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TECHNOLOGY AND APPLICATIONS FORUM  
FOR THE ORACLE COMMUNITY

# Data Visualization for Oracle Business Intelligence 11g

**Session ID#: 10442**

Presented by:  
Tim Vlamis, Consultant  
Dan Vlamis, President  
Vlamis Software Solutions, Inc.

 @timvlamis and @dvlamis



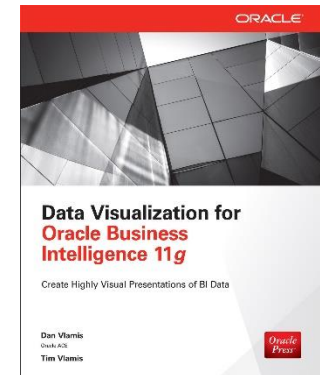
APRIL 12-16, 2015  
MANDALAY BAY  
RESORT & CASINO

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**REMINDER**

Check in on the  
COLLABORATE mobile app

- Vlamiis Software founded in 1992 in Kansas City, Missouri
- Oracle Gold Partner, Oracle University Partner
- Developed more than 200 Oracle BI systems
- Specializes in ORACLE-based:
  - Business Intelligence
  - Data Warehousing
  - Data Mining and Predictive Analytics
  - Data Visualization
- Expert presenter at major Oracle conferences
- Authors of 2015 book “Data Visualization for Oracle BI 11g”
- Co-author of book “Oracle Essbase & Oracle OLAP”
- [www.vlamiis.com](http://www.vlamiis.com) (blog, papers, newsletters, services)
- Beta tester for OBIEE 11g, 12c
- Conference chair for BIWA Summit 2014, 2015, 2016

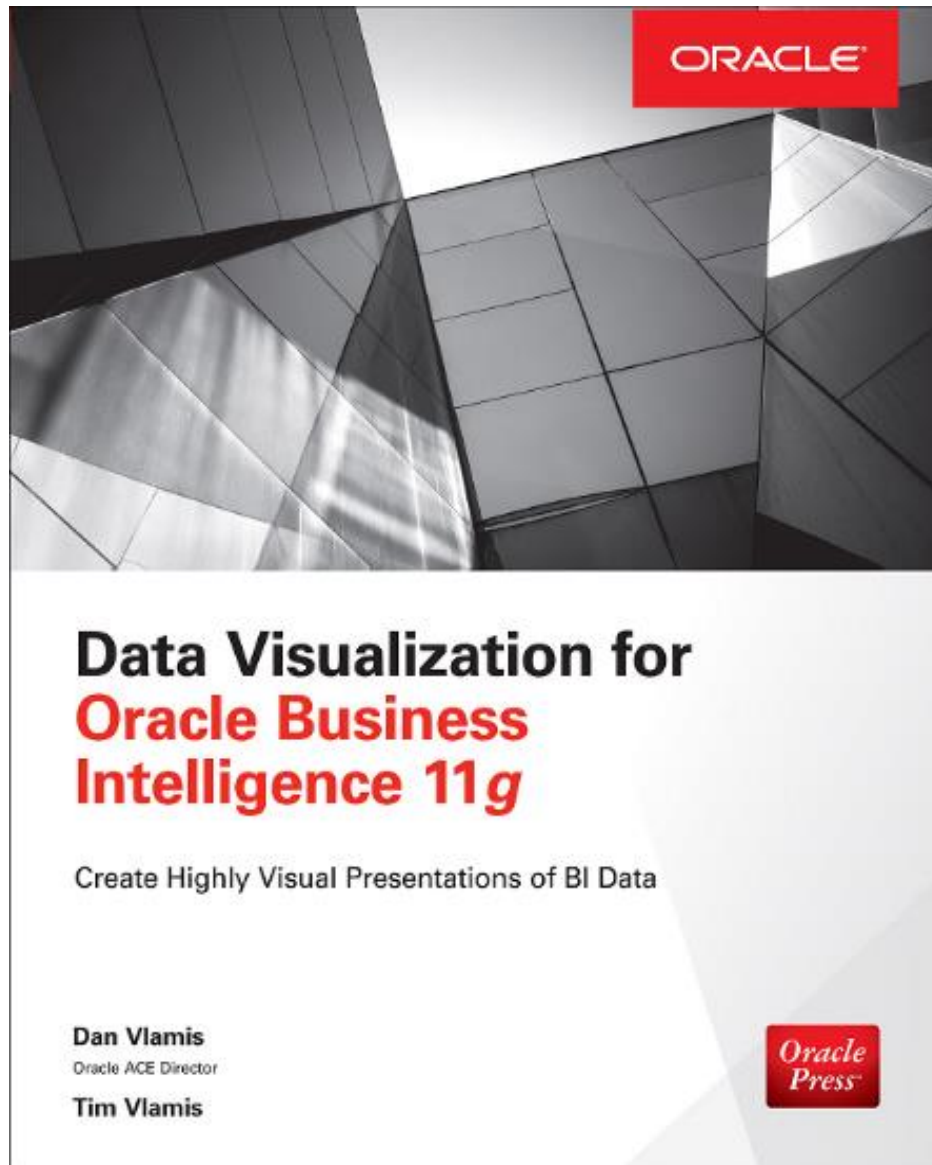


# Tim and Dan Vlamis

- Tim (business analyst and academic guy)
  - 25+ years in business modeling, valuation, and scenario analysis
  - Professional Certified Marketer (PCM) from AMA
  - Active Member of NICO (Northwestern Institute on Complex Systems)
  - Adjunct Professor of Business, Benedictine College
  - MBA Kellogg School of Management (Northwestern University)
  - BA Economics Yale University
- 
- Dan (OLAP expert and career IT guy)
  - 25+ Years in business intelligence/executive information systems
  - Led development team at IRI
  - Founded Vlamis Software Solutions 20+ years ago in 1993
  - Author, speaker, Oracle ACE Director
  - BA Computer Science Brown University



# New Book!



Special Thanks to:

Paul Carlstroem

Philippe Lions

Brian Macdonald

Jayant Sharma

Oracle BI Prod Mgmt



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# What to expect in the book

- Not a “how to”, more of a “what and why to”
- Not every example is perfect
- Writing process (Tim rough draft, Dan challenge and fix)
- Color challenge (gray scale versus color)
- Content challenge (advanced material requires explanation which we didn’t have space for)



# Presentation Agenda

- Human cognition insights
- OBIEE demo
- Table design
  - Best Practices
  - When and when not to use
- Graph design
  - Best Practices
  - Use cases for different graph types
- Questions from audience at all times





# Many BI Systems Can Create Beautiful Results



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# OBI Operates at a Different Scale



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# Ingredients → Data Quality & Variety



# Technique → Data Processing & Prep

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# Presentation → Data Visualization



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# OBIEE Demo Content from Chap 1


**Business Intelligence**

Search:

**1.10 Flights Delay tv book layout**

**Overview Typical**

All flights: 6,235,242  
Report : 3,709,454

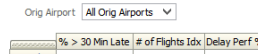
### Delay Performance by Geography


### Key Metrics and Associated Delays

Orig Airport	# of Flights	% of Total	Passenger - Miles (M)	Delay Per %
All Orig Airports	3,709,454	100.0%	328,034	
Midwest Region	691,998	18.7%	48,525	
East North Central Division	491,158	13.2%	33,998	
West North Central Division	200,840	5.4%	14,527	
Northeast Region	423,226	11.4%	44,389	
South Region	1,492,575	40.2%	107,799	
East South Central Division	177,198	4.8%	7,199	
South Atlantic Division	821,345	22.1%	67,067	
West South Central Division	494,032	13.3%	33,533	
West Region	1,101,655	29.7%	122,759	

### Late Flight Trends

### By Time and Performance % Thresholds

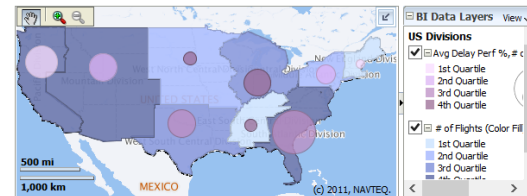



**Business Intelligence**

 Search:

### Flight Delay Performance by Geography


### Key Metrics and Associated Delays



### Flight Delay Performance by Geography

### Key Metrics and Associated Delays

Orig Division Name	# of Flights	# of Late Flights	% Sch Fl > 30min Lt	% Sch Fl < 30 Min
East North Central Division	491,158	193,304	12.2%	87.8%
East South Central Division	175,135	69,773	12.2%	87.8%


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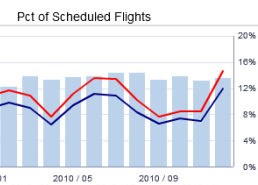
### Delay Performance by Geography

### Key Metrics and Associated Delays

Orig Airport	# of Flights	% of Total	Passenger - Miles (M)	Delay Perf %
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▣ Midwest Region	691,998	18.7%	48,525	10.8%
▣ East North Central Division	491,158	13.2%	33,998	10.4%
▣ West North Central Division	200,840	5.4%	14,527	10.4%
▣ Northeast Region	423,226	11.4%	44,389	8.2%
▣ South Region	1,492,575	40.2%	107,799	9.9%
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▣ South Atlantic Division	821,345	22.1%	67,067	9.8%
▣ West South Central Division	494,032	13.3%	33,533	9.5%
▣ West Region	1,101,655	29.7%	122,759	7.6%

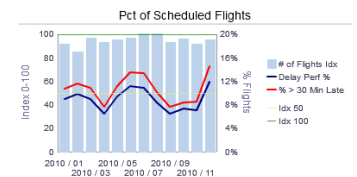
### Late Flight Trends

### By Time and Performance % Thresholds

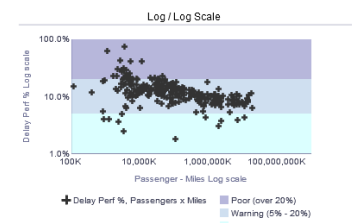


### Late Flight Trends

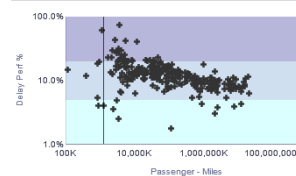
### By Time and Performance % Thresholds



### Delay % by Passenger x Miles



### Delay % by Passenger x Miles

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# Best Practice Focus

- Best practices are objective guides to what is likely to work best.
- Visualizations should be guided by:
  - Human cognition
  - Accurate representations of data
  - Preferred message (consciously designed by visualization developer)
- Visualizations should NOT be guided by:
  - Taste or what looks “good” to one person
  - Entertain users
  - A desire to “fill the white space”



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# The Principles of Human Cognition Should Guide BI Dashboard Design

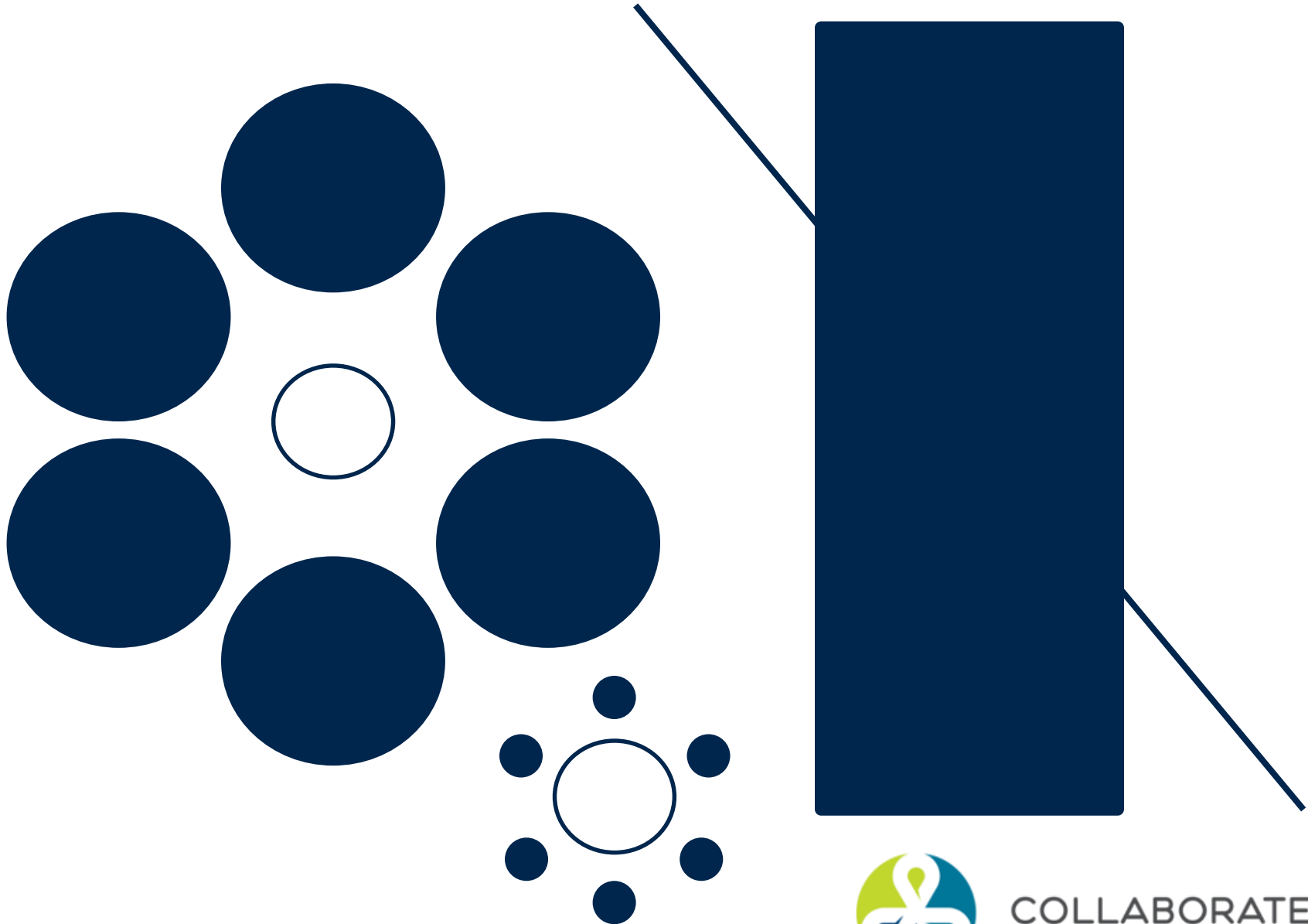
#C15LV



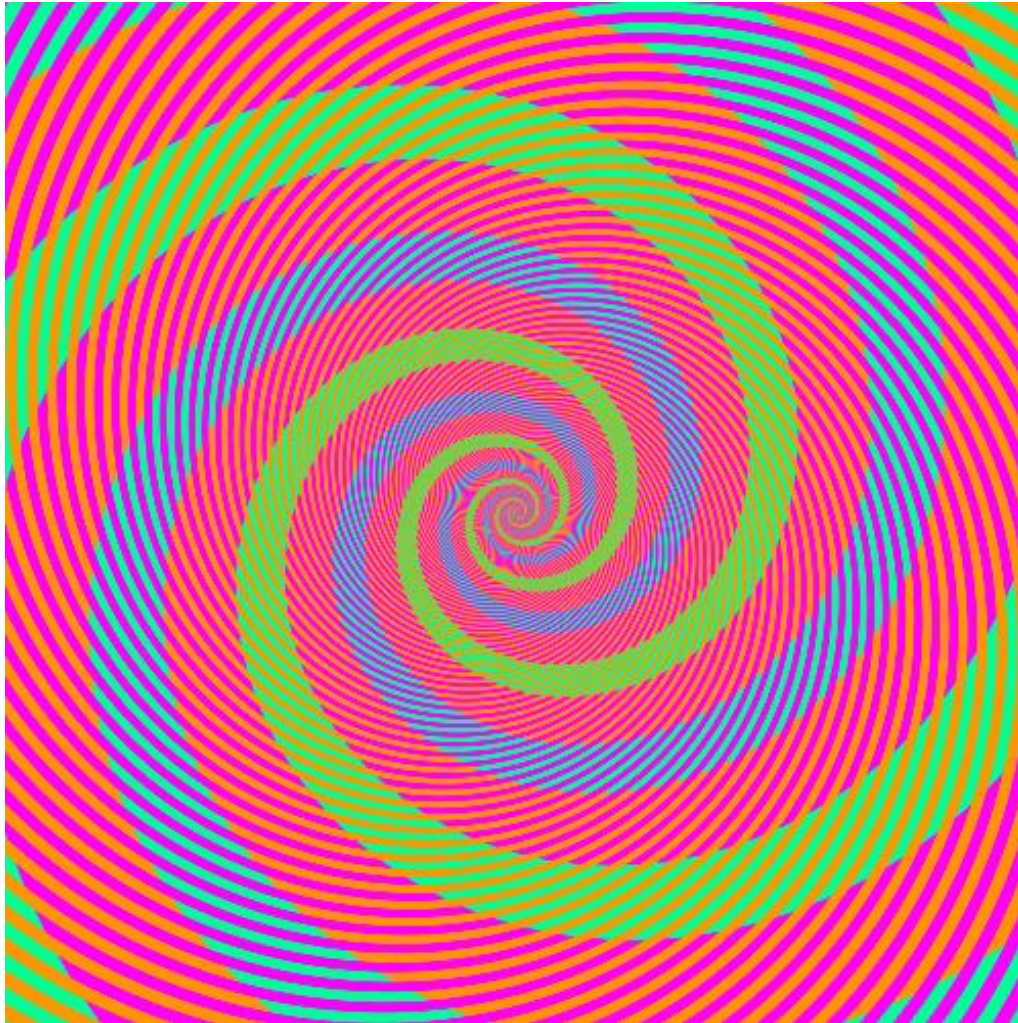
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# Classic Optical Illusions



# The Spirals are the Same Color

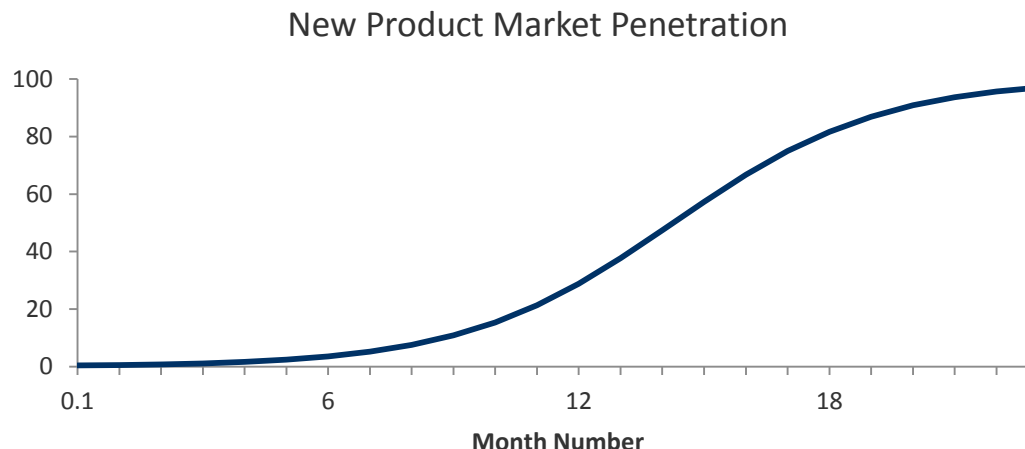


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# Graphs and Tables

- Graphs and Charts depict visual representations and relationships



- Tables show data organized for lookup of specific, precise values or items.

Order Type	No of Orders	Sales	Billed Quantity	Actual Unit Price
Express	13,980	\$14,027,034	1,117,199	\$12.56
Secure	29,347	\$28,513,745	2,326,540	\$12.26
Standard	27,673	\$27,459,221	2,213,482	\$12.41
<b>Grand Total</b>	<b>71,000</b>	<b>\$70,000,000</b>	<b>5,657,221</b>	<b>\$12.37</b>



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# Characteristics of Tables

- Can present data at drastically different scales.
- Can present very different data types simultaneously.
- Can repeat and include multiple sets of the same data values.
- Are extraordinarily dense and include numerous data relationships without direct distortion of the data itself.
- Tables can present “federated” data from different sources in a single simultaneous view.



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# Pivot Table “Needs” Sentence

*I want to see Sales (specific values)  
by Product Type and Company (define rows)  
across Market Segments (define columns).*

Year 2010 ▾

Product Type	Company	Sales						
		Active Singles	Baby Boomers	Others	Rural based	Seniors	Students	Urban based
Accessories	Genmind Corp	\$95,916	\$29,746	\$23,710	\$40,947	\$60,397	\$59,891	\$77,722
	Stockplus Inc.	\$128,470	\$29,693	\$38,455	\$68,506	\$100,349	\$120,508	\$111,572
	Tescare Ltd.	\$104,461	\$35,374	\$27,900	\$56,392	\$96,501	\$121,121	\$93,280
<b>Accessories Total</b>		<b>\$328,847</b>	<b>\$94,813</b>	<b>\$90,064</b>	<b>\$165,845</b>	<b>\$257,247</b>	<b>\$301,520</b>	<b>\$282,574</b>
Audio	Genmind Corp	\$168,612	\$50,236	\$21,842	\$74,952	\$126,754	\$133,788	\$124,072
	Stockplus Inc.	\$215,921	\$42,336	\$55,632	\$124,469	\$149,511	\$169,330	\$144,029
	Tescare Ltd.	\$173,022	\$61,713	\$30,048	\$102,717	\$162,078	\$202,451	\$161,995
<b>Audio Total</b>		<b>\$557,555</b>	<b>\$154,285</b>	<b>\$107,522</b>	<b>\$302,137</b>	<b>\$438,343</b>	<b>\$505,569</b>	<b>\$430,096</b>
Camera	Genmind Corp	\$154,930	\$50,453	\$23,935	\$73,360	\$129,189	\$143,608	\$136,459
	Stockplus Inc.	\$189,520	\$45,571	\$57,449	\$88,445	\$154,237	\$181,047	\$162,000
	Tescare Ltd.	\$182,757	\$83,650	\$45,512	\$89,213	\$140,187	\$208,441	\$151,215
<b>Camera Total</b>		<b>\$527,207</b>	<b>\$179,675</b>	<b>\$126,895</b>	<b>\$251,019</b>	<b>\$423,613</b>	<b>\$533,096</b>	<b>\$449,674</b>
Cell Phones	Genmind Corp	\$120,376	\$40,799	\$24,293	\$61,451	\$82,200	\$103,754	\$97,480
	Stockplus Inc.	\$161,238	\$47,570	\$37,670	\$71,548	\$129,511	\$133,459	\$144,812
	Tescare Ltd.	\$157,717	\$50,948	\$30,873	\$79,242	\$130,167	\$164,272	\$116,630
<b>Cell Phones Total</b>		<b>\$439,331</b>	<b>\$139,317</b>	<b>\$92,837</b>	<b>\$212,241</b>	<b>\$341,879</b>	<b>\$401,484</b>	<b>\$358,921</b>
Fixed	Genmind Corp	\$144,814	\$35,190	\$20,000	\$94,115	\$128,411	\$152,767	\$138,280
	Stockplus Inc.	\$234,518	\$56,263	\$53,554	\$109,985	\$160,065	\$238,484	\$180,872
	Tescare Ltd.	\$197,073	\$57,671	\$50,893	\$121,302	\$170,018	\$173,601	\$177,137



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# Keys to Effective Tables

Year 2010 ▼

Product Type	Company	Sales							
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Accessories	Genmind Corp	\$95,916	\$29,746	\$23,710	\$40,947	\$60,397	\$59,891	\$77,722	▲
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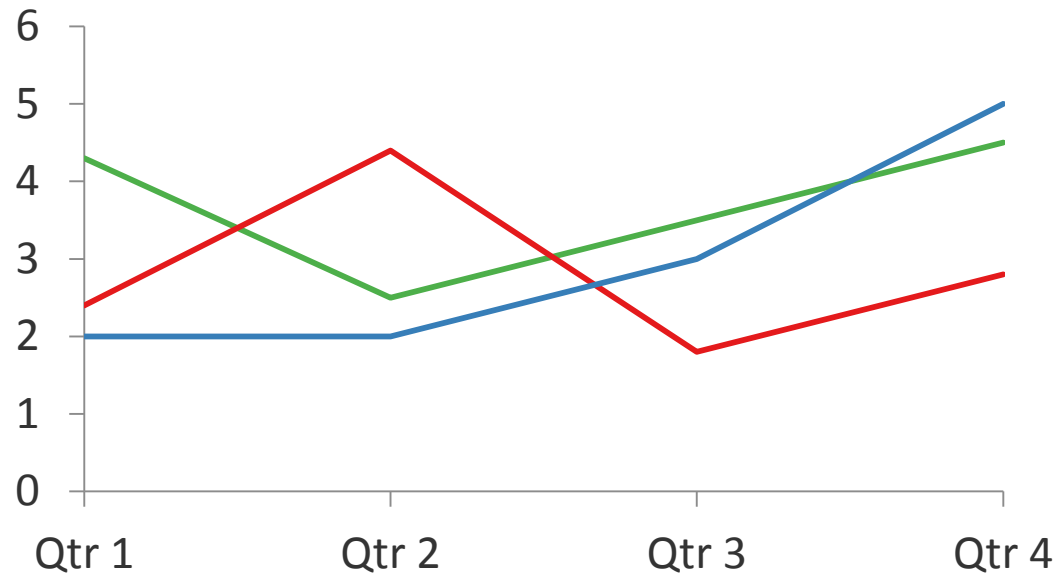
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# 7 Keys to Effective Graphs

- Do not use 3-D effects.
- Avoid “stop light” color palette.
- Prefer pastel color palettes and avoid bright colors.
- Eliminate gridlines, drop shadows, and other graphics.
- Enable interaction for “exploration” graphs.
- Prioritize a single message for “explanation” graphs.
- Above all else, show the data!



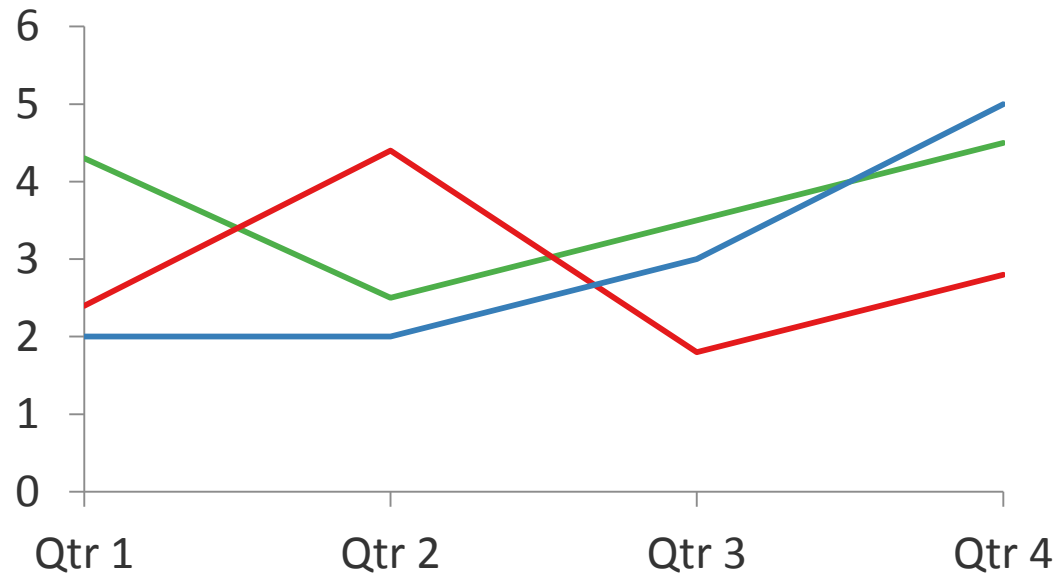
# Line Graph



- Show a pattern or progression over a continuous range.
- Can be valued within a range to highlight a particular pattern (careful!).
- Maintain a rectangular shape close to golden proportion.
- Use scale marker lines and ranges for context.



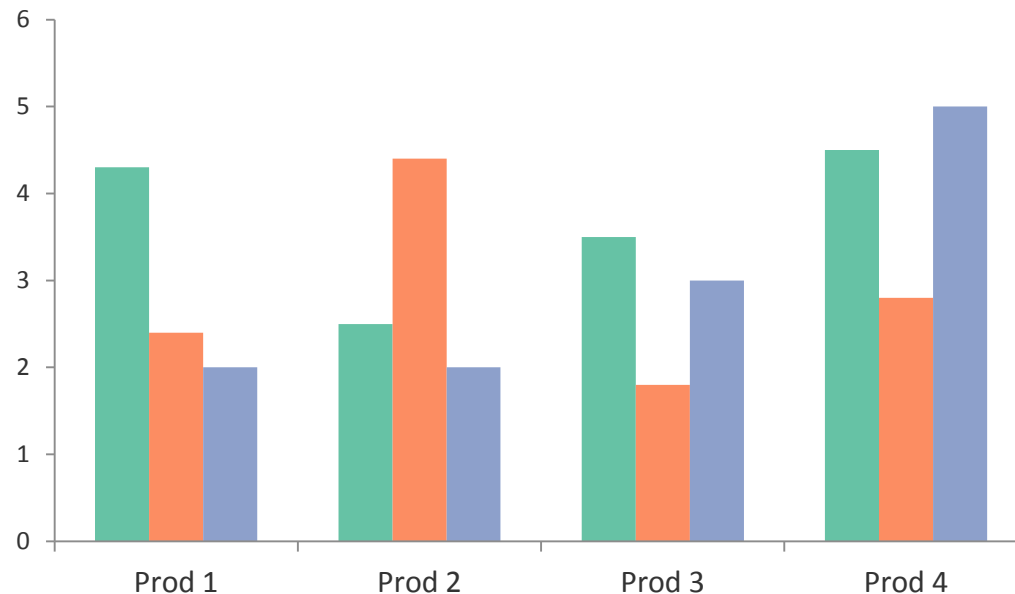
# Line Graph



- Use darker versions of standard colors.
- Eliminate grid lines.
- Use zoom function for detailed line graphs.
- Choose curved lines to smooth overall shape.
- Choose stepped lines to emphasize point transitions.



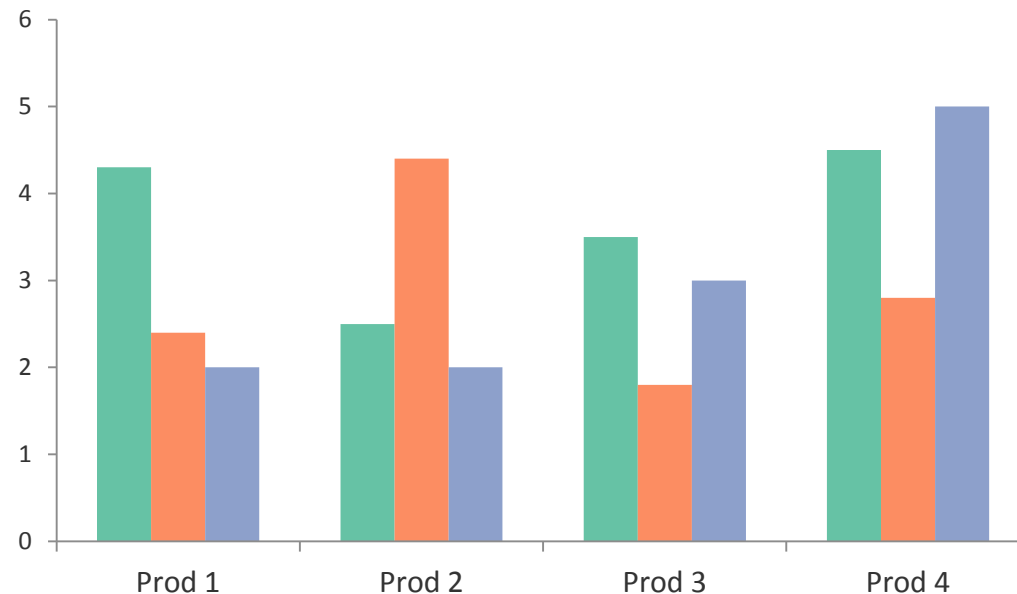
# Bar Graphs



- Show nominal data values in comparison to one another.
- Start with zero.
- If use a logarithmic scale, clearly notate.
- Think through sort order carefully.



# Bar Graphs

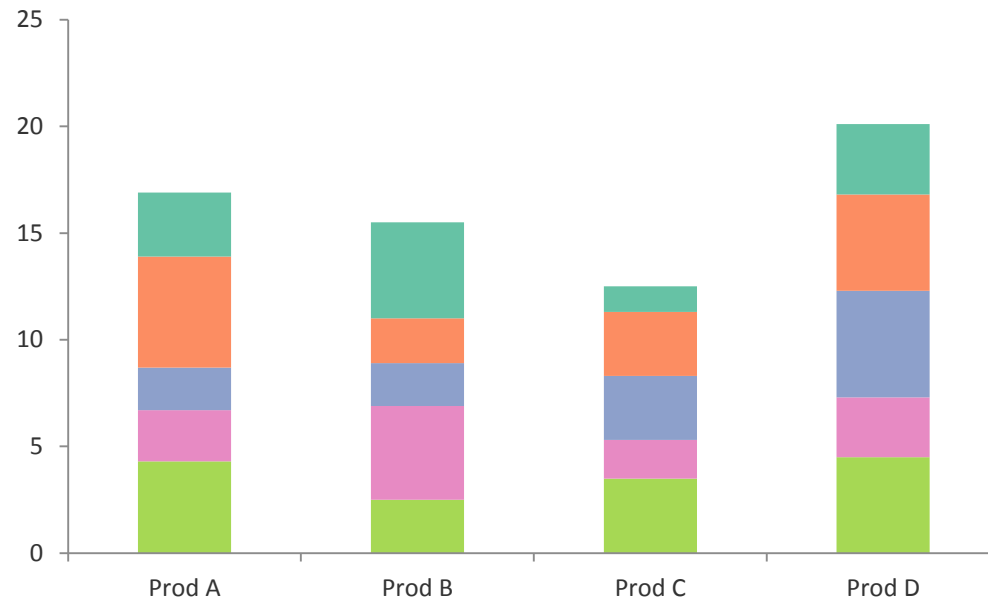


- Add data labels as interactive rollover.
- Balance colors.
- If change is most important, graph change.





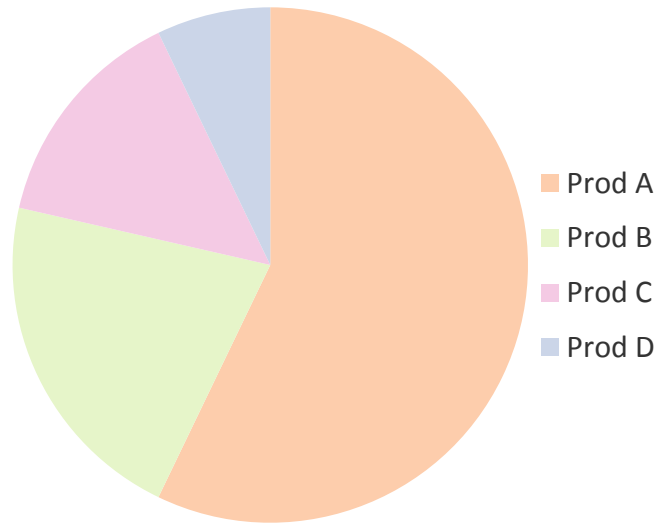
# Stacked Bar Chart



- Somewhat confusing, not great for representing change.
- Total is most clearly represented number.
- Typically stack with largest values on the bottom.
- Single scale can make for interesting intra-bar comparisons.



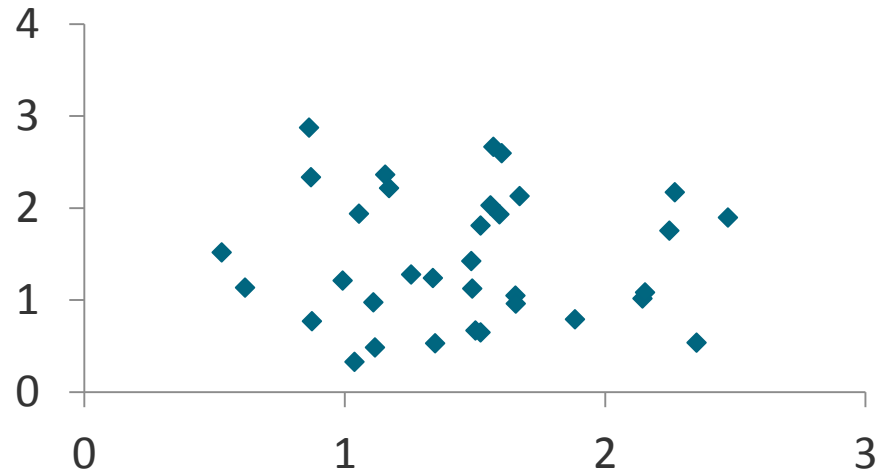
# Pie Charts



- Typically used for showing parts of whole by percentage.
- Not great for piece to piece comparisons.
- Limit number of pieces.
- Can be interesting to show lots of pies together if significant differences exist.
- Stephen Few hates them.
- Do not use 3-D.



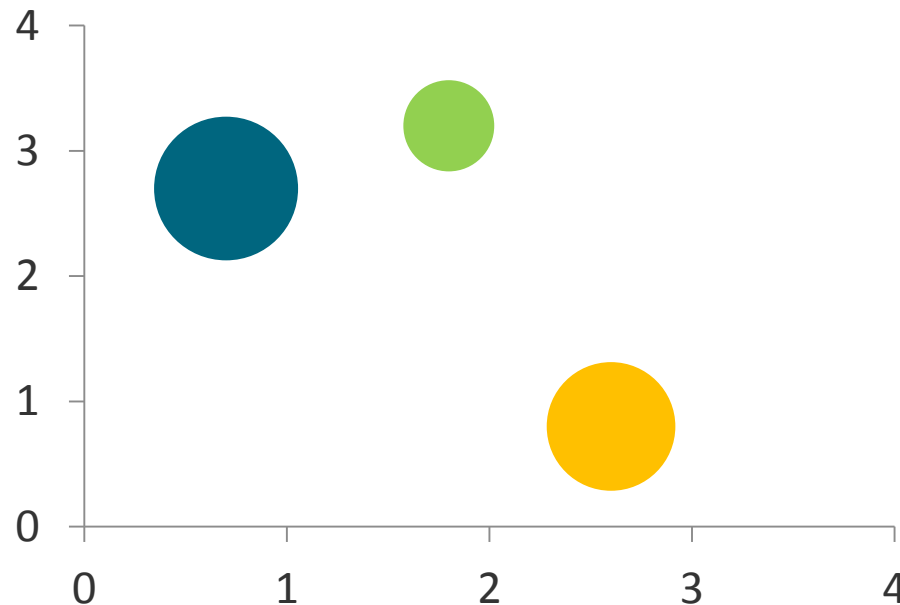
# Scatter Plot



- Shows single data points at the intersection of two values.
- Often depict a large number of discrete data points (hundreds or thousands).
- Useful comparisons of two variables.
- Trend lines are often added.
- Clearly notate if use logarithmic scale(s).



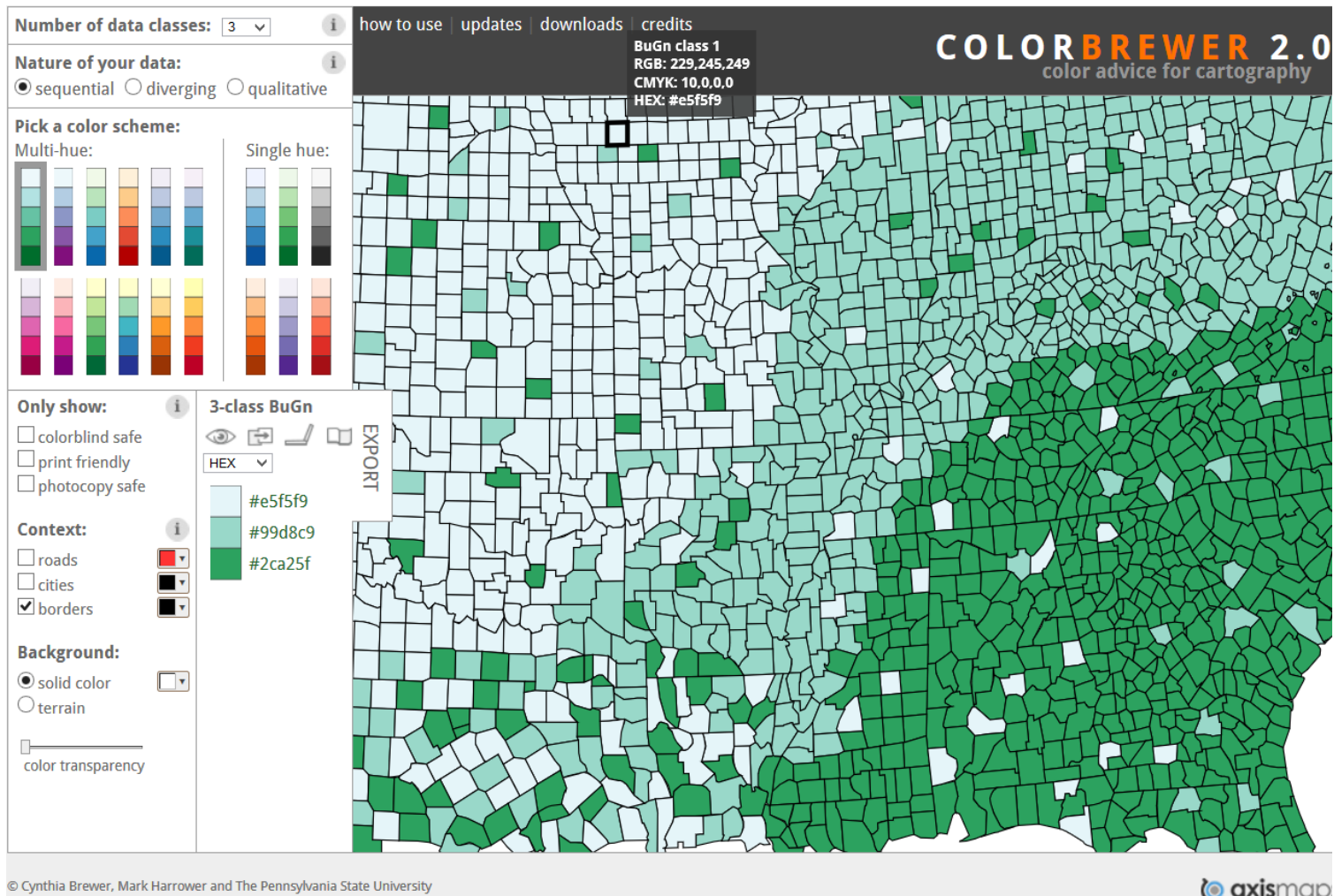
# Bubble Chart



- Special type of scatter plot.
- Size of bubble is related to a third variable.
- Color is related to a fourth variable.
- Reduces number of points that can be depicted.
- Best for depicting approximate values and comparisons.



# ColorBrewer2.org



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# i want hue

I want hue   Tutorials   Examples   Theory   Experiment   Old version ▾   GitHub   Issues   [+ Médialab Tools](#)



## i want hue

Colors for data scientists. Generate and refine palettes of optimally distinct colors.

### Color space

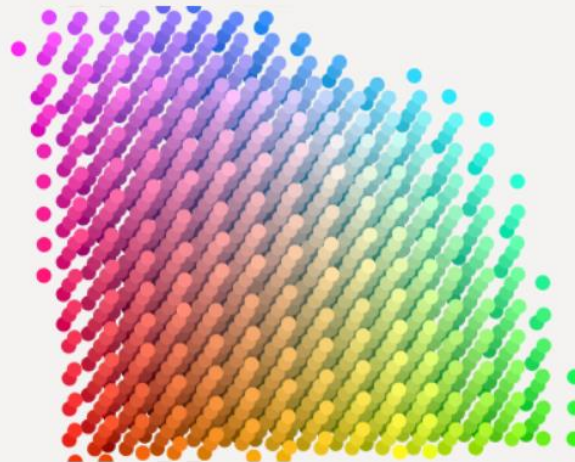
Presets... ▾

H 0 ▶ 360

C 0 ▶ 3

L 0 ▶ 1.5

☐ Dark background



### Palette

7 colors   soft (k-Means) ▾

[↻](#) Make a palette



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# Dashboard Definition

*A Dashboard is a visual presentation of current summary information needed to manage and guide an organization or activity.*



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# BI Dashboards are Different

- No mechanical systems needed to move indicators.
- Decisions are not typically made on a second-to-second basis.
- BI dashboards are not primarily single situation or single person devices.



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# BI Dashboards

- Role-based.
- Data selection and filtering are extremely important.
- Dashboards support evidenced-based decision making.
- Shared understanding of business situation is a key benefit.
- Content may be individualized.
- Design should be standardized.



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# OBIEE Dashboard Overview

- Designed with columns and sections (containers).
- Presentation server is often separate from BI server.
- Dashboards are web-based and are viewed with browsers.
- HTML, XML, and Java coding skills are useful, but not required.



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# Dashboard Principles

- Promote user interactivity
  - Prompts
  - View and column selectors
  - Hierarchical column drills
  - Column sorts
  - Guided navigation and action links
- Promote data transparency
  - Prompts
  - Filter views
  - Narrative views
  - Master detail linking
- Establish design guidelines for consistency

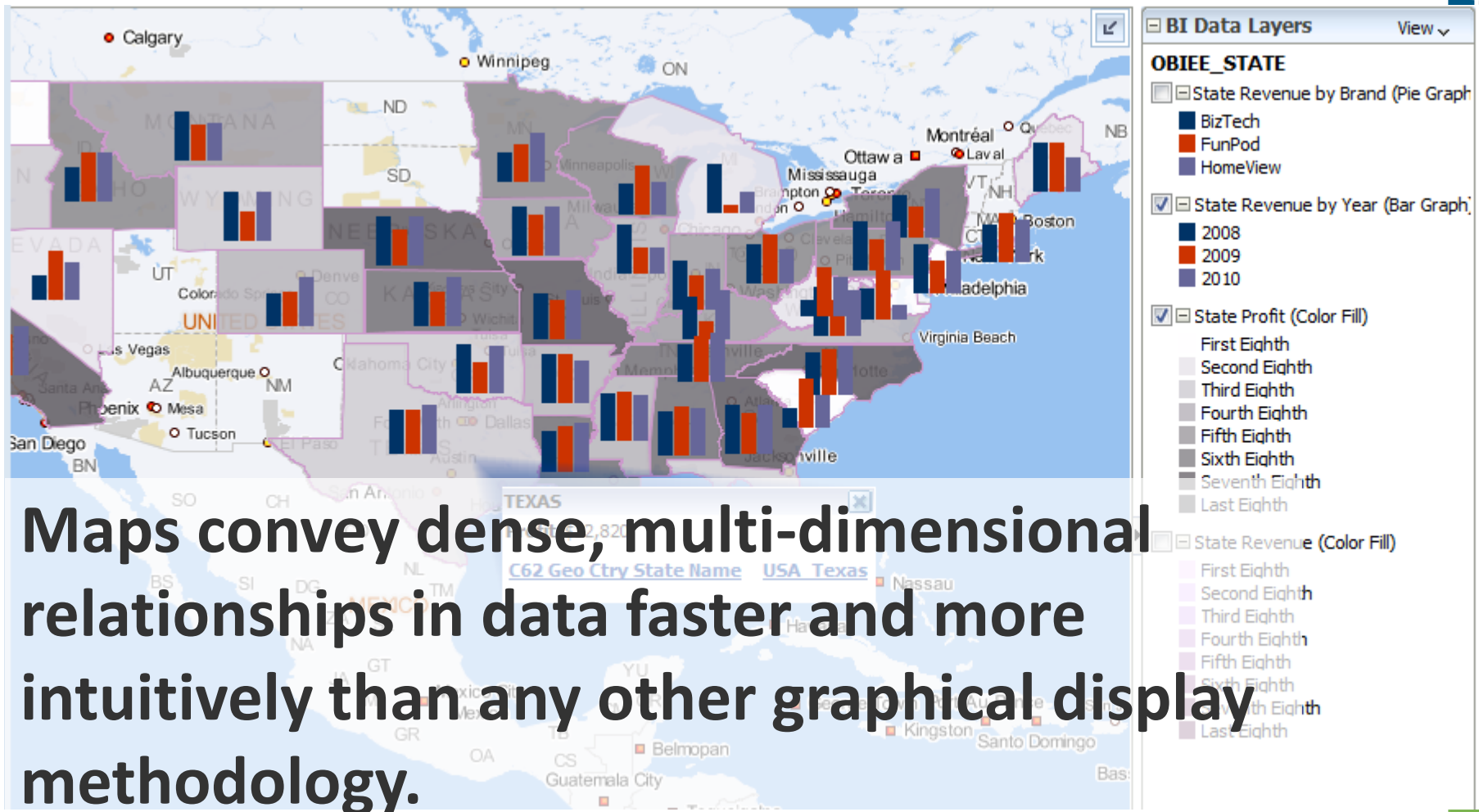


# Maps

- Humans think spatially
- Types of maps
- Map best practices
- Making meaningful maps
- Built-in data sets
- HERE (NAVTEQ) data sets and POI data
- Sources for additional data sets



# Why Maps are Powerful



Maps convey dense, multi-dimensional relationships in data faster and more intuitively than any other graphical display methodology.



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# 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.
- When is location important? Can the dimension be plotted on a map?



# Map View Tips

- Think about what scale to use. Different map scales will reveal different patterns and insights.
- Use Variable marker to display two measures on a map at a point – size and color.
- Avoid overlapping shapes too much.
- Be aware of spatial distortions E.g. Texas is larger than Connecticut.
- Look at color palette. [www.colorbrewer2.org](http://www.colorbrewer2.org)



# Map Definitions

## ■ FEATURE

- Provide a spatial context: cities, highways, rivers, etc...
- Features of Interest: store location, postal boundaries, pipelines, etc...

## ■ STYLE

- Define rendering properties for features
- Can control fill color, border color, line thickness, line style and more

## ■ THEME

- Collection of features
- Typically associated with a spatial geometry layer
- County/state boundaries, major highways, etc...

## ■ BASEMAP

- A grouping of themes to create a map
- Maps can share themes
- When associating a theme with a map, can specify min scale and max scale (sometimes known as zoom control)

## ■ MAP

- Basemap with additional themes overlain



# Map Interactivity in OBIEE 11g

- Display BI data on top of maps
  - Color fill
  - FOI point display
- Interact with other Dashboard Elements
  - Drive map content with dashboard prompts
  - Drive map content through drilling and navigation
  - Drive other dashboard elements through map interactions
- Reveal additional information on maps through mouseovers
- Drill to map detail



# Map View Formats

- Color Fill (choropleth)
  - Percentile, Value, Continuous binning
  - Dashboard user run-time slider
- Graphs – Bar, Pie
  - Adjustable graph size
  - Series by second dimension
- Bubble (variable sized)
  - Min-Max size specification
  - Color specification
- Variable Shape
  - Circle, Triangle, Diamond
  - Customizable
- Image
  - Imported via MapViewer
  - More can be added from MapBuilder
- Custom Point Layer
  - Uses Lat / Long
  - Does not require a Layer Def



# Trellis Charts

- Trellis Layout of Smaller Charts in a grid with Consistent Scales
- Great for finding structures / patterns in complex data
- Use 2D Layout to View Multidimensional Data (like a timeline –*mental animation*)



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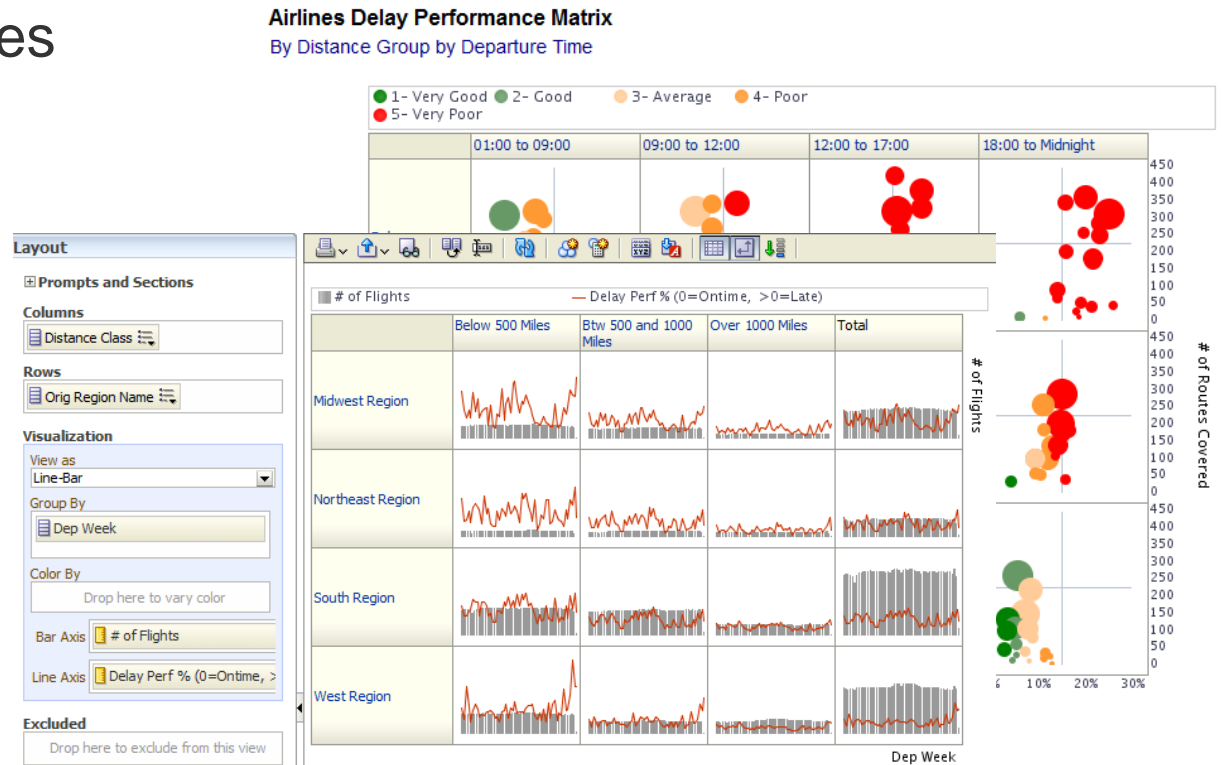
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# Trellis View - Simple

- Single type of inner visualization
- Common synchronized scale across all graphs
- Has scale showing by default (can turn off)
- Lots of graph types

- Vertical Bar
- Horizontal Bar
- Line
- Area
- Line-Bar
- Pie
- Scatter
- Bubble



# Trellis View - Advanced

- Pivot table with numbers or graphs in cells
- Each microchart has its own scale and not shown
- Most often used to see trend lines
- No axis description, so across should be time
- Can have different visualizations for different measures

- Spark bar
- Spark line
- Spark area
- numbers

**Layout**

**Prompts and Sections**

**Columns**

Distance Class

**Rows**

Orig Region Name

**Measures**

Passengers x Miles Freight (Tons) x Miles

**Visualization**

Passengers x Miles

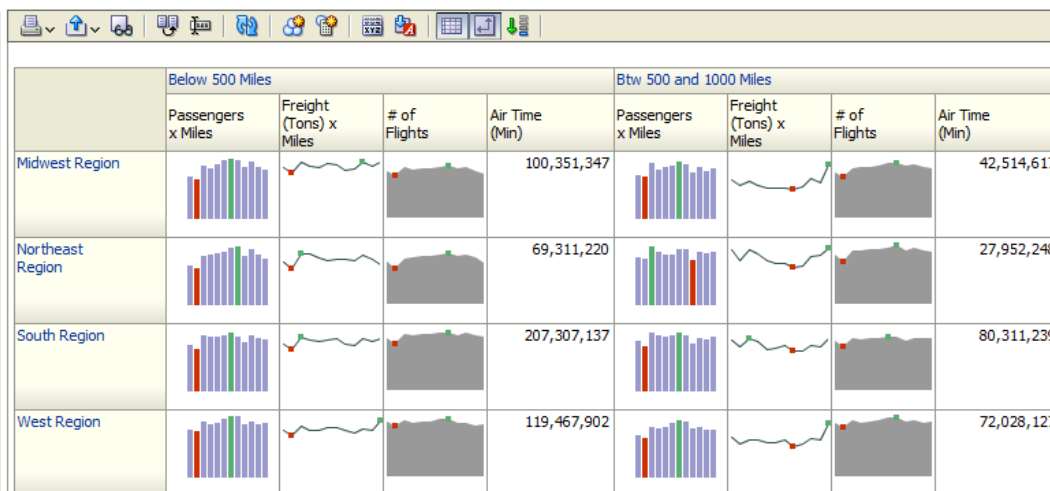
View as Spark Bar

Bars

☒ Dep Month

**Excluded**

Drop here to exclude from this view



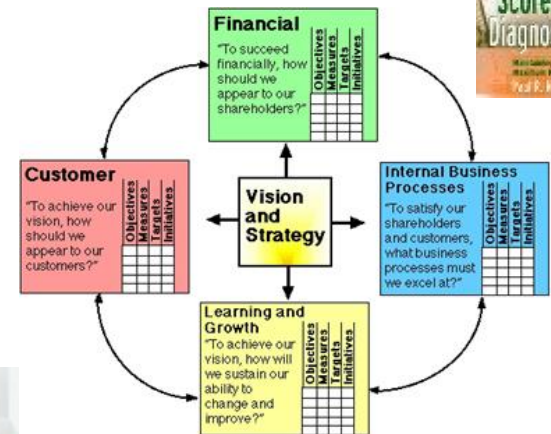
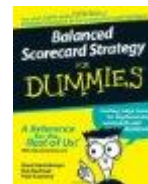
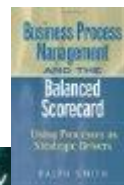
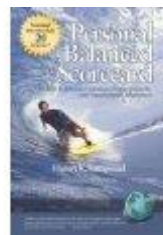
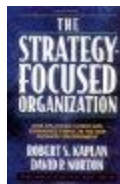
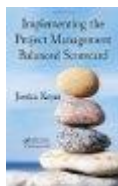
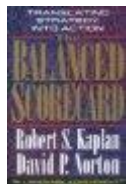
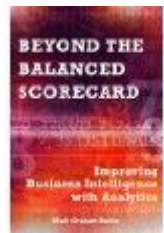
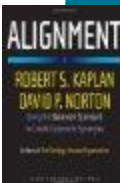
# New Trellis Views

- Does not require Exalytics but need fast Pres Server
- Can display LOTS of data in compact form
- Capable of dense visualizations
  - Great for snapshot of trending
  - Great for comparing patterns across dimension values
- Two types
  - Simple (shows full graphs per cell)
  - Advanced (sparklines – no scales per cell, separate scales)
- Need to think what you're trying to show on a trellis



# OBI Scorecard & Strategy Management

- Integrated toolset in OBIEE
- Follows “Balanced Scorecard” methodology
- Enables corporate goals and objectives to be monitored and managed
- Includes strategy maps, strategy trees, KPI watch lists, and cause and effect maps



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# New Contribution Wheel Visualization

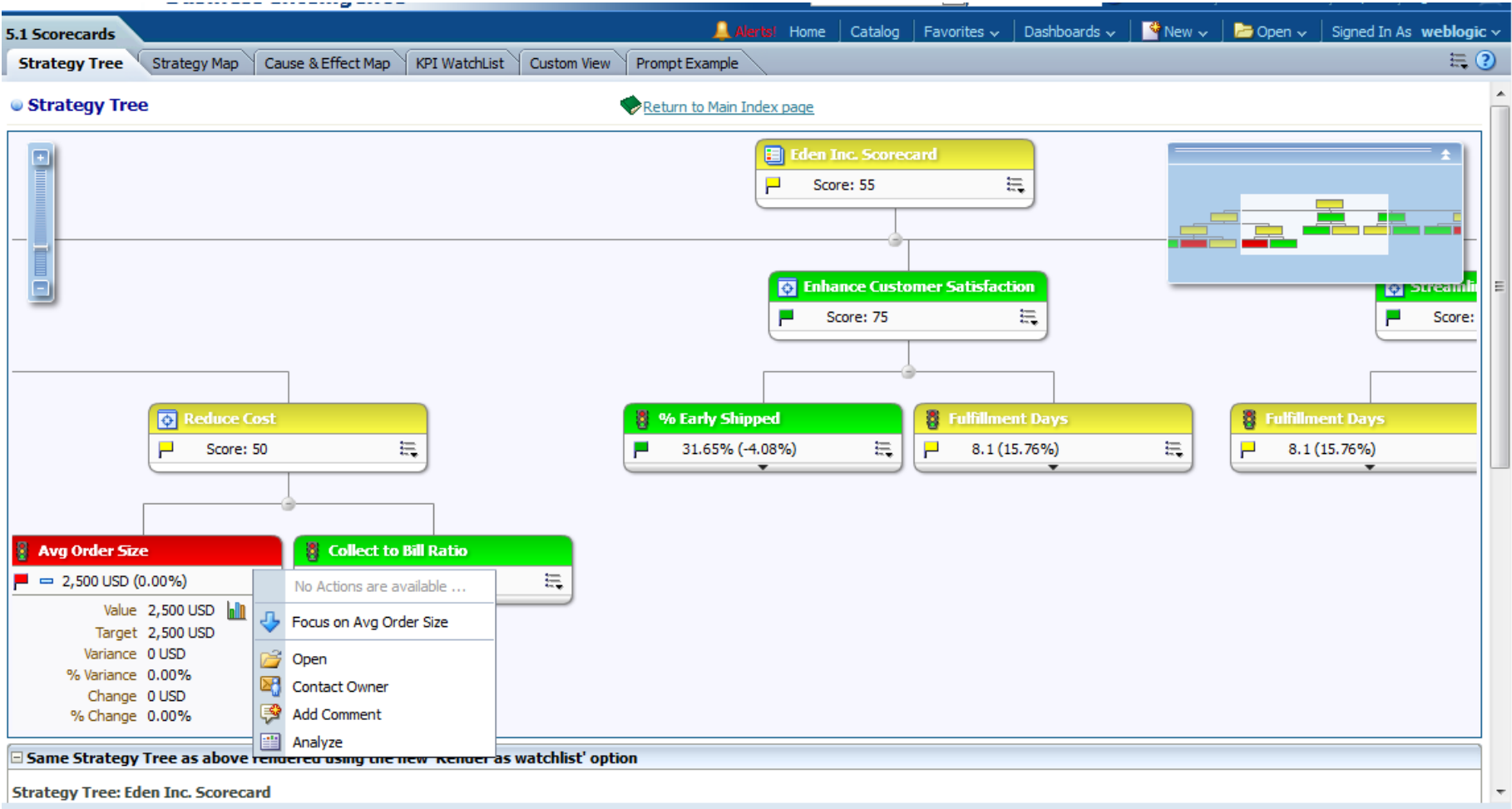
#C15LV



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# Strategy Tree View

#C15LV

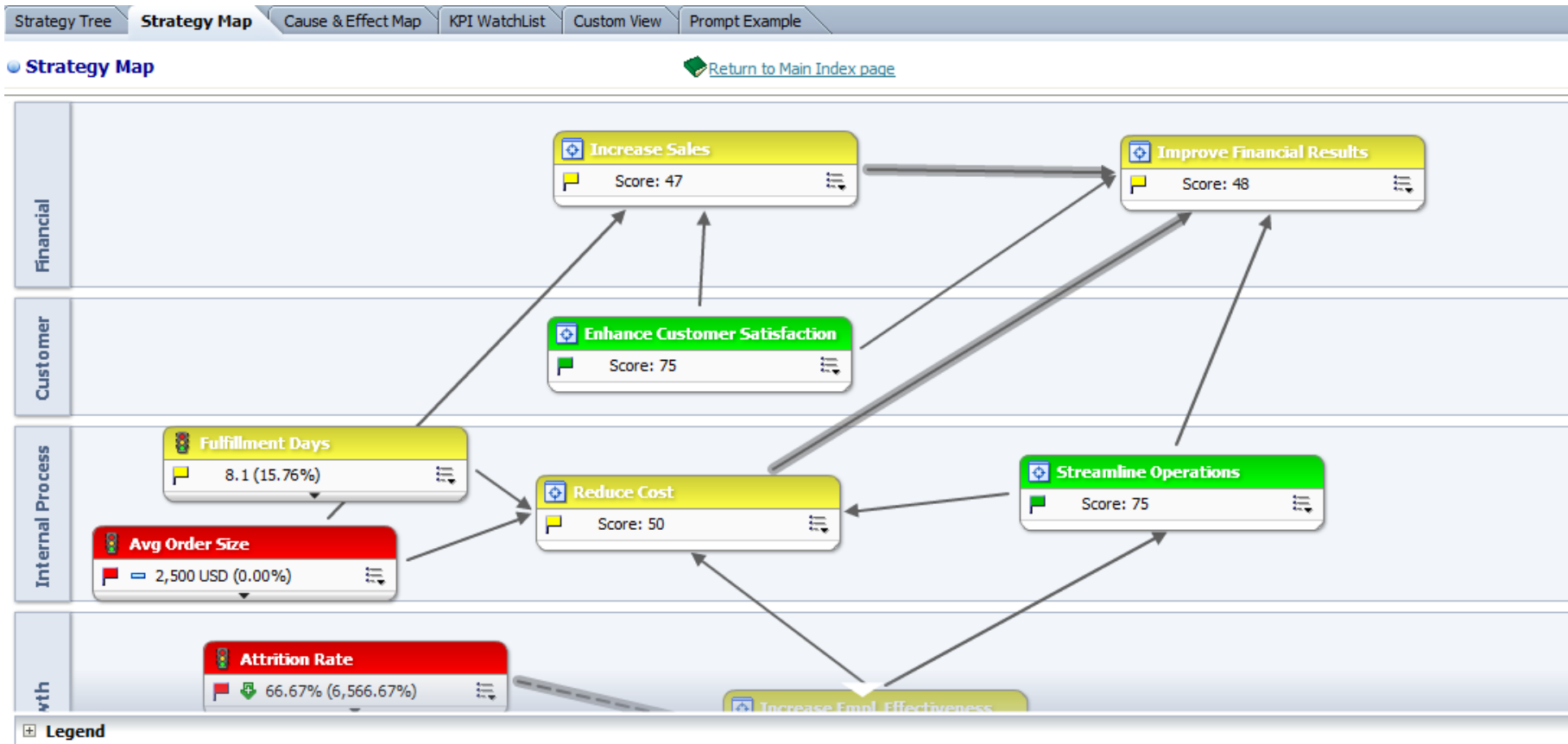


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# Strategy Map View



# General Advice

- Working with BI Catalog
- Development Standards
- Working with Executives
- Working with IT and DBAs
- Developing Trust in BI Systems
- Getting Started
  - Workshops
  - Assessments
  - Training
  - Metadata Communication and Documentation
- The Long Road



# Where to Start

- Workshops
- Assessments
- Training
- Metadata Communication and Documentation





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vm5.vlami.org:9704/analytics/saw.dll?Answers&path=%2Fshared%2FVlami%2FChapter 3%2Fwaterfall graph example profit for 2013

ORACLE Business Intelligence

Search All Advanced Administration Help SampleApp OTN Page Sign Out

waterfall graph example profit for 2013

Criteria Results Prompts Advanced

Subject Areas

- A - Sample Sales
  - Time
  - Products
  - Offices
  - Sales Person
  - Customers
  - Orders
  - Other Objects
  - Facts

Catalog

List All

- My Folders
- Shared Folders

Views

- Title
- Table
- Graph

Compound Layout

Title

waterfall graph example profit for 2013

Table

Month	Year	Revenue
2011 / 01	2011	781,389
2011 / 02	2011	1,194,264
2011 / 03	2011	1,599,334
2011 / 04	2011	1,557,516
2011 / 05	2011	2,334,190
2011 / 06	2011	3,416,722
2011 / 07	2011	2,913,041
2011 / 08	2011	2,290,621
2011 / 09	2011	2,351,868
2011 / 10	2011	1,957,392
2011 / 11	2011	1,288,446
2011 / 12	2011	1,315,216

Graph

Gross Profit Contribution by Month for 2011

Add to Briefing Book

Selection Steps



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Heatmap using Conditional Formatting TV new color palette

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Catalog

List All

- My Folders
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Views

- Title
- Table
- Pivot Table
- Legend
- Table:2

Compound Layout

Title

Pivot Table Heat Map Sorted by Totals

Pivot Table

Revenue	Total	Games	TV	Communication	Electronics	Services	Digital
Figueroa Office	3,842,965	914,919	729,827	681,779	701,456	407,920	407,063
Guadalupe Office	3,724,738	862,509	693,366	664,895	707,271	406,200	390,496
Madison Office	3,716,987	825,543	779,601	739,156	611,711	446,598	314,378
Spring Office	3,709,601	858,957	717,341	667,680	685,668	422,951	357,004
Eiffel Office	3,686,867	823,021	728,796	676,905	682,543	405,856	369,746
Morange Office	3,641,190	811,880	721,387	665,290	663,009	418,864	360,760
Perry Office	3,619,594	855,657	683,563	644,817	665,727	409,440	360,390
College Office	3,585,286	819,320	694,641	651,727	657,580	405,023	356,995
Copper Office	3,580,742	839,249	687,280	646,662	635,787	410,720	361,046
River Office	3,492,153	818,434	680,537	623,381	619,210	407,934	342,656
Montgomery Office	3,408,846	759,058	682,715	645,204	577,288	448,329	296,251
Mills Office	3,403,256	781,354	642,268	626,036	605,521	404,171	343,906
Sherman Office	3,403,022	755,788	664,182	657,178	600,829	418,831	306,213
Blue Bell Office	3,380,918	736,522	663,799	674,691	586,770	417,274	301,861
Casino Office	3,375,543	748,233	667,623	650,517	585,016	427,787	296,367
Eden Office	3,339,510	736,813	647,644	675,784	559,951	424,380	294,938
Foster Office	3,314,839	739,522	658,719	638,517	570,502	416,799	290,780
Tellaro Office	3,295,579	739,662	664,369	632,993	558,082	409,520	290,953
Merrimon Office	3,267,581	736,803	636,912	623,936	568,729	407,793	293,408
Glenn Office	3,210,784	722,649	626,495	613,791	556,409	412,547	278,893
<b>Total</b>	<b>70,000,000</b>	<b>15,885,895</b>	<b>13,671,062</b>	<b>13,100,940</b>	<b>12,399,060</b>	<b>8,328,938</b>	<b>6,614,105</b>

Legend

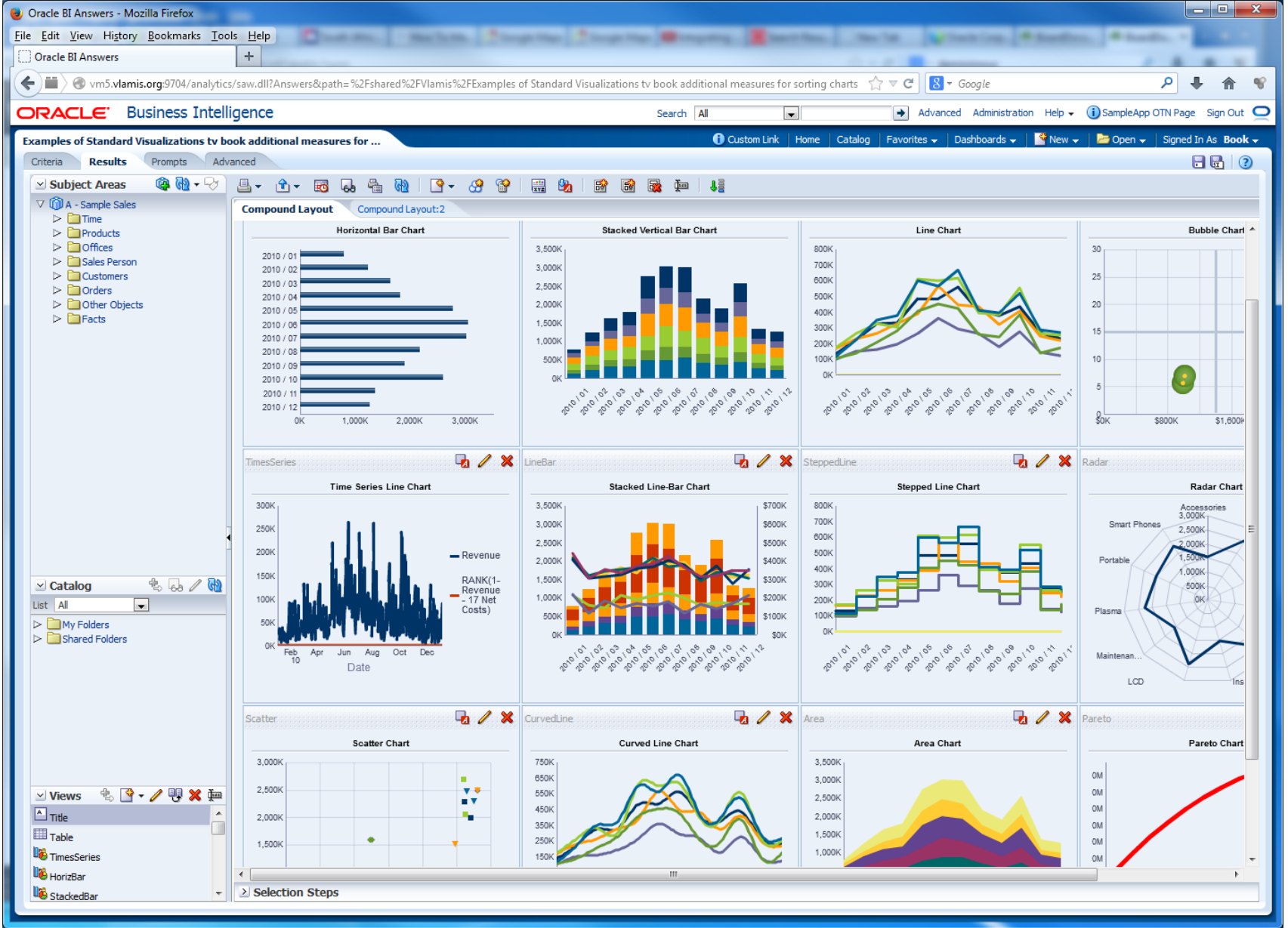
- Top 10
- Top 20
- Top 30
- Top 40
- Top 50

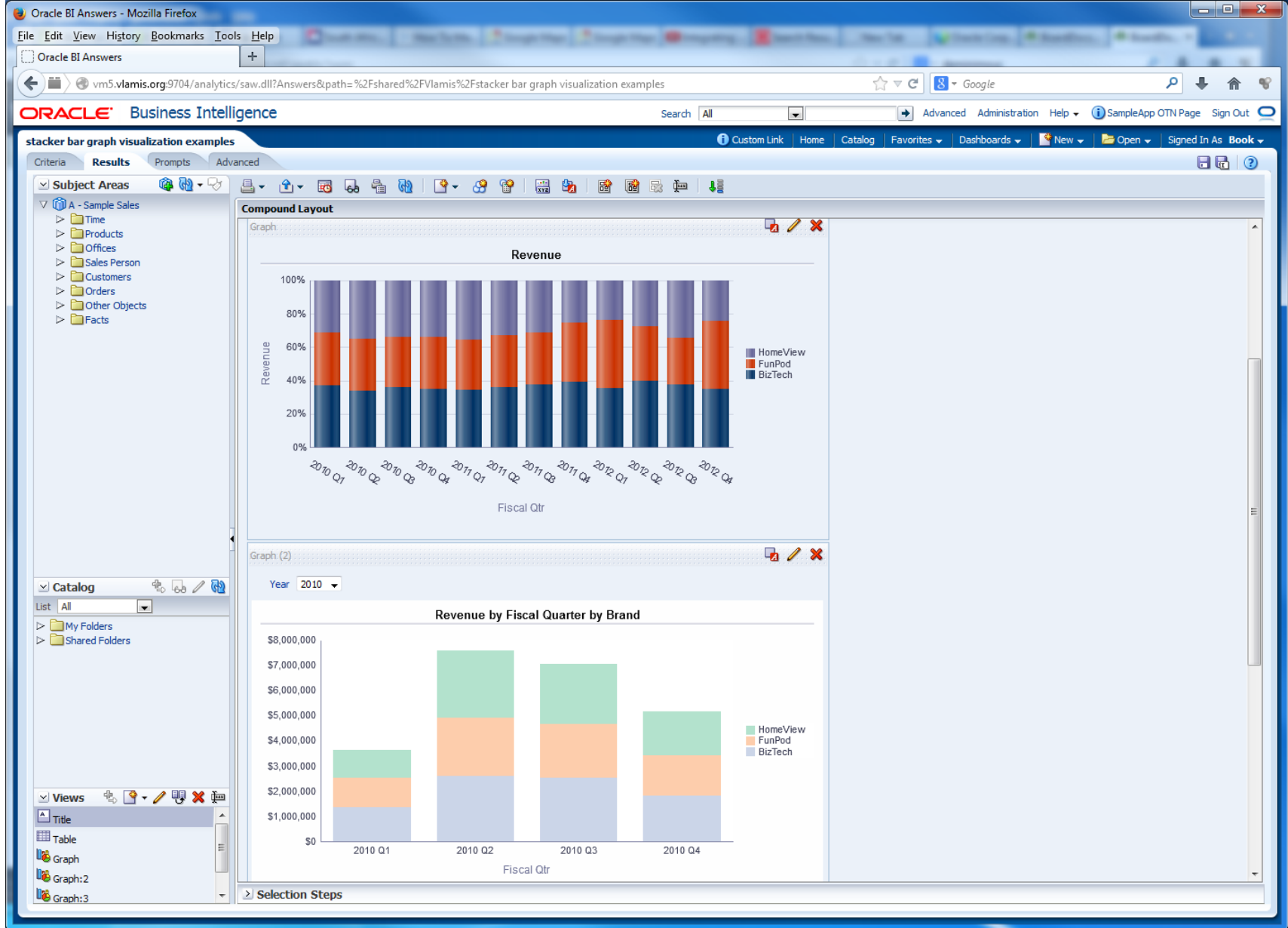
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Selection Steps









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Level Based Hierarchy TV Pivot Table with color by product line

Criteria Results Prompts Advanced

Subject Areas

- A - Sample Sales
  - Time
  - Products
  - Offices
  - Sales Person
  - Customers
  - Orders
  - Other Objects
  - Facts

Compound Layout

Title

Product Line Analysis

Time run: 4/23/2014 5:08:46 PM

Pivot Table

	< 2010	< 2011	< 2012 Q1	< 2012 Q2	< 2012 Q3	< 2012 Q4	2012	Total Time
> Communication	4,261,025	4,290,952	692,816	1,239,957	1,741,109	875,081	4,548,963	13,100,940
> Accessories	1,520,911	1,757,673	303,959	533,432	645,621	400,102	1,883,113	5,161,698
> Audio	2,495,506	2,414,546	349,357	723,386	795,165	459,402	2,327,310	7,237,362
Δ Electronics	4,016,417	4,172,220	653,316	1,256,818	1,440,786	859,504	4,210,423	12,399,060
Δ BizTech	8,277,442	8,463,172	1,346,132	2,496,774	3,181,895	1,734,585	8,759,386	25,500,000
> Digital	2,491,178	2,385,484	319,214	506,429	533,419	378,381	1,737,442	6,614,105
> Fixed	2,695,011	2,812,974	617,151	815,655	1,037,949	829,014	3,299,769	8,807,753
> Portable	2,049,810	2,102,436	602,042	704,171	836,930	782,754	2,925,896	7,078,142
Δ Games	4,744,821	4,915,410	1,219,192	1,519,826	1,874,878	1,611,769	6,225,665	15,885,895
Δ FunPod	7,235,999	7,300,894	1,538,407	2,026,254	2,408,297	1,990,149	7,963,107	22,500,000
> HomeView	7,986,559	7,235,934	903,875	1,737,498	2,927,098	1,209,035	6,777,507	22,000,000
Δ Total Value	23,500,000	23,000,000	3,788,413	6,260,527	8,517,290	4,933,770	23,500,000	70,000,000

Add to Briefing Book

Catalog

List All

- My Folders
- Shared Folders

Views

- Title
- Table
- Pivot Table
- Graph

Selection Steps

javascript:void(null)

#C15LV



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Custom Link Home Catalog Favorites Dashboards New Open Signed In As Book

Criteria Results Prompts Advanced

Subject Areas

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  - Products
  - Offices
  - Sales Person
  - Customers
  - Orders
  - Other Objects
  - Facts

Catalog

List All

- My Folders
- Shared Folders

Views

- Title
- Table
- Pivot Table
- Pivot Table: totals and spacing
- Pivot Table:3

Compound Layout

Title

pivot table example with conditional formatting

Pivot Table showing exceptional sales results greater than \$200,000

Product Type	Company	2010			Sales 2011			2012		
		Active Singles	Baby Boomers	Students	Active Singles	Baby Boomers	Students	Active Singles	Baby Boomers	Students
Accessories	Genmind Corp	\$95,916	\$29,746	\$59,891	\$96,477	\$35,327	\$85,730	\$102,837	\$30,257	\$102,557
	Stockplus Inc.	\$128,470	\$29,693	\$120,508	\$166,128	\$42,287	\$125,064	\$164,919	\$46,298	\$153,358
	Tescare Ltd.	\$104,461	\$35,374	\$121,121	\$123,201	\$51,116	\$124,715	\$132,745	\$44,773	\$137,055
<b>Accessories Total</b>		<b>\$328,847</b>	<b>\$94,813</b>	<b>\$301,520</b>	<b>\$385,807</b>	<b>\$128,730</b>	<b>\$335,508</b>	<b>\$400,500</b>	<b>\$121,328</b>	<b>\$392,970</b>
Audio	Genmind Corp	\$168,612	\$50,236	\$133,788	\$145,912	\$37,929	\$103,982	\$152,424	\$52,368	\$105,074
	Stockplus Inc.	\$215,921	\$42,336	\$169,330	\$210,808	\$57,870	\$178,434	\$208,513	\$52,097	\$137,207
	Tescare Ltd.	\$173,022	\$61,713	\$202,451	\$174,856	\$60,383	\$218,892	\$175,146	\$73,561	\$150,112
<b>Audio Total</b>		<b>\$557,555</b>	<b>\$154,285</b>	<b>\$505,569</b>	<b>\$531,576</b>	<b>\$156,183</b>	<b>\$501,308</b>	<b>\$536,083</b>	<b>\$178,025</b>	<b>\$392,393</b>
Camera	Genmind Corp	\$154,930	\$50,453	\$143,608	\$146,356	\$47,582	\$114,448	\$118,700	\$27,103	\$104,021
	Stockplus Inc.	\$189,520	\$45,571	\$181,047	\$198,591	\$44,463	\$176,452	\$148,755	\$30,071	\$127,373
	Tescare Ltd.	\$182,757	\$83,650	\$208,441	\$178,164	\$56,695	\$184,949	\$144,254	\$37,842	\$130,634
<b>Camera Total</b>		<b>\$527,207</b>	<b>\$179,675</b>	<b>\$533,096</b>	<b>\$523,111</b>	<b>\$148,740</b>	<b>\$475,850</b>	<b>\$411,709</b>	<b>\$95,017</b>	<b>\$362,028</b>
Cell Phones	Genmind Corp	\$120,376	\$40,799	\$103,754	\$126,235	\$33,530	\$114,026	\$143,555	\$31,372	\$101,993
	Stockplus Inc.	\$161,238	\$47,570	\$133,459	\$178,568	\$50,864	\$154,975	\$202,613	\$38,343	\$156,765
	Tescare Ltd.	\$157,717	\$50,948	\$164,272	\$125,300	\$69,426	\$158,507	\$168,318	\$60,207	\$182,772
<b>Cell Phones Total</b>		<b>\$439,331</b>	<b>\$139,317</b>	<b>\$401,484</b>	<b>\$430,103</b>	<b>\$153,820</b>	<b>\$427,507</b>	<b>\$514,487</b>	<b>\$129,922</b>	<b>\$441,529</b>
Fixed	Genmind Corp	\$144,814	\$35,190	\$152,767	\$183,043	\$55,049	\$145,979	\$218,694	\$43,825	\$147,809
	Stockplus Inc.	\$234,518	\$56,263	\$238,484	\$217,207	\$73,673	\$207,289	\$292,868	\$76,956	\$237,415
	Tescare Ltd.	\$197,073	\$57,671	\$173,601	\$221,255	\$94,856	\$202,322	\$298,813	\$70,166	\$224,985
<b>Fixed Total</b>		<b>\$576,405</b>	<b>\$149,124</b>	<b>\$564,852</b>	<b>\$621,505</b>	<b>\$223,578</b>	<b>\$555,590</b>	<b>\$810,375</b>	<b>\$190,948</b>	<b>\$610,209</b>

Pivot Table

Product Type	Company	2010			Sales 2011			2012		
		Active Singles	Baby Boomers	Students	Active Singles	Baby Boomers	Students	Active Singles	Baby Boomers	Students
Accessories	Genmind Corp	\$95,916	\$29,746	\$59,891	\$96,477	\$35,327	\$85,730	\$102,837	\$30,257	\$102,557
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Selection Steps



Oracle BI Interactive Dashboards - 8.13 Oracle R Enterprise TV - Mozilla Firefox

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Oracle BI Interactive Dashboards - 8.13 O...

vm5.vlamiis.org:9704/analytics/saw.dll?Dashboard&PortalPath=%2Fshared%2FVlamiis%2F8.13 Oracle R Enterprise TV&page=R Workbench

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8.13 Oracle R Enterprise TV

R Integration R End-User Interaction **R Workbench** R Sourcing from BI CEIM R Sourcing from BI CEIM (end-user) R Results Object in RPD BIP Sourcing from R Quality Control Chart (BIP)

[Return to Main Index page](#)

**R Workbench**

[Clear All Filters](#)

**Script Name**

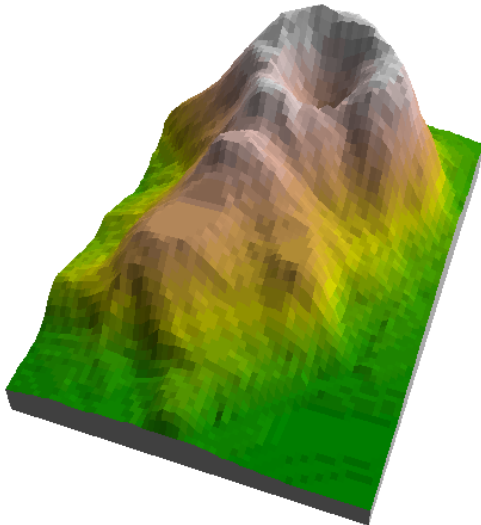
- ☐ Association Rules Movies
- ☐ Balloon Plot
- ☐ BusiestAirports-1
- ☐ Clustering with k-Means++
- ☐ Conditional Histogram
- ☐ Correlation Matrix Ellipses
- ☐ Correlation matrix circles
- ☐ Enhanced Bar Plot
- ☐ Heatmap
- ☐ Multipanel Geo Lattice Plot
- ☐ Multivariate Star Plot
- ☐ MultivariateAdaptiveRegressionSplines
- ☐ QCC-1
- ☐ RandomRedDots
- ☐ Support Vector Machines
- ☐ T.Series ACF/PACF
- ☐ T.Series Auto ARIMA

**Param 1:**  
cursor(select 0 from dual)

**Param 2:**  
cursor(select 550 "ore.png.height", 550 "ore.")

[Apply](#)

**Volcano Perspective Plot Graphics Result**



[Refresh](#)

**Volcano Perspective Plot**

[Edit Script](#)

```
function(n, th=110, ph=40){
# Perspective plot - Maunga Whau, One of 50 Volcanoes in the Auckland

z <- 2 * volcano      # Exaggerate the relief
x <- 10 * (1:nrow(z))  # 10 meter spacing (S to N)
y <- 10 * (1:ncol(z))  # 10 meter spacing (E to W)

z0 <- min(z) - 20
z <- rbind(z0, cbind(z0, z, z0), z0)
x <- c(min(x) - 1e-10, x, max(x) + 1e-10)
y <- c(min(y) - 1e-10, y, max(y) + 1e-10)

fill <- matrix("green3", nr = nrow(z)-1, nc = ncol(z)-1)
fill[, i2 <- c(1,ncol(fill))] <- "gray"
fill[i1 <- c(1,nrow(fill)), ] <- "gray"

fcol <- fill
zi <- volcano[-1,-1] + volcano[-1,-61] +
      volcano[-87,-1] + volcano[-87,-61]  ## / 4
fcol[-i1,-i2] <-
  terrain.colors(20)[cut(zi, quantile(zi, seq(0,1, len = 21)),
    include.lowest = TRUE)]

par(mar=rep(.5,4))
persp(x, y, 2*z, theta = th, phi = ph, col = fcol, scale = FALSE,
  ltheta = -120, shade = 0.4, border = NA, box = FALSE)
}
```



# Questions?



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# More info

- [www.vlamis.com/DVforOBI](http://www.vlamis.com/DVforOBI)
- Other presentations by Vlamis
- BIWA Summit and ODTUG KScope



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# Vlamis Collaborate Presentations

Presenter	Session	Time	Location	Title
Dan and Tim Vlamis	OAUG	Mon 12:45 – 1:45 PM	South Seas D	Data Visualization for Oracle Business Intelligence 11g
Dan and Tim Vlamis	OAUG	Mon 3:15 – 4:15 PM	Coral B	Designing an Analytics Strategy for the 21st Century
Dan and Tim Vlamis	IOUG	Tues 2:00 – 3:00 PM	Jasmine E	Forecasting, Prediction Models, and Time Series Analysis with Database Analytics and OBIEE
Dan and Tim Vlamis	IOUG	Wed 3:15 – 4:15 PM	Banyan D	The Oracle Data Mining Machine Bundle: Zero to Predictive Analytics in Two Weeks
Jon Clark	IOUG	Thurs 12:15 – 1:15 PM	Reef F	Using Cloud technology for Oracle Database and Oracle BI Sandboxes and Training Environments



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# Thank You!

Thank You for Attending Session  
**Data Visualization for OBI 11g**

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# Please complete the session evaluation

We appreciate your feedback and insight

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