Esri Business Analyst: Overview & Update

James Killick, Lucy Guerra
Location Analytics:
A major new initiative at Esri
Targeted beyond Pro-GIS users
Insurance
Sales and Marketing, Risk Analysis

Banking and Financial Services

Government Agencies
Local, State, Federal

Retail
Sales and Marketing, Operations, Site Selection

Transportation
Airlines

Natural Resources
Oil and Gas, Forestry

Utilities
Electrical Grids, Water, Telco

Real Estate

Healthcare

Higher Education
Recruiting, Alumni and Revenue Mgmt

Public Safety
Policing
Non-disruptive and familiar
Key capabilities

- Mapping and visualization
- Spatial analytics
- Information / data enrichment
ArcGIS Platform

Custom Solutions
- Partner Solutions
- Customer Solutions

Business System Solutions
- Esri Maps for SharePoint
- Esri Maps for Office
- Esri Maps for IBM Cognos

Business Function Solutions
- Esri Business Analyst

(Leverage Esri APIs)
Part 1: Product Overview
Location Analytics for Market Planning & Site Selection
You have to make a multi-million dollar real estate decision. 
Where is the best place to locate?

You need to maximize the performance of your store network. 
Which ones should be doing better?

The Market is Changing. You need to plan for the future. 
How can you stay competitive?
• Retail & Financial Services
• Commercial Real Estate
• Insurance
• Economic Development
Facility Site Selection

Urban & Regional Planning
- Community Needs Assessment

Utilities & Telco
- Network Planning

Economic Development & Economic Gardening
- Greater New Orleans

Recruiting
- US Air Force

Public Safety
- Emergency Management

Public Safety
- Hospitals, Parks, Fire Stations et cetera
4 Things Business Analyst Provides
Detailed, Current Facts About Any Area
6,000+ Variables. Current Year & 5 Year Forecast

- Population
- Households
- Age
- Income
- Family Size
- Education
- Net Worth
- Consumer Spending
- Market Segmentation
- Businesses
- Business Types
- Products Consumption
- Services Consumption
- Supply vs. Demand

... and many, many more
Esri Tapestry Segmentation

- 65 Segments
- What kind of people live where

<table>
<thead>
<tr>
<th>Segment Name</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>12 Up and Coming Families</strong></td>
<td>L9 Family Portrait, U7 Suburban Periphery I, Married Couples w/Kids, 32.0 Upper Middle Prof/Mgmt, Some College; Bach Degree, Single Family, White, Eat at Chick-fil-A, Have student loan, Visit zoo, Listen to soft, adult contemporary radio, Own/Lease SUV</td>
</tr>
<tr>
<td><strong>13 In Style</strong></td>
<td>L2 Upscale Avenues, U7 Suburban Periphery I, Mixed, 40.2 Upper Middle Prof/Mgmt, Some College; Bach/Grad, Single Family; Townhome, White, Vacation at beach, Track investments online, Make purchases online, Listen to news/talk radio, Own/Lease minivan</td>
</tr>
<tr>
<td><strong>14 Prosperous Empty Nesters</strong></td>
<td>L5 Senior Styles, U7 Suburban Periphery I, Married Couples w/No Kids, 48.5 Upper Middle Prof/Mgmt, Some College; Bach/Grad, Single Family, White, Play golf, Consult financial planner, Furniture refinishing, Read 2+ daily newspapers, Own/Lease luxury car</td>
</tr>
</tbody>
</table>
Wealthy Seaboard Suburbs residents maintain and remodel their homes more often by hiring lawn and property maintenance services and contractors, instead of doing the work themselves. Often their homes are oil-heated, but appliances such as dryers and range/ovens are powered by gas. A typical resident has a home equity line of credit, holds life insurance policies worth $500,000 or more, uses a brokerage firm, owns stock valued at $75,000 or more, donates to charities, and contributes to PBS.

A favorite activity is shopping, especially at upscale retailers such as Macy's and Nordstrom as well as warehouse stores such as Costco and BJ's Wholesale Club. Ordering items online by phone is also common, especially from L.L. Bean, Lands' End, and QVC. Dunkin' Donuts is a favorite stop when they are out and crave a quick snack.

Wealthy Seaboard Suburbs residents take nice vacations, traveling in the United States and abroad. Italy, France, the United Kingdom, Hawaii, Atlantic City, Las Vegas, and Disneyland are popular destinations. Leisure activities include going to the beach, skiing, ice skating, and going to the theater. Residents like to read two or more daily newspapers and prefer to read biographies as well as epicurean, travel, business, finance, and fashion magazines. They listen to classical music and jazz as well as all-news and sports programs on the radio. Television viewing is more limited; favorite cable channels include Bravo and Food Network. Favorite programs include Access Hollywood, ABC This Week, and NOVA.
• 35+ years experience in building demographic data
• Current year estimates and 5 year forecasts
• We publish both methodologies and trends
Blind study

4 credentialed researchers

Benchmarked against Census 2010

Entire United States

Four levels of geography
Lowest score indicates most precise data—highest accuracy.

<table>
<thead>
<tr>
<th>Geography</th>
<th>Vendor 1</th>
<th>Esri</th>
<th>Vendor 3</th>
<th>Vendor 4</th>
<th>Vendor 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total US</td>
<td>315.9</td>
<td>247.7</td>
<td>276.7</td>
<td>295.7</td>
<td>304.7</td>
</tr>
<tr>
<td>State</td>
<td>21.4</td>
<td>12.6</td>
<td>17.9</td>
<td>19.3</td>
<td>29.7</td>
</tr>
<tr>
<td>County</td>
<td>49.2</td>
<td>39.8</td>
<td>52.1</td>
<td>46.5</td>
<td>55.7</td>
</tr>
<tr>
<td>Census Tract</td>
<td>106.6</td>
<td>89.5</td>
<td>93.3</td>
<td>106</td>
<td>99.6</td>
</tr>
<tr>
<td>Block Group</td>
<td>138.7</td>
<td>105.8</td>
<td>113.4</td>
<td>123.9</td>
<td>119.7</td>
</tr>
</tbody>
</table>
We Also Make Using Third Party Data Easier...
American Community Survey (ACS)

• ACS is complex due to Margin of Error in sample data
Esri Reliability Flag for ACS Data

Reliability of Data

Legend

- **High:** The ACS estimate is considered reliable. The sampling error is small relative to the estimate.

- **Medium:** Use the ACS estimate with caution. The sampling error is fairly large relative to the estimate.

- **Low:** The ACS estimate is considered unreliable. The sampling error is very large relative to the estimate.

- **Unavailable data**
Powerful Geographic Analysis Tools
Focused on Location Analytics
Leveraging the Power of GIS for Analysis

Customer Analytics

Predictive Sales Modeling

Suitability Mapping

Market Penetration

Territory Design & Optimization

Cannibalization
Demo
Smart Map Search
• Model Builder Framework

• Python Scripting Framework

• Access Hundreds of Tools:
  • Geo-Analysis
  • Business Analysis
  • Spatial Statistics

• Designed for Analysts!
Predicting Performance using Models

Inputs:
- Actual Sales
- Demographics
- Competitor Locations
- Catchment Area
- Accessibility
- Attractiveness
...

Functions:
- Statistical Analysis
- Spatial Statistics Tools
- Geo-processing Tools
- Built in Demand Models

Outputs:
- Predicted Sales
- Predicted Profit
...

Example of How Modeling is Used

<table>
<thead>
<tr>
<th>Store</th>
<th>Actual Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$1,100,000</td>
</tr>
<tr>
<td>2</td>
<td>$2,300,000</td>
</tr>
<tr>
<td>3</td>
<td>$1,750,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Store</th>
<th>Predicted Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$1,310,000</td>
</tr>
<tr>
<td>2</td>
<td>$2,150,000</td>
</tr>
<tr>
<td>3</td>
<td>$1,600,000</td>
</tr>
</tbody>
</table>

Design & Build a Model That Predicts Actual Sales as Accurately as Possible
Use Model to Predict Sales

• What would the sales be if I opened at location X?
• How would that affect sales at existing stores?

<table>
<thead>
<tr>
<th>Store</th>
<th>Predicted Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$1,210,000</td>
</tr>
<tr>
<td>2</td>
<td>$1,890,000</td>
</tr>
<tr>
<td>3</td>
<td>$1,100,000</td>
</tr>
<tr>
<td>X</td>
<td>$1,300,000</td>
</tr>
</tbody>
</table>
Customer Intelligence: Segmentation

**Niche:** Buy a Lot, but not many of them

**Core:** Buy a Lot and Lots of them

**Developmental:** Don’t Buy a Lot, but lots of them
3

Fully Customizable Reports
Fully Customizable Reports…

Excel

PDF

XML (for Dynamic Display)
... For Any Shaped Area

- Rings
- Drive Time Areas
- User Defined Areas
- Standard Geographic Areas (e.g. ZIP)

In All Cases Data is Precisely & Accurately Aggregated
Business Analyst API

- We used the API to build BAO web and mobile apps

- Available via REST, Flex, Silverlight, SOAP

- Hosted or On-Premises
Demo
Health App Demo
Business Analyst Components

- BAO Web App
- BA Desktop + BAO Add-In for ArcGIS
- BAO API
- BA Server
Part 2: Product Update
Global Data Program
Country Release Schedule

* This Slide Built using Esri Maps for Office!
Demo
Publish BA GP Tools to BA Server
Fusion Reports

- Quickly combine data from multiple sources
- Examples:
  - Esri demographics
  - Customer data
  - Maps
- Author in minutes… no tweezers required!
“Smart Market Planning”

Location / Allocation: determine an optimal location for one or more facilities that will service demand from a given set of customers or prospects.
Tight Integration of Location / Allocation

**Maximize Attendance:** Selects the optimal location based on demand, taking into consideration your existing stores. Demand can be your customer base or the local population.

**Maximize Market Share:** Given you want to open X new facilities out of a choice of Y possible locations, identify exactly which subset of possible locations will maximize your market share.

**Target Market Share:** Chooses the minimum number of facilities necessary to capture a specific percentage of the total market share in the presence of competitors.
10X Faster Drive Times
Inheriting all the benefits of ArcGIS Server 10.1

64 Bit

Faster Performance (in particular in Network Analyst)
BAO Mobile
BAO Mobile on Google Nexus 7 Tablet

Android OS 4.1 Jelly Bean
BAO Web App
We’ve Made BAO Enterprise Ready.
1. What you can do by yourself
2. What’s possible with help from Professional Services
1. What you can do by yourself

2. What’s possible with help from Professional Services
Access your Private or Group Web Maps in BAO

Sign in to ArcGIS Online to access your groups.

Username
Password

Remember me

Sign in
Get Reports on Features in an ArcGIS Online Map
Access Content from Portal for ArcGIS in BAO
Make Color-Coded Maps from an ArcGIS Online Map

- Must be a polygon feature service web map (tiled web map won’t work)
- Must contain numeric data
Perform Smart Map Search on ArcGIS Online Map

- Must be a polygon feature service web map (tiled web map won’t work)
- Must contain numeric data
- Cannot perform a Smart Map Search in combo with Esri demographic data
Publish map from ArcGIS Desktop 10.1 & use in BAO

- Need ArcGIS Online Subscription & ArcGIS 10.1
- Must be a polygon feature service web map (tiled web map won’t work)
- Must contain numeric data
- Cannot perform a Smart Map Search in combo with Esri demographic data
1. What you can do by yourself

2. What’s possible with help from Professional Services
BAO for Organizations

Your Data
- Web Maps and Feature Services
  - Hosted by Customer
    - On-Premises or in Private Cloud

Esri Data
- Demographics, Lifestyles, Businesses
  - Hosted by Esri
Your Data Looks Like Any Other Esri Data…
You can use it for color coded maps...
& in Smart Map Search in combo with Esri Data
Rebrand the App

- Any color you want … as long as it’s **blue** or **green**
- No changes possible to user interface
- No changes to loading animation or home tab promos
• Still need Esri Account to Login

• Professional Services engagement will vary by amount of customer data and frequency of update

• Customer cannot do this by themselves… we need to set up special subscriptions

• Customer data must align with our standard geographies: state, county, ZIP, tract, block group
Demo
Part 3: Road Map
Traffic Aware
Drive Times

Pick Time-of-day & Day-of-week
People Love the App…
But They Need Access to Their Stuff!
BAO Mobile

ArcGIS Mobile

BAO Reports

Access Your Maps & Editable Map Layers
Demo
BA APIs
Redesigning from the Ground Up
Make APIs Available as Part of ArcGIS Online
This is **Spatial**

Data Enrichment
Super Simple
Super Fast
Super Scalable
Super Flexible
Minimum Parameter:
lat/long or address

Optional Parameters:
area
  ring
  polygon
  drive time
  admin area ID

what data to return
  predefined set of data variables
  custom set of data variables
  preformatted report

return admin area IDs
return geometries

Can submit array of records in one call

No need to specify country (we figure that out)

No need to specify data source (it’s one big source)
Extensible?
Installable On-Premise?
Localizable?
Shareable Maps?
Re-Skinnable?
So We Are Rebuilding From the Ground Up...
Extensible?
Installable On-Premise?
Localizable?
Shareable Maps?
Re-Skinnable?
Plus We’re Adding Some Features We Think You’ll Love!
Create a variable based on a selected age range.

2. Select an age range: 17 60

Gender: Male Female Both

To add additional parameters, choose Advanced Options

Save custom variable: 2010 Females Ages 17 to 60
Where to Find Out More!
<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.15-4.30</td>
<td>Esri Maps for IBM Cognos</td>
<td>31B</td>
</tr>
<tr>
<td>3.15-3.35</td>
<td>Overview of Esri Lifestyle Data</td>
<td>01B</td>
</tr>
<tr>
<td>3.40-4</td>
<td>Using Data for Customer Intelligence</td>
<td>01B</td>
</tr>
<tr>
<td>4.05-4.25</td>
<td>Building Apps using Lifestyle Data</td>
<td>01B</td>
</tr>
<tr>
<td>4.30-5</td>
<td>Market Segmentation using Tapestry</td>
<td>Demo Theater</td>
</tr>
<tr>
<td>5-5.30</td>
<td>BA for International Markets</td>
<td>Demo Theater</td>
</tr>
<tr>
<td>5.30-6</td>
<td>Accessing Online Demographics in BA</td>
<td>Demo Theater</td>
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</table>
## Wednesday

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>8.30-9.45</td>
<td>Location Analytics Technology Keynote</td>
<td>06C</td>
</tr>
<tr>
<td>8.30-9.45</td>
<td>Esri Maps for SharePoint</td>
<td>05 A/B</td>
</tr>
<tr>
<td>9-10</td>
<td>What’s New in Community Analyst</td>
<td>Demo Theater</td>
</tr>
<tr>
<td>10-10.30</td>
<td>Community Analyst in ArcGIS Desktop</td>
<td>Demo Theater</td>
</tr>
<tr>
<td>10.15-11.30</td>
<td>Esri Maps for Office</td>
<td>06A</td>
</tr>
<tr>
<td>10.30-11</td>
<td>Community Analyst for International Markets</td>
<td>Demo Theater</td>
</tr>
<tr>
<td>11-12</td>
<td>What’s new in Business Analyst Online</td>
<td>Demo Theater</td>
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<tr>
<td>1-2</td>
<td>BA Desktop 10.1</td>
<td>Demo Theater</td>
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<tr>
<td>2-2.30</td>
<td>Optimizing Territories using BA Desktop</td>
<td>Demo Theater</td>
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<tr>
<td>2.30-3</td>
<td>Add Location Intelligence to your apps w/ BA</td>
<td>Demo Theater</td>
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<tr>
<td>3-3.30</td>
<td>Criticality of 2010 Census Boundaries</td>
<td>Demo Theater</td>
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<tr>
<td>3.30-4</td>
<td>Top 10 Things to know about ACS</td>
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<td>4-5</td>
<td>Esri Maps for SharePoint</td>
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<td>5-5.30</td>
<td>Esri Maps for Office</td>
<td>Demo Theater</td>
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<tr>
<td>5.30-6</td>
<td>Road Ahead for Location Intel APIs</td>
<td>Demo Theater</td>
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### Thursday

<table>
<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>9-9.30</td>
<td>Community Analyst API</td>
<td>Demo Theater</td>
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<tr>
<td>9.30-10</td>
<td>Adding Custom Data to Community Analyst</td>
<td>Demo Theater</td>
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<td>10-10.30</td>
<td>Esri Maps for SharePoint</td>
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<td>10.30-11</td>
<td>Esri Maps for Office</td>
<td>Demo Theater</td>
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<tr>
<td>11-11.30</td>
<td>Adding Esri Location Anal. to Cognos</td>
<td>Demo Theater</td>
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<tr>
<td>11.30-12</td>
<td>Data Enrichment using Esri APIs</td>
<td>Demo Theater</td>
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</table>
Visit Commercial Island in the Esri Showcase

Tuesday 9-6.00
Wednesday 9-6.00
Thursday 9-1.30
Please Fill Out Survey!

www.esri.com/ucsessionsurveys

Offering ID: 648