Visual Analyzer and Best Practices for Data Discovery

BIWA Summit 2016

Tim Vlamis and Arthur Dayton

Tuesday, January 26, 2016

Agenda

- Understanding the foundations of data discovery

- Discovery scenarios

- Discovery frameworks

- Using Visual Analyzer to discover data insights

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Vlamis Involvement in Presentations

| Presenter	Time	Location	Title
Dan Vlamis and Brian Terry	Tues 2:40 PM	Rm 104	Preparing for BI 12c Upgrade
Tim Vlamis and Arthur Dayton	Tues 4:30 PM	Rm 102	Visual Analyzer and Best Practices for Data Discovery
Mark Hornick (Oracle) and Tim Vlamis	Wed 9:00 AM	Bldg 500 HoL	Scaling R to New Heights with Oracle Database
Maury Carollo (AMC) and Cathye Pendley	Wed 2:20 PM	Rm 104	BI Movie Magic: Maps, Graphs, and BI Dashboards at AMC Theatres
Dan Vlamis and Mike Caskey	Wed 4:30 PM	Auditorium	Analytic Views - Bringing Star Queries into the Twenty-First Century
Arthur Dayton and Mike Caskey	Thur 9:50 AM	Rm 103	Case Study of Improving BI Apps and OBIEE Performance

Vlamis Software Solutions

- Vlamis Software founded in 1992 in Kansas City, Missouri
- Developed 200+ Oracle BI and analytics systems
- Specializes in Oracle-based:
  - Enterprise Business Intelligence
  - Data Warehousing
  - Data Mining and Predictive Analytics
  - Data Visualization
- Multiple Oracle ACEs, consultants average 15+ years
- www.vlamis.com (blog, papers, newsletters, services)
- Co-authors of book "Data Visualization for OBI 11g"
- Co-author of book "Oracle Essbase & Oracle OLAP"
- Oracle University Partner
- Oracle Gold Partner
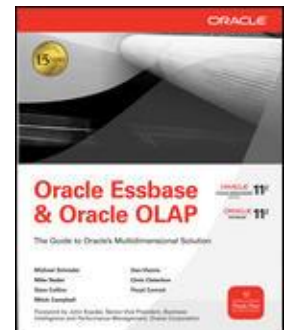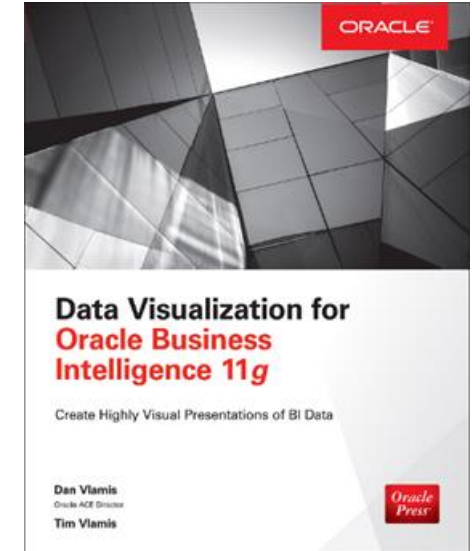
Tim Vlamis and Arthur Dayton

- ## Tim (business analyst and academic guy)
  - 25+ years in business modeling, valuation, and scenario analysis
  - Oracle ACE
  - Professional Certified Marketer (PCM) from AMA
  - Adjunct Professor of Business, Benedictine College
  - MBA Kellogg School of Management (Northwestern University)
  - BA Economics, Yale University

- ## Arthur(IT Architect and hands-on expert)
  - Financial Accounting background
  - 10+ years developing with Oracle software
  - Many years as an Oracle customer
  - Adjunct Technology Professor at University of Nebraska

Foundations of Data Discovery

- Discovery 101 - Simple and multiple regression
    - A regression models the past relationship between variables to predict their future behavior
    - One independent variable is **simple regression**
    - Two or more independent variables is **multiple regression**

- What's new about the technology that makes discovery easier and how is it different from last generation BI tools?

- Data discovery needs to come to masses because of the 3 V's

Discovery Scenarios

- New to a data set, true exploration

- Familiar with data, looking for new insights
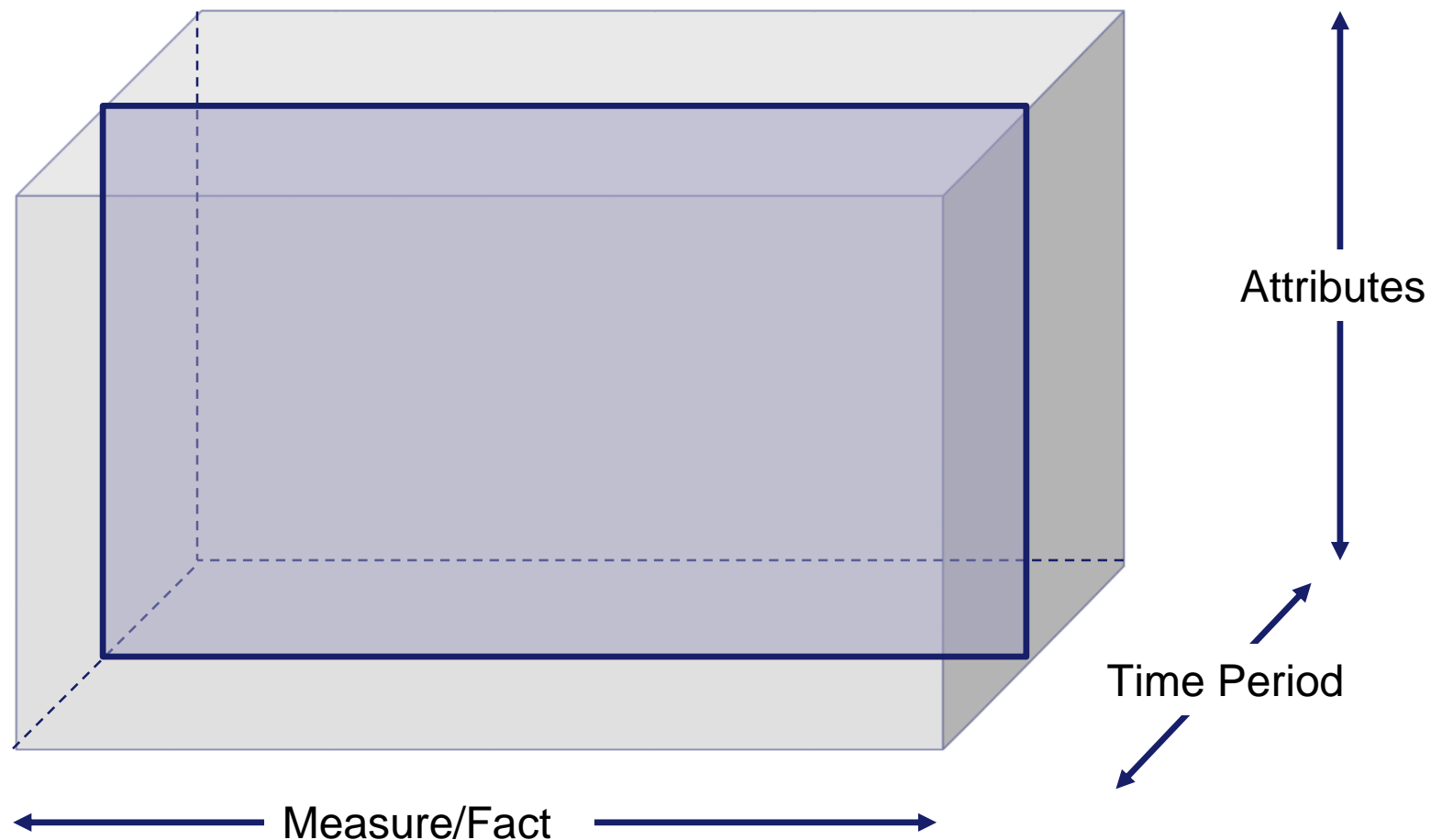
- Looking for new ways to see known relationships

An Example Useful Framework

Position Analysis	Performance Analysis	Flow Analysis
static	period of time	period of time
descriptive	results	change in single asset/resource
relative/comparative	fixed vs. variable	sources and uses
balance sheet	P&L	cash flow
strength/weakness	bottom line/zero based	change over time
portrait	motion picture	narrative

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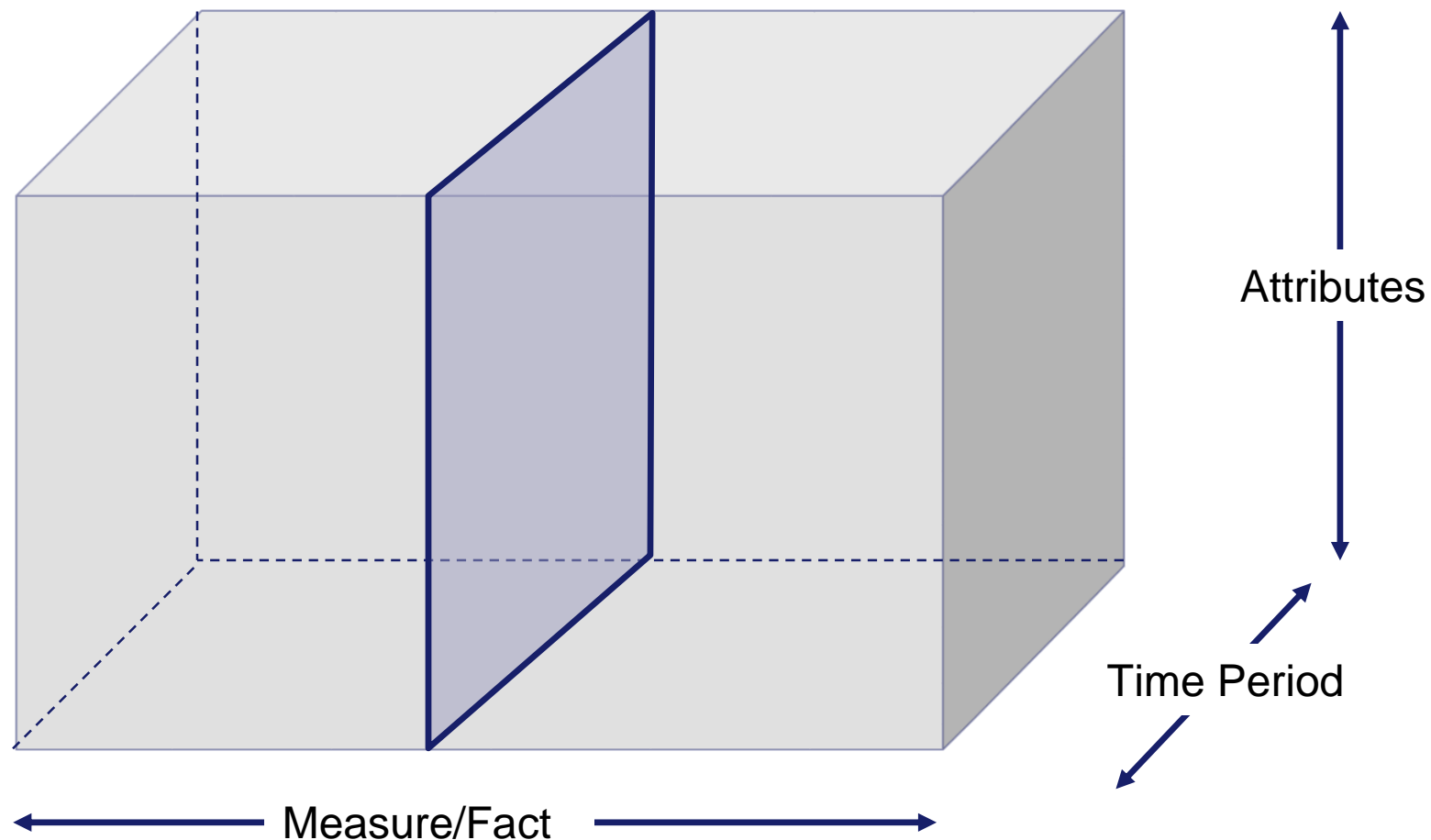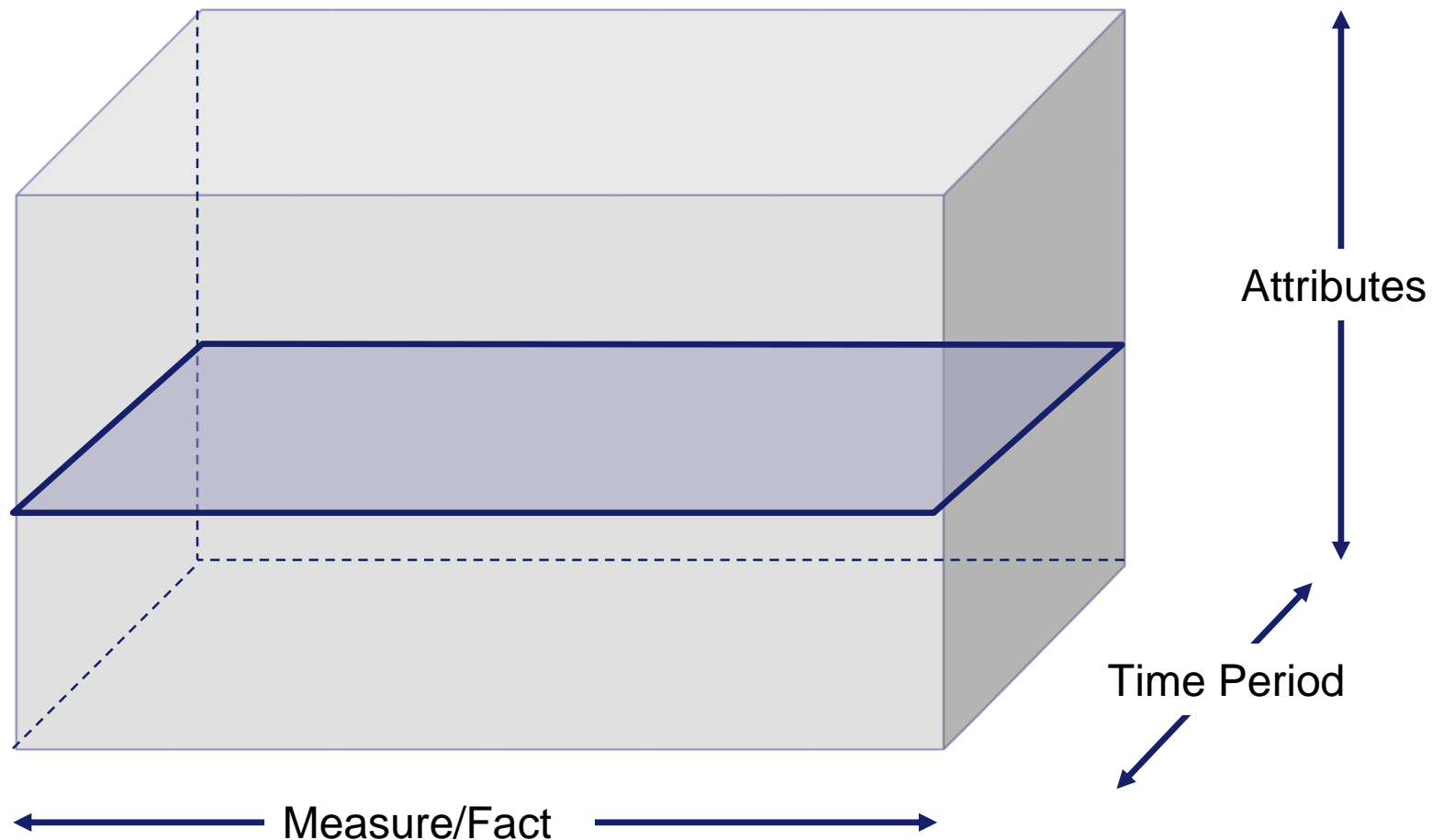# Position Analysis

Well Established Frameworks

- Key Performance Indicator (KPI) Development (business)

- Root cause analysis (science)

- Diagnostic analytics (science)

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Understanding Measures for Exploration

- Aggregation method is important
- If use average, also add a bucketed measure
- Compute differences
- Understand data's natural distribution shapes
  - Normal distributions (bell shaped)
  - Log-normal distributions
  - Exponential distributions

- Average has strong meaning only for normal distributions
- Outlier identification & treatment are important for non-normal distributions

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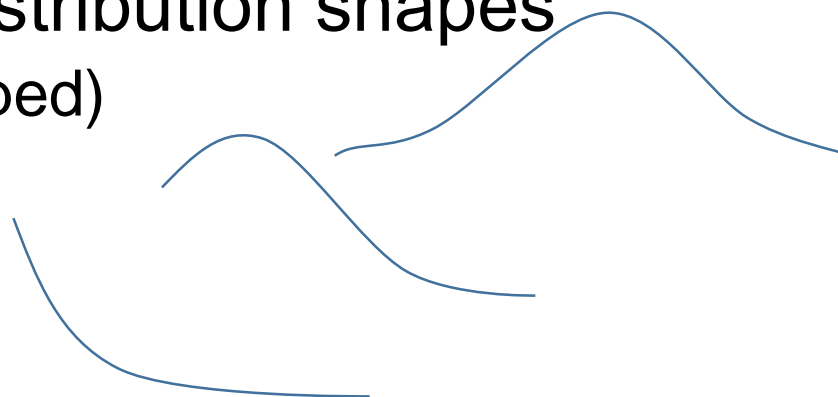
Starting with Data Discovery

- Begin either with a specific question or a framework

- Avoid "wandering around"

- Most of your visualizations will not produce new insights

- Move quickly through visualizations

- Be prepared to open a lot of browser tabs

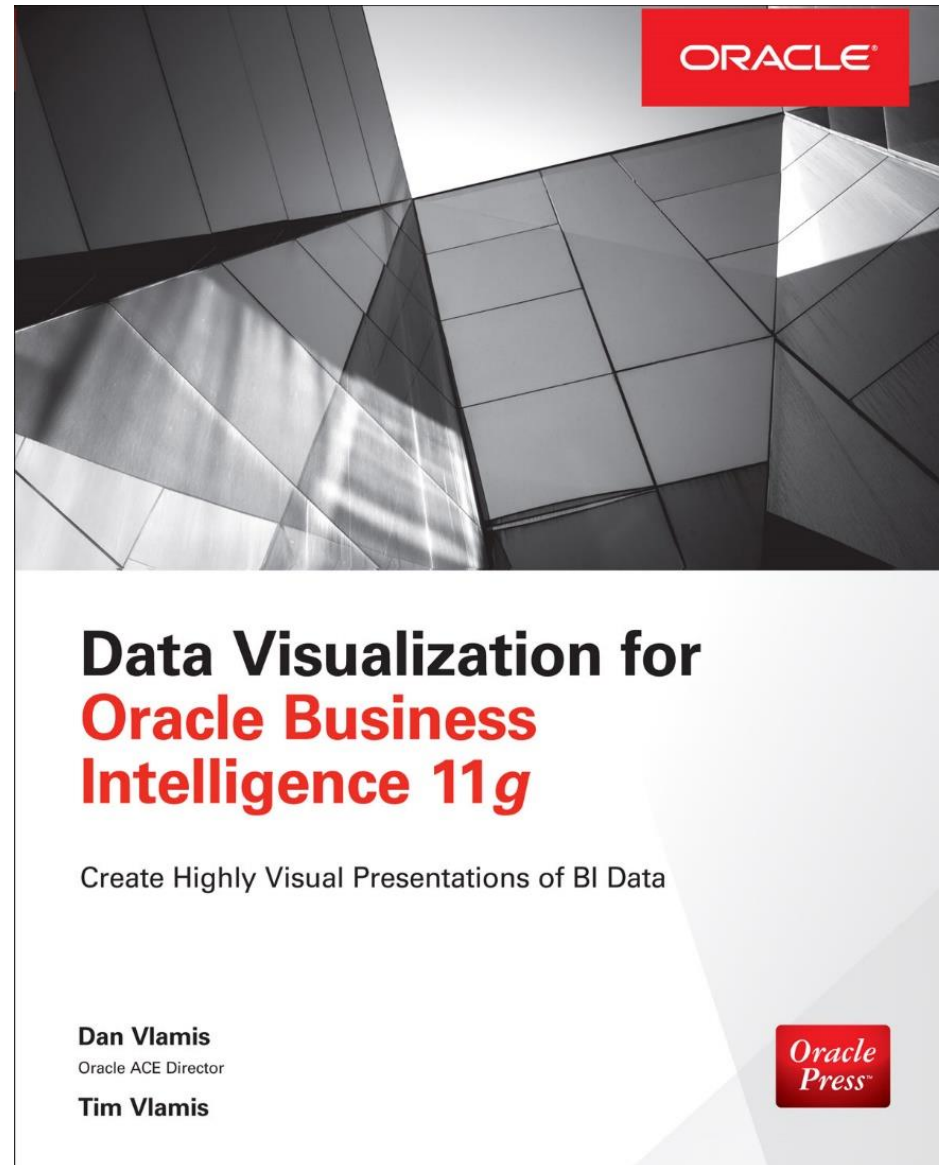vlamis
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Finding is not Explaining

- Process of interaction has a huge impact on the contextual understanding of an insight

- When someone discovers something, they believe it more

- Human Cognition Biases

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Thank You!

Tim Vlamis, VP & Analytics Strategist

tvlamis@vlamis.com

Arthur Dayton, Senior Consultant

adayton@Vlamis.com

Vlamis Software Solutions, Inc.

816-781-2880

For more information go to www.vlamis.com

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