U.S. Pat. No. 7,516,085

Wendy’s

Retail Site Selection Based on Drive Time Areas

U.S. Pat. No. 7,516,085

Disclaimer

The information in this document is provided solely to help potential buyers evaluate any potential interest in the technology described in the patents available for sale. This document is subject to the confidentiality agreement, dated March 26, 2015, between Mr. G. William Bailey and Prism Technologies, LLC. This document and any other communications with the inventor or Singh Law, PLLC ("SLP") should not be construed to express any opinion regarding the use of the patented technology by any product or company mentioned. This document does not constitute a legal or professional representation regarding infringement, validity, or valuation. Each potential buyer by accepting and using this information acknowledges that it is the potential buyer's responsibility to perform full and complete due diligence concerning this patent portfolio, particularly, with respect to the validity, infringement, and market application of the patents in this patent portfolio. SLP represents Mr. G. William Bailey only and no attorney-client relationship exists with respect to the potential buyers.

U.S. Pat. No. 7,516,085

(12) **United States Patent**
Bailey

(10) **Patent No.: US 7,516,085 B2**
(45) **Date of Patent: Apr. 7, 2009**

(54) **MARKET DETERMINATION SYSTEM**

(76) Inventor: **G. William Bailey**, 16 Fairfield Dr., Newark, DE (US) 19711

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 351 days.

(21) Appl. No.: **11/110,884**

(22) Filed: **Apr. 21, 2005**

(65) **Prior Publication Data**

US 2005/0246222 A1 Nov. 3, 2005

Related U.S. Application Data

(63) Continuation of application No. 10/410,554, filed on Apr. 10, 2003, now Pat. No. 7,043,445, which is a continuation of application No. 09/095,802, filed on Jun. 11, 1998, now Pat. No. 6,604,083.

(60) Provisional application No. 60/049,448, filed on Jun. 12, 1997.

(51) **Int. Cl.**
G06Q 99/00 (2006.01)

(52) **U.S. Cl.** **705/10**; 705/7; 705/1; 705/35; 705/36

6,604,083 B1 8/2003 Bailey 705/10

FOREIGN PATENT DOCUMENTS

JP 59034918 A 2/1984

OTHER PUBLICATIONS

Mckenna, Regis. Real-Time Marketing. Harvard Business Review, Jul./Aug. 1995. p. 87.*

The Future of Interactive Marketing. Harvard Business Review, Nov.-Dec. 1996. p. 151.*

Bailey, William G. et al., The Three-Cornered Hat: A Fantasy Dance "Perils of Using Traditonal Market Analysis for Elder Housing Development and Takeover" Part 1 of 3, The RMA Journal, pp. 78-83, Jul./Aug. 2001.

Bailey, William G. et al., "Data Dilemma: Turnover and Commingling" Perils of Using Traditional Method Market Analysis for Elder Housing Development and Takeover Part 2 of 3, the RMA Journal, pp. 78-82, Sep. 2001.

Hewlett-Packard, HP-41C, Financial Decisions PAC, "Compound Interest Solutions: The Cash Flow Diagram and Sign Convention", 15 pages, 1980.

(Continued)

Primary Examiner—Akiba K Robinson Boyce
(74) *Attorney, Agent, or Firm*—Finnegan, Henderson, Farabow, Garrett & Dunner, LLP

U.S. Pat. No. 7,516,085

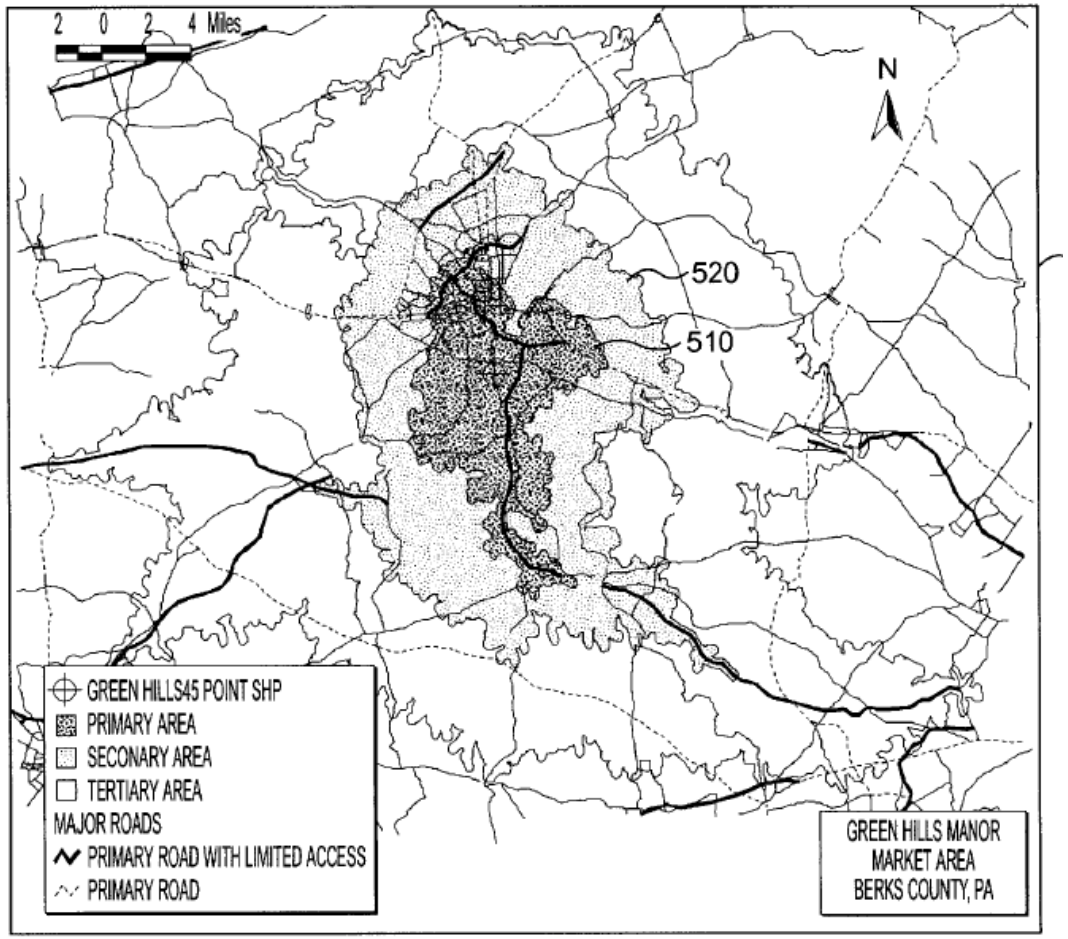
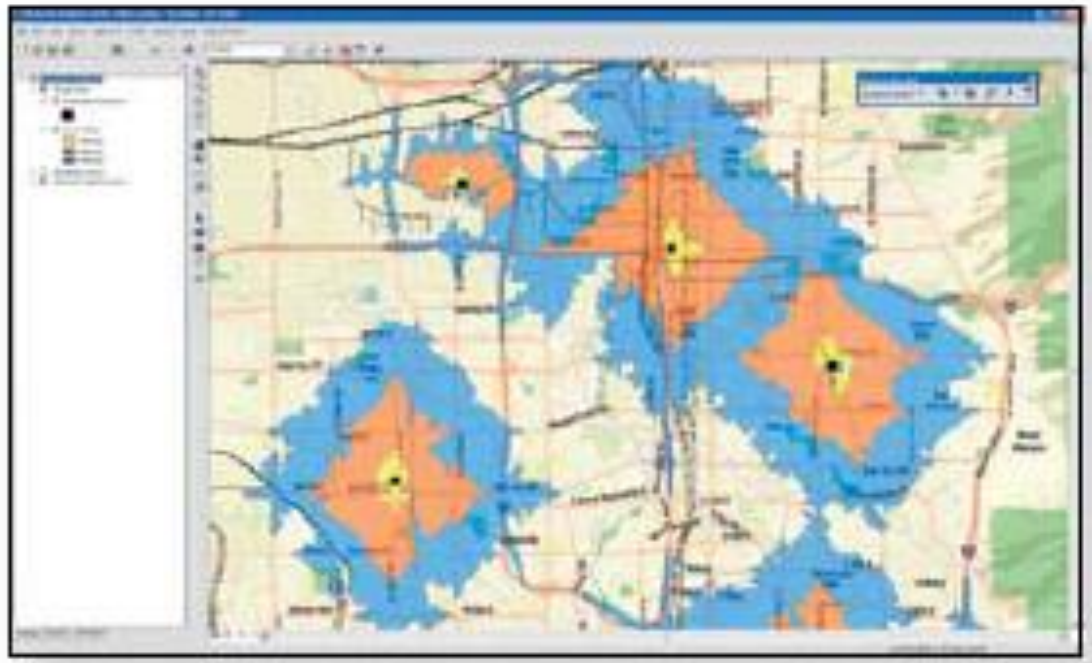


FIG. 5b



Multiple Drive Times in Salt Lake City, Utah

http://www.esri.com/library/brochures/pdfs/esri-busanalyst.pdf

U.S. Pat. No. 7,516,085

Claim 14

A data processor implemented method for determining a demand for a product or service within a plurality of census units located within a market area, the method comprising:

receiving a location input for at least one business offering the product or service;

calculating a plurality of travel time traces around at least one business location using at least one geographical information system database;

determining a number of potential customers within each of the plurality of census units using at least one demographic information database;

weighting the number of potential customers in the travel time traces within each of the plurality of census units; and

determining the demand for the product or service offered by the business using the weighted numbers of potential customers within each of the plurality of census units using the data processor.

Improving Site Selection

What did they do?

The Wendy's Company streamlined its reporting and market analysis workflow for restaurant development by working with Esri partner GISi to integrate the Esri® location platform into its corporate IT systems. Now, an intuitive mapping interface provides staff with easy access to The Wendy's Company proprietary restaurant information. Demographic, competitor, and business data is also available for any of the more than 6,500 existing chain locations and prospective sites. The Esri platform allows staff to incorporate a proprietary sales forecasting model when making decisions on opening new restaurants and closing or relocating restaurants.

"Demographic data and location analytics are critical components when making investment decisions to build new restaurants. Now, everything we need—including mapping, analytics, and modeling—can be done on one platform that is scalable across our organization."

Dennis Hill
Vice President of Real Estate
The Wendy's Company

Wendy's

http://www.esri.com/library/casestudies/wendys.pdf

U.S. Pat. No. 7,516,085

Claim 14

A data processor implemented method for determining a demand for a product or service within a plurality of census units located within a market area, the method comprising:

receiving a location input for at least one business offering the product or service;

calculating a plurality of travel time traces around at least one business location using at least one geographical information system database;

determining a number of potential customers within each of the plurality of census units using at least one demographic information database;

weighting the number of potential customers in the travel time traces within each of the plurality of census units; and

determining the demand for the product or service offered by the business using the weighted numbers of potential customers within each of the plurality of census units using the data processor.

Site prospecting using the Site Prospecting tool context menu

The Business Analyst Site Prospecting tool has a context menu to provide alternatives for setting the center point of the analysis. This context menu allows you to choose the center point by entering an address, a geographic coordinate or by using a selected point on the map.

1. Click the Site Prospecting tool on the Business Analyst drop-down menu. You can choose from:

   Site Prospecting: Use to click anywhere on the map. A basic form of prospecting when you don't know an address. This resembles throwing a dart at a map.

   Find point by address: Use to enter a single address. The address will geocode and the location is placed on the map.

   Use selected point on the map: Use to select any point on a map.

   Input coordinates: Use to enter longitude and latitude coordinates. Used when a highly precise location is required or a postal address doesn't apply in the case of a cell phone tower or weather station.

http://downloads2.esri.com/support/documentation/other_/1473Using_ArcGIS_Business_Analyst.pdf

U.S. Pat. No. 7,516,085

Claim 14

A data processor implemented method for determining a demand for a product or service within a plurality of census units located within a market area, the method comprising:

receiving a location input for at least one business offering the product or service;

calculating a plurality of travel time traces around at least one business location using at least one geographical information system database;

determining a number of potential customers within each of the plurality of census units using at least one demographic information database;

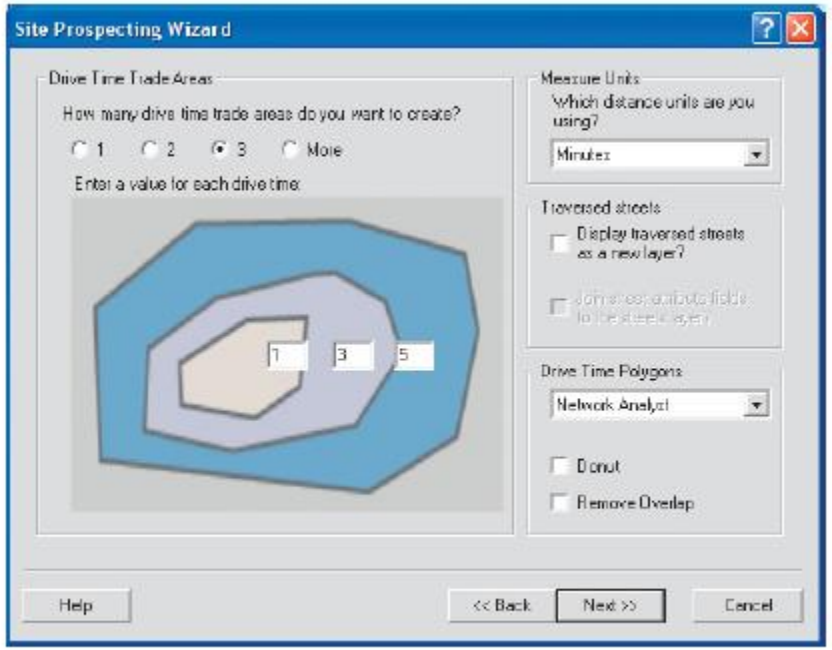
weighting the number of potential customers in the travel time traces within each of the plurality of census units; and

determining the demand for the product or service offered by the business using the weighted numbers of potential customers within each of the plurality of census units using the data processor.

If you choose Drive Time:

Choose the number of drive time trade areas you want to create, then type a value for each drive time in the text boxes. Click the Measure Units drop-down menu and click the distance units you want to use, then click Next.

Type a name for the new trade area, type any comments, then click Finish. ▸



54

USING ARCGIS BUSINESS ANALYST

http://downloads2.esri.com/support/documentation/other_/1473Using_ArcGIS_Business_Analyst.pdf

U.S. Pat. No. 7,516,085

Claim 14

A data processor implemented method for determining a demand for a product or service within a plurality of census units located within a market area, the method comprising:

receiving a location input for at least one business offering the product or service;

calculating a plurality of travel time traces around at least one business location using at least one geographical information system database;

determining a number of potential customers within each of the plurality of census units using at least one demographic information database;

weighting the number of potential customers in the travel time traces within each of the plurality of census units; and

determining the demand for the product or service offered by the business using the weighted numbers of potential customers within each of the plurality of census units using the data processor.

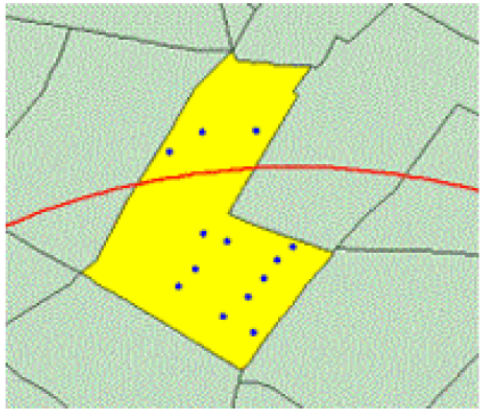
Business Analyst

1. **How is data calculated for a trade area?**

ESRI uses a sophisticated Weighted Block Centroid geographic retrieval methodology to calculate data for rings and other trade areas. This method provides the most accurate information for rings and polygons.

The basic principle - A geographic retrieval methodology determines how data is gathered and then summarized or aggregated for each ring. For standard geographic units, such as counties or ZIP Codes, the link between a designated area — called a trade area — and its attribute data is a simple one-to-one relationship; if a trade area contains a selection of ZIP Codes, the data retrieval is a simple process of gathering the data for those ZIP Codes.

Census Blocks are the smallest unit of census geography. They are used to create all other levels of census geography. For example, one or many blocks are aggregated to create a Block Group. In the third map, the blue dots represent the geographic centroids for the 13 blocks that make up the highlighted (yellow) Block Group. Unfortunately, only a small subset of data (households, population, housing units, and number of businesses) is available at the Census Block level and, therefore, cannot be used to aggregate most data for a trade area.



Block centroids within a trade area are used to calculate a weight for the highlighted Block Group. These weights are then used to more accurately gather and aggregate demographic data for rings and other polygons.

http://downloads.esri.com/support/documentation/other_/BA91_Block_Group_Centroid_Aggregation_FAQ.pdf

U.S. Pat. No. 7,516,085

Claim 14

A data processor implemented method for determining a demand for a product or service within a plurality of census units located within a market area, the method comprising:

receiving a location input for at least one business offering the product or service;

calculating a plurality of travel time traces around at least one business location using at least one geographical information system database;

determining a number of potential customers within each of the plurality of census units using at least one demographic information database;

weighting the number of potential customers in the travel time traces within each of the plurality of census units; and

determining the demand for the product or service offered by the business using the weighted numbers of potential customers within each of the plurality of census units using the data processor.

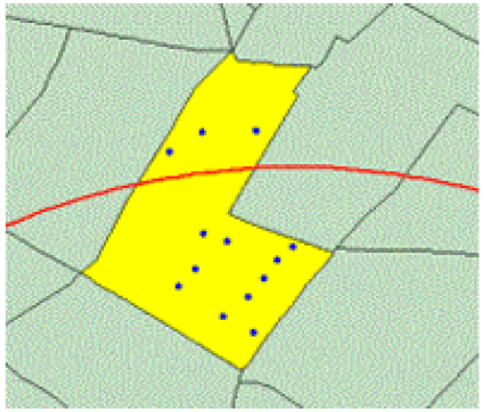
Business Analyst

1. **How is data calculated for a trade area?**

ESRI uses a sophisticated Weighted Block Centroid geographic retrieval methodology to calculate data for rings and other trade areas. This method provides the most accurate information for rings and polygons.

The basic principle - A geographic retrieval methodology determines how data is gathered and then summarized or aggregated for each ring. For standard geographic units, such as counties or ZIP Codes, the link between a designated area — called a trade area — and its attribute data is a simple one-to-one relationship; if a trade area contains a selection of ZIP Codes, the data retrieval is a simple process of gathering the data for those ZIP Codes.

Census Blocks are the smallest unit of census geography. They are used to create all other levels of census geography. For example, one or many blocks are aggregated to create a Block Group. In the third map, the blue dots represent the geographic centroids for the 13 blocks that make up the highlighted (yellow) Block Group. Unfortunately, only a small subset of data (households, population, housing units, and number of businesses) is available at the Census Block level and, therefore, cannot be used to aggregate most data for a trade area.



Block centroids within a trade area are used to calculate a weight for the highlighted Block Group. These weights are then used to more accurately gather and aggregate demographic data for rings and other polygons.

http://downloads.esri.com/support/documentation/other_/BA91_Block_Group_Centroid_Aggregation_FAQ.pdf

U.S. Pat. No. 7,516,085

Claim 14

A data processor implemented method for determining a demand for a product or service within a plurality of census units located within a market area, the method comprising:

receiving a location input for at least one business offering the product or service;

calculating a plurality of travel time traces around at least one business location using at least one geographical information system database;

determining a number of potential customers within each of the plurality of census units using at least one demographic information database;

weighting the number of potential customers in the travel time traces within each of the plurality of census units; and

determining the demand for the product or service offered by the business using the weighted numbers of potential customers within each of the plurality of census units using the data processor.

Improving Site Selection

What did they do?

The Wendy's Company streamlined its reporting and market analysis workflow for restaurant development by working with Esri partner GISi to integrate the Esri® location platform into its corporate IT systems. Now, an intuitive mapping interface provides staff with easy access to The Wendy's Company proprietary restaurant information. Demographic, competitor, and business data is also available for any of the more than 6,500 existing chain locations and prospective sites. The Esri platform allows staff to incorporate a proprietary sales forecasting model when making decisions on opening new restaurants and closing or relocating restaurants.

"Demographic data and location analytics are critical components when making investment decisions to build new restaurants. Now, everything we need—including mapping, analytics, and modeling—can be done on one platform that is scalable across our organization."

Dennis Hill
Vice President of Real Estate
The Wendy's Company

Wendy's

http://www.esri.com/library/casestudies/wendys.pdf