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Location Intelligence Integrating Maps into Oracle Business Intelligence

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Agenda

- Business Analytics
- Oracle Business Intelligence
- Map Visualization
- Location Intelligence

Key Issues

- What trends are driving analytics?
- What capabilities can you use today and expect in the future?

Top Performing Companies use Analytics to Drive Business Performance

New Insights Shape Strategy and Execution

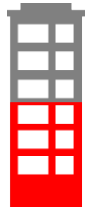
Imagine what analytics can do for your business

3x 

Top performers are **3x** more likely to use analytics than low performers

53% 

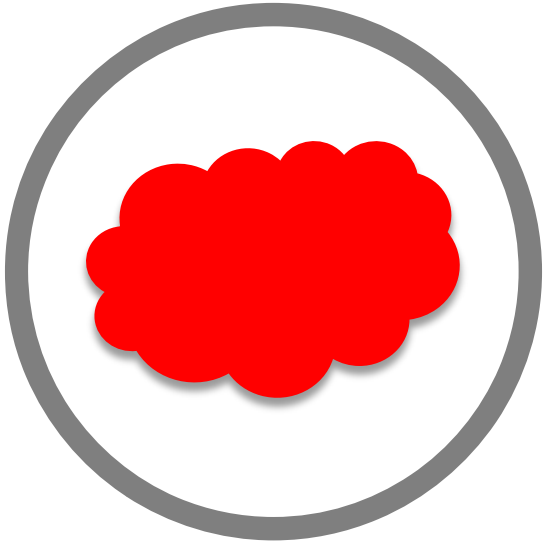
Use analytics to drive **strategy**

50% 

Use analytics to transform **daily operations**

Sources: MIT, Gartner, Nucleus Research

Technology Trends



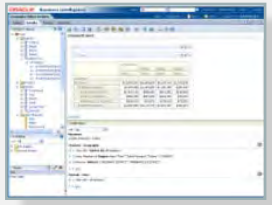
MOBILE **CLOUD** **BIG DATA** **PREDICTIVE**

Oracle BI Foundation Suite

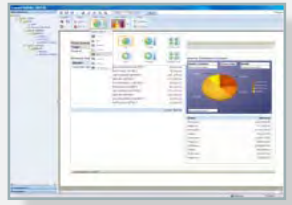
Comprehensive, Integrated, Analytic Tools

Interactive Dashboards

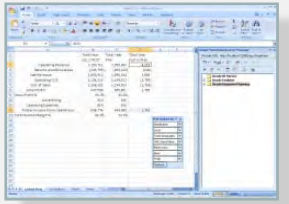
Ad Hoc Exploration



Production Reporting



Office Integration



Scorecards

What-if Scenarios

Geospatial Visualization

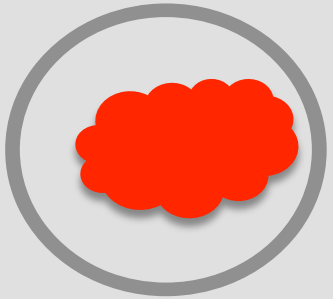
Mobile

One more key trend for BI

SELF-SERVICE

These Enable Self-service

MOBILE



CLOUD

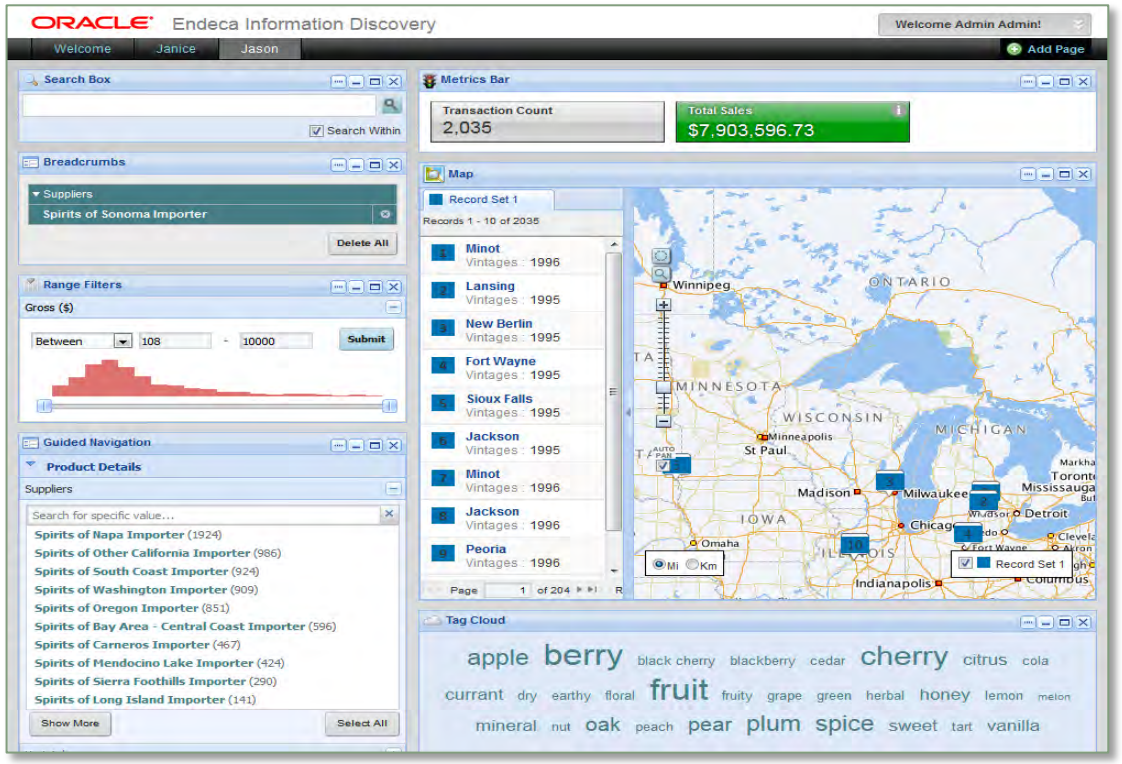
Self-Service Makes These Accessible

BIG DATA

PREDICTIVE

Oracle Endeca Information Discovery

Simplicity of Search, Power of Discovery / Exploration

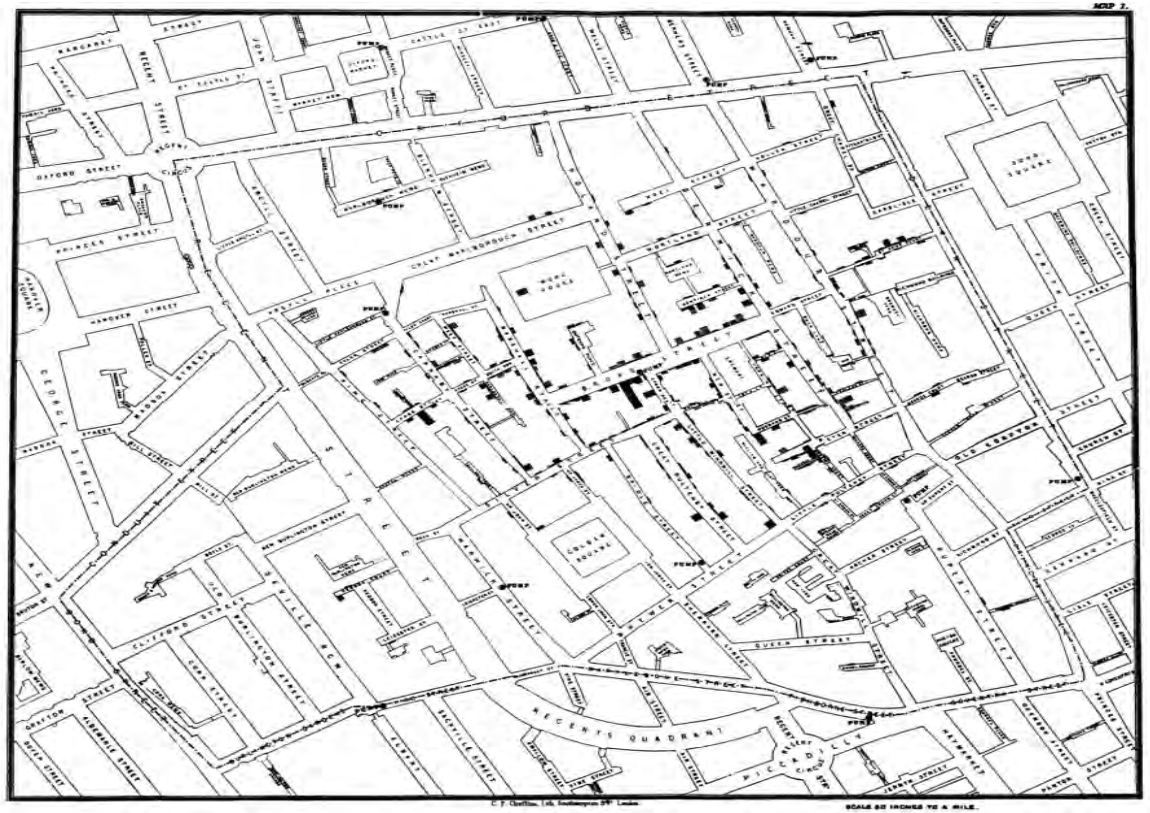


- Walk up ease of use
  - No need for any modeling
  - Search and faceted navigation metaphor
  - Highly interactive analysis
- Governed Data Discovery
  - Mash up personal data with curated OBI data sets
  - Robust ingestion with file/web crawls
- Integrated Text Enrichments

Why Maps ?

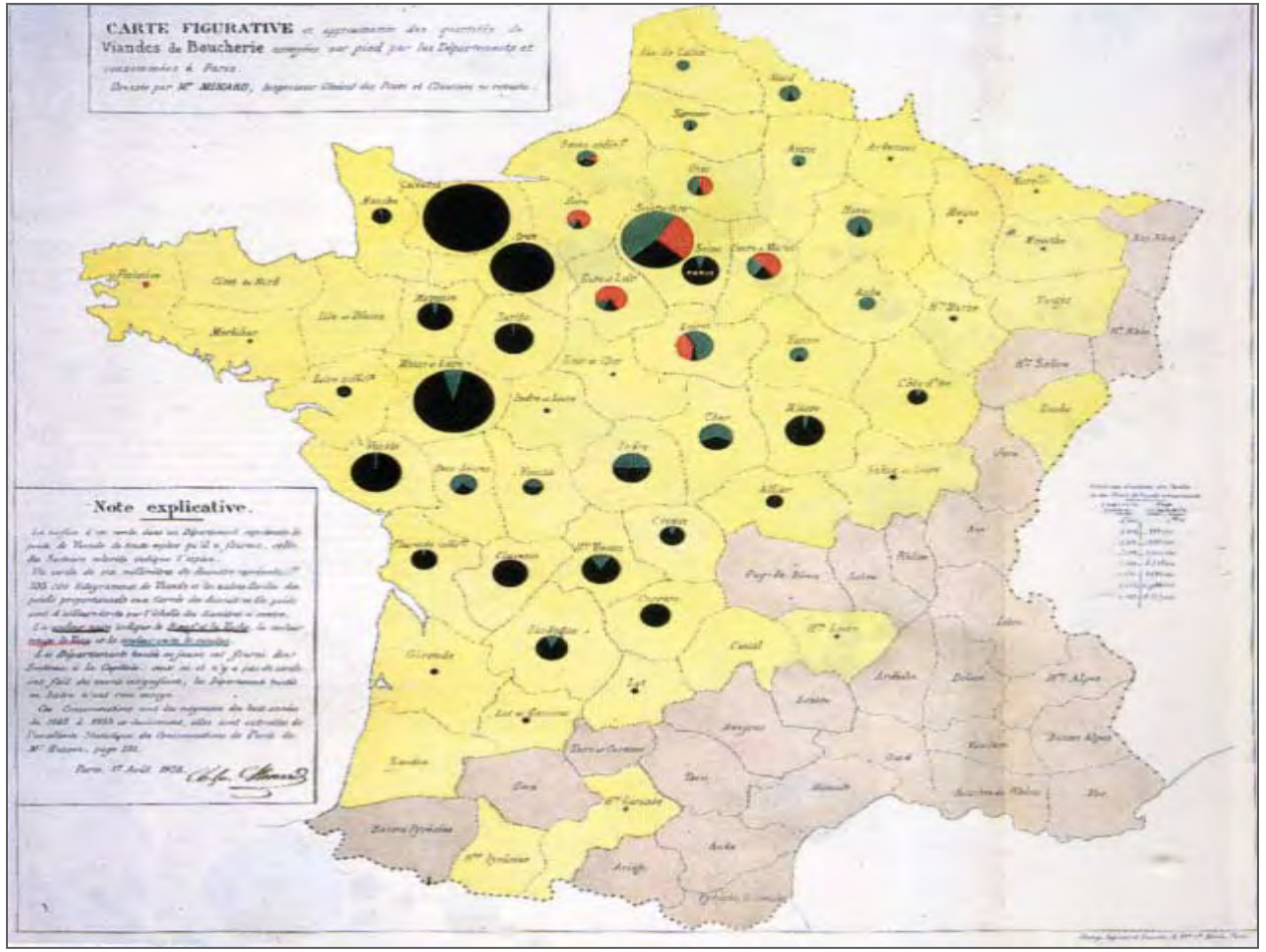
BI and Maps: A Natural Fit

- Maps are a natural choice for representing spatially-related data
- Helps understand many phenomena's and their relationships



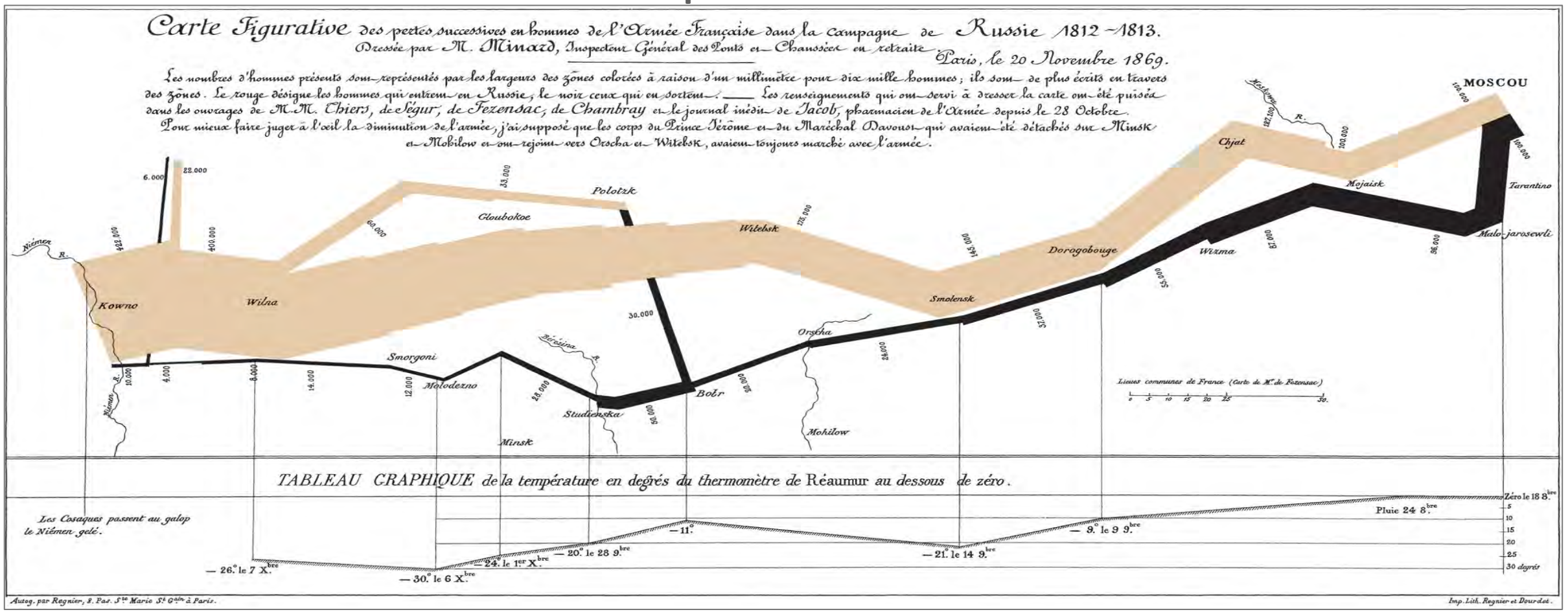
Map courtesy Wikipedia (John Snow,)

BI and Maps: A Natural Fit



Map courtesy Wikipedia (Charles Joseph Minard)

Innovative Information Representation



Map courtesy Wikipedia (Charles Joseph Minard)

More Interesting Maps
“36 Maps That Explain The Entire World”

Maps …

- Show many values
- Highlight spatial proximity
- Highlight spatial correlations

businessinsider.com_maps-that-explain-the-world-2013

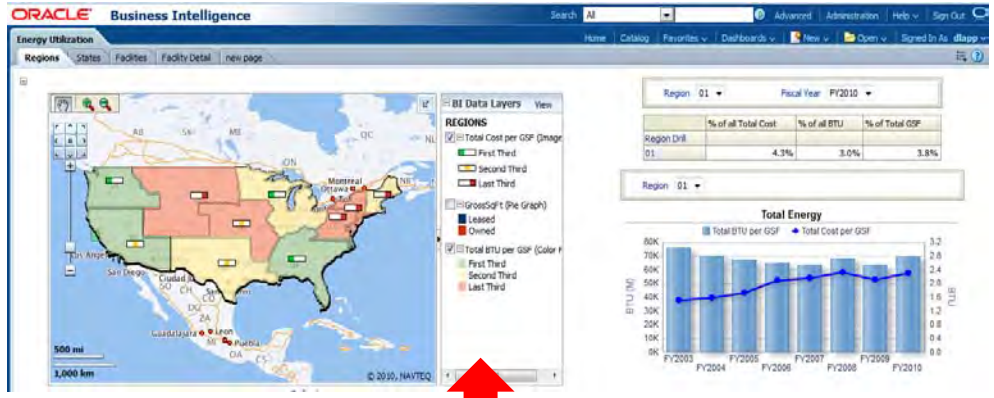
BI Map Views

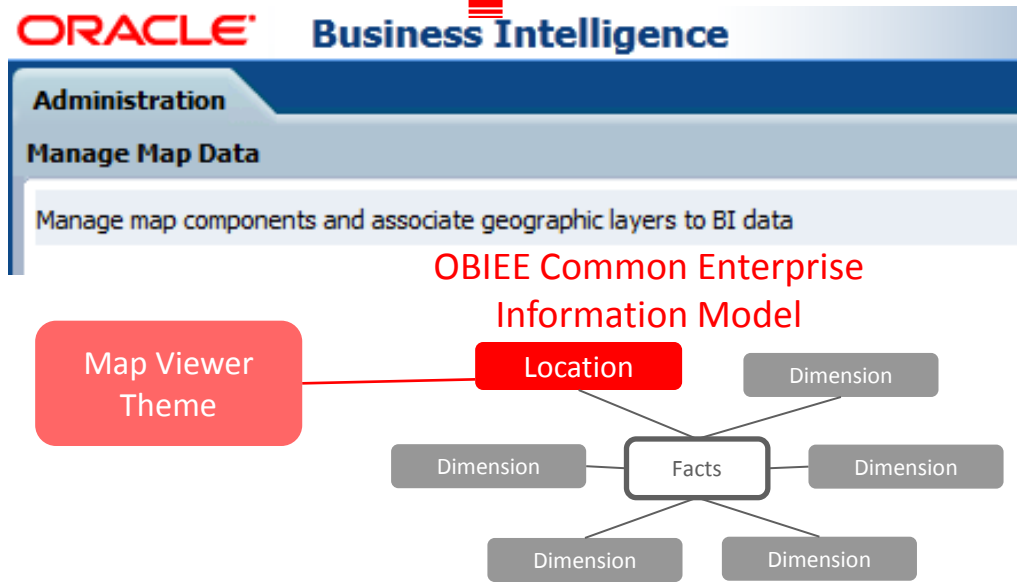
Why BI and Maps ?

- Because business data is “spatially-related”
  - *“80 % of data is spatially-related”*
- Business transactions typically involve:
  - A product or service
  - A consumer and/or a provider
  - A time
  - A location
- Maps help understand the location aspects
  - Where are most of my sales ?
  - Compare with competitors.
  - Relate with my stores.

OBIEE Mapping Capability
The “Map View”

- The ability to add colorful and interactive maps to any dashboard.
- Standard feature of OBIEE.
- Render results of OBIEE analysis as interactive, drillable color coded maps
- Inherits all OBIEE functionality; drilling, navigation, master-detail
- A map view is just like any other view
- No coding or technical know-how required





Many Ways to Render the Results

Color Fill

Bar Chart

Pie Chart

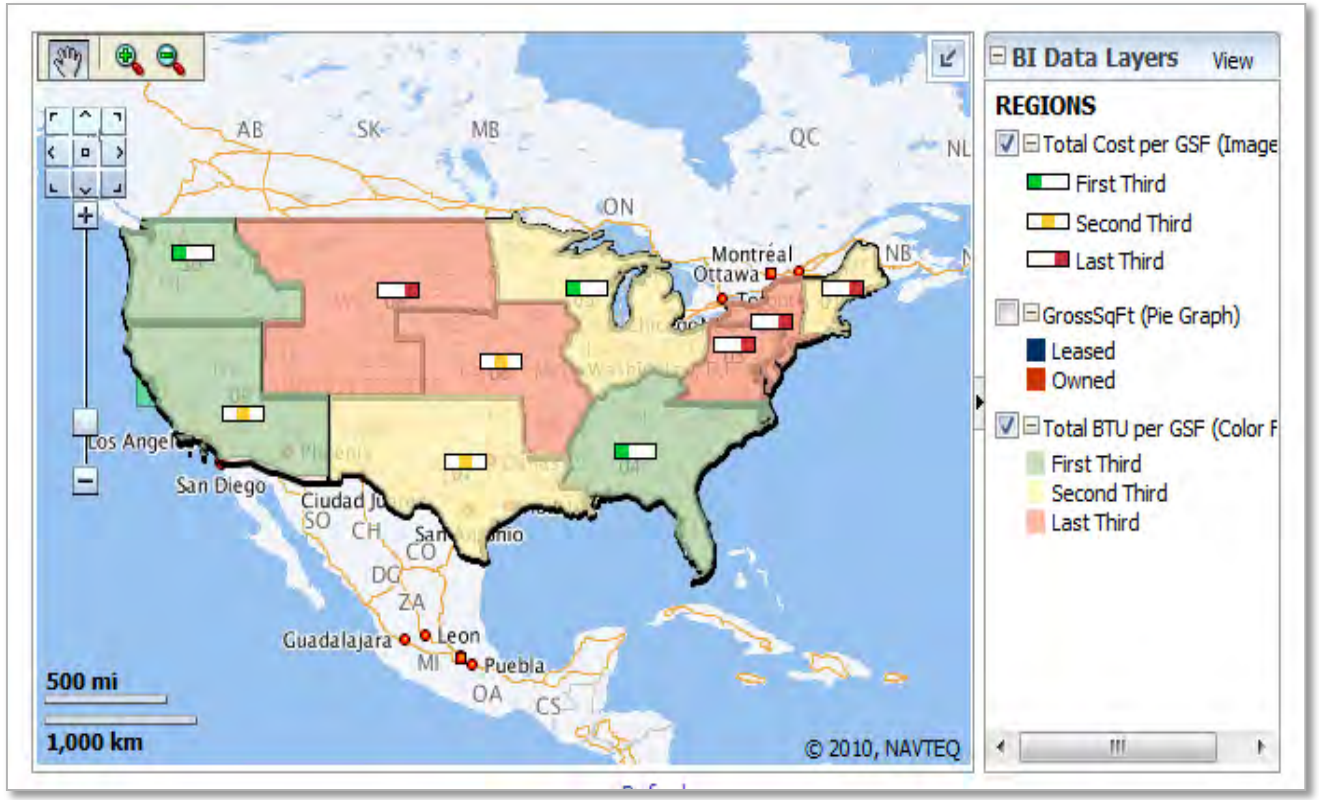
Images

Markers

Bubble

Multiple Results

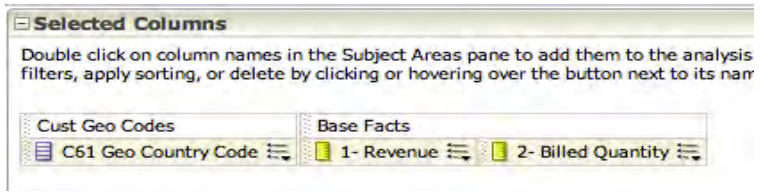
- A map can show multiple facts
- User can turn facts on or off

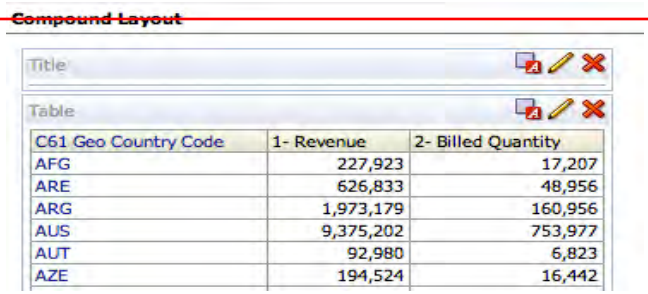


Demo

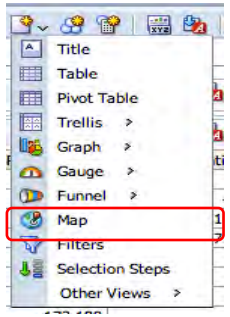
Creating a Map

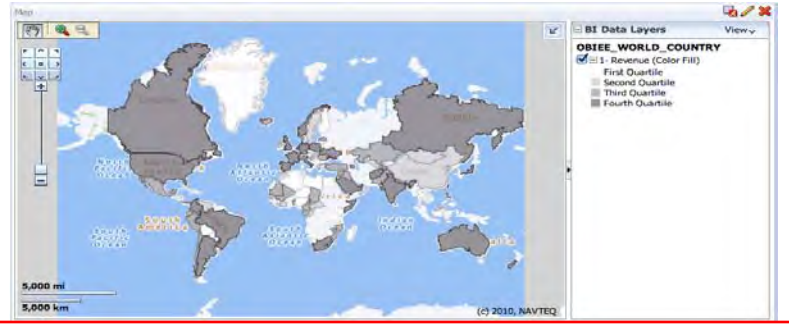
① Define your result as usual



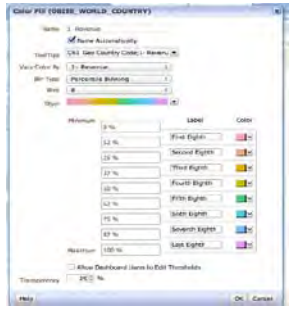


② Add a map view over that result





① Customize the map

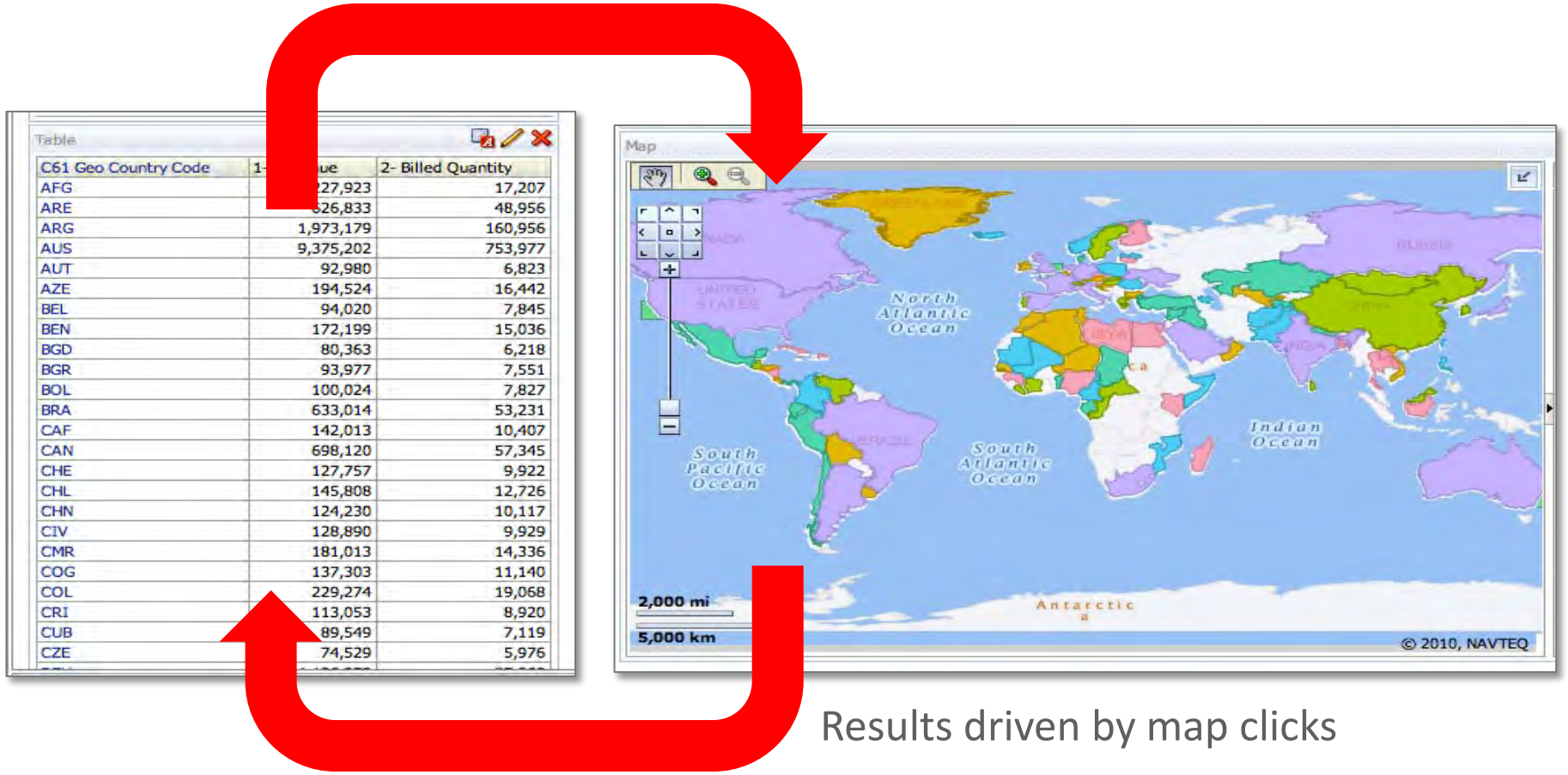


Demo

How does it work ?

Results from BI queries shown as tables, charts and also as maps

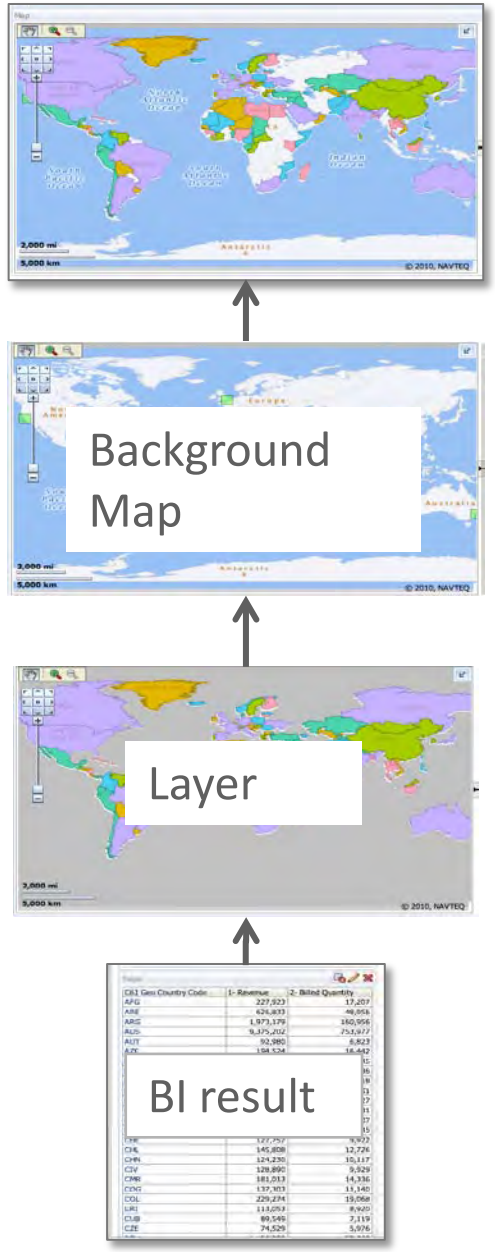
Map automatically updated when results change



Results driven by map clicks

Architectural Concepts

- **Background Map**
  - The map on which the results are drawn
  - Can be produced from spatial tables in an Oracle database
  - Can come from an external service (Google, maps.oracle.com, WMS, …)
- **Layers**
  - The graphical results drawn on the background map
  - Shapes and locations come from an Oracle database
    - Country boundaries, regions, etc
  - Graphical representation driven by BI results
    - Sales, revenue, etc



Full-function Pre-built Analytics

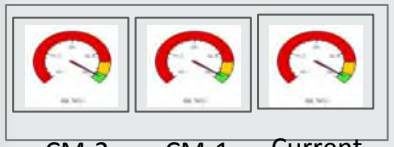
Prebuilt Analytics

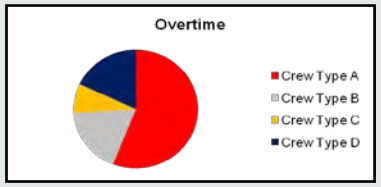
BI Platform

Extractors and Schema

Data Source

Oracle Dashboards / Prebuilt Analytics





Oracle Business Intelligence 11g

Interactive Dashboards

Reporting & Publishing

Ad-hoc Analysis

Proactive Detection

Disconnected Analytics

MS Office Plug-in

Integrated Schema and Prebuilt Extractors

Utilities Applications

MWM

MDM

CC&B

NMS

ERP

Others

Pre-Built Utilities Dashboards

Leverage Standards, Tools and Industry Best Practices

Oracle Business Intelligence Enterprise Edition

Oracle Business Intelligence for Utilities Extractors & Schema

ERP, EPM	*CCB, CSS, CRM*	*MDM, SGG*	*MWM, WAM, ODM**	*OMS, DMS,*
Corporate	**Customer**	**Meter**	**Work & Asset**	**Grid**

End to End Business Intelligence

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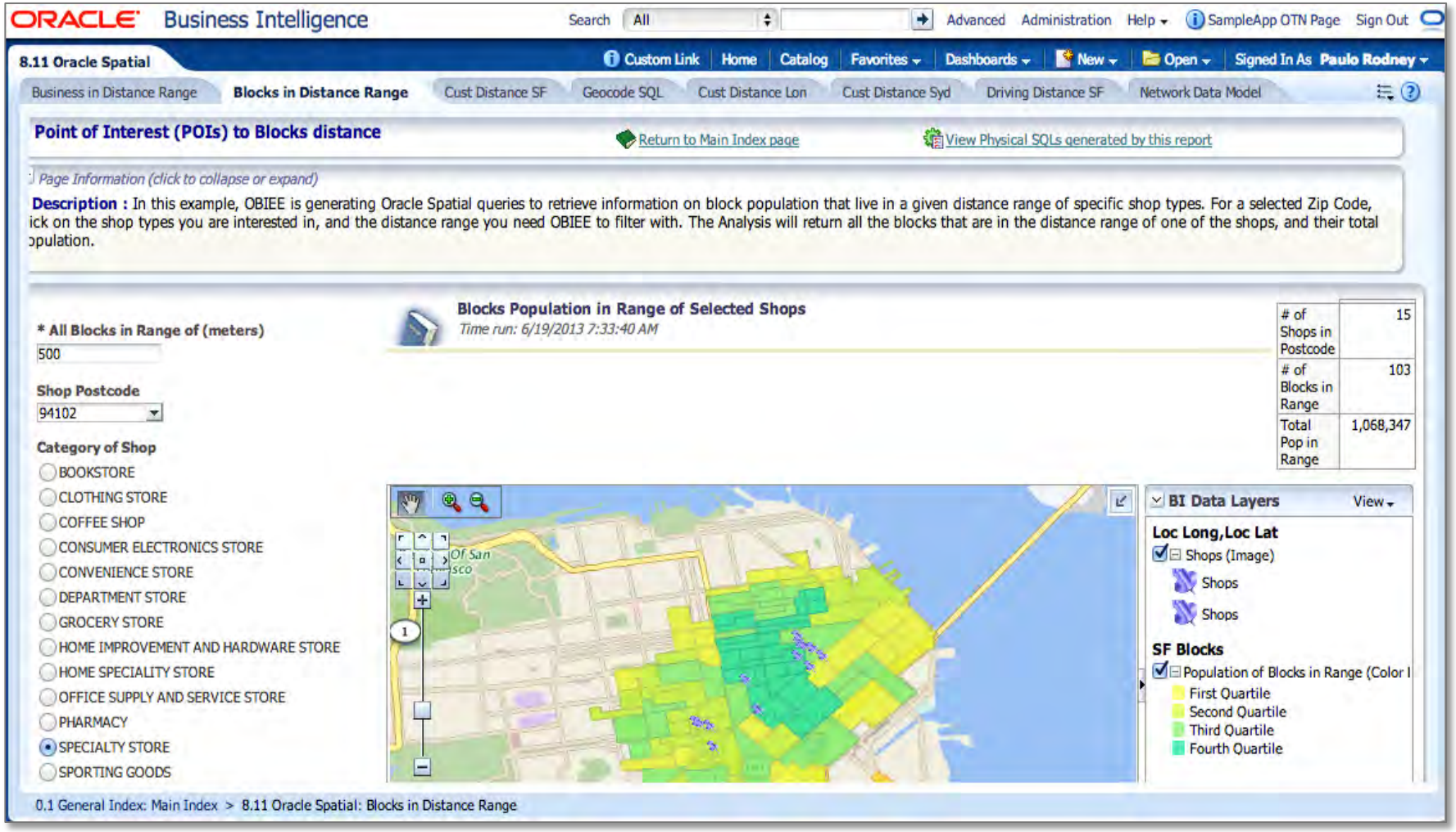
Spatial Analytics

Spatial Analytics

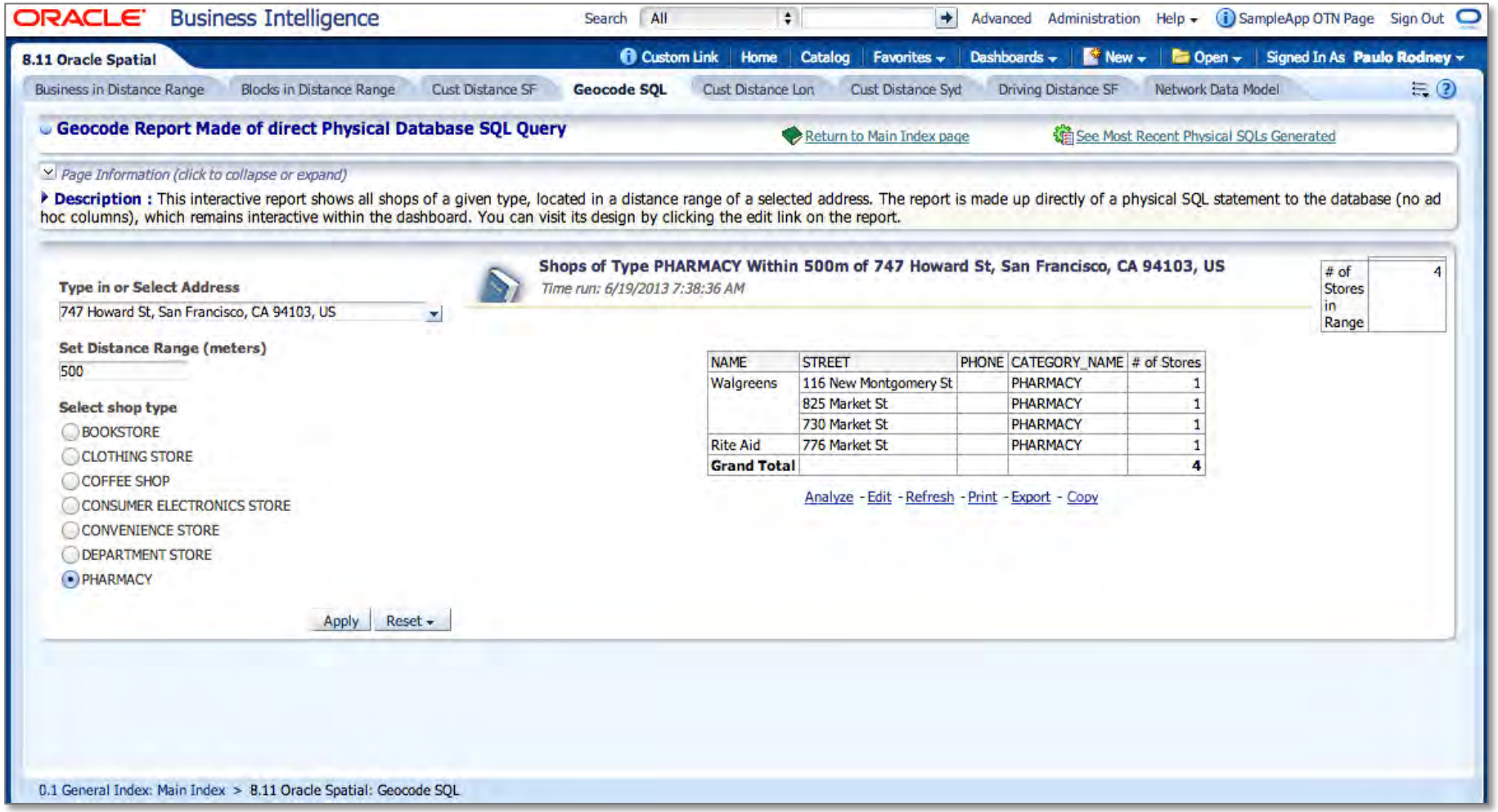
	Distance in Meters	1-Revenue
Addison Hurd	5,165	10,296
Arentina Downey	8,375	60,655
Bertha Oddell	8,090	30,295
Biddy Ross	6,993	81,645
Colburn Tillman	5,583	11,929
Enos Silvis	12,573	61,305
Geraldine Gentle	3,483	3,371
Henry	4,286	1,691

- Supplements and weaves together the native analytic capabilities of OBIEE with location-based analyses.
- Configured by invoking Oracle Spatial features through supported straightforward OBIEE integration mechanisms.
  - Proximity,
  - Nearest neighbor,
  - Within distance,
  - Topological operators,
  - Geocoding etc
- Seamless with other OBIEE data and can be rendered in any OBIEE view (table, chart, map etc)

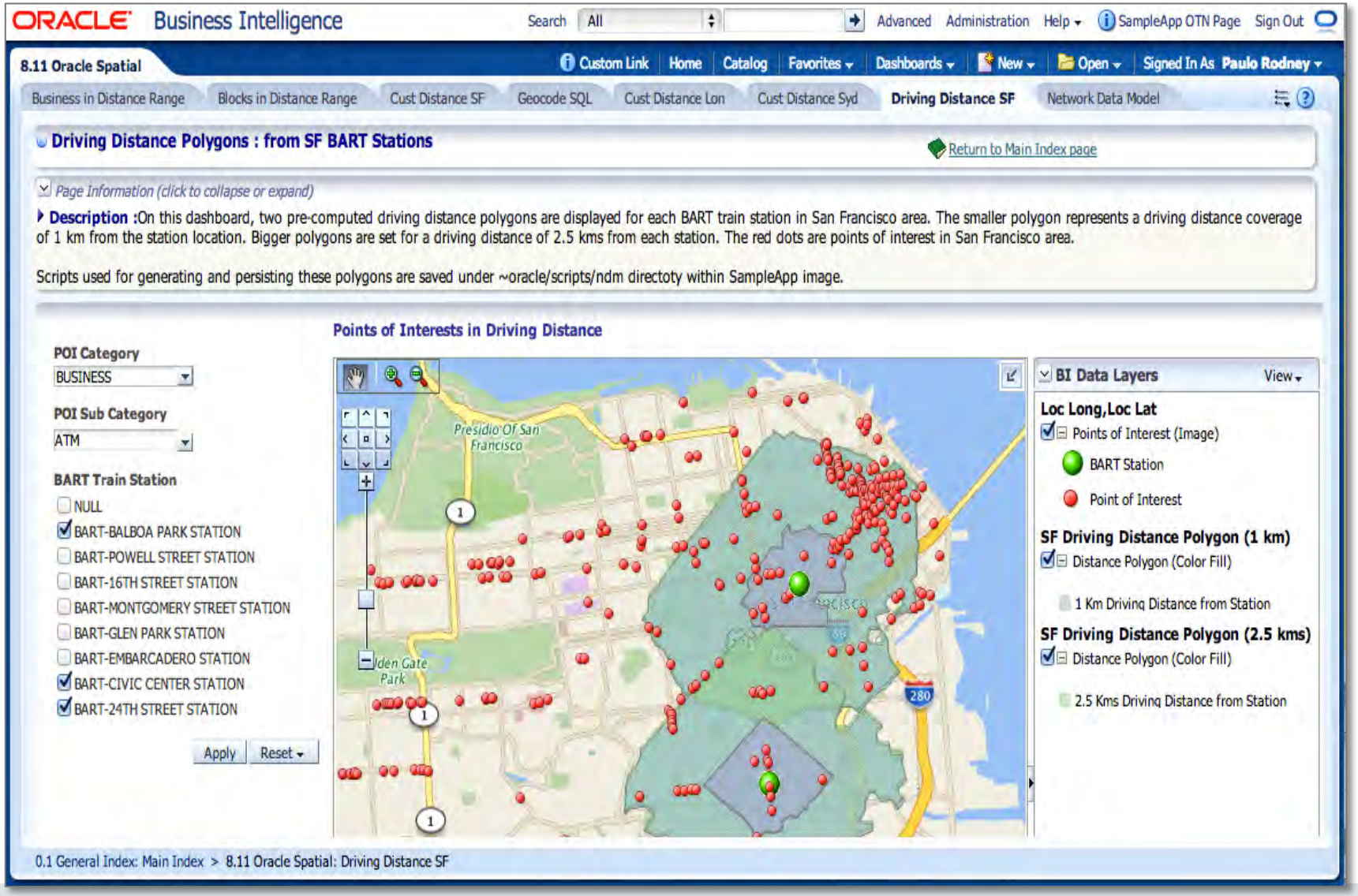
“Within Distance” Search



Geocoding and Distance Search



Drivetime Polygons



Code examples for Advanced Analytics in OBI SampleApp

ODM & PREDICTIVE	ORE	DB CLAUSES & FUNCTIONS	SPATIAL	TEXT	TEMPORAL &TIME
ODM model results Visualization	R Visuals Blob Integration in dashboard	Data Binning and Distribution	Point to point / Address to Point Distance Analytics	Mining & Tokenization (Word Distribution)	Temporal Query (SCD)
Hierarchical view of Classification Tree	R content End-User Interaction	Simple Regression Functions	Point to polygon Distance Analytics	Blending Tokens with Bus. Insights	Temporal Query at Session Level
Explain clause : Variables Significance	R Script Edit from Dashboard	Pattern Detection	Mapviewer Feature layers (Heatmaps)	Advanced Text Filtering	Dynamic Timezone Conversion
Dynamic Individual What if Scoring	R Sourcing from BI CEIM – Script	Descriptive Stats	Network Data Model : Static Results	Text Classification	Dynamic DST Conversion
Dynamic Predictive Queries : Anomaly Detection, Classification, Regression	R calculation embedded in RPD Models : end-user interact	Frequent Itemset (Market Basket)	Network Data Model : Dynamic Refresh	Text Aggregation	Timespan Calculations
Model Score Dynamic Aggregation	BIP Sourcing from R	Model Clause Inter-active Projection	Floor Plan Background		
Model Scores conditional highlighting		Sourcing from Web Services	Custom Geographies Aggregation		

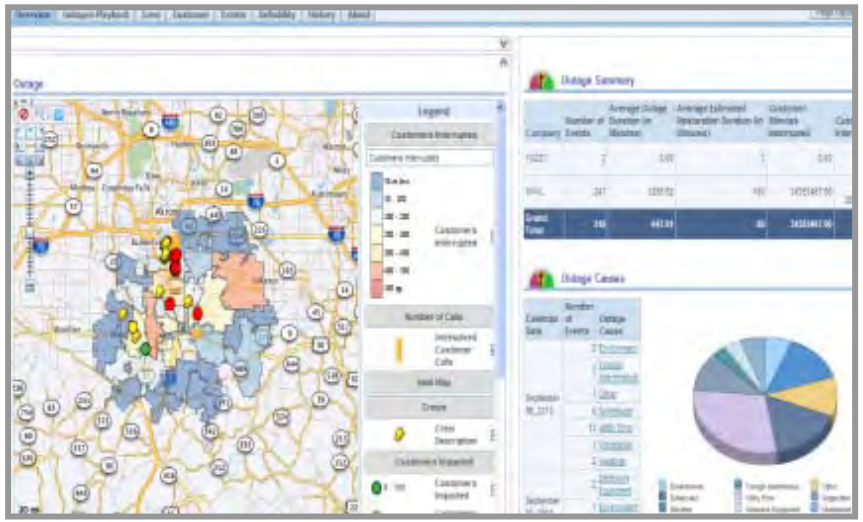
Predictive and Advanced Analytics in OBI

Best practices illustrated in Oracle BI SampleApp

Try it out using the Sample Application

Value Proposition

- **Pre-built analytics and KPIs across multiple applications**
  - Integrated spatial analytics
  - Key Performance Indicators for all major Utility Business areas
  - Pre-built OBIEE Answers covering key subject areas



- **Intuitive, well organized content**
  - Highlights metrics to investigate
  - Help identify bottlenecks
  - Support key functional workflows
  - Provides ability to drill back into the source for details
  - Offers an Action Framework to initiate corrective action right from the BI pages

Safe Harbor Statement

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Hardware and Software
Engineered to Work Together


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