



Media Math

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Universe Estimate / Coverage

Universe Estimate (U.E)

- Total persons or homes in a given population

$$\text{Universe Estimate} = \frac{\text{Impressions (000)}}{\text{Rating \%}}$$

Coverage

- The percentage of homes or persons able to receive an individual network or channel

$$\text{Coverage Rating \%} = \frac{\text{Coverage Projection (000)}}{\text{Coverage Universe Estimate}}$$

Households Using TV / Persons Using TV

Households Using Television (HUT)

- The percentage of **Total Television Households** that are viewing Television during a given time period

$$\text{HUT \%} = \frac{\text{HH Rating \%}}{\text{Share \%}}$$

Or

$$\text{HUT \%} = \frac{\text{\# of Households with TV Sets in use}}{\text{Total Households Universe}}$$

Persons Using Television (PUT)

- The percentage of Total Persons in a particular demographic group that are viewing Television during a given time period

$$\text{PUT \%} = \frac{\text{\# of Persons Viewing TV}}{\text{Total Person Universe}}$$

or

$$\text{PUT \%} = \frac{\text{Demo Ratings \%}}{\text{Demo Share \%}}$$

Share

Share

- The **Percent of Households Viewing Television** that are tuned to a particular program/network during average minute of program or daypart

$$\text{Share} = \frac{\text{Rating}}{\text{HUT \%}}$$

Share Can Help you Calculate Rating or HUT

- Rating = Share x Hut
- HUT = $\frac{\text{Rating}}{\text{Share}}$

Average Audience

Average Audience (AA)

- Average Audience reflects viewing for an average minute to a program and is an average of the audience at the specific minute (Min. 1, Min. 2, Min. 3, etc...)
 - “AA” can be expressed as a Rating % or Projected Audience (000)

Average Audience Projection (000) = Rating % x Total Universe (000)

Or

AA Projection (000) = Viewers Per Viewing Household (VPVH) x HH Projections (000)

Note: Impressions can be added together across demos, dayparts or stations/sources
(ex: M18-49 + F18-49 = A18-49)

Ratings

Ratings (Live)

- The percentage of a specific population group which is tuned to the Average Minute of a Program or Daypart

One Rating Point = 1% of the Population
Five Rating Points = 5% of the Population
Ten Rating Points = 10% of the Population

Ratings are **NOT** additive across different Demos;
Ratings must be weight-average when combined

Average Audience Rating %

- The estimate size of the Television audience relative to the total universe, expressed as a percentage. The percent of all TV Households or persons tuned to a specific station

AA Rating % = Share % x Households Using Television % (HUT %)

Or

**AA Rating % = Average Audience Projection (000)
Universe Estimate (000)**

Or

**AA Rating % = Gross Rating Points % (GRPs %)
Number of Spots**

Ratings by Stream – Program Ratings

- With the increase in time-shifted viewing, Nielsen measures multiple types of ratings that include DVR viewing... these are called “streams”
- **Live + Same Day**
 - The number of households that watched a program either while it aired **or** watched it via DVR on **the same day of the program** was broadcast
- **Live + 7**
 - The number of households that watched a program either while it aired **or** watched it via DVR **within 7 days of its original airing**

Live + SD & Live + 7 ratings are based on average program ratings; not commercial ratings

Ratings by Stream – Commercial Ratings

- Agencies / Clients demanded a more precise measurement of their commercials, so in 2007 Nielsen released commercial ratings
- **C3 (Commercial Rating + 3 day DVR viewing)**
 - Measure of the commercials watched both live and three days after original airing with DVR playback
- **C7 (Commercial Rating + 7 day DVR viewing)**
 - Measure of the commercials watched both live and seven days after original airing with DVR playback

Does not measure specific commercials; average rating of commercials within the program
C3 is the National Currency – what the dollars are guaranteed on

Gross Rating Points (GRPs)

Gross Impressions

- The total number of Households, or Persons, exposed to an advertising schedule
- Gross Impressions = Gross Rating Points % (GRPs %) x Total Universe (000)

Gross Rating Points (GRPs)

- The sum of all ratings for all programs in an advertising schedule. One rating point equals one percent of total audience (universe)

$$\text{GRPs} = \frac{\text{Impressions (000)}}{\text{Universe Estimate}}$$

or

$$\text{GRPs} = \text{Rating \%} \times \text{Number of Spots}$$

or

$$\text{GRPs} = \text{Reach \%} \times \text{Frequency}$$

- The sum of all rating points in a given schedule
- Takes into account duplication
- Can exceed 100
- Describes the amount of media weight

Reach

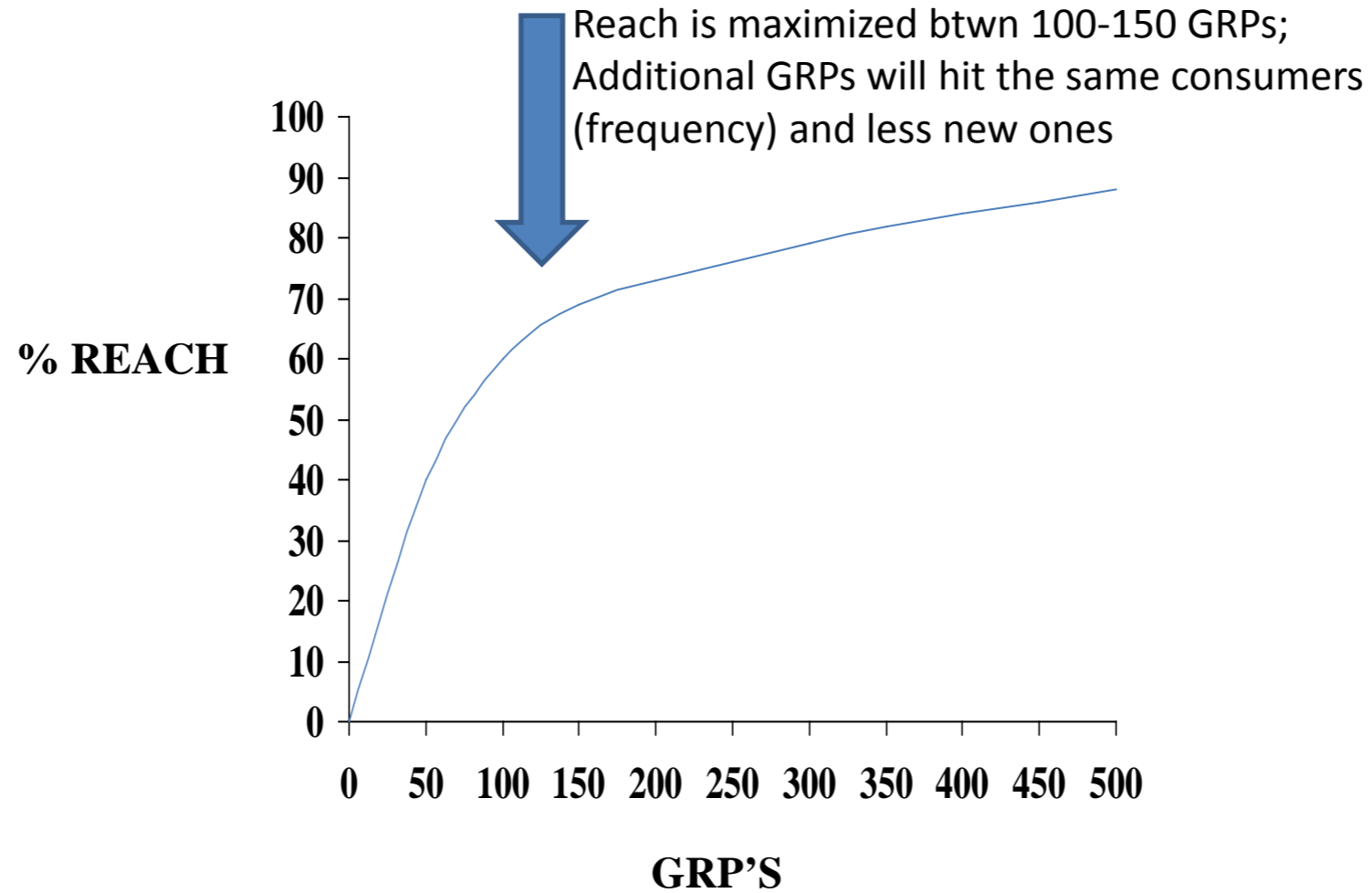
Reach

- The number of ***different*** households or persons who are exposed ***at least once*** to a program, daypart, or advertising schedule over a given period of time; Also referred to as Cume, Unduplicated Audience or Net Audience

$$\text{Reach} = \frac{\text{Gross Ratings Points (GRPs)}}{\text{Average Frequency}}$$

- Does not take into account duplication
- Usually expressed as a percent
- Can never exceed 100%
- A one time rating is a reach

Reach Curve



Frequency

Average Frequency

- The average number of times that each Household (or Person) is exposed to an advertising schedule or campaign. (Expressed as an absolute number)

$$\text{Avg. Frequency} = \frac{\text{Gross Rating Points (GRPs)}}{\text{Reach}}$$

Viewers per Viewing Household

Viewers per Viewing Household (VPVH)

- A measure of a program's audience composition (or profile) relative to the Households tuned to the program

$$\text{VPVH} = \frac{\text{Persons or Demographic Projection (000)}}{\text{Household Projection (000)}}$$

- Shows the audience skew of a program/network
- Can be expressed in Hundreds (.10) or Thousands (.100)
- Is additive between demographics
- Used in estimating a program's target audience

Average Hours of Viewing

- HUT / PUT converted to the average hours of viewing per home or per person

Average Hours of Viewing = Duration of Period x Households Using Television % (HUT %)

Cost Per Thousand / Cost Per Point

Cost Per Thousand (CPM)

- The cost of delivering One Thousand Impressions within a defined population group

$$\text{CPM} = \frac{\text{Media Cost (in Dollars)}}{\text{Gross Audience (000)}}$$

or

$$\text{CPM} = \frac{\text{Bucks}}{\text{Schmucks}}$$

- Basic Formula of negotiation among cable networks
- Measures efficiencies of media schedule
- Allows for cross media evaluation

Cost Per Point (CPP)

- The cost to deliver a single rating point (1% of the defined population)

$$\text{CPP} = \frac{\text{Average Unit Cost}}{\text{Rating \%}}$$

Or

$$\text{CPP} = \frac{\text{Total Schedule Cost}}{\text{Gross Rating Points \% (GRP \%)}}$$

Industry Definitions & Terminology

Viewing Sources Definitions

- **Broadcast Networks** - Tuning to any ABC, CBS, NBC, FOX, iON, CW, MNT, Estrella, Unimas, Telemundo, Univision broadcast network affiliated station.
- **Other Broadcast** - Tuning to a broadcast station identified as Independent from any of the above listed broadcast networks. Independent broadcast networks include Emerging networks such as Azteca America.
- **PBS** - Tuning to all station affiliated with the Public Broadcasting Service.
- **Premium Pay** - Tuning to Premium Pay Cable services (Encore, HBO, Multimax, Showtime and Starz)
- **Ad-Supported Cable** - Tuning to all advertiser supported cable networks. Only includes Cable Networks that run advertisements. (AMC, CNN, ESPN, TNT, etc...)
- **All Other Cable** – Tuning to those cable networks that are neither ad-supported nor premium pay. Includes pay per view, interactive channels, home shopping channels and audio only feeds but excludes the Disney Channel
- **All Other Tuning** – Effective with installation of the A/P meter in 7/05, reports tuning to a distributor that could not be identified due to a lack of encoding and/or monitoring.

Local Terminology

- **Designated Market Area (DMA)**
 - DMAs are a way of designating particular geographic markets and are often ranked by the size of the population.
- **Interconnect**
 - A large group of cable systems within a DMA that are “connected” together. Interconnect gives advertisers the option to reach all cable households within a given market with one buy, one contact and one tape.
- **Head-end(s)**
 - The physical location(s) from which a cable system process signals and broadcasts.

Abbreviations & Demographic Derivations

Commonly Used Abbreviations

NTI (Broadcast)	Nielsen Television Index
NSI (Syndication)	Nielsen Syndication Index
NHI (Cable)	Nielsen Home Video Index
NHTI (Hispanic TV)	Nielsen Hispanic Television Index
ADS	Alternate Delivery Source
DBS	Direct Broadcast Satellite
DMA	Designated Market Area
MSO	Multi Systems Operator
SMATV	Satellite Master Antenna Television
AOT	All Other Tuning
TELCO	Television Cable Operator

Demographic Derivations

To Derive	Computation
2-5	2-11 minus 6-11
35-49	18-49 minus 18-34
25+	25-54 plus 55+
35+	18+ minus 18-34
50+	18+ minus 18-49
65+	18+ minus 18-64
50-64	35-64 minus 35-49
18-64	18-34 plus 35-64
25-64	25-54 plus 55-64
18-24	18+ minus (25-54 plus 55+)
25-34	18-34 minus 18-24
50-54	(18+ minus 18-49) minus 55+
55-64	55+ minus 65+
25-49	18-49 minus 18-24
35-54	(18+ minus 18-34) minus 55+
12-24	12-17 plus 18-24
18-54	18-24 plus 25-54



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