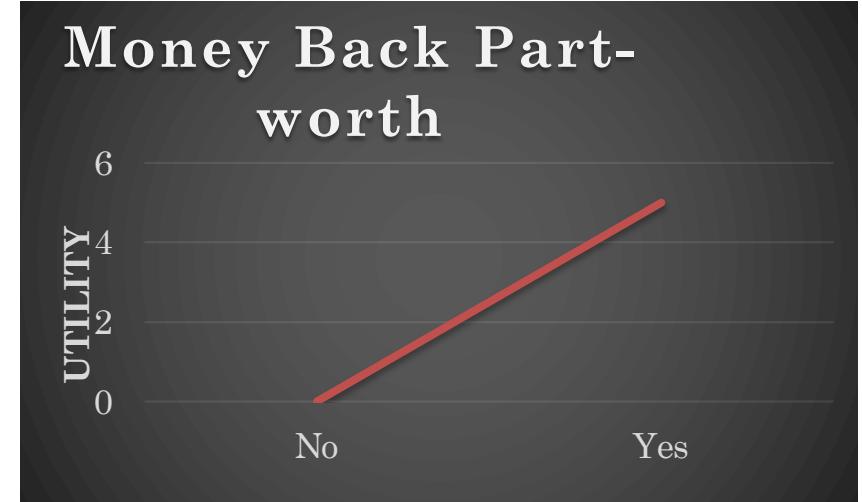
Yes, No

- Total number of possible product combinations = 108
- A subset of 18 product combinations is selected for use such that attributes are uncorrelated (orthogonal)
 - Which 18? Commercial software available to pick subset

Example: Carpet Cleaner Experiment Design

	Package Design	Brand Name	Price	Good Housekeeping Seal?	Money Back Guarantee	Respondent's evaluation (rank)
1.	A	K2R	1.19	No	No	13
2.	A	Glory	1.39	No	Yes	11
3.	A	Bissell	1.59	Yes	No	17
4.	B	K2R	1.39	Yes	Yes	2
5.	B	Glory	1.59	No	No	14
6.	B	Bissell	1.19	No	No	3
7.	C	K2R	1.59	No	Yes	12
8.	C	Glory	1.19	Yes	No	7
9.	C	Bissell	1.39	No	No	9
10.	A	K2R	1.59	Yes	No	18
11.	A	Glory	1.19	No	Yes	8
12.	A	Bissell	1.39	No	No	15
13.	B	K2R	1.19	No	No	4
14.	B	Glory	1.39	Yes	No	6
15.	B	Bissell	1.59	No	Yes	5
16.	C	K2R	1.39	No	No	10
17.	C	Glory	1.59	No	No	16
18.	C	Bissell	1.19	Yes	Yes	1

Calculating WTP from Conjoint Analysis

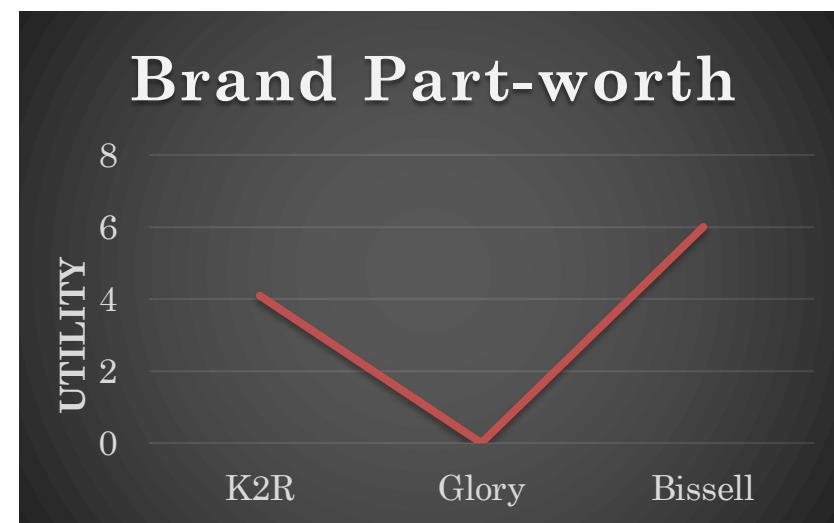


WTP per 1 util = $(\$1.59 - \$1.19) / (8 - 0) = 0.05 \text{ \$/util}$

WTP for Money back = $(5 - 0) \times 0.05 = \$0.25$

WTP for Bissell over Glory $(6 - 0) \times 0.05 = \$0.30$

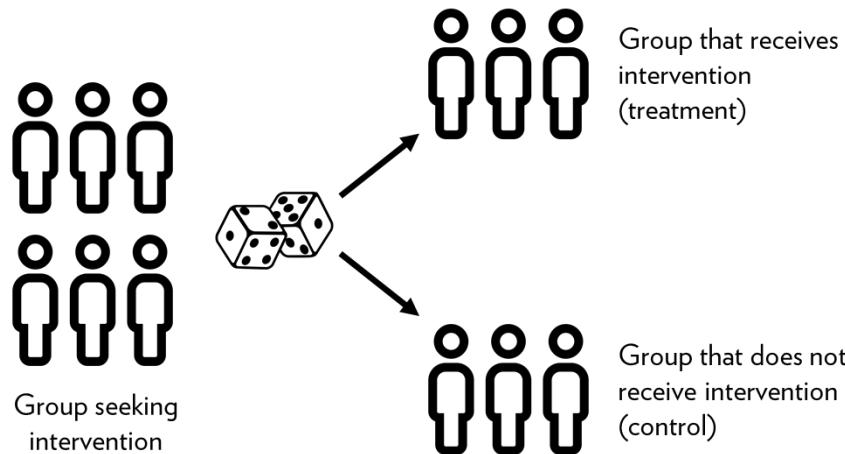
WTP for Bissell over K2R $(6 - 4) \times 0.05 = \$0.10$



Pricing Experiments

- Causal analytic methods seek to construct an appropriate counterfactual with which to compare the response of “treated” individuals
- Observational methods based on secondary data:
 - Regression adjustment, matching, propensity score
 - Instrumental variables
 - Regression discontinuity
- Superior method (gold standard): Experimentation

Pricing Experiments₍₂₎



- Construct counterfactual using a control group not exposed to the action
- Key: Control group must be probabilistically identical to the group exposed to the action (treated group)
- How do we get this?
 - Via random assignment of treatment

Example: Setting One Price for Two Segments

	Segment 1	Segment 2
Size	10 customers	20 customers
WTP	\$3	\$1.50
Usage	1 per customer	1 per customer

Average cost per unit: \$1

- **High price (\$3):** serve only Segment 1
 - Profit = $10 \times (\$3 - \$1) = \$20$
- **Low price (\$1.50):** serve Segments 1 and 2
 - Profit = $30 \times (\$1.50 - \$1) = \$15$

Price Elasticity

- Measure of price sensitivity at a given point

$$\frac{\% \text{ change in sales volume}}{\% \text{ change in price}} = \text{elasticity}$$

- Larger absolute value
 - greater price sensitivity
 - greater loss of sales if price increases

Example: Complementary Products Pricing

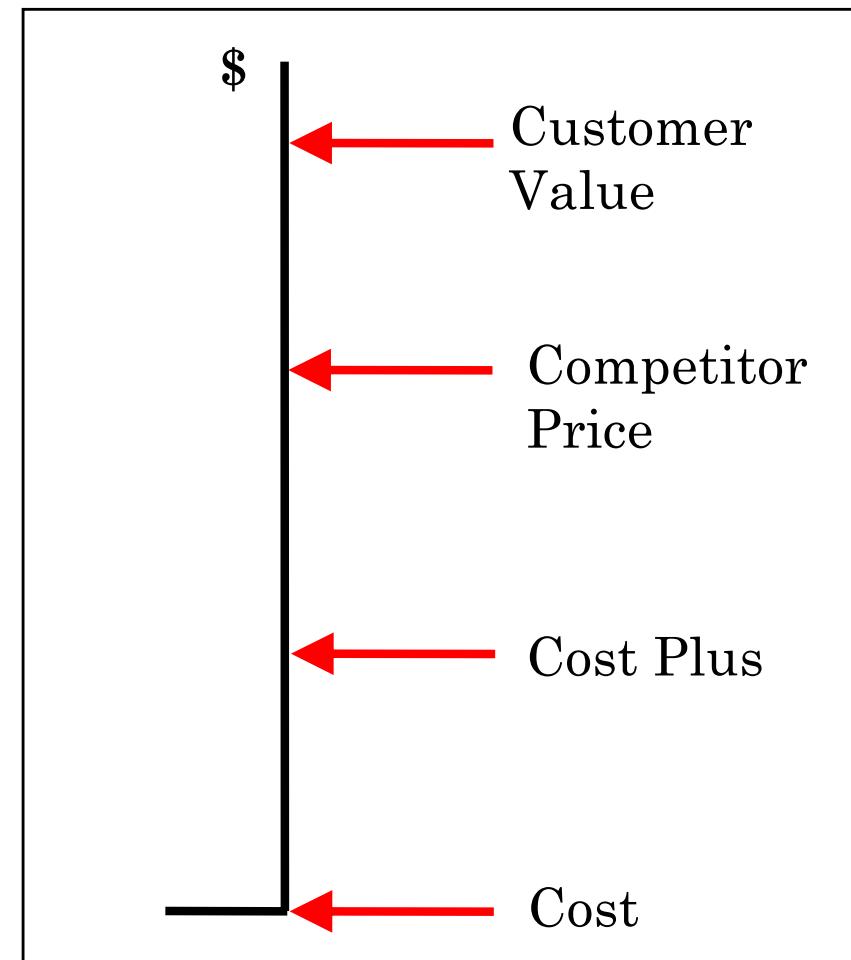
- HP sells its inkjet printers and cartridges at the following prices:

	<u>Price</u>	<u>VC</u>	<u>Unit Sales</u>	<u>Elasticity</u>
Printer	\$400	\$300	100,000	-2.5
Cartridges	\$25	\$10	10/printers	-1

- HP is considering the following three pricing options:
 - Option A: Increase printer price by 10%
 - Option B: Increase cartridge price by 10%
 - Option C: Reduce printer price by 5% and increase cartridge price by 10%
- Which option should HP opt for?

Pricing Methods

- **Cost based pricing**
 - Markup on cost
 - Breakeven analysis
- **Value based pricing**
 - Economic value to customers (EVC)



Pricing Strategies

- Price Penetration
 - Sets low initial price to increase market share rapidly
 - Effective if:
 - Customers are price-sensitive
 - Economies of scale are available
 - Threat of competition exists
- Price Skimming
 - Sets higher initial price to first reach those willing to buy at a high price before marketing to more price-sensitive customers
 - A temporal version of price discrimination

Pricing Strategies: The Concept of Price Discrimination

- What is price discrimination?
- Why do companies do it?
- How do you implement it?

Forms of Price Discrimination

- Customized pricing can be implemented using the following
 - Product Lines
 - Controlled Availability
 - Buyer Characteristics
 - Transaction Characteristics

Non-linear Pricing

- Quantity discounts that capitalize on decreasing marginal utility and multiunit demand
 - Consumers self select
 - Consumers in most cases cannot band together to get discounts
 - No legal problems as same price structure is offered to all consumers
 - Bundling is a form of non-linear pricing



Examples of Quantity Discounts

BUY 1 GET 2 FREE

Pay for 1 & pick 2 of your favourites for free

BUY 1 GET 40% OFF, BUY 2 GET 50% OFF

Let your supermask be
your superpower!

WILDCRAFT
SUPERMASK™



Buy 2 & get 1 free

Put on your
W95+ SUPERMASK™

[EXPLORE COLLECTION](#)

*Offer at ₹299 for W95 mask and ₹399 on W95+ mask



THE MAD ABOUT STYLE EVENT

25%
OFF

WHEN YOU SPEND \$75 OR MORE.

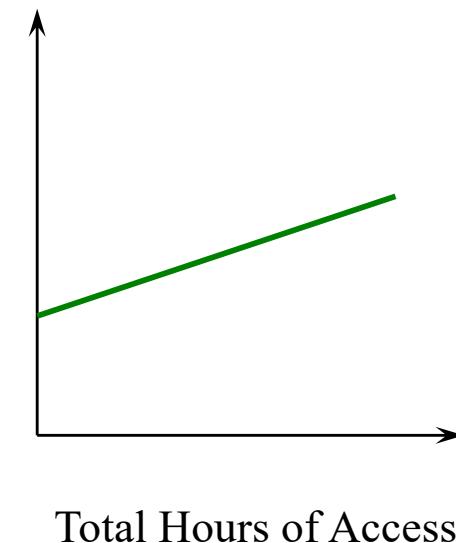
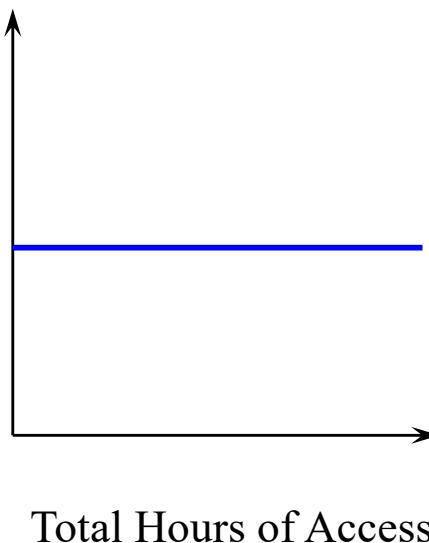
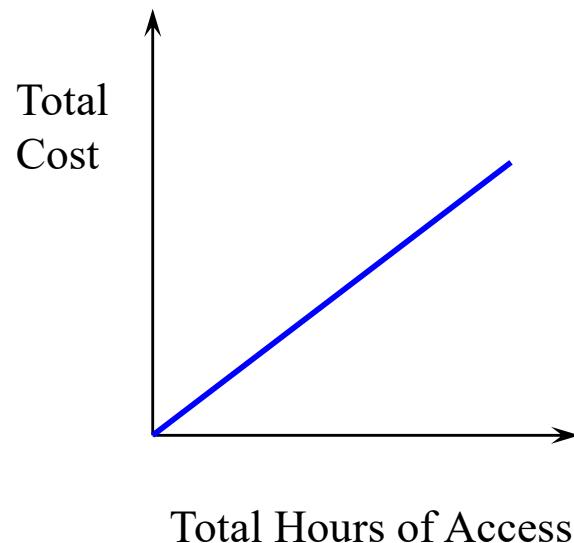
7/22 – 7/25. ONLINE ONLY.
ENTER PROMO CODE **BRSAVE25** AT CHECKOUT.
[CLICK FOR DETAILS >](#)



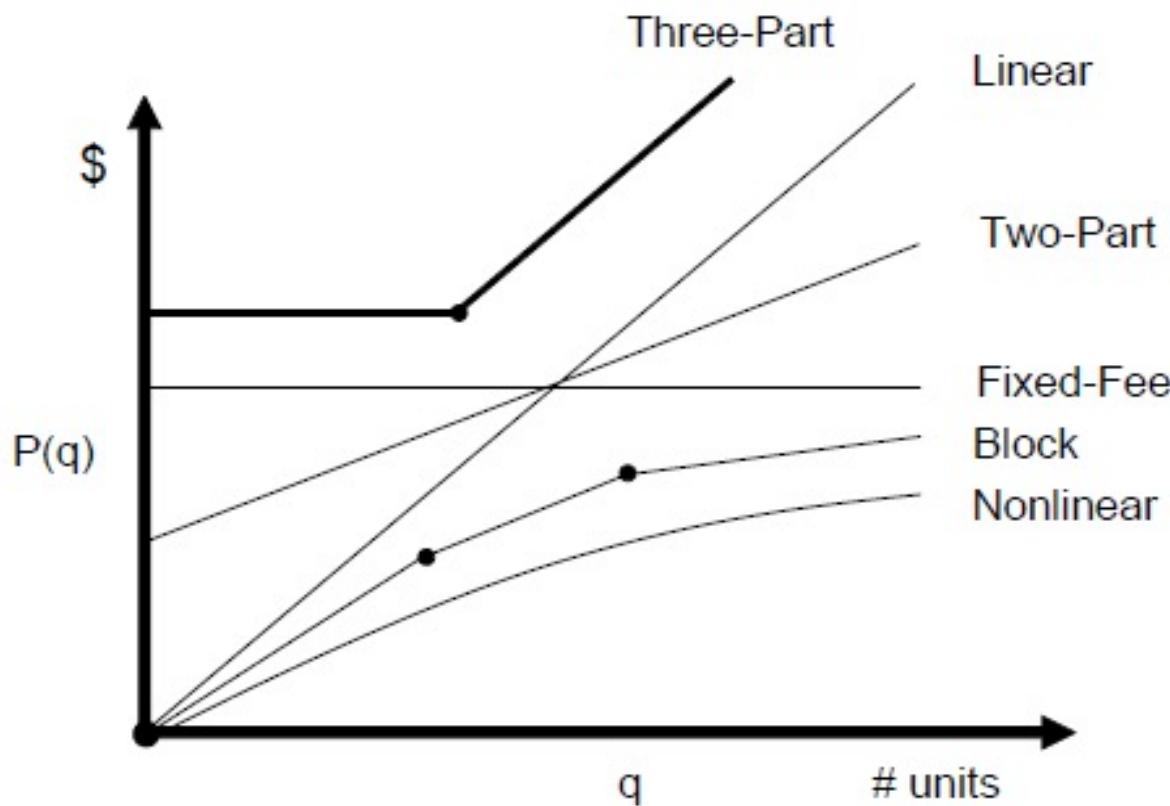
TORCUATO DI TELLA

Non-linear Pricing: Fixed Fee

- Pricing options for an Internet access provider (e.g., Xfinity)



Several kinds of tariffs



Main Takeaways

- Pricing decision is linked directly to the bottom line
- When making a pricing decision, a firm should consider:
 - Company factors (e.g., costs, image/strategy)
 - Customer factors (e.g., WTP, EVC)
 - Competitors factors (e.g., substitutes)
- Price penetration vs. price skimming
- Uniform pricing vs. price discrimination
- Ethical issues in pricing

Introduction to Marketing Analytics

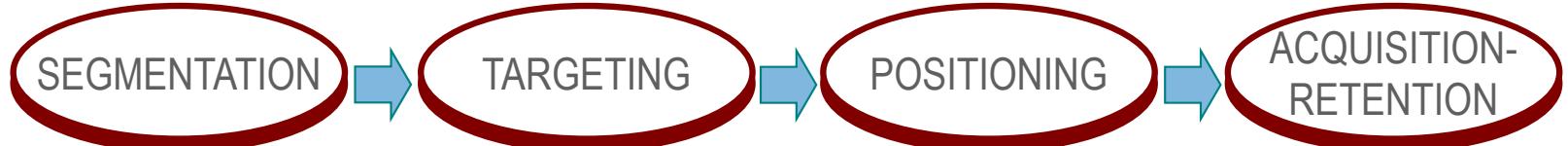
Session 5 – Advertising and Promotion

Professor Ricardo Montoya

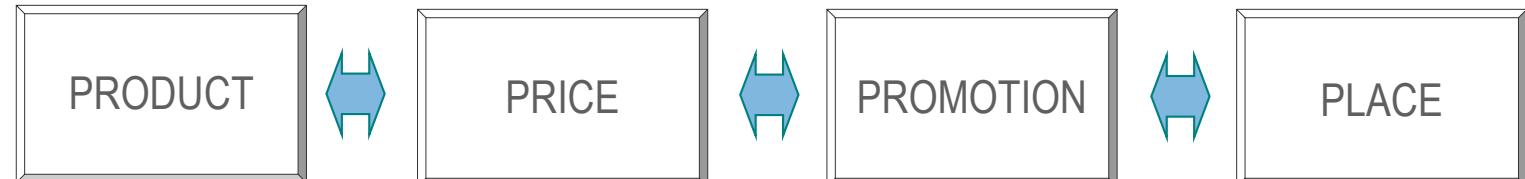
Identify Market Opportunities



Set Strategy



Formulate Marketing Program



Overview – Promotion and Communications

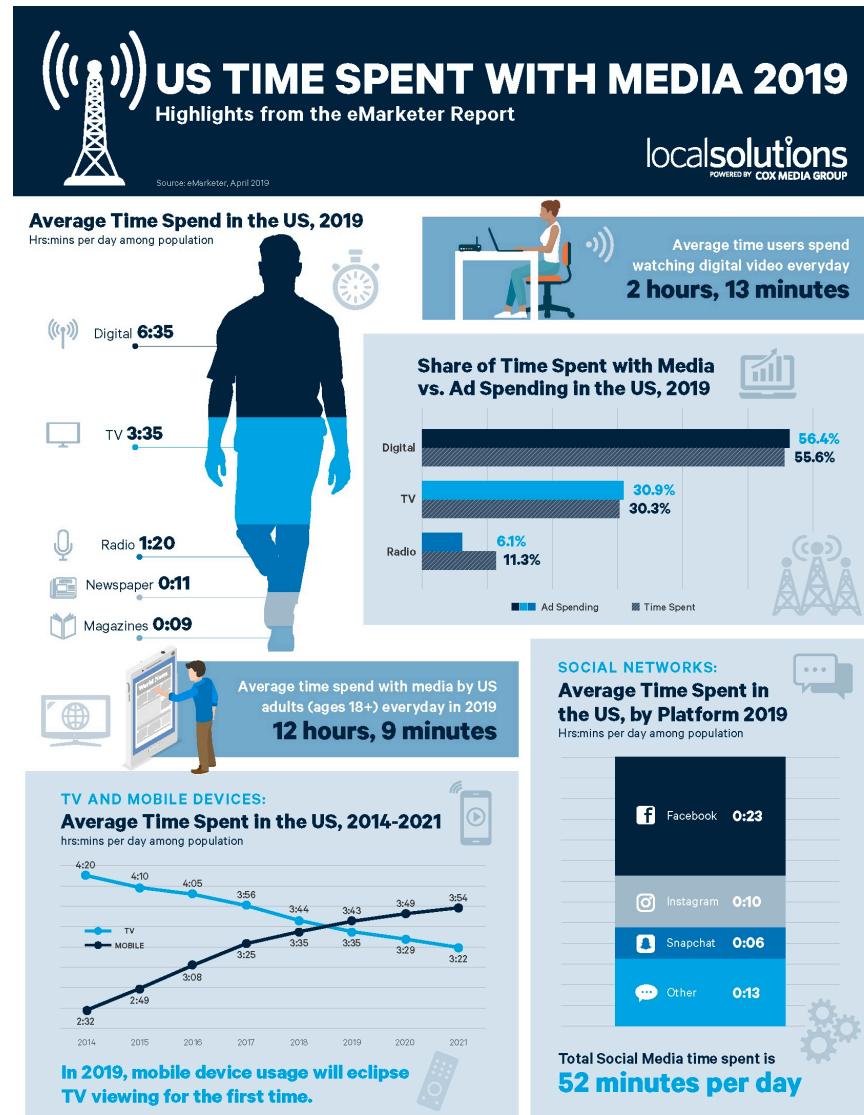
- What are the elements of the **communication mix**?
- What is the role of **advertising**?
- What are the elements of a **media campaign**?
- Advertising in a digital economy

Communication Mix

- Advertising
- Sales Promotions
- Personal Selling
- Direct Marketing/Interactive Marketing
- Public Relations
- Word of Mouth
- Non-Traditional advertising

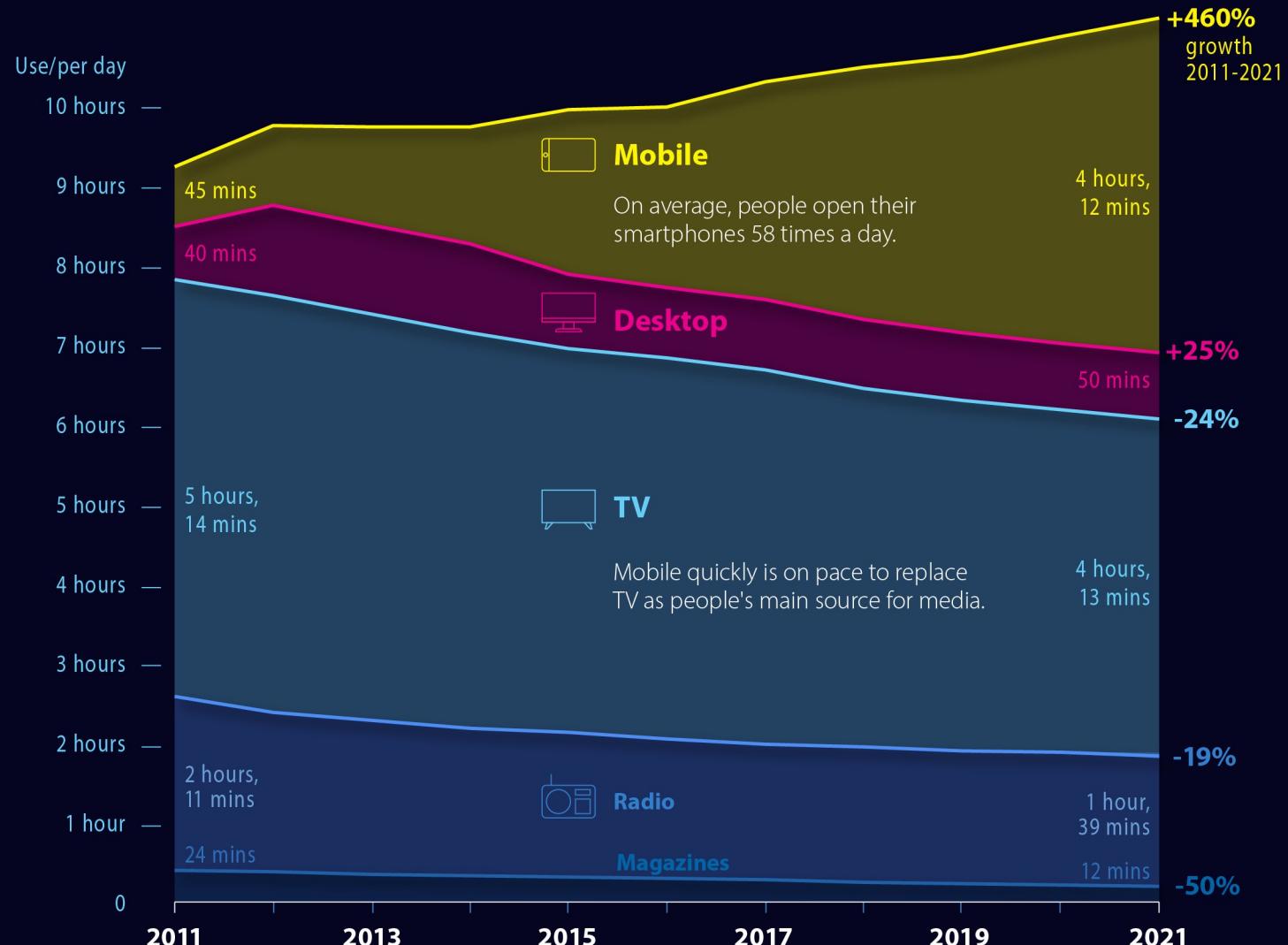


Advertising goes where people are



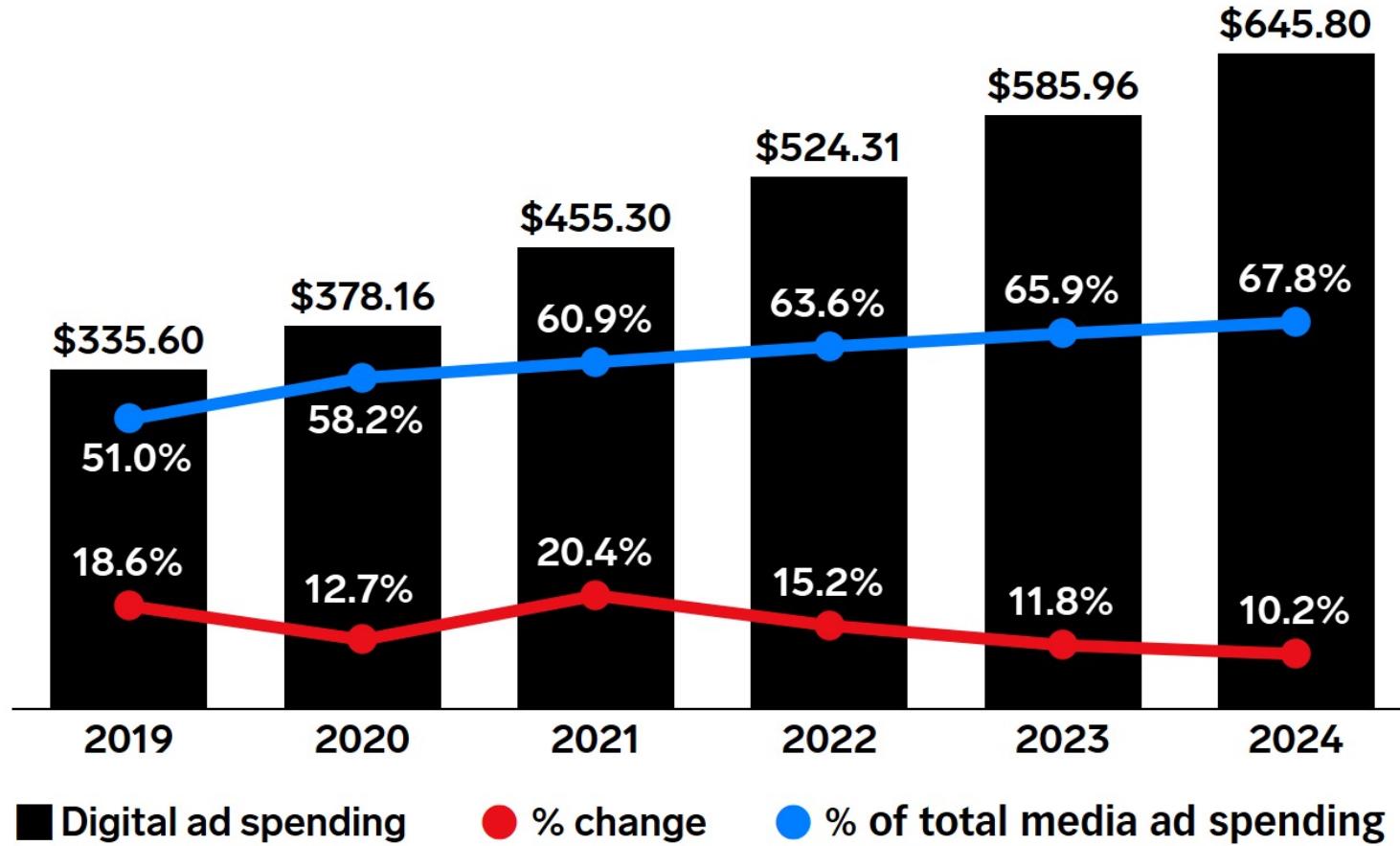
Changing Media Consumption

In a single decade, the way we in which consume media has shifted dramatically. Everyday mobile use has skyrocketed, underscoring the move away from offline media.



Digital Ad Spending Worldwide, 2019-2024

billions, % change, and % of total media ad spending



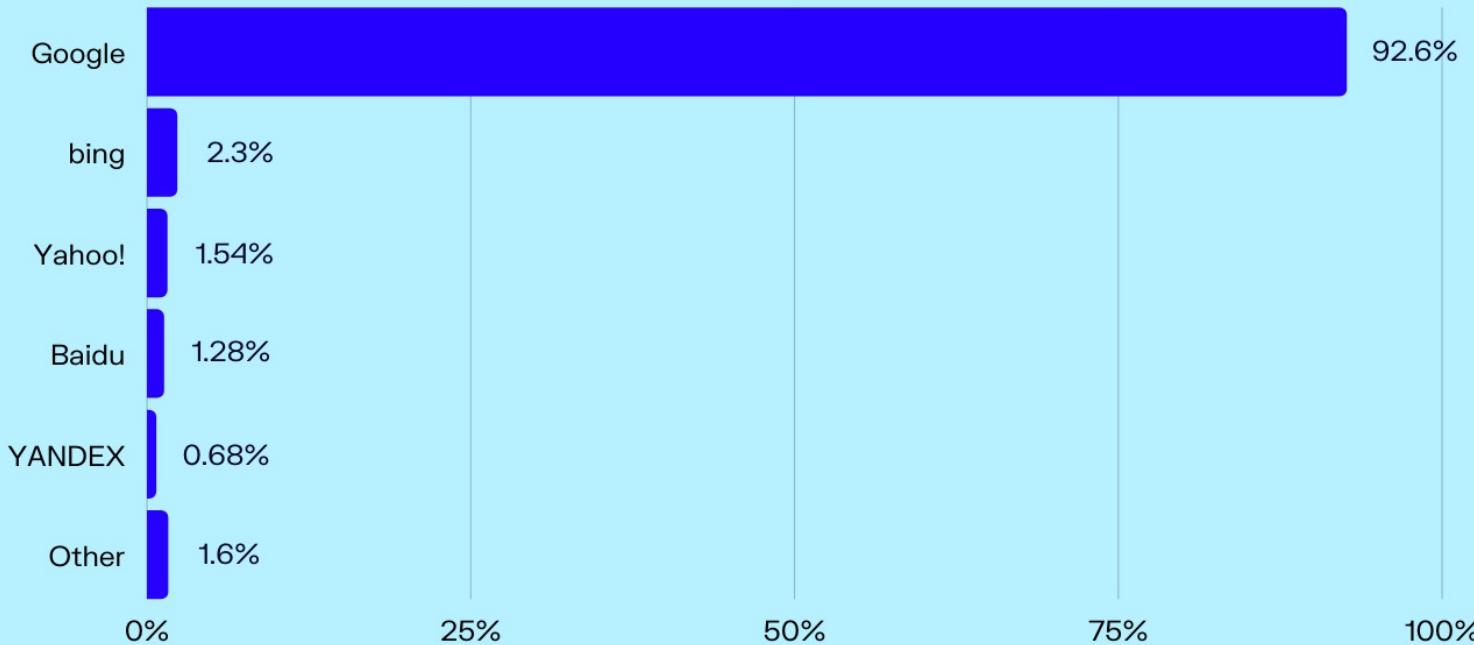
Note: includes advertising that appears on desktop and laptop computers as well as mobile phones, tablets, and other internet-connected devices, and includes all the various formats of advertising on those platforms; excludes SMS, MMS, and P2P messaging-based advertising

Source: eMarketer, March 2021

Advertising in a Digital Economy

Search Engines

Search Engine Market Share in 2021



Source: Gs.statcounter.com

OBERLO



Web Images Groups News Froogle Local more »

product development

Search

Advanced Search
Preferences

Web

Results 1 - 10 of about 171,000,000 for **product development**. (0.08 seconds)

We Are Problem Solvers

CreativeEngineering.com Creative ideas, solid engineering and design for mass production.

Rapid Product Development

www.moellerdesign.com Rapid Prototyping Technologies Experienced Project Management

Sponsored Links

Paid

New Product Development Information from PDMA.org

Information on best practices in new products for **product development** professionals across all industries. Includes new academic and business research.

www.pdma.org/ - 26k - Jun 23, 2005 - [Cached](#) - [Similar pages](#)

Natural

Sponsored Links

We Develop New Products

The next **Product** you sell in the stores could be yours. A

www.davison54.com

Paid

PTC - The Product Development Company

PTC develops and sells Pro/ENGINEER, Pro/Mechanica, Pro/Concept and related products.

www.ptc.com/ - 13k - Jun 23, 2005 - [Cached](#) - [Similar pages](#)

New Product Development

SAP solutions can help you overcome new **product development** processes.

sap.com

Managing Product Development

Blog about managing people, projects, risk. Articles available also on main site.

www.jrothman.com/weblog/blogger.html - 32k - Jun 23, 2005 - [Cached](#) - [Similar pages](#)

Product Development Firm

Innovative **Product Development** Design, Engineering, Mkt Study, DFM

www.midi-online.com

Product Development Institute

Dedicated to helping companies improve their approach to new **product development**

Vertex Product Development

Global Product Dev.



UNIVERSIDAD
TORCUATO DI TELLA

SEO and SEM

- SEO: Search Engine Optimization
 - strategies and tactics used to ensure that a site is accessible to a search engine
 - improves the chances that the site will be found by the search engine
 - the goal of successful SEO is to obtain a high-ranking placement in the search results page of a search engine
- SEM: Search Engine Marketing
 - SEM is a broader than SEO
 - researching, submitting and positioning a website within search engines
 - it includes search engine optimization, paid listings and other search-engine related services and functions to increase exposure and traffic to your Web site

SEO is NOT Paid Advertising

- SEO
 - influence rankings in the “natural” (a.k.a. “organic”, a.k.a. “algorithmic”) search results
- PPC
 - paid search advertising on a pay-per-click basis. The more you pay, the higher your placement. Stop paying = stop receiving traffic
- SEM
 - encompasses both SEO and PPC



Web Advertising: Placement on Search Engines

- Paid placement: Bid on keywords so that your ad shows up on search engines
- Rank depends on:
 - Cost per click (how much you bid)
 - Quality Score = expected click through rate
- Fine tuning your website so that it shows up in organic search
 - Rank depends upon relevancy / influence
 - From Pagerank to Rankbrain

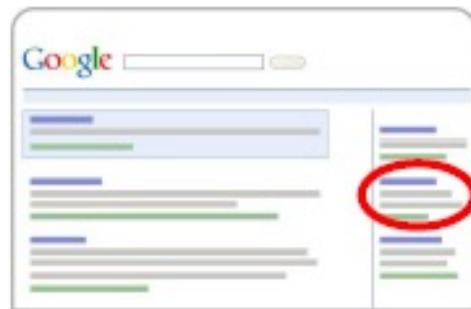


Search vs Display Advertising

Search

Ads are triggered by a proactive **search query** inputted by the user

Users are **proactively looking for ads** related to services/products



Display Network

Ads are triggered when **matched to relevant page content or specifically targeted** by advertisers

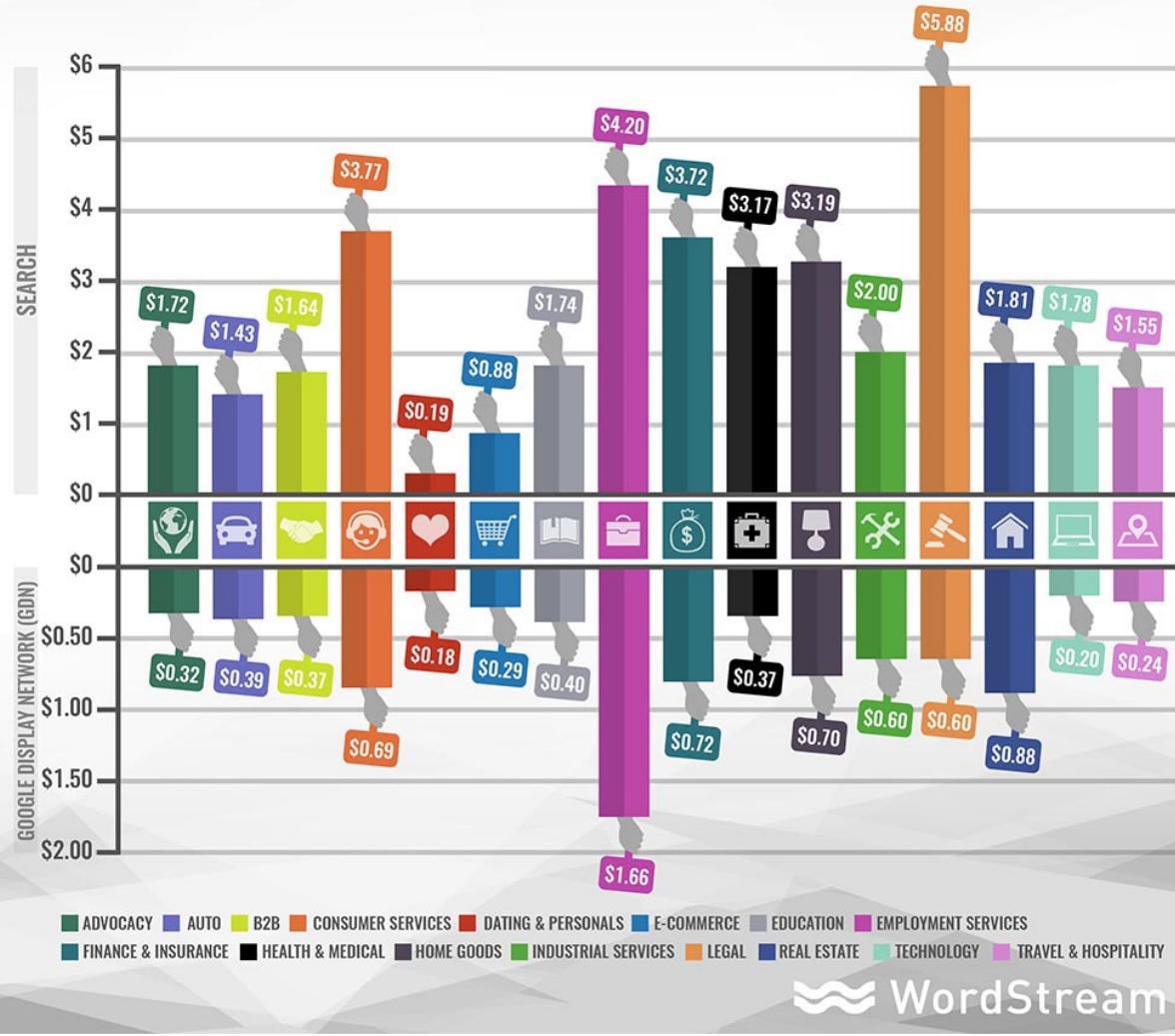
Users are **visiting pages** that relate to their needs, interests, or profile and are **not proactively looking for ads**



GOOGLE ADWORDS INDUSTRY BENCHMARKS

AVERAGE COST PER CLICK

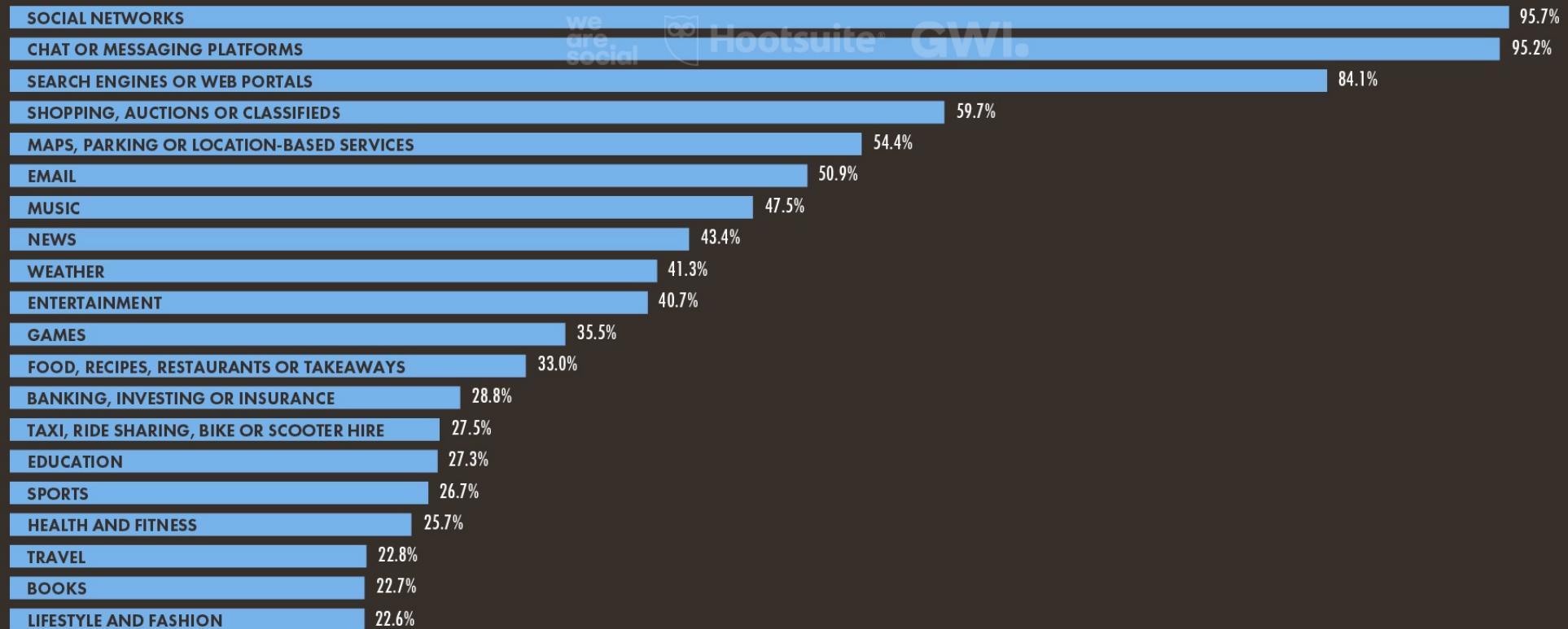
The average cost per click (CPC) in AdWords across all industries is \$2.32 on the search network and \$0.58 on the display network.



JUL
2021

TOP TYPES OF WEBSITES VISITED AND APPS USED

PERCENTAGE OF GLOBAL INTERNET USERS AGED 16 TO 64 WHO HAVE VISITED OR USED EACH KIND OF DIGITAL PROPERTY IN THE PAST MONTH



24

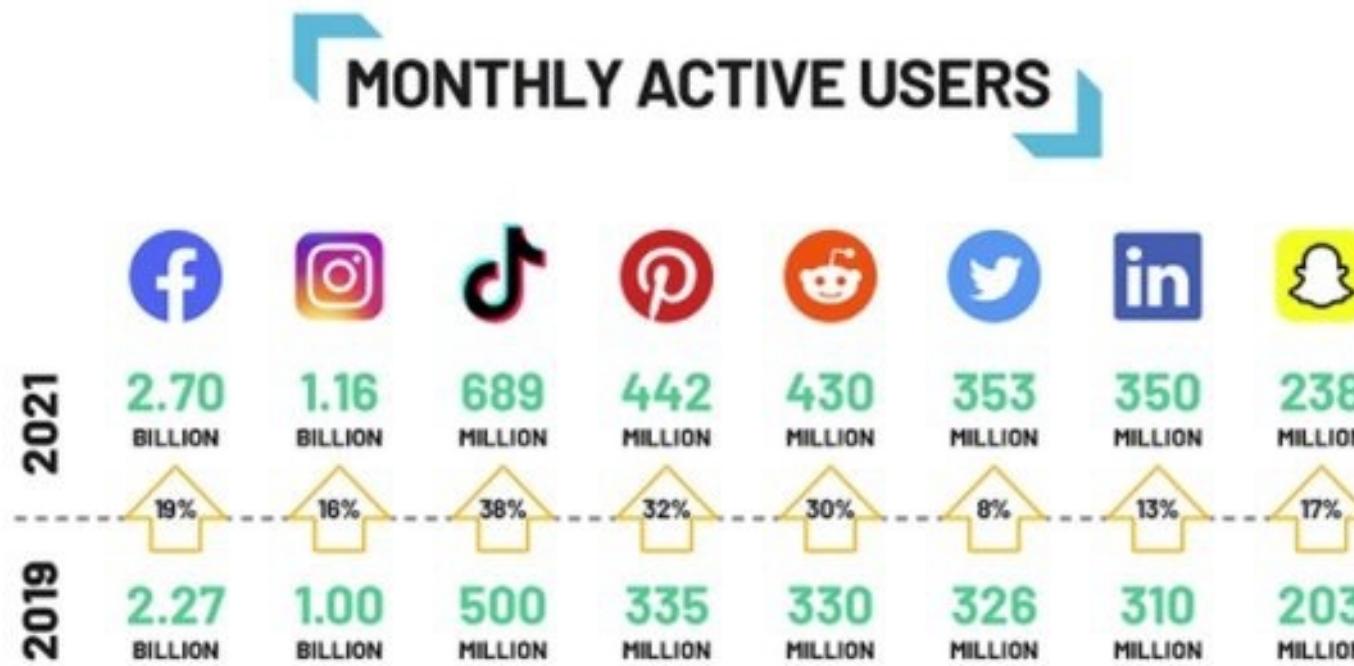
SOURCE: GWI (Q1 2021). FIGURES REPRESENT THE FINDINGS OF A BROAD GLOBAL SURVEY OF INTERNET USERS AGED 16 TO 64. SEE GWI.COM FOR MORE DETAILS.



Social Networks

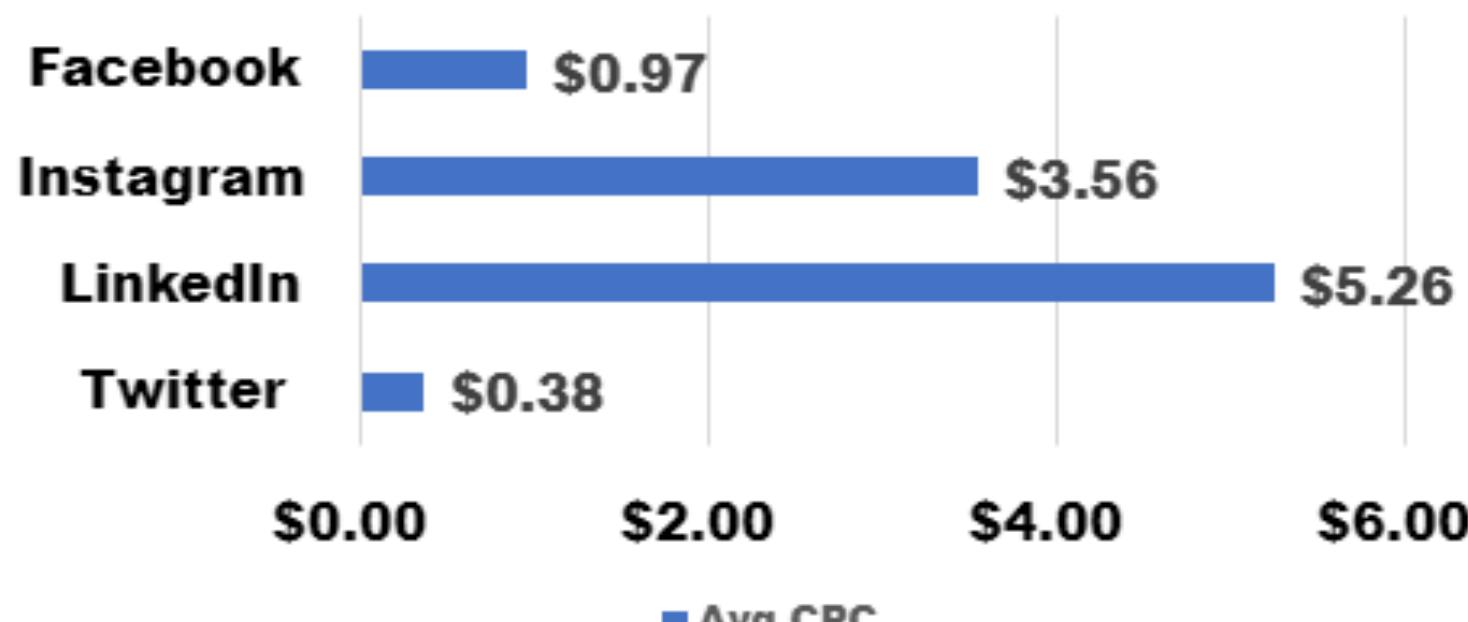
tech.co

SOCIAL MEDIA PLATFORMS

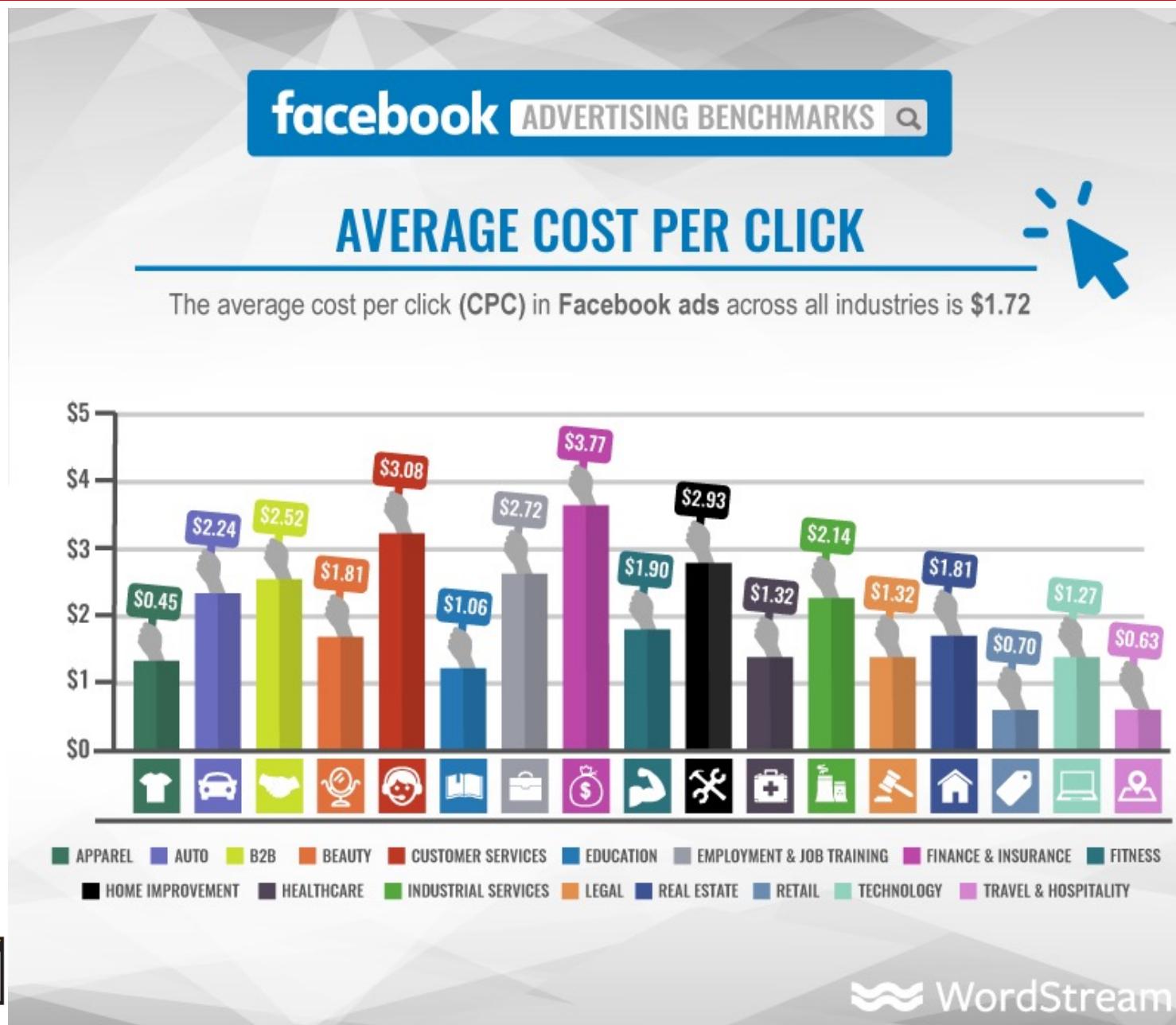


CPC across social Networks

How much does a click cost on each social network?



CPC on Facebook (2019)



Why do companies advertise on Instagram?



1 Billion
Monthly Active Users

53 Minutes
spent on Instagram
per day on average by
users

INSTAGRAM 2021 STATS & TIPS

71%
of users are under
the age of 35

10.7
Hashtags on average
are used in a post

500 Million
accounts use Instagram
Stories every day

90%
of Users follow at
least one business

83%
of users say they
discover new
products and services
on Instagram

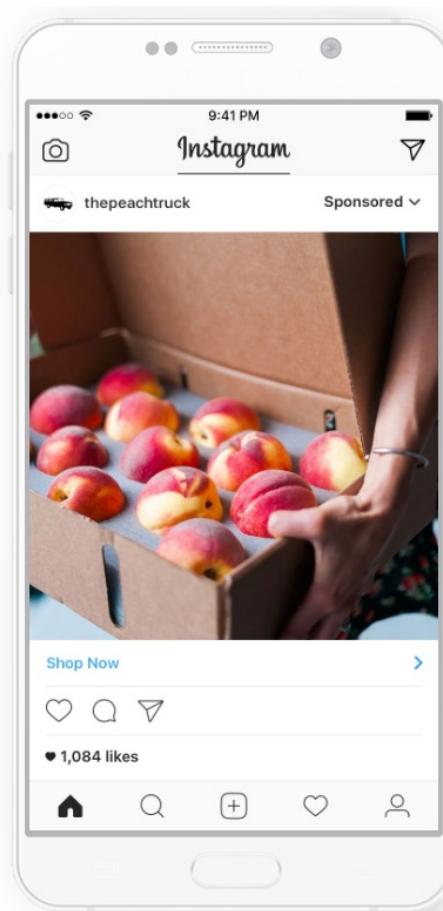
71%
of US Businesses
use Instagram

Types of ads on Instagram

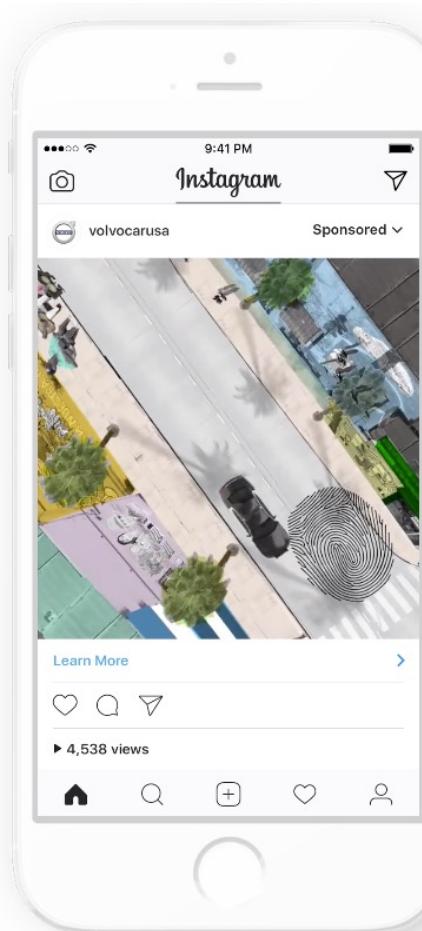
Stories



Photo



Video



Carousel



Targeting on Instagram

Reach people who matter most to you.

Make your ads reach the exact audience you want using our precise targeting options.

Location

Target people based in specific locations like states, provinces, cities or countries.

Interests

Reach people based on interests like apps they use, ads they click and accounts they follow.

Custom Audiences

Run ads to customers you already know based on their email addresses or phone numbers.

Automated Targeting

We help you quickly create an audience who might be interested in your business using a variety of signals including location, demographics and interests.

Demographics

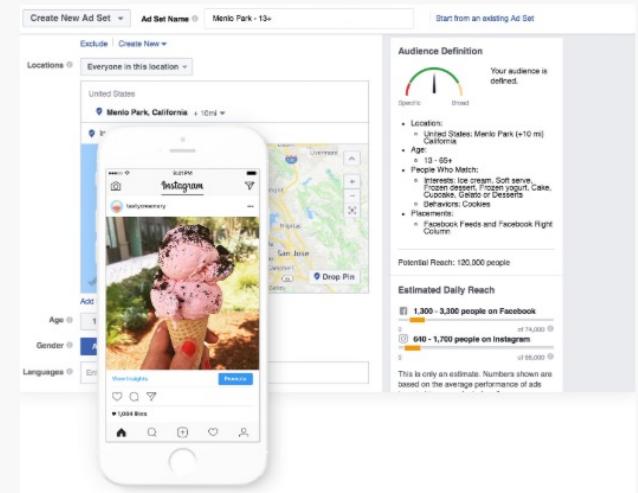
Narrow your audience based on information like age, gender and languages.

Behaviors

Define your audience by activities they do on and off of Instagram and Facebook.

Lookalike Audiences

Find new people who are similar to your existing customers.



<https://business.instagram.com/advertising/>

How much to pay for?

- Bid for your ad's placement
- Combination of factors (as in google adwords)
- CPC (cost per click) or CPM (Cost per mille)

Budget & schedule
Define how much you'd like to spend, and when you'd like your adverts to appear. [Learn more.](#)

Budget [?](#) £11.00
£11.00 GBP

Actual amount spent per day may vary. [?](#)

Schedule [?](#) Run my advert set continuously starting today
 Set a start and end date

Start	<input type="button" value="9/1/2017"/>	<input type="button" value="08:40"/>
End	<input type="button" value="9/2/2017"/> (London Time)	<input type="button" value="08:40"/>

Your adverts will run for **31 days**. You'll spend no more than **£341.00**.

[Show advanced options](#) [▼](#)

Then

Google vs. **facebook**

Developing Effective Marketing Communications

1. Identify target audience
2. Set communications objectives
3. Design the message
4. Choose communication mix
5. Measure results
6. Manage the effort

Why do firms advertise?



The Role of Advertising

- Establish awareness in target market
- Influence consumer perceptions
 - Establish an image for the brand/product
 - Modify relative product positioning
 - Educate and/or change misconception
- Influence consumer preferences
- Influence consumer behavior
 - Develop intent-to-purchase
 - Encourage switching
 - Promote new uses or usage occasions
- Influence trade (e.g., gain distribution)

Media Strategy

- A media strategy is a **plan of action** that helps your business **reach its target audience** and to improve the overall customer **conversion rate**
 - Reach & Frequency:
 - Gross Rating Points (GRP)
 - Media
 - Social, TV, radio, etc.
 - Specific Vehicles
 - Broadcast, print, billboards, digital
 - Timing
 - Continuity, flighting, pulsing

Media Exposure Measurement

- Rating %
 - # TVs tuned to a particular program / Total # households with TV (There are 120 million TV households in the US.)
- Share %
 - #TVs tuned to a particular program / Total # TVs switched on
- Reach
 - % target audience exposed at least once to the campaign
- Frequency
 - Average # times an individual who is reached in the target audience is exposed to the message

Gross Rating Points (GRP) = Reach x Frequency

Argentina



- Measured by Kantar IBOPE Media
- Buenos Aires, Córdoba, Mendoza, Rosario, Tucumán, Mar del Plata, Bahía Blanca, Santa Fe / Paraná y Alto Valle
- 4500 panelists in BA, Cordova, Mendoza and Rosario
- 2500 people meters

KANTAR IBOPE MEDIA

Media Strategy: Timing Issues

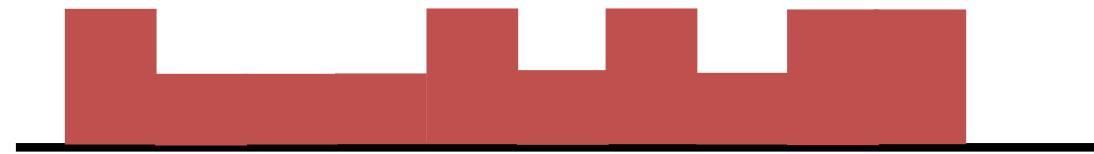
- Continuity



- Flighting



- Pulsing





UNIVERSIDAD
TORCUATO DI TELLA

Rocket Fuel: Measuring the Effectiveness of Online Advertising

Introduction to Marketing Analytics

Session 5: Pricing & Promotion

Professor Ricardo Montoya