

OpenWorld 2017 Oracle Analytics Roadmap

ORACLE
OPEN
WORLD

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Safe Harbor Statement

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Modern Analytics Strategy



Agility



Business Value

Artificial Intelligence



Broader Transformation

Self-Service



Improved User Productivity

Semantic Models

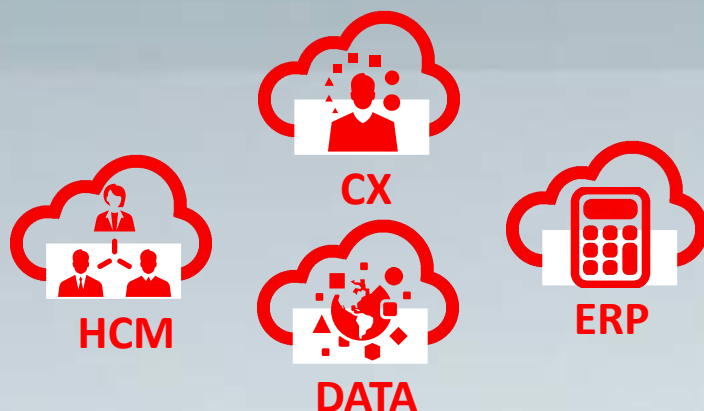


Stronger Governance



What Makes Oracle Big Data Analytics Compelling?

Pervasive



Oracle Analytics delivers business insights to **millions of users every day** across Oracle SaaS and Oracle PaaS. Enrich your data with Oracle Data cloud (including **5 Billion consumer profiles**) to achieve actionable insights

Comprehensive



Empower every type of user in a community via easy, intuitive experiences. Single platform for **all types of users** to **engage**, collaborate and elevate community wisdom

Anywhere



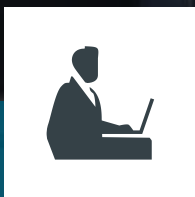
Run your **analytics anywhere** (Cloud, Cloud@customer, On Premises), manage your **data anywhere**. Enjoy the flexibility of changing your mind anytime.

The New Oracle Analytics Cloud

ANALYSTS RECOGNIZE AS #1

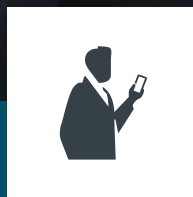


Smart Analytics for Everyone



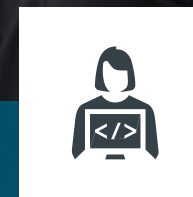
ANALYSTS

- Faster time to insights
- Share, collaborate and maximize community's wisdom



BUSINESS LEADERS

- Easy, timely, proactive business insights
- Empower to go beyond consuming others' findings



DEVELOPERS

- Develop and deploy analytic applications for people to customize and personalize
- Embed analytics in any application context

Liberate Insights from Any Data

Easy access to a variety of data sources

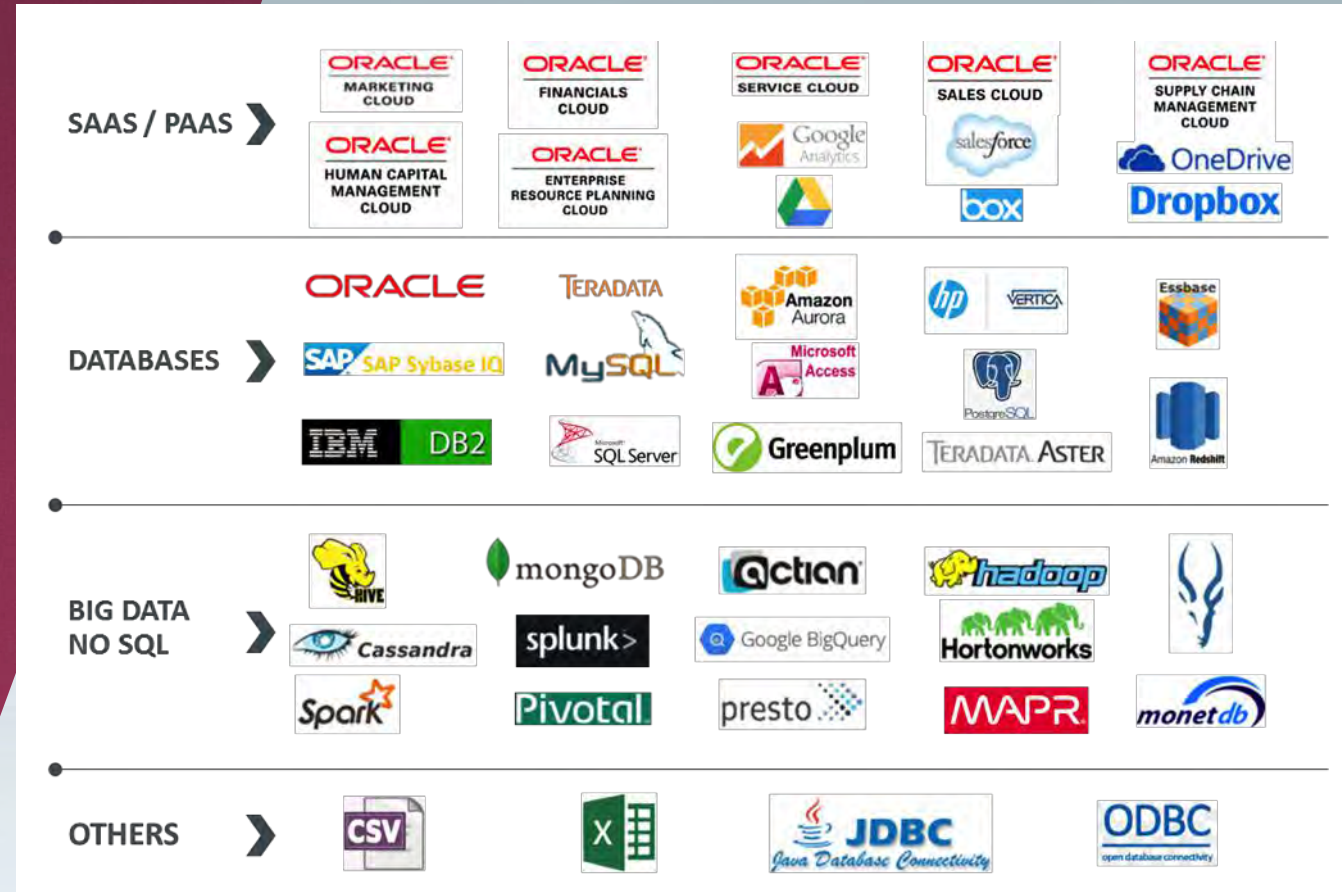
- Few clicks to setup and use
- Vast number of sources supported

Special Oracle SaaS Integration

- Access to business entities, not just tables and columns
- Respects security, business rules, and governance on source systems
- Leverage calculations and business logic in reports

Inline or “Extract-and-Analyze”

- IP built over two decades in function shipping (source-specific code generation) and internal execution now powers business user self-service



Powerful Data Flows and Enrichment

Full-featured pipeline designer

- Deploy prepared transforms within robust data pipelines
- Blend multiple data sets, aggregate results, define the order of complex data flows

No coding skills required

- Provides an intuitive user driven data preparation interface
- Standardize inconsistent values, replace null values and remove duplicates
- Create custom groups and expressions

The screenshot displays the Oracle Data Visualization Desktop interface. At the top, a 'Sales and Marketing Data Flow' pipeline is visible, consisting of several transform steps: 'Join', 'Filter', 'Add Columns', 'Aggregate', and 'Save'. Below this, the 'Data Visualization Desktop' window shows a 'Sample Project' with a data table. The table has columns for 'Order Line ID', 'Order ID', 'Order Priority', 'Properties', '# of Customers', 'Customer Name', and 'Customer Segm'. The table contains 20 rows of data. A context menu is open over the 'Properties' column, showing options like 'Duplicate', 'Convert to Number', 'Convert to Date', 'Group...', 'Split...', 'Concatenate...', 'Repeat...', 'Uppercase', 'Lowercase', 'Derivative Calc', 'Create Column...', 'Set Column...', and 'Hide'.

| Order Line ID | Order ID | Order Priority | Properties | # of Customers | Customer Name | Customer Segm |
|---------------|----------|----------------|-------------------|----------------|---------------------|----------------|
| 1788 | 88476 | Medium | Duplicate | 70 | Laura Babin | Home Office |
| 2149 | 30266 | Low | Convert to Number | 23 | Orlando Adrigh | Small Business |
| 2194 | 90272 | Medium | Convert to Date | 24 | Austin Mizer | Small Business |
| 2375 | 36420 | Medium | Group... | 27 | Rachel Caley | Home Office |
| 244 | 87190 | High | Split... | 9 | Walt Shannon | Corporate |
| 246 | 87192 | High | Concatenate... | 9 | Walt Shannon | Corporate |
| 2688 | 89200 | High | Repeat... | 23 | Christine Wilkerson | Corporate |
| 2855 | 86790 | High | Uppercase | 19 | Carl Berger | Home Office |
| 3583 | 38814 | Critical | Lowercase | 90 | Rosemary Branch | Corporate |
| 3787 | 91481 | High | Derivative Calc | 21 | Allen Star | Home Office |
| 4027 | 60194 | Low | Create Column... | 30 | Ramon Huang | Small Business |
| 4038 | 38816 | High | Set Column... | 23 | Larry Hall | Small Business |
| 4267 | 66221 | Critical | Hide | 33 | Brad Clark | Home Office |
| 4376 | 38808 | Medium | 1021 | 1021 | Avi Agari | Consumer |
| 4385 | 87754 | Critical | 1140 | 1542 | Charlene Reynolds | Corporate |
| 4181 | 87488 | Medium | 1084 | 1991 | Juan Pineda | Consumer |
| 4103 | 38300 | High | 1074 | 1074 | Sherry Purdy | Consumer |

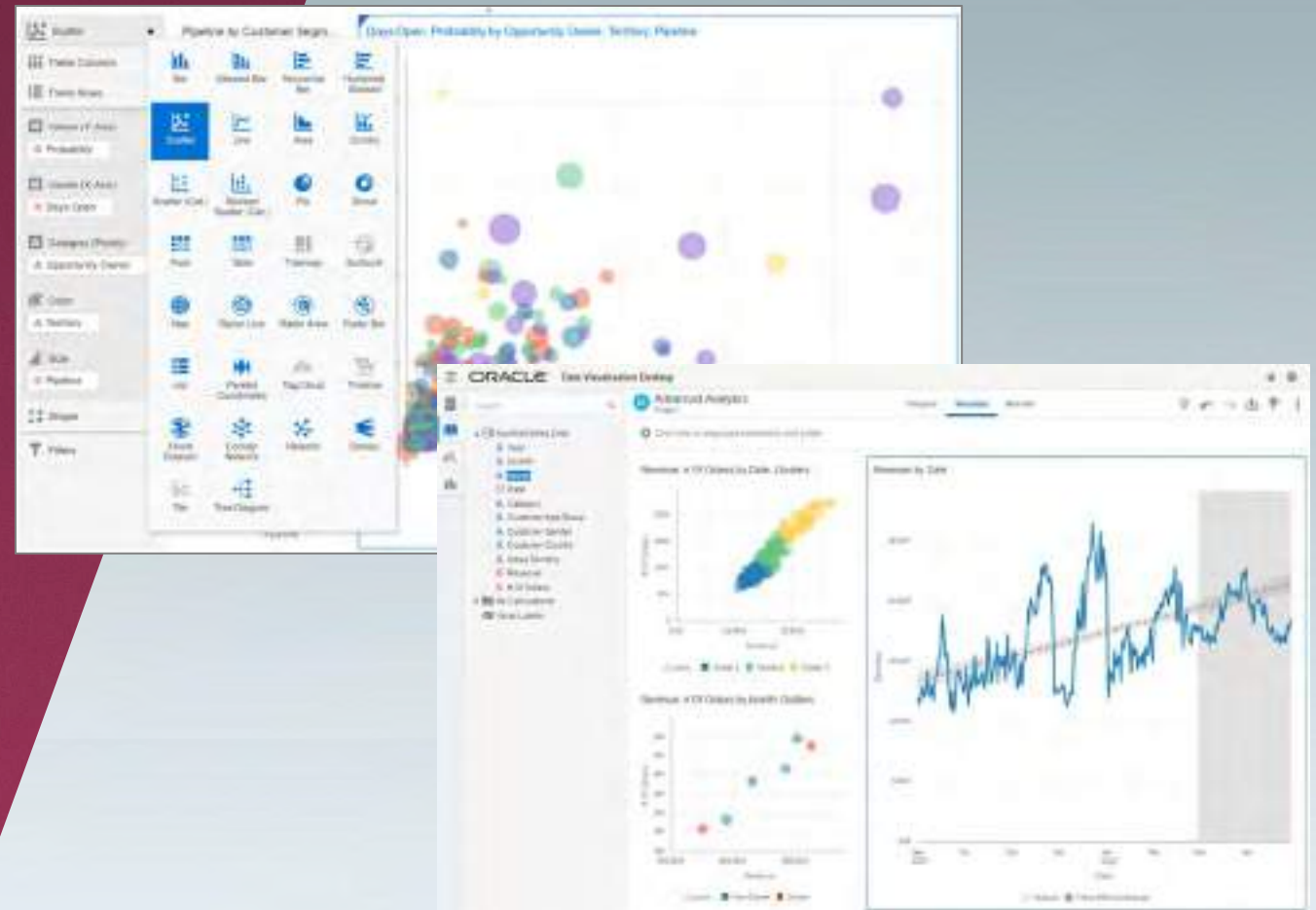
Interactive Visual Composition

Best Data Visualization Capabilities

- Rich palette of chart types, combo charts of lines, areas, bubbles, and more
- Smart Chart advisor automatically selects best fit visualization based on selected attributes
- Trellising for every visualization; customizable color palette
- Brushing – highlight correlations within data across visualizations, all auto-wired to work/update in unison, leveraging in-memory cache/execution layer

Visualize Predictive Factors

- Drag-and-drop clustering and outlier detection
- Single-click trending and forecasting



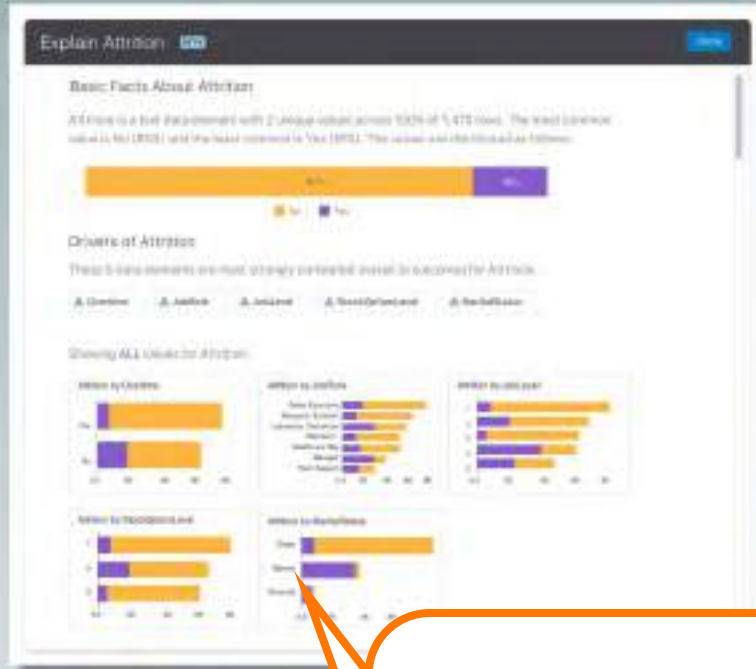
A man in a dark suit, white shirt, and patterned tie is shown from the chest up, holding a smartphone in his hands. The background is a blurred cityscape with a body of water and a bright sun or light source on the left, creating a hazy, atmospheric effect. A large red banner is overlaid across the middle of the image.

What's Next?

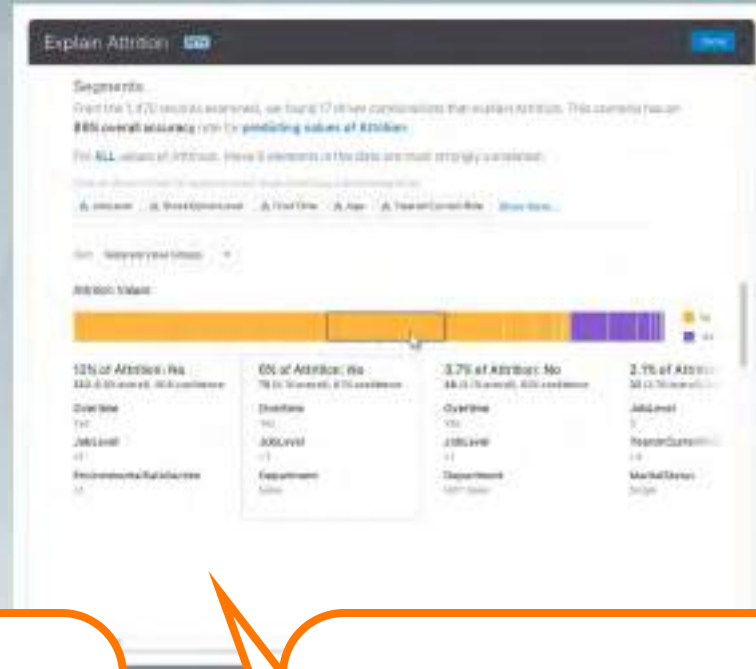
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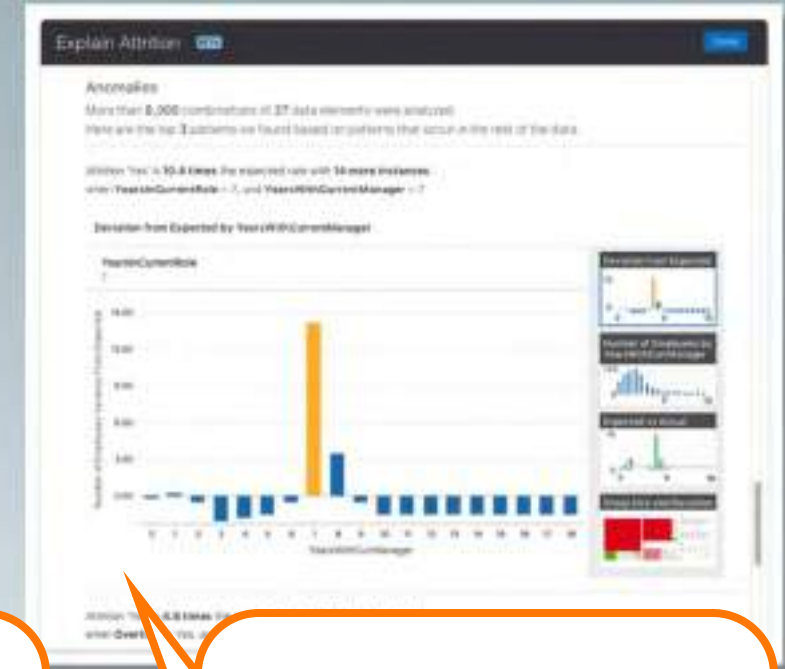
Automated Data Diagnostics – “Explain”



Understand value distribution and statistically correlated driving factors



Learn which segments and clusters of data have highest predictive significance



Discover statistical anomalies in the dataset that merit further investigation



Smart Catalog: Data Prep Recommendations



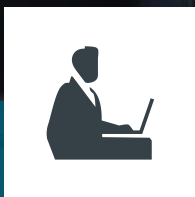
Enhanced summary view highlights data shape and data quality

The screenshot displays the Oracle Analytics Cloud interface for a project named 'Employee Productivity - Project'. The main view is titled 'Customers - Data Set' and shows a grid of summary cards for various data elements. The 'Gender' card is highlighted with a blue border and shows a bar chart with 'Male' and 'Female' categories, and a red indicator for '72 Missing' values. Other cards show counts and unique values for fields like 'Customer ID', 'Firstname', 'MI', 'Lastname', 'Email', 'Phone', 'CC Number', 'Address', 'City', and 'State'. A right-hand panel lists 'Recommendations (7)' such as 'Address missing values', 'CVV', 'SSN', 'Merge elements', and 'Remove elements'. The bottom status bar indicates '24 Data Elements | 120,348 Rows'.

Deep semantic profiling unlocks smart recommendations

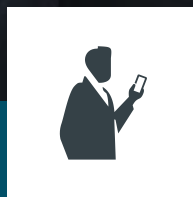


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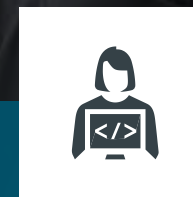
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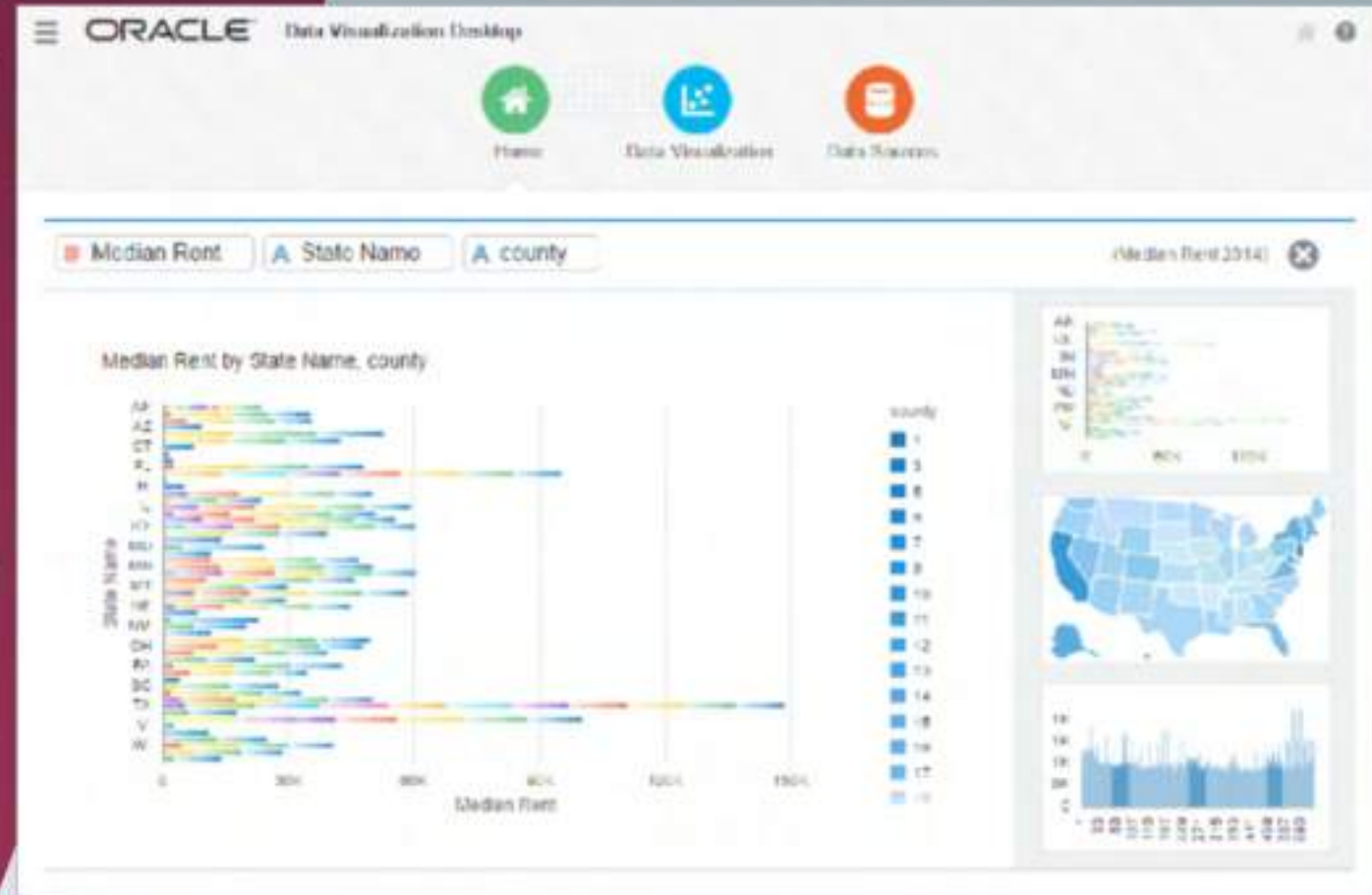
Talk to Your Data with BI Ask

Powerful, intuitive keyword search

- Interprets semantic layer, user private data, expression library and catalog artifacts
- Voice-enabled
- Fuzzy match, stemming, natural language processing
- Generates on-the-fly queries - visualizations are auto-created while user types

Available on all platforms

- Mobile
- Browser
- Desktop



Tell Better Stories with Your Findings

Interactive data storytelling

- Evaluate each story point, “kick the tires” and validate conclusions
- Presentation mode enables focus on the story point, while offering complete interactivity
- Freeform text and images enable in-place discussions

Consume anywhere

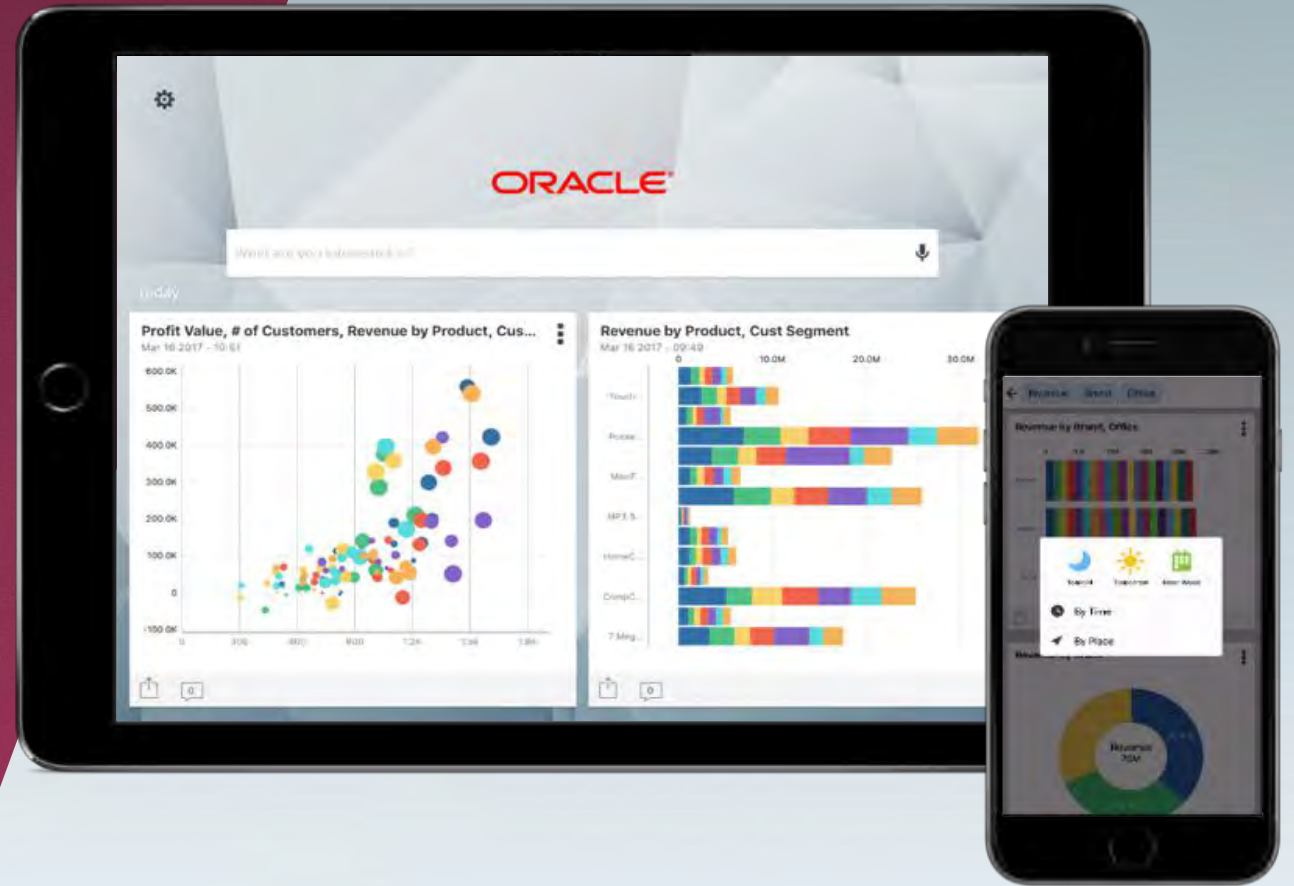
- Mobile, desktop and browser
- Native integration with mobile platforms to enable seamless hand-offs, screen-shares, and more



Build Collective Intelligence with Day by Day

Anticipates questions through self-learning

- Infuse data-based insights into daily activities
- Get customized feeds based on what you are interested in, when and where you are interested in it, and who you collaborate with
- Anticipates your needs and delivers appropriate information to help you make better informed decisions throughout the day
- Use your device's voice capabilities to obtain answers



Role-based Visualization Content Packs

Pre-built data visualization content

- Included with Oracle Data Visualization Platform
- Extends OTBI insights with pre-built data visualization sample content
- Targets specific line-of-business personas
- Identifies difficult-to-spot business opportunities, innovations and patterns
- Blends data across business functions, lines of business and applications
- Quick ad-hoc exploration of OTBI and other data with intuitive business user interface
- Near real-time access to data from OTBI and other Oracle application sources

Finance Manager

- Revenue Overview
- Revenue and Headcount Analysis
- Cost Management

Project Manager

- Campaign performance
- Campaign cost

Sales VP

- Top deals in Play
- Sales review
- Pipeline trend
- Revenue trend

Marketing Analyst

- Campaign performance
- Campaign cost

Payables Manager

- AP Balances
- AP Holds
- AP Overdues

Grants Manager

- Budget vs. Actual
- Award Cost Details
- Award Encumbrance Details

Sales Manager

- Team performance
- Quota attainment
- Pipeline review
- Demand generation

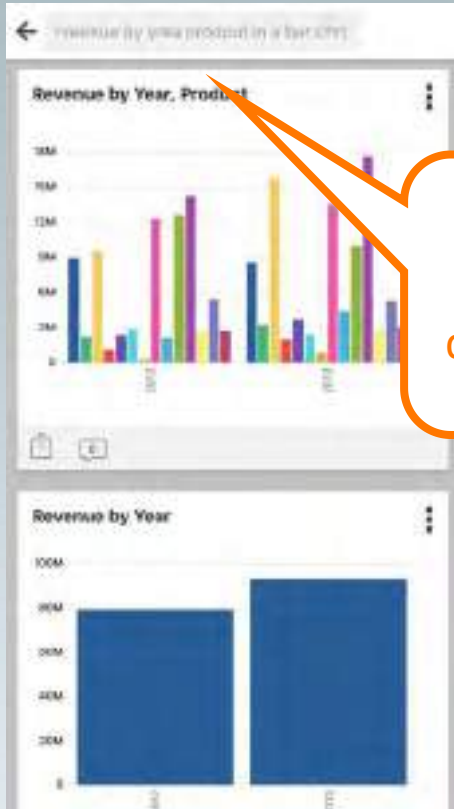
Service Manager

- Open incidents
- Closed incidents
- Team performance

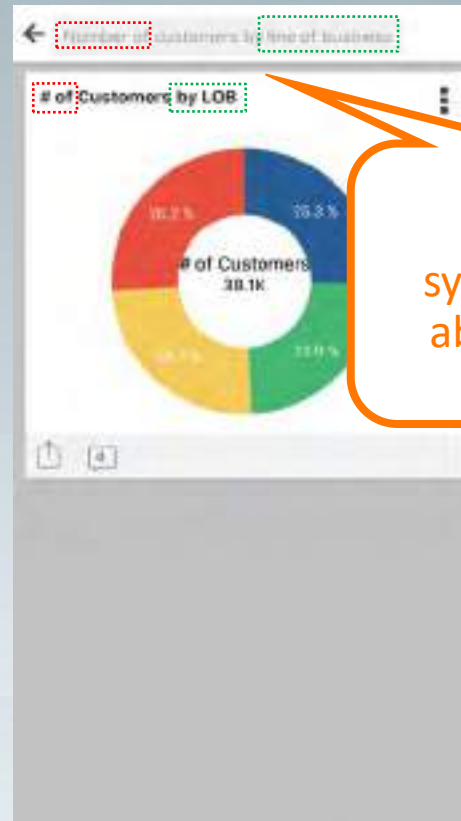
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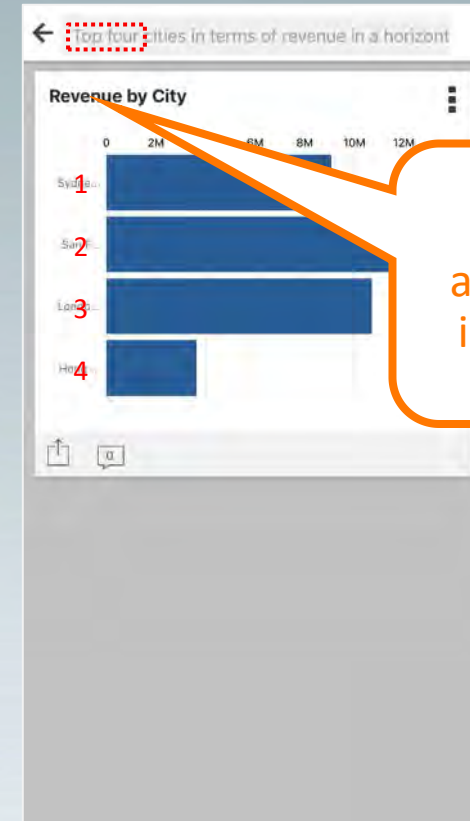
Improved Natural Language Query (“Ask”)



Autocorrect natural language queries on the fly

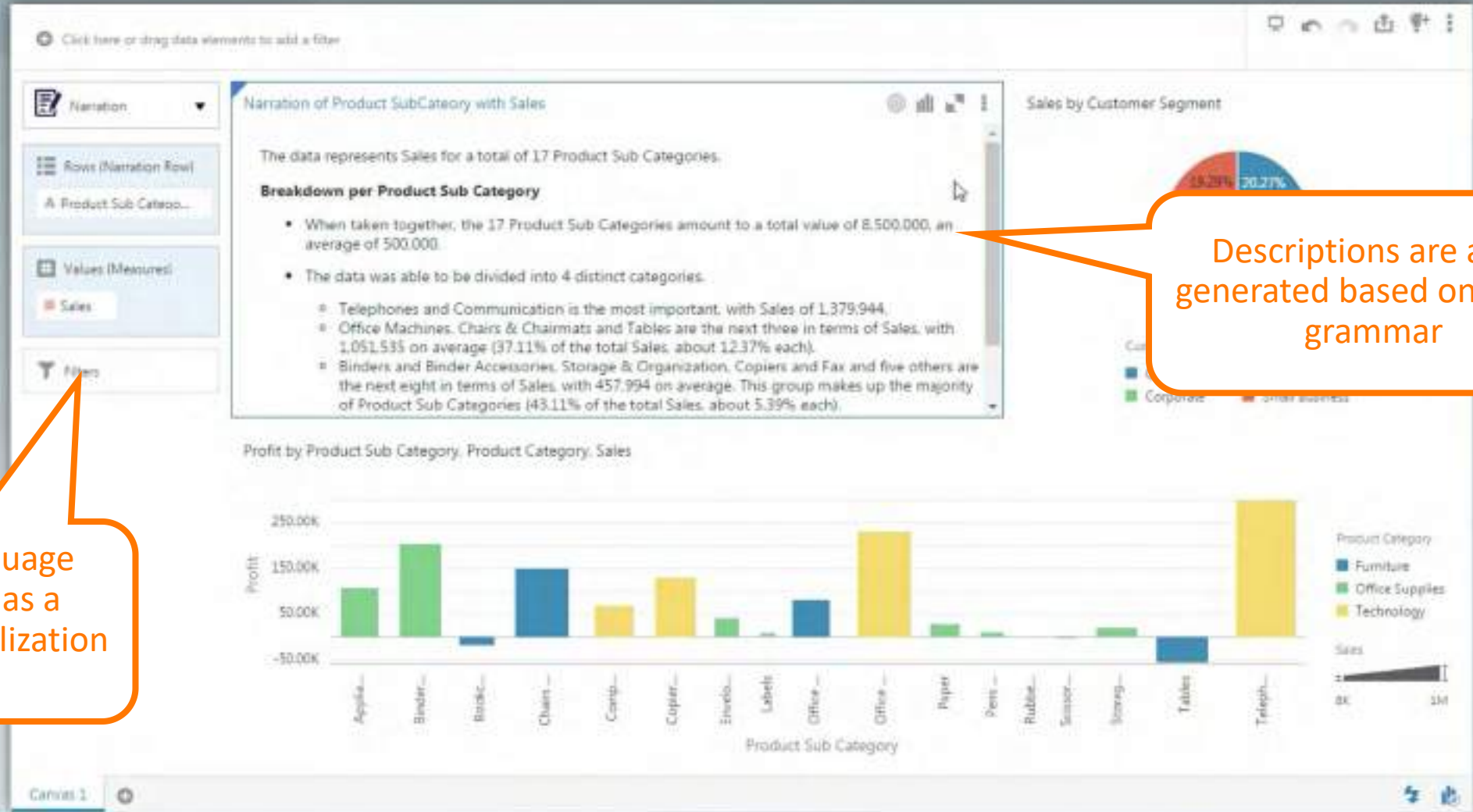


Support synonyms and abbreviations



Dynamically adjust grammar interpretations

Natural Language Insights

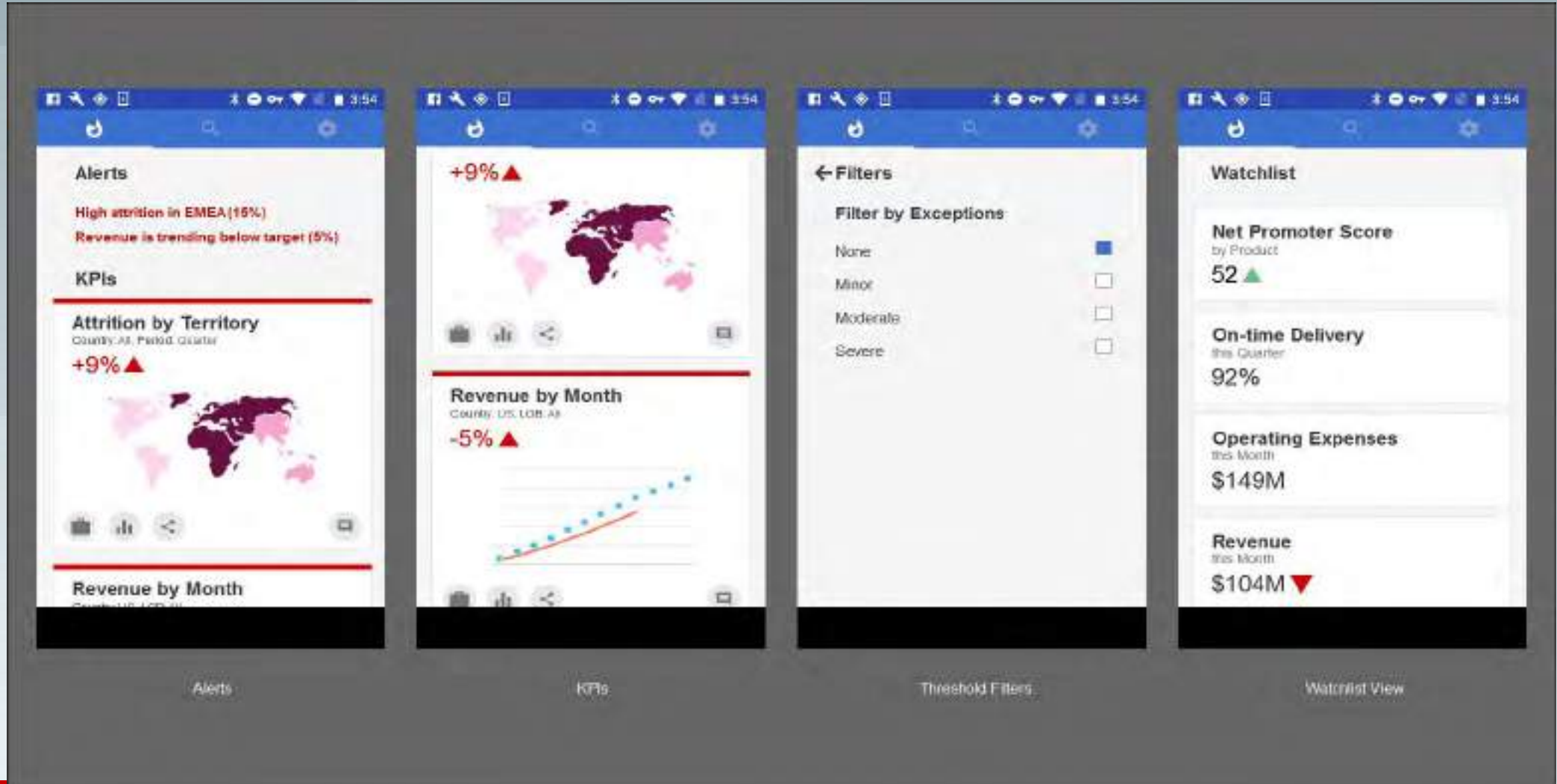


Descriptions are auto generated based on visual grammar

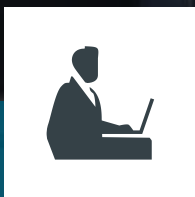
Natural Language Generation as a standard Visualization type

Proactive Intelligence

ML/Data drive, Business context aware, Personalized experiences

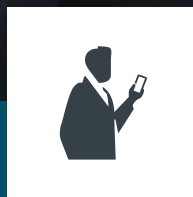


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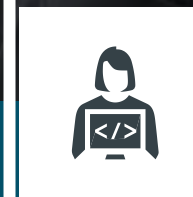
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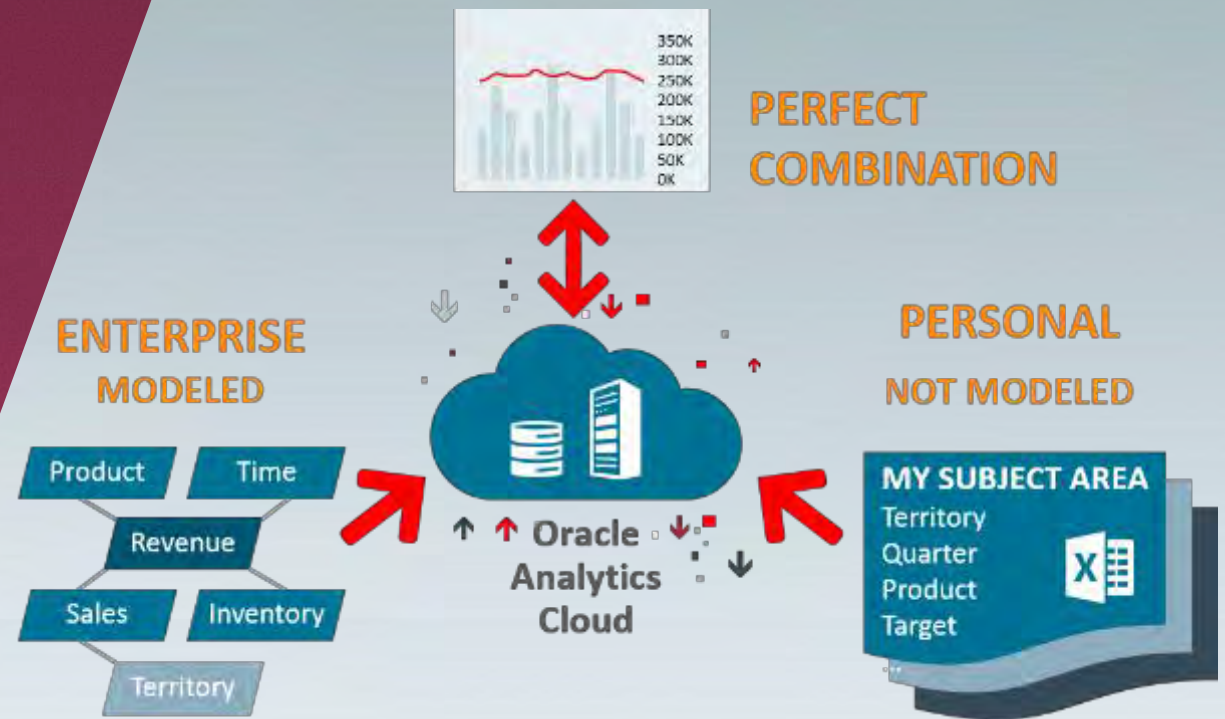
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Business Agility & Data Reliability

Balance business needs with data governance

- Combine all relevant information from any data source, managed and self-service
- Stay productive with intelligently optimized queries
- Robust data mashup support – variety of join options and key inference



Easily Extensible by App Developers

Visualization SDK

- Develop custom visualizations with Javascript/D3
- 100% functional, LCM parity with native visualizations

Function extensibility

- Extend the expression library with custom functions (e.g., stats, machine learning or textual functions)
- Leverage custom functions anywhere – Visual discovery, Data Prep, and more

Data source extensibility

- Add data connectors to non-native sources

Full Embedding SDK

- Full ability to natively embed visualizations and stories with native interaction



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What's Next?

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Add ML to Data Flows



Train sophisticated machine learning models directly within any data flow

The screenshot shows the Oracle Analytics Cloud interface for configuring a 'Train Model' step in a data flow. The pipeline consists of three steps: 'HR Data', 'Train Model', and 'Save Model'. The 'Train Model' step is currently selected, showing its configuration options. The 'Model Training Script' is set to 'Logistic Regression' and the 'Model Type' is 'Regression'. The 'Target column to predict' is 'Attribution'. The 'Maximize hold-out value percent' is set to 50, 'Numerical column imputation' is 'Mean', and 'Categorical column imputation' is 'Most Frequent'. The 'Number of K-Folds' is 5 and the 'Train partition percent' is 80. Below the configuration is a preview of the HR data table.

| Employee ID | Employee Name | Age | Gender | Attribution | Department | Education |
|-------------|---------------------|-----|--------|-------------|------------------------|---------------|
| 1234567 | Gregory J. Adams | 41 | Male | Yes | Research & Development | Life Sciences |
| 1234568 | Bradley P. Freshman | 48 | Male | Yes | Research & Development | Life Sciences |
| 1234569 | Elizabeth E. Work | 37 | Female | No | Research & Development | Life Sciences |
| 1234570 | Alice C. Quinn | 53 | Female | Yes | Research & Development | Life Sciences |
| 1234571 | Nelson Becker | 21 | Male | No | Research & Development | Life Sciences |

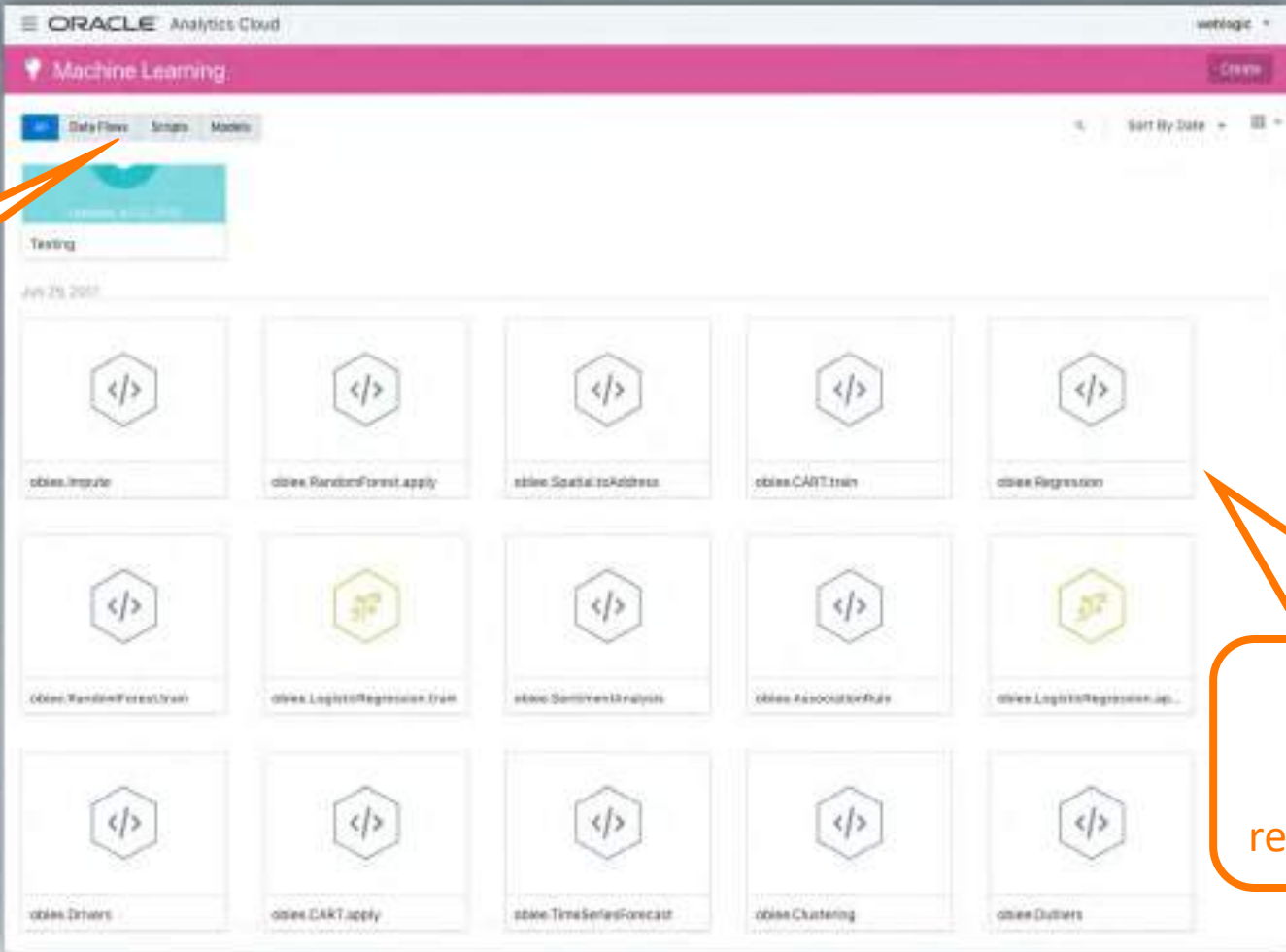
Leverage best practice model configuration parameters



Operationalize ML (aka RTD)



Manage all ML artifacts in one catalog location



Model lifecycle management, scoring APIs, automated retraining and A/B Testing



Roadmap

Coming Soon

Discover

- One click diagnostic, descriptive analytics for business user

Prepare

- Essbase cubes creation and update for fast interactive visualizations

Visualize

- Action plugins for initiating transactional operations
- Pixel perfect reporting – BIP
- Adaptive, personalize insights feeds across Cloud and Mobile

AI (Intelligent Data Services)

- Develop custom ML models using OOTB algorithms or custom. Use Data flows to train, save and score against models

Enterprise Cloud

- Performance with Bare Metal Cloud

Within 6 Months

Discover

- One click predictive and prescriptive analytics for Business User

Prepare

- Intelligent recommendations for data blending
- Knowledge based data enrichment

Visualize

- What-If and Sandboxing
- Proactive alerts based on usage/social

AI (Intelligent Data Services)

- NLP and NL Gfor readable insights
- RTD features: Model management, online scoring, Model time versions, A/B testing and more.

Enterprise Cloud

- Scalable batch and streaming model serving
- Data flow job monitoring

Within 12 Months

Discover

- Automated catalog across all data for search, recommendations, and security

Prepare

- Streaming data flows
- Recommend domain specific predictive models

Visualize

- Team data data input and analysis in DV
- Domain KPI recommendations

AI (Intelligent Data Services)

- Pro-active Intelligence: Business context, Data driven, Community interest aware experiences. Personalized and actionable.

Enterprise Cloud

- Packaged DV Apps for distribution
- New class of applications – CXO Dashboards