

# TURF Analysis

By Jerry W. Thomas

**TURF (Total Unduplicated Reach and Frequency) had its origins in the media planning world, long before it was adapted to marketing research applications. As the name of the technique suggests in its original media application, the goal was twofold: to maximize Reach (the percent of the target audience that sees at least one ad) and to maximize Frequency (the average number of exposures or number of times the ad is seen by a member of the target audience).**

As this technique was adopted and adapted by the research industry, the focus became Reach, and the Frequency part of the formula largely disappeared. The primary application of TURF in marketing research is to maximize the Reach of a product line, especially if line extensions (new flavors or new variants of an existing product line) are under consideration. The basic question TURF attempts to answer is: What new flavors or new line extensions will maximize the Reach of the resultant product line, assuming not all flavors or all variants can be offered?

As an example, let's suppose a manufacturer offers three flavors of ice cream: chocolate, vanilla, and strawberry. Let's further suppose that the manufacturer wishes to extend the product line by offering new flavors, and let's assume that two new flavors can be added without cannibalizing distribution of the existing three flavors. The manufacturer's Research and Development team comes up with five new flavors for consideration, and the whole product line (existing flavors plus new flavors) is submitted to



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a sample of 100 ice cream users (let's ignore the issue of the manufacturer's brand users versus nonusers for the sake of simplicity). Let's suppose that each participant in the survey is asked how likely he or she is to purchase each of the flavors (three existing flavors and five new flavors). The results might be as follows:

Existing Flavors	Percent Definitely Buy	Reach	Incremental Reach
Chocolate	34%	34%	34%
Vanilla	32%	54%	20%
Strawberry	30%	63%	9%

New Flavors	Percent Definitely Buy	Reach	Incremental Reach
Lime	22%	73%	10%
Peach	23%	78%	5%
Orange	34%	79%	1%
Banana	42%	80%	1%
Pecan	28%	80%	0%

As this table illustrates, if the researcher only looked at the "Definitely Buy" percents, Banana and Orange would be the new flavors recommended for addition to the existing flavors. But if TURF analysis is employed, then the recommendation would be to add Lime and Peach, because those two flavors maximize the Reach of the whole product line—if only two flavors can be added.

Conceptually, traditional TURF analysis as applied to product line planning can be explained in simple terms (although more sophisticated and rigorous variants of TURF do exist). Going back to our example above, let's go through an illustration of TURF analysis. Let's suppose all 100 respondents had participated in the TURF flavor survey above. Those that said they

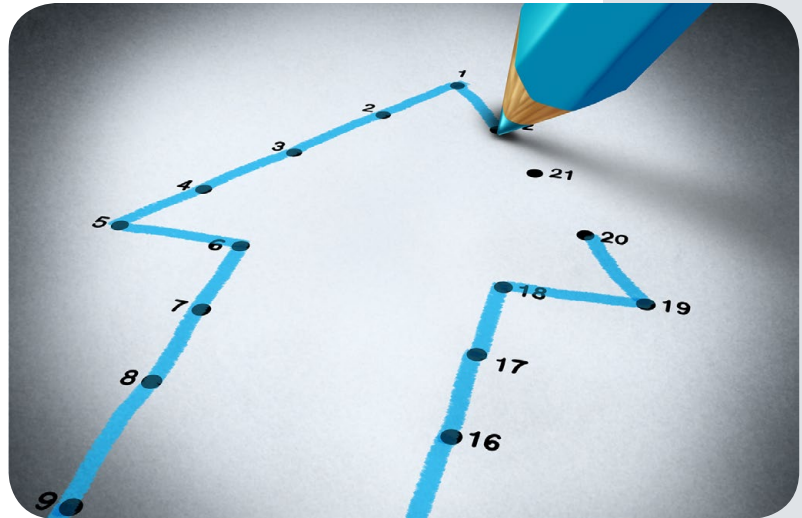
would definitely buy chocolate (34 people) would be removed from the sample (Reach of product line with only one flavor, chocolate, is 34%). The 66 remaining respondents would be reviewed, and the 20 who said they would definitely buy vanilla would be removed from the sample. Now Reach is 54% for a chocolate-vanilla product line, and 46 people remain in the pool of potential buyers.

So which of the new flavors should be added to the existing three flavors? Among the remaining people, nine prefer strawberry, so the existing chocolate-vanilla-strawberry line would add up to 63 people (Reach of 63%). Now there are 37 remaining people. Ten people say they would definitely buy the lime flavor. So those 10 are removed from the sample, and Reach goes up to 73%. There's one more flavor to select. Among the 27 individuals remaining (those who haven't said they would definitely buy the four top flavors), five people say they would definitely buy the peach flavor, so that becomes the final selection for the product line (and Reach is 78%). You will note that the two highest-rated flavors (banana and orange) were not included in the final product line because those flavors did not expand Reach.



TURF analysis can be a perfectly good and useful technique for some applications, but choice modeling is often a better technique for product line optimization.

- The first weakness of the TURF model as commonly applied in marketing research is its single focus on Reach. With choice modeling techniques, Frequency of purchases can be incorporated in addition to Reach measures. That is, certain flavors or combinations of flavors might increase Frequency of purchases. If total sales of the product line go up because of changes in purchase Frequency related to new flavors, do we really care that Reach is not maximized? Some advocates of TURF attempt to include Frequency (or number of units that would be purchased) into the calculations, but this metric is often flawed. Since Frequency is measured for each product in isolation (one at a time), it tends to result in gross overstatement of how many units might be purchased. In choice modeling on the other hand, Frequency is measured within a competitive set in a “buying” scenario—which tends to dampen overstatement.
- The second weakness of TURF is its failure to measure market-expansion potential. That is, certain combinations of flavors or product line variants might



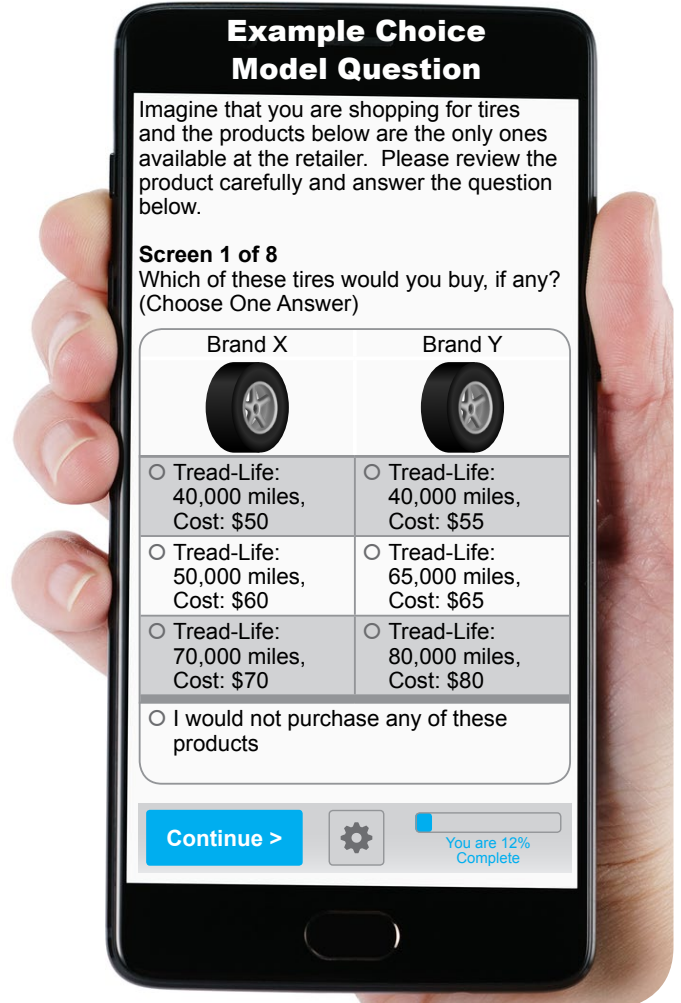
actually expand the total market potential for the brand. With choice modeling, market-expansion potential can be measured—in contrast to TURF. While most choice models assume a static total market, market expansion can be inferred with creative design of the choice model, or add-on models such as the negative binomial model.

- The third weakness of TURF is its failure to fully measure consumers’ preferences for variety. Most of us buy multiple flavors of ice cream, for example, and those flavor preferences can vary from month to month and year to year. The TURF model tends to overweight the most popular flavors and underweight the less-popular flavors. If you compare the market shares derived from a TURF analysis to actual market shares, you will tend to find that TURF overstates market share for the most popular flavors. Choice modeling provides more accurate market share estimation.

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- TURF does not incorporate competitive brands or pricing variations—choice modeling does.
- TURF cannot measure cannibalization or source of volume, whereas choice modeling can.
- TURF assumes 100% distribution and 100% awareness for each flavor or product line variant. Rarely are these assumptions true. With Choice Modeling, variables for distribution levels and awareness levels by flavor or product variant can be incorporated into the simulator so that more realistic product line scenarios can be explored and evaluated.

While TURF has a place in the researcher’s toolkit, it has major limitations as a product line planning tool. Choice modeling is more expensive, but it overcomes most of the limitations of TURF and produces much more accurate predictions of actual in-market outcomes.



## About the Author

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Decision Analyst is a global marketing research and analytical consulting firm. The company specializes in advertising testing, strategy research, new products research, and advanced modeling for marketing-decision optimization.