
# OBI 11g Data Visualization Best Practices

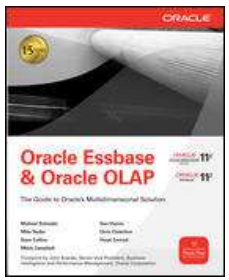
**Tim Vlamis**
**Vlamis Software Solutions**
**816-781-2880**
**http://www.vlamis.com**

**Dan Vlamis**
**Vlamis Software Solutions**
**816-781-2880**
**http://www.vlamis.com**

Copyright © 2012, Vlamis Software Solutions, Inc.

# Dan Vlamis and Vlamis Software Solutions

- Vlamis Software founded in 1992 in Kansas City, Missouri
- Developed more than 200 Oracle BI systems
- Specializes in ORACLE-based:
  - Data Warehousing
  - Business Intelligence
  - Design and integrated BI and DW solutions
  - Training and mentoring
- Expert presenter at major Oracle conferences
- www.vlamis.com (blog, papers, newsletters, services)
- Developer for IRI (former owners of Oracle OLAP)
- Co-author of book “Oracle Essbase & Oracle OLAP”
- Beta tester for OBIEE 11g
- Reseller for Simba and NAVTEQ map data for OBIEE
- HOL Coordinator for 2012 Collaborate Conference




Copyright © 2012, Vlamis Software Solutions, Inc.

vlamis™
SOFTWARE SOLUTIONS

# Tim Vlamis' Bio

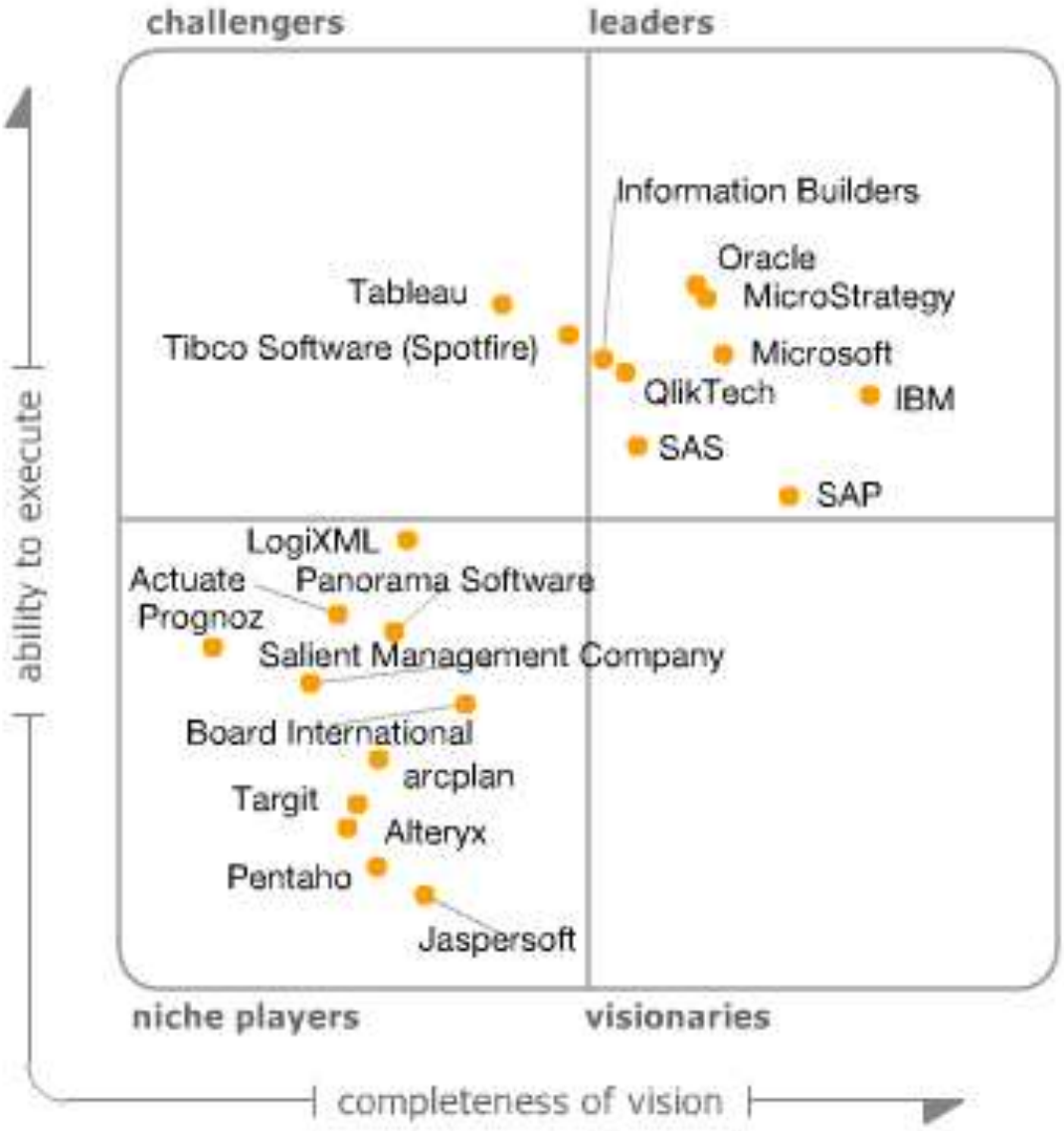
- 20+ years experience in business modeling and valuation, forecasting, and scenario analyses
- Expert in principles and elements of design
- Expert in curriculum development and pedagogical theory
- Professional Certified Marketer (PCM) from AMA
- Active Member of NICO (Northwestern Institute on Complex Systems)
- Adjunct Professor of Business Benedictine College
- MBA Kellogg School of Management (Northwestern)
- BA Economics Yale University

tvlamis@vlamis.com 816-781-2880

Copyright © 2012, Vlamis Software Solutions, Inc.

vlamis SOFTWARE SOLUTIONS

# Gartner Magic Quadrant for BI Feb 2012




vlamis SOFTWARE SOLUTIONS

# Highlights from Gartner's BI Magic Quadrant Report 2012

- BI and Analytics named as "Top Priority" for 2012
- "Organizations continue to turn to BI as a vital tool for smarter, more agile, and efficient business."

❖ OBI has highest aggregate "Ability to Execute" score.

❖ Broadest global deployment score

❖ Average user population nearly 3000

❖ Average data volumes nearly 5 Terabytes

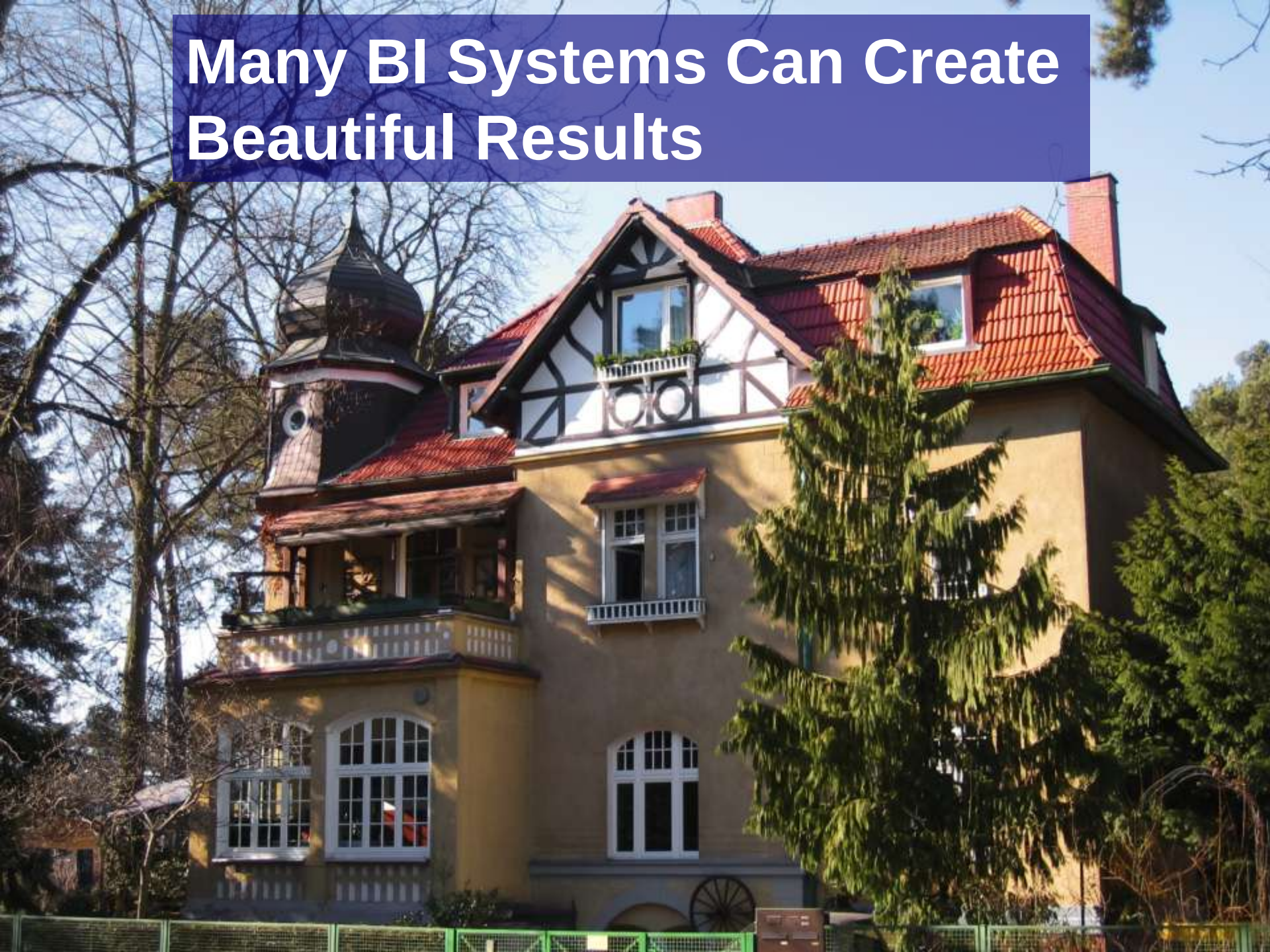
✘ Below average complexity scores (mostly used for static reporting)

✘ Below average ease of use scores

✘ OBI has low "data discovery" score

vlamis SOFTWARE SOLUTIONS

# Many BI Systems Can Create Beautiful Results

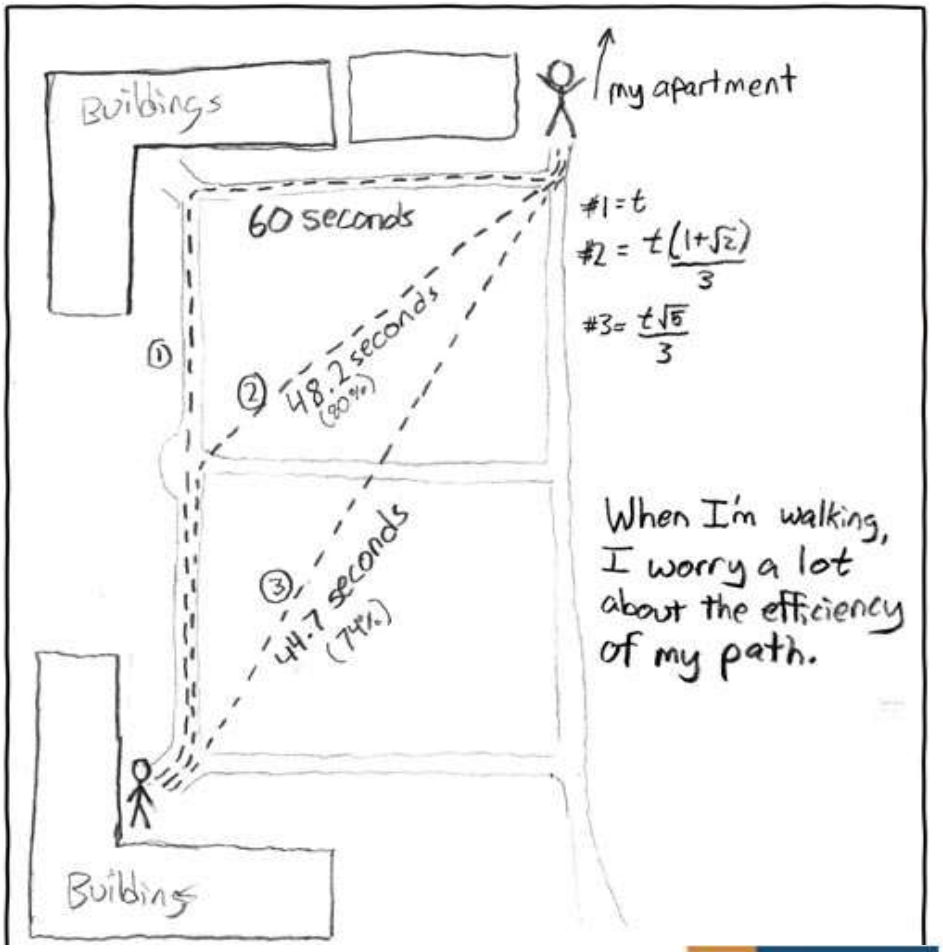


# OBI Operates at a Different Scale

# Main Uses of BI Reports & Dashboards

## Exploration

## Explanation




xkcd.com

vlamis SOFTWARE SOLUTIONS

# The Principles of Human Cognition Should Guide BI Dashboard Design


Humans are Pattern Seeking Creatures

# OBI EE 11.1.1.5 Samples Application - General Index

## 0. Overview

### 0.1 General Index
General Index

### 0.2 Configuration
User Credentials, Session Variables, Product Hier. Diagram, Employees Hier. Diagram, Office Hier. Diagram, Main Database Diagram

## 1. Quick Demos

### 1.1 Simple Dashboard
Brand Analysis,

### 1.2 Financials Demo(Essbase)
Expense Structure, P&L, Structure Analysis

## 2. Functional Examples

### 2.10 Descriptive Stats
Distribution, Distribution Breadown, Comparative Dist, Correlation, Regression, 8020, StdDev, Variability, Scatter, Percentiles, N-tiling, SPC Control Chart, Deviants

### 2.11 Comparative Analysis
TopN, TopN Breakdown & History, Tiering, Index To Avg, Indexing, Benchmark, Lift, Ages Pyramid

### 2.12 Trending
History, Seasonality, Trending, Trend Lines Chart, Asynchronous Time Report

### 2.20 Financials
P&L

### 2.40 BPM Analytics
Process Analytics, Completed User Tasks, In-Flight Tasks

## 3. Analysis and Dashboards

### 3.10 Query Building
Hierarchical Columns, Multiple SA, Selection Steps, Selection Steps on Hierarchies, Relative Filtering Direct DB SQL, Filter Function Metrics, RPD Presentation Aliases

### 3.20 Report Views
Overflow, Text Aggregation, MS Office

### 3.30 Map Views
Streets London, Formats SF Metrics Custom Geo Aggregation

### 3.40 Dashboard Design
Page Help

### 3.50 Mobile Styles
Product Line Analysis, Product Line Analysis (lt)

### 3.60 Other Front Ends
Segmentation Example, Bi Composer (Image Vb107 only)

## 4 Actionable Intelligence

### 4.1 Actions
Invoking Browser Script, Invoke Java Methods deployed in EJBs, Invoke Web Services, Navigate to a Web Page, Navigate to BI Content

Insight into Action, Customer View, Investigate to Invest, Commentary

### 4.2 Agent Status

## 6. Published Reporting

### 6.1 Published Reporting
Sales Performance, BI Publisher Activity Report

Balance Letter Report, Brand Revenue Details, Customer Employees by Department Report, Office Sales Report, Product Listing, Revenue Budget Actual and Detail, Salary Report, Sales History Report, SF1 Passenger Analysis Report, W2 2010, Ar Aging Report

Executive, Financials, Human Resources, Marketing, PDF Optimization, RTF SubTemplate, Style Templates, Supply Chain Management, XSL SubTemplate Template

## 7. Source Agnostic Server Features

### 7.1 Logical Modelling
Lookup Columns, Currency Format and Conversion, Aggregate Navigation, Fiscal Calendar, LTS Filtering, Canonical Time

### 7.2 Logical Aggregations
Hierarchical Measures, Hierarchical Functions, Value Based Hierarchy Aggregations, Non Additive Aggregations, Dynamic Series, Balnce Based and Time Span Aggregations, Allocated Metrics, Text Aggregation, Level Based Aggregation, Indexed Function

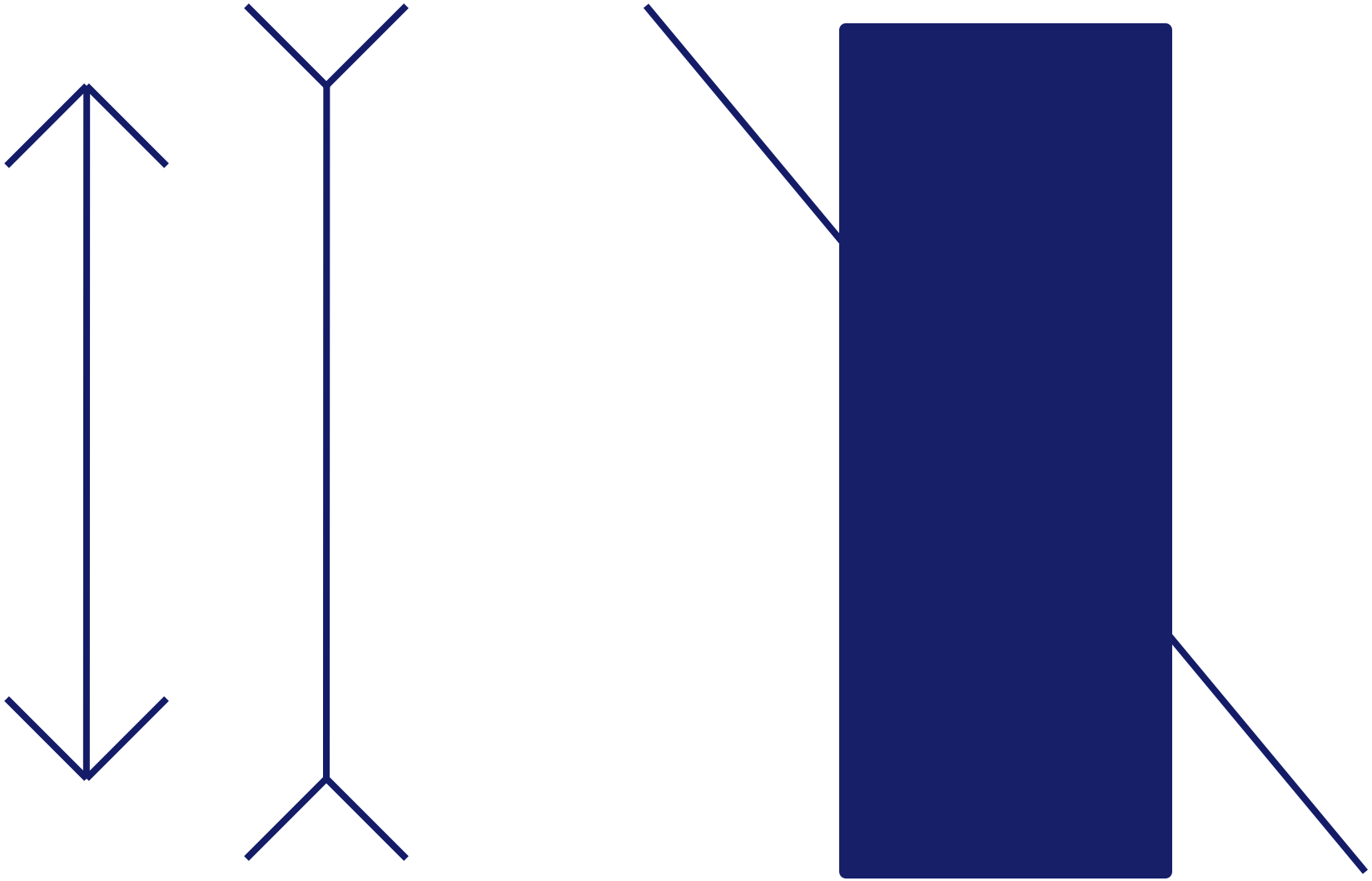
### 7.3 Physical Layer Features
Dynamic Source Name, Many to Many between Dimensions, Physical Column Writeback, Fragmented Physical Sources, Snowflakes Attributes, Fact Attributes Table

### 7.4 Users and Security
Users and Roles List Report, System Variables, Proxy User, Member Based Datasecurity, Hierarchical Data Security, Row Initiated Variable, WLST Scripts, Column Object Security, OID Security Provider

BI Dashboards Should be Primarily Seen as Communication Devices


Photo Source: Creative Commons http://15mmvsf.bagofmice.com/child_2.html

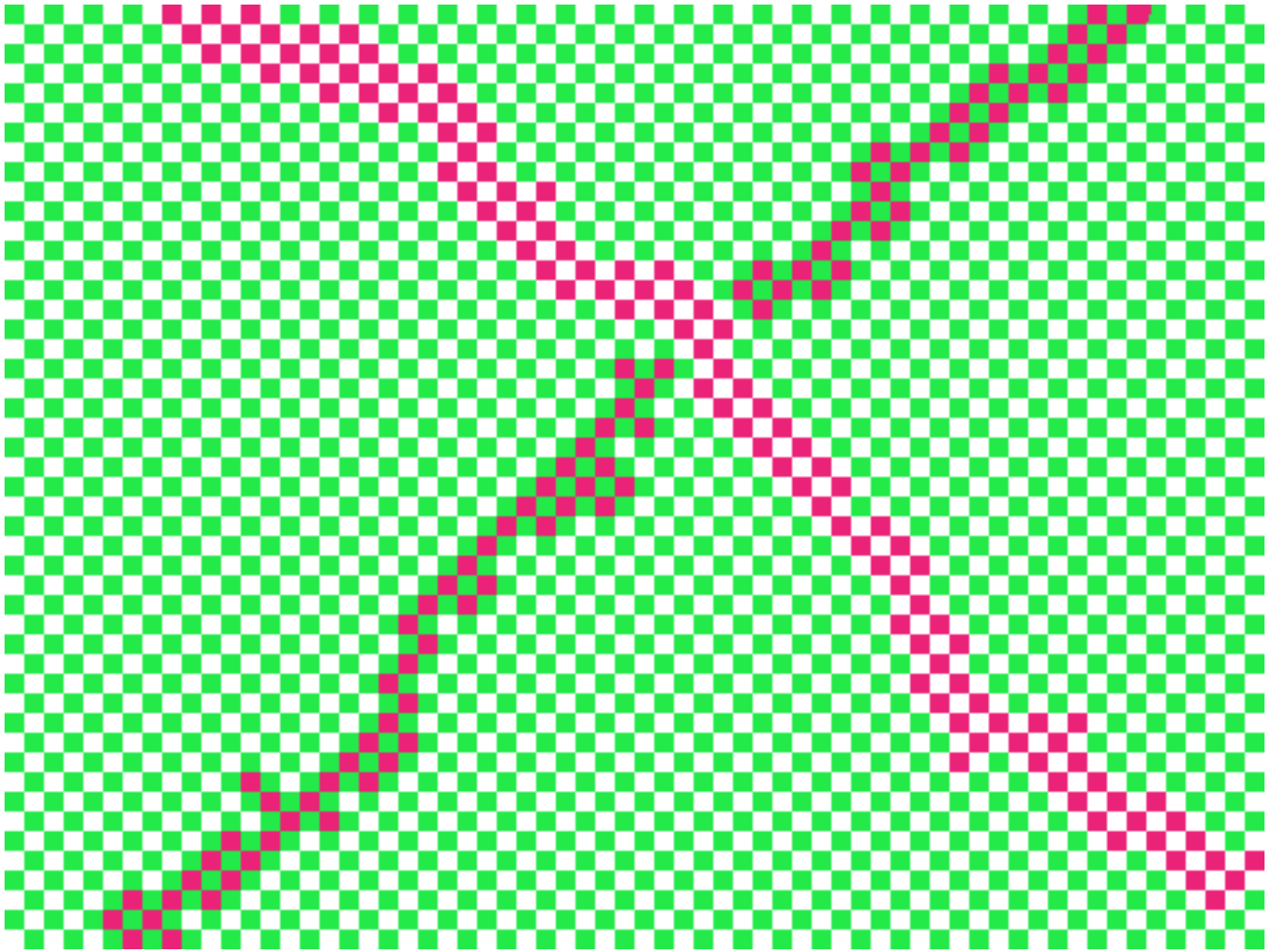
# Classic Optical Illusions



Copyright © 2012, Vlamis Software Solutions, Inc.

vlamis SOFTWARE SOLUTIONS

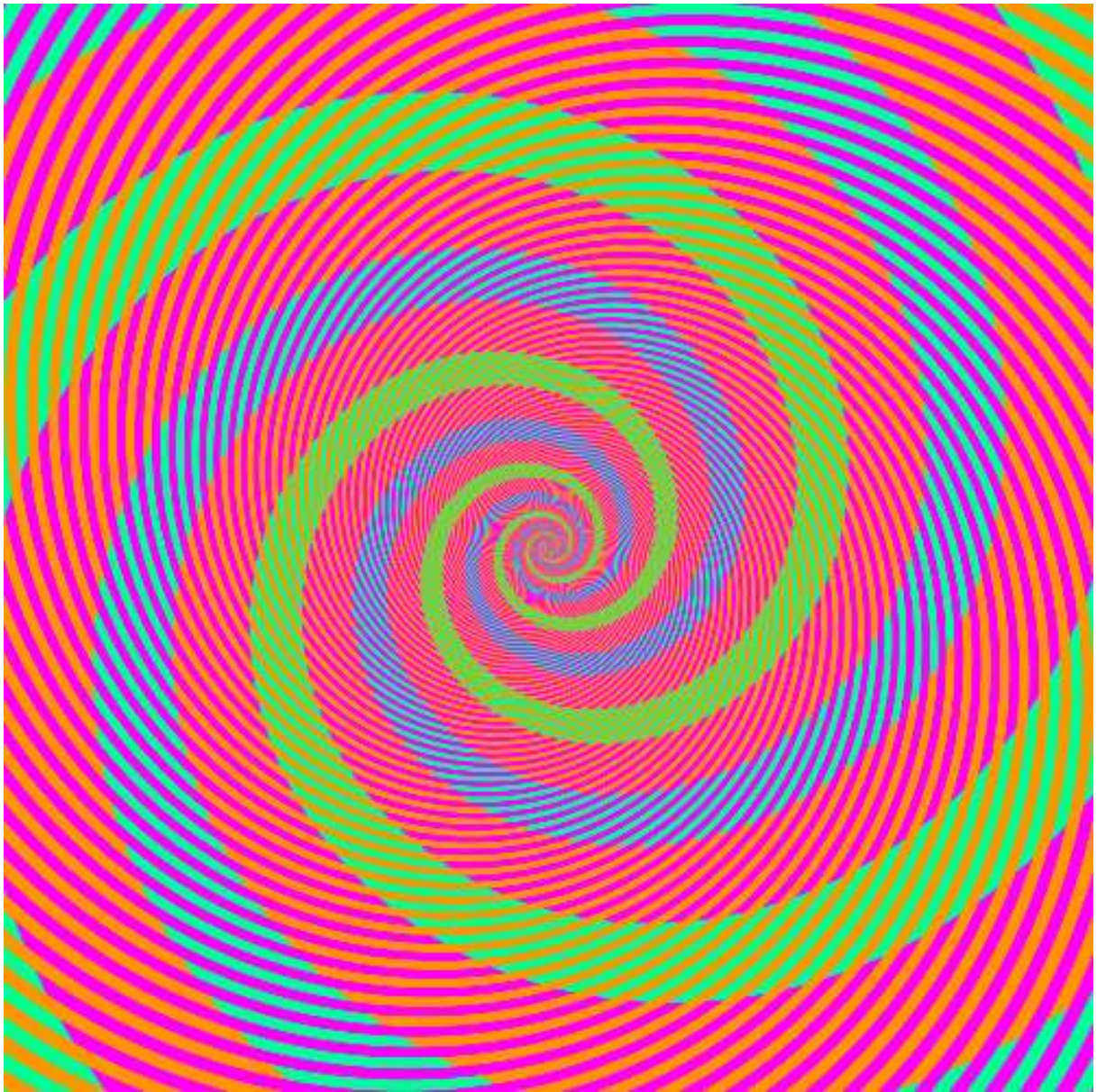
How many colors do you see?



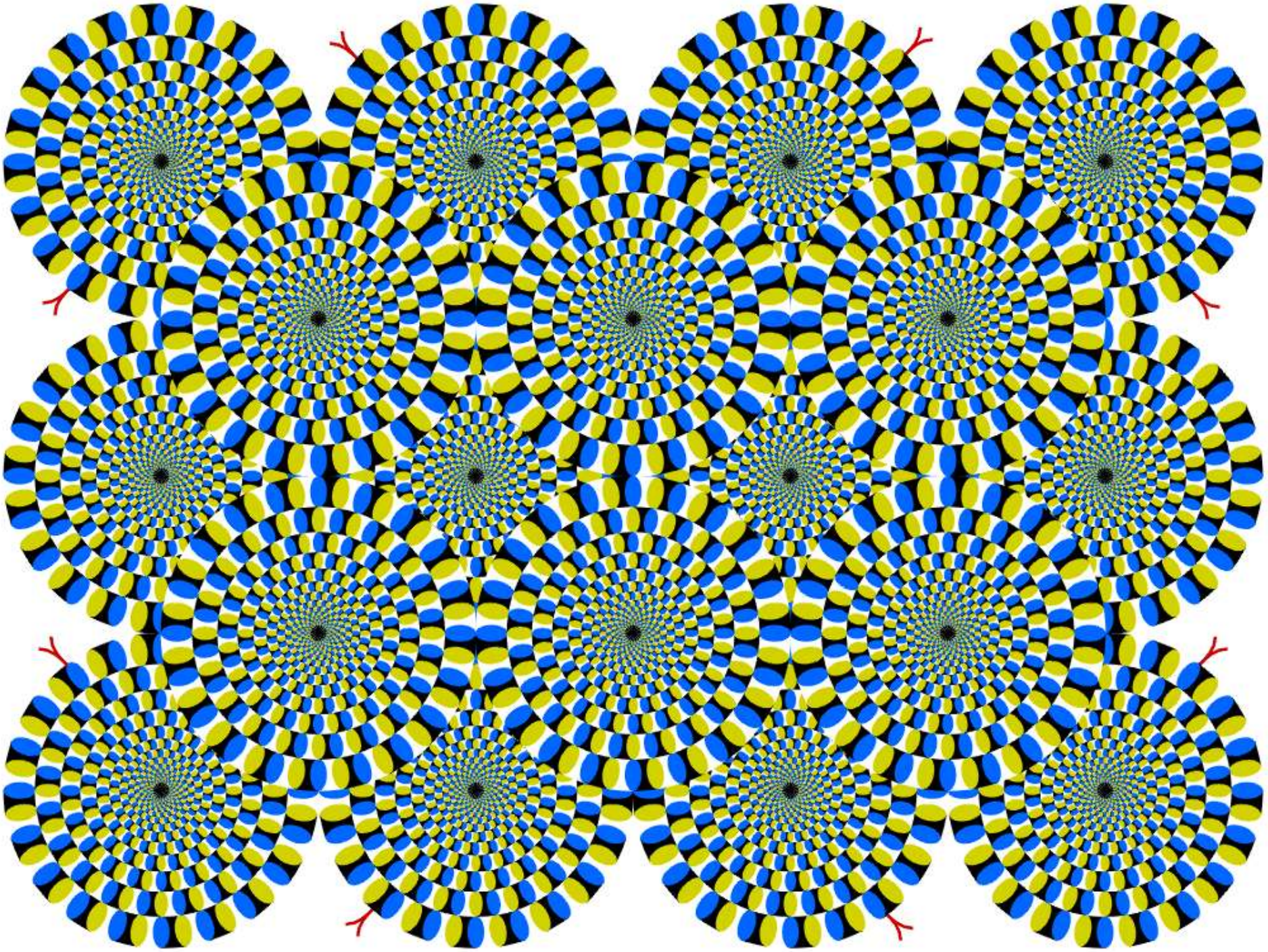
There are only 3 colors: White, green, and pink.
There seem to be two different shades of pink,
but there is only one pink.

Copyright © 2012, Vlamis Software Solutions, Inc.

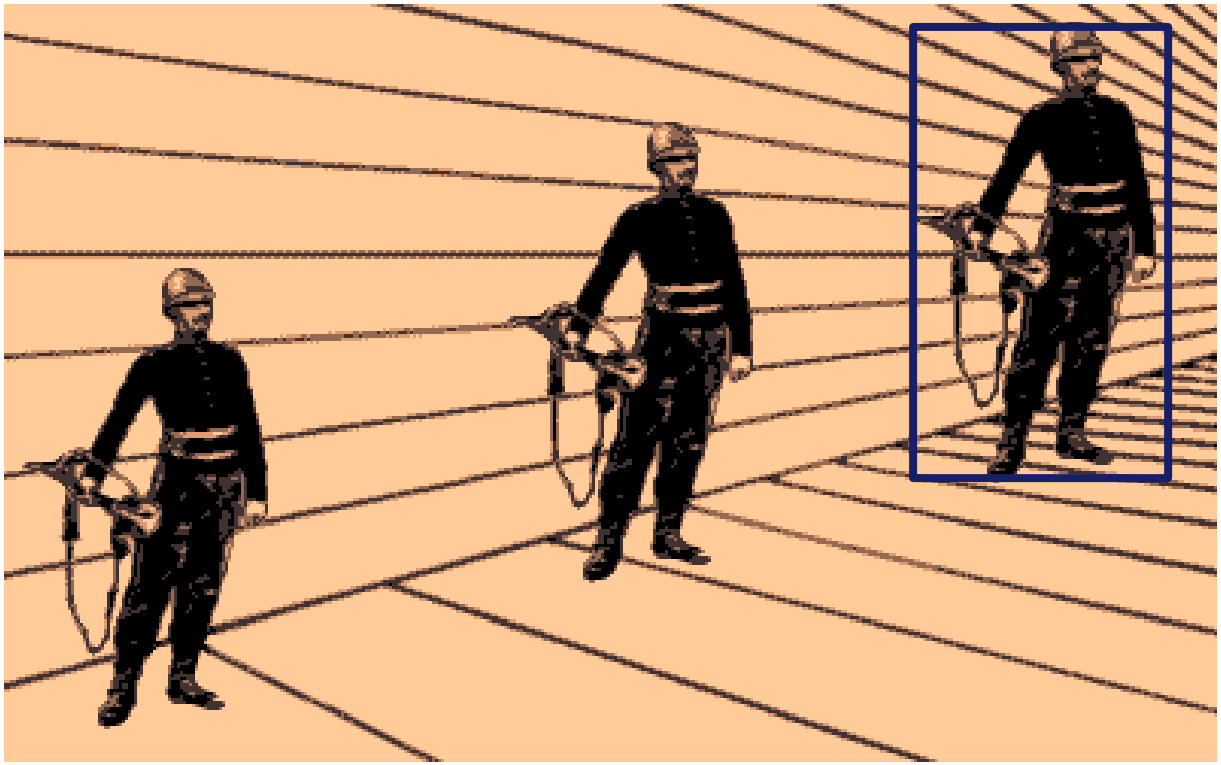
# The Spirals are the Same Color



vlamis
SOFTWARE SOLUTIONS



# Which Soldier is tallest?



Copyright © 2012, Vlamis Software Solutions, Inc.

vlamis SOFTWARE SOLUTIONS

# What Attracts Attention

1. Motion
2. Color
3. Size

Copyright © 2012, Vlamis Software Solutions, Inc.

vlamis SOFTWARE SOLUTIONS ™

# OBIEE Intro Demo

vlamis
SOFTWARE SOLUTIONS

# Tufte's 5 Principles

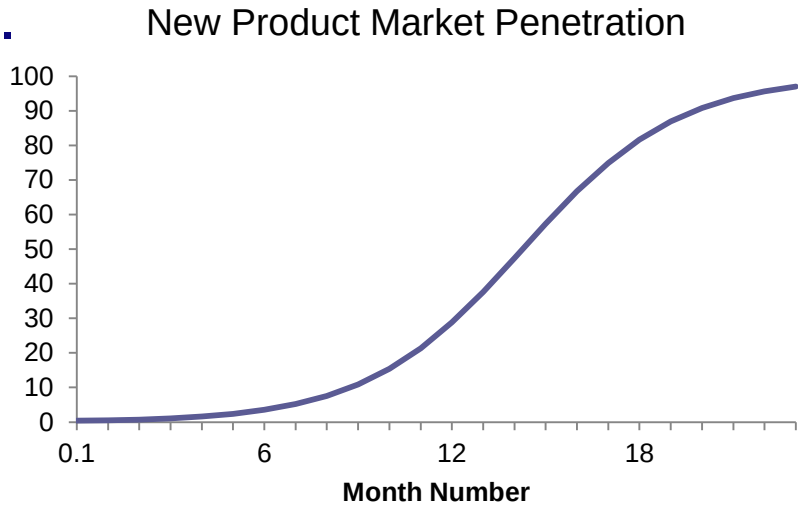
- Above all else show the data.
- Maximize the data to ink ratio.
- Erase non-data ink.
- Erase redundant data ink.
- Revise and edit.

Copyright © 2012, Vlamis Software Solutions, Inc.

vlamis SOFTWARE SOLUTIONS

# Graphs and Tables

- Graphs and Charts depict visual representations and relationships.




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

| District | Month | Dollars | WB Forecast Dollars | % Forecast |
|---|---|---|---|---|
| ATLANTA DISTRICT | 03/01/2008 | 595,232.0 | 535,185.0 | 111.2 |
| BOSTON DISTRICT | 03/01/2008 | 1,882,036.0 | 1,954,736.7 | 96.3 |
| CHARLOTTE DISTRICT | 03/01/2008 | 215,360.0 | 204,592.0 | 105.3 |
| CHICAGO DISTRICT | 03/01/2008 | 1,381,552.0 | 1,236,574.0 | 111.7 |
| CINCINNATI DISTRICT | 03/01/2008 | 827,162.0 | 742,869.0 | 111.3 |
| DALLAS DISTRICT | 03/01/2008 | 1,060,316.0 | 897,654.0 | 118.1 |
| DENVER DISTRICT | 03/01/2008 | 955,876.0 | 1,050,735.4 | 91.0 |
| DETROIT DISTRICT | 03/01/2008 | 961,026.0 | 1,249,333.8 | 76.9 |
| JACKSONVILLE DISTRICT | 03/01/2008 | 1,827,434.0 | 1,892,779.4 | 96.5 |

Copyright © 2012, Vlamis Software Solutions, Inc.

vlamis SOFTWARE SOLUTIONS

# Keys to Effective Tables

- Enable column and row sorting.
- Use appropriate number format.
- Avoid scrolling if possible.
- Lock titles if do use scrolling (BI Publisher)
- Display significant figures.
  - Don’t imply precision that doesn’t exist.
- Judiciously use conditional formatting for data exploration.
- Avoid putting text in color.
- Alignment, proximity, contrast.

Copyright © 2012, Vlamis Software Solutions, Inc.

vlamis SOFTWARE SOLUTIONS™

# Bad Table

| | | WIDGETS TO GADGETS RATIO CALCULATED USING CHECK LEVEL DETAIL | | | | | |
|---|---|---|---|---|---|---|---|
| | | ELECTROMECHANICAL | | | PNEUMATIC | | |
| | PERIOD | IN-STORE | WEBSITE | DISTRIBUTOR | IN-STORE | WEBSITE | DISTRIBUTOR |
| INCLUDES ONLY DATES FROM JANUARY THRU OCT 2007 | PERIOD 1 | 22.36% | 11.37% | 83.00% | 85.34% | 20.90% | 46.80% |
| | PERIOD 2 | 21.22% | 15.25% | 81.00% | 81.31% | 18.01% | 35.39% |
| | PERIOD 3 | 21.64% | 13.22% | 82.00% | 78.29% | 29.94% | 41.28% |
| | PERIOD 4 | 20.89% | 13.44% | 82.00% | 47.82% | 16.30% | 39.46% |
| | PERIOD 5 | 21.90% | 13.24% | 81.00% | 84.58% | 17.19% | 20.52% |
| | PERIOD 6 | 25.09% | 14.78% | 80.00% | 59.93% | 31.08% | 35.14% |
| | PERIOD 7 | 26.23% | 14.98% | 79.00% | 36.35% | 32.85% | 22.52% |
| | PERIOD 8 | 26.83% | 13.08% | 80.00% | 82.10% | 30.41% | 36.10% |
| | PERIOD 9 | 23.79% | 14.27% | 81.00% | 43.40% | 25.17% | 23.81% |
| | PERIOD 10 | 24.39% | 12.61% | 82.00% | 38.21% | 17.70% | 40.30% |

Copyright © 2012, Vlamis Software Solutions, Inc.

vlamis SOFTWARE SOLUTIONS

# Better Table

## Widgets to Gadgets Ratio

| | Electromechanical | | | Pneumatic | | |
|---|---|---|---|---|---|---|
| Period | In-store | Website | Distributor | In-store | Website | Distributor |
| 1 | 22% | 11% | 83% | 51% | 21% | 40% |
| 2 | 21% | 15% | 81% | 74% | 21% | 32% |
| 3 | 22% | 13% | 82% | 48% | 22% | 23% |
| 4 | 21% | 13% | 82% | 58% | 31% | 30% |
| 5 | 22% | 13% | 81% | 52% | 19% | 28% |
| 6 | 25% | 15% | 80% | 87% | 15% | 22% |
| 7 | 26% | 15% | 79% | 51% | 23% | 20% |
| 8 | 27% | 13% | 80% | 44% | 22% | 45% |
| 9 | 24% | 14% | 81% | 54% | 17% | 31% |
| 10 | 24% | 13% | 82% | 75% | 31% | 29% |

Ratios calculated using check level detail.

Periods include Jan - Oct 2007

Copyright © 2012, Vlamis Software Solutions, Inc.

vlamis SOFTWARE SOLUTIONS

# Keys to Effective Graphs

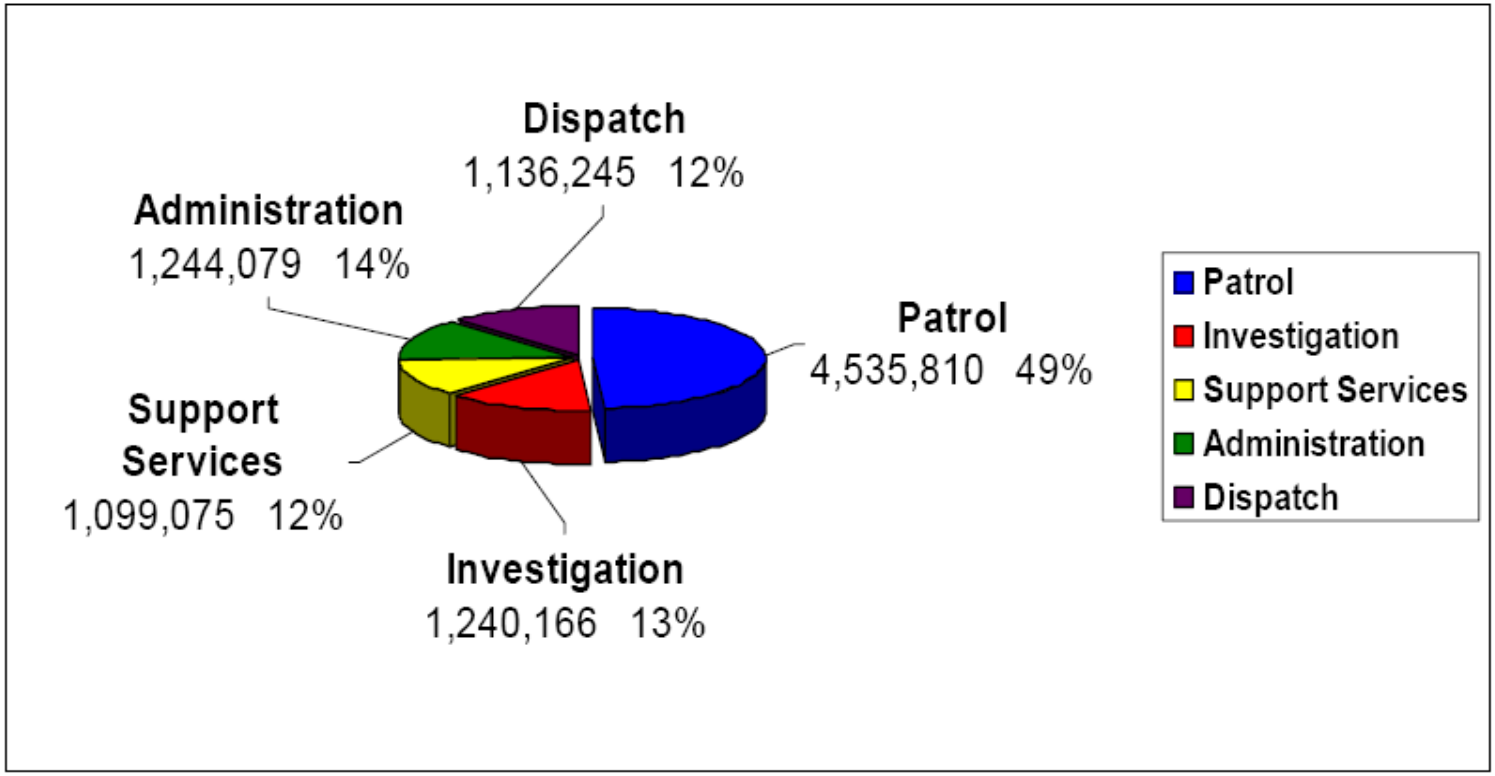
- Do not use 3-D effects.
- Avoid “stop light” color palette.
- Prefer pastel color palettes.
- Avoid bright colors.
- Do not use round gauges or dials.
- Eliminate gridlines, drop shadows, and other graphics.
- Enable interaction for “exploration” graphs
- Prioritize a single message for “explanation” graphs
- Alignment, proximity, contrast.

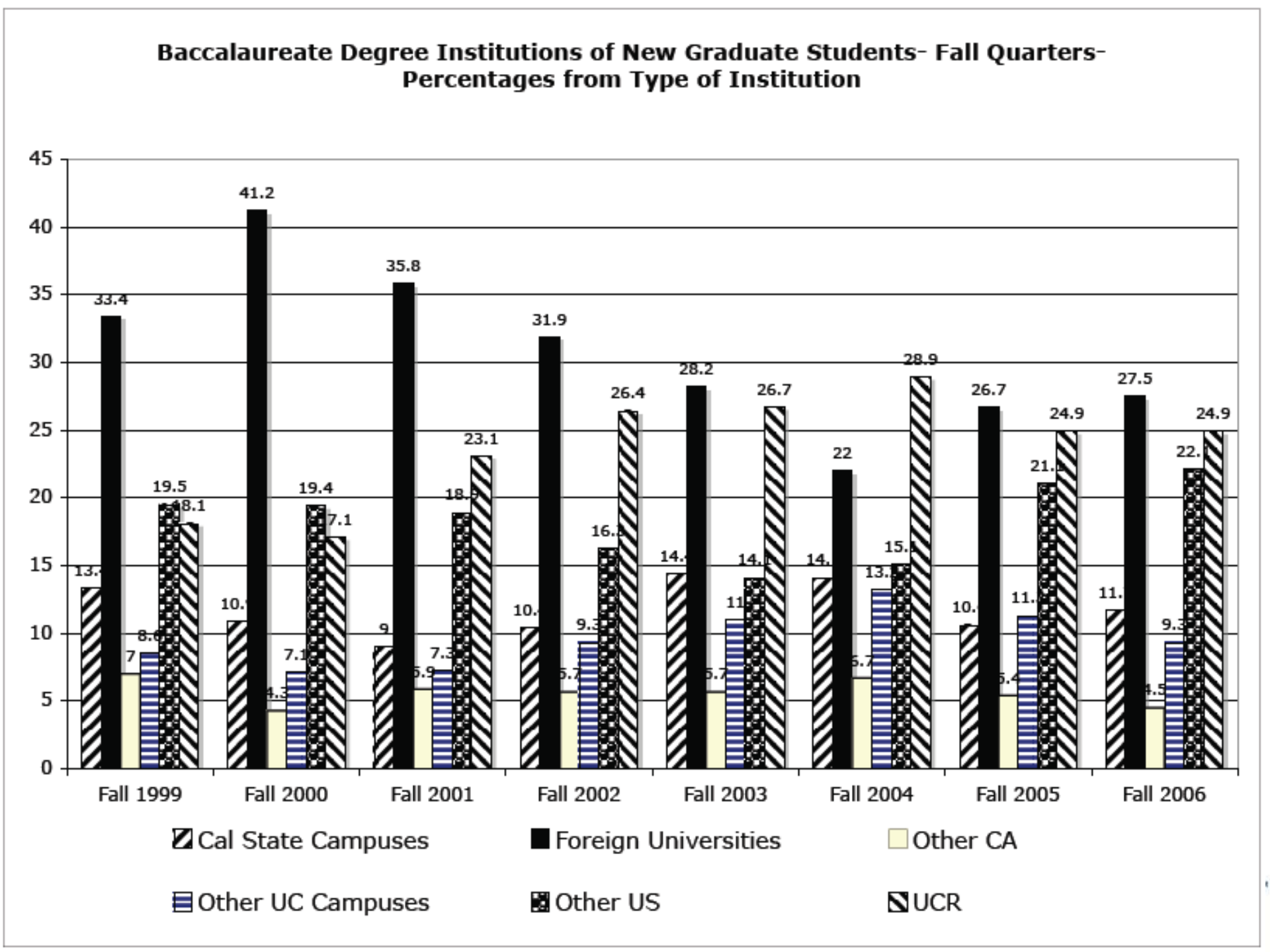
Copyright © 2012, Vlamis Software Solutions, Inc.

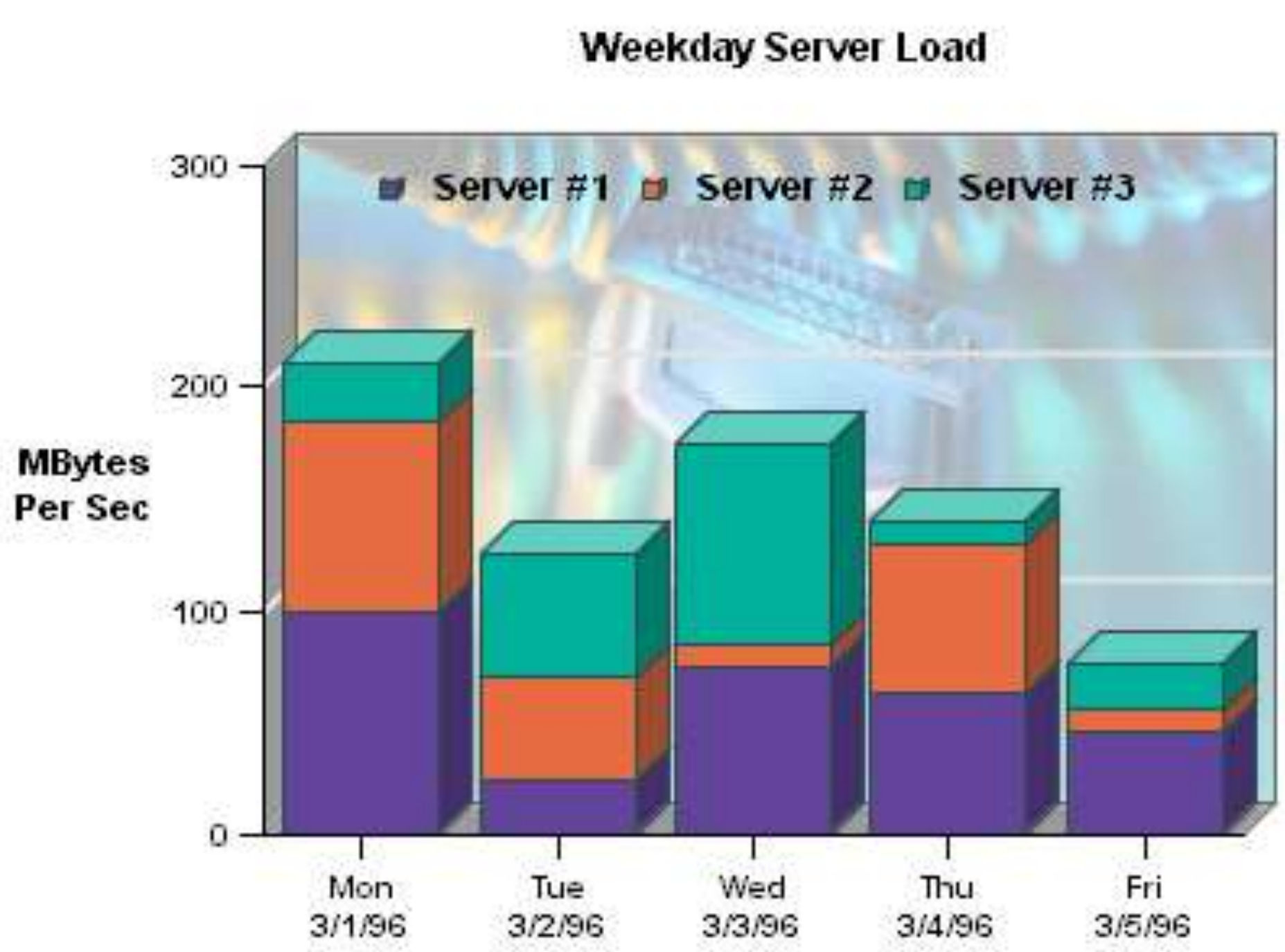
vlamis™
SOFTWARE SOLUTIONS

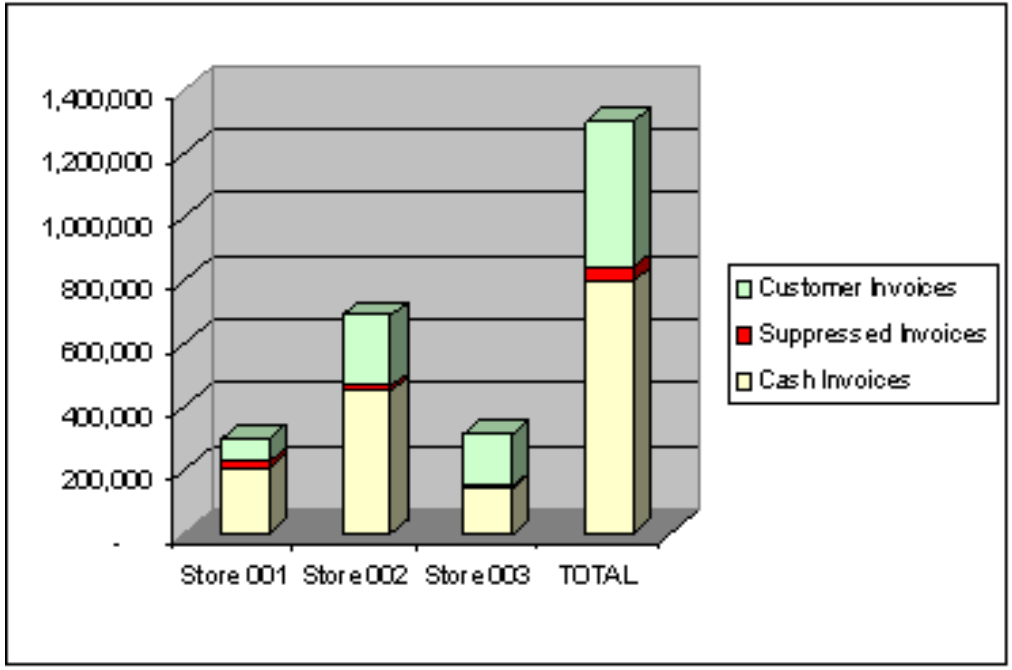
# 2004 - 2005 Budget

## Budget By Division



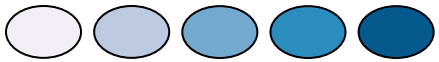
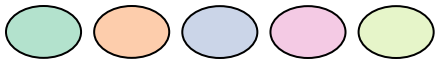

Baccalaureate Degree Institutions of New Graduate Students- Fall Quarters-
Percentages from Type of Institution
45
40
35
30
25
20
15
10
5
0
41.2
35.8
31.9
28.2
26.7
26.4
23.1
22
19.5
19.4
18.1
7.1
Fall 1999
Fall 2000
Fall 2001
Fall 2002
Fall 2003
Fall 2004
Fall 2005
Fall 2006
Cal State Campuses
Foreign Universities
Other CA
Other UC Campuses
Other US
UCR


Weekday Server Load
Server #1
Server #2
Server #3
300
200
100
0
MBytes
Per Sec
Mon
3/1/96
Tue
3/2/96
Wed
3/3/96
Thu
3/4/96
Fri
3/5/96




| | Store 001 | Store 002 | Store 003 | TOTAL |
|---|---|---|---|---|
| Total Invoices | 298,943 | 687,091 | 313,140 | 1,299,174 |
| *less* | | | | |
| Cash Invoices | 207,256 | 449,064 | 141,305 | 797,625 |
| *leaves* | | | | |
| Non-cash Invoices | 91,687 | 238,027 | 171,835 | 501,549 |
| *consisting of* | | | | |
| Suppressed Invoices | 18,888 | 15,527 | 6,501 | 40,916 |
| *and* | | | | |
| Customer Invoices | 72,799 | 222,500 | 165,334 | 460,633 |
| *for purchases from* | | | | |
| Suppressed Customer Names | 2,123 | 4,306 | 870 | 7,299 |
| *and* | | | | |
| Active Customer Names | 2,103 | 14,747 | 8,342 | 25,192 |
| *which include* | | | | |
| Duplicate Customer Names | 70 | 693 | 619 | 1,382 |
| *leaving* | | | | |
| Unique Customer Names | 2,033 | 14,054 | 7,723 | 23,810 |
| *which include* | | | | |
| Bad Addresses | 1,055 | 5,759 | 2,406 | 9,220 |
| *leaving* | | | | |
| Mailable Customer Names | 978 | 8,295 | 5,317 | 14,590 |

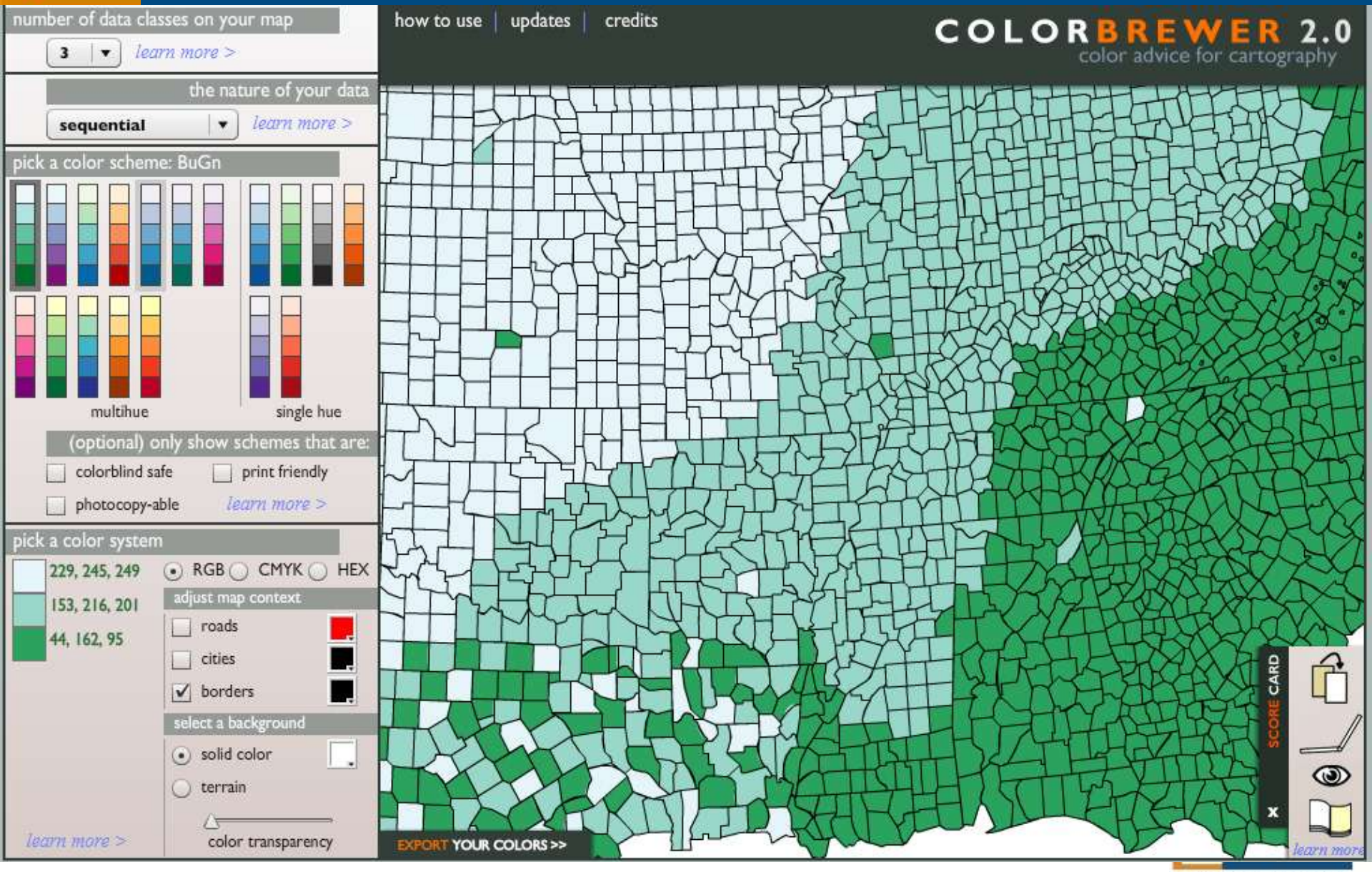
# Using Color Effectively

- Consciously choose a color palate.
- ColorBrewer2.org
  - Sequential schemes 
    - Designed for ordered data that progresses from low to high.
  - Divergent schemes 
    - Place equal emphasis on mid-range values and extremes at both ends of the data range.
  - Qualitative schemes 
    - Used for nominal and categorical data where magnitude differences between classes should not be emphasized.

Copyright © 2012, Vlamis Software Solutions, Inc.

vlamis SOFTWARE SOLUTIONS

# Colorbrewer2.org




Copyright © 2012, Vlamis Software Solutions, Inc.

SOFTWARE SOLUTIONS

# Dashboards Defined

*“A dashboard is a visual display of the most important information needed to achieve one or more objectives, consolidated or arranged on a single screen so that the information can be monitored at a glance.”*

- Stephen Few, Intelligent Enterprise

Copyright © 2012, Vlamis Software Solutions, Inc.

# Dashboards Defined

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

Copyright © 2010, Vlamis Software Solutions, Inc.

vlamis SOFTWARE SOLUTIONS

# OBIEE Dashboard Best Practices

- Dashboards should be customized to the needs of individual users and groups.
- Dashboards should maintain and reflect organizational standards so that they can be properly understood by others in the organization.
- Dashboards should reveal their selection and transformation of data in a transparent manner.
- Dashboards should be purposefully designed and optimized for effectiveness.

vlamis
SOFTWARE SOLUTIONS

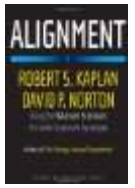
# Dashboard Standards

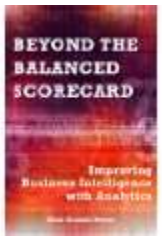
- Determine what colors are used for which products.
- Know the organization's typical screen size so a standard number of section columns can be determined.
- Set a standard location for prompts.
- Visually indicate which prompts control which analyses.
- Standards help with:
  - Providing professional look and feel, which instill user confidence
  - Standards help reduce development time and improve productivity and consistency.

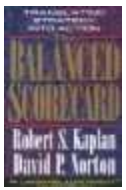
Copyright © 2012, Vlamis Software Solutions, Inc.

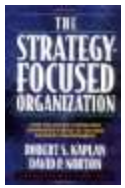
# OBI Scorecard & Strategy Management

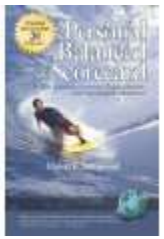
- Integrated toolset in OBIEE
- Follows “Balanced Scorecard” methodology
- Enables corporate goals and objectives to be monitored and managed
- Includes strategy maps, strategy trees, KPI watch lists, and cause and effect maps

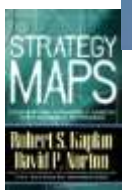



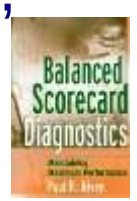



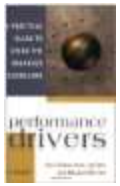




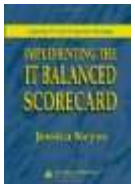


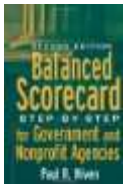




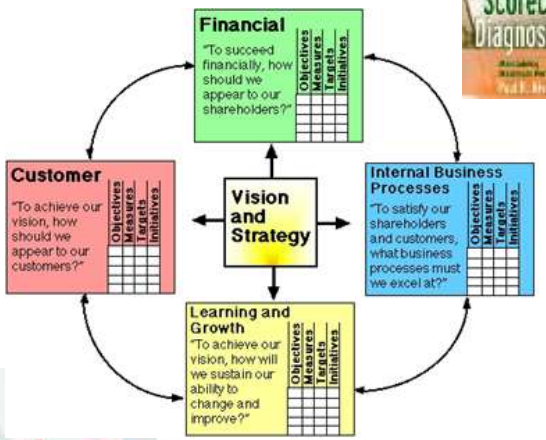







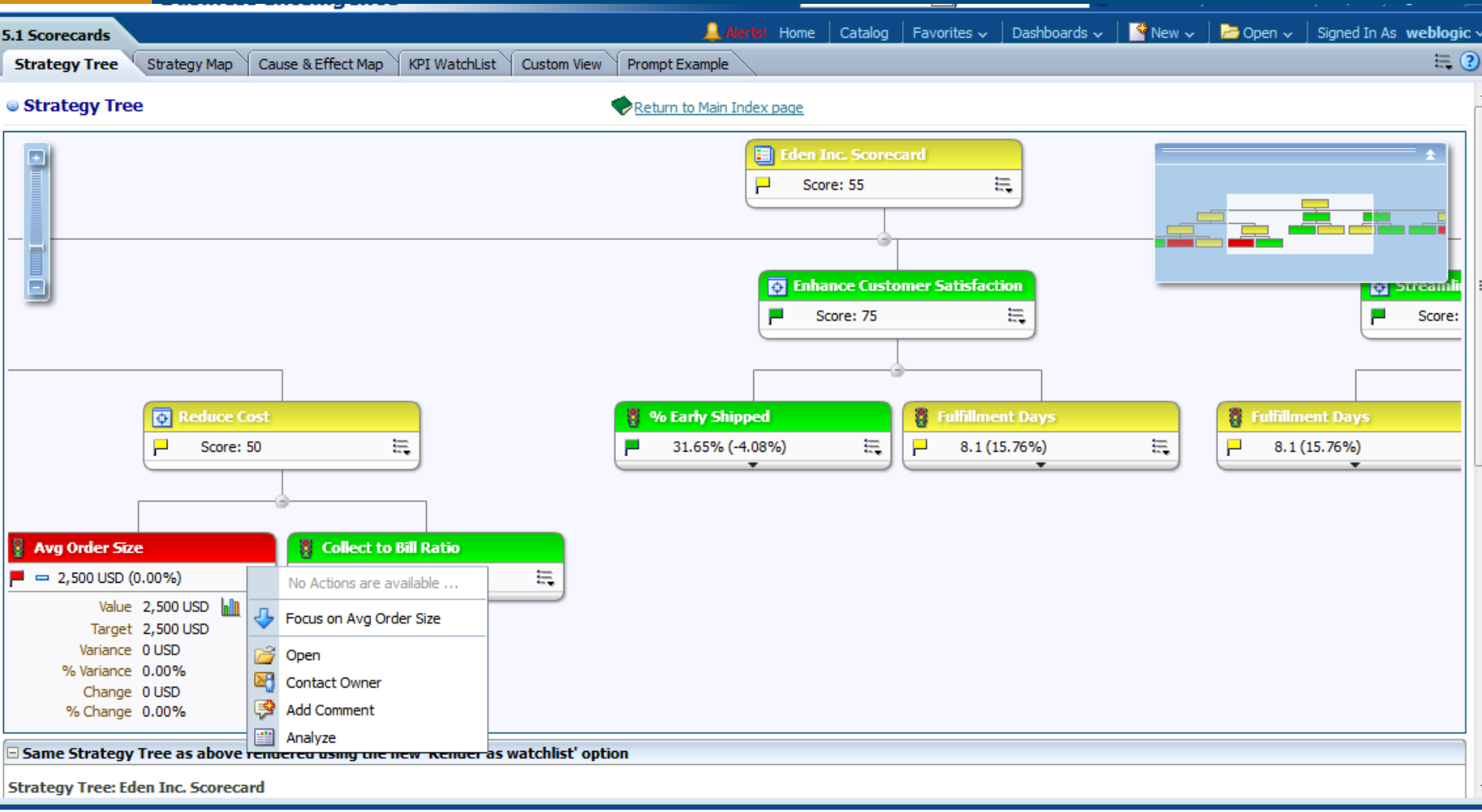



vlamis
SOFTWARE SOLUTIONS

# New Contribution Wheel Visualization

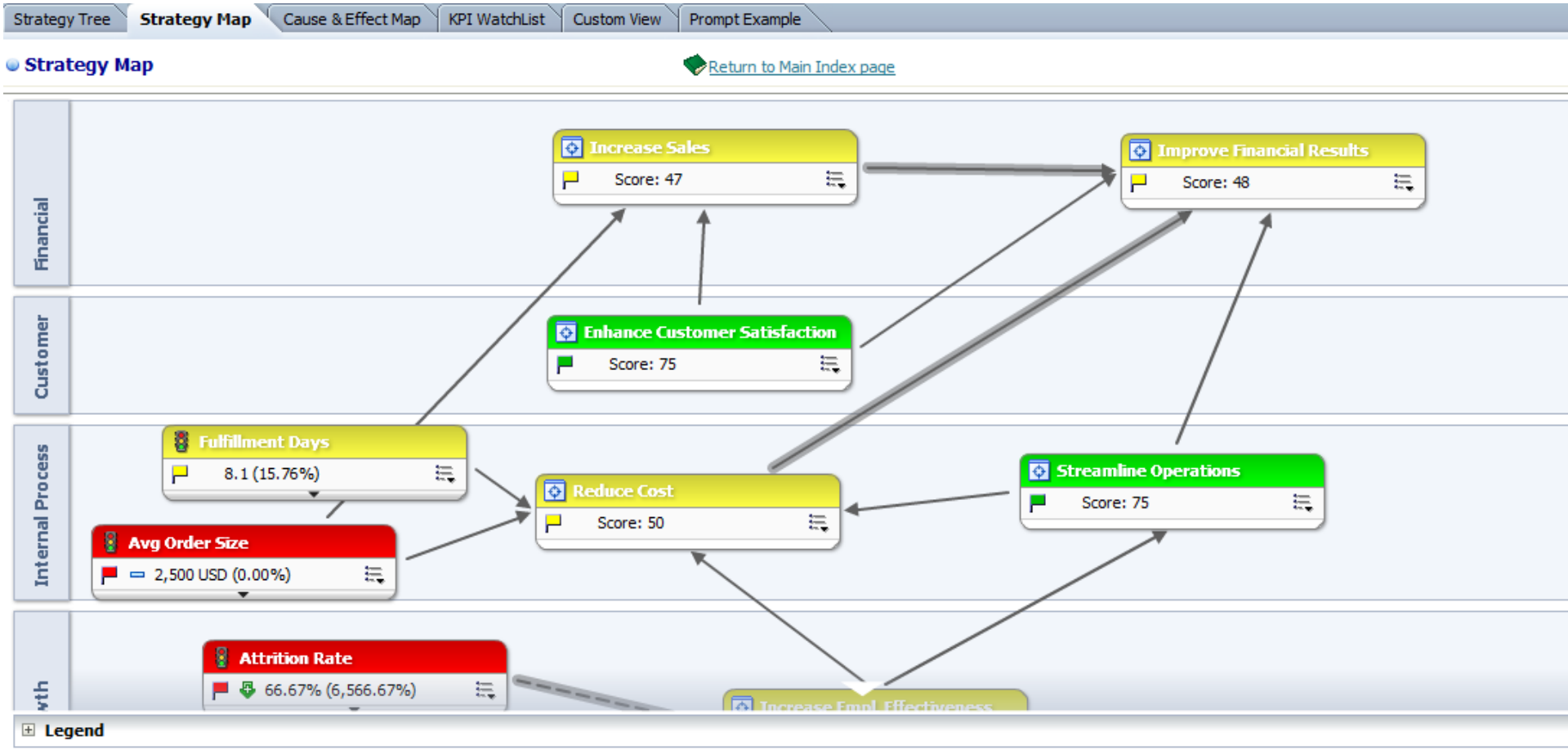
# Strategy Tree View




Copyright © 2012, Vlamis Software Solutions, Inc.

vlamis SOFTWARE SOLUTIONS

# Strategy Map View




vlamis SOFTWARE SOLUTIONS

# Embedded “Trellis” Charts

**Embedded Charts**

Return to Main Index page

*Page Information (click to collapse or expand)*

Select Metric

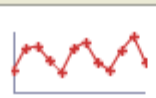
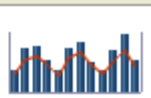
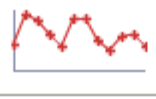
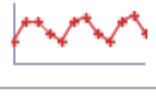
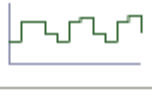
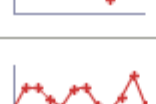
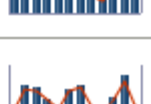
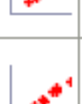
- (•) F.Revenue
- ( ) F.Qty
- ( ) Calcs.UnitPrice

Apply

Reset

**Embedded OBIEE Charts**

*Time run: 5/15/2012 7:46:26 PM*

| | | | | | | | 2008 Q1 | 2008 Q2 | 2008 Q3 | 2008 Q4 | 200 Q1 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Communication |  |  |  |  |  | 677435.55 ; 1311983.52 ; 1354281.88 ; 937259.38 ; 623617.91 ; 1298523.51 ; 1489051.75 ; 896220.26 ; | 677,436 | 1,311,984 | 1,354,282 | 937,259 | 623 |
| Digital |  |  |  |  |  | 401145.71 ; 822268.06 ; 738654.72 ; 540466.40 ; 359993.65 ; 791301.74 ; 789496.18 ; 454990.47 ; | 401,146 | 822,268 | 738,655 | 540,466 | 359 |
| Electronics |  |  |  |  |  | 637085.14 ; 1261684.50 ; 1246109.26 ; 879931.23 ; 662522.02 ; 1265905.20 ; 1369656.29 ; 883015.40 ; | 637,085 | 1,261,685 | 1,246,109 | 879,931 | 662 |
| Games |  |  |  |  |  | 745734.28 ; 1521437.95 ; 1406565.31 ; 1068774.77 ; 715802.42 ; 1489518.90 ; 1527344.83 ; 1061246.95 ; | 745,734 | 1,521,438 | 1,406,565 | 1,068,775 | 715 |
| Services |  |  |  |  |  | 423414.32 ; 1118764.99 ; 932195.32 ; 695286.86 ; 603856.18 ; 985225.26 ; 917763.73 ; 385202.82 ; | 423,414 | 1,118,765 | 932,195 | 695,287 | 603 |
| TV |  |  |  |  |  | 678636.40 ; 1548434.14 ; 1495702.28 ; 1056748.03 ; 721122.98 ; 1403073.11 ; 1534590.56 ; 770957.88 ; | 678,636 | 1,548,434 | 1,495,702 | 1,056,748 | 721 |

Edit -Refresh -Print -Export

vlamis SOFTWARE SOLUTIONS

# Sparklines

This page is better rendered by using Firefox browser

**Sparklines Types (JQuery)**

*Time run: 5/15/2012 7:43:22 PM*

As Of : **2010 / 10**

| Dimension | 1- Revenue | Line | Chart | Tristate | Discrete | Pie Charts | Box | Bullet |
|---|---|---|---|---|---|---|---|---|
| Assembled Dept. | 92,556 | | | | | | | |
| Entertainment Dept. | 189,100 | | | | | | | |
| Equipment Dept. | 186,291 | | | | | | | |
| Local Plants Dept. | 193,843 | | | | | | | |
| Manufactured Dept. | 190,268 | | | | | | | |
| Operations Dept. | 190,225 | | | | | | | |
| Surplus Dept. | 92,343 | | | | | | | |
| Technology Dept. | 279,962 | | | | | | | |
| Test Programs Dept. | 187,073 | | | | | | | |
| Translated Products Dept. | 288,014 | | | | | | | |

Analyze - Edit - Refresh - Print

# Pivot Heat Map

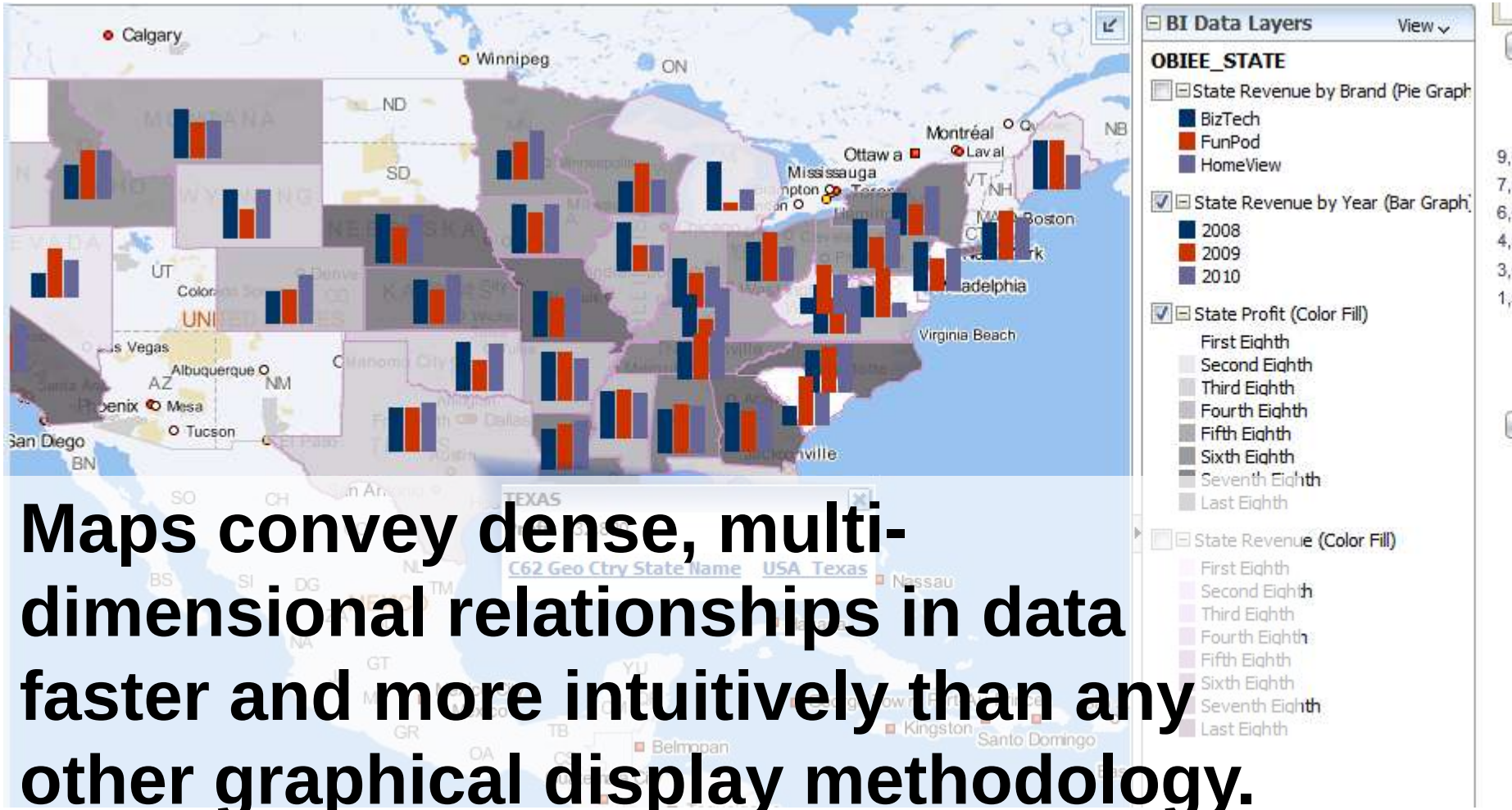
| | Grand Total | Games | TV | Communication | Electronics | Services | Digital |
|---|---|---|---|---|---|---|---|
| Figueroa Office | **3,842,927** | 914,978 | 729,734 | 681,729 | 701,586 | 407,924 | 406,975 |
| Guadalupe Office | **3,724,904** | 862,523 | 693,361 | 664,967 | 707,356 | 406,223 | 390,474 |
| Madison Office | **3,717,168** | 825,439 | 779,666 | 739,256 | 611,821 | 446,599 | 314,387 |
| Spring Office | **3,709,488** | 858,879 | 717,308 | 667,767 | 685,675 | 422,997 | 356,863 |
| Eiffel Office | **3,686,688** | 823,046 | 728,679 | 676,979 | 682,524 | 405,847 | 369,613 |
| Morange Office | **3,641,103** | 811,852 | 721,242 | 665,251 | 663,154 | 418,867 | 360,736 |
| Perry Office | **3,619,566** | 855,577 | 683,439 | 644,954 | 665,790 | 409,505 | 360,299 |
| College Office | **3,585,299** | 819,437 | 694,455 | 651,687 | 657,574 | 405,017 | 357,129 |
| Copper Office | **3,580,654** | 839,416 | 687,128 | 646,676 | 635,637 | 410,738 | 361,058 |
| River Office | **3,492,079** | 818,428 | 680,394 | 623,420 | 619,194 | 407,964 | 342,679 |
| Montgomery Office | **3,408,826** | 759,058 | 682,610 | 645,294 | 577,336 | 448,314 | 296,214 |
| Mills Office | **3,403,649** | 781,304 | 642,323 | 626,079 | 605,688 | 404,210 | 344,045 |
| Sherman Office | **3,402,840** | 755,860 | 664,127 | 657,163 | 600,825 | 418,788 | 306,077 |
| Blue Bell Office | **3,381,098** | 736,555 | 663,794 | 674,607 | 586,915 | 417,255 | 301,973 |
| Casino Office | **3,375,885** | 748,299 | 667,646 | 650,591 | 585,134 | 427,806 | 296,409 |
| Eden Office | **3,339,479** | 736,841 | 647,572 | 675,796 | 559,997 | 424,357 | 294,916 |
| Foster Office | **3,315,059** | 739,504 | 658,783 | 638,605 | 570,621 | 416,816 | 290,730 |
| Tellaro Office | **3,296,487** | 739,693 | 665,197 | 633,022 | 558,079 | 409,549 | 290,947 |
| Merrimon Office | **3,267,813** | 736,837 | 636,913 | 623,980 | 568,846 | 407,850 | 293,386 |
| Glenn Office | **3,208,987** | 722,666 | 626,456 | 611,952 | 556,473 | 412,547 | 278,894 |

Top
Top 5
Top 10
Top 15
Top 20
Top 25
Top 30

vlamis
SOFTWARE SOLUTIONS

# Humans Think Spatially

# Why Maps are Powerful




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

Copyright © 2012, Vlamis Software Solutions, Inc.

vlamis SOFTWARE SOLUTIONS

# What is Spatial Data?

- Business data that contains or describes location
  - Street and postal address (customers, stores, factory, etc.)
  - Sales data (sales territory, customer registration, etc.)
  - Assets (cell towers, pipe lines, electrical transformers, etc.)
  - Geographic features (roads, rivers, parks, etc.)
- Anything connected to a physical location

Copyright © 2010, Vlamis Software Solutions, Inc.

# Tufte Quote

*"Clutter is not an attribute of information, clutter is a failure of design… fix the design rather than stripping all the detail out of the map."*

Edward Tufte

The Visualization of Quantitative Information

Copyright © 2012, Vlamis Software Solutions, Inc.

vlamis SOFTWARE SOLUTIONS

# 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?

Copyright © 2012, Vlamis Software Solutions, Inc.

vlamis SOFTWARE SOLUTIONS™

# 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

Copyright © 2012, Vlamis Software Solutions, Inc.

vlamis SOFTWARE SOLUTIONS™

# 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

vlamis™
SOFTWARE SOLUTIONS

# 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

vlamis™
SOFTWARE SOLUTIONS

# Map View Formats

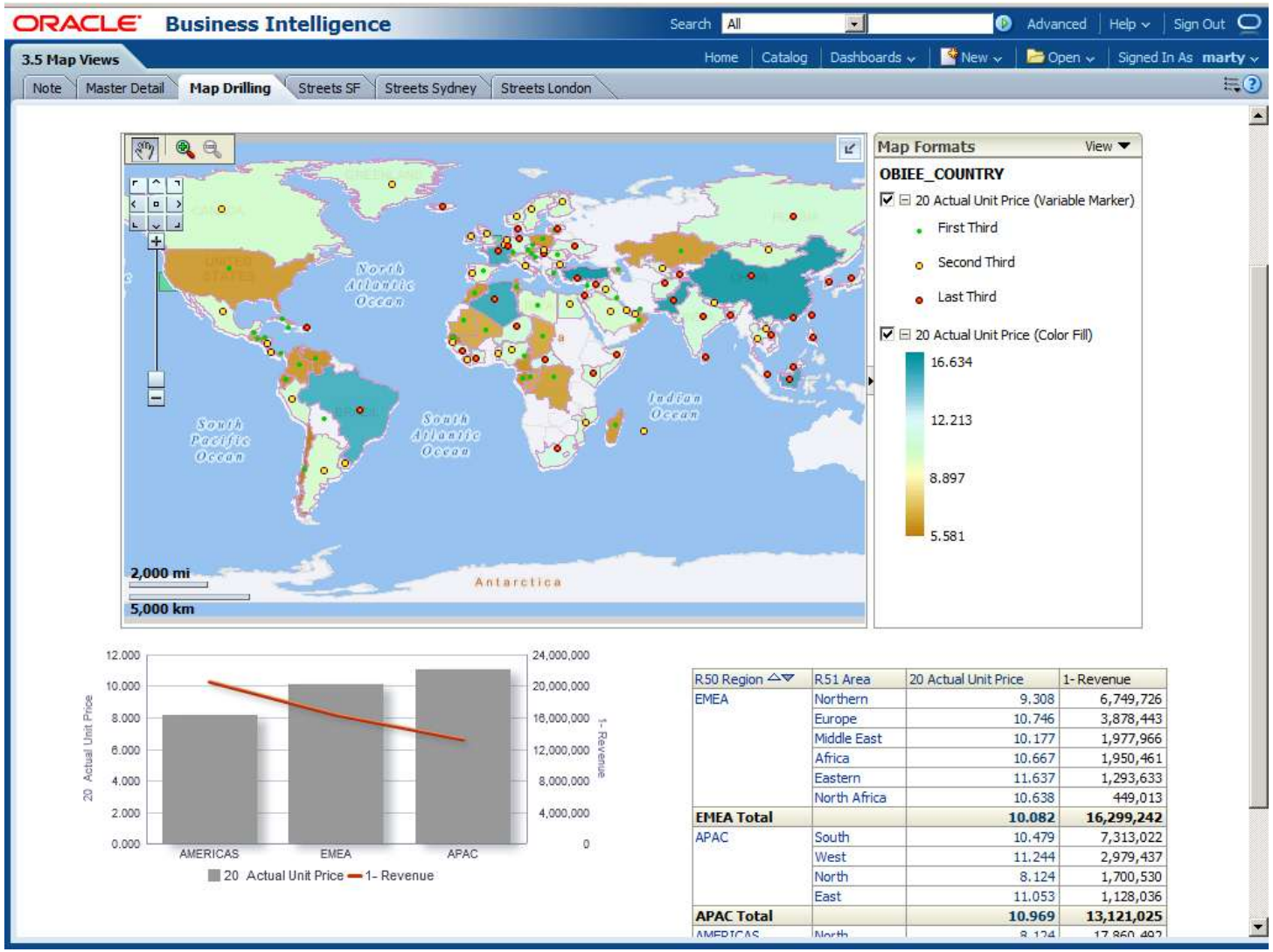
- Color Fill (choropleth)
  - Percentile, Value, Continuous binning
  - Dashboard user run-time slider
- Graphs – Bar, Pie
  - Adjustable graph size
  - Series by second dimension
- Bubble (variable sized)
  - Min-Max size specification
  - Color specification
- Variable Shape
  - Circle, Triangle, Diamond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

# NAVTEQ Data

- NAVTEQ is the leading global provider of digital map, traffic and location data that enables navigation and location-based platforms around the world.
- NAVTEQ data is licensed direct or through a reseller.
- Licenses are use specific.
- NAVTEQ data resides inside your own Oracle Database.
- NAVTEQ publishes an ODF (Oracle Data Format) version of its data designed specifically for use in an Oracle Database.


vlamis SOFTWARE SOLUTIONS

# Demo of Oracle BI 11g Maps

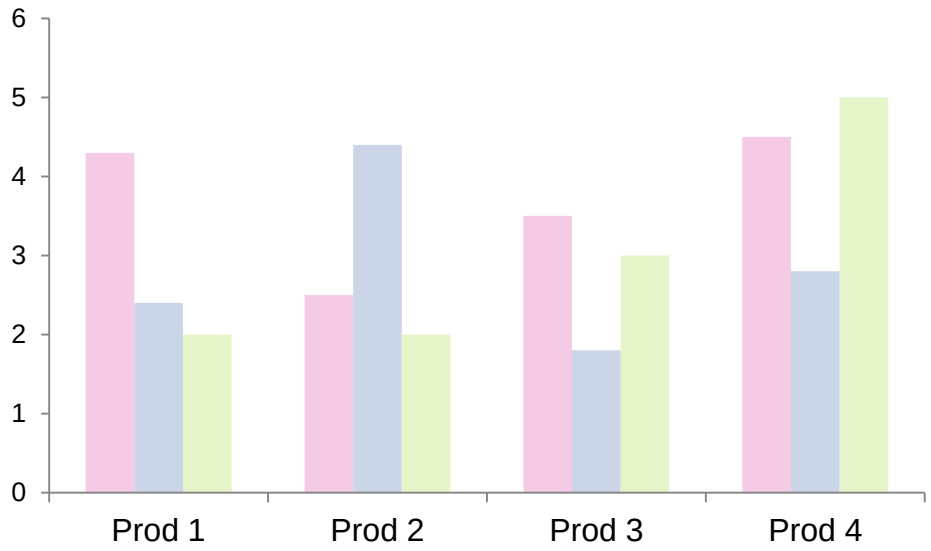



| R50 Region | R51 Area | 20 Actual Unit Price | 1- Revenue |
|---|---|---|---|
| EMEA | Northern | 9.308 | 6,749,726 |
| | Europe | 10.746 | 3,878,443 |
| | Middle East | 10.177 | 1,977,966 |
| | Africa | 10.667 | 1,950,461 |
| | Eastern | 11.637 | 1,293,633 |
| | North Africa | 10.638 | 449,013 |
| **EMEA Total** | | **10.082** | **16,299,242** |
| APAC | South | 10.479 | 7,313,022 |
| | West | 11.244 | 2,979,437 |
| | North | 8.124 | 1,700,530 |
| | East | 11.053 | 1,128,036 |
| **APAC Total** | | **10.969** | **13,121,025** |



vlamis SOFTWARE SOLUTIONS

# Bar Charts

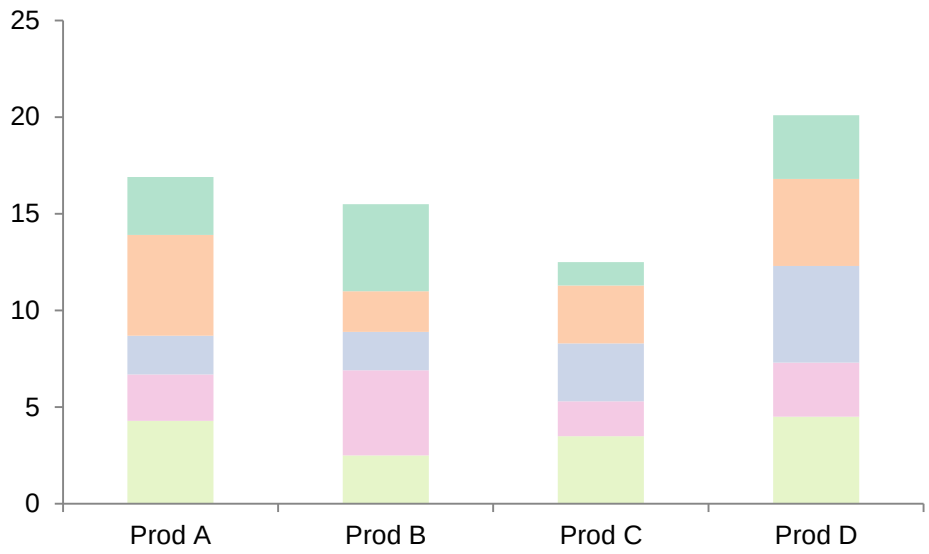



- Show nominal data values in comparison to one another.
- Start with zero.
- If use a logarithmic scale, clearly notate.

Copyright © 2012, Vlamis Software Solutions, Inc.

vlamis SOFTWARE SOLUTIONS

# Stacked Bar Chart

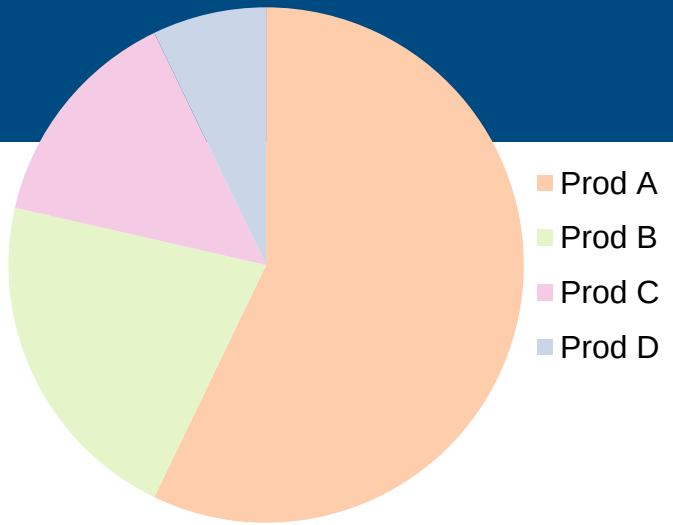



- Somewhat confusing, not great for representing change.
- Total is most clearly represented number.
- Typically stack with largest values on the bottom.
- Single scale can make for interesting intra-bar comparisons.

Copyright © 2012, Vlamis Software Solutions, Inc.

vlamis SOFTWARE SOLUTIONS

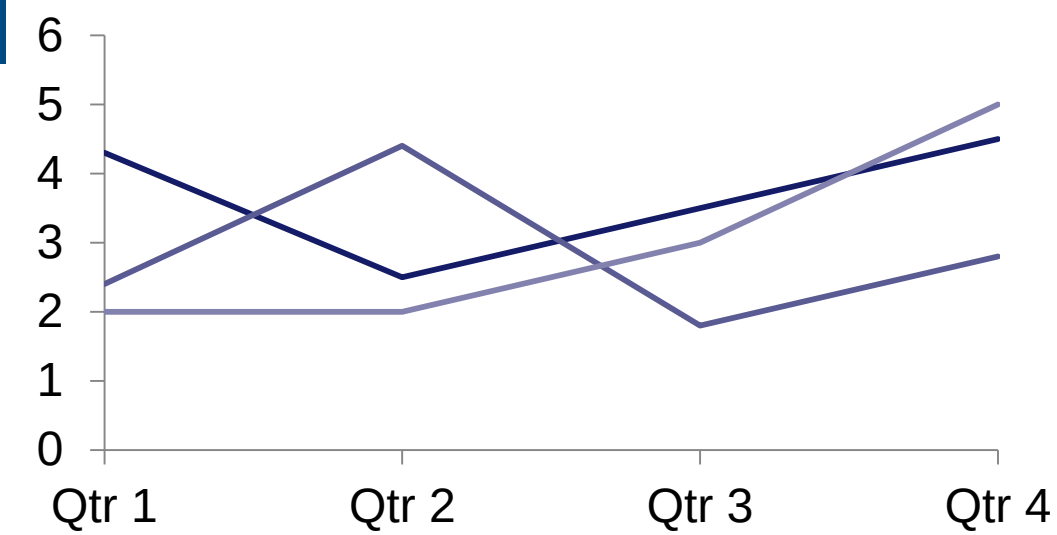
# Pie Charts




- 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.

vlamis SOFTWARE SOLUTIONS

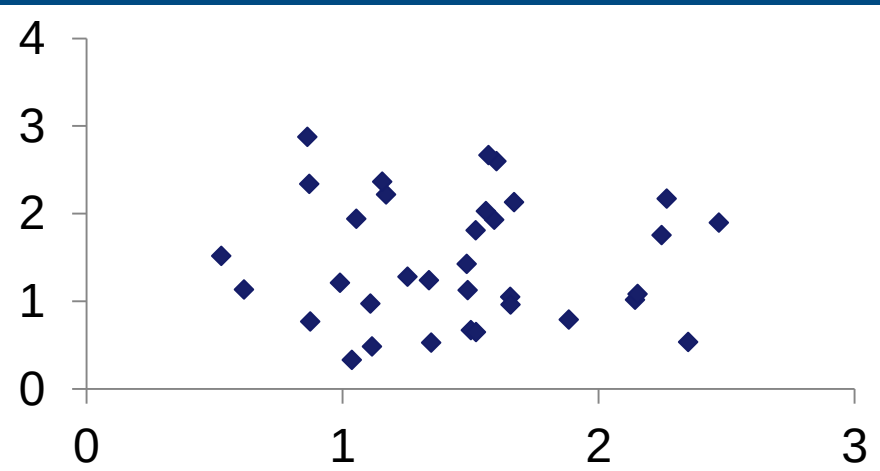
# Line Chart




- Show a pattern or progression over a continuous range or period.
- Can be valued within a range to highlight a particular pattern (careful!).
- Maintain a rectangular shape close to golden proportion.

vlamis
SOFTWARE SOLUTIONS

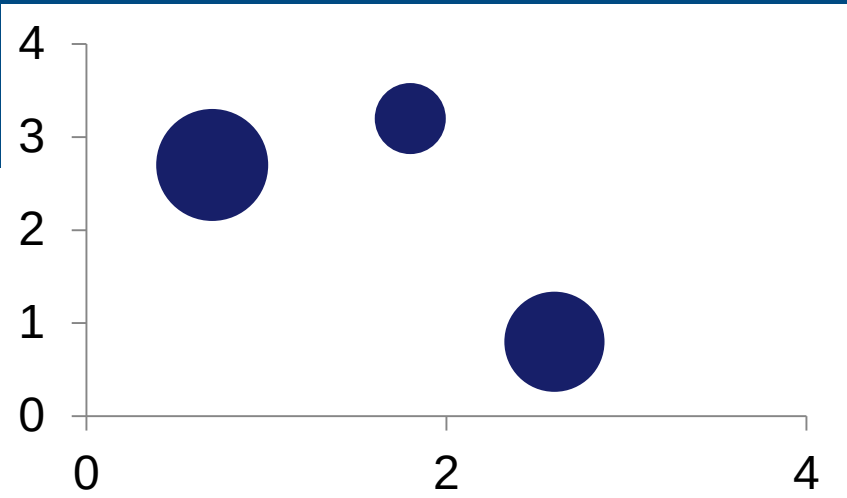
# Scatter Plot




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

vlamis
SOFTWARE SOLUTIONS

# Bubble Chart




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

vlamis
SOFTWARE SOLUTIONS

# Questions and Observations

tvlamis@vlamis.com

www.vlamis.com

816-781-2880

Copyright © 2012, Vlamis Software Solutions, Inc.

vlamis SOFTWARE SOLUTIONS

http://vm2.vlamis.org:7001/analytics/saw.dll?BIEEHome&startPage=1

http://23.23.195.238:7001/analytics/saw.dll?Dashboard

Copyright © 2012, Vlamis Software Solutions, Inc.

vlamis SOFTWARE SOLUTIONS