
What's New in ArcGIS 9.1 Business Analyst

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Contents

Highlights	3
Welcome to ArcGIS 9.1 Business Analyst	4
Geoprocessing	5
New ArcToolbox Window	5
Using the Geoprocessing Framework	6
ArcCatalog	9
Data	10
2005 Data Updates	10
New Data Capabilities	10
Reporting	11
New Reports in Business Analyst	13
Segmentation	14
Community Coder	15
Other New Features in Business Analyst	16
New Features in Business Analyst 9.1	16

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Highlights

- ESRI® ArcGIS® 9.1 Business Analyst includes an extensive data update. Base data includes updated 2005/2010 demographic and consumer expenditures data from ESRI, updated streets from Tele Atlas North America (formerly GDT), updated business locations from *infoUSA*, updated shopping centers from the Directory of Major Malls (DMM), and an updated street address geocoder from Group 1 Software.
- Business Analyst is completely integrated into the ArcGIS 9 framework. This integration provides a new environment for geoprocessing, modeling, and scripting including a new dockable ArcToolbox™ window with a comprehensive set of tools for all Business Analyst capabilities. The integrated ModelBuilder™ lets you link geoprocessing operations together and build models interactively.
- ArcCatalog™ is now used extensively to organize Business Analyst data. Stores, customers, trade areas, and other Business Analyst data elements are now organized in the ArcCatalog tree.
- Business Analyst still includes the familiar ArcMap™ wizards that lead you through step-by-step procedures for creating and managing stores, customers, trade areas, and analysis. Quality and performance have been improved in a number of key areas.
- Reporting and report speed in Business Analyst 9.1 have been vastly improved, and a number of new reports have been included. A custom report wizard is also included that will allow you to build and share custom reports.
- A new batch framework has been added, making it easier to work with multiple sites, trade areas, and customer files. This flexible batching capability will allow you to create trade areas, reports, and analysis one at a time or batched together as a group of work.
- A new optional neighborhood segmentation engine can be added to Business Analyst 9.1. You can use this module to target customers, examine merchandizing mix, and find optimal locations for new store sites using the Community™ Tapestry™ neighborhood segmentation system.
- A number of new trade area techniques have been added to Business Analyst 9.1. These new trade area tools will allow you to create, manage, and compare trade areas. A new sales forecasting model based on the Huff model has also been included that will let you evaluate new site locations.
- Routing and drive-time trade areas have been improved and are based on the new routing and service area tools from the ArcGIS Network Analyst extension.
- Additional data has been added to Business Analyst 9.1. The extension now includes Core Based Statistical Area (CBSA) and Designated Market Area (DMA) boundaries with a full complement of demographic data.
- The Business Analyst dataset includes a new toolbar that allows you to download satellite images and aerial photographs. The new toolbar, based on GlobeXplorer's standard imagery service, provides a collection of high-quality aerial and satellite imagery that is regularly updated and expanded. These images can be used in reports and projects that require visual details of properties, neighborhoods, and towns.
- A number of other new tools and features have been added for performing site location research, customer targeting, and marketing analysis.

Welcome to ArcGIS 9.1 Business Analyst

Business Analyst 9.1 is the next major release of the ArcGIS extension. This release builds on previous releases and adds important new capabilities. ESRI has also worked hard to improve quality and performance in a number of areas. This document guides you through the key new features of Business Analyst 9.1.

Getting More Information

- Look for the new *ESRI Software Documentation Library* CD that comes with the ArcView® ArcGIS install. This CD provides the complete range of ArcGIS books in PDF format.
- Use the ArcGIS Desktop Help. You can launch this from the Windows Start menu or by choosing Help > ArcGIS Desktop Help in any ArcGIS application. ESRI has worked hard to improve the content and indexing of the help.
- The Business Analyst help is found under Extensions in the ArcGIS Desktop Help.
- You get detailed context-sensitive help about tools, commands, and dialog boxes as you use the software.
 - To get help on a command in a pulldown menu or a button on a toolbar, click the What's This tool  in the Standard toolbar, then click the item.
 - To get help on a command in a context menu (menu launched by right-clicking), highlight the command and press Shift + F1.
 - To get help on a control in a dialog box, click the ? control at the top of the dialog box, then click the control.
 - Some dialog boxes have a Help or About button that launches a topic giving you quick information and tips.
 - To get help on a window such as the Table of Contents or the Identify Results window, first click inside the window, then press Shift + F1.
 - To get help on a control in a geoprocessing dialog box launched from the new ArcToolbox window, click in or on the control, then press the Show Help button to expand the help panel. When the help panel is expanded, you can click the Help icon at the top of the panel to launch the Desktop help topic for the tool.

Geoprocessing

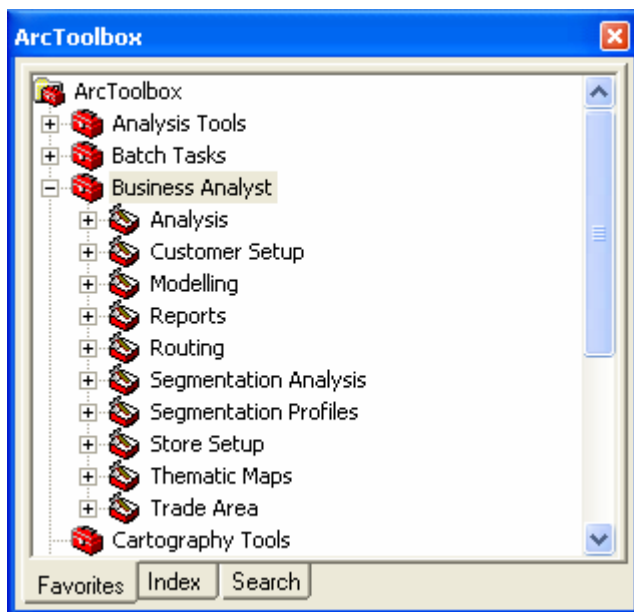
ArcGIS 9.1 Business Analyst presents a comprehensive set of geoprocessing tools that work with all the data formats supported by Business Analyst. It also offers a completely new framework for working with these tools, which enable you to launch tools individually, combine them together in a visual modeling environment, write scripts in standard scripting languages, and run the tools as commands in a command line window.

The Business Analyst extension is fully integrated into the new geoprocessing framework. For an introduction to the geoprocessing framework and its capabilities, refer to the Geoprocessing section of the "What's New in ArcGIS 9" document in the ArcGIS documentation folder.

New ArcToolbox Window

- ArcGIS ArcToolbox is now a dockable window that can be integrated into ArcMap or ArcCatalog.
- The geoprocessing framework is common to all the ArcGIS Desktop applications. The ArcGIS Business Analyst extension adds more than 70 tools to ArcToolbox.

The Business Analyst toolbox is organized into a number of toolsets.



The following is included in a toolbox:



Toolset: A container for organizing the contents of a toolbox.



Tool: Runs an underlying function in the geoprocessing framework.








Script: Can be written in any COM-compliant scripting language such as Python, JScript, or VBScript. An ArcInfo® Workstation ARC Macro Language (AML™) can also be added into a toolbox as a script.



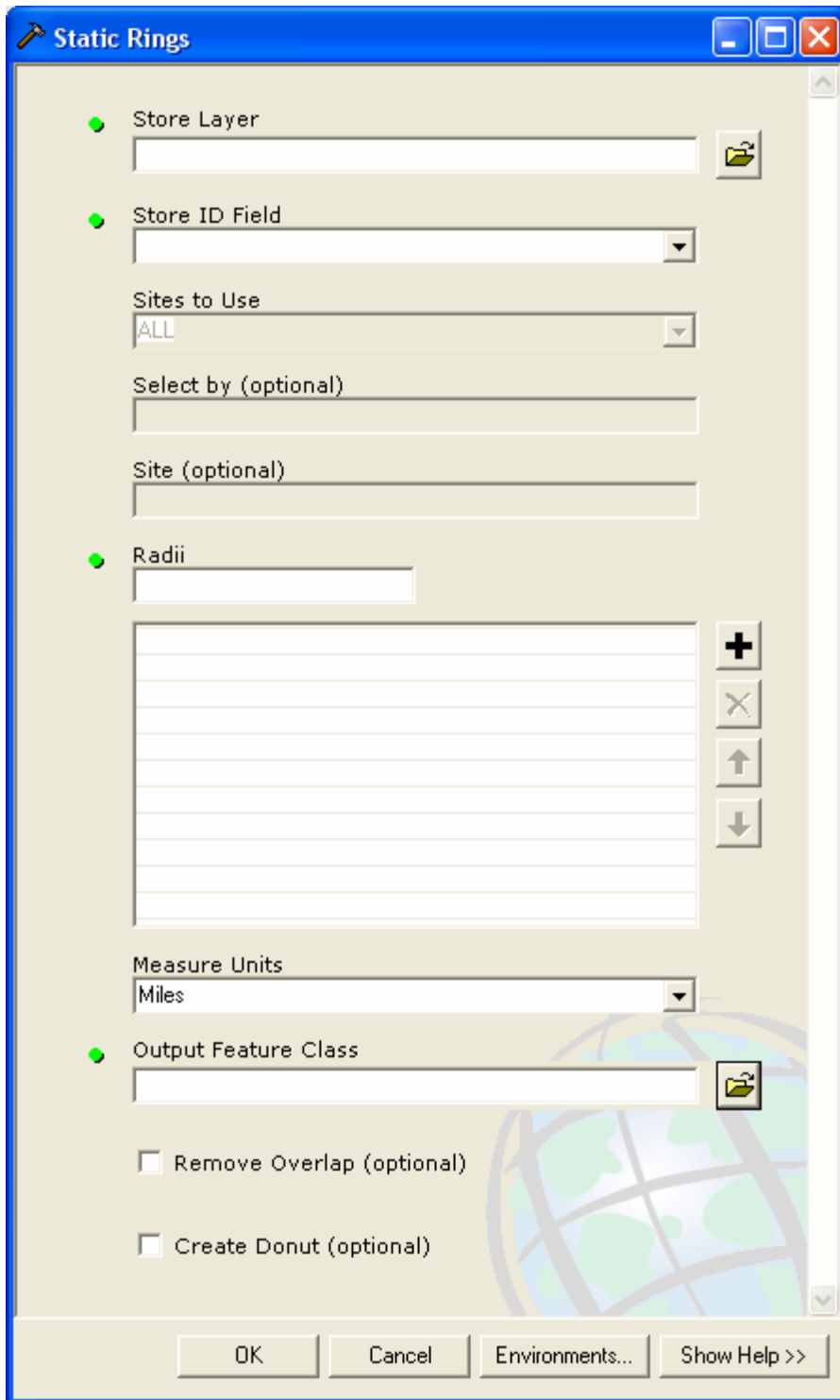
Model: You can view and edit these in the new integrated ModelBuilder window.

Using the Geoprocessing Framework

■ There are five ways to perform geoprocessing in ArcGIS, summarized in the following table:

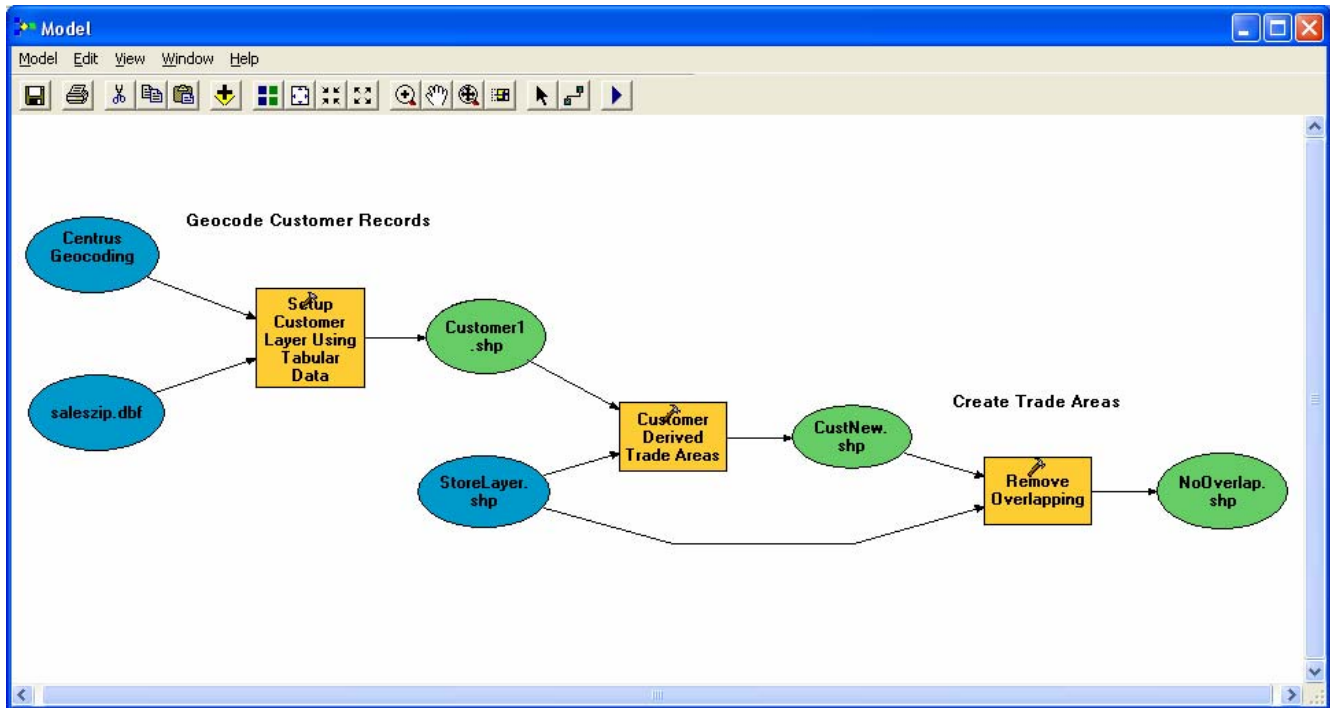
Method	Description	Use To
Tool Dialog Box 	<p>A form in which input data and other necessary parameters are defined. Fully embedded context-sensitive help is provided.</p>	<ul style="list-style-type: none"> - Run any geoprocessing tool from inside any application. - Get familiar with a tool and its parameters.
Model 	<p>An interactive visual model that links processes, data, and parameters together. Models are created and edited in the integrated ModelBuilder window.</p>	<ul style="list-style-type: none"> - Build models, workflows, and processes without scripting or programming. - Document or present a process. - Explore alternative scenarios. - Present methodology and workflow to others.
Command Line 	<p>Dockable command line window offering usage popups for commands, autocompletion, etc.</p>	<ul style="list-style-type: none"> - Run tools quickly without launching their dialog boxes—a useful shortcut for advanced users.
Script 	<p>File written using a standard scripting language such as Python, JScript, or VBScript.</p>	<ul style="list-style-type: none"> - Automate repetitive tasks. - Fully control processes based on any conditions, states, time delay, etc. This brings the traditional working environment for advanced GIS users to bear on the full range of ArcGIS Desktop functionality.
ArcObjects™ 	<p>Geoprocessing objects can be accessed in the ArcGIS development environment to create custom tools and applications using COM-compliant languages such as Visual Basic 6, Visual Basic .NET, C++, and C#.</p>	<ul style="list-style-type: none"> - Incorporate tools into new and existing applications. - Create custom dynamic link libraries (DLLs) that incorporate geoprocessing tools. - Create custom toolbox functions (DLL, EXE, or OCX).

■ Geoprocessing tools can be launched directly by double-clicking the tool in the ArcToolbox window. This will open the tool dialog box so you can specify the necessary inputs and execute the tool. Following is an example of a geoprocessing tool for ring-based trade areas.



■ You can also create models that will execute a sequence of geoprocessing functions. For example, a store layer created in one function becomes the input for a trade area function, and so on.

Models are viewed and edited using the integrated ModelBuilder window. The ModelBuilder window lets you drag and drop tools and data into the model diagram to build processes that can be connected into a logical flow. You can run a model from within the ModelBuilder window and inspect the flow of control. Models can also include scripts and other models as steps. You can save models in toolboxes and use them as tools or distribute them to other users. A model can also be exported from the ModelBuilder window as a script, so you can first build a process as a model, export it as a script, and add additional automation or advanced flow of control.

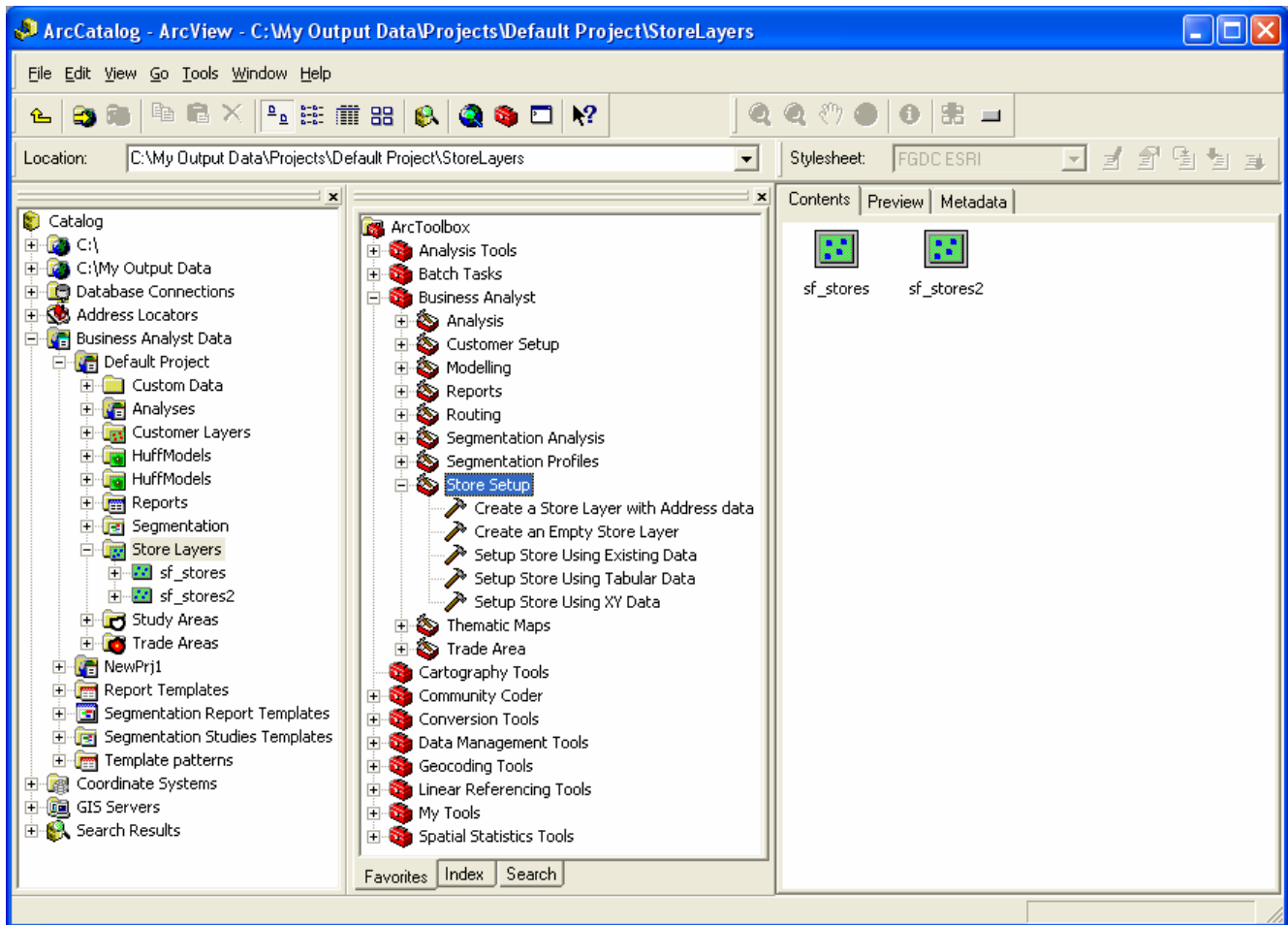


■ Geoprocessing tools can also be used within scripts to allow the automation of repetitive processes or complex flow of control. Scripts can include calls to geoprocessing tools, models, and other scripts. Scripts are easy to author in the COM-compliant scripting environment of your choice such as Python, VBScript, and JScript. After a script is authored, it can be exposed to users as a standard tool and embedded in other models or scripts like any other tool.

ArcCatalog

The ArcCatalog application organizes and manages all information such as stores, customers, trade areas, reports, datasets, models, metadata, and services. You can employ ArcCatalog to organize, find, and use Business Analyst data as well as document data holdings using standards-based metadata. The new ArcToolbox dockable window can also be integrated into ArcCatalog so you can run all Business Analyst tools from a more data-driven perspective.

■ ArcCatalog is now used extensively to manage and view Business Analyst data. Stores, customers, trade areas, and other data elements are now organized in the ArcCatalog tree.



■ Each element in the Business Analyst section of the ArcCatalog tree can be used in conjunction with ArcToolbox tools or ArcMap. For example, you can drag and drop a Business Analyst store to an input element of a geoprocessing tool, ModelBuilder, or an ArcMap map.

Data

2005 Data Updates

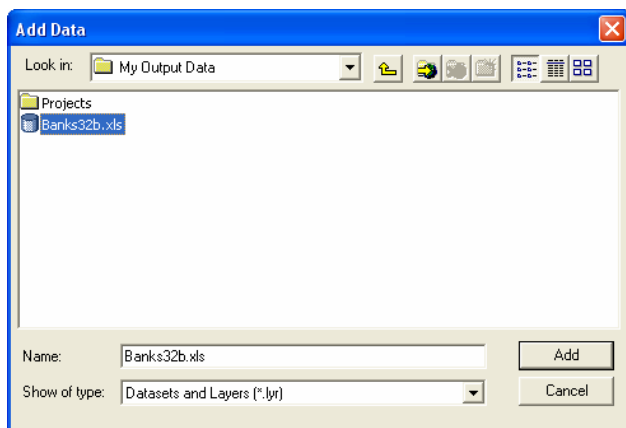
ArcGIS 9.1 Business Analyst includes a number of data updates. The following updated boundaries and databases are installed with Business Analyst:

- 2005 forecasts and 2010 projections from ESRI
- CBSAs and DMAs are now included with a full complement of demographic data
- New business points from *infoUSA*
- New shopping centers from DMMs
- New Dynamap streets and zip code boundaries from Tele Atlas
- Updated street address Centrus geocoder from Group 1
- Aerial photographs and satellite imagery from GlobeXplorer

New Data Capabilities

ArcGIS Business Analyst also includes a number of new features and tools that improve data management and access within the extension.

- Microsoft Excel has been added as a valid data source for ArcGIS 9.1 Business Analyst. With this new capability, you can create stores and customers and add data directly in Microsoft Excel format.



- The underlying data architecture in Business Analyst has been improved to include calculated fields. With this new feature, you will be able to calculate new "virtual" fields. For example, you can store the sum of two population variables as a new variable in Business Analyst that can be used in analysis and on reports.

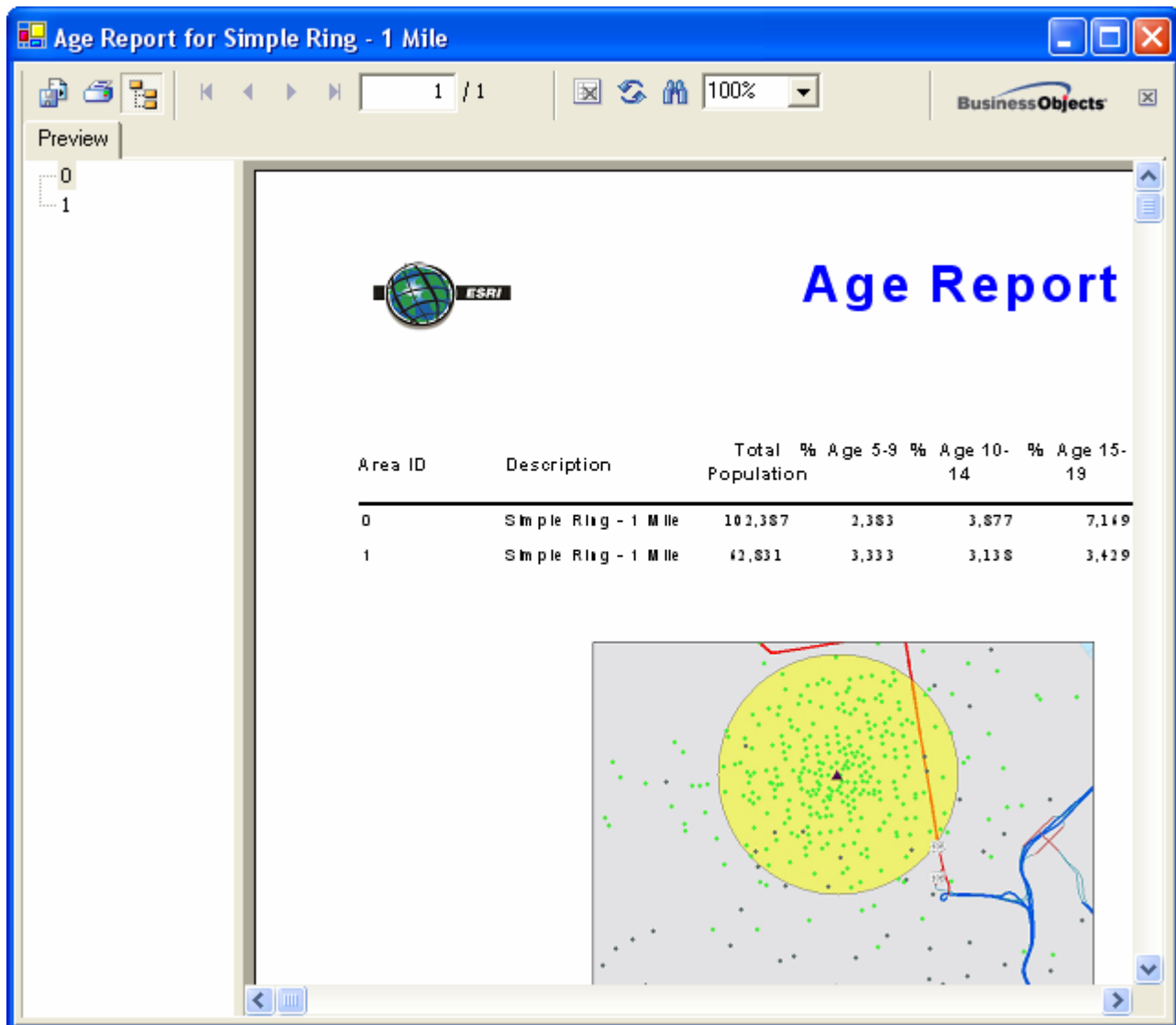
- New "data join" tools have been added that simplify the process of joining your own information to core Business Analyst boundaries. For example, you can add a table containing store sales by zip code and dynamically join this data to the zip code boundaries provided with Business Analyst. You can then create reports, run models, and perform analyses based on the sales data.

Reporting

Reporting in Business Analyst 9.1 has been vastly improved. The user experience for creating and managing reports has been simplified and includes a number of new capabilities.

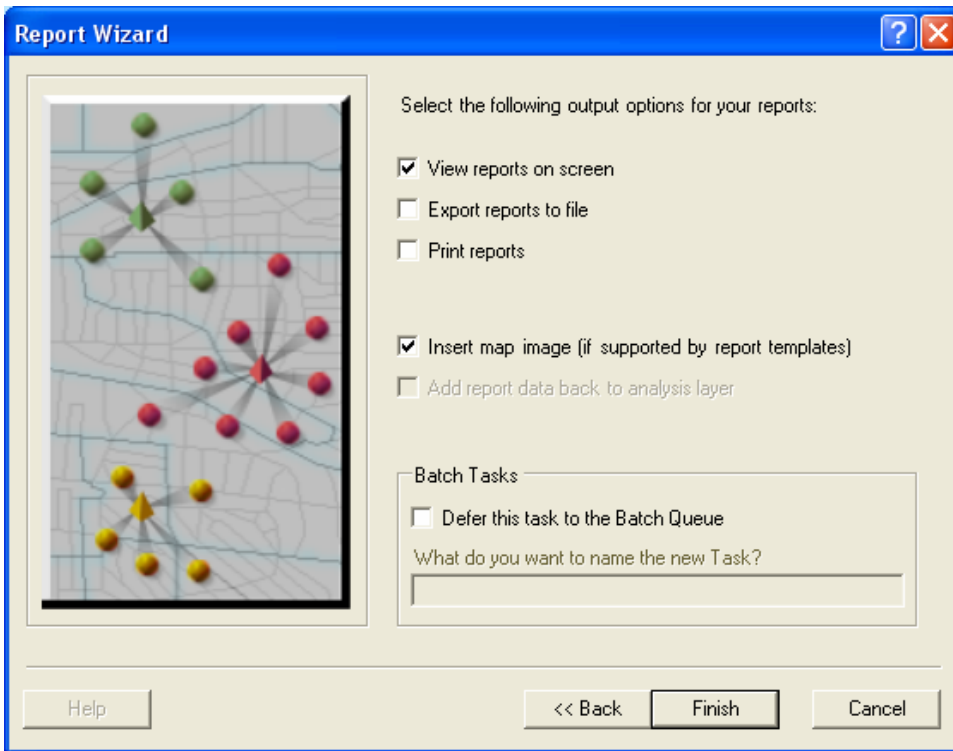
- Report speed has been dramatically improved in Business Analyst 9.1. Improving the time it takes to generate reports was a key development goal for this version of Business Analyst. The time to generate a typical report in Business Analyst 9 has been reduced, on average by a factor of 10, from the previous release of the extension.

- You can now optionally add a map image to a Business Analyst report.



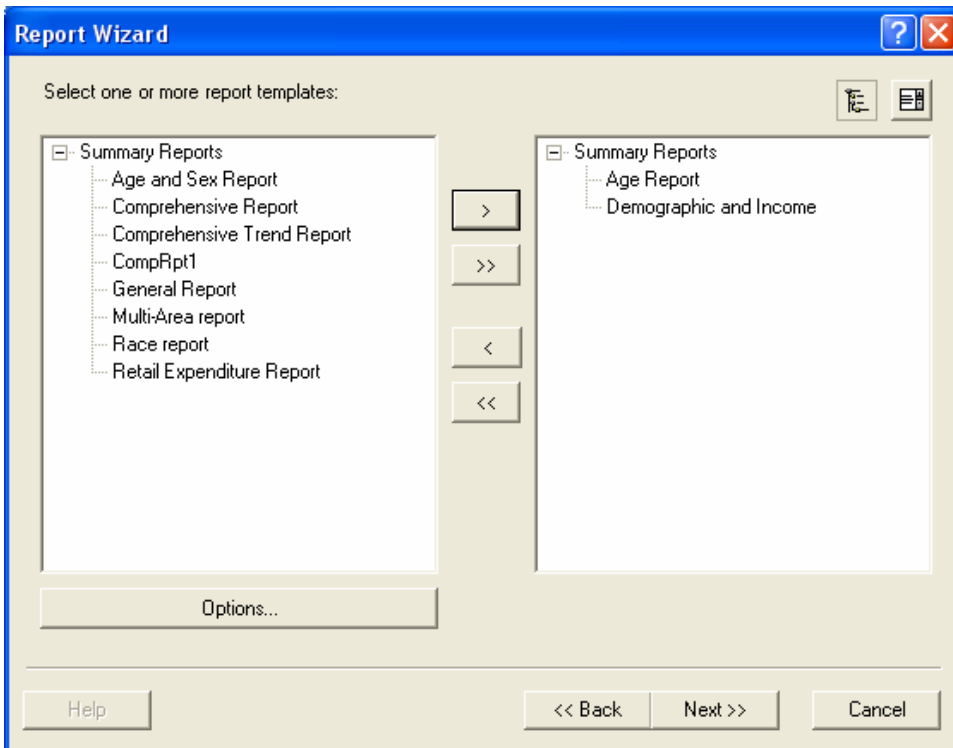
- A new set of report export tools has been added. With this export capability, you can view your reports on-screen or have them produced in a number of popular desktop formats including Adobe Acrobat PDF, HTML, Microsoft Word, and Microsoft Excel.

- You can also send your reports directly to a printer of your choice.



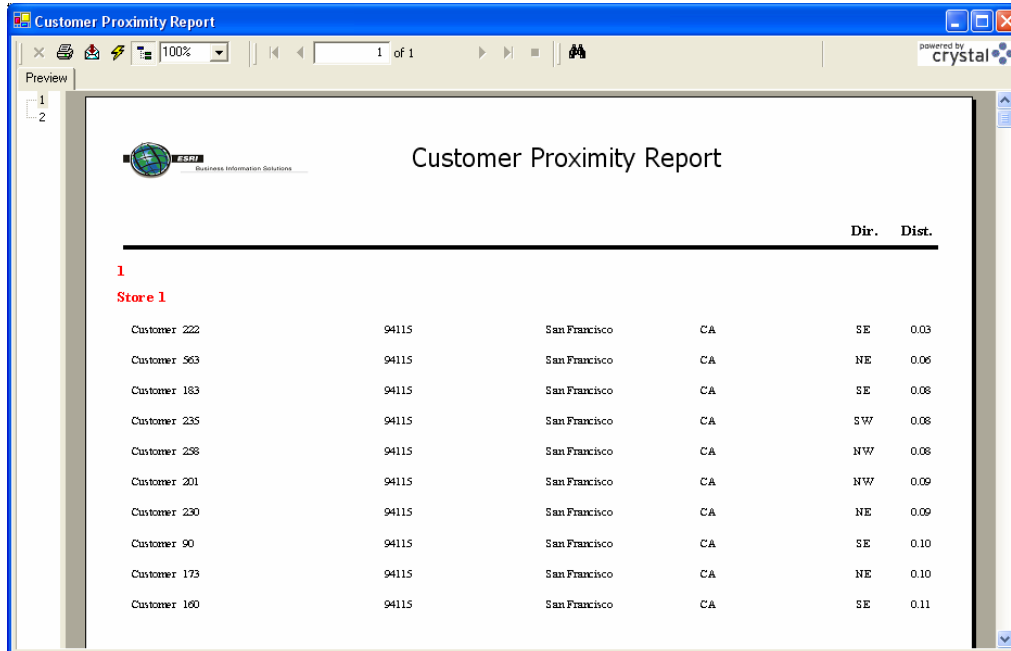
■ A new wizard has been added that will allow you to create and manage custom reports. These custom reports can be created based on any data layer including data that is provided with Business Analyst or your own information. The wizard allows you to select variables and organize them on a new report template.

■ A new batch framework has been added. These new batch capabilities will allow you to produce one or many reports at a time and also batch them together as a book of reports.



New Reports in Business Analyst

■ **Locator and Proximity Report.** A new set of point-based proximity reports has been added to Business Analyst. With these reports, you can list all the locations that are closest to your facilities and examine the geographic patterns and distribution of your customers. For example, the report below lists the 10 closest customers to each store location.



					Dir.	Dist.
1						
Store 1						
Customer 222	94115	San Francisco	CA		SE	0.03
Customer 563	94115	San Francisco	CA		NE	0.06
Customer 163	94115	San Francisco	CA		SE	0.08
Customer 235	94115	San Francisco	CA		SW	0.08
Customer 298	94115	San Francisco	CA		NW	0.08
Customer 201	94115	San Francisco	CA		NW	0.09
Customer 230	94115	San Francisco	CA		NE	0.09
Customer 90	94115	San Francisco	CA		SE	0.10
Customer 173	94115	San Francisco	CA		NE	0.10
Customer 160	94115	San Francisco	CA		SE	0.11

■ **Trade Area Penetration Report.** A new set of reports has been added to measure and display the percent penetration of your customers, based on trade areas that you have created. These reports will allow you to evaluate the performance of new and existing facilities.

■ **Wind Rose Customer Distribution Report.** This report offers a visual representation of the frequency and direction of customer locations. The chart is based on a tool used by meteorologists to measure wind direction but is a useful tool for examining customer distributions.

■ **Customer Geographic Distribution Report.** This report lists standard geography distributions for your customer layer. For example, this report will let you know how many customers are in California, the county of San Diego, and zip code 92037.

■ **Market Ranking Report.** This report lists a number of markets, defined by your study area, and ranks them based on a variable you select. For example, you can list all the zip codes in San Diego sorted by population.

■ **Distance Decay Report.** This report counts the number of customers in incremental bands and compares these totals to a benchmark value you select (e.g., total households). For example, you can list the number of customers in one-mile bands and compare them to the total households in each ring.

There are also a number of new Tapestry segmentation reports that are covered in the Segmentation section of this document.

Segmentation

A new neighborhood segmentation module is available as an optional module to ArcGIS 9.1 Business Analyst. This new add-on module is based on ESRI's Community Tapestry segmentation system, which provides an accurate, detailed description of America's neighborhoods. U.S. residential areas are divided into 65 segments based on demographic variables such as age, income, home value, occupation, household type, education, and other consumer behavior characteristics.

■ You can use the segmentation module to profile customer databases. These profiles help you estimate product usage and market potential more accurately, perform competitive analyses, identify cross-selling opportunities, and reveal secondary markets.

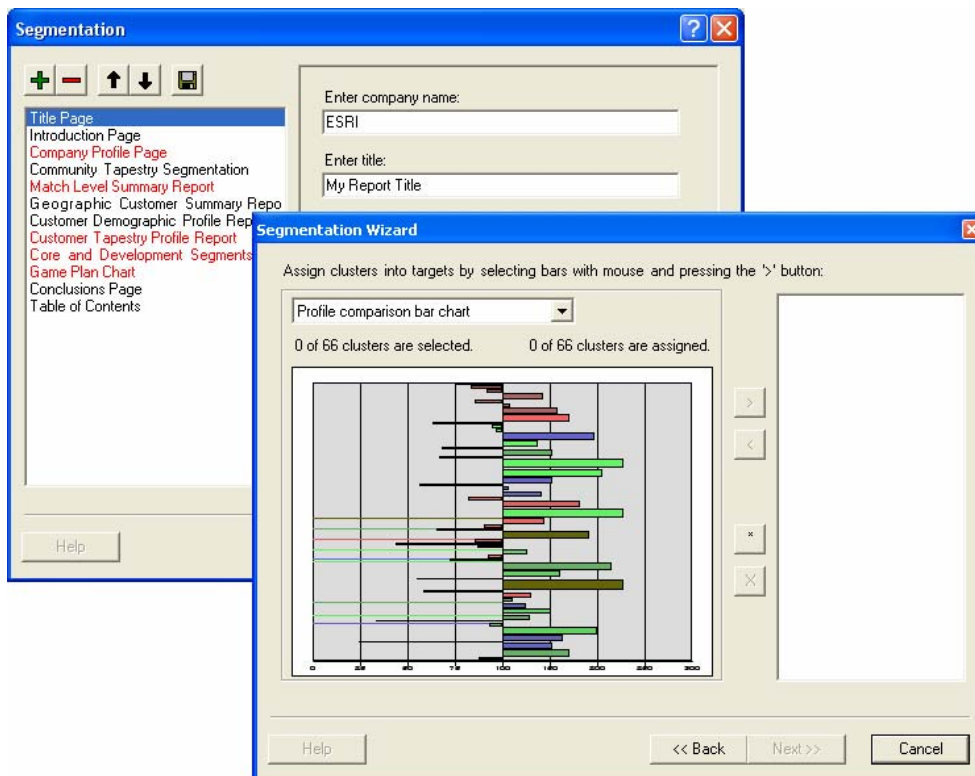
■ Your customer profiles can be compared to other profiles that are created in the segmentation module. You can create profiles based on your trade areas; standard geographic areas; and Mediamark Research, Inc. (MRI), survey questions.

■ Once your profiles are created, you can create segmentation reports, maps, and charts. These reports can be used to answer questions such as

- Who are my customers?
- Who are my best customers?
- Where can I find more customers like them?

■ The segmentation module includes a number of tools that help you identify target groups of Tapestry segments. You can create maps, charts, and reports based on these targets and identify segments of customers you want to target.

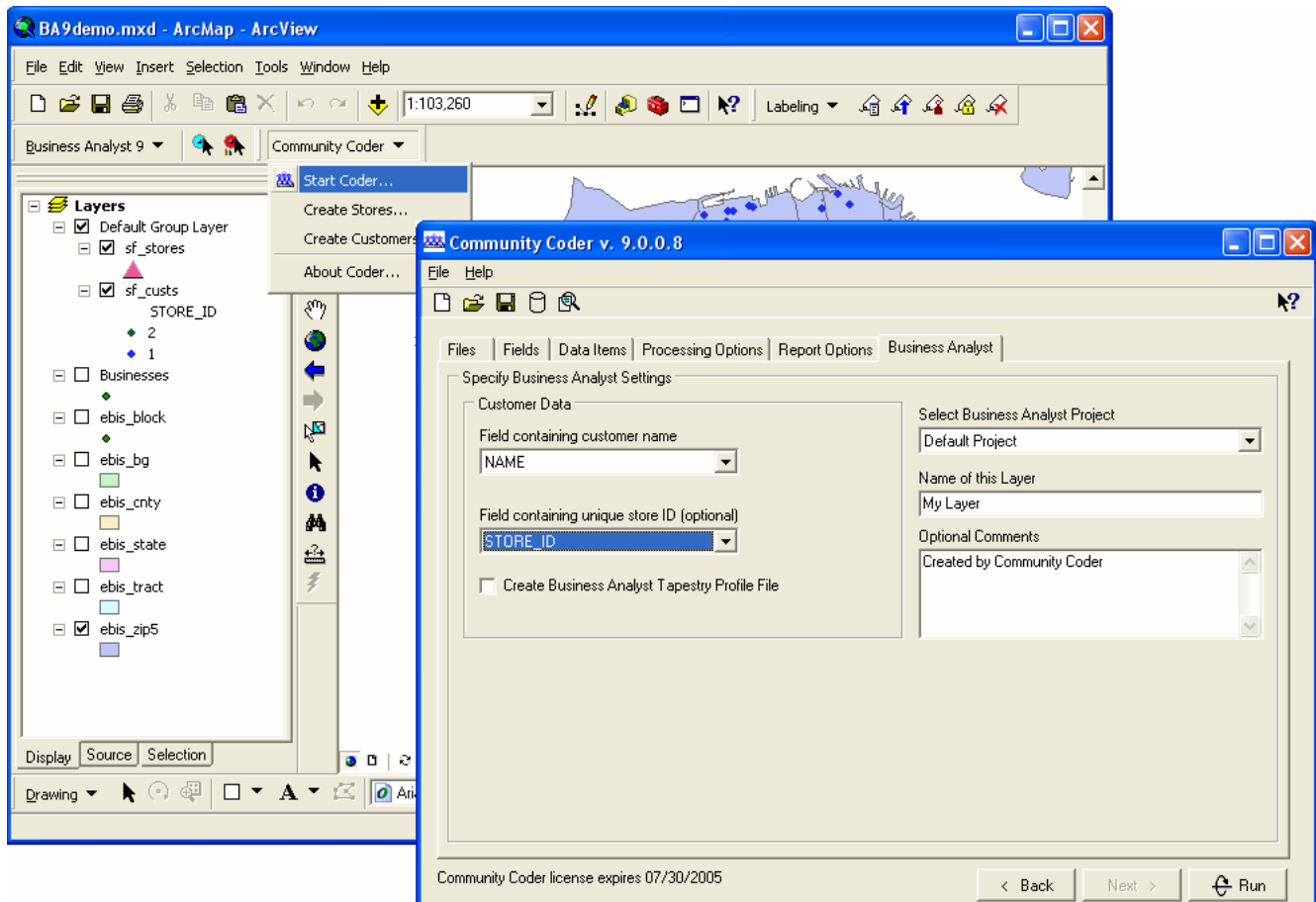
■ The segmentation module also contains a powerful tool that will allow you to combine segmentation analysis with other Business Analyst reports to create a Segmentation Study Book.



Community Coder

ESRI's Community Coder is integrated into ArcGIS Business Analyst as part of the optional segmentation module. Community Coder is a fast, user-friendly batch geocoding engine that you can use to identify targeted audiences and customer prospects by appending geographic coordinates and data variables to customer records.

■ Within ArcGIS, you can launch Community Coder using the new Community Coder toolbar in ArcMap that is installed with ArcGIS 9.1 Business Analyst. With Community Coder, you can append geographic coordinates to your address data and also create Business Analyst store and customer layers.



■ Community Coder provides a powerful geocoding solution and offers a number of batch capabilities for address geocoding your customer records.

■ Community Coder is a robust geocoding engine. You can connect to customer records ranging from small desktop files (Excel, text, dBASE, and the like) to customer databases stored in large RDBMSs such as SQL Server.

■ You can also append Tapestry segmentation information to your customers and create Business Analyst Tapestry profiles from within Community Coder.

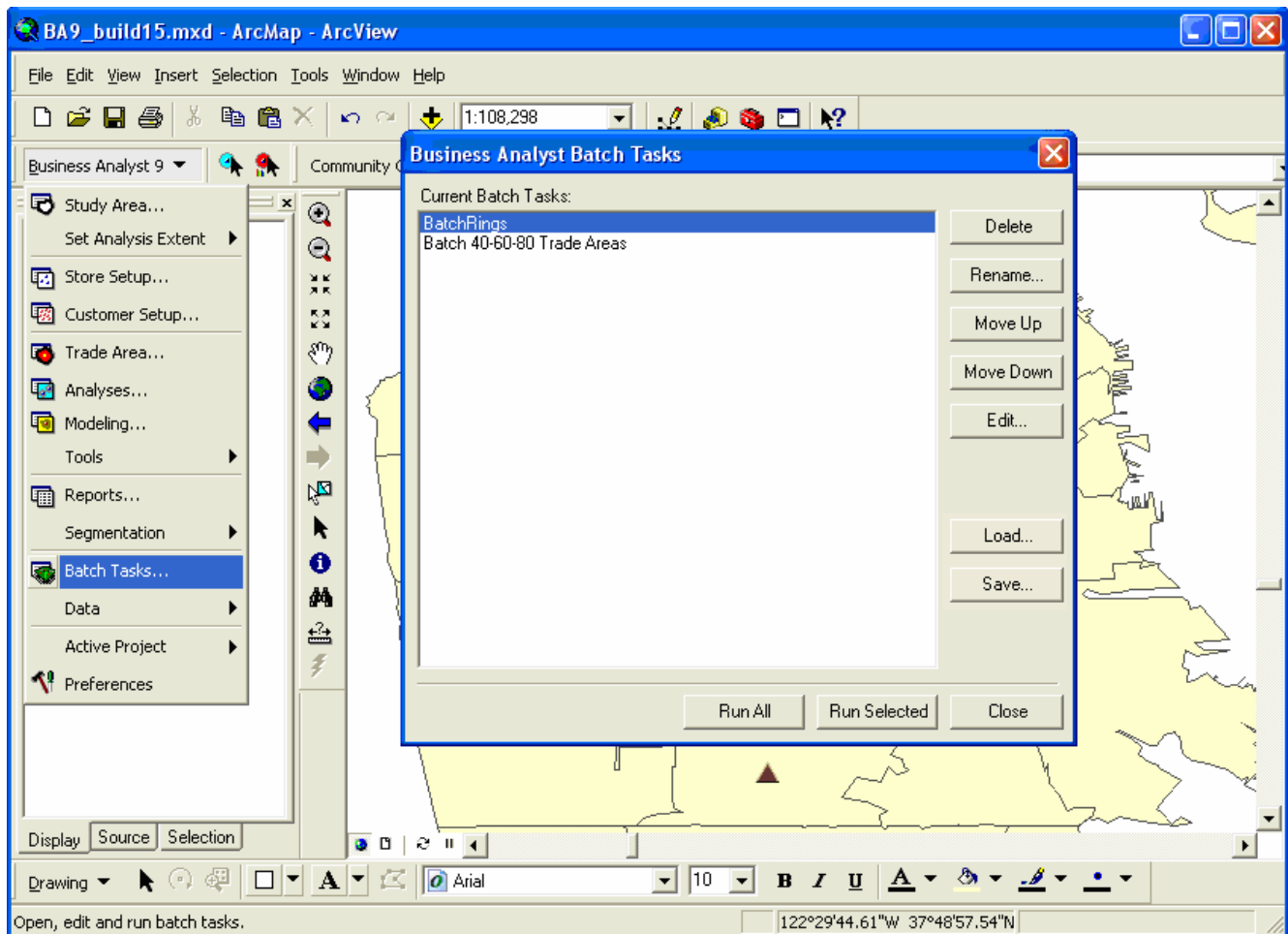
■ You can still create stores and customers using the Business Analyst Stores and Customer Setup wizards.

Other New Features in Business Analyst

ArcGIS 9.1 Business Analyst includes a number of exciting new features and capabilities. The following is a summary of a number of these new tools and features. Please consult the online help or user manual for details about any one of these features.

New Features in Business Analyst 9.1

■ **Batch framework.** A new batch task capability has been added to Business Analyst. With this tool, you can run most Business Analyst tasks one at a time or batched together as a group. For example, you can create a number of different trade areas around a set of stores and execute the batch job before you leave for the day.

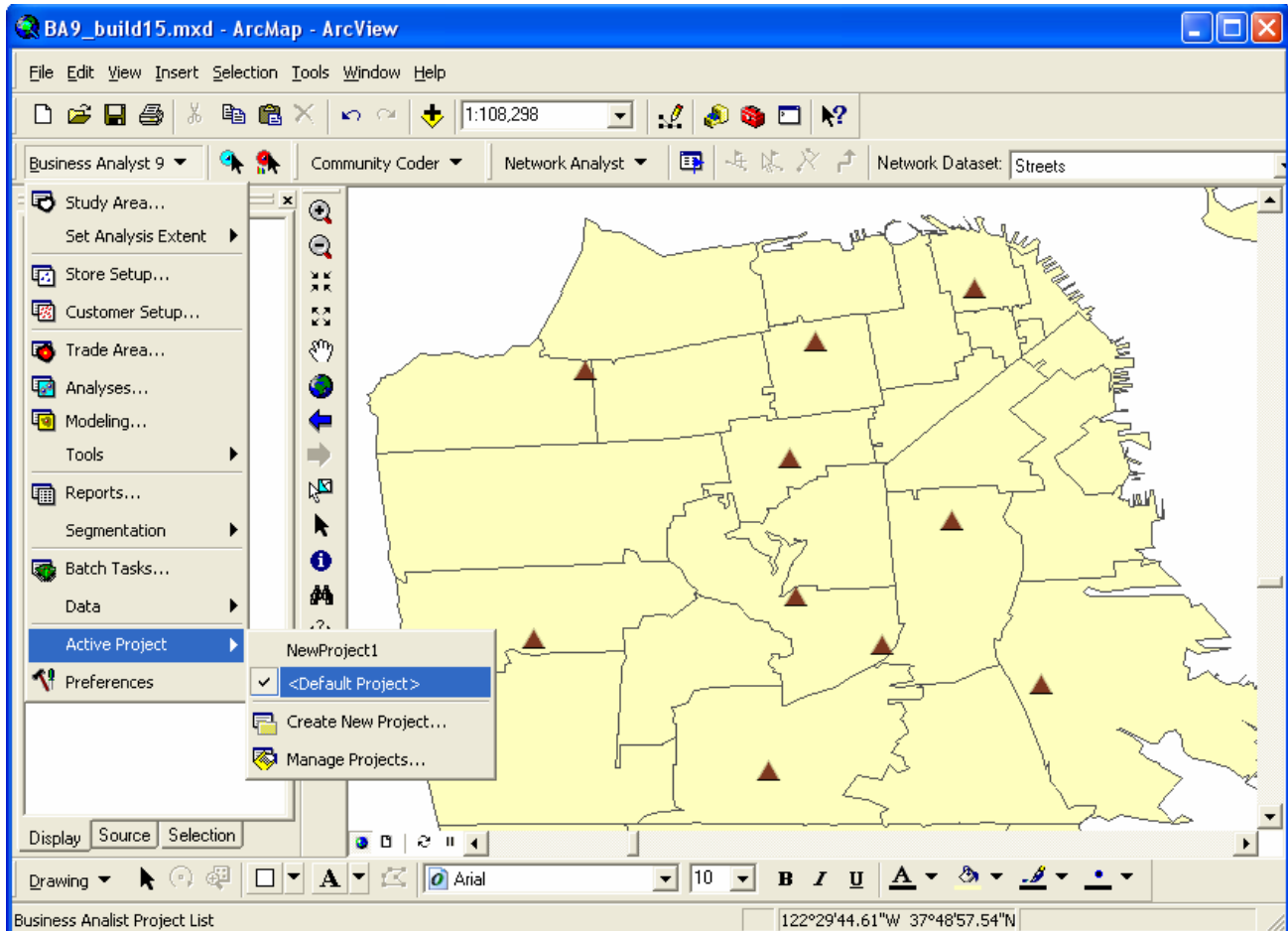


■ **New Trade Area wizard.** All the tools and functions in Business Analyst for creating and managing trade areas have been moved to a new Trade Area wizard. The wizard also organizes trade areas into categories that will make it easier for you to determine when to use different trade area techniques.

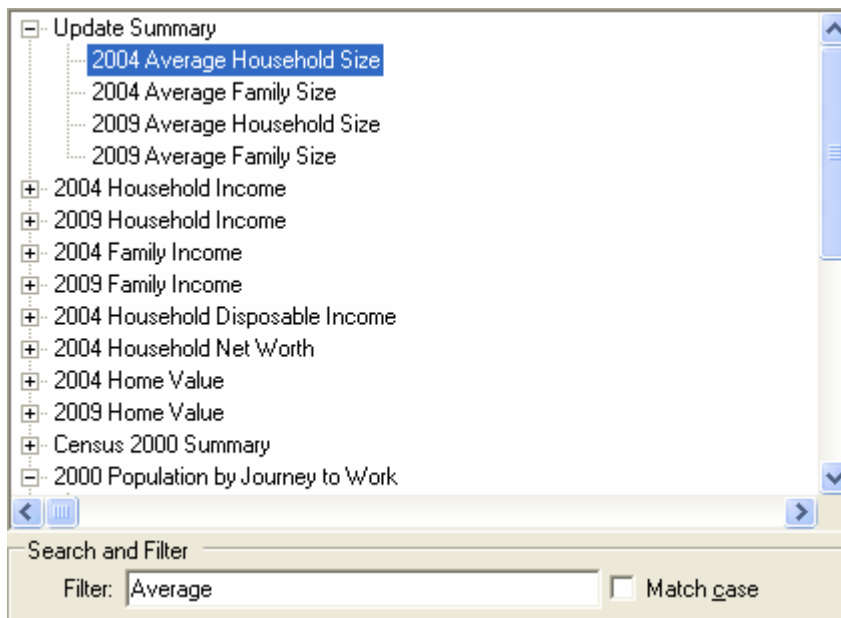
■ **Measure cannibalization.** A new set of reports and tools has been added that allows you to measure the amount of cannibalization in a set of trade areas. These tools will let you evaluate how much a new store location or competitor is cannibalizing an existing facility.

■ **Monitor trade area change.** A new set of reports and tools has been added that allows you to measure how trade areas change over time. You can use this tool to examine change over time periods or evaluate how trade areas are calculated during different days of the week.

■ **Business Analyst Projects.** You can now create, manage, and organize all your work in Business Analyst projects. Projects allow you to organize your stores, customers, trade areas, and analysis in folders.



■ **Find variables.** Finding and selecting a data variable have been improved in Business Analyst 9.1. Data is now organized into categories, and you can search and filter the list of variables, making it significantly easier to find the information you want.

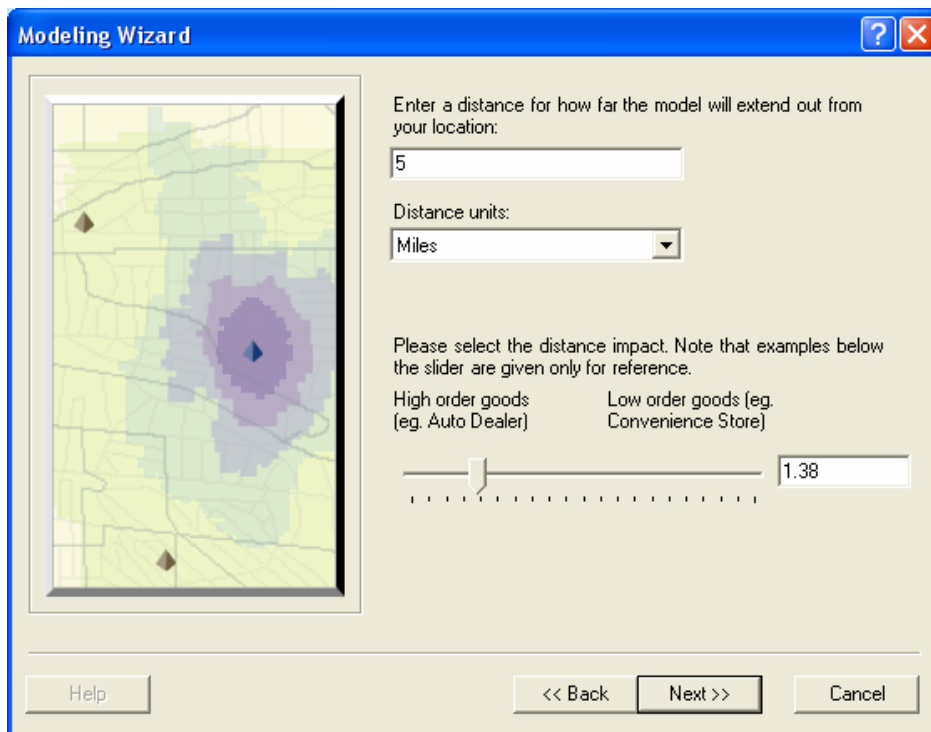


■ **Threshold rings.** In Business Analyst 9.1, you can create threshold rings on any point- or polygon-based data layer. For example, you can create threshold rings based on block group data or your own sales or customer information.

■ **New Customer-Derived Trade Areas.** New and improved techniques have been added for creating customer-derived (customer reach) trade areas. These new techniques will more accurately calculate the aerial extent of your customer distribution (e.g., 60% primary trade area).

■ **Desire lines.** Desire lines can now be created with polygon data. For example, you can create desire lines with zip code boundaries. The distance units can also be measured using the straight-line or drive-time distance.

■ **Huff model.** The original Huff model (formerly Gravity model) has been simplified and provides a tool for estimating the distance coefficient.



■ **Sales forecasting.** Business Analyst 9.1 includes a sales forecasting and market share model based on the Huff model. This advanced model includes the ability to have one or many attractiveness values, and the model can be statistically calibrated using a multivariate regression analysis.

■ **Huff contours.** A new tool is included that will allow you to create probability contours (trade areas) based on the results from a Huff model. These trade areas can be used to estimate the primary market area for new facilities.

■ **Remove trade area overlap.** A new set of tools has been added that will allow you to remove overlap from a set of trade areas.

■ **Attach store attributes.** You can now optionally attach your store attributes (e.g., address) to trade area layers.

■ **Automatic updates.** You can now check for software and data updates directly within the Business Analyst extension. You can stay up to date with the latest data updates, patches, and service packs by using a standard Internet connection to download and install any updates.

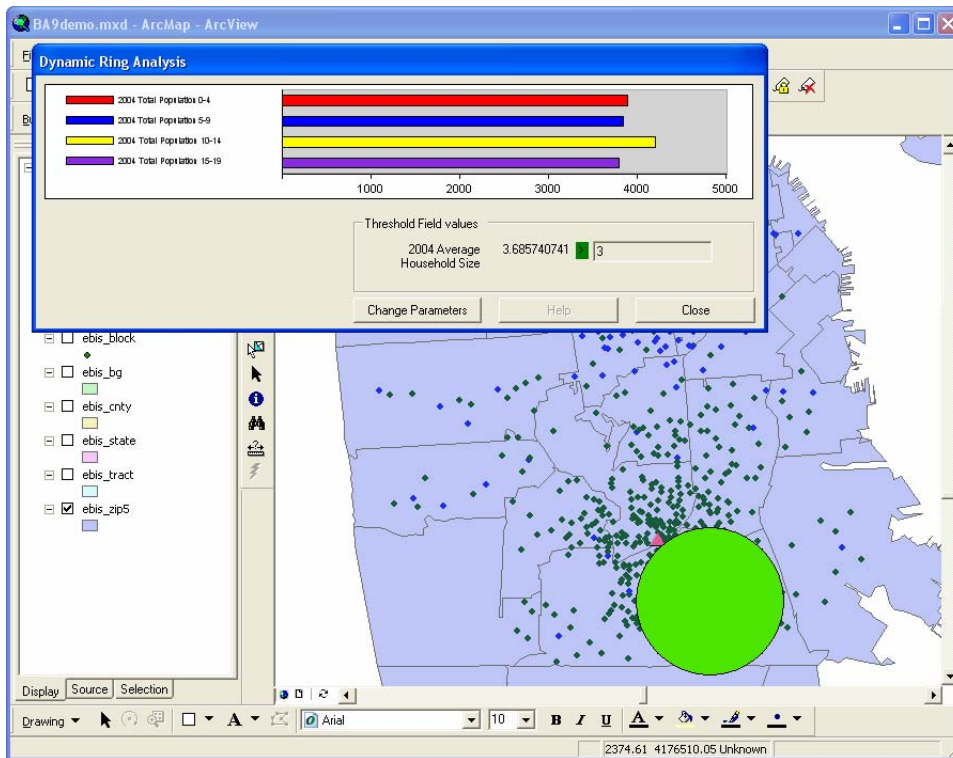
■ **Market ranking tool.** An interactive window has been added where you can rank market areas by a variable. For example, you can sort all the states by population. The window allows you to sort, select, and zoom to markets interactively with the map. You can also create reports based on the information in the window.

Report Wizard

Geography Name	Value	Percentage
Santa Clara County	65114	3.7653559...
Sacramento County	57265	4.2720505...
Alameda County	53442	3.5786270...
Fresno County	43057	5.0381338...
Contra Costa County	38685	3.8148103...
San Joaquin County	31270	4.9606810...
Stanislaus County	23982	4.8607268...
San Mateo County	23662	3.2988880...
Monterey County	18754	4.4556901...
San Francisco County	16998	2.1589038...
Solano County	16830	3.9991730...
Washoe County	15857	4.1241859...
Sonoma County	15455	3.2272816...
Merced County	12496	5.4005229...
Placer County	12373	4.1388884...
Santa Cruz County	8227	3.1686913...
Yolo County	7072	3.8112688...

Buttons: Help, << Back, Next >>, Cancel

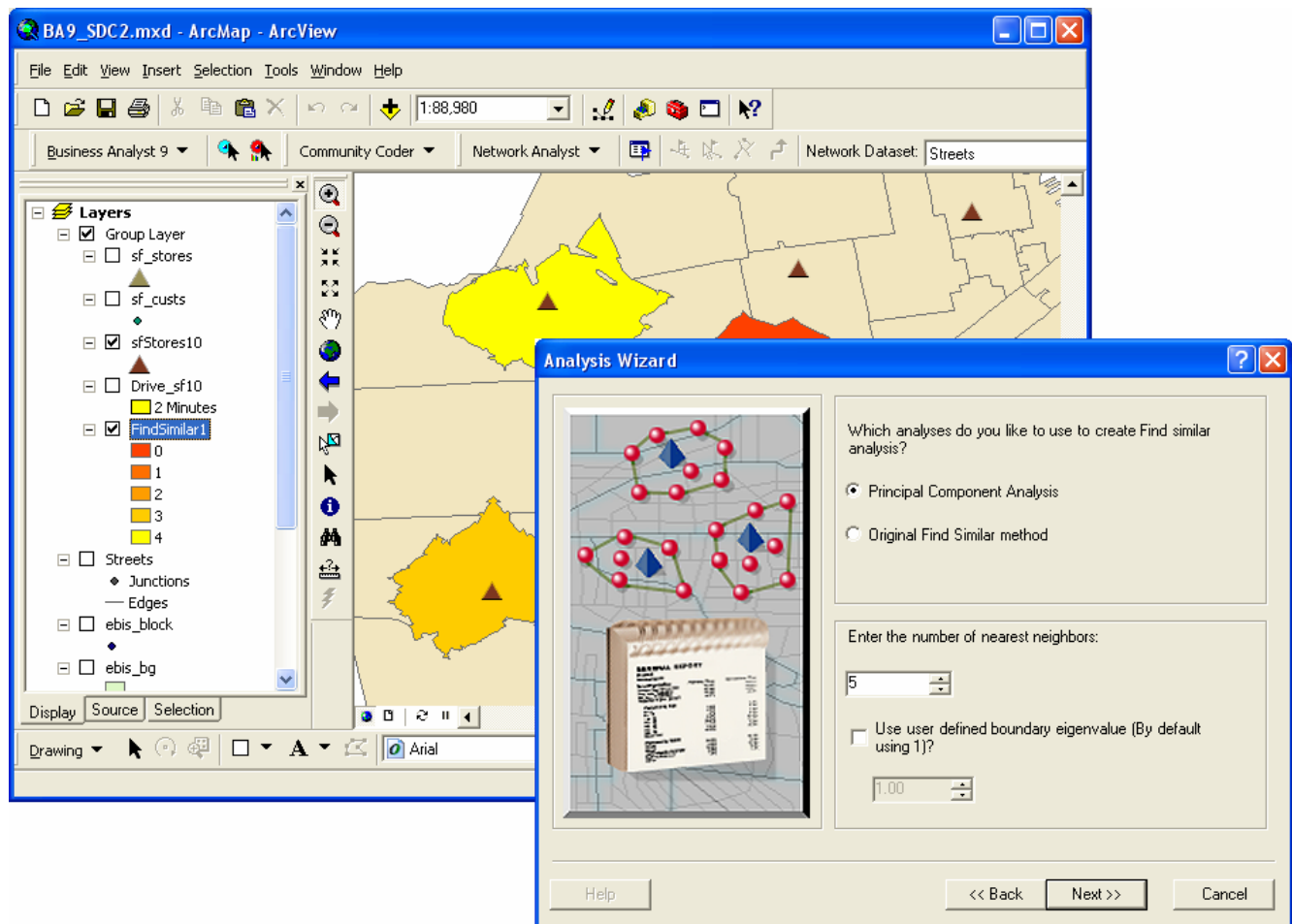
■ **Dynamic ring tool.** A new interactive site prospecting tool has been added to Business Analyst 9.1. This tool allows you to pan around the map and evaluate site locations using a value you set as a threshold. You can also choose to view a chart of a number of variables. The chart is dynamically updated as you move the mouse cursor around the map.



■ **New routing engine.** Routing and drive-time trade areas have been improved and are based on the new routing and service area tools from the ArcGIS Network Analyst extension. You can still create drive-time polygons from within Business Analyst. Business Analyst uses the Network Analyst engine to create routes and drive-time polygons. You can also create more advanced drive-time service areas using the Network Analyst

extension and seamlessly integrate them into Business Analyst. For example, you could create drive-time polygons based on your own network of streets and use the output trade areas in Business Analyst 9.1.

■ **Find similar.** A new Find Similar approach has been added to the Find Similar Analysis. This powerful technique allows you to investigate the similarity of multiple store locations using many data variables. A series of multivariate statistical techniques, including Principal Components Analysis, is used to create factors of like variables. This new approach will rank trade areas around a set of stores based on their similarity.



The Find Similar Analysis has also been improved by letting you evaluate the similarity using any of the trade area techniques in Business Analyst 9.1 (rings, drive times, threshold rings, and the like).

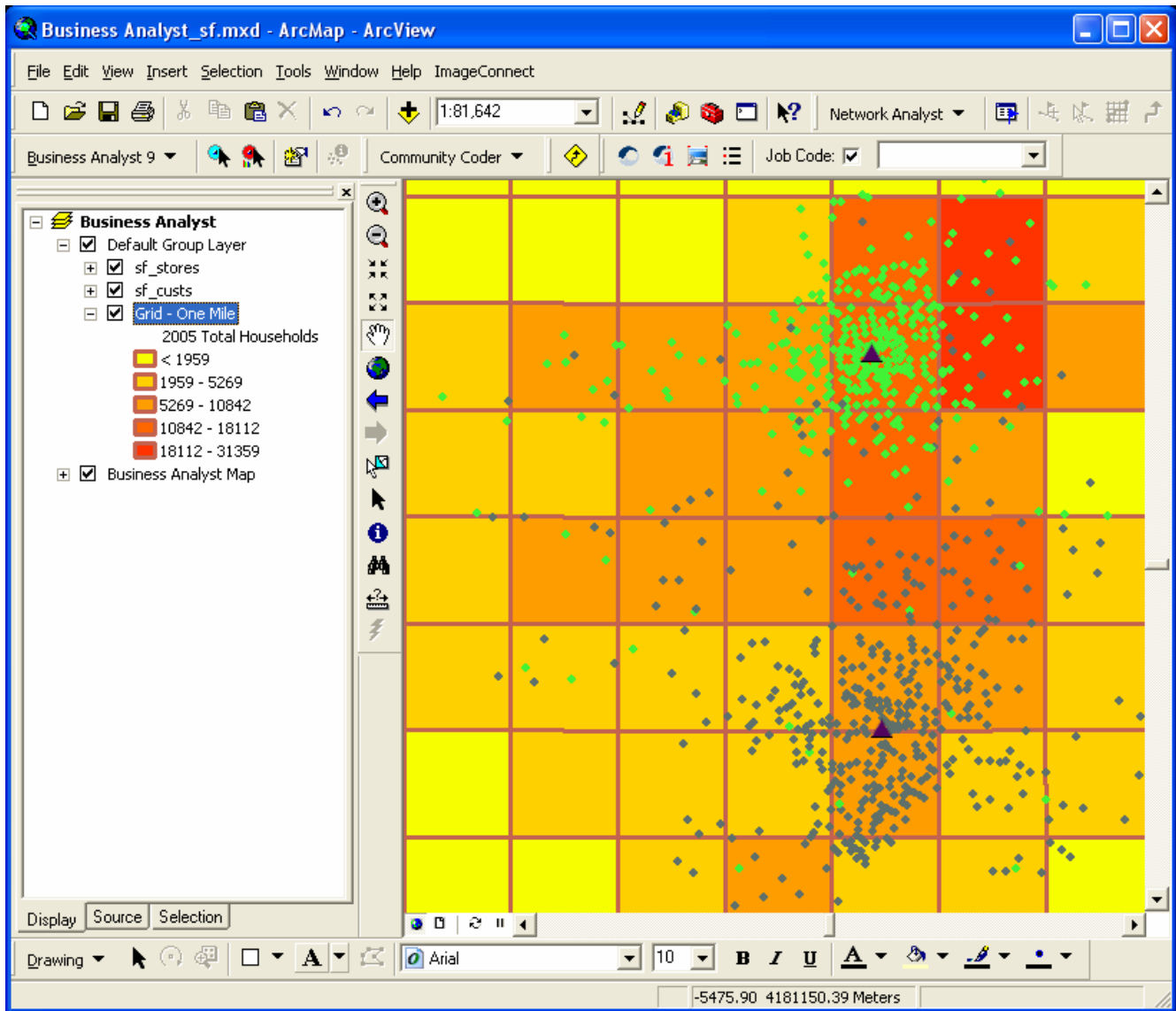
■ **Weighted Thiessen polygons.** Thiessen, or spatial monopoly, polygons can now be weighted using manually entered weights. The weights can also be calculated and statistically calibrated using the Huff model.

■ **Business points.** You can now query (extract) business points using trade areas, study areas, and the current map extent. For example, you can display all the restaurants and grocery stores within your drive-time trade area.


■ **Customer prospecting.** In Business Analyst 9.1, you are able to use the customer prospecting tools with additional data. In Business Analyst 8, customer prospecting was limited to a set of 50 key variables. Now you can prospect with any data that is provided with the extension or prospect with your own data.

■ **Store and customer setup with x,y data.** Store and customer layers can now be created using data that already contains x,y coordinates. This data could have been previously geocoded or generated from a file of points from a GPS unit.

■ **Grids.** Business Analyst 9.1 has a new tool to create grid-based layers. Grids can be created for the current extent or study area at the size you want. You can even append demographic information to each grid cell.



■ **Subgeography trade areas.** You can now create component geography-based trade areas. For example, you can create a trade area that lists all the zip codes within a 10-minute drive time of your store location or trade area that contains all the census tracts in San Diego County.

■ **Quick-start tutorial.** A new Quick-Start Tutorial tool  has been added to the Business Analyst toolbar. Clicking on this tool will display a new dialog box that will provide new users with a guided tour of some of the more popular features in the extension.