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**Introduction to Geospatial Visualization in
Oracle Business Intelligence Enterprise Edition, 11g**

Product Mgmt., Oracle Business Intelligence and Spatial

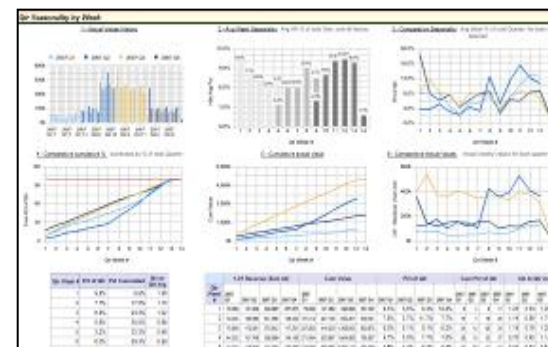
Agenda

- Introduction
- When are Map views useful
- Oracle Business Intelligence 11g
- Geospatial Visualizations
- Further Examples



Introduction

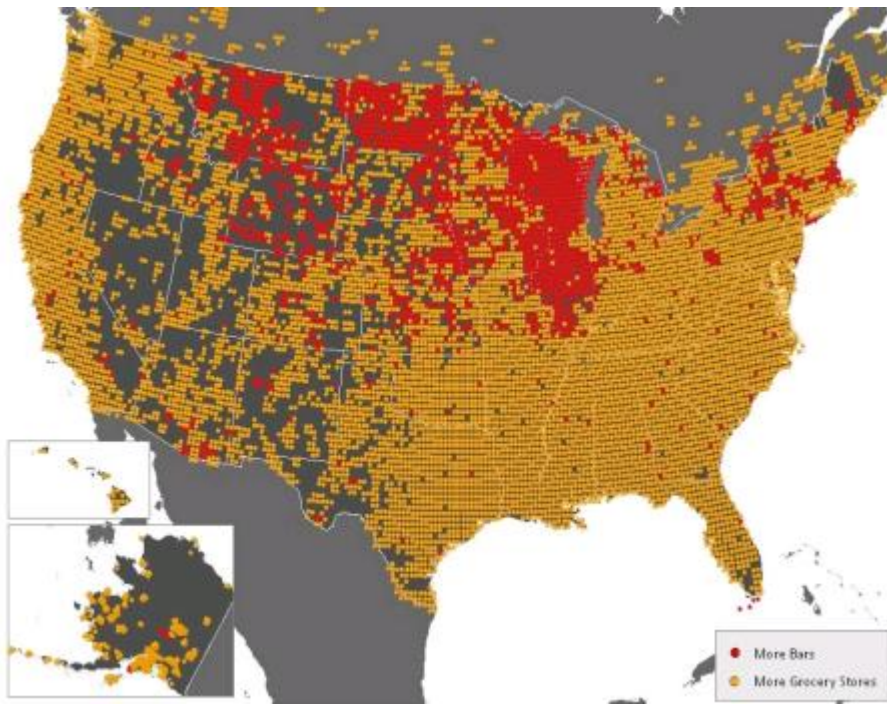
- Effective interactive visualization and analysis are key to insight
- The Oracle BI Suite offers numerous choices ...



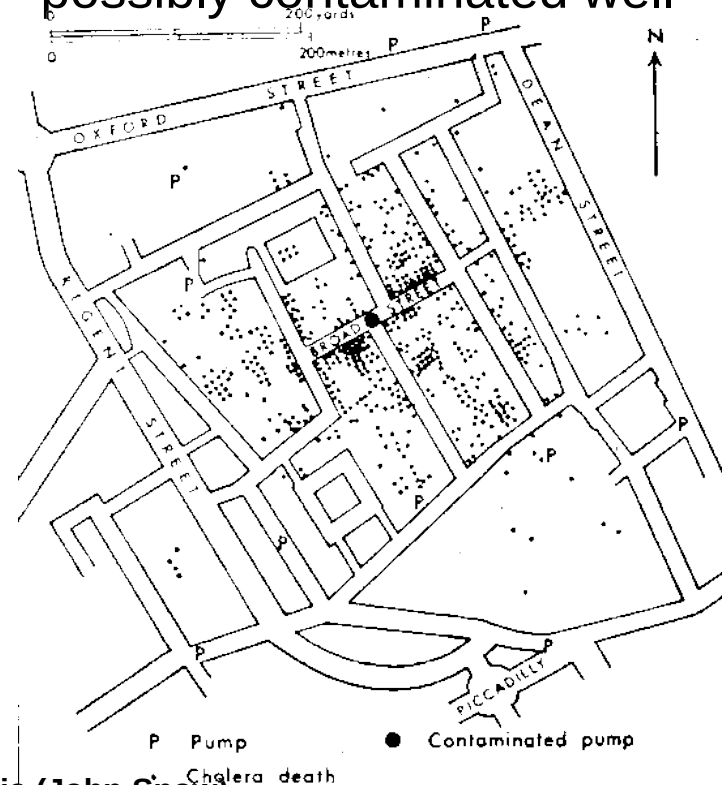
BI and Maps: A Natural Fit

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

More bars (red) or grocery stores (brown) per 10,000 people



Cholera incidents and possibly contaminated well

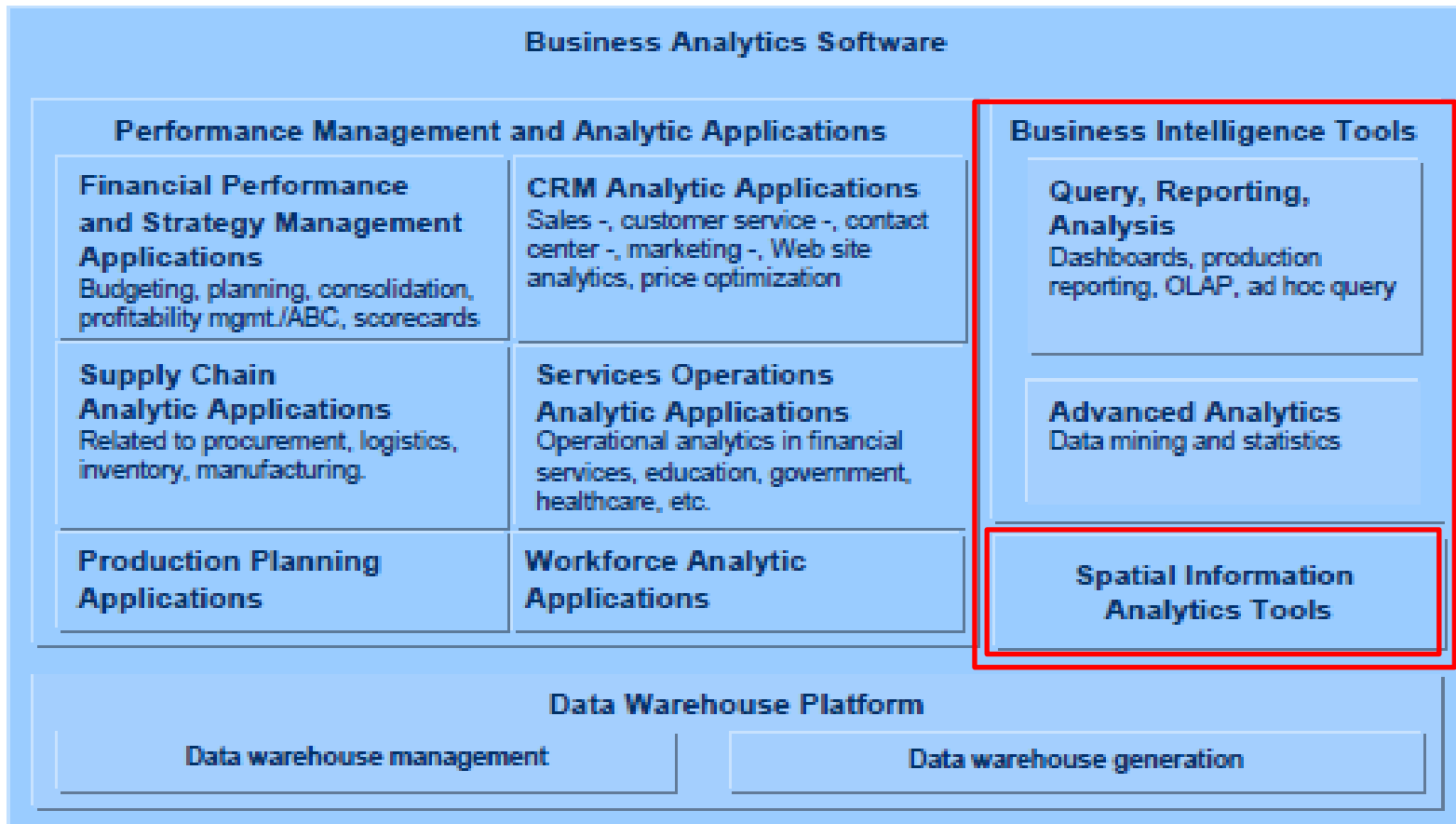


Map courtesy StrangeMaps, Wikipedia (John Snow)

Spatial is a Natural BI Component

IDC recognized BI sector.

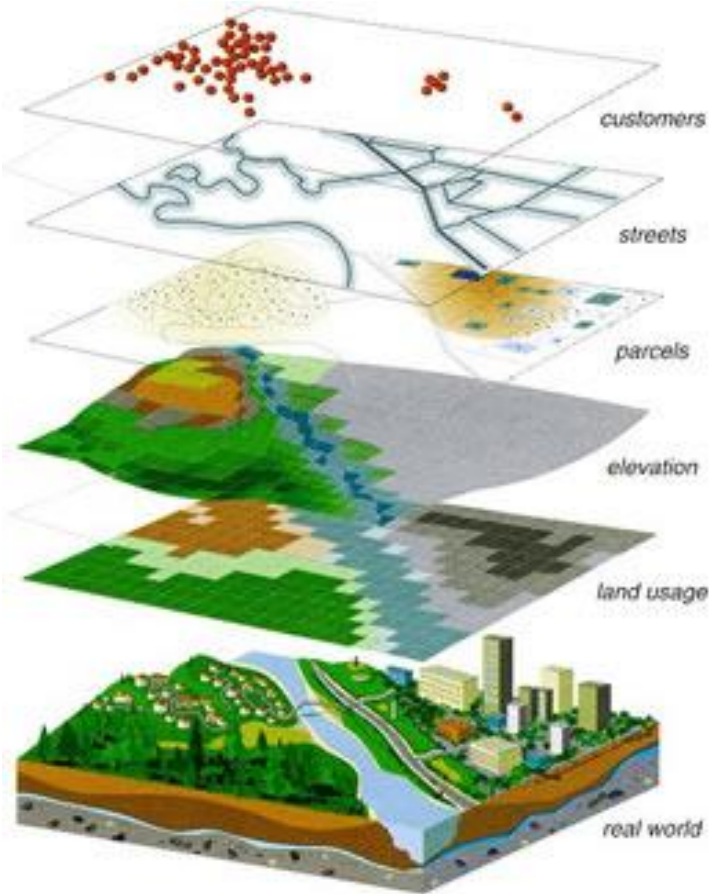
IDC's Business Analytics Software Taxonomy, 2009



Source: IDC, 2009

Spatial Intelligence

New Depth and Breadth of Analysis



- Most BI data *already* contains geographic dimension of analysis
- Deliver deeper analytical insights through Spatial visualisation and data
- Increase the ROI of BI & GIS systems

In effect, Oracle is "flipping the switch" and turning spatial into a product feature when such a capability is needed. **It will be daunting to compete against this company.**

Microsoft, beware... we haven't heard much about geospatial and SQL Server integration lately... you are in danger of becoming a non-player. And IBM continues to play with ESRI only, and resists striking out on its own in what could be a missed opportunity.



Spatial Analytics Give a Real World Perspective

Most business data has a location

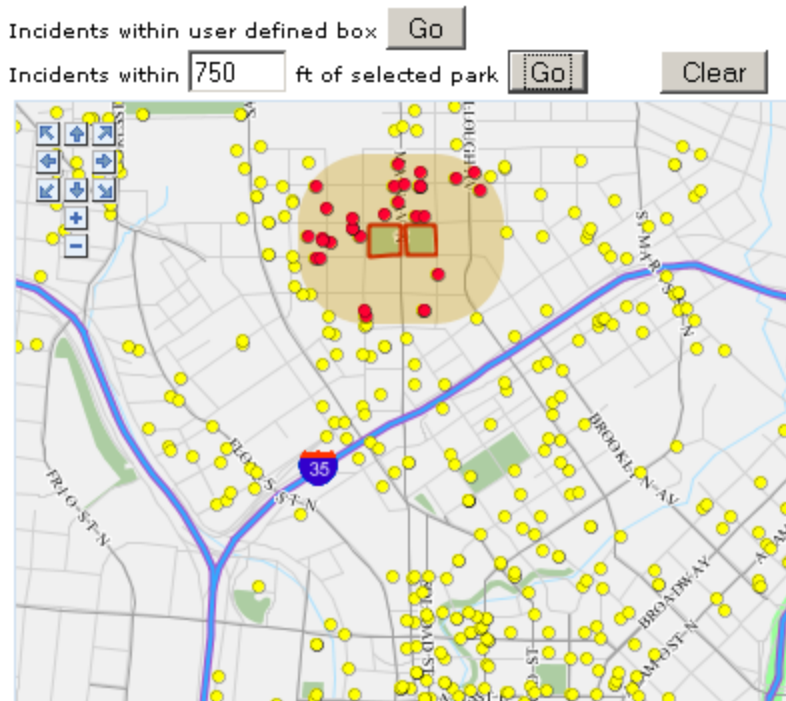
Find all competitors within 2 miles of Northport Branch

```
SELECT c.holding_company, c.location
FROM competitor c,
      bank b
WHERE b.site_id = 1604
      AND
      SDO_WITHIN_DISTANCE(c.location,
                           b.location, 'distance=2 unit=mile')
      = 'TRUE'
```



Map driven filters, or prompts, in BI dashboards

Only Possible With Spatial Analytics



Show incidents within 750 ft
of selected park

Complaint Detail

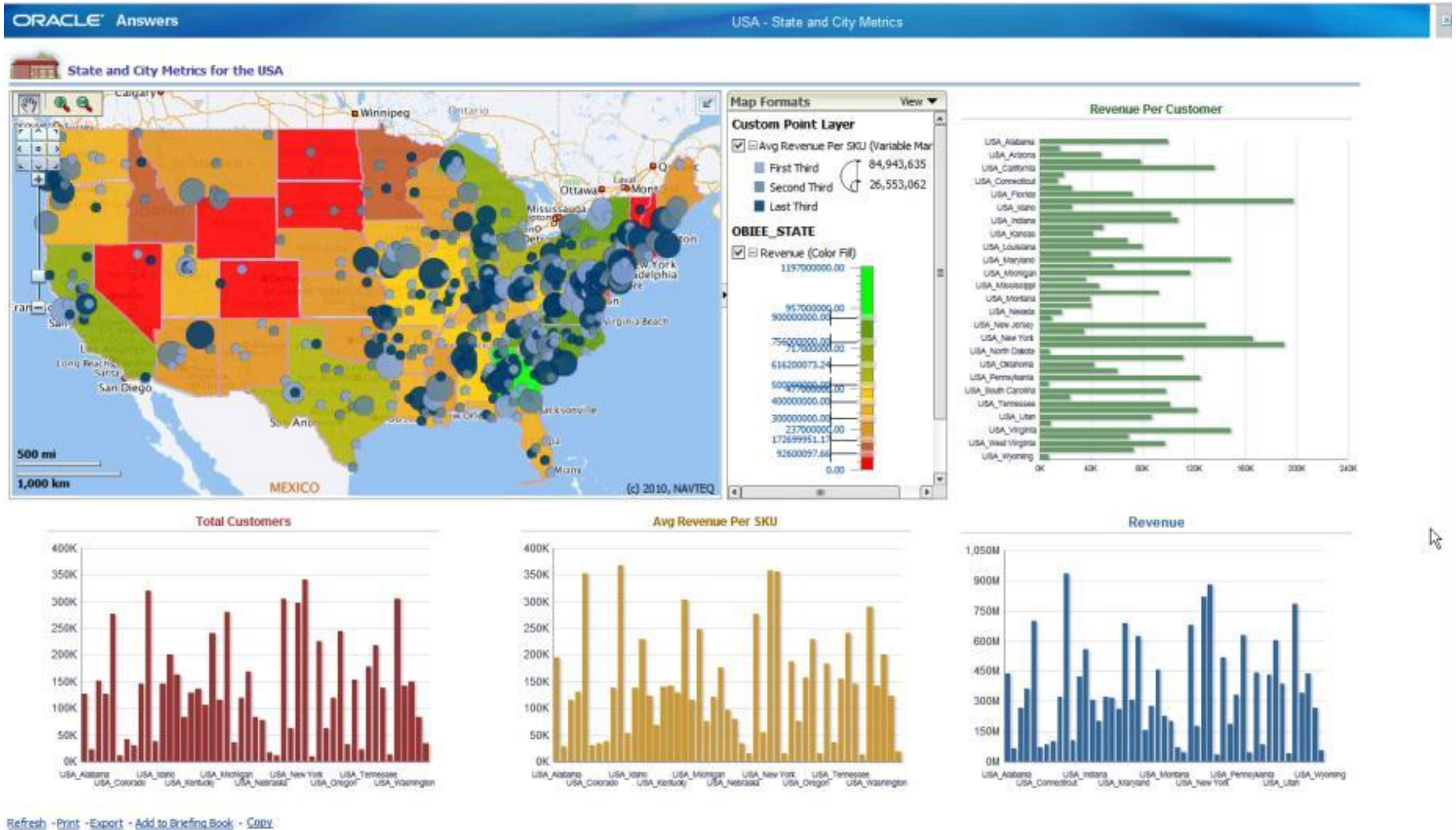
Offense Desc	PD Desc	Date Key	Complaint Key	Service Area	Region
CRIMINAL MISCHIEF & RELATED OF	MISCHIEF, CRIMINAL 4, OF MOTOR	18-Feb-03	1026	28	Central
DANGEROUS DRUGS	CONTROLLED SUBSTANCE, POSSESSI	10-Nov-02	30099	28	Central
		10-Mar-03	40099	28	Central
HARRASSMENT 2	HARRASSMENT,SUBD 1,CIVILIAN	02-Aug-03	1064	32	Central
	HARRASSMENT,SUBD 3,4,5	04-Mar-03	1027	28	Central
		04-May-03	31027	28	Central
		04-Sep-03	41027	28	Central
		19-Sep-03	41028	28	Central
ROBBERY	ROBBERY,UNCLASSIFIED,OPEN AREA	09-Jan-04	41032	28	Central

When are Map views useful

- Visualizing data related to geographic locations.
- Showing or detecting spatial relationships and patterns.
- Showing lots of data in a relatively small area.
- Drilling down from a (map) overview to a detailed report, chart, or graph.

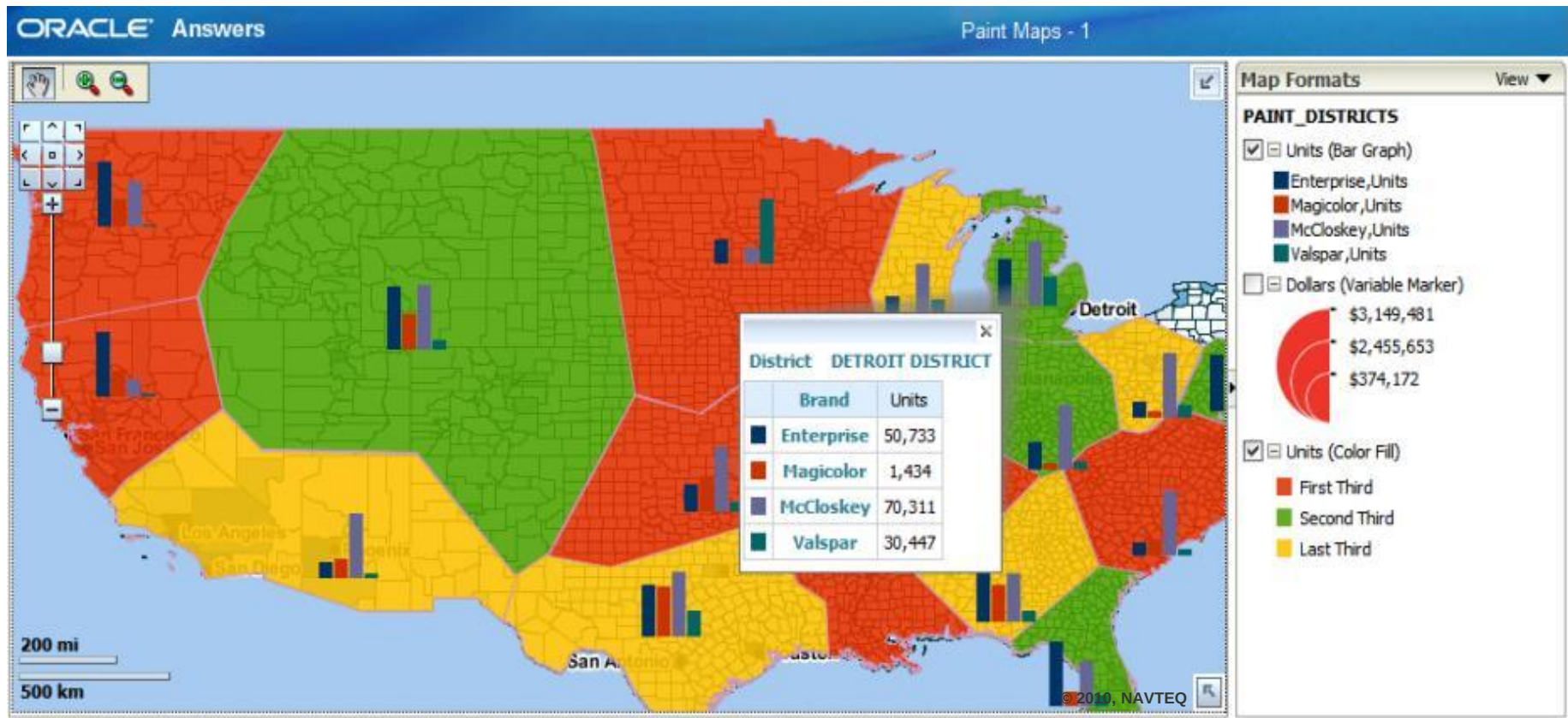
Why Spatial Map Visualizations?

The Original High-Density Visualization



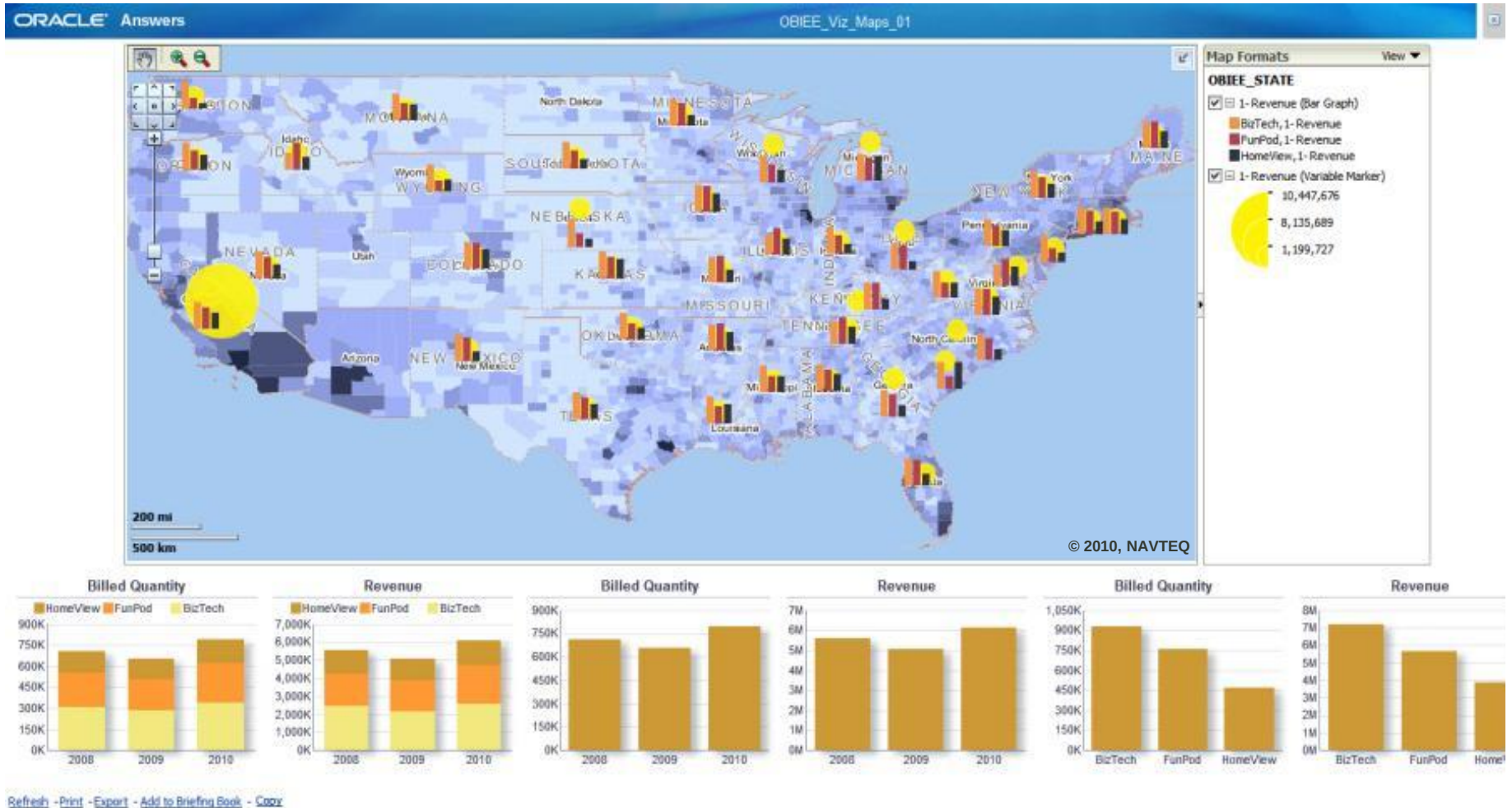
Why Spatial Map Visualizations?

Custom Territories

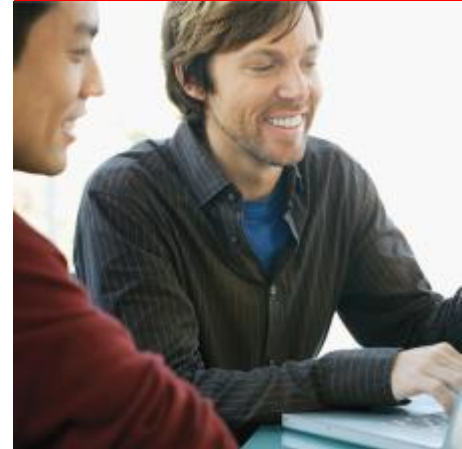


Why Spatial Map Visualizations?

Ideal For Master-Detail Analysis

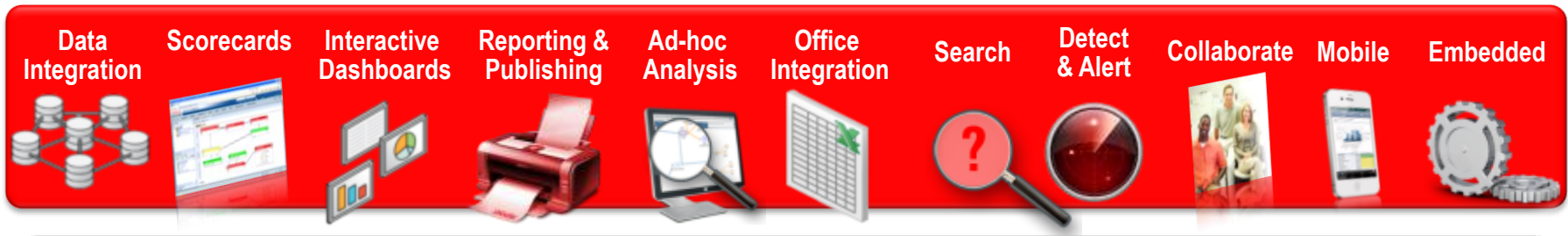


Oracle Business Intelligence Enterprise Edition 11g



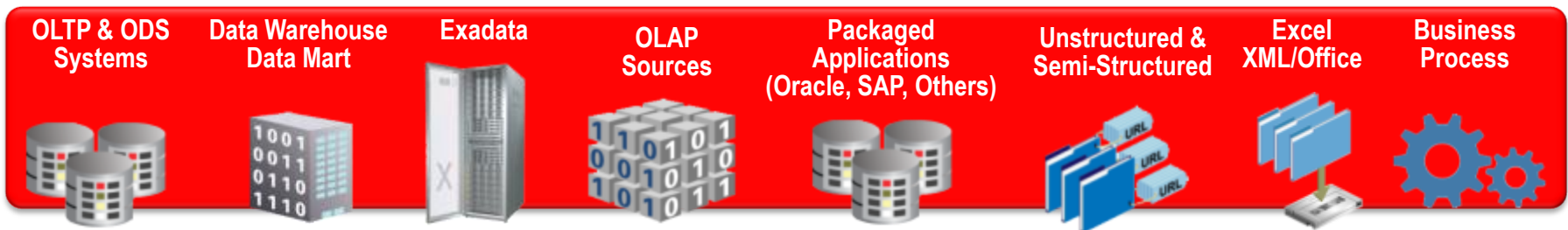
Oracle Business Intelligence

Complete, Open, Integrated



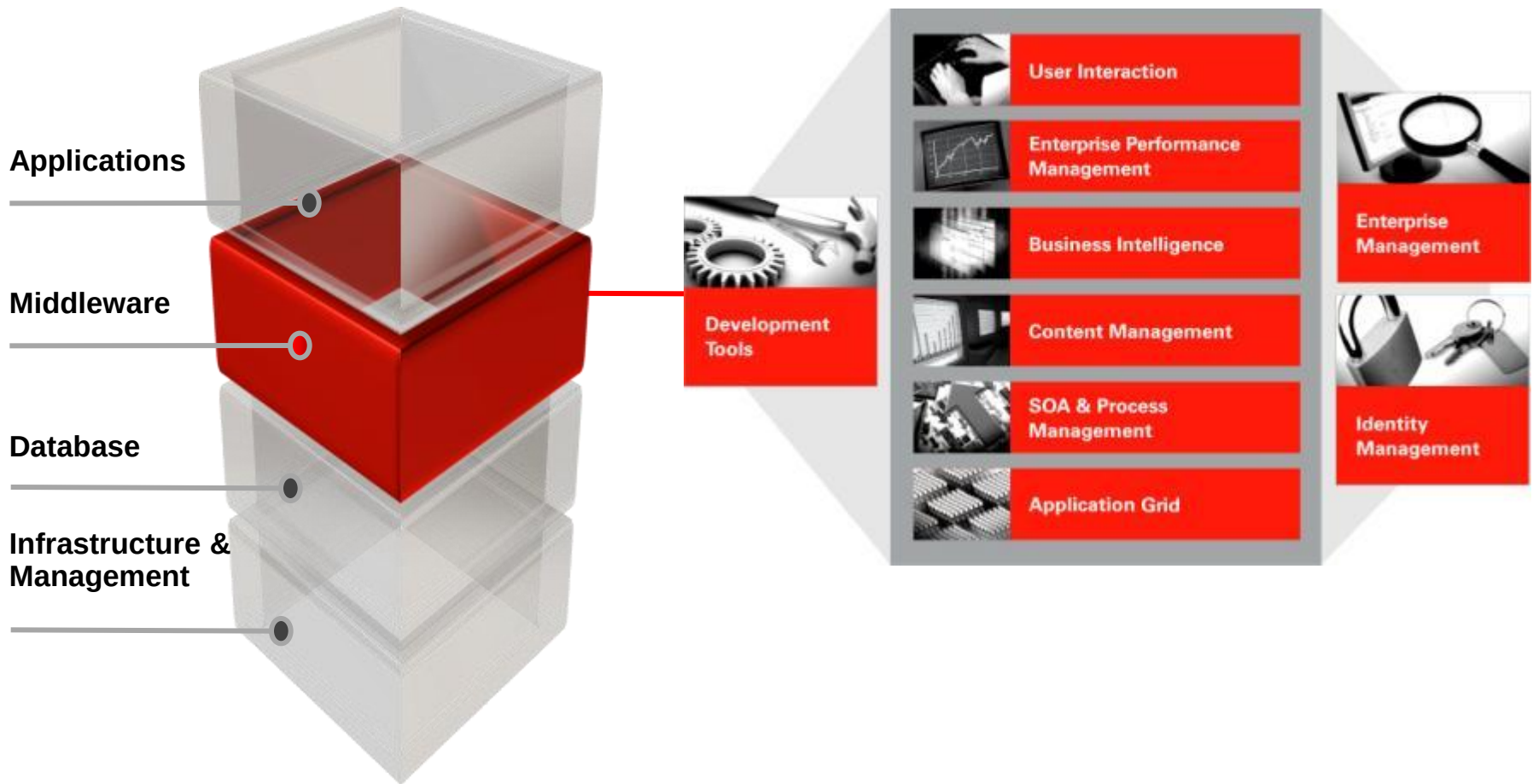
Common Enterprise Information Model

- Common Metadata Foundation across all Data Sources
- Common Security, Access Control, Authorization, Auditing
- Common Request Generation and Optimized Data Access Services
- Common Clustering, Workload Management, & Deployment
- Common Systems & Operational Lifecycle Management



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Part of Oracle Fusion Middleware



Oracle BI 11g New Interactive Visualizations

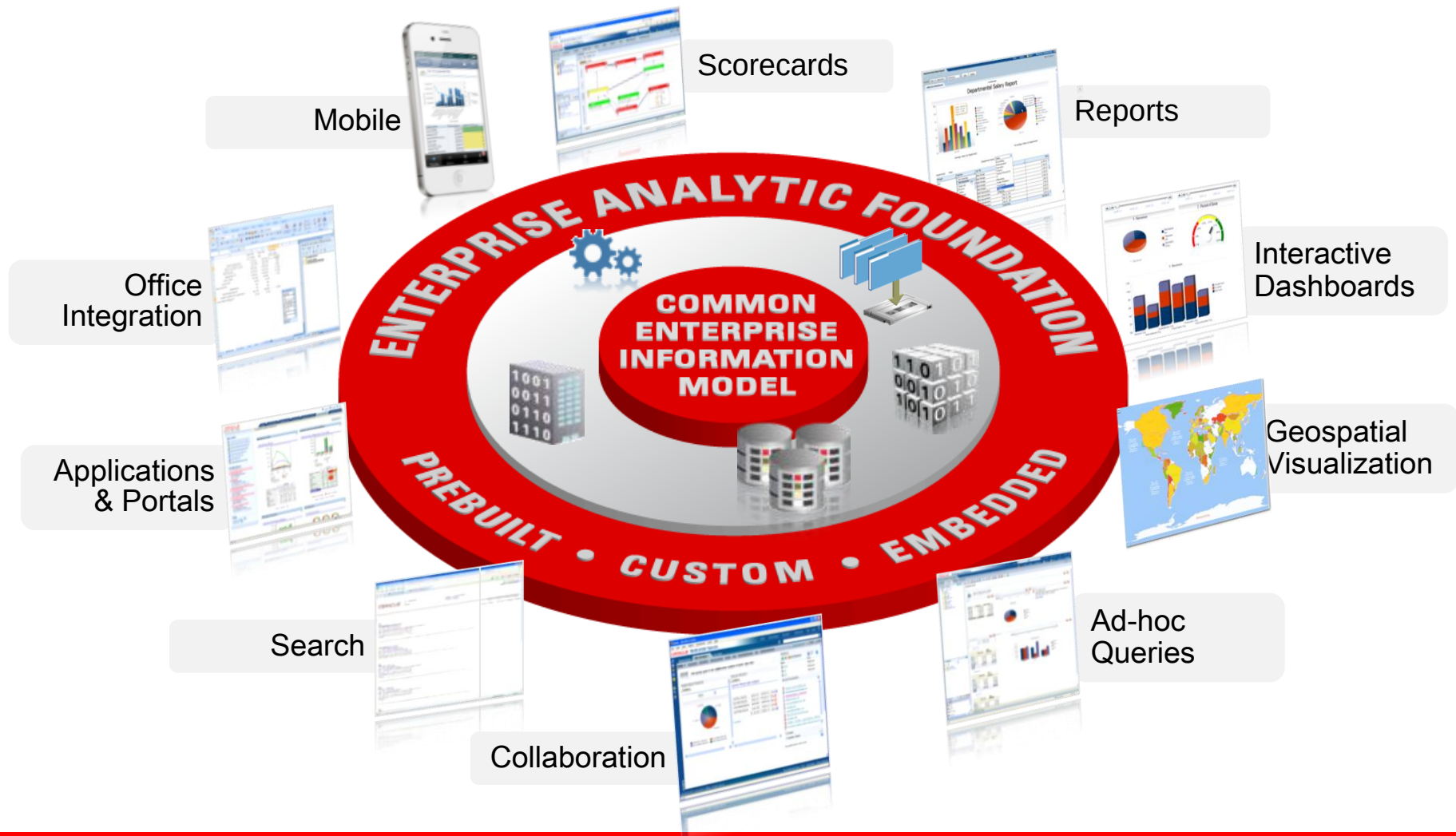
Gain Insight Quicker with Greater Visibility

- Rich interactive visualizations
- Animated transitions
- Range sliders
- Paging sliders
- Master-Detail linking
- Extensive and extended set of chart types
- Consistent, hi-fidelity charting across Oracle product line



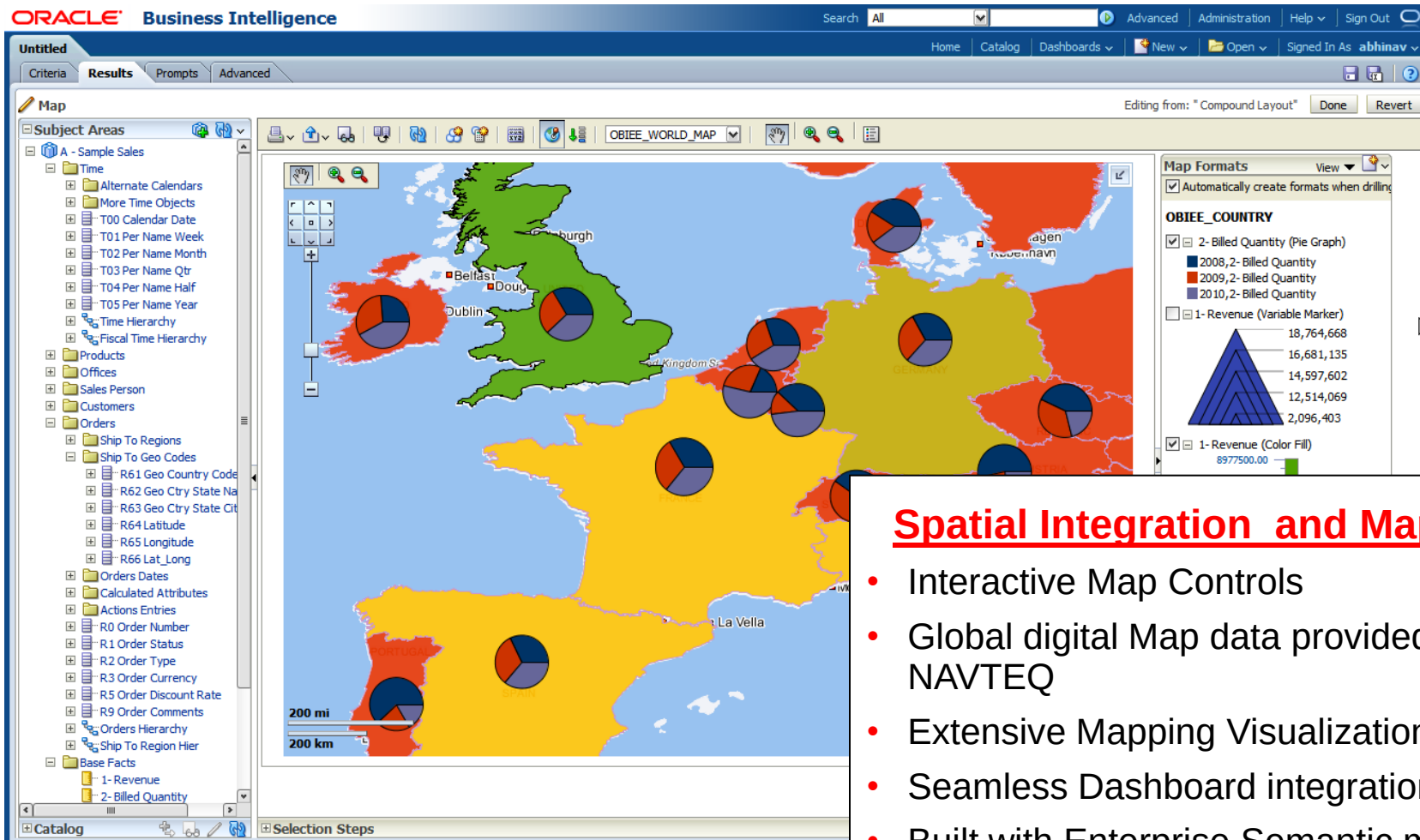
Unified End User Experience

Complete. Consistent. Accurate.



Spatial Visualization in Oracle BI 11g

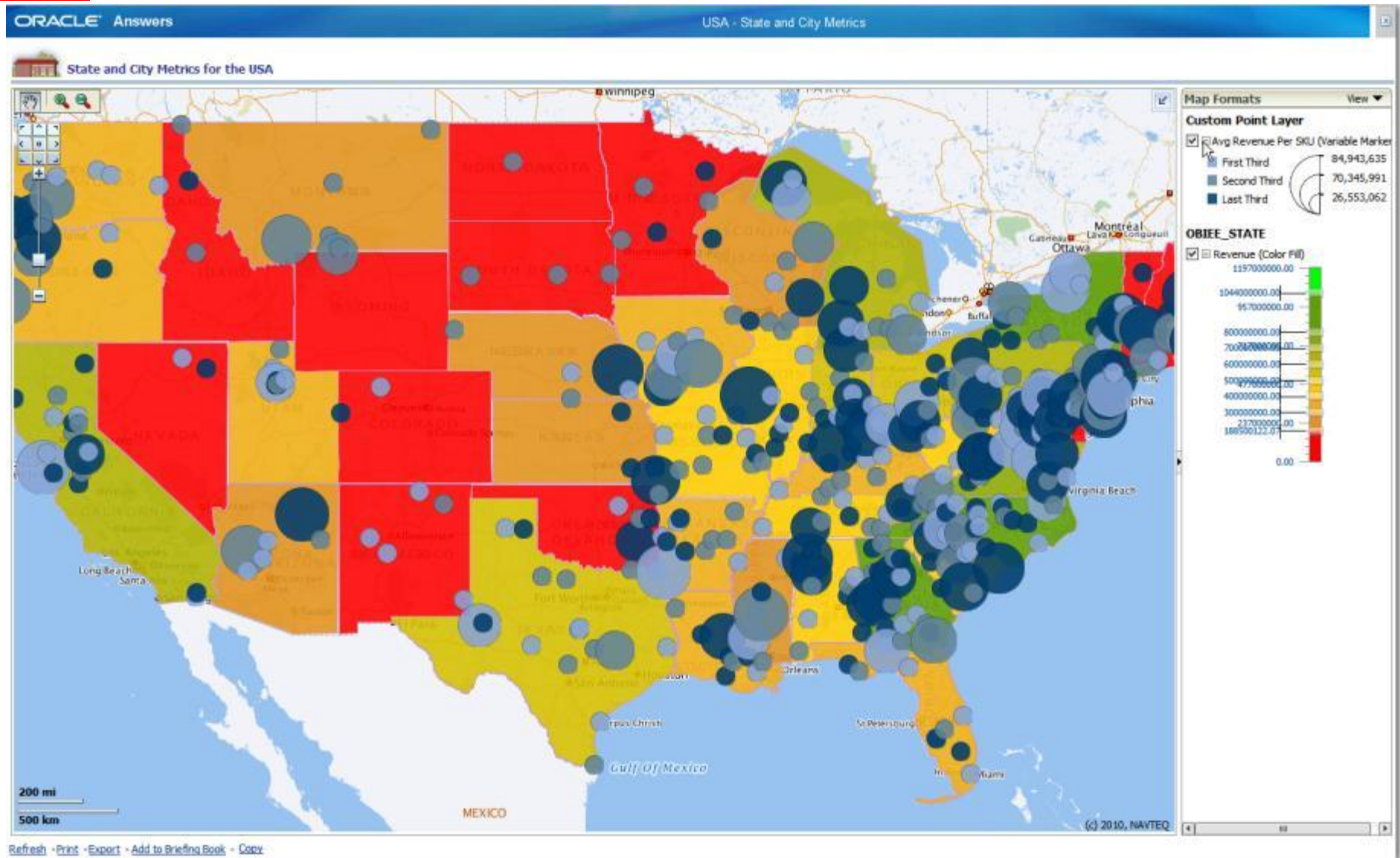
Gain new understanding of customers and markets



Spatial Integration and Mapping

- Interactive Map Controls
- Global digital Map data provided by NAVTEQ
- Extensive Mapping Visualizations
- Seamless Dashboard integration
- Built with Enterprise Semantic model

Known as Map Views in Oracle BIEE 11g



Spatial Visualization: Map views in OBIEE 11g



For Example: Business Data



Interactive Visualizations

Year	Plant Location Country	Plant Location State	Spend Typ	Spend	# of Suppliers	# of Buyers	Invoiced Quantity
2007	BE	Unspecified	ITEM	8,451,585	11	4	11,746
			TAX	288,325	8	4	
	BR	SP	ITEM	706,542	2	3	848
	FR	Unspecified	ITEM	36,058,468	10	8	51,139
			TAX	958,229	9	8	
	GB	Unspecified	ITEM	22,308,436	14	15	45,025
			TAX	464,114	9	4	
	IT	Unspecified	ITEM	8,406,679	11	4	14,435
			TAX	309,027	8	4	
	JP	Unspecified	ITEM	9,606	3	1	25
	NL	Unspecified	ITEM	28,937,424	10	4	44,364
			TAX	461,415	8	2	
	US	AZ	ITEM	136,853	2	1	18,904
		CA	ITEM	37,732,046	42	11	1,884,123
		CO	ITEM	1,080	1	1	90
		DC	ITEM	17,771,255	9	4	74,600
		GA	ITEM	88,411	11	3	59,332
		IL	ITEM	44,876	1	1	2,508
		LA	ITEM	132,583	1	1	17,704
		MA	ITEM	68,870,319	6	1	472,984
		MI	ITEM	31	3	2	545
		NC	ITEM	8,546,510	7	1	5,362
		NY	ITEM	50,640,285	21	5	17,139,790
			TAX	29	2	2	
		OH	ITEM	129,588	3	1	970
		OR	ITEM	84	2	1	28
		TX	ITEM	38,843,715	6	1	575,742
		WA	ITEM	115,436,145	14	5	6,463,985
2008	BE	Unspecified	ITEM	13,333,269	11	4	22,325
			TAX	58,493	6	3	
	BR	SP	ITEM	870,357	2	3	1,061
	FR	Unspecified	ITEM	41,952,960	10	9	56,607
			TAX	136,779	4	7	
	GB	Unspecified	ITEM	22,465,922	14	15	43,092
			TAX	63,570	8	3	
	IT	Unspecified	ITEM	16,737,493	11	4	25,791
			TAX	47,759	6	4	
	NL	Unspecified	ITEM	33,260,624	10	1	50,108
			TAX	76,018	7	1	
		AZ	ITEM	33,430	1	1	3,643
		CA	ITEM	60,694,355	40	8	3,106,348
		NC	ITEM	15,200,285	10	2	1,405,750

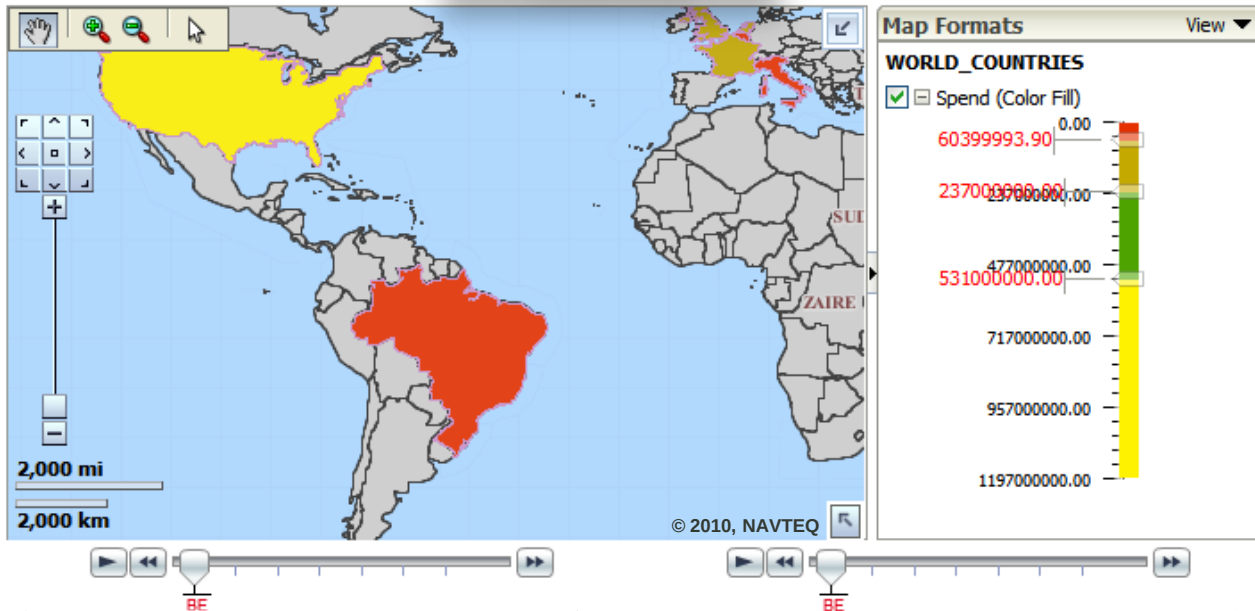
Year
 Plant Location Country
 Plant Location State
 Spending Type
 Spend
 Suppliers
 Buyers
 Invoiced Quantity

And Resulting Analysis

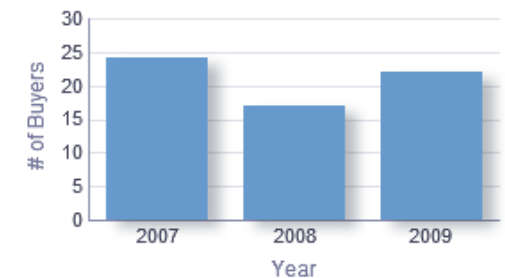
Spend
Country

Buyers
Year

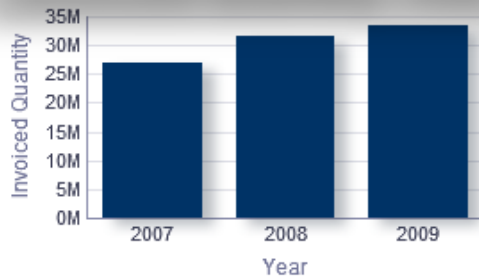
Interactive Visualizations



of Buyers



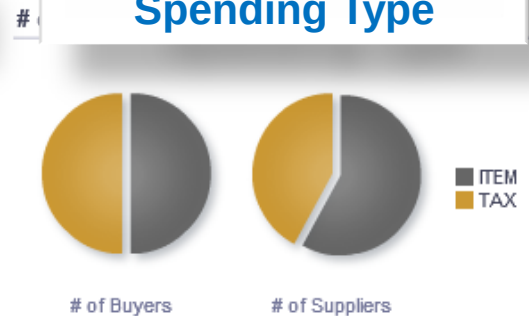
Invoiced Quantity **Year**



Buyers, Suppliers **Year**



Buyers, Suppliers
Spending Type



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Oracle BI Enterprise Edition & Location Integration

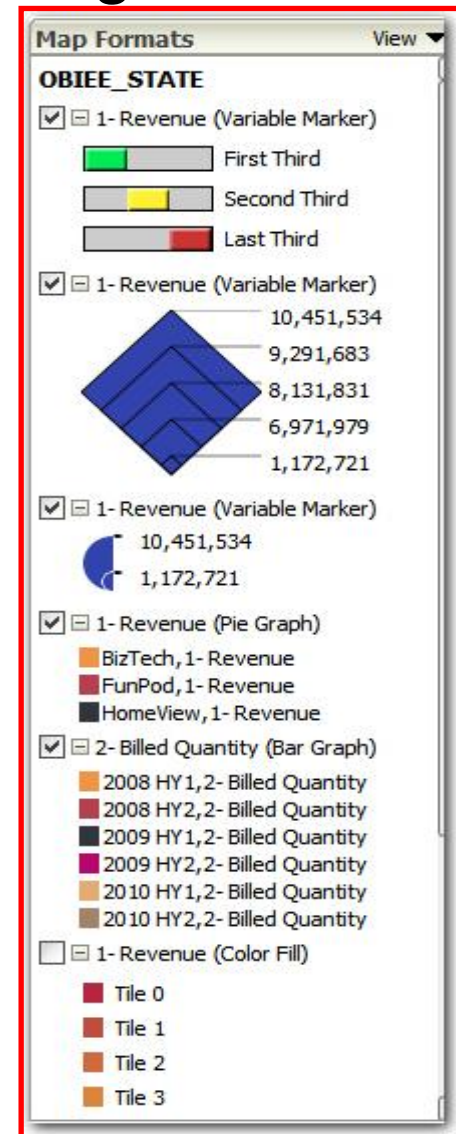
Map views: Thematic Map-based Visualizations

- Thematic Mapping in OBIEE 11g
- First-class view in Answers
 - Point-and-click interface
 - Creation of Map Views
 - Interactions are UI-driven
 - State management
 - Dashboard Prompts
 - Print & Export
 - Agents
 - Integration with Presentation Server stack
 - Oracle Fusion Middleware MapViewer

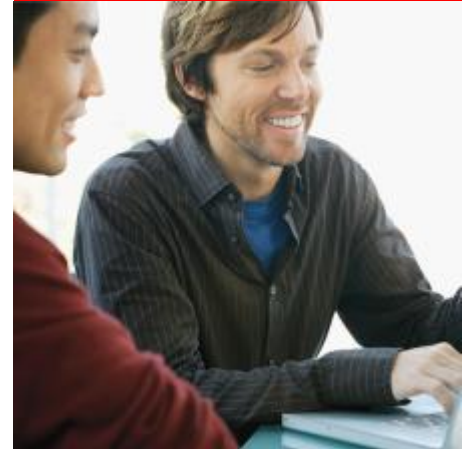
Oracle BI Enterprise Edition & Location Integration

Map views: Thematic Map-based Visualizations

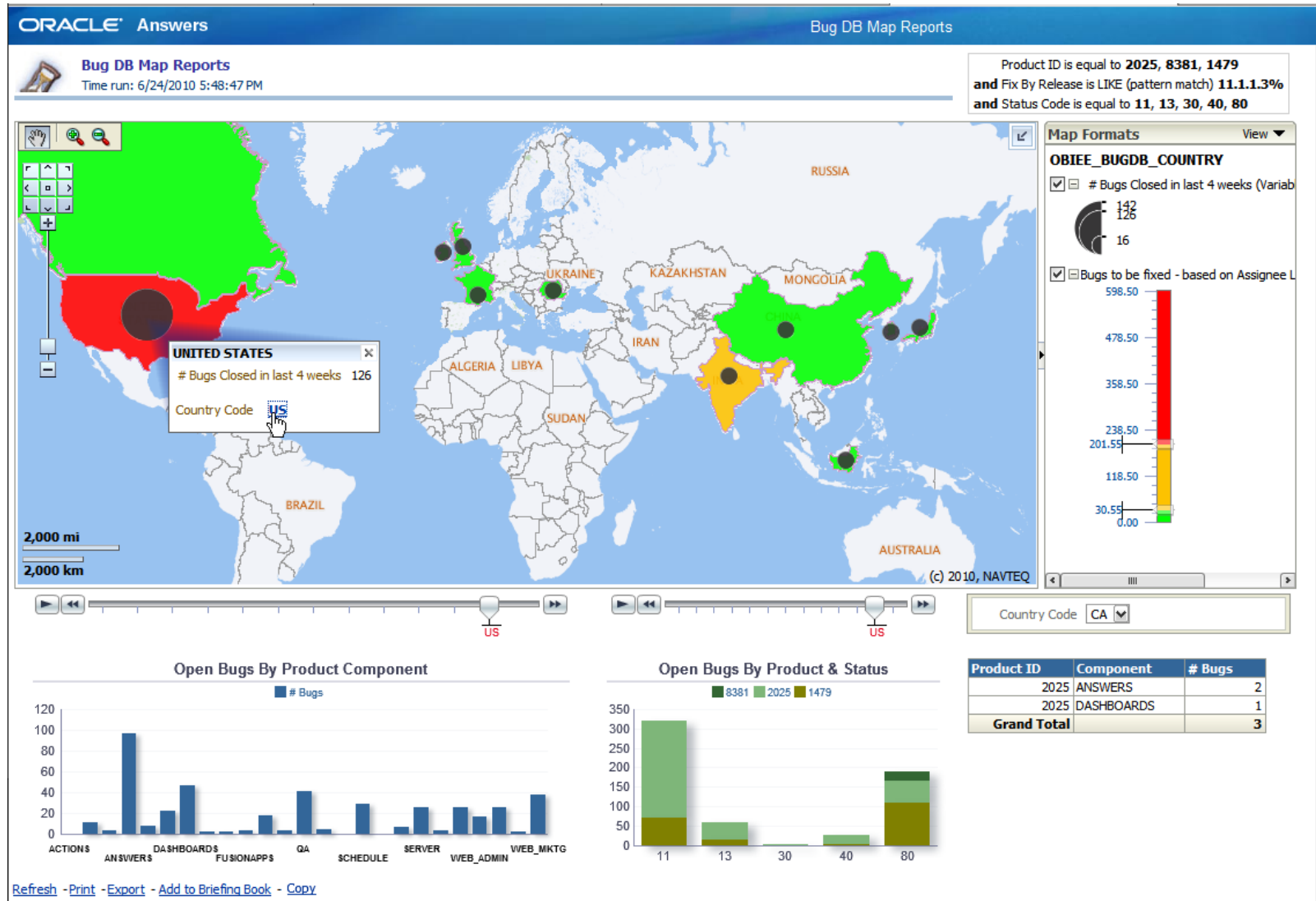
- Support for thematic overlays
- Master-detail linking
- Map Metadata Management
 - Via Presentation Server Administration



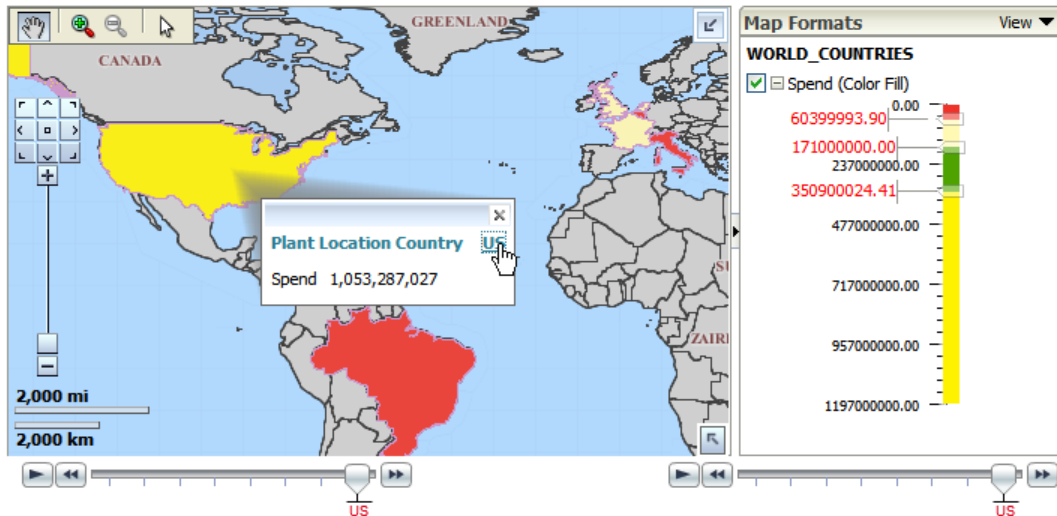
More examples



Performance metrics on map, chart, and table views



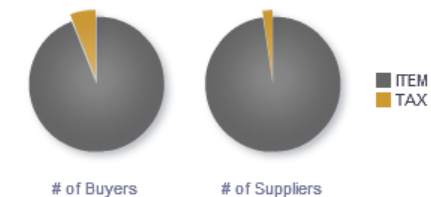
Interactive Visualizations



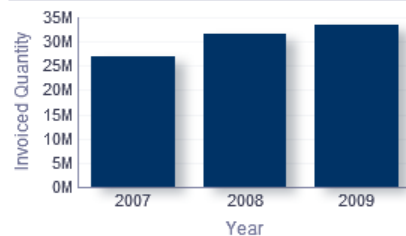
of Buyers



of Suppliers, # of Buyers



Invoiced Quantity

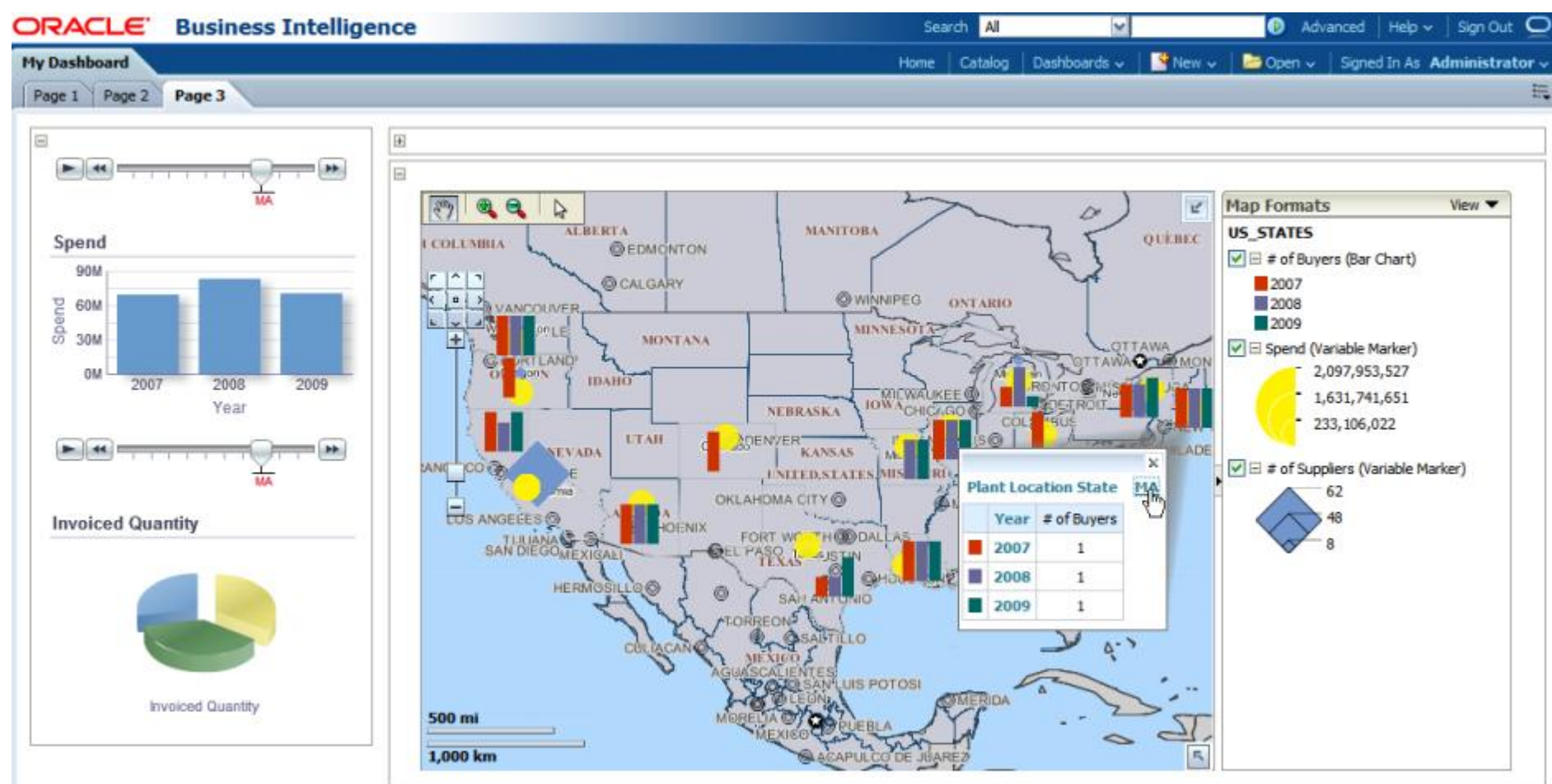


of Suppliers, # of Buyers

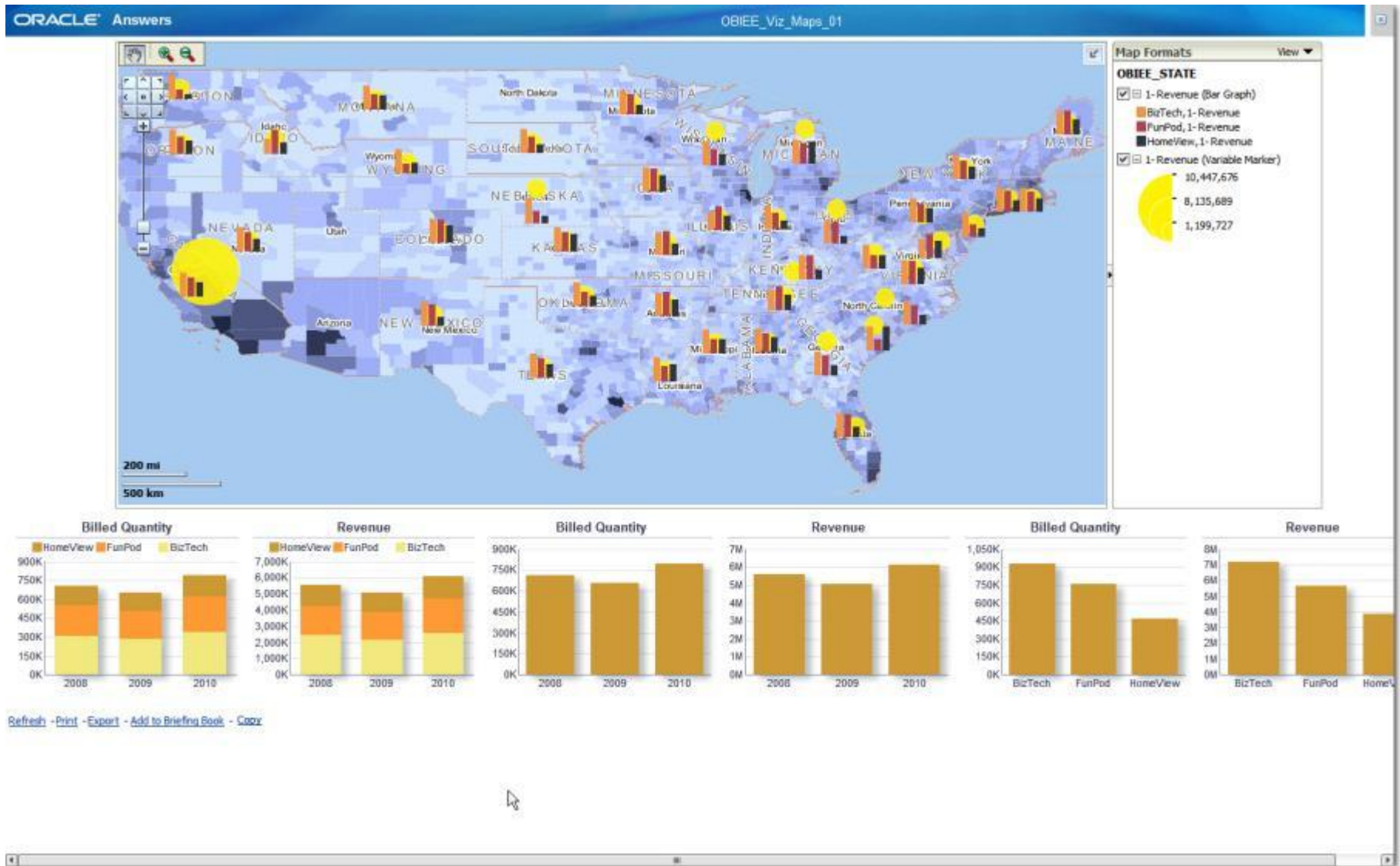


[Edit](#) - [Refresh](#) - [Print](#)

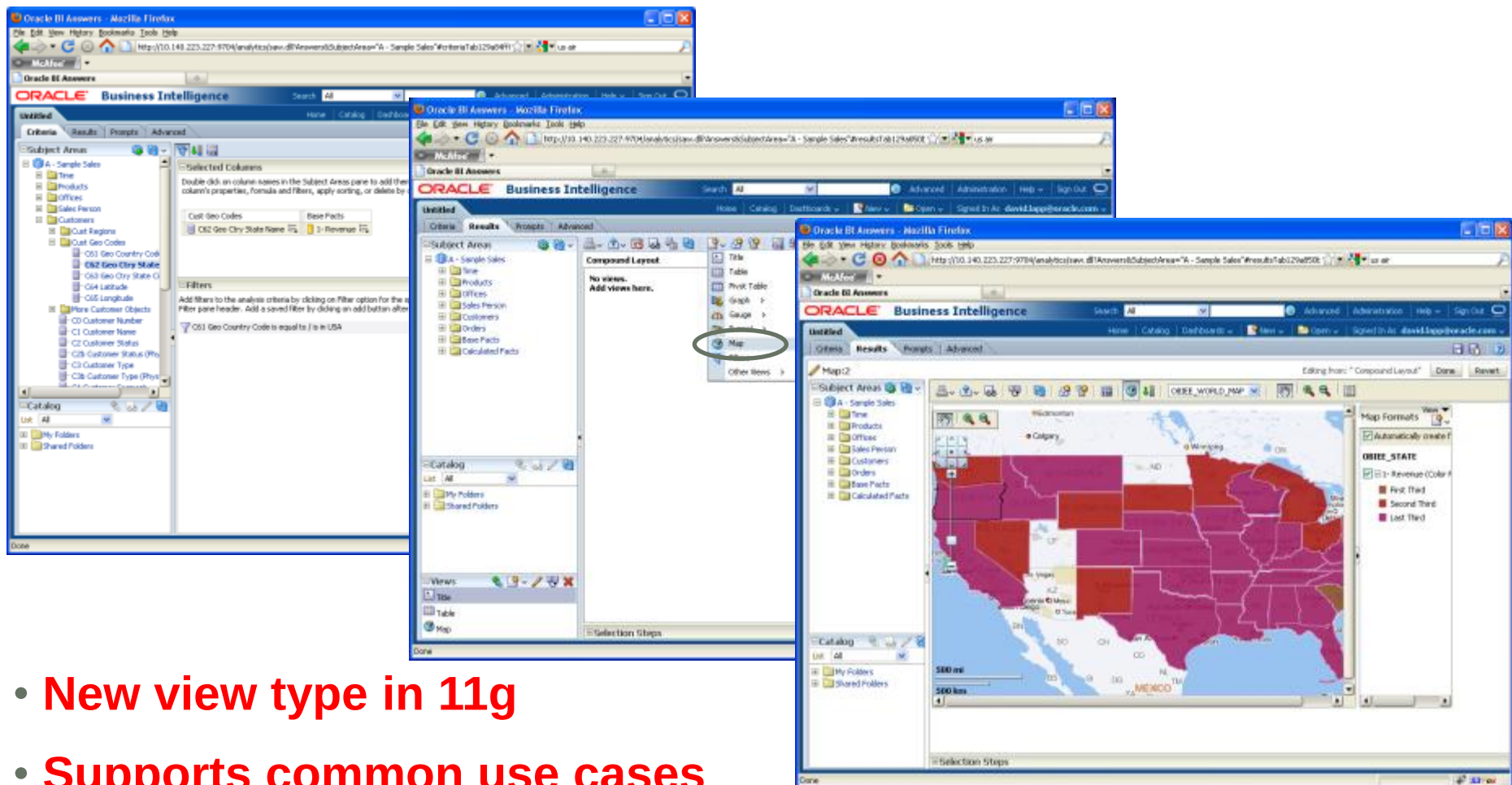
Drilling and multiple measures on a map



The background map itself can be a thematic map



Summary: OBIEE 11g Map view feature



- New view type in 11g
- Supports common use cases
- And interactions: drilling, master-detail linking



<http://www.oracle.com/technetwork/middleware/bi-enterprise-edition/overview/index.html>

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