Dashboard and Visualization Best Practices for Oracle BI Applications

Heartland OUG Spring Conference 2014

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Presentation Agenda

- A few slides
- LOTS OF DEMO
- Questions from audience at all times

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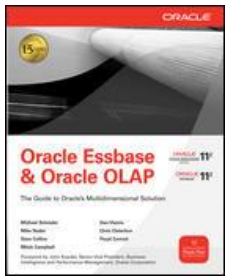
Vlamis Software Solutions

- 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 Nokia map data for OBIEE
- Conference chair for BIWA Summit 2013, 2014



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The case for business intelligence and analytics

- Dashboards and BI interfaces are windows into business performance and position.
- Maps, Movement, and Mashups as keys to the future
- Why maps are so powerful as a visualization tool
- Movement and sliders and understanding change
- Data mashups are increasingly important

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Ingredients → Data Quality & Variety

Technique → Data Processing & Prep

Presentation → Data Visualization

The Principles of Human Cognition Should Guide BI Dashboard Design

OBIEE Intro Demo

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Best Practice Focus

- Best practices are objective guides to what is likely to work best.
- Many times visualizations are seen as being “design” and subject to “taste”.
- Visualizations should be guided by:
  - Human cognition
  - Accurate representations of data
  - Preferred message (consciously designed by visualization developer)

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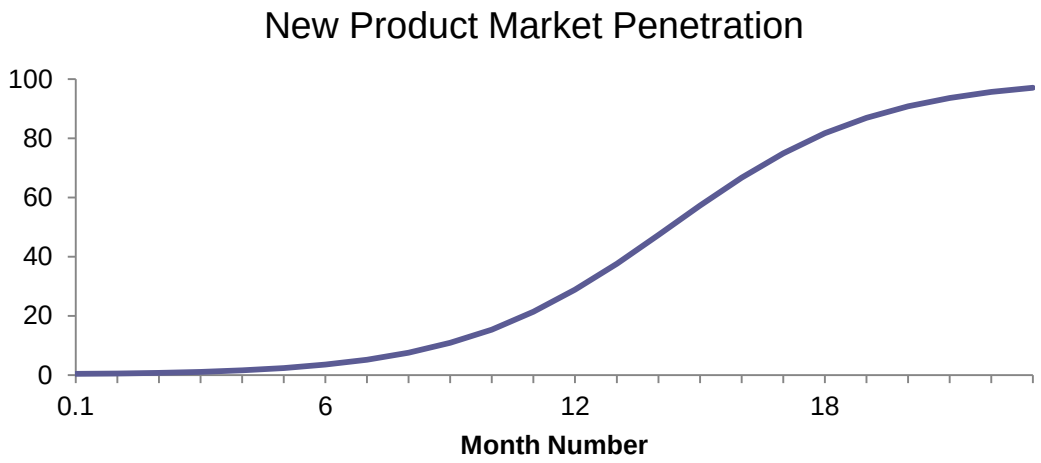
Graphs and Tables

- 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
Grand Total	**71,000**	**$70,000,000**	**5,657,221**	**$12.37**

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OBIEE Demo

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Keys to Effective Tables

- Eliminate unnecessary gridlines
- Enable column and row sorting
- Avoid scrolling (if possible)
- Display significant figures
- Judiciously use conditional formatting
- Avoid putting text in color
- Left justify text cells and Right justify numerical cells
- Align the decimal point for numerical cells
- Prefer smaller tables
- Write informative titles for tables and column head descriptions
- Be transparent about data selection
- Enable roll overs for meta data for commonly used tables

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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.

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Tables

- Tables can present data from at drastically different scales.
- Tables can present very different data types simultaneously.
- Tables can repeat and include multiple sets of the same data values.
- Tables are extraordinarily dense and include numerous data relationships without direct distortion of the data itself.

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Basic Graphs

- Types of graphs when to use them
- Using titles, axis descriptions, and scales effectively
- Color choices in graphs
- Making graphs interactive
- Sliders and graphs in motion
- Editing and formatting graphs
- Zooming and scrolling in graphs

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Maps

- Types of maps
- Map best practices
- Making meaningful maps
- Built-in data sets
- NAVTEQ data sets and POI data
- Sources for additional data sets

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General Advice

- Dealing with executives who have seen flashy demos and purchased systems because of them
- The need for continual development
- The need for continual training
- The long road
- The perfect is the enemy of the good
- If it's worth doing, it's worth doing right
- Don't settle, the lesson of Steve Jobs and Goldilocks

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Oracle Test Drive

- Free to try out Oracle BI, Advanced Analytics and Big Data
- Go to www.vlamis.com/td
- Runs off of Amazon AWS
- Hands-on Labs based on Collaborate 2012 HOLs
- Test Drives for:
  - Oracle BI
  - Oracle Advanced Analytics
  - Big Data
- Once sign up, you have private instance for 5 hours
- Available now

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Thank You!

Thank You for Attending Session **Dashboard and Data Visualization Best Practices for OBI Applications**

Presenter Information

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For more information go to www.vlamis.com

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ORACLE Business Intelligence

Search All | Advanced | Administration | Help | SampleApp OTN Page | Sign Out

1.30 QuickstartTV1

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

Overview | Overview TV | Office Details | Product Details | Order Details | Geo Prompter | Strategy Tree | Geo HeatMap | Customers Profile | Customers Profile New | copy of Product Details

Select Metric

- "F"."Revenue"
- "F"."Collections"
- "F"."Shipments"
- "F"."Qty"
- "F"."Bookings"

*** Select Language**

- en
- fr
- es
- it

*** Set Source DB Table**

- SAMP_PRODUCTS_D
- SAMP_PRODUCTS_D2

See Dashboard Commentaries

Add Dashboard Commentary

Custom Group

Time run: 4/23/2014 5:11:47 PM

	2010	2011	2012	Grand Total
Total Value	23,500,000	23,000,000	23,500,000	**70,000,000**
BizTech	8,277,442	8,463,172	8,759,386	**25,500,000**
FunPod	7,235,999	7,300,894	7,963,107	**22,500,000**
HomeView	7,986,559	7,235,934	6,777,507	**22,000,000**
Hot Products	4,793,138	4,520,332	3,970,444	**13,283,913**
Camera	2,491,178	2,385,484	1,737,442	**6,614,105**
Plasma	2,301,960	2,134,848	2,233,002	**6,669,809**

Analyze - Edit - Refresh - Print - Export - Add to Briefing Book - Copy

Target Completion

Time run: 4/23/2014 5:11:47 PM

T05 Per Name Year 2012

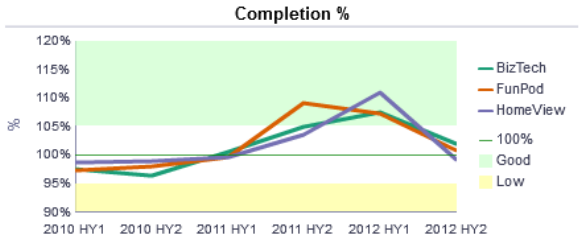
	Actual	Target	%	Completion
BizTech	8.76 M	8.40 M	104.2%	
FunPod	7.96 M	7.69 M	103.6%	
HomeView	6.78 M	6.56 M	103.4%	
Grand Total	**23.50 M**	**22.65 M**	**103.8%**	

Analyze - Edit - Refresh - Print - Export - Add to Briefing Book - Copy

Target Completion Chart

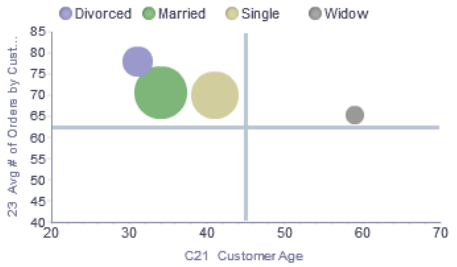
Time run: 4/23/2014 5:11:47 PM

	2010			2011			2012		
P4 Brand	Actual	Target	%	Actual	Target	%	Actual	Target	%
BizTech	8.28 M	8.55 M	96.9%	8.46 M	8.23 M	102.9%	8.76 M	8.40 M	104.2%
FunPod	7.24 M	7.42 M	97.6%	7.30 M	6.99 M	104.5%	7.96 M	7.69 M	103.6%
HomeView	7.99 M	8.09 M	98.8%	7.24 M	7.14 M	101.4%	6.78 M	6.56 M	103.4%
Grand Total	**23.50 M**	**24.05 M**	**97.7%**	**23.00 M**	**22.35 M**	**102.9%**	**23.50 M**	**22.65 M**	**103.8%**



Revenue Demographics light background no grid TV

Size of Bubble indicates "F"."Revenue" Value



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* Currency USD

Converted Revenue

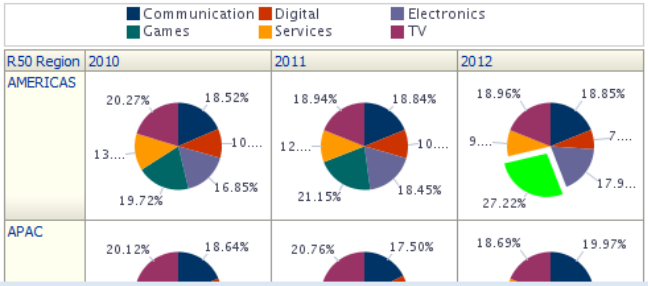
Time run: 4/23/2014 5:11:47 PM

R3 Order Currency	# of Orders	Avg FX Rate	Converted Revenue
AUD	17,866	0.703	12,349,132.25 USD
EUR	17,922	1.106	19,587,658.89 USD
USD	35,212	0.785	27,256,201.78 USD
Grand Total	**71,000**	**0.846**	**59,192,992.92 USD**

Analyze - Edit - Refresh - Print - Export - Add to Briefing Book - Copy

Revenue Breakup

By Product LOB for each Year and Region



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ORACLE Business Intelligence

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8.12 Oracle DataminingTV

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

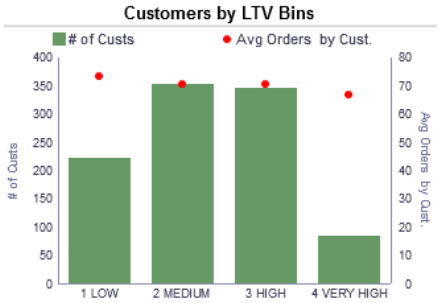
LTV Prediction | LTV Details | Classification Tree | LTV Probabilities | What If Scoring | Geo LTV Prediction | Regression | Regression Model | Results Map

LTV Prediction

Return to Main Index page

LTV Prediction Overview TV revised visuals

Time run: 4/23/2014 5:12:39 PM



Cust Predicted LTV	# of Custs	Sales	Avg Orders by Cust.
LOW	1,306	$16,053,554	73.58
MEDIUM	2,055	$24,676,519	70.80
HIGH	2,018	$23,752,050	70.53
VERY HIGH	499	$5,517,877	66.96
Grand Total	**5,878**	**$70,000,000**	**71.00**

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Oracle BI Answers

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

ORACLE Business Intelligence

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waterfall graph example profit for 2013

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

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

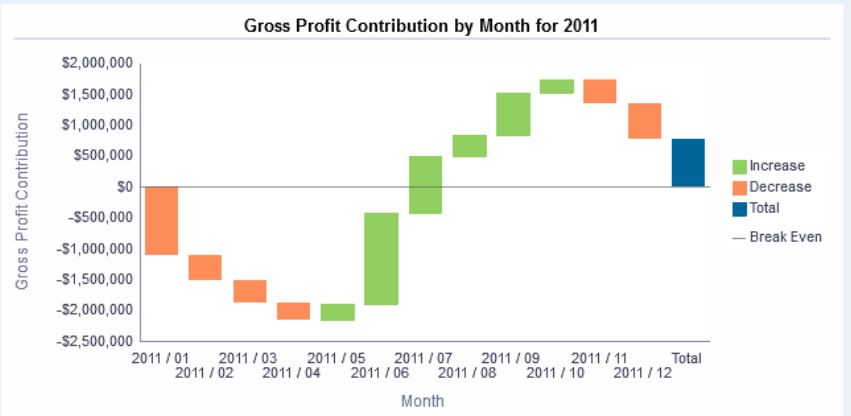
Title

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



Add to Briefing Book

Selection Steps

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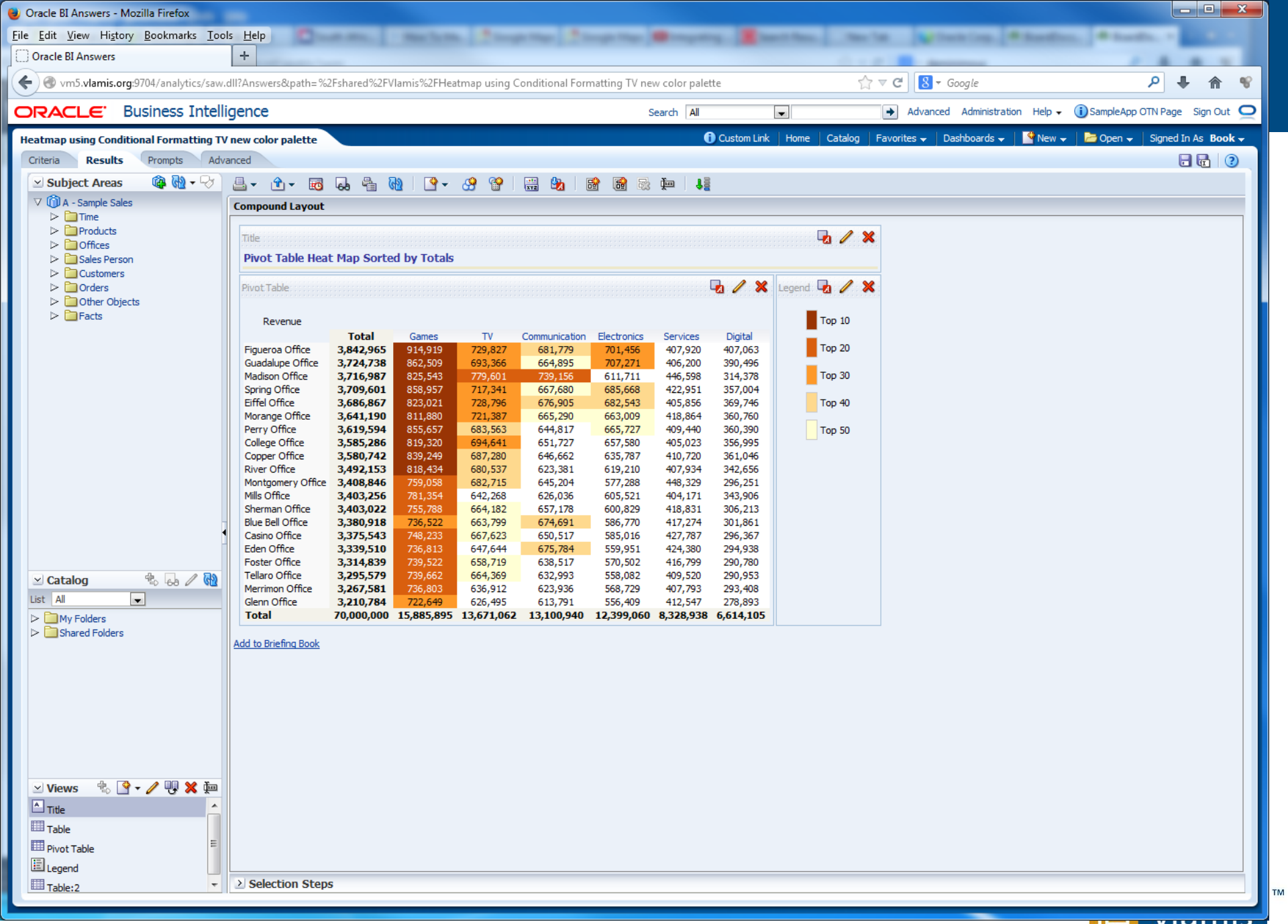

Revenue

	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
Total	**70,000,000**	**15,885,895**	**13,671,062**	**13,100,940**	**12,399,060**	**8,328,938**	**6,614,105**

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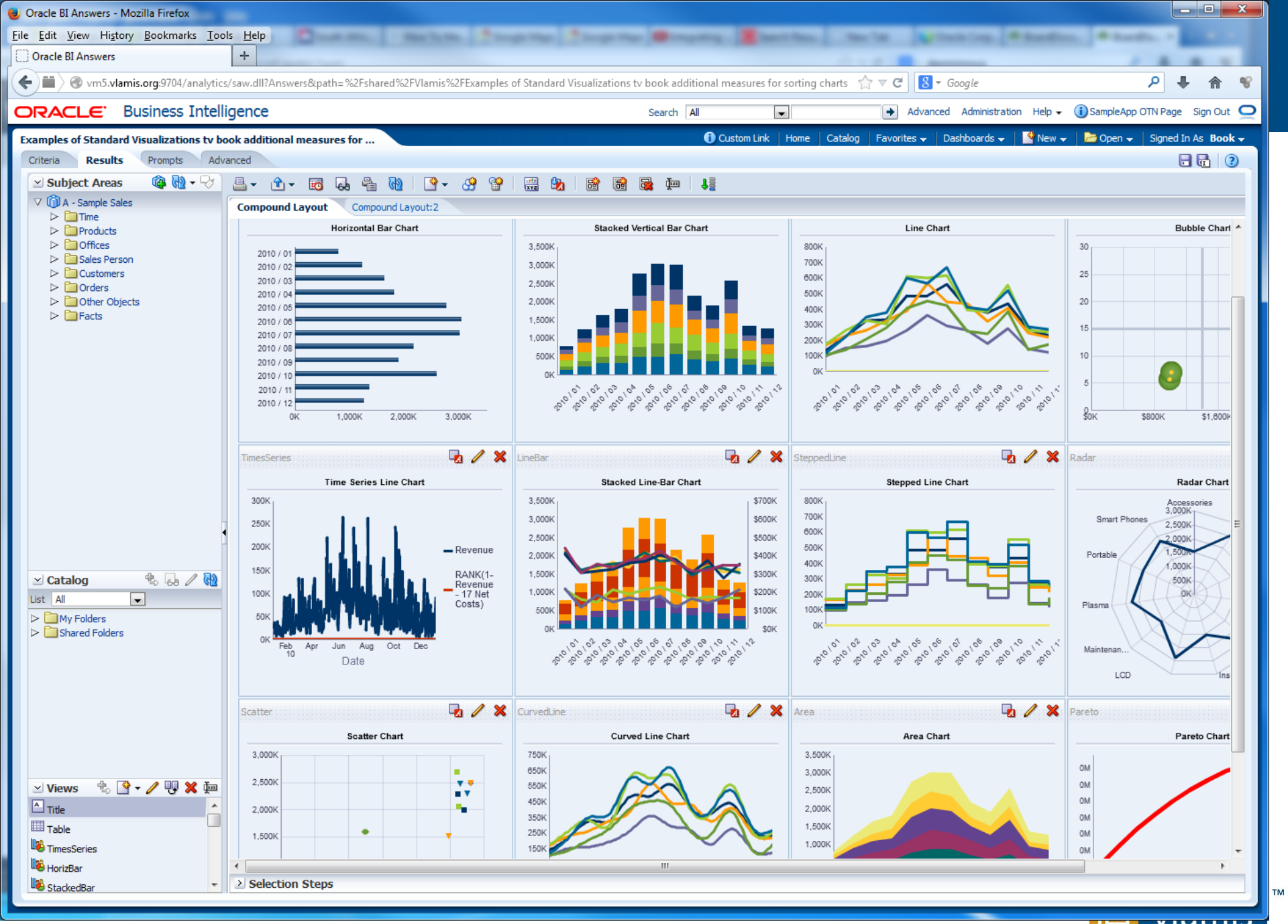

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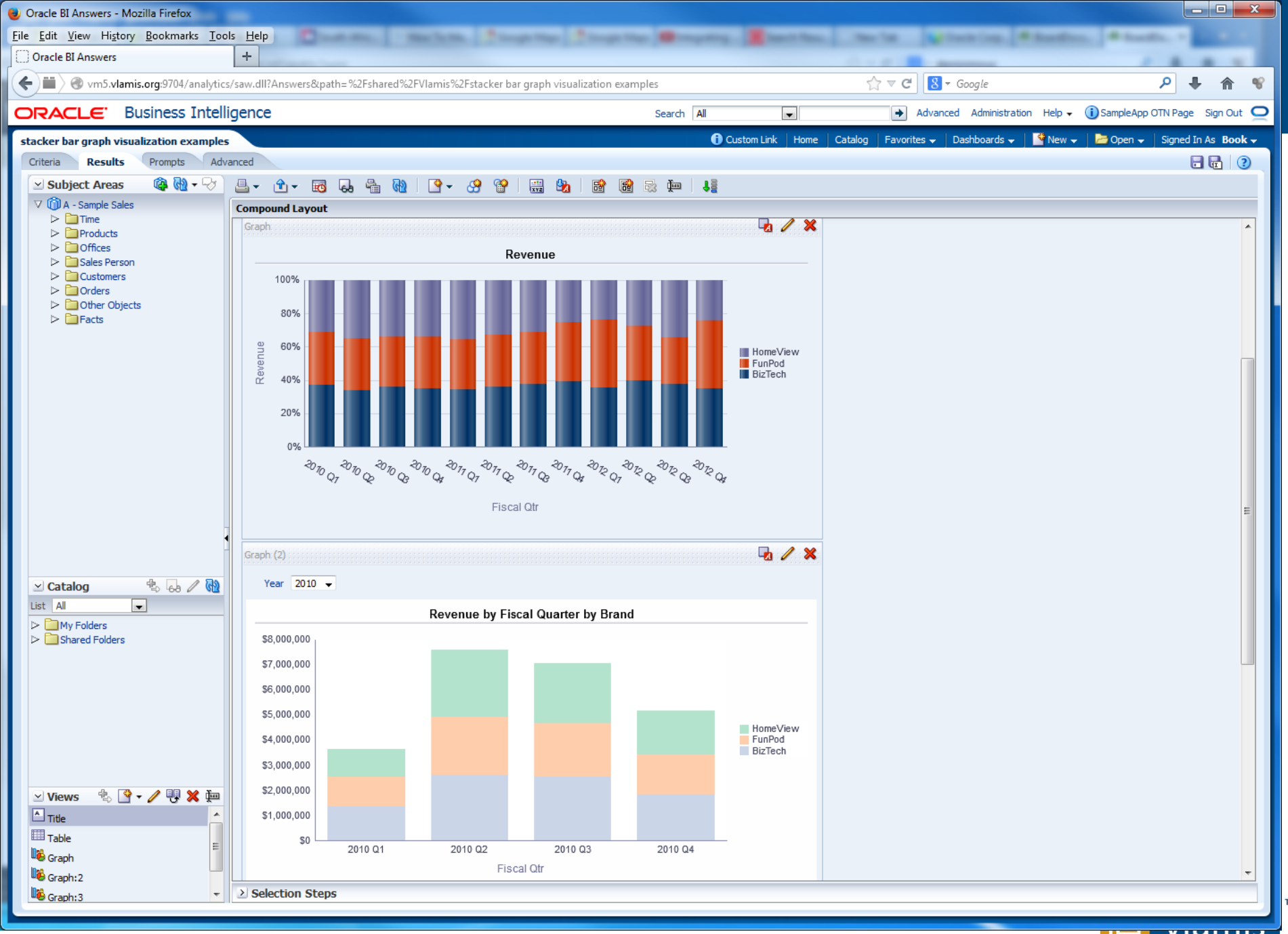

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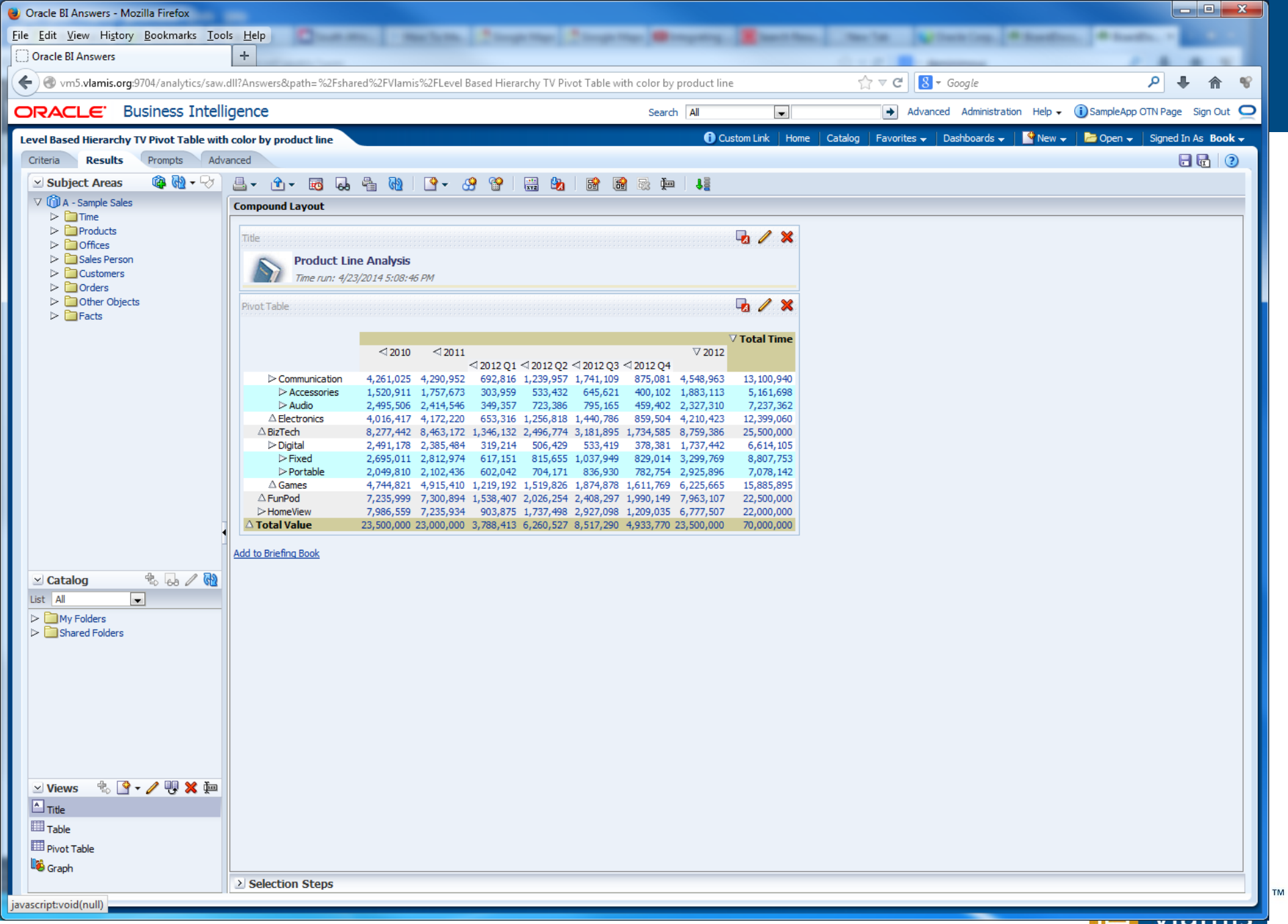

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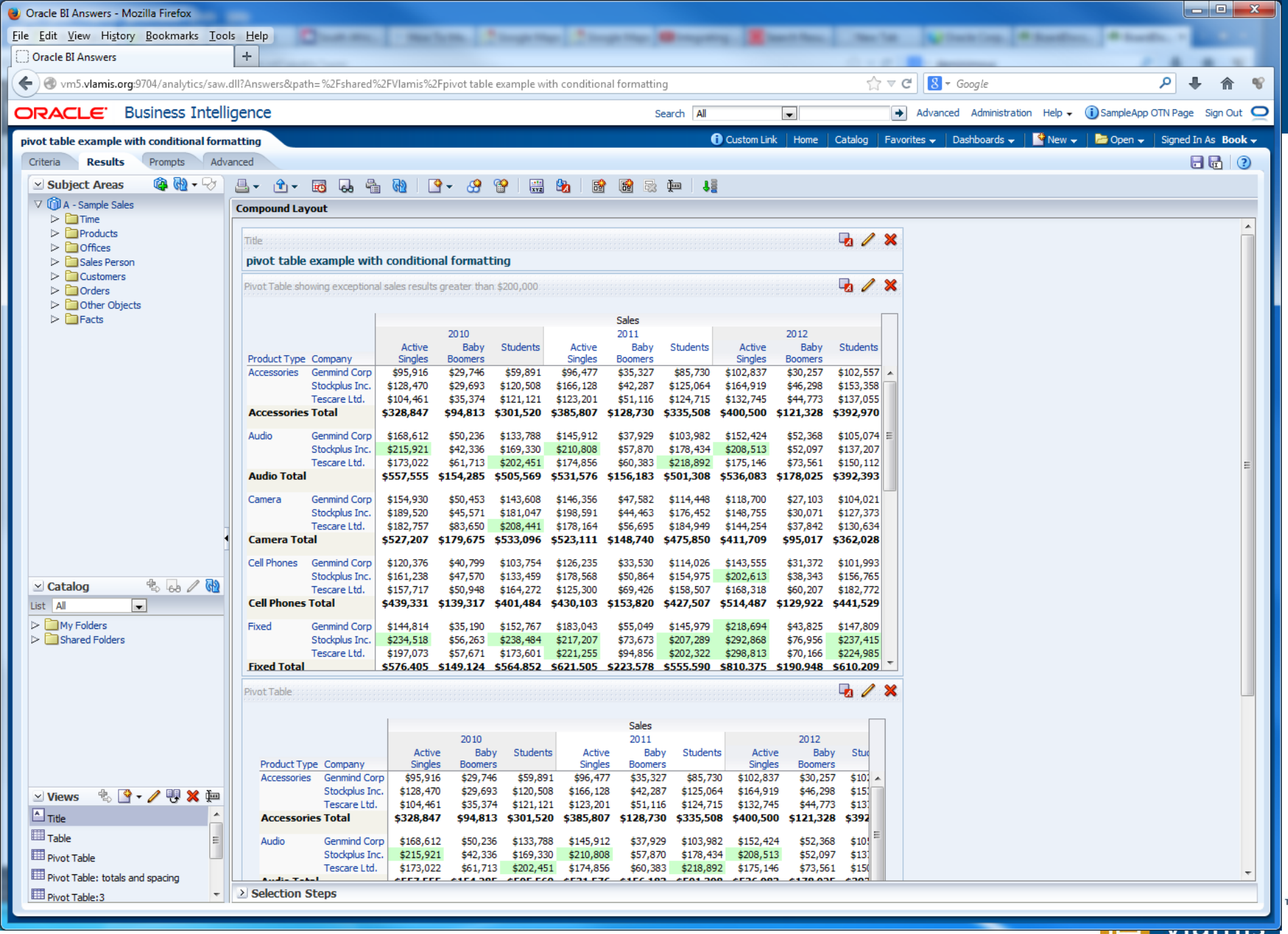

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vm5.vlamis.org:9704/analytics/saw.dll?Dashboard&PortalPath=%2Fshared%2FVlamis%2F8.13 Oracle R Enterprise TV&page=R Workbench

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8.13 Oracle R Enterprise TV

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

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)

R Workbench

Return to Main Index page

Clear All Filters

Script Name

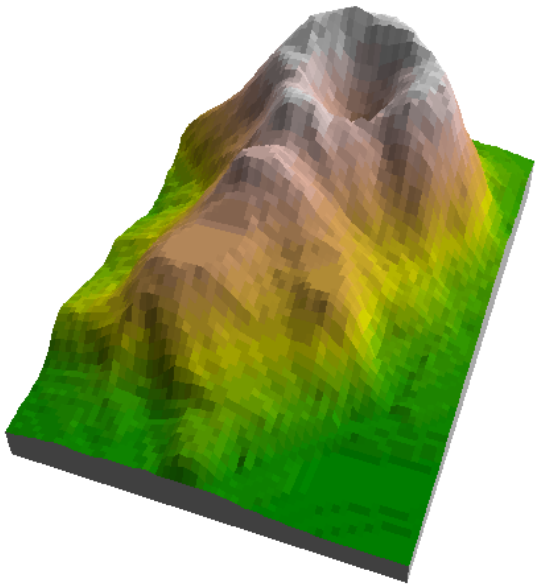
- Association Rules Movies
- Balloon Plot
- BusiestAirports-1
- Clustering with k-Means++
- Conditional Histogram
- Correlation Matrix Ellipses
- Correlation matrix circles
- Enhanced Bar Plot
- Heatmap
- Multipanel Geo Lattice Plot
- Multivariate Star Plot
- MultivariateAdaptiveRegressionSplines
- QCC-1
- 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 Aucklanc

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)
}
```

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