

# U.S. Pat. No. 6,604,083

24 Hour Fitness

Retail Site Selection Based on Drive Time Areas

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# U.S. Pat. No. 6,604,083

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**Bailey**

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(54) **MARKET DETERMINATION BASED ON  
TRAVEL TIME BANDS**

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(\*) Notice: Subject to any disclaimer, the term of this  
patent is extended or adjusted under 35  
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(21) Appl. No.: **09/095,802**

(22) Filed: **Jun. 11, 1998**

## **Related U.S. Application Data**

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1997.

(51) **Int. Cl.**<sup>7</sup> ..... **G06F 17/60**

(52) **U.S. Cl.** ..... **705/10; 701/201**

(58) **Field of Search** ..... 705/1, 10, 14;  
700/200, 201; 707/10; 701/201

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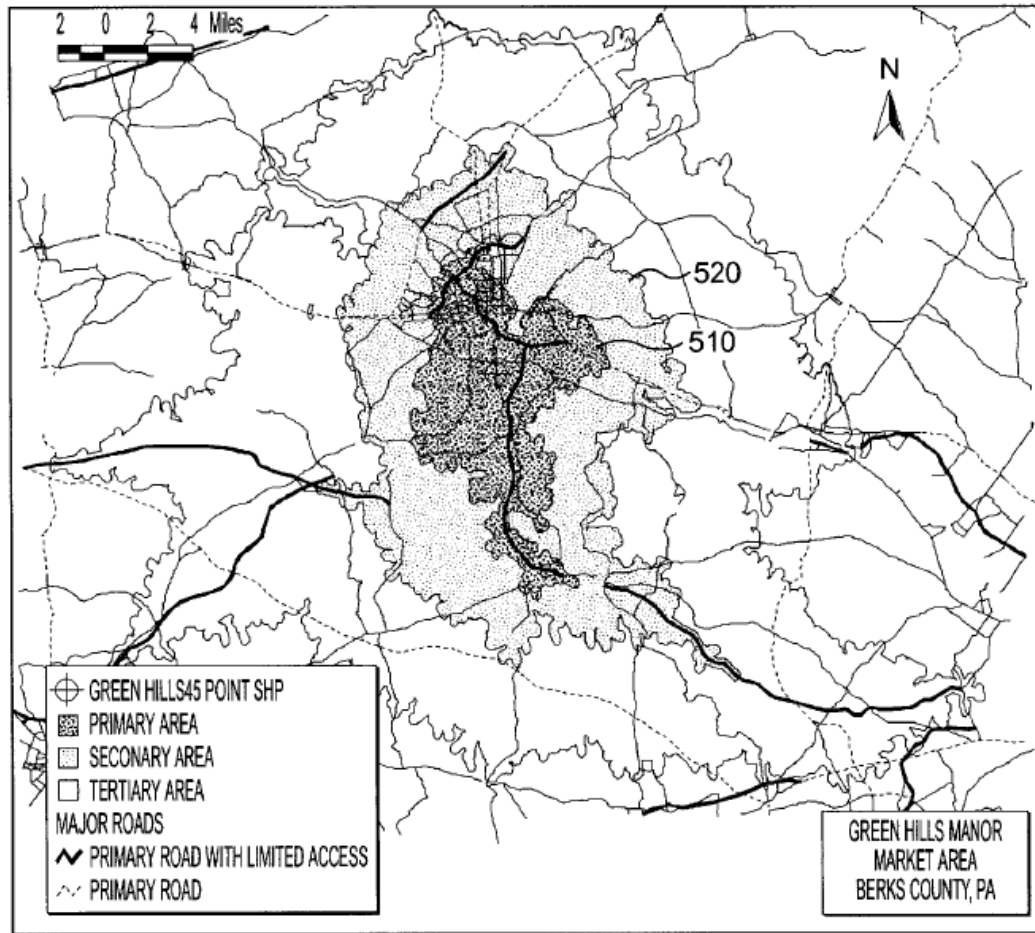
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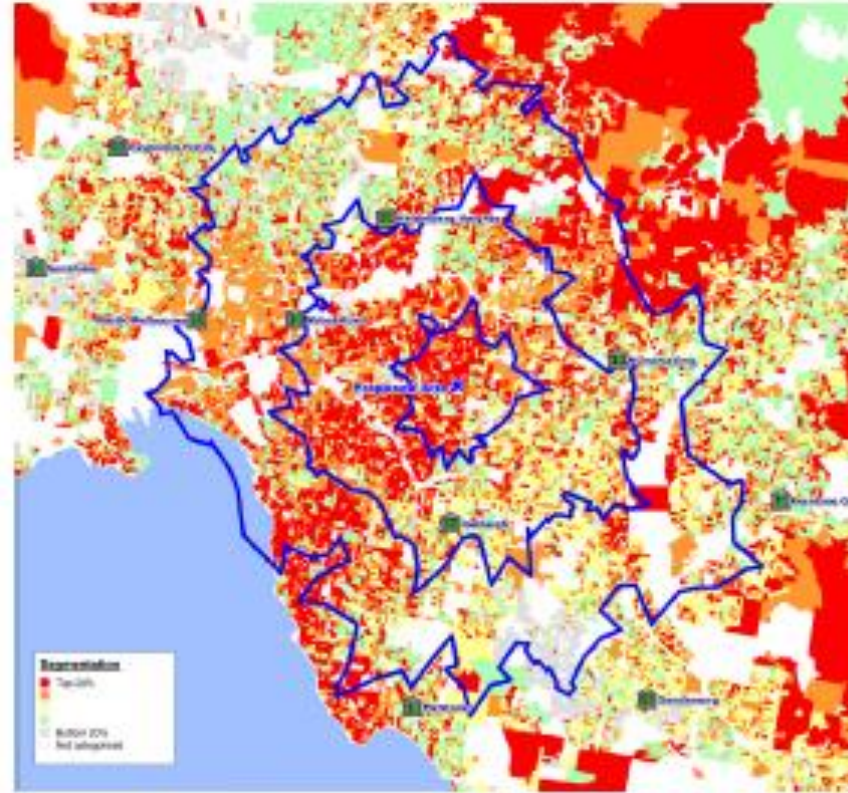
\* cited by examiner

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**FIG. 5b**

Drive-time analysis is another location intelligent capability that is powerful for retailers. It simulates geographic catchments of travelling times. This helps a business factor in travel convenience as a parameter in retail network modelling.



[http://www.mapinfo.com/wp-content/uploads/2014/03/New-Location-Perspectives-in-Retail-In-The-Zone\\_Thought-Leadership-Paper\\_Pitney-Bowes-Software-Australia.pdf](http://www.mapinfo.com/wp-content/uploads/2014/03/New-Location-Perspectives-in-Retail-In-The-Zone_Thought-Leadership-Paper_Pitney-Bowes-Software-Australia.pdf)

## Claim 5

### A method for preparing a market study comprising:

defining a geographic area around a selected location, the geographic area corresponding to a market based on a selected maximum travel time;

defining a plurality of bands based on increasing travel time from the location;

selecting geographic units in the bands;

defining market-related variables for the market;

calculating values corresponding to the market-related variables for each of the selected geographic units; and

calculating a net demand for a service or a commodity in the market based on the values.

## Business challenge

24 Hour Fitness invests several million dollars to launch every new site and will often commit to long-term leases, which means that Nelson Williams, Director Real Estate Strategy, and his team need to be accurate with their long-range projections. "Site selection is very important to our business," notes Williams. "A significant amount of member satisfaction is driven by their impressions of the facility and the member's experience while in the club. Proximity to home and work are main drivers of a person's decision to join a fitness club."

24 Hour Fitness needed more insightful data and analysis to forecast site performance over a long-term horizon and avoid the costly mistake of a poor-performing facility. "Real estate is a combination of art and science," Williams explains. "Our previous methodologies were not as data-driven as we needed."

The AnySite platform provides directors, analysts and marketers valuable insight into market data, allowing them to easily analyze the relationship between the performance of a location relative to the market area demographic characteristics.

*"Real estate is a combination of art and science. AnySite from Pitney Bowes Software is crucial to our data-driven site selection strategy. We get much more clarity than other tools we've worked with before."*

**Nelson Williams**  
Director Real Estate Strategy

<http://www.pb.com/docs/US/pdf/software/articles/24-hour-fitness-case-study-2012.pdf>



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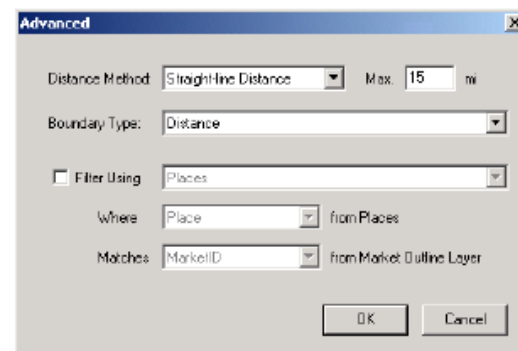
defining market-related variables for the market;

calculating values corresponding to the market-related variables for each of the selected geographic units; and

calculating a net demand for a service or a commodity in the market based on the values.

## Advanced Options

Clicking **Advanced** in the Capture Method dialog opens the Advanced dialog. This lets you change the method of how AnySite creates your capture boundary. It is important that you understand fully the settings of this dialog. It is also recommended that you try several different settings until you find one that meets your specific analysis needs.



### Distance Method

To create the capture boundary AnySite will take the closest object in the capture layer going from closest out until the threshold value is attained. Currently there are three methods for determining the distance between your site and the objects from the capture layer. These are:

- Straight-Line distance – Uses a straight “as the crow flies” measurement of the distance between your site and the surrounding objects in the capture layer.
- Drive-Time distance – Calculates an estimated drive time from your site and the surrounding objects in the capture layer.
- Drive distance – Calculates an estimated drive distance between your site and the surrounding objects in the capture layer.

In general, straight-line distance will disregard any geographic features on the map (for example, rivers, lakes, and so on) Drive-Distance and Drive-Time distance will be influenced by the underlying road network and therefore will, in some cases, be affected by geography.

Max (distance or time): If the threshold is not met within the maximum distance, or time, the capture study area is not generated.

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calculating values corresponding to the *market*-related variables for each of the selected geographic units; and

calculating a net demand for a service or a commodity in the market based on the values.

To generate a report for the data within a study area, not for all of the data, then select from the Study Area list. The options vary depending on the study areas in the map view:

- Map View – Data for the portion of the map that you see displaying in AnySite.
- Rings – Displays for a ring analysis. The report uses the data within each overlapping circle defined by a ring, which is the area from the site to the ring edge.
- Bands– Displays for a ring analysis. The report uses the data from the areas between each ring. Bands do not overlap.
- Drive Times – Displays for a drive time analysis. The report uses the data within each overlapping drive time area.
- Drive Time Bands – Displays for a drive time analysis. The report uses the data between each drive time area. Bands do not overlap.

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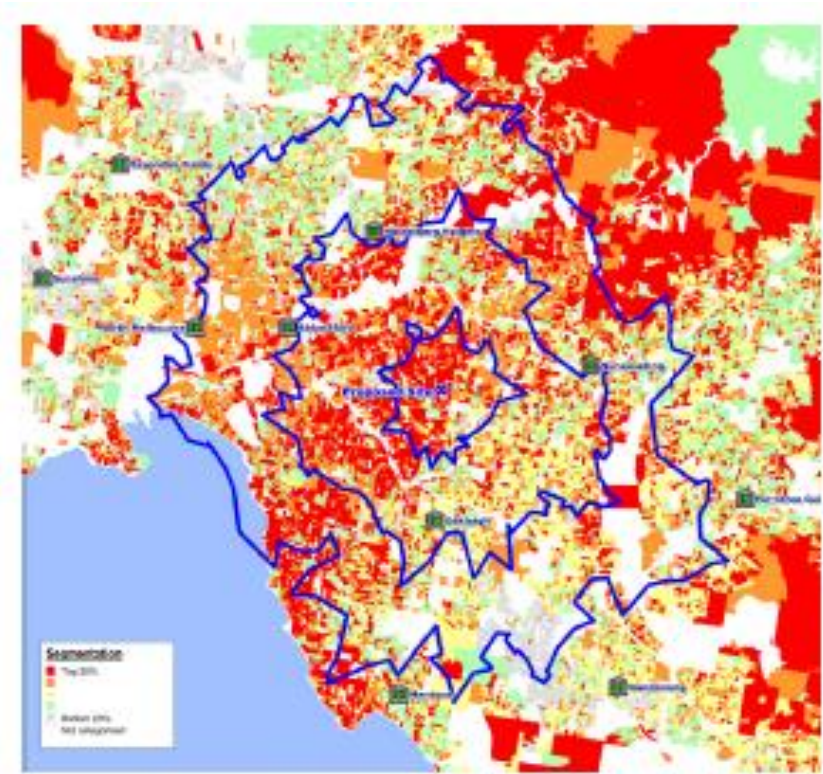


Figure 4: Consumer lifestyle segmentation data is displayed in relation to a potential retail site. It also shows 5, 10, 15 minute drive time catchment boundaries around the site.

*Comment: Catchment boundaries are exemplary drive time bands.*

[http://www.mapinfo.com/wp-content/uploads/2014/03/New-Location-Perspectives-in-Retail-In-The-Zone\\_Thought-Leadership-Paper\\_Pitney-Bowes-Software-Australia.pdf](http://www.mapinfo.com/wp-content/uploads/2014/03/New-Location-Perspectives-in-Retail-In-The-Zone_Thought-Leadership-Paper_Pitney-Bowes-Software-Australia.pdf)



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### Index Report

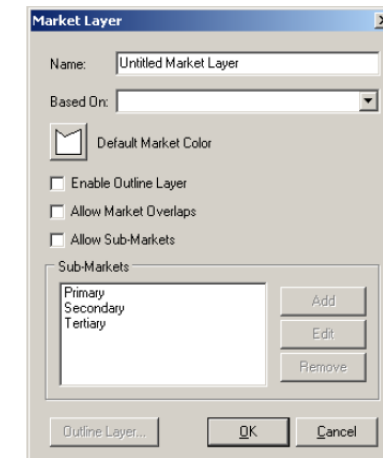
Summary Report that has a benchmark study area and calculated index values. It lets users compare the demographics for a location's study area against the data of a predefined geographic area.

The First Column displays the aggregated data from the geographic objects, such as blocks, block group, and census tracts, that fall within a defined study area. This data is then indexed against a pre-defined area created through the Index manager, such as the United States, Orange County, or any custom trade area created in AnySite. This is the benchmark. An Index is then created by comparing the study area value to the benchmark. An Index of 100 is average. Data that populates an Index report can be retrieved from ASDE only.

### Reference

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4. The Market Layer dialog opens.



In this dialog:

- Type the market layer name in the **Name** box.
- In the Based on list, click the geography on which the market will be based. Standard geographies include block groups, ZIP codes, census tracts, counties, and states.

### Reference

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[http://reference.mapinfo.com/software/anysite/english/8\\_8/reference/AnySite\\_Reference\\_US\\_CAN.pdf](http://reference.mapinfo.com/software/anysite/english/8_8/reference/AnySite_Reference_US_CAN.pdf)

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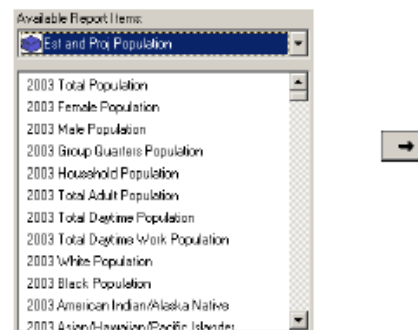
defining market-related variables for the market;

calculating values corresponding to the market-related variables for each of the selected geographic units;

and calculating a net demand for a service or a commodity in the market based on the values.

Add a variable to the report by selecting the variable in the list and clicking the right arrow button, double-clicking on a variable will also bring it over into the list.

The Available Report Items list includes maps and charts to add to a report and includes report formatting. To select multiple variables, press the CTRL or SHIFT key when clicking variables.



The item appears in the Design View list, so they will appear on the report.



### Removing Variables from the Report (Design View list)

You can remove a variable from the Design View and therefore the report by selecting the item and clicking on the left arrow. To remove an item, select it and then click Delete. Press the CTRL or SHIFT key when clicking items in the list to make multiple selections.

You can also create formulas using multiple variables.

### Adding a Custom Formula to the Report

Formulas from Flat MapInfo tables must all come from the same data table. Formulas from ASDE groups can be defined across groups. To do this you click **New Formula**. This opens the ASDE Formula Editor dialog. Refer to **Group Manager on page 352** for more information.

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calculating values corresponding to the market-related variables for each of the selected geographic units; and

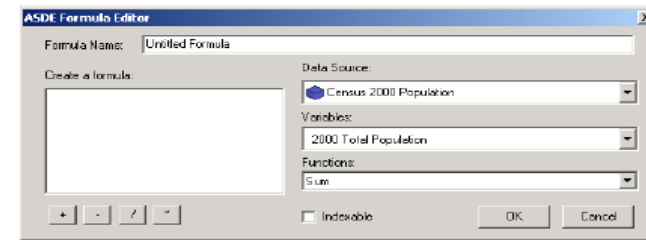
calculating a net demand for a service or a commodity in the market based on the values.

The AnySite Data Engine (ASDE) format compresses large data sets to conserve space and to increase speed and accuracy. Variables pulled from the ASDE can be aggregated from the block, census tract, ZIP Code, county, or state level as you choose.

### Reference

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### Index Reports

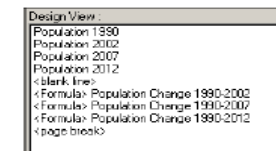


Type a name for the formula, and select from the following:

- Data Source – Lets you switch between multiple ASDE data sources.
- Variables – Lets you create the actual formula by selecting what data to use and the add/subtract/multiply/divide buttons for simple formulas.
- Functions – Lets you sum up a list of variables, calculate the median of a list of variables and access the area value to calculate density values.
- Indexable – Lets you use the formula in an index report.

After completing the formula and clicking **OK** the new item appears in the Design View list.

After creation, the formula will be available for use in the "USER DEFINED FORMULAS" data source. Formulas are designated by <Formula> in front of the name.



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AnySite 8.8

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## Solution

The move to AnySite allowed 24 Hour Fitness to expand their evaluation to include not only demographic data, but also the psychographics and behaviors most relevant to their industry. “We are looking for trade areas that over-index in terms of fitness participation. With the data and maps we can generate, we can now make more insightful decisions on club deployment,” details Williams. “Anysite is crucial to our data-driven site selection strategy,” Williams adds. “We get much more clarity than other tools we’ve worked with before.”

When assessing locations for new facilities, 24 Hour Fitness relies on AnySite to analyze markets, forecast member potential, and pinpoint pockets of opportunity. Using a custom model designed for their needs by the professional services team from Pitney Bowes Software, 24 Hour Fitness could now make more informed decisions around club deployment – enabling them to grow with confidence. “The fact is, AnySite identifies many factors in what constitutes a successful membership population, and that gives us the confidence to move quickly,” adds Williams.

Today, their entire real estate team has access to market optimization studies and trade area evaluations. Plus, with the customization developed specifically for their business, they can instantly build predictive models to forecast member potential. “Today, we can go beyond simple market demographics to understand member potential and determine which attributes drive club performance.”

<http://www.pb.com/docs/US/pdf/software/articles/24-hour-fitness-case-study-2012.pdf>

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## Claim 6

The method of claim 5, wherein selecting the geographic unit includes determining whether a centroid corresponding to the geographic unit falls within at least one of the bands.

The following system options can be set at any time:

Option	Description
RTF Viewer	Sets the program you want to use to view reports.
RTF Printer	Sets the program you want to use to print reports.
DBF Viewer	Sets AnySite to send database files to a program such as Excel.
MapInfo Pro	Sets where MapInfo Professional is located. MapInfo Professional is not required to use AnySite, but can be used to enhance AnySite's functionality.
<u>Calculate Demographics Using Centroids</u>	<u>This is used with data coming from flat MapInfo tables. Selecting this option directs AnySite to only sum the demographics for areas whose centroids are within the study area.</u>
Launch Viewer for Exported Reports	Tells your system to open any exported report in the program specified above.