#### CHAPTER 3

## **Developing a Targeted Promotional Campaign**

#### Course: Principles of Marketing

This chapter involves implementing a market segmentation program. You will plan the promotional campaign for Outdoor Living Inc.'s\* new recreational product in the Florida market. The firm makes camping and recreational equipment and has introduced a new, moderately priced camper to attract middle-income families who are new to camping. To be successful, the firm must reach concentrations of targeted customers with its promotional campaign for the new product. You will learn how to use GIS tools to achieve this goal with each of the three components of this campaign: advertising, direct mail, and outdoor shows sponsored by recreational stores.

<sup>\*</sup> This is a fictional company and scenario, created for educational purposes only. Any resemblance to actual persons, events, or corporations is unintended.

#### Learning objectives

To maximize the effectiveness of the promotional campaign in Florida, you will learn how to use ArcGIS to:

- 1. Create map symbology to display population demographics
- 2. Select target Florida families for advertising and direct-mail components of a promotional campaign using appropriate geographic units and demographic attributes
- 3. Select Tampa-area recreational stores with outdoor shows based on their location relative to target market households
- 4. Design maps to communicate and support your recommendations

#### Marketing scenario

Outdoor Living Inc. manufactures a wide range of products for recreational outdoor living. The product line ranges from small, one-person tents for backpackers to large tents for camping and enclosed awnings for large gatherings.

The firm's newest product, the Conestoga, is a modular camper tent mounted on a small trailer for towing behind a vehicle. In addition to the pop-up tent commonly offered with competing products, it includes a modular enclosed "porch" that extends the unit with a covered space large enough for dining or recreation. In addition, the basic unit incorporates a patented compact kitchen unit that provides electricity, cooking, and washing facilities. The Conestoga also contains an integrated entertainment center with satellite television, DVD, and advanced audio capabilities. The unit is exceptionally light, easily maintained, and simple to set up and take down. It is designed to make outdoor living quick, comfortable, and easy for families with children.

The features and convenience of the Conestoga make it ideal for a family new to camping. In addition, innovative design and production techniques allow Outdoor Living to offer the model at an attractive price point. Therefore, Outdoor Living plans to focus its marketing efforts on families in a middle-income range in hopes of attracting them to the recreational pleasures of camping. Ideally, they will be satisfied with their experience and become lifelong campers and consumers of Outdoor Living products.

For these reasons, Outdoor Living has chosen to supplement its national advertising campaign with more focused efforts to reach new consumers in its target market. Specifically, the firm plans to: (1) conduct local television and newspaper advertising in markets with high concentrations of target customers; (2) reach targeted consumers via direct mail with price incentives; and (3) demonstrate the benefits of the new product in outdoor shows at outlets serving its targeted consumers.

Within this strategy the key to success is identifying concentrations of prospects who fit the profile of the product's target segment: families with incomes of \$35,000 to \$60,000. As sales manager for the southeastern U.S. region, your tasks are to identify geographic concentrations of target customers and design your promotional activities to reach them efficiently. You have chosen to begin this process with the state of Florida and have acquired data on population, family size, income, and market segmentation measures for the state.

#### **Background information**

Market segmentation is one of the most powerful tools in the marketing field. It allows firms to identify specific groups of consumers based on their common characteristics and design marketing offerings custom tailored to their needs and preferences. Successful use of segmentation tools allows marketers to enhance brand image, build customer loyalty, and decrease price sensitivity, all of which contribute to long-term sales and profits.

Market segments are defined using a wide range of segmenting dimensions including demographic, socioeconomic, lifestyle, benefit, and usage measures. The choice of segmenting dimensions depends upon several factors, including competitive conditions in the product market, the availability and cost of relevant data, and the market position of the firm's brand.

However segments are defined and analyzed, for segmentation strategies to be successful, marketers must be able to effectively reach targeted consumers with promotion, products, and services. In most cases, this requirement implies a spatial dimension to the implementation of a segmentation strategy. To reach customers, marketers must know where they are. Further, different distribution and promotional approaches require that marketers analyze customer location in different ways. This chapter illustrates that concept.

Outdoor Living has defined its target market as families with incomes between \$35,000 and \$60,000. Though this appears to be a straightforward definition, it does include judgments about buying behavior for the Conestoga. As a demographic variable, *families* is one of several measures of population units, and refers to people who reside together and are related to each other by birth, marriage, or adoption. *Population*, another measure, is defined as the total number of people residing in a geographic area, whatever their living arrangement. *Households* include people who are residing together whether or not they are related to each other. Thus, families are included in households, but not all households are families. You may get more information about families from the dataset by comparing the total family population measure with the total population measure. The ratio of these two measures is the total percentage of the population living in family units. Outdoor Living's focus on families reflects the judgment that family units, not individuals or households of unrelated people, will be the purchasing unit for the Conestoga product.

The income dimension of Outdoor Living's target segment reflects the firm's perception of the general income boundary between the categories in its product mix. Families with lower levels of income will be more attracted to Outdoor Living's tent products, while those with higher levels will be more attracted to motorized recreational vehicles. Remember that these boundaries are not fixed, but represent behavioral tendencies among target consumers.

This combination of measures is captured in two variables in the dataset: number of families in the target market (the total number of families in the designated income range) and percentage of families in the target market (the number of target market families as a percentage of all families in a geographic area). Each of these measures is useful in the process of planning Outdoor Living's promotional campaign.

In this planning process, you will also use several different geographic units. Each represents a different approach for dividing larger geographic units into smaller ones for purposes of understanding the distribution of a population characteristic. You will begin the process with political units of geography—the state of Florida and its counties.

Another type of unit is the ZIP Code system that the U.S. Postal Service uses to facilitate mail delivery. As ZIP Code boundaries can change over time, postal geographies are not as valuable for

longitudinal research as are census geographies (described below), which, though not permanent, are relatively more stable. However, from a marketing perspective, ZIP Code level analysis is useful because it is actionable. That is, attractive ZIP Codes are more easily targeted with direct-mail tools than are units of census geography.

Census geography units are created by the U.S. Census Bureau to administer and report its decennial census of the country. The most basic units of census geography for which data is reported are:

- · Census tracts, which are subdivisions of counties
- Census block groups, which are subdivisions of census tracts
- · Census blocks, which are subdivisions of census block groups

Census tracts were originally drawn to reflect some degree of internal demographic similarity, though this has often been eroded by natural patterns of population migration. They also vary in size, though the average census tract population is about 4,000. However, because census tract boundaries remain relatively stable over time, this unit is useful for tracking long-term change in population patterns. The census tract is the unit of census geography included in Outdoor Living's promotional planning analysis.

The Census Bureau and commercial marketing data suppliers also use several other geographic units to report population characteristics. Core Based Statistical Areas are population centers with integrated economic, transportation, and communication systems that often cross county or even state boundaries. They include Metropolitan Statistical Areas (larger urban and suburban areas surrounding a city of 50,000 or more, or a general urban area of 100,000 or more) and Micropolitan Statistical Areas (urban and suburban areas around a population center of 10,000 to 50,000). Some commercial marketing data firms also collect and report data for a geographic unit that they themselves define. Nielsen Media Research's Designated Market Areas is an example of this type of geographic unit.

Outdoor Living Florida data dictionary		
Attribute Description		
For State, Cou	nties, ZIPCodes and HillsboroughCensusTracts	
TOTPOP_CY	Total population, 2004	
FAMPOP_CY	Family population, 2004	
FAMHH_CY	Family households, 2004	
AVGFMSZ_CY	Average family size, 2004	
PCI_CY	Per capita income, 2004	
NumFamInTM	Number of families in target market, 2004	
PctFamInTM	Percentage of families in target market, 2004	
For MajorCities		
AreaName	City name	
Capital	State capital (yes or no)	
For OutdoorStoresShows		
StoreName	Name of outdoor store	
Source: ESRI Community Data, 2005		

# **Exercise 3.1 Explore demographic characteristics**

To maximize the effectiveness of your promotional campaign, you must focus your resources on geographic concentrations of your target customers. To prepare for this analysis, you must explore demographic variations among Florida's geographic areas. Thus, in this exercise, you will:

- Load, display, and explore maps of Florida
- View thematic maps of Florida's counties and their demographic characteristics
- Examine data distribution in densely populated areas

### **Open an existing map**

1 From the Windows taskbar, click Start > All Programs > ArcGIS > ArcMap.

Depending on how the software has been installed or which Windows operating system you are using, there may be a slightly different navigation menu from which to open ArcMap.

- 2 If you see a Start dialog box, click the "An existing map" option. Otherwise, click the Open button on the Standard toolbar.
- 3 Browse to the location of the GISMKT folder (e.g., C:\ESRIPress\GISMKT), double-click the OutdoorLivingFL folder, then click the OutdoorLivingFL1 map document and click Open.

When the map opens, several layers appear in the table of contents and a map of Florida appears in the map display area. The visible layers represent the state of Florida and its major cities. The Total Population by County, Average Family Size by County, and Per Capita Income by County layers represent demographic information about Florida's counties, but are not currently visible. The Tampa Area Per Capita Income layer contains income data by census tract in the Tampa area, and is also currently not visible.



### **Display map layers**

The table of contents contains several items, called layers, each of which represents features that can be displayed on the map. You can view the layers by turning them on and off (clicking their check boxes).

#### Change the display order of layers

In ArcMap, layers draw from the bottom of the table of contents up. Thus, the top layer can obscure layers underneath it. The State of Florida layer is at the top of the table of contents thereby covering all the other layers. So even though the Cities layer is turned on, you can't see the city markers because the state polygon is covering them. You can reorder layers in the table of contents by dragging them from one position to another.

- 1 In the table of contents, click Major Cities and hold down the mouse button.
- 2 Drag Major Cities to the top of the table of contents, then release the mouse button.

The symbols for the Major Cities layer now appear on top of the State layer.

#### Turn layers on and off

- **1** Turn off the State layer.
- 2 Turn on the Total Population by County layer.





3 Now turn on the Major Cities and Per Capita Income by County layers and turn all other layers off.

## Explore demographic characteristics with thematic layers

Thematic layers allow you to display selected attributes of features in a map format. They are useful in analyzing and communicating the distribution of demographic characteristics within a region of interest. In this task, you will explore the variations of population, household size, and income among Florida's counties. To do so, you will turn the various county data layers on and off, allowing you to review the distribution of population, household size, and income.

#### Identify data for specific counties

You may use the Identify tool to click on a feature, like a county, and display its attribute information.

- 1 From the Tools toolbar, click the Identify tool. 🕦
- 2 Click inside the county southwest of Miami.

This county flashes briefly and the Identify window displays all the attributes for this county, Monroe County. You may use this tool to review the attributes of any other counties you wish. Consult the data dictionary to determine the meaning of attribute names.

Identify		×
Layers: <top-most layer=""></top-most>		
	Elecation: (-81.00	Value
	OBJECTID NAME AREA TOTPOP_CY FAMPOP_CY FAMHH_CY AVGFMSZ_CY PCI_CY shape NumFamInTM PctFamInTM shape_Length shape_Area	33 Monroe County 995.46428 80976 56482 20603 2.740000 31216 Polygon 5115 0.248265 16.723737 0.231390
< >>	<	

- **3** Close the Identify window.
- 4 Turn off the Per Capita Income by Country layer, and turn on the Average Family Size by County layer. Observe the data distribution of this layer. When you're finished, turn on the Total Population by County layer.

#### Change the data represented by a layer

The Total Population by County layer displays the number of people in each county. However, Outdoor Living's target market is defined as families. Therefore, the number of family households in an area is a more relevant market measure than is total population. Thus, you must revise the Total Population by County layer to display this attribute.

- **1** Double-click the Total Population by County layer (or right-click the layer and select Properties).
- 2 Click the General tab. For Layer Name, enter Family Households by County. Don't click OK—that will close the Layer Properties dialog box, and you have more properties to change.

Layer Properties
General Source Selection Display Symbology Fields Definition Query Labels Joins & Relates
Layer Name: Family Households by County
Description:
- Scale Range
You can specify the range of scales at which this layer will be shown:
Show layer at all scales
C Don't show layer when zoomed: Out beyond 1: 0 (minimum scale)
In beyond 1: 0 (maximum scale)
OK Cancel Apply

**3** Click the Symbology tab. In the Value field, select the appropriate attribute. (Use the data dictionary to identify the attribute name for the Family Households measure.)

General       Source       Selection       Display       Symbology       Fields       Definition Query       Labels       Joins & Relates         Show:       Features       Categories       Import       Fields       Import         Graduated colors       Graduated symbols       Fields       Classification       Natural Breaks (Jenks)         Proportional symbols       Dot density       Color Ramp:       Import       Classify         Charts       Symbol Range       Label       1612 · 61939       1612 · 61939         1612 · 61939       1612 · 61939       1612 · 61939       243738 · 575367         243738 · 575367       243738 · 575367       243738 · 575367	Layer Properties		? 🛛
Show:       Draw quantities using color to show values.       Import         Features       Categories       Import         Graduated colors       Fields       Classification         Graduated symbols       Proportional symbols       Classify         Proportional symbols       Normalization:       (None>         Dot density       Color Ramp:       ⊂         Color Ramp:       ⊂       Color Ramp:         Symbol       1612 · 61939       1612 · 61939         1612 · 61939       1612 · 61939         74649 · 217729       74649 · 217729         243738 · 575367       243738 · 575367	General Source Select	ion Display Symbology Fields Definition G	Query Labels Joins & Relates
243738 - 575367 243738 - 575367 ✓ Show class ranges using feature values Advanced ▼	Show: Features Categories Quantities Graduated colors Graduated symbols Proportional symbols Dot density Charts Multiple Attributes	Draw quantities using color to show va         Fields         Value:       FAMHH_CY         Normalization:          Color Ramp:          Symbol       Range         1612 - 61939       74649 - 217729	Import       Classification       Natural Breaks (Jenks)       Classes: 3 ▼       Classify       Label       1612 - 61939       74649 - 217729
		243738 - 575367 ✓ Show class ranges using feature values	243738 - 575367

- 4 Click OK.
- 5 In the table of contents, click the word FAMHH\_CY under the layer name, then click again to make it editable. Replace FAMHH\_CY with Families. (Note: If your second click is too quick, the Layer Properties dialog box will open. Click Cancel, then try again, clicking more slowly to reach the edit function.)

The resulting map displays the number of family households in each of Florida's counties. This data is more directly related to the firm's target market than total population.



#### Display data distribution in smaller areas

You have observed attribute variation between Florida's counties. With ArcMap you may also explore variations within smaller geographic areas. Consider the Tampa region as an example.

- 1 Click the check boxes to the left of the layers in the table of contents to display only the Major Cities, Tampa Area Per Capita Income, and Per Capita Income by County layers. (Turn all other layers off.)
- 2 Right-click the Tampa Area Per Capita Income layer and click Zoom To Layer to zoom in and center the map display on the Tampa area.





**3** Turn off the Tampa Area Per Capita Income layer.

Compare this view with the previous view. This view indicates that the counties within the Tampa region fall within the middle income classification. However, the previous view reveals that many of the census tracts in the area fall into the upper and lower classifications. Further, some census tracts in the region have levels of per capita income that are significantly lower than any of Florida's counties, while other census tracts have levels that are significantly higher. Exploring these relationships allows you to understand the distribution of Outdoor Living's target market not only between counties but between the census tracts of a metropolitan area.

### Update report and save map document

1 Use your observations of the maps you have displayed to answer the question below. Summarize your answer in the appropriate section of the project report template (OutdoorLivingFL\_ ReportTemplate.doc) which you will find in your \GISMKT\OutdoorLivingFL folder.



What do you observe about the geographic distribution of family households, family size, and income in Florida's counties?

2 Save your map file as OutdoorLivingFL1\_fl.mxd (replace f and l with your first and last initials). To do so, from the File menu, choose Save As. Navigate to your \GISMKT\OutdoorLivingFL folder, type OutdoorLivingFL1\_fl.mxd as the file name, and click Save.

### **Exercise 3.2 Select counties for local** advertising campaign

Local advertising media such as newspapers, radio, and television stations provide broad coverage of their local markets. Media costs are for insertions or time slots. While costs vary with audience size, they are not determined directly on a per-household basis, as direct-mail costs are. For these reasons, counties are the appropriate geographic units for the local advertising campaign and the number of target market families in each is the appropriate market measure. The budget for the local advertising campaign will support ten county markets. You will select the specific counties for the campaign based on the total number of families in the target market residing in each county. Thus, in this exercise, you will:

- Identify the ten Florida counties with the largest number of families in the target market
- Design a map that identifies these counties and their location
- Calculate the total number of target market families that will be exposed to the campaign in these counties

### Open an existing map

1 In ArcMap, open the OutdoorLivingFL2 map document found in your \GISMKT\OutdoorLivingFL folder.

The map contains two layers: an outline of Florida and its major cities.



### Add and display a new map layer

This analysis requires a map layer depicting the distribution of Outdoor Living's target market across Florida's counties. Recall that the target market is families with annual incomes between \$35,000 and \$60,000. Your first step is to add and display this map layer.

#### Add a map layer

- 1 Click the Add Data button. 븆
- 2 In the Add Data dialog box, navigate to the OutdoorLivingFL geodatabase found in your \GISMKT\ OutdoorLivingFL folder.
- **3** Double-click the geodatabase to open it. Click Counties.

Add Data	
Look in: 🕤	OutdoorLivingFlorida.mdb 💽 📤 📚 🎬 🔠 🖽
Counties Hillsborough MajorCities OutdoorSho OutdoorStor State ZIPCodes	iCensusTracts iwsBuffer resShows
Name:	Counties
Show of type:	Datasets and Layers (*.lyr)  Cancel

4 Click Add to add the Counties feature class as a new layer to the map.

The resulting map displays Florida's counties; however, every county is the same color. You will change the layer's symbology so that each county's color represents the correct attribute value.

#### Edit a map layer's symbology

- 1 Double-click the Counties layer in the table of contents (or right-click the layer and select Properties).
- 2 Click the General tab and enter Number of Families in Target Market as the new layer name.

Layer Properties ?	X
General Source Selection Display Symbology Fields Definition Query Labels Joins & Relates	
Layer Name: Number of Families in Target Market 🔽 Visible	
Description:	
Scale Range	
You can specify the range of scales at which this layer will be shown:	
Out beyond 1: 0 (minimum scale)	
In beyond 1: 0 (maximum scale)	
OK Cancel Apply	

- 3 Click the Symbology tab. In the Show area, click Quantities, then click Graduated colors.
- 4 Select the appropriate attribute name in the drop-down box in the Value field. (You can use the data dictionary to identify the attribute name for the number of families in target market measure.)
- 5 Click the "Show class ranges using feature values" check box to define classification ranges using actual values from the layer's attribute table.

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6 Select any color scheme using the drop-down box in the Color Ramp field.

Layer Properties 🦳 🔀			
General Source Select	tion Display Symbology Fields Definition Query	_abels   Joins & Relates	
Show:	Draw quantities using color to show values.	Import	
Categories	_ Fields C	lassification	
Quantities	Value: NumFamInTM 💌	Natural Breaks (Jenks)	
Graduated colors Graduated symbols	Normalization: <none></none>	lasses: 5 💌 Classify	
Dot density	Color Ramp:		
Charts	Symbol Range Label		
Multiple Attributes	396 - 8609 396 - 8 9061 - 23438 9061 - 26265 - 43763 26265 59001 - 78524 59001	609 23438 - 43763 - 78524	
	104589 - 138220 10458	9 - 138220	
	IV Shink class ranges using reactire values	Advanceg •	
	OK	Cancel Apply	

These settings specify which attribute value will be used to display the layer and how it will be displayed. Next you will designate how many classes will be used to display the data.

- 7 While still in the Layer Properties dialog box (on the Symbology tab), click the Classify button to display the Classification dialog box.
- 8 For the Method option, click the drop-down arrow and choose Quantile.
- 9 For the Classes option, choose 4.

Classification		? 🔀
Classification Method: Quantile Classes: 4 Data Exclusion Exclusion Sampling Column 100	Classification Statistics Count: Maximum: Sum: Mean: Median: Standard Deviation:	67 396 138220 1237840 18475 8609 26507
2(# 88 8 15- 10- 5-	138220	Break Values 8 1874 8609 23084 138220
0 396 34852 69308 103764	138220	OK
Snap breaks to data values		Lancei

With these settings, you have specified that this layer will display in 4 classes, each containing a roughly equal number of counties. Note in the Classification Statistics area that Florida has 67 counties. So 16 or 17 counties will be in each of the 4 classes.

The highest class will be composed of the top 10 counties that will be included in the initial promotional campaign, as well as another 6 or 7 counties to include in the campaign should additional funds become available.

10 Click OK to assign the 4 classes. Click OK again to complete the layer symbolization process.

The resulting map displays the distribution of Outdoor Living's target market across Florida counties.



The class of counties with the highest values contains the 10 counties you are seeking in this task. You will now identify them specifically.

#### Analyze data in attribute tables

You can view a layer's data by opening its attribute table. You will sort, select, and calculate summary statistics on attributes in the counties layer table to learn the names of the top ten counties.

#### Sort and select counties based on attribute values

Your first task is to identify the ten Florida counties with the highest number of families in Outdoor Living's target market. You will do so by sorting and selecting records in the layer's attribute table.

1 In the table of contents, right-click the Number of Families in Target Market layer, and click Open Attribute Table.

The attribute table contains the data for each county feature in the layer.

2 Scroll horizontally through the table to find the NumFamInTM attribute, then right-click the column header cell and select the Sort Descending option.

This sorts the feature values for this attribute from highest to lowest.

3 Click the small gray box to the immediate left of the first record in the table to select it.

	III Attributes of Number of Families in Target Market						
	FAMHH_CY	AVGFMSZ_CY	PCI_CY	shape*	NumFamInTM	PctFamInTM	~
	575367	3.39	21940	Polygon	138220		0.24(
	437286	3.11	27201	Polygon	104589		0.23
	328627	2.91	34745	Polygon	78524		0.238
	281456	3.08	25683	Polygon	75115		0.266
	248079	2.77	27921	Polygon	69754		0.28′
	243738	3.16	24442	Polygon	66005		0.27(
	217729	3.05	24402	Polygon	59001		0.27(
	149889	2.73	28961	Polygon	43763		0.29′
	142702	2.96	21475	Polygon	41944		0.29(
	128844	2.85	22985	Polygon	40535		0.314
	143274	2.84	25174	Polygon	40204		0.28(
	111848	2.77	21224	Polygon	35230		0.314
	102507	2.62	33579	Polygon	29395		0.286 🧹
<						>	
R	Record: III C Ditions V Show: All Selected Records (1 out of 67 Selected.)						

This record turns blue to indicate that it is selected. If you look on the map, you will see that the corresponding county polygon is also selected and drawn in blue. You may need to move the attribute table to see the table and map simultaneously.

- 4 In the same manner, select several records in the attribute table and then view the changes on the map.
- 5 To select multiple features, click the small gray box to the immediate left of the topmost feature and hold your mouse button down. Move the mouse pointer down the column of boxes to select the first ten features in the table. Alternatively, you can press and hold the Ctrl key as you click each record.

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Note that the counties are selected simultaneously on the map as well. These counties will be the target of your advertising campaign.



#### Calculate summary statistics for attributes

The final step in this exercise is to calculate the number of target market families that will be exposed to the advertising campaign. You will perform this step by calculating summary statistics for the relevant attribute in the attribute table.

1 Again find the NumFamInTM attribute, right-click the attribute name at the top of the column, then select Statistics. (Note: The top ten features for this attribute should still be selected in this table. If they are not, repeat step 5 above to select them. The summary statistics are only calculated for the selected records/features.)

In the Selection Statistics of Counties window, the Sum reports the total number of target market families in the ten selected counties. This is the number of families that will be exposed to Outdoor Living's advertising campaign.



### Update report and save map document

1 Use your map, attribute tables, and calculations to answer the questions below. Summarize your answers in the appropriate section of the project report template (OutdoorLivingFL\_ReportTemplate.doc) which you will find in your \GISMKT\OutdoorLivingFL folder.



Which ten counties should be included in Outdoor Living's local advertising campaign? Why? How many target-market families will be reached by this campaign?

2 Close the statistics window and attribute table, and save your map file as OutdoorLivingFL2\_fl.mxd (replace f and I with your first and last initials) in your \GISMKT\OutdoorLivingFL folder.

### **Exercise 3.3 Select ZIP Codes for direct**mail campaign

Direct mail offers customized communication with individual households that can easily be targeted by ZIP Code. Costs are based on the number of mailings and response rates are typically low. Thus, it is important that the highest possible percentage of recipients be target prospects. For these reasons, ZIP Codes are the appropriate geographic unit for the local advertising campaign, and the percentage of target market families is the appropriate market measure. The direct-mail budget for Florida will support a mailing to 750,000 households. You will select the ZIP Codes to be included in the mailing on the basis of the percentage of families in each that are in the target market. Thus, in this exercise, you will:

- Identify the ZIP Codes in Florida with the largest percentage of families in the target market
- Design a map that identifies these ZIP Codes and their location
- Calculate the total number of ZIP Codes and family households that will be included in the mailing
- Calculate the number of target market families who will receive mailings

### Open an existing map

1 In ArcMap, open the OutdoorLivingFL3 map document found in your \GISMKT\OutdoorLivingFL folder.

This map document contains three layers: a basemap of Florida, Florida's major cities, and ZIP Codes. The blank areas are national and state parks that are not assigned ZIP Codes.



### Edit a layer's symbology

This map displays a ZIP Code layer, but it does not represent any data. You will edit this layer to display the percentage of families in each county that is in Outdoor Living's target market.

- **1** Double-click the ZIPCodes layer in the table of contents (or right-click the layer and select Properties).
- 2 Click the General tab and enter Percent of Families in Target Market as the new layer name.

Layer Properties	? 🗙
General Source Selection Display Symbology Fields Definition Query Labels Joins & Relates	
Layer Name: Percent of Families in Target Market	
Description:	
Scale Range You can specify the range of scales at which this layer will be shown: Show layer at all scales	
C Don't show layer when zoomed: Out beyond 1: 0 (minimum scale)	
In beyond 1: 0 (maximum scale)	
OK Cancel Apr	oly

- 3 Click the Symbology tab. In the Show area, click Quantities, then click Graduated colors.
- 4 Select the appropriate attribute name in the drop-down box in the Value field. (You may use the data dictionary to identify the attribute name for the percentage of families in target market measure.)
- 5 Select a color scheme using the drop-down box in the Color Ramp field.
- 6 Click the "Show class ranges using feature values" check box to define classification ranges using actual values from the layer's attribute table.

These settings specify which attributes will be displayed in this layer and how the layer will appear.

Layer Properties General Source Selecti	on Display Symbology Fields Definiti	on Query   Labels   Joins & Relates
Show:	Draw quantities using color to show	values. Import
Categories	Fields	Classification
Quantities	Value: PctFamInTM	<ul> <li>Natural Breaks (Jenks)</li> </ul>
Graduated colors Graduated symbols	Normalization:	Classes: 5 Classify
Proportional symbols Dot density	Color Ramp:	•
Charts	Symbol Range	Label
Multiple Attributes	0.000000 - 0.156682	0.000000 - 0.156682
	0.161212 - 0.229209	0.161212 - 0.229209
	0.230046 - 0.278421	0.230046 - 0.278421
	0.278663 - 0.324873	0.278663 - 0.324873
	0.325203 - 0.486911	0.325203 - 0.486911
VIL/	Show class ranges using feature values	Advance <u>d</u> 🔻
		OK Cancel Apply

- 7 In the Symbology dialog box, click the Classify button to display the Classification dialog box.
- 8 For Method, choose Quantile.

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9 For Classes, maintain the default value of 5.

These settings determine how many data classes will be displayed and how they will be determined. You have specified that the data will be displayed in quantiles. This means that each classification group will contain approximately one fifth of Florida's ZIP Codes. The group with the highest range of values for the attribute is the top 20 percent of ZIP Codes, the next group is the 20 percent of ZIP Codes with the next highest range of values, and so on through the classification groups.



**10** Click OK to return to the Symbology tab.

Note that the values for the class breaks are displayed as decimals with six decimal places. As these values are percentages, they should be displayed as such in the table of contents. You will specify these settings in the following steps.

11 Click the Label column header and then click Format Labels from the resulting menu to reach the Number Format dialog box. (Note: This is NOT the Labels tab in the Layer Properties dialog box, which serves a different function. If you clicked the Labels tab in error, click the Symbology tab and repeat the instruction above.)

Draw quantities using color to s Fields Value: PctFamInTM Normalization: <none></none>	show values. Import Classification Quantile Classes: 5  Classify
Color Ramp:	
Symbol         Hange           0.000000 - 0.228022         0.228451 - 0.266520           0.266626 - 0.292029         0.292086 - 0.315652           0.315702 - 0.486911         0.315702 - 0.486911	Label 0.00000 0.22845 0.26662 0.292086 - 0.315652 0.315702 - 0.486911
✓ Show class ranges using feature values	aluesAdvanced -
	OK Cancel Apply

12 Under Categories, click Percentage, and click the option "The number represents a fraction. Adjust it to show a percentage."

N	umber Format		?×		
	Category: None Currency Numeric Percentage Custom	<ul> <li>The number already represents a percentage</li> <li>The number represents a</li> </ul>			
	Rate Fraction Scientific Angle	fraction. Adjust it to show a percentage.			
Displays numbers as a percentage					
		OK Ca	ancel		

13 Click the Numeric Options button and, in the resulting dialog box, reduce the number of decimal places to 1.

Numeric Options	?×
Numeric Rounding Number of decimal places Number of significant digits	
Alignment C Left C Right 12 - characters	
<ul> <li>Show thousands separators</li> <li>Pad with zeros</li> <li>Show plus sign</li> </ul>	
OK Cancel	Apply

14 Click OK in each of the three dialog boxes to accept the changes.

The resulting layer displays the percentage of target market families in each of Florida's ZIP Codes. The map indicates which ZIP Codes have the highest concentration of target market families. You must now determine which of these ZIP Codes will be included in your 750,000-household mailing.

#### Analyze data in attribute tables

ArcMap allows you to analyze the data that underlies a layer by manipulating the layer's attribute table. You will use the attribute table tools to sort, select, and calculate summary statistics for this data.

#### Sort and select counties based on attribute values

As in the previous task, you will sort and select records in a layer attribute table to identify those you will target. However, as the number of ZIP Codes is so much greater, you will perform this selection by using an attribute query rather than selecting records manually.

1 In the table of contents, right-click the Percent of Families in Target Market layer, then select Open Attribute Table.

This layer's attribute table contains ZIP Code data for each of the features.

2 Scroll through the table to find the PctFamInTM attribute, right-click the column header, then select the Sort Descending option.

The records are sorted from highest to lowest.

To maximize the effectiveness of your direct-mail campaign, your 750,000 mailings should be sent to the ZIP Codes with the highest percentages of target market families. Therefore, you should select ZIP Codes from the top of this list down until you reach a total of 750,000 households. You will use the Select by Attributes function to accomplish this task.

- 3 At the bottom of the attribute table, click the Options button, then choose the Select by Attributes option. (Note: You may need to increase the size of the attribute table to see the Options button.)
- 4 In the resulting Select by Attributes dialog box, double-click the attribute name [PctFamInTM], then click the >= operator, then type .316 at the end of the equation in the Query box so that the full equation reads: [PctFamInTM] >= .316 (This is the minimum value of the highest quantile in the classification scheme.)

Select by Attributes	×				
Enter a WHERE clause to select records in the table window.					
Method : Create a new selection					
[AVGFMSZ_CY]	^				
[NumFamInTM]					
[Pothamini M] [shape_Length]					
	_				
> >= And					
? * () Not					
Is Get Unique Values Go To:	_				
SELECT * FROM ZIPCodes WHERE:					
[PctFamInTM] >= .316	^				
Clear Verify Help Load Save					
Apply Close					

5 Click Apply, then click Close.

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						Indip.	2
ibutes of P	Percent of Fam	illies in Tar	get Market				1
AVGEM	SZ_CY	PCI_CY	shape'	IIIumFaminTM	PetFamInTM	· Variation Product	2
	3.78	12943	Polygon	279	0.486911	- And - Market	100
	3.55	13907	Polygon	260	0.471889		133
	2.27	25304	Polygon	276	0.433962		10
	3.87	13845	Polygon	226	0.411658	14 2 4 4 4	no
	3.14	18775	Polygon	271	0.293095		
	3.16	22296	Polygon	272	0.390005	The second secon	12
	2.93	17521	Polygon	663	0.389633	5.00	100
	3.32	16242	Polygon	1007	0.309264		100
	3.19	18015	Polygon	362	0.388829	1 1	dist.
	2.82	28428	Polygon	349	0.386918	v 1 2 2	晋/
					3	· ·	10

Records in the attribute table turn blue to indicate they are selected. The corresponding ZIP Codes are also highlighted in blue on the map.

You must now determine the number of ZIP Codes and family households that are contained in the selected ZIP Codes.

6 Find the FAMHH\_CY attribute, right-click the column header, then select the Statistics option to display the Selection Statistics of ZIPCodes window.

In this window, the number of ZIP Codes selected is displayed as the Count while the number of family households in these ZIP Codes is displayed as the Sum.



How many ZIP Codes are selected? How many family households will receive the mailing? Look at the sorted attribute table. Can the next highest ZIP Code be added to the selection without exceeding the 750,000-household limit?

You have determined how many family households will receive mailings in this campaign. You must now determine how many of these households fall within Outdoor Living's target market. To do so, you will repeat the Statistics calculation for the NumFamInTM attribute.

7 Close the Statistics window. Find the NumFamInTM attribute, right-click the column header, then click Statistics to display the statistics of this attribute.

In this window, the number of target market family households is displayed as the Sum.

#### Update report and save map document

1 Use your map, attribute tables, and calculations to answer the questions below. Summarize your answers in the appropriate section of the project report template.



How many ZIP Codes and family households will be included in Outdoor Living's direct-mail campaign? Why? How many target-market families will be reached by this campaign?

2 Save the map document as OutdoorLivingFL3\_fl.mxd (replace f and I with your first and last initials) in your \GISMKT\OutdoorLivingFL folder.

## **Exercise 3.4 Select stores for outdoor show demonstrations**

Outdoor Living plans to feature its new product in outdoor and recreation shows in the major metropolitan areas of Florida. The budget will support four shows in the Hillsborough County portion of the Tampa area, and you will select the stores that will host the shows. Thus, in this exercise, you will:

- Examine the distribution of target market families in Hillsborough County
- · Identify retail outlets that sponsor outdoor shows each year
- Select four stores for product demonstrations at outdoor stores

### Open an existing map

1 In ArcMap, open the OutdoorLivingFL4 map document from your \GISMKT\OutdoorLivingFL folder.

This map document contains four layers, including a thematic layer that represents the number of families in the target market for each Hillsborough County census tract, and a layer that represents the location of recreational stores that sponsor outdoor shows. A layer depicting two-mile rings around these stores is not turned on. There is also a state layer for Florida.



### **Explore stores and their surrounding areas**

Note that the map displays the number of target market families in each of the area's census tracts. Review the distribution across this metropolitan area. The map also displays retail stores that sponsor outdoor shows where the new Conestoga model might be displayed. You can use the Identify tool to learn more about the locations of the stores.

- 1 Click the Identify tool 1 then click on one of the stores to display its attribute information in the Identify window.
- 2 Look at the attributes of other stores. As you move from store to store, observe the colors of the census tracts surrounding them to determine the number of target market families living near each store.



**3** Close the Identify window when you're finished exploring.

# Select specific stores for product demonstration at outdoor shows

Data from past outdoor shows suggests that most prospective buyers live within two miles of the show site. For this reason, you wish to view the areas where each outdoor show might draw these prospects.

**1** Turn on the Outdoor Show Attraction Rings layer.



The resulting map displays a buffer ring with a two-mile radius around each outdoor show site.

2 Visually identify four stores that serve substantial numbers of target market families and are distributed across the Tampa area. Look for rings that contain several census tracts with high numbers of target market families and are geographically dispersed from each other. Your objective is to provide potential customers across the area an opportunity to view the Conestoga at a convenient outdoor show.

You will now use the map to display your selection.

- 3 In the table of contents, right-click the Stores with Outdoor Shows layer, then click Selection > Make This The Only Selectable Layer.
- 4 Click the Select Features tool 🕅 then click on a store of your choice. Notice that your selection is highlighted on the map.
- 5 Repeat this process with another store. When you select a second store, note what happens to the first store.

You will now use the multiple selection procedure to display the four stores you have selected for your outdoor store demonstrations.

- 6 With the Select Features tool active, click your first store again. Press the Shift key and hold it down. With the Shift key depressed, click your second chosen store.
- 7 Repeat this procedure to display your third and fourth selections.

The four selected stores are highlighted on the map. (Note: Although your map should be similar to that shown below, you may have made some different choices, which is OK.)

![](_page_30_Figure_8.jpeg)

You will now export this map image and integrate it into the report template.

### Export map and insert into your report

- 1 From the main menu bar, click File > Export Map to reach the Export Map dialog box. Navigate to your \GISMKT\OutdoorLivingFL folder. For File name, type SelectedStores.emf, then click Save to save the map document as a graphic file in EMF format to include in your report.
- 2 Locate the instructional text in brackets in the fourth section of the project report template for this chapter. Select this text, then from the main menu bar in Microsoft Word, click Insert > Picture > From File. Navigate to your \GISMKT\OutdoorLivingFL folder and select the SelectedStores.emf file. Click Insert to insert the picture into the report as exhibit 1. (Note: You may have to select and resize the image to fit the space provided.)

### Update report and save map document

1 Use ArcMap tools and your map to answer the following questions. Summarize your answers in the appropriate section of the project report template.

![](_page_31_Picture_6.jpeg)

Which four stores in this area have you selected to host outdoor show demonstrations? Why do you think this combination will be effective in attracting targeted customers?

2 Save the map document as OutdoorLivingFL4\_fl.mxd (replace f and I with your first and last initials) in your \GISMKT\OutdoorLivingFL folder.

### **Exercise 3.5 Communicate and support** your recommendations

You have completed the three components of your analysis and described your conclusions in the report template. You will now complete the report by summarizing your recommendations and providing maps to illustrate them. In this exercise you will:

- Restate your recommendations briefly
- Explain how geographic targeting will increase the effectiveness of each of the three components of your local marketing campaign in Florida
- Design two map layouts to support your analysis

### **Open an existing map**

1 In ArcMap, open the OutdoorLivingFL5 map document from your \GISMKT\OutdoorLivingFL folder.

This map contains four layers: a basemap of Florida, a layer displaying the state's major cities, a thematic layer displaying the number of families in the target market by county, and a thematic layer displaying the percentage of families in the target market by ZIP Code. The percentage layer is not turned on. This is the same map you created in exercise 3.2, and it identifies the ten counties you selected in that exercise as the focus of the advertising campaign.

![](_page_32_Figure_9.jpeg)

### **Create and edit a layout**

In the first four exercises of this chapter, you used ArcMap as an analysis tool. In this exercise, you will use it as a communication tool by designing a map layout to support your report findings. A map layout is a collection of layers and other elements, such as legends, north arrows, scale bars, and text. You will use the ArcMap layout view to design a printable map, which you will use to increase the communication effectiveness of your entire marketing report.

1 From the main menu bar, click View > Layout View.

The map now appears in layout view with several additional elements added. Notice that the layout is a virtual piece of paper where you place and arrange elements to create a printable map suitable for a report, paper, article, or other presentation material.

![](_page_33_Figure_5.jpeg)

2 Review the various layout elements and note how they contribute to its communication value. To zoom in for a closer look, use the Zoom In tool on the Layout toolbar, which should have appeared when you switched to layout view. Although the tools on the Layout toolbar are similar to the navigation tools on the Tools toolbar, they are somewhat different, so familiarize yourself with each one.

Layout	×
	58% 🔽 🖻 🖬 💼

The actual map illustrates the data frame, which includes all the layers you have been working with. A legend, north arrow, and scale bar all convey the meaning, orientation, and scale of the map to the reader. The three text boxes at the bottom contain data source information, the meaning of the selected features, the author, and creation date of the map—information readers require to evaluate the credibility of the map.

All the elements depict information about Florida's counties relative to the advertising campaign decision. However, the author and creation date information is incomplete. You must supply this information to complete your map for exhibit 2 in the report.

3 Notice the small text box at the bottom of the page that includes the Submitted by and Date elements. With the Select Elements tool click the text to select it. (A blue dashed line will appear around the text to show it has been selected.)

![](_page_34_Picture_6.jpeg)

**4** Right-click the selected text box and choose Properties.

5 In the Properties dialog box, replace [Your Name Here] with your name, and replace [Today's Date] with the correct date. Click OK to accept the changes and close the dialog box.

Readers of your report must be able to ascertain the source and currency of the information it displays. You will edit the sources text box to provide this information.

6 Click the Sources text box just below the map, then right-click it and choose Properties. Replace the placeholder text with ESRI Community Data, 2005. Click OK.

#### Export the map layout document

The complete map is now ready to become exhibit 2 in your report. You will save it as a graphic file and insert it into the report template.

- 1 From the main menu bar, click File > Export Map to reach the Export Map dialog box. Navigate to your \GISMKT\OutdoorLivingFL folder. For File name, type CountyAd.emf, then click Save to save the map document as a graphic file in EMF format to include in your report.
- In the project report template for this chapter, locate the page entitled Exhibit 2: County map for advertising campaign. Select the instructional text in brackets, then from the main menu bar in Microsoft Word, click Insert > Picture > From File. Navigate to your \GISMKT\OutdoorLivingFL folder and select the CountyAd.emf file. Click Insert to insert the picture into the report as exhibit 2. (Note: You may have to select and resize the image to display it on the same page as the title.)

Exhibit 2 of your report is now complete.

#### Edit data frame contents in layout view

To produce exhibit 3 of your report, you must edit the contents of the map to display the ZIP Codes that will be the focus of Outdoor Living's direct-mail campaign. To do so, you will edit the data frame and the map's title and text.

1 In the ArcMap table of contents, click the check boxes to turn off the Number of Families in Target Market layer and turn on the Percent of Families in Target Market layer. Now this layer displays in the data frame area of layout view.

This is the layer you created in exercise 3.3 to identify the ZIP Codes to be included in the directmail campaign. However, the selected ZIP Codes do not appear in the current map. To display them you must repeat the selection process you used in exercise 3.3.

- 2 Right-click the Percent of Families in Target Market layer, then click Open Attribute Table.
- 3 Click the Options button at the bottom of the attribute table, then choose Select by Attributes.
- In the Select by Attributes dialog box, double-click the attribute name [PctFamInTM], then click the operator >=, then type .316 at the end of the equation in the Query box so that the full equation reads: [PctFamInTM] >= .316. (This is the minimum value of the highest quantile in the classification scheme.)

Select by Attributes	?×		
Enter a WHERE clause to select records in the table window.			
Method : Create a new selection	-		
[AVGFMSZ_CY]	~		
[NumFamInTM]			
[shape_Length]			
[snape_Area]	<u> </u>		
= <> Like			
> >= And			
< <= Or			
? * () Not			
Is Get Unique Values Go To:			
SELECT * FROM ZIPCodes WHERE:			
[PctFamInTM] >= .316			
Clear Verify Help Load Sa	ave		
Apply CI	ose		

5 Click Apply, then close the dialog box.

The selected ZIP Codes now appear in the layout. (Note: If this is not the case, press the F5 key to refresh the view.) You must now edit the title and text to reflect the new content of the map.

![](_page_36_Figure_4.jpeg)

- 6 Open the properties for the title at the top of the layout page.
- 7 Replace the existing title text with ZIP Codes Targeted for Outdoor Living's Direct Mail Campaign. (Note: You may need to place a hard return after "Outdoor Living's" so the type will fit neatly on the page.)

Properties ?X
Text Size and Position
Text
ZIP Codes Targeted for Outdoor Living's All Campaign
Font: Times New Roman 23.00
Angle: 0.00 + Character Spacing: 0.00 +
Leading: 0.00 📩
About Formatting Text Change Symbol
OK Cancel Apply

- 8 Click OK.
- **9** Open the properties for the large text box at the bottom of the page.
- 10 Delete the existing text and type: The ZIP Codes outlined in blue are those with the highest percentage of families in Outdoor Living's target market. Selection of these ZIP Codes for the direct-mail campaign will maximize the number of target market families reached by the campaign. (Note: You may need to manually enter hard returns by pressing the Enter key at the end of each line for the text to fit neatly on the page.) Click OK.

The resulting map now displays a title and explanatory text appropriate for the map's contents. It is ready to be exported and inserted into the project report.

![](_page_38_Figure_2.jpeg)

### **Export the new layout document**

- 1 From the main menu bar, click File > Export Map. Navigate to your \GISMKT\OutdoorLivingFL folder. For File Name, type ZIPMail.emf, then click Save to save the map document as a graphic file in EMF format to include in your report.
- 2 In the project report template, locate the page entitled Exhibit 3: ZIP Code map for direct mail campaign. Select the instructional text, and from the main menu bar in Microsoft Word, click Insert > Picture > From File. Navigate to your \GISMKT\OutdoorLivingFL folder and select the ZIPMail.emf file, then click Insert to insert the picture into the report as exhibit 3. (Note: You may have to select and resize the image to display it on the same page as the title.)

Exhibit 3 of your report is now complete.

### Update report and save map document

1 Use these map documents and your conclusions from prior exercises to complete the following task. Summarize your answer in the appropriate section of the project report template.

![](_page_39_Picture_7.jpeg)

Restate your recommendations briefly and explain how geographic targeting will increase the effectiveness of each of the three components of your local marketing campaign in Florida.

- 2 Save the map document as OutdoorLivingFL5\_fl.mxd (replace f and I with your first and last initials) in your \GISMKT\OutdoorLivingFL folder.
- 3 Close ArcMap.

Your written report with both map document exhibits is complete and ready for submission.

#### Congratulations! You have completed the Outdoor Living project.

Pause for a moment to consider what you have accomplished in this chapter. You have learned about various types of demographic measures and observed their distribution in the state of Florida at different levels of geography. You have used this data to identify concentrations of target customers for each of the three components of Outdoor Living's promotional campaign and designed map documents to communicate these results to an audience. In short, you have used ArcGIS as an effective analytical and communication tool in the market segmentation process.

#### Additional applications

This project covers the most fundamental marketing strategy of identifying target customers and focusing marketing efforts on concentrations of those customers. Though this process can be implemented with the simplified data used here, it becomes even more powerful when applied with sophisticated data and targeting techniques.

For example, while this project uses simple demographics of families within a specific income range, ESRI Business Information Solutions (ESRI BIS)<sup>1</sup> provides much more precise and complex analysis. Data is available on hundreds of additional variables, including ethnicity, income, household size and composition, housing ownership, housing value, net worth, type of employment, and educational attainment, among others. This data is available for a range of political, census, and postal geographies to support the needs of the analyst. In addition, several variables offer a range of historical values, current estimates, and future projections to support longitudinal study.

In addition to this wealth of demographic and socioeconomic data, ESRI BIS also offers extensive lifestyle data in the Community Tapestry Segmentation system. This system integrates demographic and socioeconomic information with lifestyle and purchasing data to provide profiles of 65 distinct neighborhood clusters. This system provides marketers with a more detailed understanding of the motivations, values, and lifestyles that underlie consumer purchasing patterns. Chapter 2 provides an overview of this system and its marketing applications. Chapters 4 and 5 use this system to develop marketing strategies responsive to these lifestyle variations.

ESRI Business Analyst, a software and data extension to ArcGIS, combines this extensive data collection with sophisticated analytical tools to support richer segmentation analysis. Working directly with customer files, an organization can create a profile of its best customers and then look across the United States for concentrations of prospective new customers who match that profile.

Several organizations use these capabilities to enhance their segmentation analysis. Galyans Sports and Outdoor stores, for example, uses its customer database integrated with demographic and Community Tapestry data from Business Analyst to focus its customer prospecting efforts.<sup>2</sup>

Similarly, Telefónica del Perú has implemented a GIS system that supports a wide range of its operations, from facilities management to customer service.<sup>3</sup> Among them is market analysis, in which thematic mapping is used to identify underserved areas of Peru, and attractive markets for wireless services among existing landline customers.

The Arizona Republic serves its advertisers by providing selective distribution of promotional materials to households with desired demographic characteristics, thus improving response rates and advertising effectiveness.<sup>4</sup> Advertisers can select ZIP Code level concentration or choose carrier routes within ZIP Codes to focus on target customers more closely. The Washington Times uses a similar approach to attract new subscribers. However, it focuses on lifestyle characteristics by targeting Community Tapestry segments in its marketing program.<sup>5</sup>

Western Exterminator also uses GIS tools to identify marketing opportunities in the metropolitan areas it serves.<sup>6</sup> The firm performs termite inspections that are required as part of home sales. By combining its internal records of inspections with home sales data by ZIP Code, the firm can identify ZIP Codes with high home sales and few inspections. These ZIP Code areas are growth opportunities for Western's inspection services. 88

As these examples illustrate, the business analysis capabilities that ArcGIS Desktop provides have tremendous value in the customer prospecting process. Identifying concentrations of target customers can improve the focus of promotional expenditures and help firms refine their products and hone their messages to find and serve their customers more effectively.

1. ESRI Business Information Solutions is currently known as ESRI Community Data.

2. Kevin Burgess, "Customer Analysis, Prospecting and Segmentation," ESRI Business GeoInfo Summit, June 2004.

3. Jim Baumann, "Are You Being Served," Directions, May 19, 2005.

4. Jay Visnansky, "Doing Market Focused Selling at the Arizona Republic," ESRI Business GeoInfo Summit, April 2005.

5. ESRI. "The Washington Times: GIS Increases Newspaper Subscriptions," Business Analyst product promotion brochure, 2005.

6. David Boyles, GIS Means Business: Vol. 2, Redlands, CA: ESRI Press, 2002.