Visualizing OLAP Data With Multiple Products

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Visualizing OLAP Data Agenda

- IOUG, BIWA and Vlamis background 5 mins
- Agenda for Visualizing OLAP Data:
  - Background on OLAP 10 mins
  - Visualizing OLAP data 5 mins
  - OBIEE 10 mins
  - Simba's MDX Provider for Oracle OLAP 5 mins
  - Microsoft Excel 5 mins
  - Arcplan 5 mins
  - DeltaMaster 5 mins
- More information (Q&A) 10 mins
- Use Chat to ask questions during the presentation

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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
- HOL Coordinator for 2012 Collaborate Conference
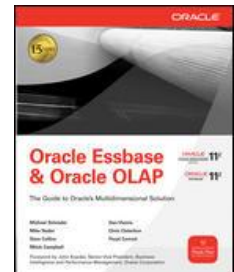
Oracle OLAP
Leveraging Core Database Infrastructure

Oracle Database 11*g*

Data Warehousing

Oracle Spatial

OLAP

Data Mining
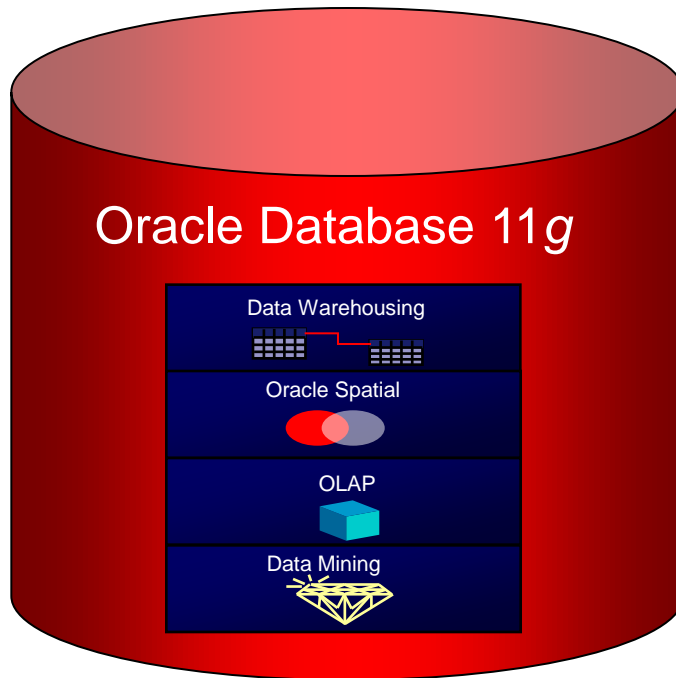
- Single RDBMS-MDBMS process
- Single data storage
- Single security model
- Single administration facility
- Grid-enabled
- Accessible by any SQL-based tool
- Embedded BI metadata
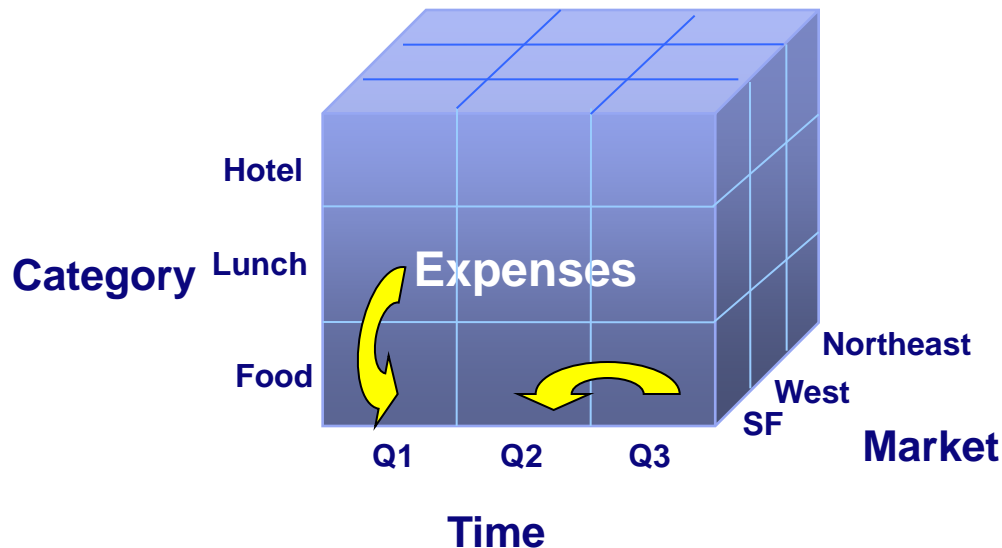- Connects to all related Oracle data

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Easy Analytics
Optimized Data Access Method

How do Expenses compare this Quarter versus Last Quarter

What is an Item's Expense contribution to its Category?

- Data stored in dense arrays
- Offset addressing – no joins
- More powerful analysis
- Better performance

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OLAP Is Fast For Dimensional Queries

- Dimensions are natural indexes to data
- Dimensions are natural way to look at data
  - By, across, over, down – prepositions are often dimensions
- Handles multiple levels easily – embedded total hierarchies
- Inter-row calcs are easy
  - Share, index
  - Yr/yr or prior period comparison
  - Movingtotal

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Dimensions Are Key to OLAP Model

- OLAP good at unpredictable query pattern if query fits dimensions of data

- Don't confuse limitations of pre-calculated data with limitations of OLAP

- If filter invalidates OLAP, likely invalidates summary table logic

- Example: Sales by Region (easy)

- Hard: Sales by Region for stores open > 1 yr

- If demand ultimate flexibility, must calc on the fly and performance will be a problem if accessing lots of data

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Analytics Made Easy

Calculations include:

- Time-series
- Comparison to peers (i.e. share)
- Alerts (uncover issues at levels below current selection)
- Statistical Forecasts
- … and multiple layers of nested calculations
- … at any level of detail

Sales Revenue Analysis

	Q1-CY2009	Q2-CY2009	Q3-CY2009	Q4-CY2009	Q1-CY2010	Q2-CY2010	Q3-CY2010	Q4-CY2010
Computers *								
Sales	33,777,199	28,581,026	30,982,913	34,565,477				
Sales % Chg PY	20.3	18.1	9.6	9.5				
Product Alert	✅	❌	❌	❌				
Sales YTD	33,777,199	62,358,225	93,341,138	127,906,615				
Sales YTD % Chg PY	20.3	19.3	15.9	14.1				
Sales YTD Share of Parent Product	81.5	81.0	80.5	80.3				
Sales YTD Share % Chg PY	2.5	1.1	(1.2)	(1.4)				
Cross Over Best Fit Fcst	33,777,199	28,581,026	30,982,913	34,565,477	36,313,991	31,450,588	34,078,273	37,120,510
Cameras and Camcorders *								
Sales	2,961,771	2,699,287	3,192,047	3,540,144				
Sales % Chg PY	1.1	14.1	29.6	25.8				
Product Alert	❌	✅	✅	✅				
Sales YTD	2,961,771	5,661,058	8,853,105	12,393,249				
Sales YTD % Chg PY	1.1	6.9	14.1	17.2				
Sales YTD Share of Parent Product	7.1	7.7	8.3	8.2				
Sales YTD Share % Chg PY	(13.9)	(2.3)	16.8	13.4				
Cross Over Best Fit Fcst	2,961,771	2,699,287	3,192,047	3,540,144	3,526,328	3,068,517	3,437,529	3,843,667
Portable Music and Video *								
Sales	4,692,772	3,990,017	4,313,055	4,923,392				
Sales % Chg PY	9.4	9.9	8.9	12.4				
Product Alert	✅	✅	✅	✅				
Sales YTD	4,692,772	8,682,789	12,995,844	17,919,236				
Sales YTD % Chg PY	9.4	9.6	9.4	10.2				
Sales YTD Share of Parent Product	11.3	11.3	11.2	11.4				
Sales YTD Share % Chg PY	(6.8)	(5.9)	(1.8)	1.2				
Cross Over Best Fit Fcst	4,692,772	3,990,017	4,313,055	4,923,392	5,083,426	4,369,709	4,714,648	5,236,437

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File   Edit   View   Navigate   Run   Debug   Source   Tools   Help

bisample1.sql | vm2.vlamis.org olaptrain | SqlHistory.xml | cube_queries.sql

0.57423645 seconds

vm2.vlamis.org olaptrain

Enter SQL Statement:

```
SELECT c.long_description as channel,
       p.long_description as product,
       t.long_description as time,
       round(s.sales) as sales,                              -- sales
       round(s.sales_ytd) as ytd,                            -- sales year to date (YTD)
       round(s.sales_ytd_pctchg_pp, 2) as "ytd % chg prior year",  -- sales YTD compared to last year
       round(s.sales_2008) as sales_2008,                    -- sales for all of 2008
       round(s.to_go) as to_go,                              -- absolute sales required to achieve 2008 revenue.
                                                             -- This is based on year to date sales compared to 2008
       round(s.pct_of_2008) as pct_of_2008,                  -- ytd sales as a % of 2008 sales
       how_is_sales_ytd,                                     -- How is sales performing YTD (compared to last year)
                round(s.sales_yr_ago) as sales_pr_year,              -- sales last year
       round(s.sales_pctchg_yr_ago, 2) as "% chg prior year",    -- % change sales last year
                product_alert                                              -- Alert if year over year sales ha
FROM channel_sales_channel_view c,
     product_standard_view p,
     geography_regional_view g,
     time_calendar_view t,
     sales_cube_view s
WHERE(c.dim_key = s.channel
  AND g.dim_key = s.geography
  AND p.dim_key = s.product
  AND t.dim_key = s.TIME
  AND g.level_name = 'ALL_REGIONS'
  AND c.level_name = 'CLASS'
  AND p.level_name = 'DEPARTMENT'
  AND t.level_name = 'CALENDAR_QUARTER'
  AND t.calendar_year_long_descr = 'CY2009')
ORDER BY channel, product, t.end_date;
```

Results | Script Output | Explain | Autotrace | DBMS Output | OWA Output

Results:

	CHANNEL	PRODUCT	TIME	SALES	YTD	ytd % c...	SALES_2008	TO_GO	PCT_OF_2008	HOW_IS_SA...	SALES_PR_YEAR	% chg pri...	PRODUCT_ALERT
1	Direct	Cameras and Ca...	Q1-CY2009	1242385	1242385	1.62	4372207	3129821	28	On track	1222587	1.62	ALERT
2	Direct	Cameras and Ca...	Q2-CY2009	1125521	2367906	8.52	4372207	2004301	54	On track	959410	17.31	OKAY
3	Direct	Cameras and Ca...	Q3-CY2009	1354490	3722396	16.21	4372207	649811	85	Outstanding ...	1021252	32.63	OKAY
4	Direct	Cameras and Ca...	Q4-CY2009	1443028	5165424	18.14	4372207	-793217	118	Outstanding ...	1168958	23.45	OKAY
5	Direct	Computers	Q1-CY2009	13917490	13917490	18.78	46459972	32542482	30	Outstanding ...	11716674	18.78	OKAY
6	Direct	Computers	Q2-CY2009	11756607	25674097	17.92	46459972	20785875	55	Outstanding ...	10056440	16.91	ALERT
7	Direct	Computers	Q3-CY2009	12865030	38539127	15.25	46459972	7920845	83	Outstanding ...	11667335	10.27	ALERT
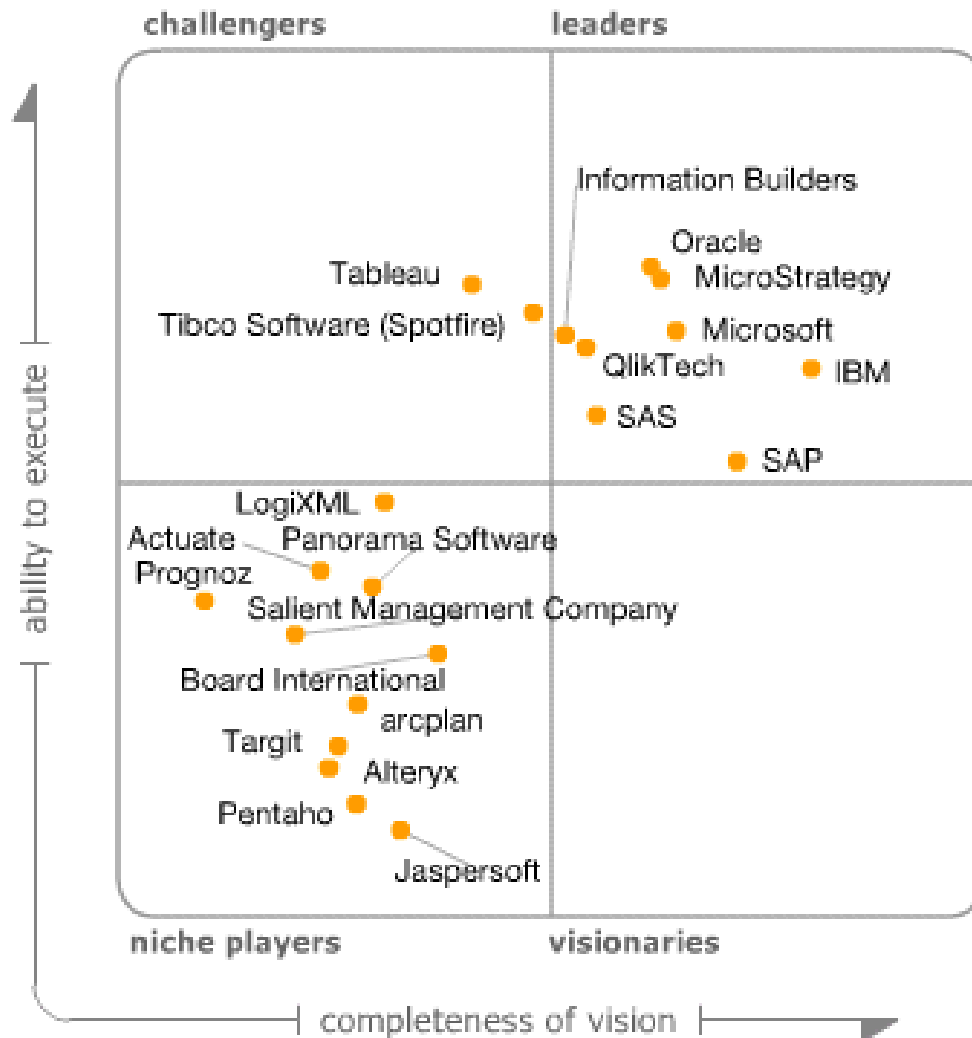
As of February 2012

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Exploration

Explanation

xkcd.com
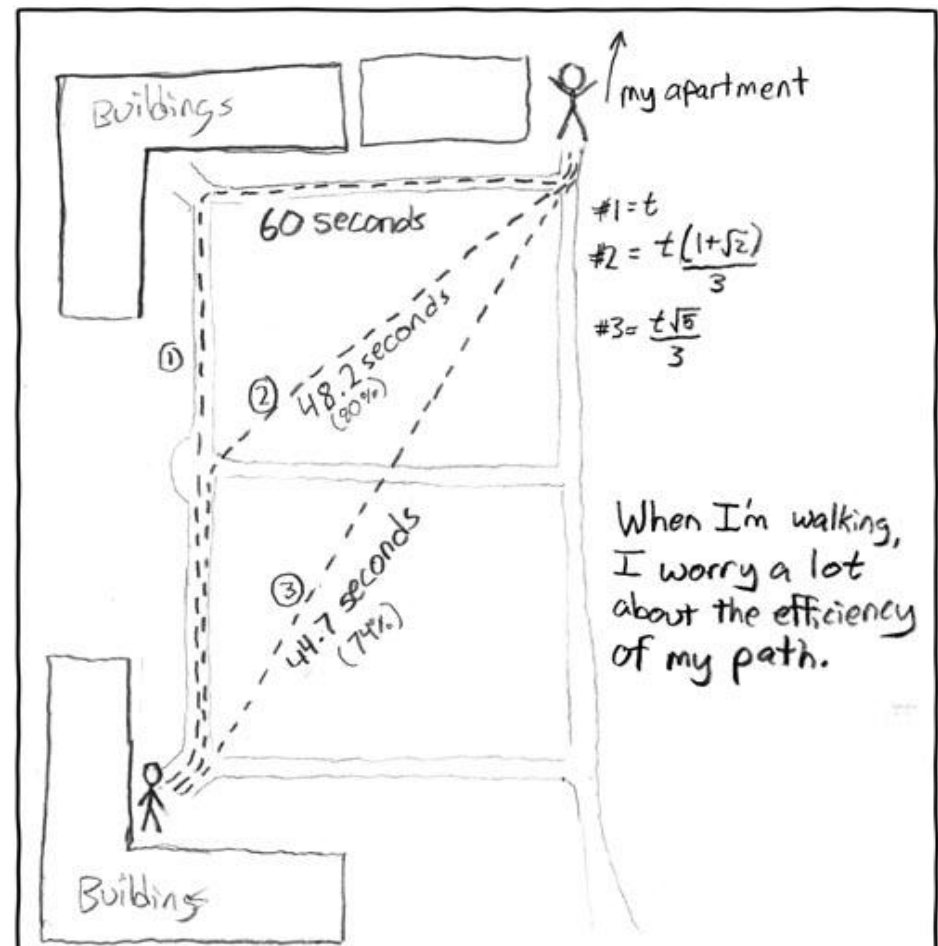
Highlights from Gartner's BI Magic Quadrant Report 2012

- 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

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Many BI Systems Can Create Beautiful Results

OBI Operates at a Different Scale

Hierarchical Reporting

- Hierarchical Columns can be put in Table or Pivot Table views
- Can be mixed with other column types
- Drag and Drop rearrangement supported

		Revenue							
		⊟ Total Time							
		⊟ 2008						⊞ 2009	⊞ 2010
			⊞ 2008 Q1	⊞ 2008 Q2	⊞ 2008 Q3	⊞ 2008 Q4			
⊟ Total Products	Genmind Corp	16,792,560	5,470,146	932,961	2,672,378	1,441,689	423,117	5,036,331	6,286,083
	Stockplus Inc.	13,566,400	4,574,096	741,234	2,191,716	1,227,819	413,327	3,999,836	4,992,468
	Tescare Ltd.	19,641,040	6,455,758	1,033,491	3,245,622	1,669,336	507,310	5,963,833	7,221,449
⊟ BizTech	Genmind Corp	6,638,825	2,192,909	376,077	1,064,310	577,364	175,158	1,999,213	2,446,703
	Stockplus Inc.	6,289,013	2,136,281	361,774	989,802	573,723	210,983	1,839,924	2,312,808
	Tescare Ltd.	8,072,162	2,661,551	431,809	1,325,976	685,449	218,318	2,462,950	2,947,660
⊞ Communication	Genmind Corp	2,920,284	899,128	162,373	438,735	219,250	78,771	908,519	1,112,638
	Stockplus Inc.	4,240,828	1,405,532	235,636	647,880	374,437	147,579	1,228,562	1,606,733
	Tescare Ltd.	3,724,305	1,228,831	179,706	628,925	326,636	93,564	1,141,531	1,353,943
⊞ Electronics	Genmind Corp	3,718,541	1,293,781	213,705	625,575	358,114	96,387	1,090,694	1,334,066
	Stockplus Inc.	2,048,185	730,749	126,137	341,922	199,286	63,404	611,362	706,075
	Tescare Ltd.	4,347,857	1,432,721	252,102	697,051	358,813	124,754	1,321,419	1,593,718
⊞ FunPod	Genmind Corp	6,674,101	2,208,040	379,356	1,112,519	549,015	167,150	1,968,610	2,497,451
	Stockplus Inc.	3,448,054	1,123,130	186,146	530,059	317,494	89,431	984,165	1,340,760
	Tescare Ltd.	7,377,844	2,392,018	380,614	1,218,792	618,980	173,632	2,207,565	2,778,262
⊞ HomeView	Genmind Corp	3,479,633	1,069,197	177,528	495,550	315,311	80,809	1,068,508	1,341,928
	Stockplus Inc.	3,829,333	1,314,686	193,315	671,855	336,603	112,914	1,175,746	1,338,901
	Tescare Ltd.	4,191,034	1,402,189	221,068	700,854	364,907	115,360	1,293,318	1,495,527
⊟ *Hot Products*	Genmind Corp	6,745,760	2,117,535	337,647	1,047,151	556,629	176,108	2,001,707	2,626,518
	Stockplus Inc.	4,315,039	1,516,319	255,707	774,003	346,365	140,244	1,224,600	1,574,120
	Tescare Ltd.	7,762,002	2,490,454	338,620	1,277,676	687,457	186,701	2,353,559	2,917,989
⊞ Camera	Genmind Corp	2,944,394	956,202	171,198	470,167	245,994	68,842	860,294	1,127,898
	Stockplus Inc.	1,495,109	531,747	91,765	265,213	128,359	46,410	381,834	581,527
	Tescare Ltd.	3,295,602	1,098,828	142,405	583,275	300,668	72,479	985,180	1,211,594
⊞ Cell Phones	Genmind Corp	2,155,126	655,182	82,108	351,183	165,440	56,451	659,225	840,719

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
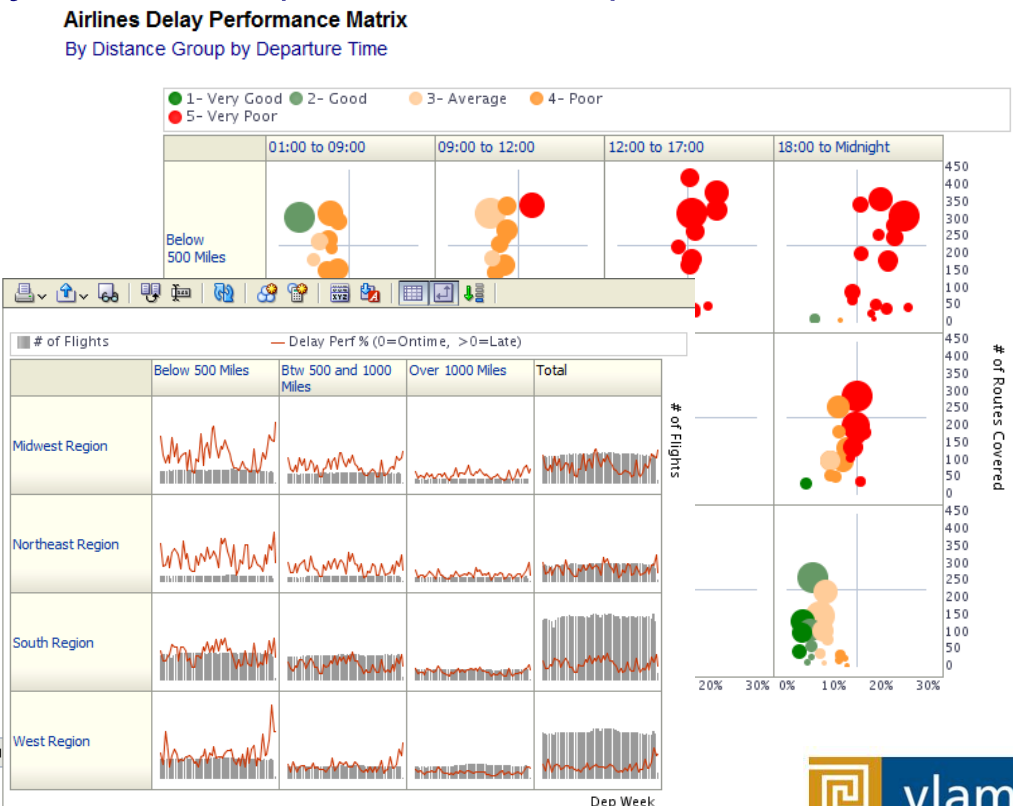
Trellis View - Advanced

- 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

Oracle BI Test Drive

- Free to try out Oracle BI
- Go to www.vlamis.com/testdrive-registration/
- Runs off of Amazon AWS
- Hands-on Labs based on Collaborate 2012 HOLs
- Test Drives for:
  - Oracle BI
  - BI Publisher
  - Microsoft Excel against Oracle OLAP (coming soon)
- Once sign up, you have private instance for 5 hours
- Available now

Simba MDX Provider Opens Doors

- Oracle OLAP uses SQL as query language
- Predominant query language for OLAP front ends is MDX
- Simba translates MDX into SQL
- Enables many MDX-based products to work against Oracle OLAP
- Not all MDX is the same—may require some tweaks
- Can often fool products by telling them back end is MS Analysis Server

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Simba MDX Provider to Oracle OLAP

- Client applications talk MDX
- Simba translates to SQL
- Simba MDX Provider is Oracle's recommended solution for connecting BI applications to Oracle OLAP data sources
- Provides live access to data without replicating from OLAP cubes
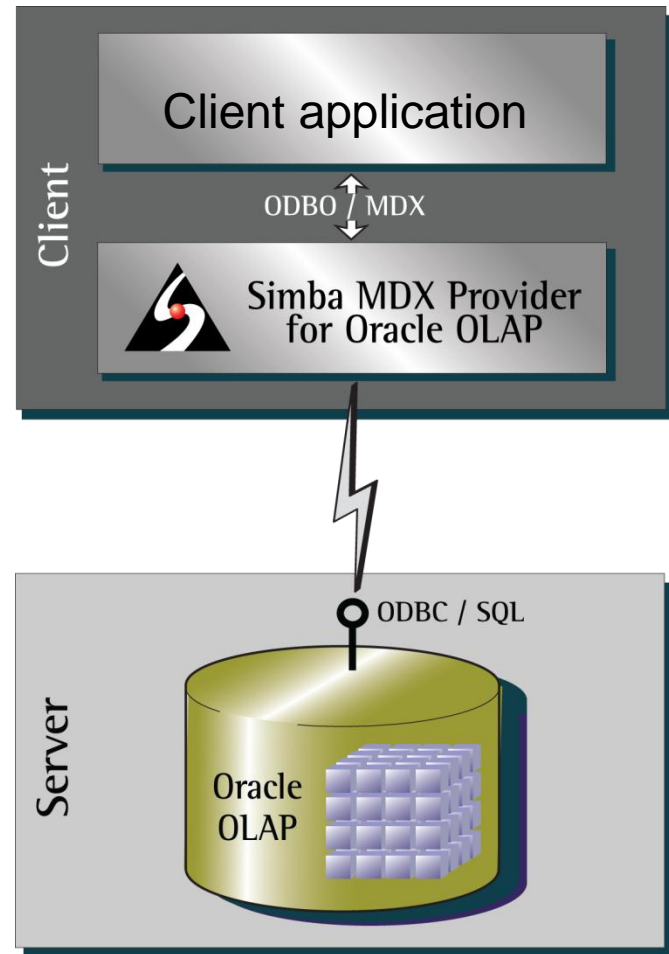
Front ends enabled by MDX and XML/A

- Microsoft Excel
- Excel Services
- Arcplan
- DeltaMaster
- Tableau
- Business Objects
- Cognos
- Microstrategy
- LogiXML
- Lots of others to try out

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Excel with Oracle OLAP

- Native Excel
- Not an addin
- Pivot tables
- Pivot charts
- Excel 2003 – 2010 and beyond
- Best with Excel 2010
- Set up OLAP as ODBC data source via Control Panel

Sales	Column Labels				
Row Labels	⊞ North America	⊞ South America	⊞ Asia	⊞ Africa	⊞ Europe
Jan-2009	2533710.67	1036897.88	4235663.63	443267.43	1473084.71
Feb-2009	1879928.63	876588.61	3291515.27	334648.61	1156170.31
Mar-2009	2633336.12	1090583.21	4709928.32	426805.19	1588295.03
Apr-2009	1903540.56	824670.53	3162979.4	301586.83	1133169.37
May-2009	1863130.36	847443.15	3290272.86	321569.77	1069893.08
Jun-2009	2197712.62	976176.11	3894508.21	366880.98	1294588.09
Jul-2009	2013822.84	884714.11	3507152.07	360692.15	1228021.34
Aug-2009	2210355.6	934950.77	3903275.79	376738.95	1255844.26
Sep-2009	2199146.18	946131.71	3864902.77	408669.56	1257563.51
Oct-2009	2047357.8	849021.26	3479280	349022.73	1161055.01
Nov-2009	2194104.14	913867.48	3738836.22	362361.9	1281600.27
Dec-2009	3029256.1	1253193.49	5363420.04	525970.56	1821585.83

Connecting It Together – ODC (cont.)

Begin a follow-along demo

arcplan
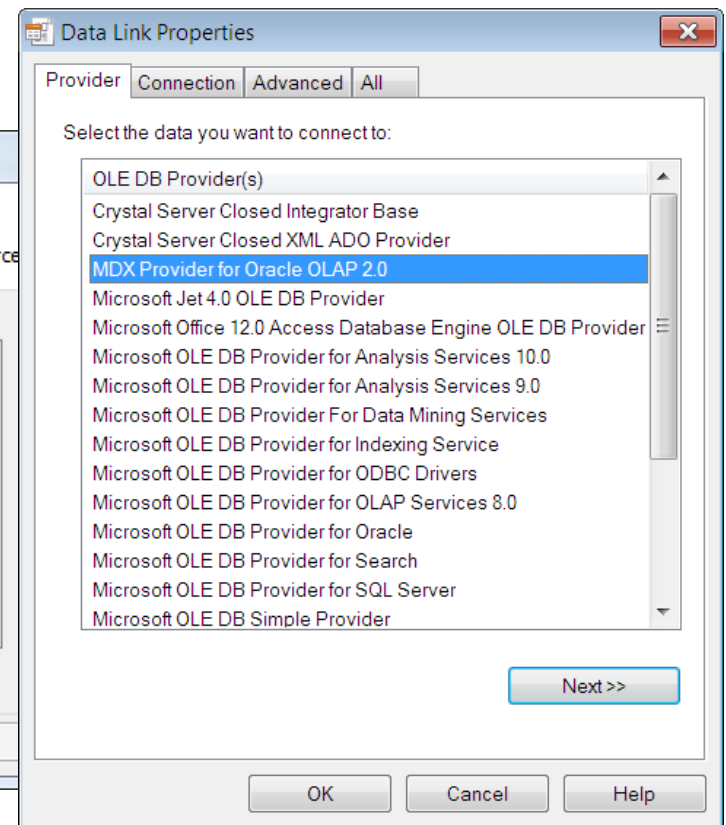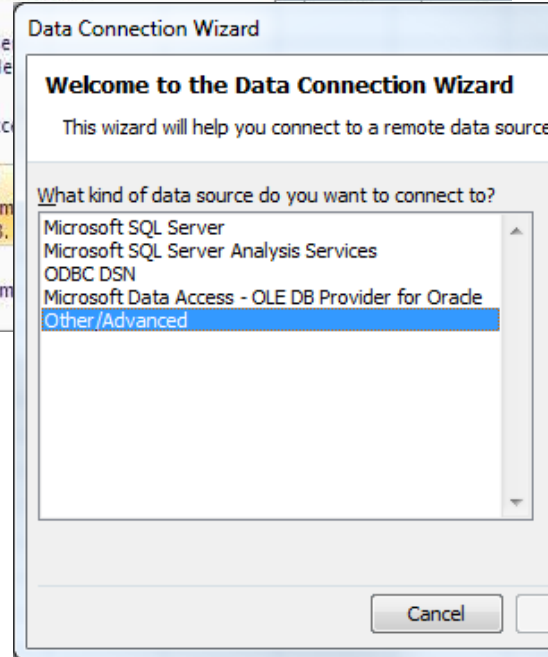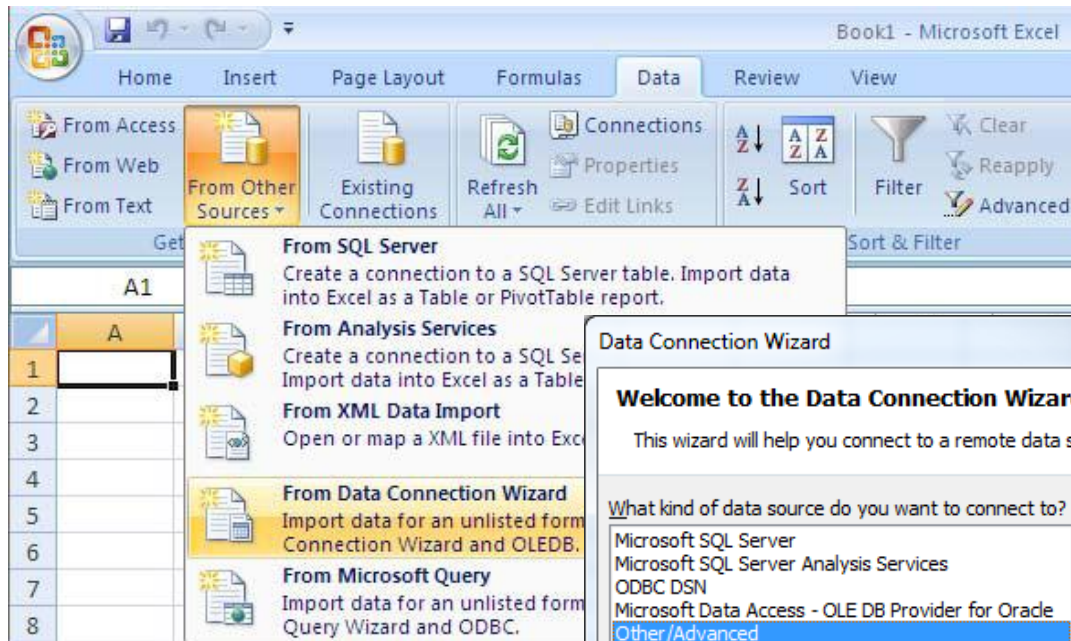
- HQ in Dusseldorf, Germany. US base in Philadelphia.
- Works with multiple back ends including Oracle OLAP via Simba MDX Provider
- Flexible development tool for developing custom screens
- Many products in suite of products
- Showing arcplan Enterprise

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arcplan Differentiators

- One integrated platform for all of your BI needs, including dashboards and reporting; budgeting, planning and forecasting; ad-hoc reporting; and mobile BI.

- Offers powerful analysis and visualization capabilities that are too complex for other BI systems (e.g. Pareto/80-20 analysis)

- Leverages your existing infrastructure, making it easy to report off of Oracle and non-Oracle data sources.

- The #1 front-end to Oracle for the second year in a row according to the world's largest survey of BI users (The BI Survey 10, 2011).

- Enables easy report and dashboard creation and a user-friendly interface for even casual users.

arcplan 7
Comm. Interfaces & Standards

- **IBM** - IBM Cognos TM1, IBM DB2, IBM InfoSphere Cubing Services

- **Microsoft** - Microsoft SQL Server, Microsoft SQL Server Analysis Services, Microsoft Sharepoint

- **Oracle** - Oracle RDMBS, Oracle Essbase, Oracle Hyperion Enterprise, Oracle Hyperion Financial Management, Oracle OLAP MDX (via Simba Technologies)

- **Paris Technologies** - PowerOlap

- **SAP** - SAP BI, SAP BI-Integrated Planning (SAP BI-IP), SAP R/3, SAP Query, SAP HANA, SAP NetWeaver Portal, NetWeaver certified

- **Teradata** - Teradata OLAP Connector

- **Other vendors** - Infor PM OLAP Server (former Alea), MIK OLAP, Software AG Adabas

- **Standards** - All ODBC compliant databases, All OLE DB compliant databases, OLE DB for OLAP, XML/A, XML, XBRL, Web services (SOA), LDAP

As of: arcplan version 7.1.1

Technology Partners

SAP Partner

ORACLE Gold Partner

Microsoft Partner
Gold Independent Software Vendor (ISV)

IBM Business Partner

PARIS TECHNOLOGIES

TERADATA
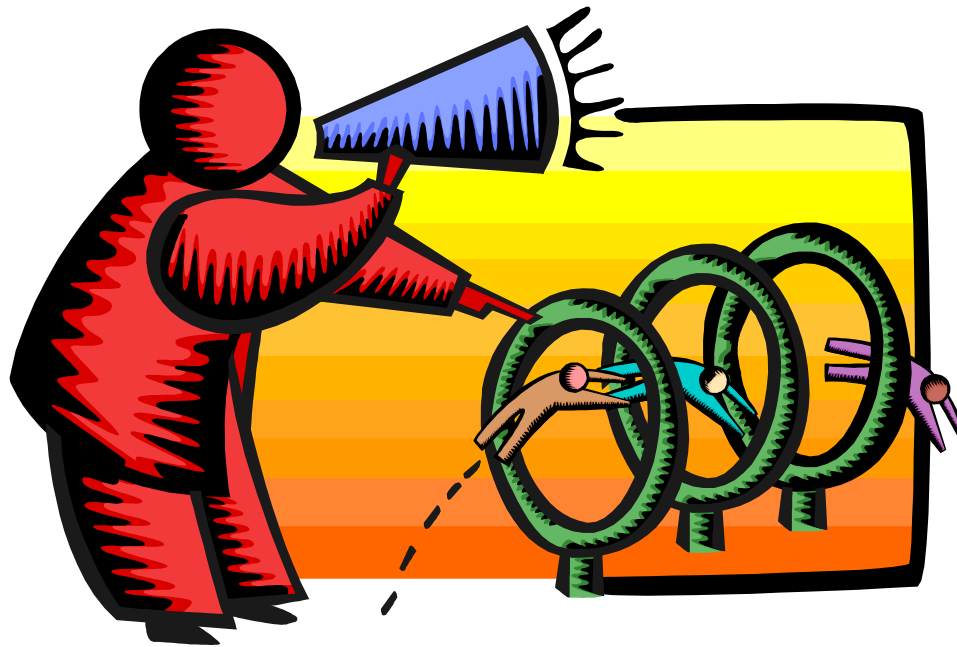
DeltaMaster

- Available from Bissantz
- HQ in Nuremburg, Germany
- Works with multiple back ends
- Available from resellers such as Vlamis Software
- Integrated software for various experience levels
  - Report recipients
  - Adhoc users and builders
  - Analysts
- Advanced visualizations
- Focus on business users
- Preconfigured reports / analysis templates

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Analysis methods need to be preconfigured...

... and freely combinable by business end users

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Automated rankings

Top	Ship To	Share	Profit, DEC-06 ./. NOV-06
1.	Computer Services Tokyo	-161,8%	80.668
2.	Computer Warehouse San Jose	-56,5%	28.154
3.	Business World San Jose	-50,4%	25.107
4.	Computer Wiz Tempe	-37,2%	18.558
5.	KOSH Entrpr El Segundo	-12,1%	6.024
6.	SHG New York	-9,7%	4.826
7.	KOSH Entrpr Tokyo	-6,1%	3.018
8.	Computer Warehouse Atlanta	-5,7%	2.827
9.	Computer Warehouse Detroit	-5,0%	2.479
10.	KOSH Entrpr Madrid	-4,7%	2.362

Bottom	Ship To	Share	Profit, DEC-06 ./. NOV-06
1.	Computer Warehouse Singapore	294,7%	-146.898
2.	KOSH Entrpr New York	57,4%	-28.630
3.	Business World New York	34,6%	-17.256
4.	Computer Warehouse London	25,4%	-12.645
5.	IBS Computers London	11,2%	-5.591
6.	Business World Nanterre	10,9%	-5.434
7.	SHG Sacramento	10,7%	-5.337
8.	IBS Computers New Orleans	7,2%	-3.606
9.	KOSH Entrpr Boston	7,1%	-3.523
10.	SHG Austin	1,8%	-899

Portfolio analysis

Item — Bubble Area: Sales, DEC-06

Profit, DEC-06 ./. NOV-06 (axis: 80.000 / 40.000 / 0 / -40.000 / -80.000 / -120.000 / -160.000 / -200.000)

Sales, DEC-06 ./. NOV-06 (axis: -1.000.000 / 0 / 1.000.000 / 2.000.0)
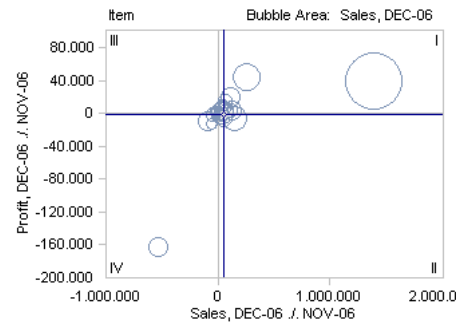
Searching for causes with waterfall analysis

Sales, DEC-06 - Sales, NOV-06 = +1.762.141

All Splits — Region (100) — MARKETING_MANAGER (35)

Selected Split (recommended) — ← Previous | Next →

Split by: Region

Sales, DEC-06	12.415.325
North America	-1.604.462
Europe	+23.173
Asia Pacific	+3.343.430
Sales, NOV-06	10.653.184

(axis: 0 / 4000000 / 8000000 / 12000000)
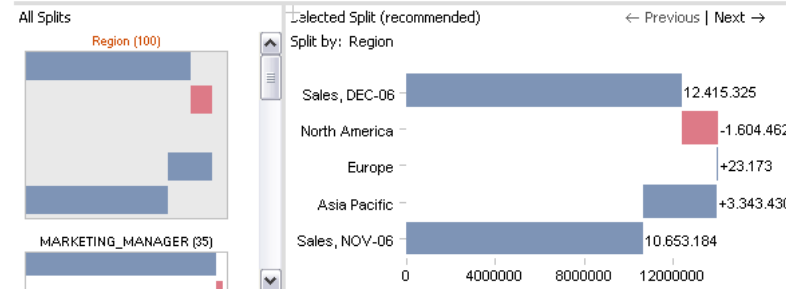
Concentration analysis - how dependent am I on certain customers?

	Item	Sales, DEC-06	Σ	%	Σ %
1.	Sentinel Financial	5.396.778	5.396.778	43,5%	43,5%
2.	Sentinel Standard	981.057	6.377.835	7,9%	51,4%
3.	Sentinel Multimedia	879.397	7.257.232	7,1%	58,5%
4.	Envoy Executive	583.248	7.840.480	4,7%	63,2%
5.	Envoy Ambassador	463.171	8.303.651	3,7%	66,9%
6.	Envoy Standard	453.316	8.756.968	3,7%	70,5%
7.	Unix/Windows 5-user pack	431.388	9.188.356	3,5%	74,0%
8.	Internal - DVD-RW - 8X	378.798	9.567.154	3,1%	77,1%
9.	56Kbps V.90 Type II Moder	374.358	9.941.512	3,0%	80,1%
10.	Monitor- 17"Super VGA	292.076	10.233.588	2,4%	82,4%
11.	Internal - DVD-RW - 6X	276.664	10.510.252	2,2%	84,7%
12.	512MB USB Drive	248.155	10.758.407	2,0%	86,7%
13.	Deluxe Mouse	223.456	10.981.863	1,8%	88,5%
A	5	13,9%	13,9%	8.303.651	8.303.651	66,9%	66,9%
B	8	8,3%	22,2%	1.263.503	9.567.154	10,2%	77,1%
C	36	77,8%	100,0%	2.848.171	12.415.325	22,9%	100,0%

Share of 'Sales, DEC-06' (axis: 100 / 90 / ... / 0) — 77,1 — 66,9

Internal - DVD-RW - 8X — Envoy Ambassador

Share of 'Item' (axis: 0 / 13,9 / 22,2 / 30 / 40 / 50 / 60 / 70 / 80 / 90 / 100)
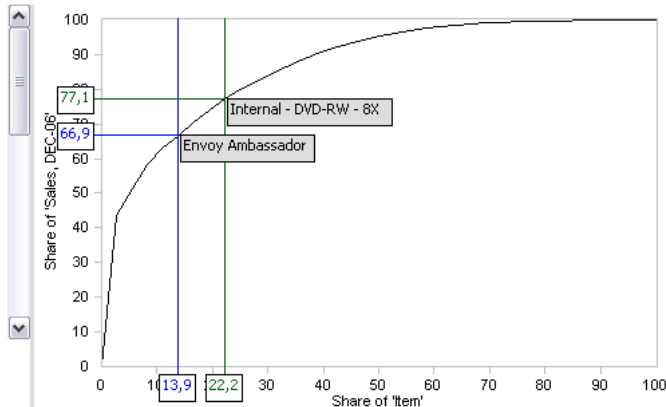
Data-dense visualization...

... enables comparisons which allow for more analyses

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Dashboard based on Oracle Global schema

▼ DEC-06

Margin analysis

Analytical links via right-click on selected value

Indicators	DEC-06	NOV-06	DEC-06 - NOV-06	DEC-06 - NOV-06 %	DEC-06 kum.
Sales	12.415.325	10.653.184	1.762.141	16,5%	140.138.317
Cost	11.563.288	9.751.302	1.811.986	18,6%	129.113.770
Profit	852.037	901.882	-49.845	-5,5%	11.024.547

Marketing Manager

	Sales	Profit per unit
Burtis	623.112	3,23
Furst	9.688.024	32,15
Hickey	183.330	11,22
Jackson	1.920.859	24,84

Sales analysis

Product Families	DEC-06	NOV-06	DEC-06 - NOV-06	DEC-06 - NOV-06 %	DEC-06 kum.
Desktop PCs	7.257.232	5.467.688	1.789.545	32,7%	76.682.955
Portable PCs	1.499.736	1.430.607	69.129	4,8%	18.072.328
CD/DVD	1.019.915	1.478.860	-458.945	-31,0%	17.302.122
Accessories	623.112	493.030	130.083	26,4%	6.215.304
Operating Systems	568.167	433.646	134.521	31,0%	5.276.530
Modems/Fax	483.363	448.208	35.155	7,8%	5.565.552
Memory	417.581	447.747	-30.167	-6,7%	5.347.292
Monitors	362.888	319.938	42.950	13,4%	3.926.632
Documentation	183.330	133.460	49.871	37,4%	1.749.602

Packagings

	Sales	Profit per unit
Allround	139.144	5,83
Executive	1.779.975	5,00
Laptop Value Pack	798.921	6,55
Multimedia	1.328.533	11,06

Regional indicators

Shipments	Cost		Sales	Profit	Units	Profit per unit
Spain	48.299		54.862	6.563	266	24,67
Japan	4.870.128		5.056.018	185.890	7.683	24,20
Italy	101.626		114.165	12.539	555	22,59
Canada	199.087		221.482	22.395	1.170	19,14
Australia	98.242 →		108.055	9.813	514	19,09
Hong Kong	110.601		115.181	4.581	275	16,66
United States	4.739.912		5.251.332	511.420	31.646	16,16
Germany	236.511		253.557	17.046	1.580	10,79
Singapore	342.089		385.522	43.434	4.475	9,71
United Kingdom	599.537		641.501	41.964	5.934	7,07
France	217.257		213.649	-3.608	954	-3,78

Sales vs. profit portfolio analysis

Item   Bubble Area: Sales, DEC-06

Profit, DEC-06 ./. NOV-06

Sales, DEC-06 ./. NOV-06
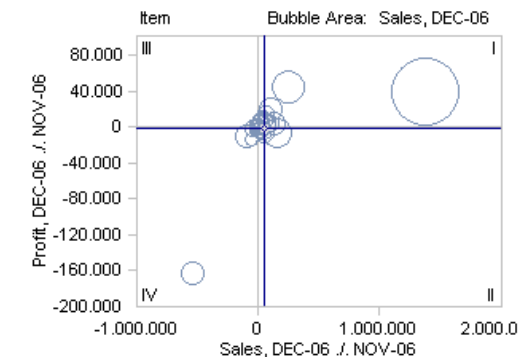
Integration of automation and visualization...

... allows the business end user to dig-in deeply into data warehouses
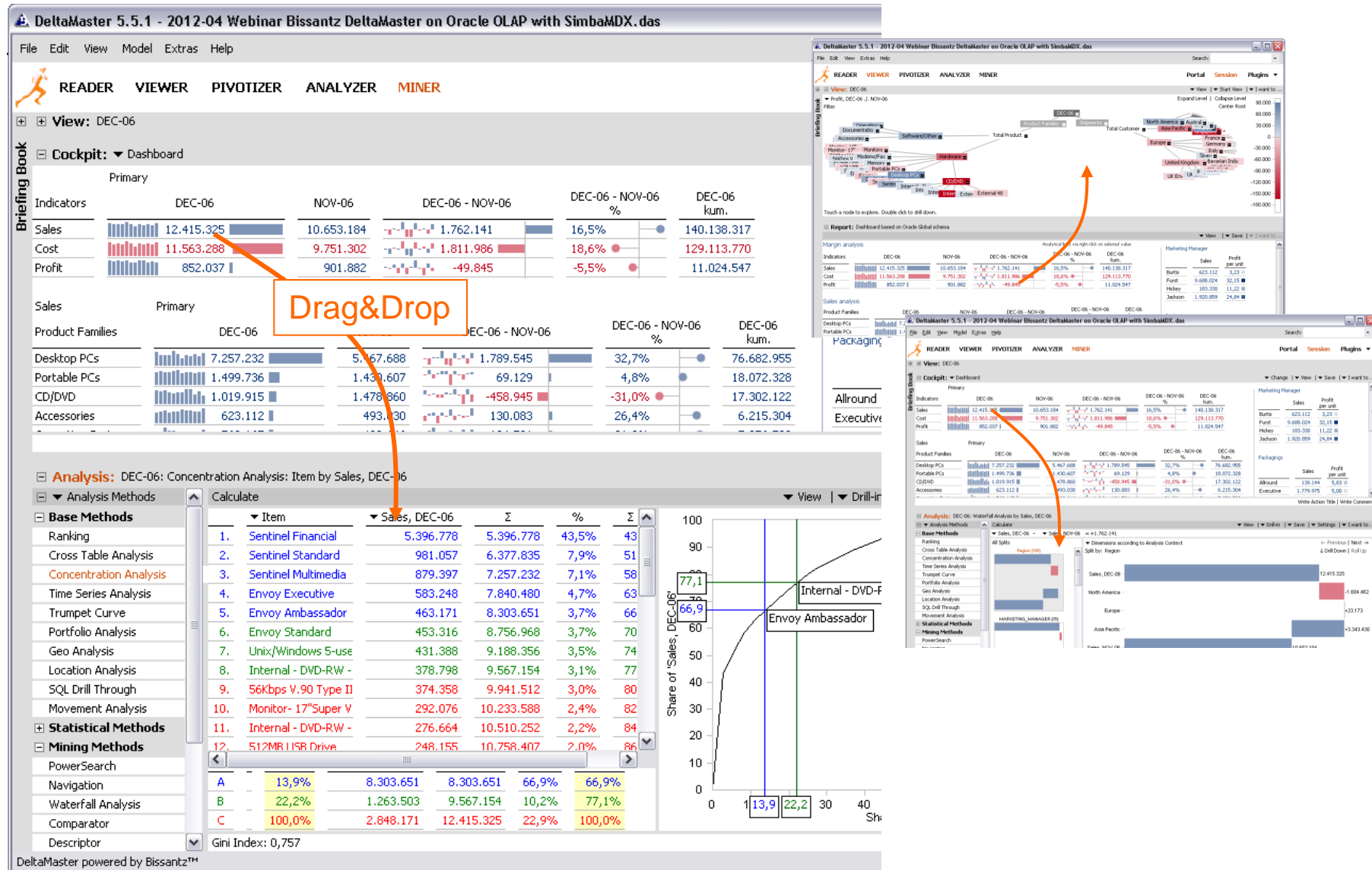
User and licence pyramid

Functionality and license offers for every target group
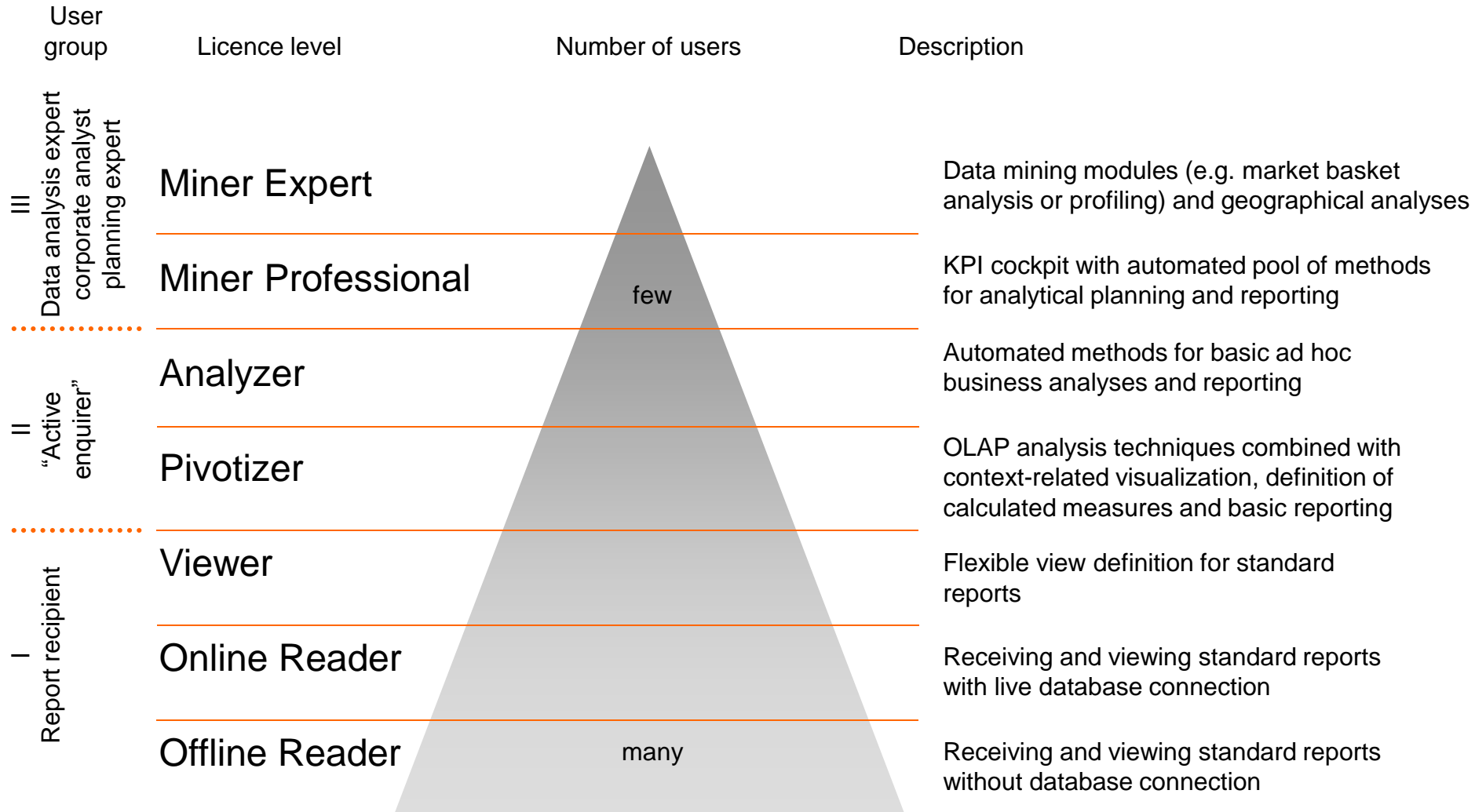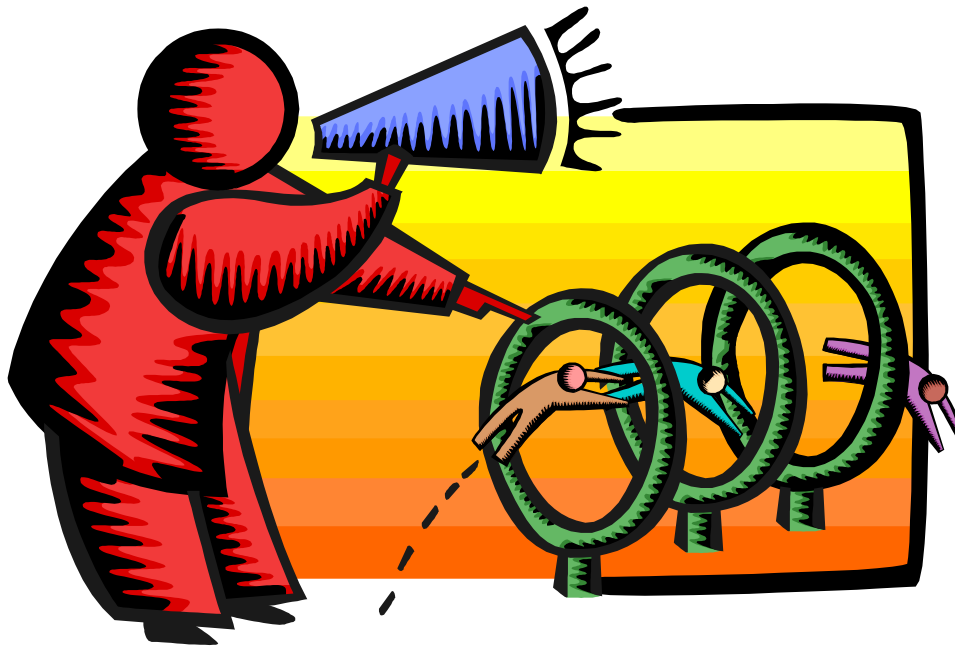
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User group	Licence level	Number of users	Description
III — Data analysis expert / corporate analyst / planning expert	Miner Expert	few	Data mining modules (e.g. market basket analysis or profiling) and geographical analyses
	Miner Professional		KPI cockpit with automated pool of methods for analytical planning and reporting
II — "Active enquirer"	Analyzer		Automated methods for basic ad hoc business analyses and reporting
	Pivotizer		OLAP analysis techniques combined with context-related visualization, definition of calculated measures and basic reporting
I — Report recipient	Viewer		Flexible view definition for standard reports
	Online Reader		Receiving and viewing standard reports with live database connection
	Offline Reader	many	Receiving and viewing standard reports without database connection

Summary

- BI Data is best stored in multi-dimensional database
- Oracle Database EE already has cubes–Oracle OLAP
- Oracle OLAP can work with multiple front ends
- Oracle OLAP works with any product that issues SQL
- Simba MDX provider translates MDX to SQL
- MDX enables many front end products
    - Arcplan
    - Bissantz DeltaMaster
    - Many others, including using XML/A

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Questions? Send Via Chat Window

- More information on:

- Vlamis Software: www.vlamis.com, dvlamis@vlamis.com
- Oracle BI Test Drive: www.vlamis.com/testdrive-registration/

- IOUG: www.ioug.org
- BIWA: www.oraclebiwa.org
- BIWA Virtual Summit: http://oraclebiwasig.blogspot.com/

- Oracle BI SampleApp: www.oracle.com/technetwork/middleware/bi-foundation/obiee-samples-167534.html
- Simba: www.vlamis.com/simba
- Excel: http://office.microsoft.com/en-us/excel/
- Bissantz DeltaMaster: www.vlamis.com/deltamaster, www.bissantz.com/products/
- Arcplan: www.vlamis.com/arcplan, www.arcplan.com/en/products/enterprise/

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