Strategic MEDIA Decisions

Exercise Workbook 2nd Edition

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Introduction

Throughout this workbook you will find a mix of exercises and math problems that correspond to the "Strategic Media Decisions" textbook. The exercises are directly related to the material covered in the textbook. The math problems represent opportunities to practice the basic math skills needed to be able to do the work of media analysis, media planning, media buying and media sales. Math problems are presented in varying degrees of difficulty, building to some of the more complex math work that is done in the professional practice of media analysis.

This is the second edition of the workbook. This edition contains many of the same exercises found in the first edition along with new exercises drawn from other contributors.

We would especially like to thank Professor Joe.Bob Hester for his Wuzzits contribution to this edition. Starting on page 26, you'll find a whole new section of exercises drawn from Professor Hester's work creating a set of media analysis exercises and a companion set of MRI-like data for the fictional Wuzzits product category. Using the web edition of this workbook, students will access data for each Wuzzits exercise via simple hyperlinks to Excel spreadsheets. Students will be able to download and save the spreadsheets so that they can manipulate and summarize the data as needed to complete each assignment.

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Basic Media Math

Simple Operations

Adding. For each of the following problems, what is the total?

39	792.1	1,313.2
+23	+49.9	+ 929.95

Subtracting. For each of the following problems, what is the difference?

24	365	9,007.3
-9.5	-78	- 789.72

Multiplying. For each of the following problems, what is the product?

52	93	10,789
x3.5	x26	x 160.3

Dividing. For each of the following problems, what is the quotient?

45,000,000 / 15 = _____   3,000,000 / .65 = _____

Mixed Review. Solve for the blank in each problem.

4,000 / _____ = 8   _____ x 12 = 228

3,395,010 + _____ = 10,519,000

$7,399 / _____ = $1,399   365 x _____ = $10,698.15

105,500,000 x _____ = 49,585

Basic Media Math

Fractions, Decimals and Percentages

Round each number to the nearest hundredth place.

0.03894 = _____   0.301 = _____

20.6 = _____   3.997 = _____

Re-write each fraction as a decimal. Round to the nearest thousandth place.

11 / 22 = _____   13 / 39 = _____

5 / 8 = _____   7 / 35 = _____

Re-write each decimal as a percentage.

0.62 = _____   0.125 = _____

0.4025 = _____   2.20 = _____

Re-write each percentage as a fraction.

15% = _____   25% = _____

86% = _____   33.3% = _____

Re-write each percentage as a decimal. Round to the nearest hundredth place.

73.3% = _____   113% = _____

25% = _____   0.13% = _____

Basic Media Math

Simple Media Applications

Part One:

1. If a single issue of *Sports Illustrated* magazine costs $3.50 at the newsstand, then how much would it cost you to buy an issue every week for a year?

2. If the publisher of *Sports Illustrated* offers you a deal of 26 issues for $59.99, how much money would you save as compared to buying one issue at a time at the newsstand?

3. **THINK**: Why would the publisher of *Sports Illustrated* want to offer you the same magazine for less money?

Part Two:

1. If there are 1,500 newspapers published daily in the United States and they earn a combined total of $45 billion each year in advertising revenues, then what is the average revenue generated by each daily newspaper?

2. The average newspaper gets 65% of its total revenue from advertiser support while the other 35% comes mostly from subscription sales. Using your answer from above for the average advertising revenue generated per newspaper, if this is 65% of a newspaper's total revenue then what on average is the total revenue generated by a daily newspaper in the United States?

3. **THINK**: Does this seem like a good business to be in? How does the future look for newspapers in America?

Basic Media Math

Part Three:

Parts of a whole. Let's say that you have completed some research on competitive product media spending for major brands in the fast food burger restaurant category. You have found that McDonald's spent $13 million last quarter while Burger King spent $11 million. Wendy's spending was $6 million, Hardee's spent $5 million, and What-A-Burger spent $4 million. All other fast food burger advertisers spent a total of $11 million in the same quarter.

What is the percent breakout of media spending during the quarter for each brand?

McDonald's   ___   Burger King   ___

Wendy's   ___   Hardee's   ___

Other   ___   What-A-Burger   ___

THINK: Did you find this hard to do or easy? This exercise was designed to be easy to do using just mental math (working it out in your head). Can you see what should have made this easy? Explain.

Percentage difference. In the table below show your calculation of the percentage difference between the two numbers A and B as indicated. In the first column you should calculate A as compared to B and in the second column you will reverse that and calculate B as compared to A.

Number A	Number B	A as Compared to B	B as Compared to A
2.59	2.29		
85	100		
1,307	1,113		

THINK: Why is there a difference when you calculate the numbers A as compared to B and B as compared to A?

Yesterday Media Usage Exercise

How Average Are You (part one)?

When it comes to media usage, the average American today spends 91/2 hours of every day involved in some way with the media. How do you compare?

Part One:
- Think about your media usage over a 24-hour day. Use the form on the next page to record as much detail as possible about your yesterday media usage.
- Make a record of your entire media day by noting each media you encountered and how much time you spent with each media throughout the full day.
- Summarize your minutes into the categories listed at the bottom of the form. Remember that you may very well need to double count time spent with multiple media. For example, if you were listening to the radio in the car while seeing outdoor ads on a daily commute. Another example might be surfing on the internet with the television on at the same time.
- Then summarize your time spent yesterday into the media categories at the bottom of the page.

Part Two:
After you have completed the form, summarize your day two ways.
- First, how many hours were you involved with media in total? How do you compare to the American average of 9 ½ hours per day?
- Second, look only at the hours you are involved with the media and breakout the percentages of your media usage for each summary category at the bottom of the page. Again, how do you compare with the average American?

Part Three:
Finally, graph two charts that show how your yesterday media usage compares to the average American.
- The first chart should show your media hours and non-media hours as compared to the average.
- The second chart should show your percentage of media hours broken out into categories as compared to the average.

THINK:
Were you higher, lower or about the same as the national average? Most students will turn out to be lower on daily media usage with a much higher percentage of usage on the Internet category. Why do you think this would be true for most students?

Yesterday Media Usage Assignment Worksheet

Assignment: Think about your day yesterday; the full day between the hours or 12:01am and 11:59pm. Think about the time you were awake and the time you were asleep and, think about the time in middle. Did you spend any time with the media yesterday? Use the form below to record the time (in minutes) that you spent and with which media. Then summarize your time spent yesterday into the media categories at the bottom of the page.

Note: It's ok to double count your time if you had two media going at once, for example if you had time in the car yesterday you may have been listening to the car radio at the same time you were exposed to outdoor billboards.

__Time__	__What were you doing? What media (if any) were you using?__
12:01am	_____
1:01am	_____
2:01am	_____
3:01am	_____
4:01am	_____
5:01am	_____
6:01am	_____
7:01am	_____
8:01am	_____
9:01am	_____
10:01am	_____
11:01am	_____
12:01pm	_____
1:01pm	_____
2:01pm	_____
3:01pm	_____
4:01pm	_____
5:01pm	_____
6:01pm	_____
7:01pm	_____
8:01pm	_____
9:01pm	_____
10:01pm	_____
11:01pm	_____

Total Minutes Spent:
_____ Television   _____ Magazines
_____ Radio   _____ Other (Outdoor, In-store, Bars, etc.)
_____ Internet
_____ Newspapers   _____ No Media

Media Fact Finding Exercise

Below is a list of Internet websites for industry associations representing a specific category of media. Your assignment is to choose one media category and visit the indicated website from the list below. Follow the instructions provided for your assigned website and prepare a presentation of your findings.

1. www.magazine.org. Visit this website and find and download a copy of the magazine marketer's fact book.

2. www.rab.com. Visit this website and find and download a copy of the radio marketer's fact book.

3. www.ncta.com. Visit this website, search through the industry overview section to find and download a copy of the year-end overview.

4. www.naa.org. Visit this website and search through "Information for researchers."

5. www.oaaa.org. Visit this website and search through "Marketing research" for free reports on the Outdoor industry.

6. www.tvb.org. Visit this website and search through "Research central."

7. www.iab.org. Visit this website and search through "Resources and research."

8. www.snta.org. Visit this website and search through "Syndication 101."

9. www.the-dma.org Visit this website and search through "White papers."

THINK: While you are searching your selected website, take note of what you see as significant issues or changes in the business. How do you think these issues or changes may impact the future of the business?

Intermediate Media Math

Calculating an Index

The index is a very important mathematical tool used to analyze and understand numerical data. The index gives us a way to relate two numbers. It is very easy to calculate an index but it gets a little tricky when you have to express the result of the calculation and interpret the meaning of the index.

The formula for calculating an index is simple. For Number A and Number B:

Index AB = (Number A / Number B) x 100

After calculating, simply round the number to the nearest ones place.

Use the formula above to calculate an index for each pair of numbers in the table below.

Number A	Number B	Index AB	Percent Diff AB
23	13		
12%	15%		
525,987	526,112		
$2.59	$2.39		
39%	35%		

Because of the way it is calculated, the result of an index shows the percentage difference between the two number inputs to the index. All you need to do is subtract the 100 from the formula above to know the percentage difference. The formula looks like this:

Percent Difference AB = Index AB – 100

For example, from the table above you calculated Number A (23) as compared to Number B (13). You should have the following:

Index AB = (23 / 13) x 100 = 177

Percent Difference AB = 177 – 100 = 77%

This means simply that Number A (23) is 77% higher than Number B (13).

Now, complete the Percent Difference AB column of the table above.

Intermediate Media Math

Geographic and Seasonal Development Analysis

The index is a good way to relate any pair of numbers in any kind of analysis. It is also a very effective way to analyze any series of numbers. All you need to do is fond the average for the series and then apply an index calculation as the way to compare each number of the series to the series average. One such specific application in media work is known as a Geographic Development Analysis. The idea here is to analyze the sales development of a brand or a category across some geographic area. The index resulting from this kind of analysis is called a Brand Development Index (BDI) or Category Development Index (CDI).

To do this kind of analysis, all you have to know is sales figures for each area and the corresponding population of each area. This analysis is done in steps as follows:
1. For any given set of sales figures by geographic area, find the total sales. Do this by adding together the sales for each area.
2. Use the total as the base and calculate the percentage of sales in each area. Do this by taking the sales in each area divided by the total. For best results you should show the answer out to at least three decimal places.
3. Repeat steps one and two for the population figures of each geographic area.
4. Now to calculate the index take the percent of sales in each area divided by the percent of population in each area. Remember to multiply by 100 and round to the nearest ones place.

Use the step-by-step instructions above to find the answers and complete the geographic development analysis for Brand B in the table below.

Geography	Unit Sales	Pct of Sales	Population	Pct of Pop	Index
New England	277		10,432		
Mid Atlantic	1,031		33,414		
East Central	919		25,623		
West Central	478		29,279		
South East	1,054		38,021		
South West	579		21,996		
Pacific	671		36,427		
Total					

Which is the best sales region for Brand B? Which is the worst?

THINK: Why is it important to look at this as an index? Can't we just see that the South East is the biggest sales region for this product?

Intermediate Media Math

Geographic and Seasonal Development Analysis

Another common application in media work is called the Seasonal Development Analysis. The goal is the same for this kind of analysis, in this case we are looking at sales data over some period of time to identify what might be stronger selling seasons for the brand or category.

The procedure for this analysis is a little different. With the geographic analysis we were able to compare sales by area relative to population by area. With an analysis over time, we need instead to compare sales in one period of time relative to some projected or expected average. Even so, the seasonal development analysis is also a simple step-by-step process as follows:

1. For any given set of sales figures for periods of time, find the total sales by simply adding the numbers in the series.
2. Then find the percentage of sales in each period of time. Do this by taking the sales figure for each period and divide by the total sales over all periods. Again, for best results you should show the result out to at least three decimal places.
3. Next find the average percent for each period of time. To do this, simply take the number 1 and divide it into the total number of periods of time. For example, if you are looking at 12 months of sales data, then you would take the number 1 and divide by 12. The answer you would get is 0.083 for each month.
4. Finally, calculate the index by taking the observed percent of sales in each time period divided by the projected average for each time period. And, remember to multiply by 100 and round to the nearest ones place.

Use the step-by-step instructions above to find the answers and complete the geographic development analysis for Brand B in the table below.

Time Period	Observed Sales	Observed Pct of Sales	Projected Pct of Sales	Index
1st Quarter	330			
2nd Quarter	418			
3rd Quarter	295			
4th Quarter	463			
Total Year				

Which is the biggest selling season this brand? Which is the worst time of year?

THINK: Are these differences really significant? How might this analysis effect the recommendations you make in your media plan?

Intermediate Media Math

Trend Analysis

There are many times in media work where you will have to look at data results over some period of time and need to be able to identify the trend underlying the data. For example, in analyzing advertising spending over several years, is the key competitor increasing spending? If so, at what rate? Should your client be worried or is everything ok?

One way to do this is just to look at the data in some kind of simple chart. You can plot data on a line chart or you can look at percent change in data on a column chart. Using the following set of data, draw (hand draw) a line chart. Then calculate the percent change from one year to the next and draw a simple column chart.

	Year 1	Year 2	Year 3	Year 4	Year 5
Ad Spending	11	13	15	18	22
Pct Change					

Line Chart
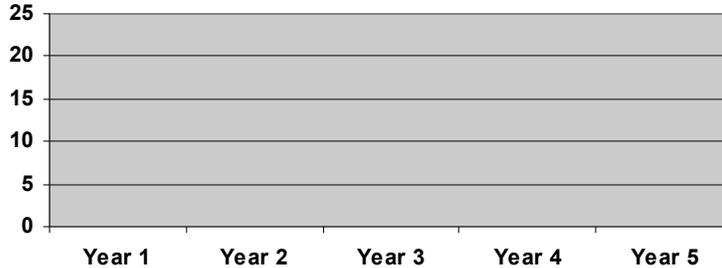
Column Chart
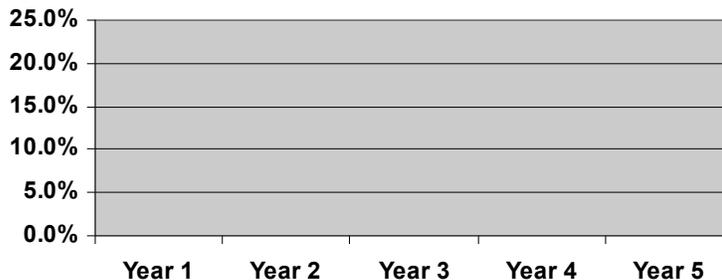
Intermediate Media Math

Trend Analysis and Compound Growth Rates

From the data charts above we can see that the basic trend is increasing spending. That answers the first part of the question, but what about the rest? Can we tell from the charts we drew the rate at which the competitor's spending is increasing? Can we tell whether this rate is something to be worried about or not? In order to answer these other questions, we need to be able to figure out Compound Growth Rates over time. For large data sets, tracking big numbers over long periods of time, you'll want to have a calculator that can do this work for you; any financial calculator will do this. But for shorter data series like our example here, we can do this with simple calculations using trial and error.

Here's how we do this with simple math and trial and error.
1. First, take the Year 5 number divided by the Year 1 number to find the overall change over the time period observed.
2. Second, take the overall change divided by the number of years tracked. Top determine the number of years tracked, you DON'T count the years, you count the spaces between the years. For our example, the number of years tracked is 4 NOT 5. This calculation gives you a place to start for the trial and error part.
3. Finally, once you have that average, try it out. Take the first year spending and multiply it by the average increase. Then multiply that by the average increase and so on until you get out to year 5. The answer you get for year 5 will probably be too high, so estimate a lower average and try this process again. It is best to lay this out in a simple table until you get the right answer.

The table below shows the data series from the previous page, and then the first round of calculations. To get this first round we took 22 divided by 11 to get the overall 100% change from Year 1 to Year 5. Then we took 100% divided by 4 to get a first try average of 25% per year. See if you can follow along with this so far. Now, choose a different average, something lower than 25% and try it again for yourself. Complete the table below to find the Compound Growth Rate for the same series of data.

	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**
Ad Spending	11	13	15	18	22
1.25		13.75	17.19	21.48	26.86

What did you get for an average annual percentage change in spending?

THINK: Should your client be worried about this competitor's increasing spending or is everything OK?

Spreadsheet Exercise

Data Entry and Basic Operations

This is a basic exercise in using simple spreadsheet software. To prepare for this exercise, you'll need to find yourself a basic set of data. To make this fun, go buy yourself a big bag of Skittles candies. (M&M candies can work too, make sure you buy the big bag so you have enough pieces to create a good data set.)

Step One: Open the bag of candies and sort the pieces into separate piles based on color. Then count and record the number of candies you have for each color on a piece of scrap paper.

Step Two: Go to your computer and open Microsoft Excel to start a new file. Set up the file this way
- in the first column, Column A from row one down to row five, type in the colors (red, green, yellow, orange, and purple)
- in the second column, Column B, record the number of candy pieces you had for each color under the appropriate color name

Step Three: Now that you have your data entered, let's figure some things out. To do this in a spreadsheet, you need to be able to create a formula. It's easy in Microsoft Excel.

How many total candies do you have? _____

To find this total, highlight the empty cell in Column B Row 6 then using the drop menu from the menu bar, click on "Insert" and select "Function" in the dialog box choose "SUM" and on the next dialog box you should see highlighted "B1:B5" click OK and you should see the total indicated in Cell B6.

What percentage of candies is each color?

Red _____ **Yellow** _____ **Green** _____ **Orange** _____ **Purple** _____
- First, mouse your cursor to highlight cell C1. Type an equal sign (=) and next to the equal sign type "B1/B6" – this tells the computer to take the number in cell B1 divided by the number in cell B6. The dollar signs ($) in the formula tell computer to "freeze" the identified column and row – we'll need this "freeze" in a moment when we go to copy our formula. Hit the enter key to set the formula then go back to highlight the same cell again (C1). While this cell is highlighted, mouse up to the task bar and select the percentage sign (%) to display the number in cell C1 as a percentage.
- Then, right click your mouse in cell C1 and select "copy" then click and hold down the left mouse button in cell C2 and drag it down to cell C5. You should have cells C2 through C5 highlighted, right click the mouse again and select "paste" to copy and paste the formula to find the remaining percentages. This will only work if you remembered those dollar signs in the base formula.

Spreadsheet Exercise

Data Entry and Basic Operations

How many of your candies are primary colors? _____ Non-primary? _____

To figure this out in a spreadsheet you need to add what is called a "dummy variable" and do a "sort" then calculate the sub totals.

1. First, use Column D to create a "dummy variable" – in Column D put a 1 for each primary color (for Skittles that would be red and yellow) and a 2 for other colors.
2. Second, place your cursor over the Row 1 indicator and click and hold the left button of your mouse to select all of Row 1 and drag it down to add Rows 2 through 5 to the selection. You should see all of Row 1 through Row 5 highlighted, even the empty cells in Column E and so on.
3. Third, with all Rows highlighted, click on "Data" in the menu bar and select "Sort" from the drop menu. In the "Sort" dialog box select Column D from "Sort by" drop box. Then click OK and your spreadsheet data should be rearranged to show primary colors first and then other colors.
4. Now you can sub-total for each sub-category. Use your mouse to select the empty cell E2, go to the menu bar, click "Insert" "Function" and "SUM" in the SUM dialog box for "Number 1" type "B1:B2" then click OK. The typing "B1:B2" tells the computer to sum the data in cell B1 through (:) cell B2. Mouse your cursor to cell E5 and repeat for the non-primary colors.

What percentage of candies are primary colors? _____ Non-primary? _____

To do this, you will again have to enter your own formula.

- First, mouse over and click to select cell F2. Type the equal sign (=) to start a formula. The right next to the equal sign type "E2/B6" – this combination in sequence tells the computer to take the number in cell E2 divided by the number in cell B6. Hit the enter key to set the formula in cell F2. Now go back to select cell F2 again. With F2 selected, move your mouse up to the task bar and click on "%" to display the decimal number answer as a percentage.
- Now repeat this process in cell F5 to find the percentage of candies that are non-primary colors. In cell F5 type "=E5/B6" then enter to set the formula. Then highlight F5 again and mouse up to the task bar to click the "%" sign.

THINK: How hard or how easy was this? Want more practice? Go get yourself another bag of candies and repeat the exercise.

Spreadsheet Exercise

Data Analysis and Charts

Now that you know some of the basics of working in a spreadsheet environment, it's time to work with a little more complicated set of data. One of the more common analyses done for media work is called a Competitive Analysis. In performing a Competitive Analysis you will typically use a secondary syndicated research service that tracks and report advertising activity across all of the major media. Below is a table summary of a small amount of information showing the kind of detail you can find using such sources. Copy the data from the table below into a spreadsheet, exactly as shown. Take care to be sure you copy everything exactly as shown or it may lead you to problems and wrong answers down the line. (Note: your spreadsheet should already have the column letters and row numbers as shown.)

National Advertising Spending for Car Rental Companies, by Media (000)

	A	B	C	D	E	F	G
1		Net TV	Cable TV	Synd TV	Mags	Internet	Net Radio
2	Avis	2000	1500	950	1200	500	2
3	Budget	2100	2500	0	1900	750	75
4	Enterprise	2500	0	0	2000	950	0
5	Hertz	4000	2000	500	1000	1000	125
6	National	1000	1400	750	1500	300	50
7	Others	1500	2100	125	1300	600	0

Using the data in your spreadsheet and the formula basic you learned on the last exercise, answer the following simple questions.

What was total national advertising spending for the Car Rental Category? _____

Which company spent the most, how much did it spend, and what was its percent of total category spending?

The company _____ How much _____ Its percent of total ____

Which media draws the most spending for the car rental category, how much spending did it get, and what is its percent of the total category spending?

The media _____ How much _____ Its percent of total _____

Which company spends the most in television media, how much does it spend on TV, and what is television spending as a percent of its total spending?

The company _____ How much _____ Its percent of total_____

Spreadsheet Exercise

Data Analysis and Charts

Now let's create some charts using the data entered in your spreadsheet.

First, create a pie chart that shows national media spending for the total category broken down by type of media.
To do this you need to calculate and chart the total category spending for each media type.

- The best way to do this is to calculate the total right next to the headings so the first thing you should do is insert a row just below the column headings you typed in. Point your cursor over the number 2 on row 2 and click to highlight the whole row. Then mouse up to the menu bar and click "Insert" and select "insert row" – this should insert a new blank row 2 with everything else simply moved down.
- Now calculate your totals. Highlight the cell B2 and type "=sum(B3:B8)" and enter to set the formula.
- Then click to highlight cell B2 again and right-click and select copy. Now click and hold on cell C2 and drag the cursor to cell G2 and then right-click the mouse and select paste. Enter to set the formula in all selected cells.
- To create the chart, highlight the cells B1 through G2, then mouse up to the task bar and click on the chart button. In the chart types dialog box select pie chart. Use Chart Options to give your chart an appropriate title and then print your chart.

See if you can make you final chart look like this.

Car Rental Category Spending by Media

Net Radio 1%
Internet 11%
Net TV 34%
Mags 23%
Synd TV 6%
Cable TV 25%
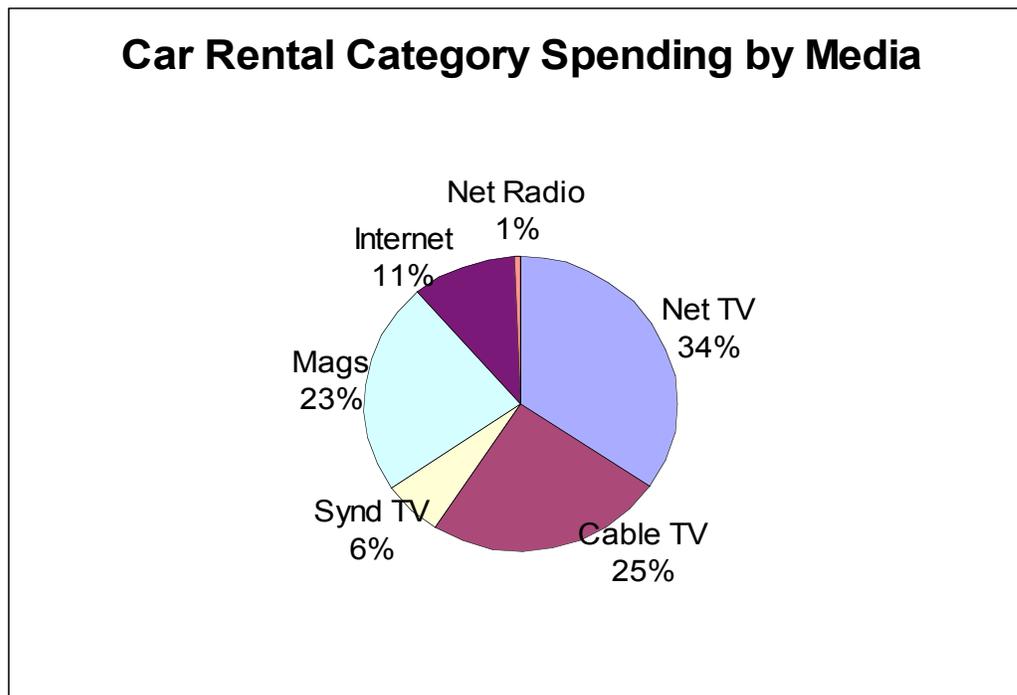
Spreadsheet Exercise

Data Analysis and Charts

Second, create a segmented column chart that shows total spending for each company broken down to show spending by media type.
To do this you'll have to delete the total line you added above so be sure to print that first. Once you have deleted the total row, all you need to do is highlight the area from cell A1 to cell G8 then click on the chart button on the task bar. In the chart types dialog box, select column chart and then choose the "Stacked Column" type either flat or 3-dimensional and finally change the series data from rows (default) to columns. Use chart options to give your chart a title and print a copy.

Can you make a chart that looks like this?
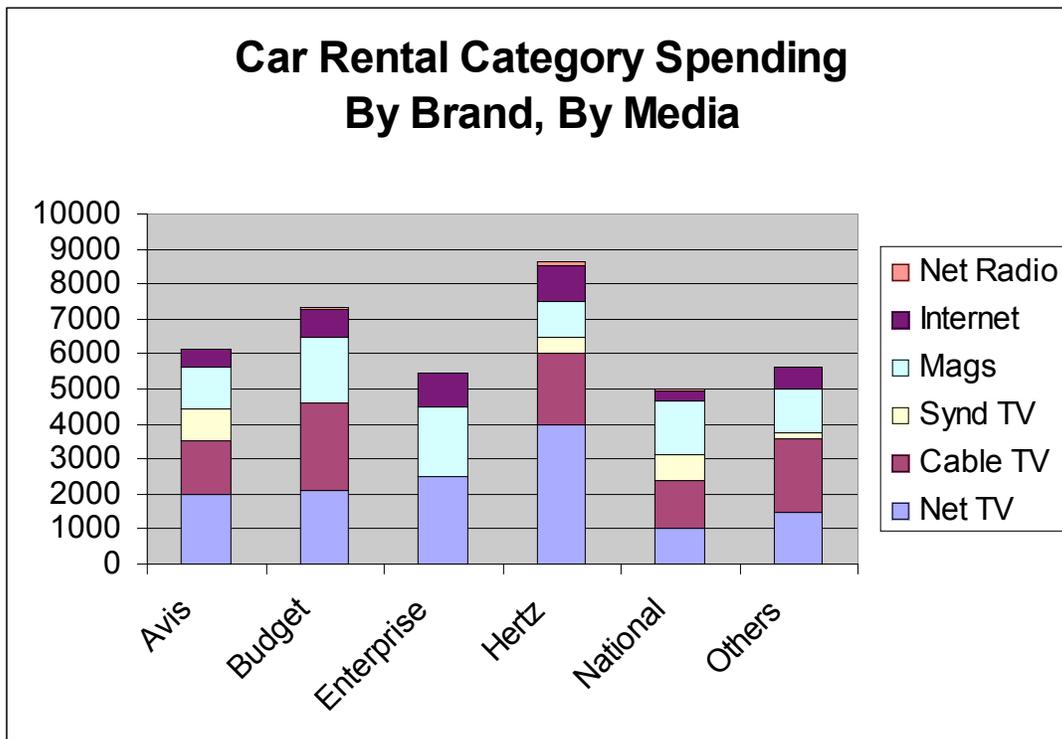
THINK: If you were working for a Cable TV network as a sales representative, which car rental company would you target for business development and why? What kind of chart could you create to convince this company to spend more on Cable TV?

Using Syndicated Data Sources

Target Audience Analysis

The table below presents a short summary of the kind of data found in syndicated research sources like Simmons Market Research Bureau (SMRB) and MediaMark Research Inc. (MRI). These syndicated sources use proprietary panel research to provide (sell) extensive data to advertisers and agencies regarding the demographic, psychographic and behavioral characteristics of the people who buy or use consumer packaged goods (CPG) products in the US.

If you ever find yourself working on an assignment involving a CPG product, you will almost certainly need to be able to read and work with this kind of data. The table below presents basic audience demographic data for a fruit flavored soft-drink product. Follow along with the data as we work together through some of the simple calculations and the meaning of the important numbers shown here.

	Total US (000)	Sugary Sweet Soda			
		A (000)	B % Down	C % Across	D Index
All Adults	195,192	11,578	100%	5.9%	100
Men	93,553	6,186	53.4%	6.6%	111
Women	101.639	5,392	46.6%	5.3%	89
Age 18-24	24,842	2,905	25.1%	11.7%	197
Age 25-34	40,972	2,623	22.7%	6.4%	108
Age 35-44	43,561	2,453	21.2%	5.6%	95
Age 45 +	85,817	3,597	31.1%	4.2%	71

Total US (000) is data derived from the US Census.
Column "**A (000)**" is data projected from a proprietary survey.
Columns B, C, and D are calculated as follows:

"**B % Down**" – For the demographic cell take the number from "**A (000)**" divided by the number from "**A (000)**" for **All Adults**. For example, for **Women** take 5,392 divided by 11,578 equals 0.4657, express as a percent and round to the nearest tenth, 46.6%. **Interpret this number as: 46.6% of all adults who drink Sugary Sweet Soda are women.**

"**C % Across**" – For the demographic cell take the number from "**A (000)**" divided by the number immediately next to it in the column "**Total US (000)**" For example, for **Women** take 5,392 divided by 101,639 equals 0.0531, express as a percent and round to the nearest tenth, 5.3%. **Interpret this number as: 5.3% of all Women in the US drink Sugary Sweet Soda.**

Using Syndicated Data Sources

Target Audience Analysis

"**D Index**" is a more complex calculation in two parts. The index column is a comparison of the product percent down "**A % Down**" column relative to the total US percent down. Of course, you see that there is no number shown for the Total US % Down, this is a calculation you have to do for yourself to see how this works. Here's how:

1. First, for the demographic cell take the number from the column "**Total US (000)**" divided by the All Adults number in the column "**Total US (000)**" express this as a percent and round to the nearest tenth. This gives you the **Total US % Down**.
2. Next, take the percentage shown in "**B % Down**" divided by the percent you calculated for **Total US % Down**, multiply the result times 100 and round to the nearest ones place to get the **Index**.

For example, for **Women** take 101,639 divided by 195,192 to get a **Total US % Down** equal to 52.1%. Then take the percent in "**B % Down**" 46.6% divided by 52.1% multiply by 100 and round to the ones place to find the **Index** 89.

Because of how it is calculated, the **Index** gives us an indication of the development of product sales among the measured segment of the target audience. An index of 100 would be flat, meaning that the percent product sales among that particular audience segment were exactly equal to the percent of total population observed in that audience segment. This means that any index over or under 100 shows some over or under development of product sales among that audience segment. In the case of our example for Women we can read this index as meaning that sales development for Sugary Sweet Soda is below average for Women; specifically, sales among women are 11% less than what we might project based on the presence of women in the marketplace.

Now, you can read that two ways, it might mean that we have an opportunity to build sales among women or it could mean that we should focus on our strength which is sales among men. Media analysts make these kinds of decisions all the time. The key here is all of the other information you know about the product and how well established this sales pattern may or may not be. It's a judgment call that you get good at with time and practice.

In working with an **Index**, you will find it useful to have some kind of "rule-of-thumb" for knowing when a difference is big enough to be meaningful. **For most population segments, media people feel comfortable looking at differences of 10% or more as meaningful. This means that the Index must be less than 90 or greater than 110 to really mean a difference is observed.** For really small population segments, you might want to look for greater differences.

Using Syndicated Data Sources

Target Audience Analysis

Now let's see if you can work through an example on your own. The table below presents partial data for people who drink SoSo Soda. Complete the table and then answer the questions below.

	Total US (000)	SoSo Soda A (000)	SoSo Soda B % Down	SoSo Soda C % Across	SoSo Soda D Index
All Adults	195,192	2,330	100%		100
Men	93,553	1,175			
Women	101.639	1,155			95
Age 18-24	24,842	421			
Age 25-34	40,972	696		1.7%	
Age 35-44	43,561	453			
Age 45-54	32,521	240	10.3%		
Age 55-64	21,227	182			
Age 65 +	32,069	339			

Of all the adults in the US, what percent drink SoSo Soda? _____

Of all SoSo Soda drinkers, what percent are over the age of 65? _____

Should your media plan target Men or Women, or All Adults? Explain your answer.

What age group sub-segment should your media plan target for this campaign?

Using Syndicated Data Sources

Media Selection Analysis

Media Analysts use the same syndicated data sources and the same kind of analysis technique in considering which media might be best to use for a media plan. The following table presents a summary of data for media usage among people who are heavy buyers in the yogurt category (defined by MRI as people who bought 3 or more containers in the last 7 days). Use the same calculation process you learned in the previous exercise to complete the table below and then answer the questions.

| | Total US (000) | Heavy Yogurt Buyers | | | |
		A (0000	B % Down	C % Across	D Index
Female Homemakers	89,789	16,443	100%		100
Heavy Outdoor	18,125	3,504			
Heavy Magazines	17,661	3,952			
Heavy Newspapers	18,091	4,165		23.0%	
Heavy Radio	17,547	3,447			
Heavy Television	18,184	2,794			
Yellow Pages	42,466	8,652			
Internet	10,028	2,441	14.8%		

What percent of all Female homemakers in the US are heavy yogurt buyers?

What percent of Heavy Yogurt Buyers are also Heavy Television viewers?

Are Heavy Yogurt Buyers more likely to be found surfing the Internet or watching Television?

What three media would you recommend for this media plan and why?

Media Planning Exercises … Wuzzits Brands

Situation Analysis

Note: This exercise introduces you to the Wuzzits product category. This fictional product category was developed as a teaching tool for advertising media courses. The next several exercises will use data from one or more brands in the Wuzzits category. This exercise uses the Wuzzits.xls data file.

Part One: Using Sales Data
One important part of a situation analysis is the history of the market. The Wuzzits.xls data file contains the sales history for 17 brands competing in the Wuzzits product category over the last three years. The data are presented in unit sales (volume) rather than dollars, eliminating the need to adjust sales for inflation.

1. Compute the total sales of Wuzzits for each year, and calculate the unit and percent change from each year to the next. How would you characterize the growth of the Wuzzits category?

2. Rank the brands by sales each year. What does the pattern of ranking tell you?

3. Compute the unit and percent change in sales from each year to the next for each brand. What can you learn from this data?

4. Compute market share for each brand in each year, then compute the percent change in market share from year to year. What can you learn from this data, and how is it different from the change in sales computed in question #3?

Media Planning Exercises … Wuzzits Brands

Situation Analysis

Part Two: Using Syndicated Data
There are several sources of syndicated data available to the media planner. The
Wuzzits.xls file contains a Wuzzits Product Summary formatted like the type of
information provided by MRI. Here's how to read it:

1. The first column of numbers shows the number of adult product users in thousands.

2. The second column of numbers shows the number of adult product users as a
percentage of the total adult population.

3. The third column of numbers shows the unweighted respondent count from the survey
that produced the data.

4. The fourth column of numbers shows share of users by brand (brand share) and by
level of usage (L = Light, M = Medium, H = Heavy). The base is the sum of all brands
mentioned, i.e., 0.8% of the brands specified were Buffalo brand.

5. The fifth column of numbers share of volume by brand (volume share) and by level of
usage. The base is the total reported volume of usage, (i.e., 0.3% of the total units used in
the last 6 months were Buffalo brand).

6. The last column of numbers computes an index comparing share of volume to brand
share. (For example, Buffalo brand, 0.3 ÷ 0.8 x 100 = 38.)

Assignment

**1) Based on your analysis of the category's sales history, write a brief (about 5 bullet
points) overview of the Wuzzits category's sales history. Include only the most
important observations from your analysis.**

**2) Assume that your client is Raider brand. Write a brief (about 5 bullet points)
summary of Raider brand's position in the category vs. other brands.**

3) Create a pie chart comparing brands by 2006 market share.

4) Explain what the Volume/Users Index tells you about each brand.

Media Planning Exercises … Wuzzits Brands

Competitive Media Expenditures Analysis

WuzzitsADV.xls presents measured media expenditures for 2005 & 2006 for eight leading brands of Wuzzits. Data are presented for 18 different categories of media. Use this data to perform a competitive expenditure analysis in two parts.

Part A: Competitive Expenditures

1. What was the *total amount* spent by each brand in 2006? 2005?

2. What was the *total amount* spent to advertise all 8 brands combined in 2006? 2005?

3. What was the *percent change* in expenditures from 2005 to 2006 for each individual brand as well as for all 8 brands combined?

4. What was each brand's overall *share of voice* each year? (Compute the percentage of total advertising expenditures accounted for by each individual brand.) How does this compare with each brand's market share? (Note: because you are working with only 8 brands, you should recalculate market share based on those 8 brands only. Use the data from Wuzzits.xls and the Situation Analysis exercise on page 26 to calculate market share.)

5. What was each brand's share of voice *within each medium*?

Part B: Competitive Media Mix

6. What is the overall *media mix* for these 8 brands combined? For each individual brand? (Compute the percentage of total advertising expenditures accounted for by each medium.)

7. Are there any *other computations* that might be helpful in analyzing this data? If so, compute them.

8. If you were planning for the Raider brand, what additional calculations would you make? Compute them.

9. Finally, what *conclusions* can you draw from this data? Write a brief summary outlining the major findings from your competitive media expenditure analysis. Assume your client is Raider brand. Present particularly important data in table or graphic form.

Media Planning Exercises … Wuzzits Brands

Target Audience Analysis

Part One: Wuzzits Category Users

The [WuzzitsCat.xls](#) file provides a summary of audience detail for all Adults, Men, and Women users of brands in the Wuzzits product category. Data is presented here for all Wuzzits users broken out into audience segments based on standard demographic and lifestyle breaks including

> Education
> Age
> Employment
> Household income
> Geographic location
> Marital status
> Familystatus
> Household size
> Ethnicity
> Home ownership

The [WuzzitsHML.xls](#) file provides the same audience segment breaks for Wuzzits category users identified by the quantity of product used (Heavy, Medium, Light).

Media planners use this kind of data to identify the common characteristics of the people who use products in a category. The data presented here is the same kind of data you would find in one of the typical syndicated data sources used everyday by media planners. To complete this exercise you'll need to use what you learned about using syndicated sources and indexes in the preceding section of this workbook on pages 23 and 24.

Assignment

Use the data in [WuzzitsCat.xls](#) and [WuzzitsHML.xls](#) to create a general profile of Wuzzits users. Remember that you are looking for audience segments with an index higher than 110. You may need to bundle some of the sub-segments and recalculate an index to show that you have identified the most important audience characteristics for users of the Wuzzits product category.

Media Planning Exercises … Wuzzits Brands

Target Audience Analysis

Part Two: Raider Brand Users

The [WuzzitsBrands.xls](#) file provides audience demographic and lifestyle data for each of eight Wuzzits brands in the category: Raider, Eagle, Pigg, Redwing, Tamu, Wolfe, Wildcat, and Gator.

For this exercise assume that your job is to recommend a target audience for Raider brand. You'll need to determine the characteristics of the people who are most likely to buy Raider brand in the future. In order to do this properly, you will need to reference the data in [WuzzitsCat.xls](#) and [WuzzitsHML.xls](#) as well as the recommendations you made in response to Part One (on page 29).

Assignment

1) First make the following comparisons:
    a) **In general, how do Raider brand users compare with Wuzzits category users?**
    b) **How do Raider brand users compare with Heavy, Medium, and Light category users?**
    c) **How do Raider brand users compare with users of the other major brands?**
    d) **Are there any other comparisons you feel should be made? If so, make them.**

2) Use these analyses, along with any previous data from earlier Wuzzits exercises, to make a target audience recommendation for the Raider brand. Your recommendation should at minimum profile the target for Raider brand based on gender, age, and income. You should also include a fourth factor where you find that you can justify its importance from the data. Be sure to support your recommendation with appropriate data form the files.

Media Metrics

Audience Coverage and Composition

Coverage and Composition are often seen as companion statistics when considering individual media vehicles for possible selection in a media plan.

Audience Coverage is a percentage of some total target market potentially exposed to a given media vehicle. For example, from the table below we see that ESPN Magazine covers only about 7.4% of all men aged 18-24.

This is calculated as 950 divided by 13,000 equals 0.074 which is 7.4%.

Audience Composition is a percentage of a given media vehicle's potential audience that fits a given demographic description. From the table below we see that 52.8% of the total adult audience for ESPN Magazine is comprised of men aged 18-24.

This is calculated as 950 divided by 1,800 equals 0.5277 which is 52.8%.

Use these calculations and the data provided to complete the table below.

(000)	Population Adults	Population Men 18-24	Coverage %	Composition %
Total US	195,000	13,000		
ESPN Magazine	1,800	950	7.4%	52.8%
Newsweek	6,500	1,900		
Sports Illustrated	3,400	1,750		
Time	8,200	2,120		

Now, go the other way with this. Use the same formula to complete the table below. Given only some of the numbers, you should be able to calculate backwards to complete the table.

(000)	Population Adults	Population Women 18+	Coverage %	Composition %
Total US	195,000			
Elle	1,250		0.9%	
Glamour		2,400		80.0%

Media Metrics

Ratings, Share, HUTs and PUTs

Ratings, Share, HUTs and PUTs are commonly used broadcast audience measurements. These measurements are all interrelated. People who work in media in any way need to be able to calculate any of these measures working off the other measures provided.

<u>Ratings</u>
The rating of any show is a measure of the size of the audience that tuned into that show at a particular point in time. The rating is actually calculated as a percentage but the percent sign is not shown. Depending on the audience measured, a rating can be calculated for households tuned in or for people tuned in.

In order to calculate a rating you need to know two things, the tuned in audience and the total base audience population. You simply take the tuned in audience divided by the total population, multiply by 100 and round to the nearest tenth place. The formula looks like this:

Rating = (Tuned Audience / Audience Population) x 100

Use this formula to calculate the ratings for the television and radio programs listed in the table below. Use the last column on the right to indicate whether the rating is a household rating or a persons rating.

Program	Tuned Audience	Audience Population	Rating	Households Or Persons
ER (NBC) Thur 10PM	14,000,000 HH	105,500,000		
CSI (CBS) Mon 9PM	10,345,000 W18+	94,050,000		
Baseball (FOX) Sat 1PM	650,000 M18-24	13,000,000		
KSTP – FM Tues 8AM	50,000 W18+	2,500,000		
ESPN Radio Sun 5PM	18,000 M18+	1,875,000		
PBS Radio Prairie Home	1,512,000 A18+	168,000,000		

Media Metrics

Ratings, Share, HUTs and PUTs

Using this same formula you can find any one of three numbers as long as you have the other two numbers. Use the formula above to figure out the missing numbers in the table below.

Program	Tuned Audience	Audience Population	Rating
ABC Daytime M-F 1PM	3,009,600 W18+		3.2
CNN Weekend Sat 5PM	738,500 HH		0.7
Nickelodeon M-F 7AM		27,300,000 K6-11	1.1
Radio Disney M-F 3PM		273,000 K6-11	0.5

HUTs and PUTs

Within any given time period we look at another important measure to know whether it is a big broadcast time period or not. The measure we use for this is called Households Using Television (HUTs); we can also calculate this measure for Person Using Television (PUTs). HUTs and PUTs are a combination of the ratings for programs aired within a given time period.

Media analysts use this data over time to monitor the popularity of daypart segments. The HUT (or PUT) for a given time period is simply the total of all ratings within that period. With this in mind, complete the table below. Your totals should add up to the HUT/PUT indicated for each line.

Daypart	Networks	Cable	Syndies	Other	HUT/PUT
M-F 7AM	12.0	5.5	3.5		23 HH
M-F 3PM	10.0		2.9	1.3	19 W18+
M-F 9PM		16	10.9	5.1	64 HH
Sat 10AM	7.0	11.0		3.2	25 K2-11
Sat 3PM	8.5	4.9	3.1		18 M18+
Sun 9AM		5.7	2.0	1.7	13 W18+
Sun 4PM	16.5	9.5		3.0	35 HH

Media Metrics

Ratings, Share, HUTs and PUTs

<u>Share</u>
Share is another measure used in looking at broadcast media. Share is calculated by taking the rating of any particular program (or group of programs) divided by the HUT (or PUT) for that particular time period. These numbers are interrelated as follows:

Rating(HH) divided by HUT = Share

HUT times Share = Rating(HH)

Rating(HH) divided by Share = HUT

We can do this looking at any one program or for a group of programs. For the previous table we grouped programs within time periods according to origination of the programming (network, cable, etc.). Use the data from the previous table to calculate the shares for each program group within each time period. Your totals should add up to 100 on every line.

For example, to find the network share of total audience for programming M-F at 7AM, you would take the number 12.0 divided by the HUT for the time period 23 to get the answer 52%

Daypart	Networks	Cable	Syndies	Other	Total
M-F 7AM	52%				100
M-F 3PM					100
M-F 9PM					100
Sat 10AM					100
Sat 3PM					100
Sun 9AM					100
Sun 4PM					100

THINK: If all of these numbers (Rating, Share, HUT/PUT) are related, why do you think it is important to know them all?

Media Metrics

GRPs and TRPs

As shown in the previous worksheet, ratings are a basic measurement in media. As long as the geographic or target audience base is held constant, ratings across multiple programs or multiple media can be accumulated into some aggregate measure of the overall audience weight of a media plan. We call this aggregated sum of ratings **Gross Rating Points** or GRPs. If the audience target for the media plan is some segment of a population base, then we call the aggregated measure Target Rating Points or TRPs.

The keys to this definition are simple, both the geographic base and the audience base for the media plan must be held constant for rating points to be accumulated. The word accumulated means simply added together.

Now keep this in mind as you answer the following questions. If you can't answer the question with the information provided, just say so.

1. If your national media plan delivers 100 household rating points in daytime television and 250 household ratings points in primetime television, how many total rating points are delivered?

2. If your national media plan delivers 100 Men 18-34 rating points on Cable TV networks and 250 Men 18-34 rating points on broadcast TV networks, how many total rating points are delivered?

3. If your media plan delivers 250 household rating points on national television and 100 household rating points on Chicago television stations, how many total rating points are delivered in Chicago?

4. If your media plan delivers 250 Women 25-54 rating points on national television and 100 Women 25-54 rating points on KSTP-FM radio in Minneapolis, how many total rating points are delivered in Chicago?

5. If your national media plan delivers 250 Men 18-34 rating points in June and 100 Men 18-34 rating points in August, how many total rating points are delivered for the year?

6. If your national media plan delivers 250 household rating points in May and 100 Men 18-34 rating points in June, how many total rating points are delivered?

7. If your national media plan delivers 100 Women 25-54 rating points on network radio and 250 Women 25-54 rating points on network television, how many total Women 25-54 rating points are delivered in Pittsburgh?

Media Metrics

GRPs and TRPs

If the bases are not the same, then you cannot add or even average the ratings. If the geographic or audience base is different, then we can combine the ratings, just not by adding or simple average. In order to combine rating points across different geography we need to do a weighted average combination that uses the audience population in each geographic area as the weighting factor.

For example, let's say we are looking at a media plan that delivers 250 household rating points in Atlanta and 100 household rating points in Birmingham. If we want to find told rating points for this combined plan, then we first need to know the household population of Atlanta and Birmingham. Data for this example is summarized in the table below.

Market	TV Households	GRPs
Atlanta	2,250,000	250
Birmingham	650,000	100

With this data, we can now solve the problem in three steps.
1. First, we need to convert the GRPs in each market to some common base. Here we need to remember that rating points are percentages (even though we don't show the percent sign). So if 250 rating points is really 250% then we can rewrite this as 2.50 and we can rewrite 100% as 1.00. With this in mind, we take the Atlanta GRPs times the Atlanta population and the Birmingham GRPs times the Birmingham population.

   Atlanta   2,250,000 x 2.50 = 5,625,000
   Birmingham   650,000 x 1.00 = 650,000

2. Now we can add the total delivered audience in Atlanta and Birmingham.

   5,625,000 + 650,000 = 6,275,000

3. Finally, we take the combined two-market delivered audience total and convert it back to GRPs by dividing by the combined two-market audience population.

   6,275,000 divided by 2,900,000 = 2.16 = 216 GRPs

Now you try it. What is the weighted average combined GPRs for a media plan that delivers 250 GRPs in Chicago (3,120,000 TV Households) and 100 GRPs in Milwaukee (275,000 TV Households)?

Media Metrics

GRPs and TRPs

<u>Mixed Review</u>
Use what you've learned on the previous pages to answer the following questions. If you think you need additional information to answer any of the questions, say so and indicate what information you think is missing.

1. Over a 20 week period of time, your national media plan delivers 10 weeks of network daytime television at 50 GRPs per week, 5 weeks of network primetime television at 100 GRPs per week, and 20 weeks of national cable television at 50 GRPs per week.

How many total GRPs are delivered in the 20-week plan?

Assuming the primetime television overlaps with the daytime television, how many GRPs are delivered per week in the heaviest weeks of the plan?

How many GRPs are delivered per week on the lightest weeks of the plan?

How many total plan GRPs are delivered in Portland Oregon?

2. You have put together a terrific media plan focused on five of the biggest markets in the country. Your plan delivers 500 Women 25-54 TRPs in New York, Los Angeles, San Francisco, and Boston.

How many total TRPs are delivered for this 5-market plan?

3. Your recommended media plan delivers a national plan of 2,400 GRPs together with an overlay of another 2,400 GRPs in each of the top ten markets. You know that the total US Households is 105,500,000 and the total households in the combined top ten markets is 26,375,000.

How many total GRPs are delivered with this plan?

Media Metrics

From Audience to Ratings and Back Again

We have covered two ways of measuring delivery of media; audience measurements and ratings. We have to use both kinds of measurements in media because some media are best measured with ratings while other media are best measured by audience. It is important that you understand that no matter how one media is measured, you can convert ratings into audience and audience into ratings for any media.

Converting Ratings into Audience
The conversion process from ratings to audience is very simple because ratings are just a percentage of an audience. Knowing this, all we need to do is multiply to convert ratings into an audience number.

If you know the rating points, simply re-write as a decimal number and multiply times the total audience population.

Rating divided by 100 = Decimal Number

For example, if your plan delivers 250 GRPs and you want to know how much total audience then re-write 250 as a decimal number and multiply times the total population audience. Remember GRPs means households so we use total households population.

Step One: Re-write ratings as a decimal number. 250 divided by 100 equals 2.50

Step Two: Multiply times the audience population. 2.50 times 105,500,000 equals 263,750,000 total delivered audience.

Now you try it.

If your national media plan delivers 1,200 total GRPs, what is the total delivered audience? Use 105,500,000 as the total US Households population.

If your national media plan delivers 2,000 total Women 25-54 TRPs, what is the total delivered audience? To answer this you need to know that the total US population of Women 25-54 is 61,500,000.

If your media plan delivers 500 GRPs in each of the top ten US Markets, what is the total delivered audience? Total households in the top ten US markets is 26,375,000.

Media Metrics

From Audience to Ratings and Back Again

<u>Converting Audience to Ratings</u>
Knowing that you can convert from ratings to audience is important in media work. It is also important to know that you can convert the other way as well, if you know audience, you can convert to ratings. These kinds of conversions are needed particularly when you are combining multiple media in one plan. Up to now, we talked about audience measures for magazines and ratings measures for television and radio. Most media plans will use a combination of print and broadcast media and we need to know how to combine measures in order to compare across multiple media plans. All you need is a common audience base.

Let's work through an example. Let's say you have a media plan that delivers 2,400 Women 25-54 TRPs with national network television over one year and uses a magazine schedule to deliver a total audience of 246,000,000 Women 25-54. We need to determine the total TRPs delivered by the magazine part of the schedule so we can know how many total TRPs are delivered by the media plan. To do this we convert the magazine audience figure into TRPs with simple division.

Ratings = (Delivered Audience divided by Audience Population) times 100

Magazine ratings = 246,000,000 divided by 61,500,000 = 4.00 times 100 = 400

So, the total delivered TRPs for our plan are 2,400 plus 400 equals 2,800.

Now you try it.
Let's say that your national media plan delivers 1,500 television TRPs, 250 Network Radio TRPs, a magazine audience of 44,000,000 and an Internet audience of 26,000,000 Men 18-34. Assume there are a total of 32,000,000 Men 18-34 in the US.

How many magazine TRPs are delivered?

How many Internet TRPs are delivered?

How many total TRPs are delivered with this plan?

Media Metrics

Efficiencies, CPP and CPM

In media work we use audience measures and rating points to assess the effectiveness of one media plan relative to another. However, we also need to measure the efficiency of our media plans. For this we need efficiency measures. There are two common measures of media efficiency; cost-per-point and cost-per-thousand.
Cost-per-point (CPP) is a simple rate calculation where we take the total cost of advertising divided by the total rating points delivered by a media plan.
Cost-per-thousand (CPM) is another simple rate calculation where we take the cost of the advertising divided by the total audience (in thousands) delivered by a media plan.
We need both measures because as we have said some media are measured by rating points while other media are measured best by audience.

The formulas are simple:

CPP = Total Cost divided by Total Rating Points

CPM = Total Cost divided by (Total Audience divided by 1000)

Use the appropriate formula above to complete the table below.

Media Plan	Cost	Delivered Rating Points	CPP
Television	$8,500,000	1,500	
Radio	$350,000	250	
Internet	$150,000	100	
Magazines	$500,000	125	
Total Plan			
Media Plan	Cost	Delivered Audience	CPM
Television	$8,500,000	480,000,000	
Radio	$350,000	80,000,000	
Internet	$150,000	32,000,000	
Magazines	$500,000	40,000,000	
Total Plan			

Media Metrics

Reach & Frequency

As we said before, remember that rating points are a percentage even though we don't show the percentage sign. So when we start adding together rating points and we start getting big numbers – like 250 GRPs or 1,000 GRPs or even 12,000 GRPs – what do those big numbers really mean? If rating points are percentages, then what does it mean to deliver 1,000% of an audience?

The answer lies in the breakdown of the GRP number. You can't really deliver anything more than 100% of any given audience, right? So, if you are looking at a media plan with 1,000 GRPs then your plan must be delivering 100% of the people in your audience, 10 times each (1000 divided by 100 equals 10). In media this breakdown is known as Reach and Frequency. Reach and Frequency are the component statistics of GRPs.

- **Reach** is the percent of different members of an audience (households or target persons) exposed at least one time to a media schedule over a specific period of time. By definition Reach can never be greater than 100%.
- **Frequency** is defined as the number or count of exposures per average member of the audience reached by a media schedule over the same specific period of time.

The mathematical relationship is simple:

Reach times Frequency = GRPs
GRPs divided by Reach = Frequency
GRPs divided by Frequency = Reach

Use the simple formula above to complete the missing information in the table below.

Media Plan	Reach	Frequency	GRPs
A	40%	5.9	
B		8.0	750
C	52%		2,500
D		13.2	1,200
E	75%		1,500
F	39%	4.3	

THINK: 100% reach of a target audience would mean that your media plan effectively reached every single member of the target audience at least one time during the delivered media schedule. Do you believe that could be possible?

Media Metrics

Reach and Frequency Distribution

As we defined it earlier, Reach is a percent of an audience exposed at least one time to a commercial message. Frequency, we said, was the count or number of exposures per **average** audience member reached. In fact what happens is that some people in the audience are exposed only a few times and other members are exposed many times. The result is a distribution of audience members reached by number of times reached over the period of time measured.

Here's an example to show how this works.
Let's say that in one week I plan to deliver 300 TRPs to a total audience population of 20,000,000 people. Let's say that of the 20,000,000 people my plan will reach 95%.

How many people will my plan reach at least one time?
20,000,000 times 0.95 equals 19,000,000

What is the average frequency of exposures for my plan?
300 TRPs divided by Reach of 95 equals 3.16

What does the frequency distribution look like?

Number of Times Exposed	Number/Count Audience Reached	% of Audience Reached	Cume % Audience Reach	Total Audience Exposures
1 time	4,000,000	20%	95%	4,000,000
2 times	5,000,000	25%	75%	10,000,000
3 times	3,000,000	15%	50%	9,000,000
4 times	3,000,000	15%	35%	12,000,000
5 times	1,000,000	5%	20%	5,000,000
6 times	1,000,000	5%	15%	6,000,000
7 times	2,000,000	10%	10%	14,000,000
Total	19,000,000	95%		60,000,000

Note: Total Audience Exposures is calculated as the number of times exposed multiplied by the number/count audience reached for each row of the table.

From the table above we see:

Total reach is 95%
Average Frequency is 60,000,000 divided by 19,000,000 equals 3.16
Total TRPs is 95 times 3.16 equals 300

Media Metrics

Reach and Frequency Distribution

Now you work through an example. We'll leave off some zeroes to make this a little easier. Let's say that your media plan delivers its TRPs to an audience of 30,000 people. The table below provides the percentages at each level of frequency. You complete the rest of the calculations and answer the questions.

Number of Times Exposed	Number/Count Audience Reached	% of Audience Reached	Cume % Audience Reach	Total Audience Exposures
1 time		20%		
2 times		25%		
3 times		15%		
4 times		15%		
5 times		5%		
6 times		5%		
7 times		10%		
Total				

Now look at your completed table and answer the following questions.

What is the total Reach for this plan? _____

What is the average frequency for this plan? _____

How many total TRPs are delivered with this plan? _____

What is the percent reach delivered for people exposed 3 or more times?

Media Budget Exercises

There are four commonly used approaches for determining a media plan budget.
- **The Objective-Task Method**
- **Affordability Method**
- **Percentage of Sales Method**
- **Competitive Spending Method**

The Objective-Task Method

The Objective-Task Method, is a "zero-based" or "ideal" budgeting approach in which the plan budget is set according to the tasks needed to accomplish specific and measurable objectives. This is a very simple approach to budget setting, but one that requires extensive experience and supporting research to know exactly how much media will be needed to accomplish the objectives of the plan. If you do actually know what needs to be done and how much each task will cost, then all that's left to do is add up the cost of each task to obtain a total budget for the plan.

The table below shows a list of specific objectives and the media plan tasks needed to accomplish each. Use this table of data to answer the questions below the table.

Objective	Media Plan Task	Cost/Task
Introduce the new product achieving 90% product awareness within the first 3 months after launch (by the end of March)	Run a Reach-heavy mix of media delivering 90% reach at the 3+ level of frequency in each month	$5,000,000 per month
Beyond the introductory period, maintain product awareness at a minimum of 75% for the remainder of plan year	Sustain the plan with a base continuity level of media delivering 60% reach at the 3+ level of frequency in each month	$3,500,000 per month
Build awareness levels back up to 90% for each month leading up to the holiday season of October/November/December	Pump up for the holiday season with the same introductory Reach-heavy media mix delivering 90% reach at 3+ frequency each month	$5,000,000 per month

If your media plan runs for a twelve-month calendar year beginning in January, how much budget will you need to deliver the objectives defined above? _____

Media Budget Exercises

The Affordability Method

This is a simple, top-down approach to setting a media plan budget. This budget method is tied directly back to the profitability of the advertised product in that the media plan budget is determined based on how much profit the client will invest in the possibility of future sales. All we need to know for this approach is the profit margin for the advertised product. It may not seem like a lot, but you would be surprised how many clients do not want to share this kind of sensitive financial information even with their agency partners.

If you do know the profit margin for the advertised product (whether dollars or percent) then you can use this budget approach to work out a budget plan with your client such that she knows exactly how much of a sales increase is needed to pay-out the advertising investment. Here's how this works.

Let's say that you know that your client clears a 10% margin of profit on each unit of product sold and you know that average annual sales for the product is 100,000,000 units and the sales price is $3.50 per unit.

First, we need to figure out how much budget we have to work with. Do this by converting the margin percentage into a total margin estimate. Take 10% of the unit price times the 100,000,000 units sold on average per year.

$0.35 x 100,000,000 = $35,000,000

Next, you work with the client to determine what portion of the total annual profit is available for investment in the upcoming year's media plan. Let's say you agree to invest $3,500,000.

Now, you need to defend that investment amount by calculating a pay-out point. The pay-out point is the point at which incremental sales growth will generate enough profit to cover the cost of the initial investment.

Pay-out in unit sales = Investment divided by Unit Margin

Unit Pay-out = $3,500,000 divided by $0.35 = 10,000,000

Finally, you and the client need to agree on whether this is a reasonable increase in unit sales given the investment in the business. For this example, the increase in unit sales would be 10%.

Now you do the math. Let's say that your client has agreed to spend $5,000,000 next year. If you know that the per-unit margin is $0.23, how many units must be sold to pay-out the $5,000,000? If average annual sales for the product is 50,000,000 units, what is the percent increase needed in unit sales to pay-out the investment? Is this a reasonable amount? Why or why not?

Media Budget Exercises

Percentage of Sales Method

The percentage of sales approach to budget setting is done by calculating some planned percentage of total dollar sales for investment in the business. If you know total sales dollars and the appropriate percent of sales investment level, calculating the budget is straightforward.

Let's say total product sales are $250,000,000 and the trend for the business has been to invest 5% each year in advertising. The budget then would be set at $12,500,000.

$250,000,000 times 0.05 equals $12,500,000.

The percentage is something that you can get from a lot of different places. The first place to look would be past year's plans for the product. You should look at a couple of year's worth of plans to get an average. Looking only at one year might provide a distorted perspective. Another good source for this kind of information is trade publications. In the advertising industry, the trade magazine Advertising Age publishes an annual report on spending by leading advertisers. This annual report generally includes some measure of average percent of sales investment for major industry segments. There are also many trade industry associations that monitor and report this information for member companies in particular industry segments. Most major industry associations these days have websites with data archived. Sometimes, though, you might have to figure this out for yourself by researching the spending history of several companies and comparing that spending to sales.

However you do it, the calculation is still the same.

Budget equals Total Sales times Percent of Sales

Try it for yourself on the following problems.

Your client product category on average invests 3.2% in advertising spending and your client's product earns about $300,000,000 in annual sales, how much should you budget for the media plan?

Your client's product generates annual sales of $150,000,000. Three major competitors in the category earn sales each year averaging $400,000,000, $250,000,000 and $100,000,000 respectively. You have found that all three competitors in total average advertising spending equal to $12,500,000. What is the competitor spending as a percent of sales? What budget should you set for your client? Why?

Media Budget Exercises

Competitive Spending Method
This fourth approach to budget setting looks at specifically at the spending history of competitors for purposes of setting your own budget recommendation. Whereas earlier we were looking at competitive spending to help us find a percent of sales pattern, here we are looking more at actual dollars invested by competitors. Our goal with this approach is to recommend a competitive budget for our client.

There are two ways to execute a competitive spending budget approach. The first is very simple; you determine how much is being spent by a key competitor and recommend spending for your client relative to that competitor's spending. If you know that a key competitor is spending $7,000,000 and you want to be competitive then you might recommend that your client also invest $7,000,000.

The second approach is a little more complex; looking at competitive spending and your own spending recommendation relative to each company's share of market. This is called a **share-of-voice** approach to budget setting. Take the same example above and let's say that the key competitor is spending $7,000,000 and has a market share equal to 25%. If our own client's share of market is 18% then we could use this particular approach to recommend a budget for our client of $5,040,000. Here's how:

- **If Competitor A spends $7,000,000 for a 25% share-of-market**
- **Then total spending for the category should be $28,000,000**
- **Calculated as $7,000,000 divided by 0.25 equals $28,000,000**
- **If our client spending is to equal share-of-market at 18% of the category**
- **Then $28,000,000 times 0.18 equals $5,040,000.**

Now you try it.

> **Competitor A and B spend $13,000,000 in total advertising and together they have a 40% share of total category sales.**
>
> **What should total category spending be?**
>
> **If your client has 15% market share, what budget should you recommend?**

THINK: If your client has 15% market share today but wants to build share to 20%, then what budget should you recommend?

Media Budget Exercises

<u>**Mixed Review**</u>
The table below presents some basic information on your client's product and key competitors within the category. Use this information and any additional information provided to answer the following questions.

	Last Year's Ad Spending	Last Year's Total Sales	Last Year's Share of Market
Competitor A	$15,000,000	$200,000,000	20%
Competitor B	$32,500,000	$250,000,000	25%
Competitor C	$30,000,000	$150,000,000	15%
Client Brand X	$35,000,000	$300,000,000	30%
Total Category	$130,000,000	$1,000,000,000	100%

1. **For the category, what percent of sales is currently invested in advertising spending?**

2. **For the client Brand X, what percent of sales were invested in spending last year?**

3. **Of all companies listed, which company is currently spending at a rate about equal to its share of market?**

4. **What budget would you recommend for Brand X next year using the percent of sales method based on total category spending?**

5. **What budget would you recommend for Brand X next year if spending is to be consistent with share of market?**

6. **Let's say that the Brand X product sells at $2 per unit and the client profit margin is $0.49 per unit.**

   How many units sold last year?

   How much profit was earned last year?

   What is the pay-pout point for the budget you recommended in question 4 above?

Local Market Profile Exercise

Assignment: Use your school or public library and internet resources in order to prepare and present a Local Market Profile based on your own "home" market. Your "home" market is the city or town where you have lived enough time to have gained some familiarity with the people and the media. Prepare a final report of your findings by completing each section of this worksheet. Be prepared to present your report to the class.

Population Characteristics:
What can you tell about the population of this market? How many people? How many households? Average household size? Median age of the population?
How has the population of this market changed over time?
Is this a growing market? Where is the growth coming from?

Business and Employment Characteristics:
Which are the major companies in the market, employing the most people? What kind of businesses are these? What is the tax basis for the market? How has this changed over time?
What is the level of employment in this area? How have employment statistics changed over time?

Geography, Traffic and Retail Patterns:
Tell everything that you can about where people live, work and shop in this market and how they move around the city.

Education Characteristics:
What is the average education of the people in this market? How many are high school graduates? How many went to or graduated college? How have these changed over time? How strong is the educational system in your market? How does this market compare?

Income Characteristics:
What is the median household income in this market? What is the per capita income?
What are the income trends over time and how does this market compare to others?

Retail Sales:
What percentage of income in the market is spent in each of the key retail product categories: Automotive, Apparel, Food, Furniture, General Merchandise, Lumber and Building Materials, Fuel, others?

Market Media:
Find out everything you can about the media in this market.
What are the available media choices? TV stations, radio stations, newspapers, magazines, outdoor locations, directories, etc.

Specialty Magazines Exercise

Assignment: Visit a good book store or a specialty store where you can buy a special-interest magazine like those mentioned in chapter nine. Look for magazines about pets, or cars, or specific hobbies like fishing, boating, model trains, or arts & crafts. Depending on the size of your town, the best place to find such magazines might be a specialty store like a pet store for pet magazines, a sporting goods store for specialty sports magazines, a bait and tackle store for fishing magazines, an art store for crafts magazines or a hobby shop for magazines on model trains.

Once you have your magazine, sit down with it and go through it page-by-page. Study the editorial content of the magazine and look closely at the advertisements as well. Make detailed notes on what you find. Think about the products advertised and the editorial coverage and consider what this tells you about the people that fit the target "niche" for the magazine.

Summarize your thoughts according to the demographic and lifestyle characteristics of the people who are most likely to be readers of the magazine and cite specific product or editorial reasons each characteristic you've identified.

Next, do some library or internet research to find any publisher's information about the magazine that you chose. In your university or public library you should be able to find a copy of the consumer magazine SRDS providing a short summary of publisher's information. You might also look for your magazine via the internet. If it has a web presence, you might be able to find a ad sales media kit providing information about the magazine.

Prepare a short, 5-minute, presentation summarizing what you think you have learned about the magazine you chose.
- Present a summary of what you concluded from simply looking at the magazine.
- Present a summary of what you found out about the magazine based on publisher's information.
- Present a brief analysis of how your independent observations compared with the publisher's reported information.

Internet Ad Sales Exercise

Assignment: Find a website that is as yet not advertiser supported, at least not by outside advertising. One good example of such a website right now is a university dot.edu website (this will likely change in the future). Imagine that you are representing an advertising sales consulting firm and your job is to recommend an advertising sales plan for the website that you have chosen. Decide what you will recommend in response to each issue category listed below. Use this worksheet to keep your thoughts organized and on task.

Take some time to study the website and consider your answers in each area. Write a short report of your recommendations for each of the categories indicated below.

Advertising Space Avails
Where (on the website) would you recommend making space available for sales to outside advertisers? Where would you start and how deep would you go (pages into the site)? Be specific about the design and architecture of the assigned website.

Advertising Pricing Model
How will you recommend pricing for the website? Should pricing be competitive, premium or value-based? Why? Justify your recommendations with details considering competitive websites, size of the site audience, premium ad placement opportunities, premium day-part opportunities, etc.

Advertising Companies to Approach
Which companies would you approach and in what order of priority? Be specific about the companies that might best match-up to the target audience delivered by the assigned website.

Product Placement Valuation Exercise

Assignment: Video tape one of your favorite primetime television shows that incorporates a product placement. Most of the shows on TV today include some kind of product placement; many will have more than one product featured in the program. For this exercise you should focus on just one product.

Use a stop watch while you watch the video tape to record the total number of seconds the product is shown on camera. Be sure to count time for all exposures, even the passing exposures where you only see the product in the background. You should go through the show a couple of times to be sure you counted all exposure time.

Use this simple step-by-step valuation model to determine the monetary value of the product placement in this particular show.

1. determine the total elapsed time of the product placement in total seconds

2. divide the total elapsed product time by the standard TV commercial unit length, 30 seconds, to get a total number of equivalent commercial exposures (this probably won't be an even number, round your answer off to the nearest tenth place)

3. multiply the equivalent commercial exposures times the average advertising cost per commercial unit,

   - for primetime network programming use an average advertising cost of $100,000 per 30-second commercial

   - for primetime cable television programming use and average advertising cost of $30,000 per 30-second commercial

How much was your product placement worth?

Cross-Platform Integration Exercise

Assignment: Prepare a recommendation for a multi-media, cross-platform media package to a potential client company.

1. Choose one of the top five media companies discussed in chapter 14 of "Strategic Media Decisions."

2. Now, imagine that you are a multi-media sales representative working for the media company that you chose. Your job is to try to sell a multi-media, cross-platform media package deal to one of the following three client companies. Choose one:

    - Welch's brand grape jelly

    - Murphy's Oil Soap household cleaner

    - Jackson Hewitt Income Tax and Financial Services

3. Use your library and the internet to research both the media company and the client company you have chosen.

4. Based on your research develop three possible, distinctly different multi-media combinations that you could package and sell to the client company.

5. Prepare a report for the client company in which you show details on the components of all three multi-media packages. Remember that the media components must be owned by the one media company that you chose for this exercise. And, keep in mind that you are selling your ideas to the client.

Hint: For this kind of exercise it is often helpful to think of themes when deciding which media properties to combine for a multi-media package. If you do come up with theme ideas that tie the media properties together, you should include your theme ideas as part of the recommendation you make to the client company.