

ORACLE®

The Picture That Paints a Thousand Words

Data Visualization on Web and Mobile

Chris Muir, Senior Principal Product Manager

Oracle Cloud and Mobility
Development Tools

September 28–
October 2, 2014
San Francisco

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Program Agenda

- 1 Oracle Alta UI
- 2 Data Visualizations Overview
- 3 Data Visualization Opportunities
- 4 New Components & Features
- 5 Hands on Lab

Oracle Application Development Framework (ADF)

- Create web & mobile web apps
 - Increased productivity & ease-of-use
 - Visual and declarative development
 - Takes care of the Java “plumbing” code
- Promotes service oriented development
- Standards-based
- End-to-end coverage
- Oracle's strategic web framework



Oracle Mobile Application Framework (MAF)

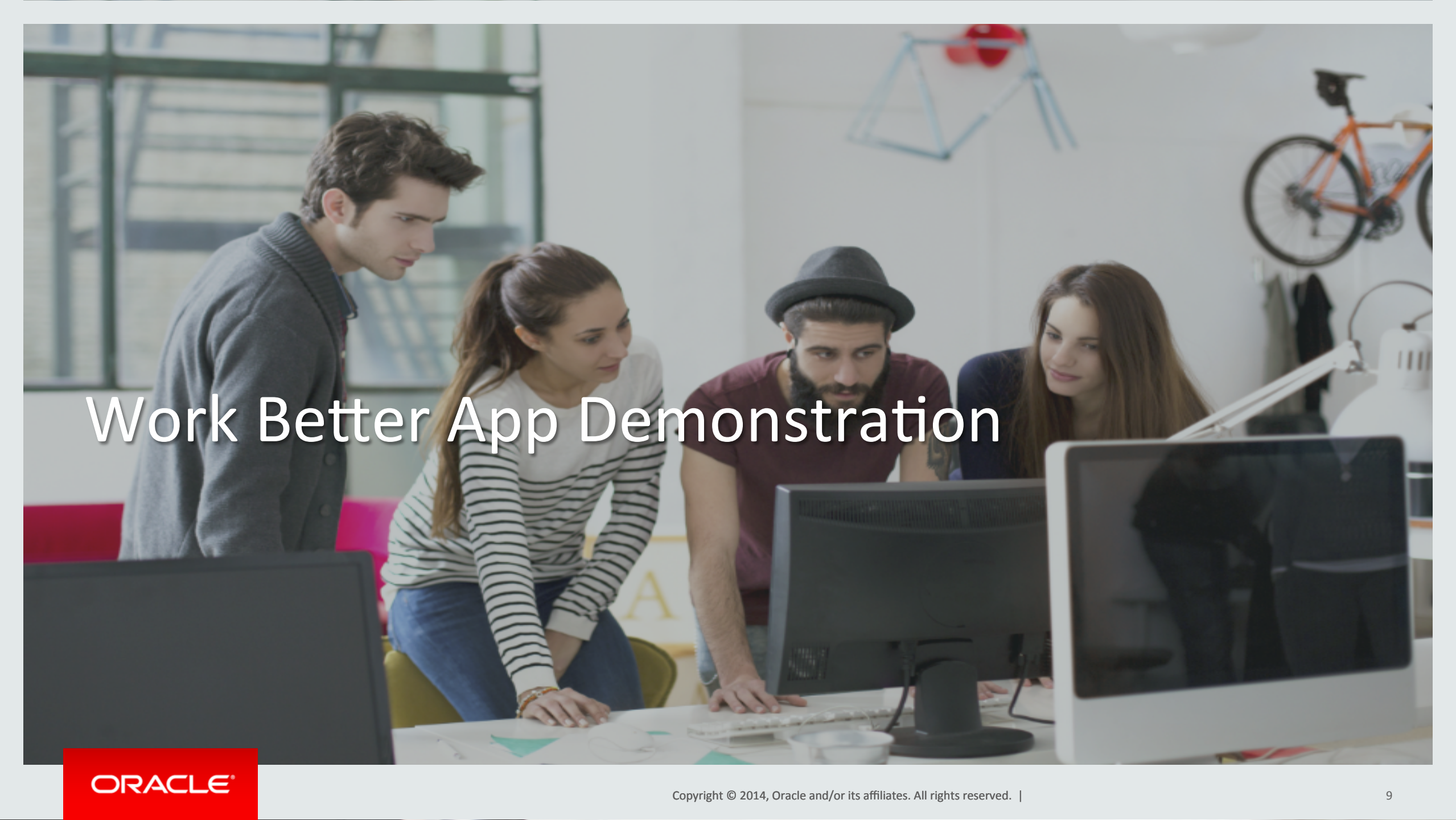
- Create on device mobile apps
- Build once, run on multiple-platforms
- Simple UI development
- Java, JavaScript and HTML5 development
- Security built in
- Full access to native device features
- Modular, reusable components
- Choice of development IDEs



Oracle Alta UI

- More than just a skin
- Modern UI patterns for Mobile, Cloud, Web
- Visualization-centric
 - Infographics, InfoTiles
- Mobile first UI, responsive
- Clean and simplified layout
- Used across Oracle's own solutions



A group of four people (three men and one woman) are gathered around a desk in a modern office, looking at two computer monitors. The man on the left is standing and leaning over the desk. The woman next to him is also leaning over. The man in the center is wearing a hat and a beard, and the woman on the right is looking at the monitor. The background shows a large window and a bicycle hanging on the wall.

Work Better App Demonstration

My Team

104

My Group

14

My Directs

My Notifications

3

Approved

4

Waiting

1

Rejected

My Activities

4

Meetings

2

Events

Next 7 Days

My Team Activites

77

Meetings

22

Training

43

Events

19

Time Off

Next 7 Days

Compensation Ratio

Above Range	9
In Range	52
Below Range	43

Across My Organization

Average Compensation

Top Six Organizations

Average Ratings

3.5

Performance

4.2

Potential

Across My Organization

Average Performance

Top Six Organizations

Attrition History

Across My Organization

About Me

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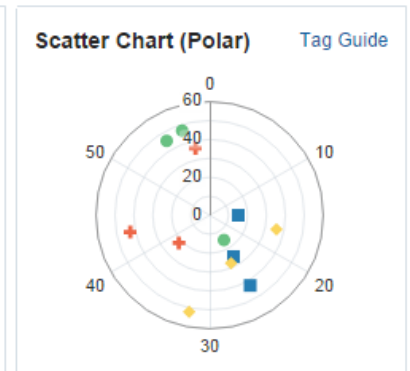
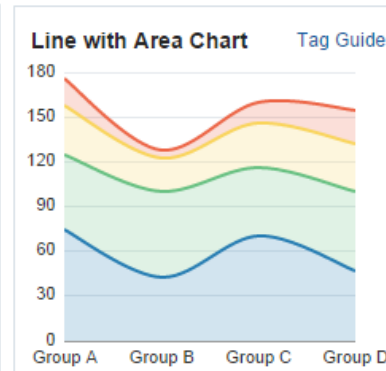
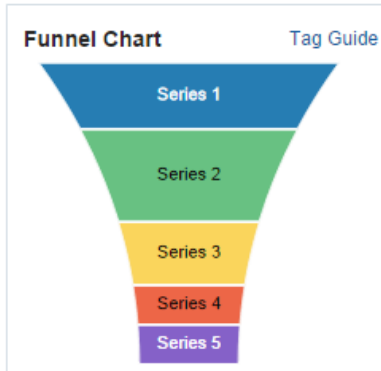
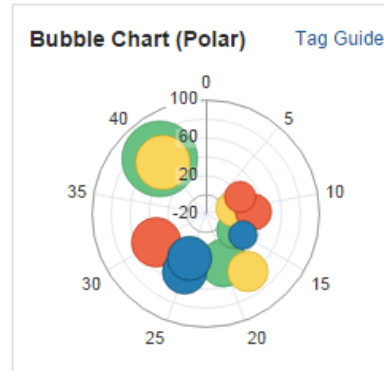
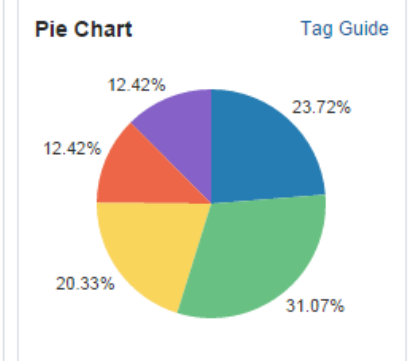
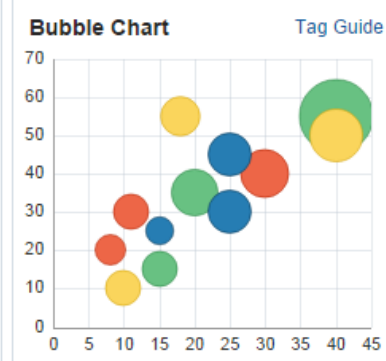
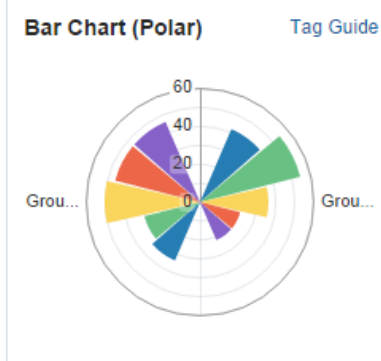
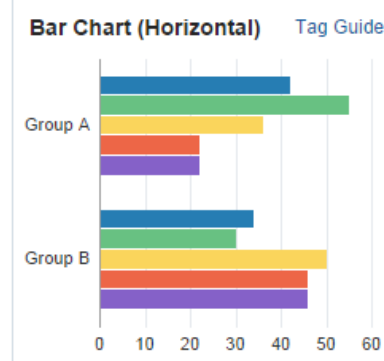
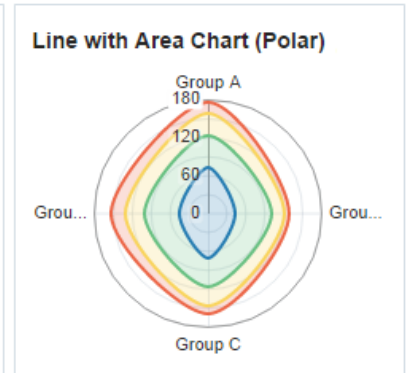
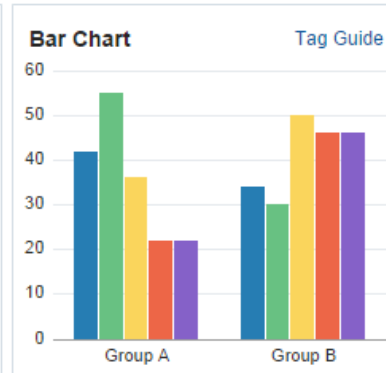
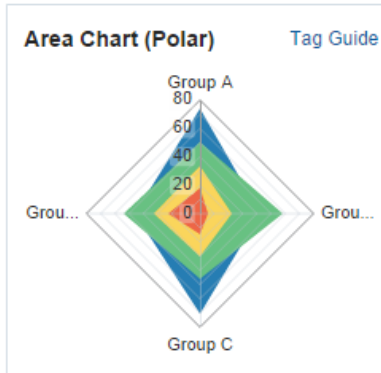
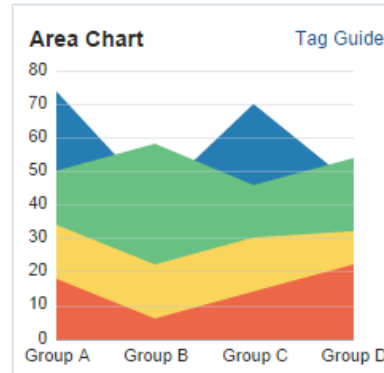
Oracle Data Visualizations

- Full set of beautiful, interactive, animated visualizations
- Mobile first UI
 - Touch support
 - Responsive layout
- Shared across:
 - Oracle ADF & MAF
- Support for
 - Internationalization, accessibility



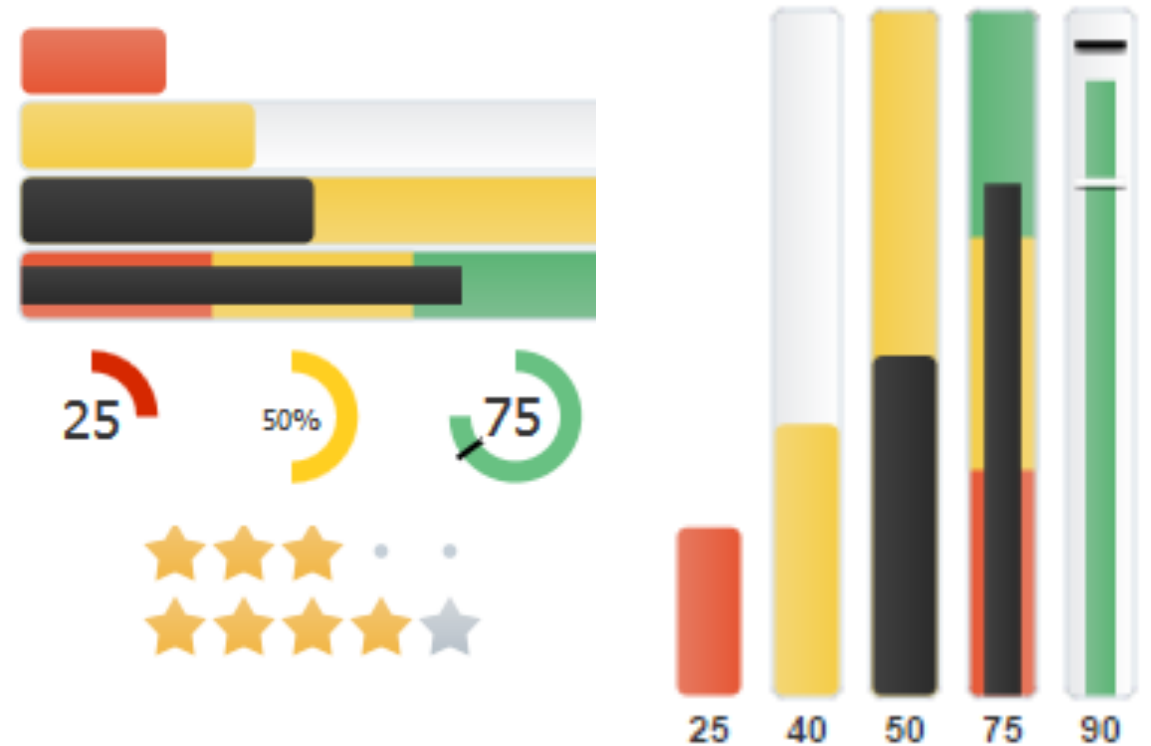
Charts

- Over 50 chart types
- Client-side layout
- Redesigned zoom/scroll
- Marquee zoom and selection
- Redesigned Time axis
- Improved data labeling



Gauges

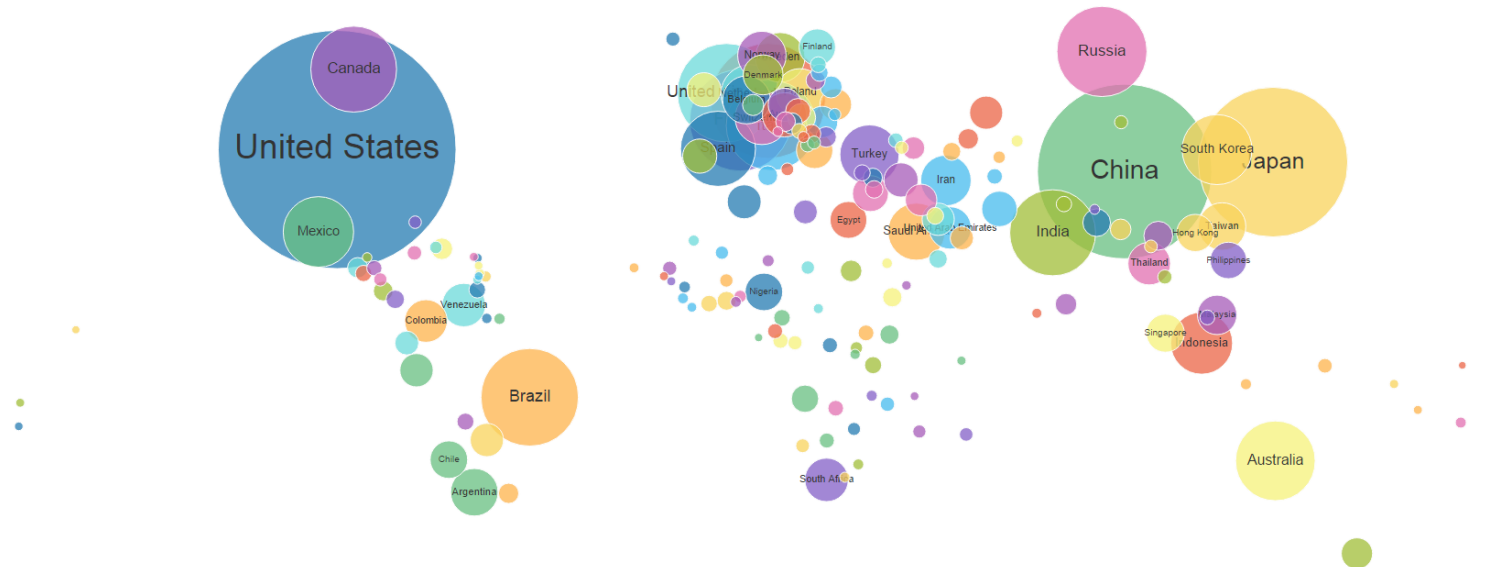
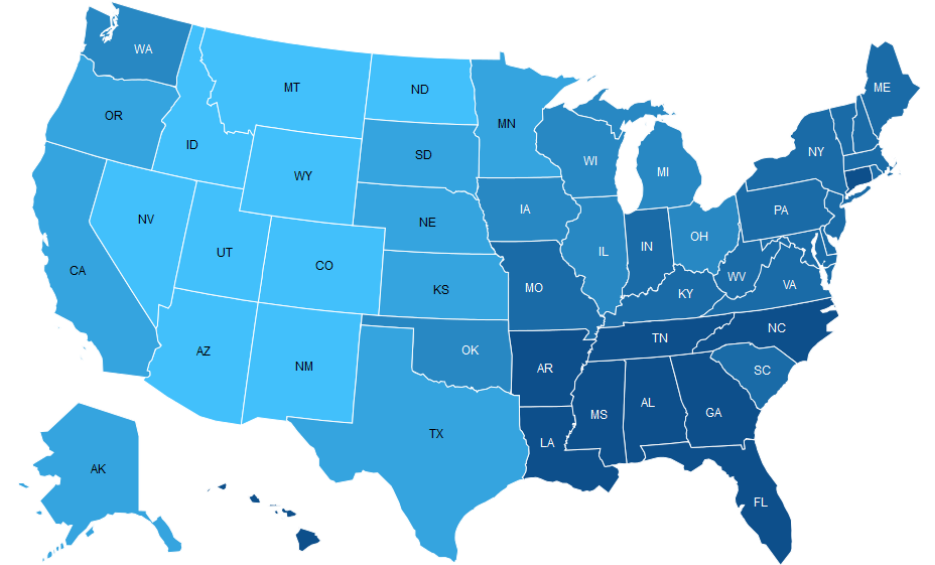
- Dial
- LEDs
- Status Meter
 - Horizontal
 - Vertical
 - Circular
- Rating gauge
- Supports animation and input



Thematic Map

Geographic Context for Business Data

- Basemaps (built-in and custom)
- Animation
- Drilling
- Selection
- Markers
- Drag and drop
- Area layer styling
- Isolated areas



Geographic Map

Spatial Functionality within ADF and MAF

- View business data on a map, along with geographical details
- Geocoding support
- Active data support
- Geomap in Mobile Application Framework:
 - Access to both Google Maps and MapViewer

Person List

 **Mary Atkinson**
Stock Clerk
Shipping

650.124.6234
650.124.6234
matkinso@cableco.net

Mary
Mary
Mary

About	Performance	Compensation	Timeline	Team
10 Skills	2 Rating	28k Salary	4 Meetings	0 Group
5 Tenure	3 Potential	95 Ratio	2 Events	0 Directs

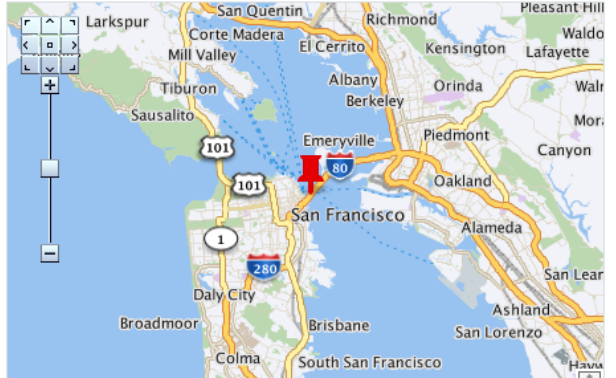
HIRE DATE
March 1, 2009

ADDRESS
2011 Main Street
South San Francisco
California 94105 US

MANAGER
Adam Fripp

SKILLS
Recruiting Project Planning Outsourcing
Recruiting Word Staffing Outsourcing Java Javascript
Bookkeeping

LOCATION

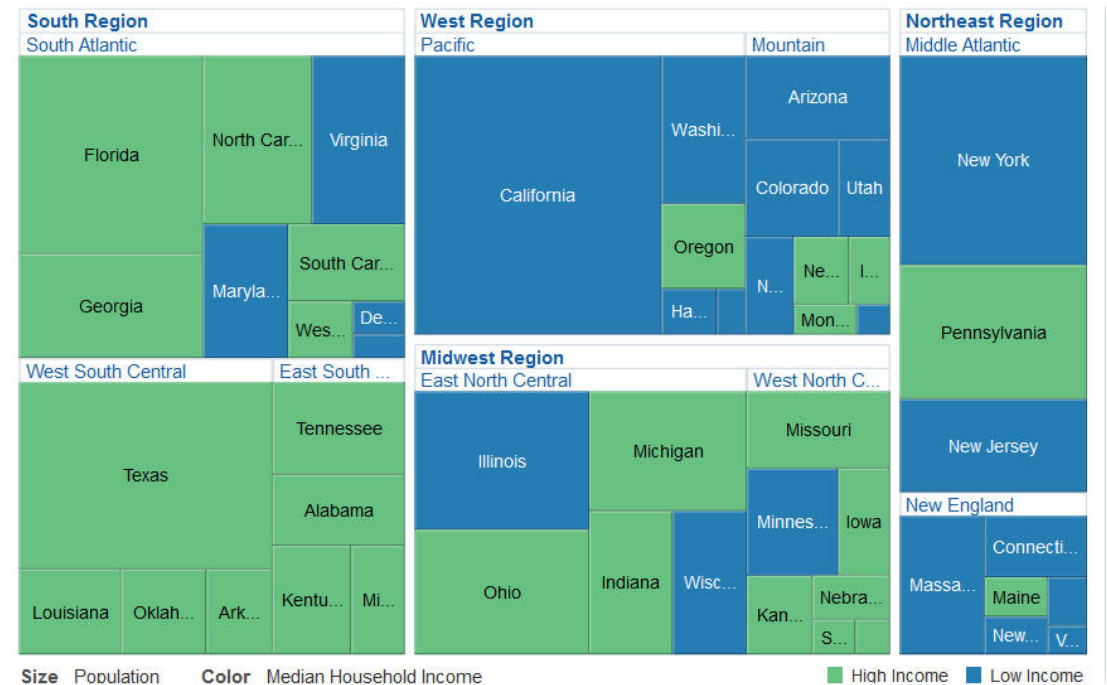


Copyright © 1997, 2014 Oracle and/or its affiliates. All rights reserved. Map Data

Treemap

Display Hierarchy using Color and Size of the Nodes to Convey Information

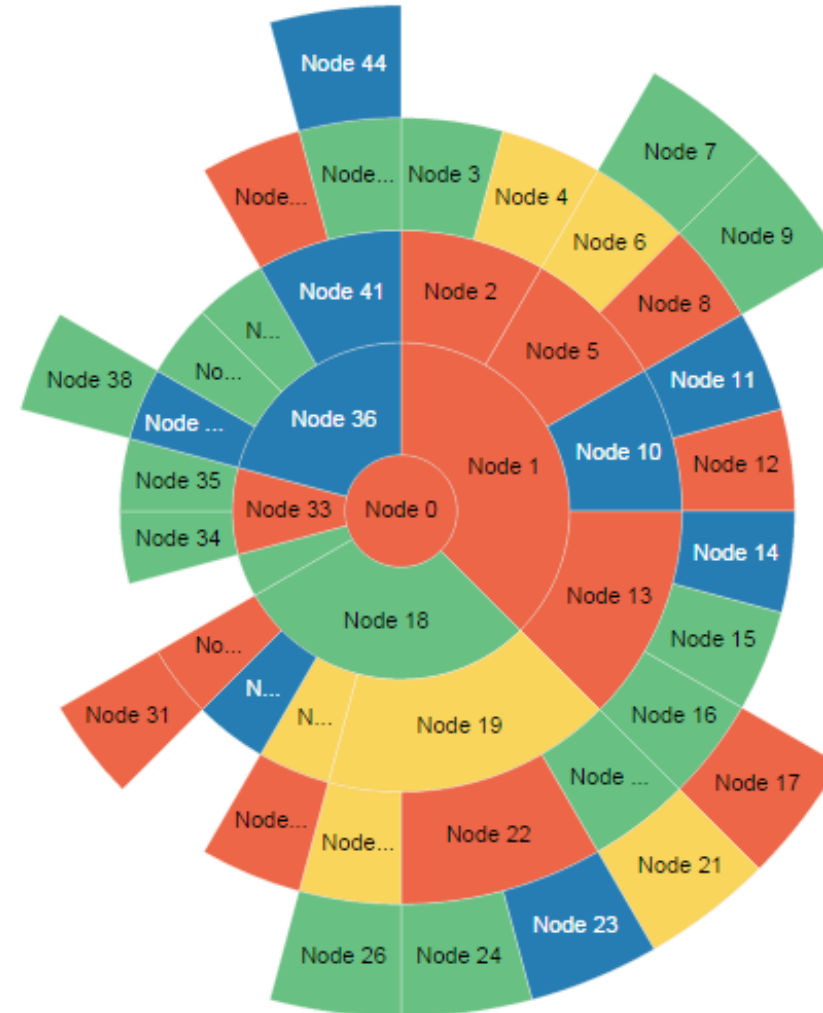
- Context Menus
- Drag and Drop
- Drilling/Isolate
- Popups
- Selection
- Other node (group small values)
- Small form factor
- Now available in Mobile Application Framework



Sunburst

Display the Metrics for all Levels in the Hierarchy

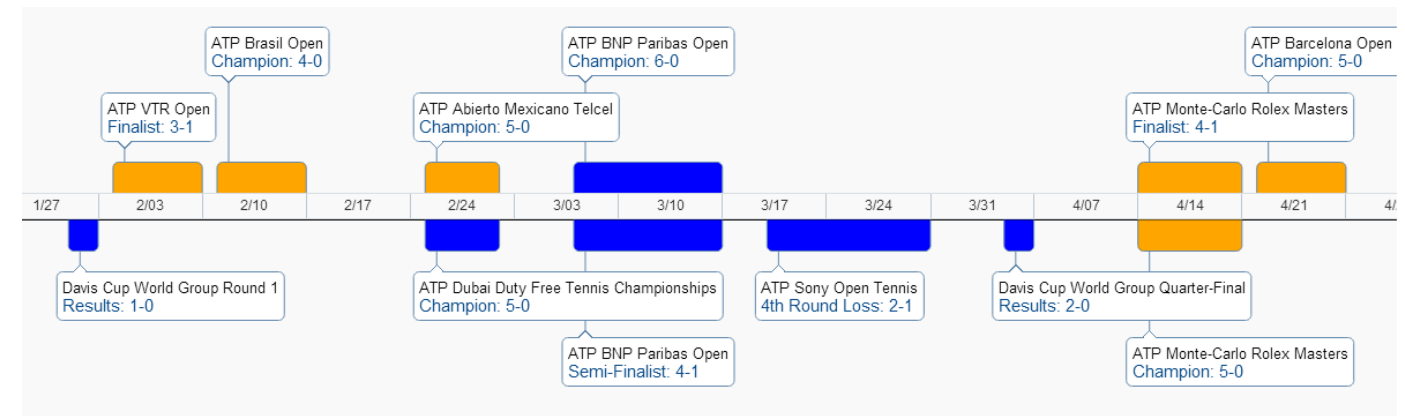
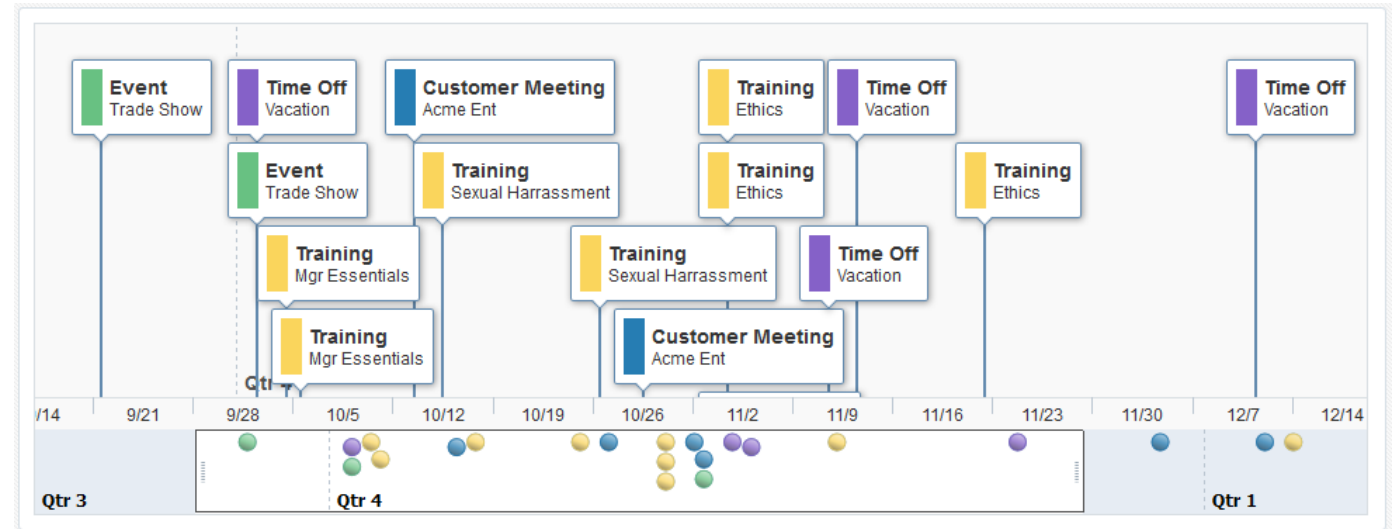
- Radial layout
- Animation
- Selection
- Enable drilling to allow the user to traverse the hierarchy
- Now available in Mobile Application Framework



Timeline

Visualize Events on an Interactive Timeline

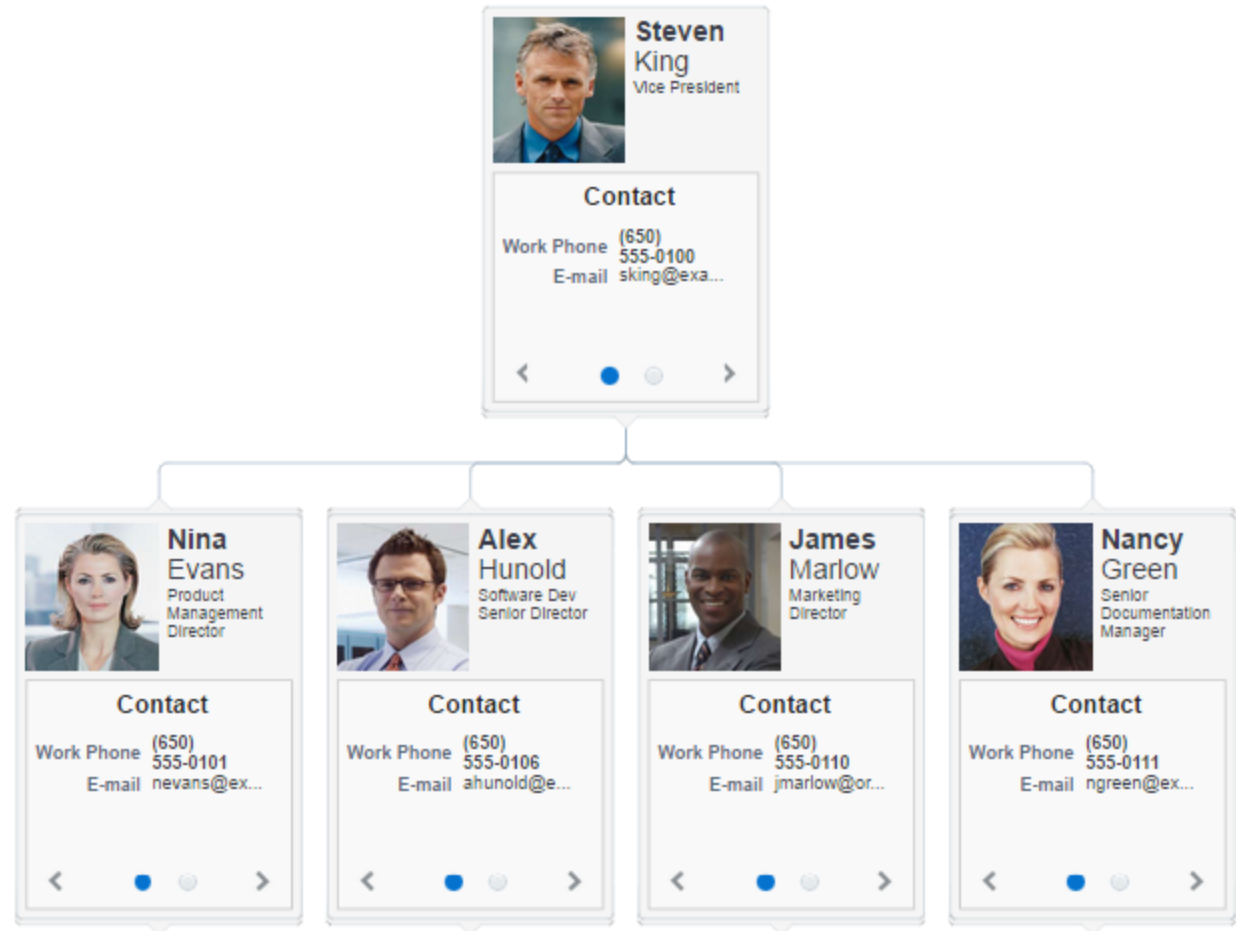
- Customized node content
- Drag and drop
- Stacking of nodes
- Animation
- Scrolling, zooming, panning
- Now available in Mobile Application Framework



Hierarchy Viewer

View Complex Hierarchical Data

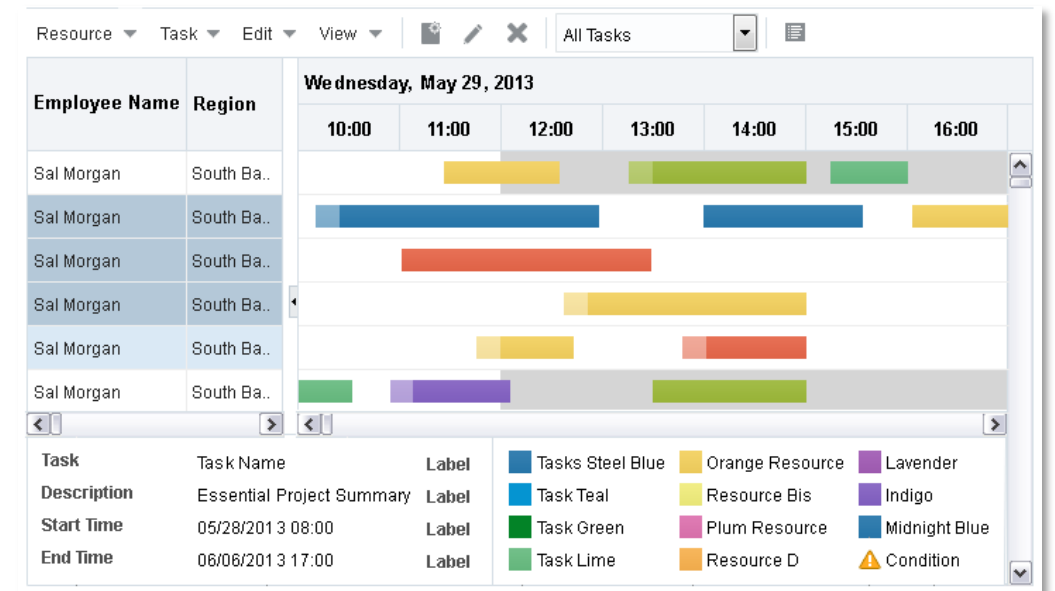
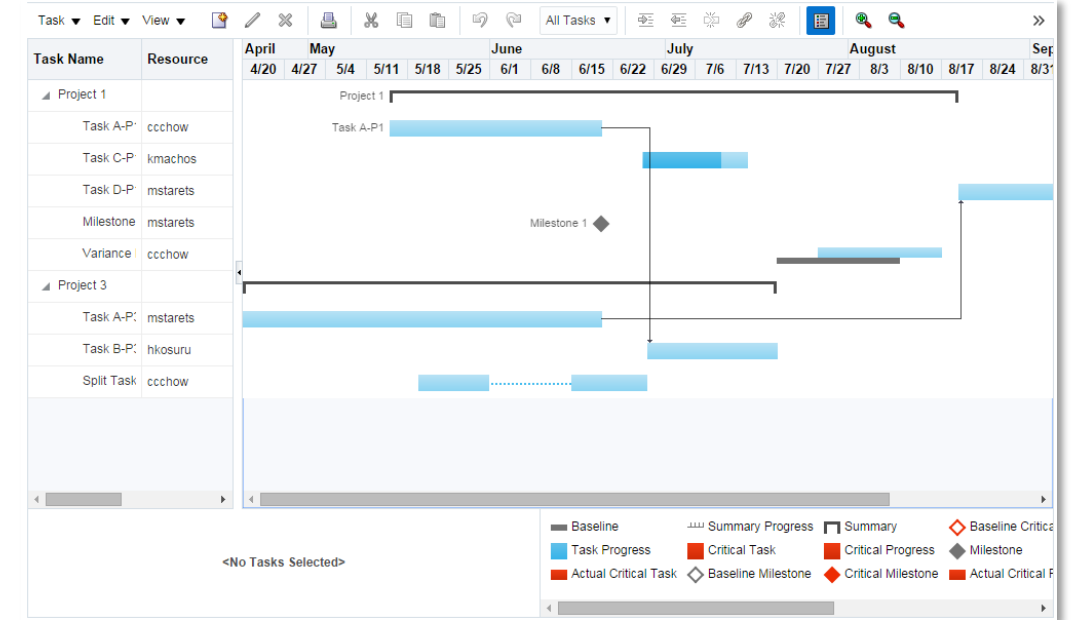
- Panel cards for changing node content
- Multiple layouts
- Search
- Expand/collapse nodes
- Drag and drop



Gantt Charts

Track Tasks and Resources over Time

- Project Gantt
- Scheduling Gantt
- Resource Utilization Gantt



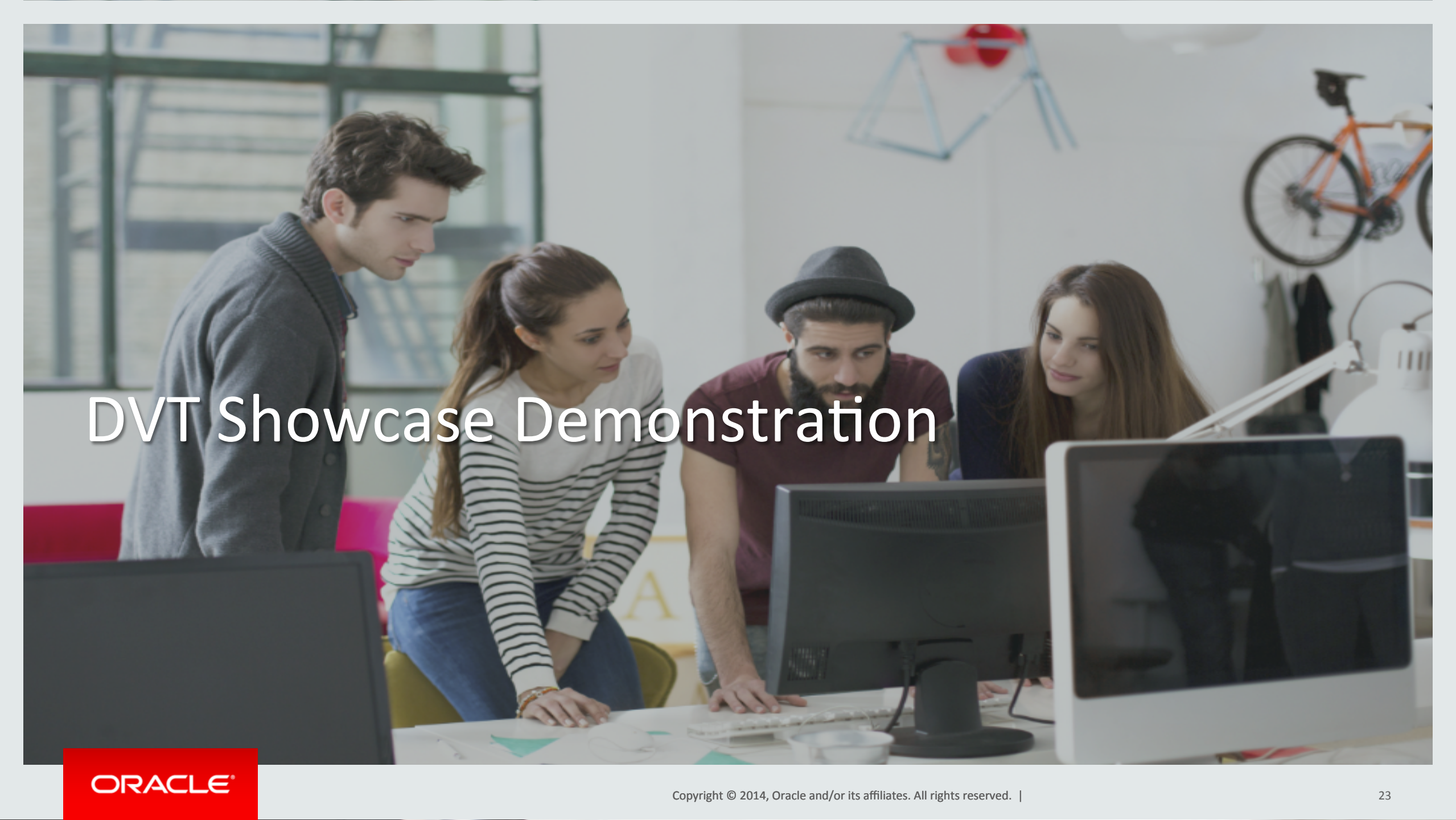
Pivot Table

Multiple Layers on Row and Column Edges

- Drag and drop pivoting
- Automatic totals
- Scrolling, paging, split panes
- Selection
- Header and cell formatting
- Drilling, filtering, sorting
- Cell editing

		Sales		Units	
		All Channels		All Channels	
		World	Boston	World	Boston
2007	Tents	20000.0	500.0	200.0	50.0
	Canoes	15000.0	1500.0	75.0	8.0
2006	Tents	10000.0	250.0	100.0	25.0
	Canoes	7500.0	750.0	40.0	4.0
2005	Tents	5000.0	125.0	50.0	15.0
	Canoes	3750.0	375.0	20.0	2.0

		Acres						By			
		Atlanta			Boston						
		Avocados	Bobbins	Canoes	Avocados	Bobbins	Canoes ▲▼	Atlanta	Bobbins	Canoes	
Aston Martin	Chet	1,819	1,852	1,864	2,573	2,606	2,618	1,664	1,697	1,709	
	Ezra	2,083	2,116	2,128	2,837	2,870	2,882	1,928	1,961	1,973	
	Betty	2,101	2,134	2,146	2,855	2,888	2,900	1,946	1,979	1,991	
	Archie	2,449	2,482	2,494	3,203	3,236	3,248	2,294	2,327	2,339	
	Daphne	2,483	2,516	2,528	3,237	3,270	3,282	2,328	2,361	2,373	
Bentley	Chet	1,892	1,925	1,937	2,646	2,679	2,691	1,737	1,770	1,782	
	Ezra	2,156	2,189	2,201	2,910	2,943	2,955	2,001	2,034	2,046	
	Betty	2,174	2,207	2,219	2,928	2,961	2,973	2,019	2,052	2,064	
	Archie	2,522	2,555	2,567	3,276	3,309	3,321	2,367	2,400	2,412	
	Daphne	2,556	2,589	2,601	3,310	3,343	3,355	2,401	2,434	2,446	
Corvette	Chet	2,037	2,070	2,082	2,791	2,824	2,836	1,882	1,915	1,927	
	Ezra	2,301	2,334	2,346	3,055	3,088	3,100	2,146	2,179	2,191	
	Betty	2,319	2,352	2,364	3,073	3,106	3,118	2,164	2,197	2,209	
	Archie	2,667	2,700	2,712	3,421	3,454	3,466	2,512	2,545	2,557	
	Daphne	2,701	2,734	2,746	3,455	3,488	3,500	2,546	2,579	2,591	
DeLorean	Chet	2,017	2,050	2,062	2,771	2,804	2,816	1,862	1,895	1,907	
	Ezra	2,281	2,314	2,326	3,035	3,068	3,080	2,126	2,159	2,171	
	Betty	2,299	2,332	2,344	3,053	3,086	3,098	2,144	2,177	2,189	
	Archie	2,647	2,680	2,692	3,401	3,434	3,446	2,492	2,525	2,537	
	Daphne	2,681	2,714	2,726	3,435	3,468	3,480	2,526	2,559	2,571	
Edsel	Chet	2,536	2,569	2,581	3,290	3,323	3,335	2,381	2,414	2,426	

A group of four people (three men and one woman) are gathered around a desk in a modern office, looking at two computer monitors. The man on the left is standing and leaning over the desk. The woman next to him is also leaning over. The man in the center is wearing a hat and has a beard. The woman on the right is sitting and looking at the monitor. The office has large windows in the background and a bicycle hanging on the wall.

DVT Showcase Demonstration

Tag Guide

Feature Demos

Alphabetical

Converters and validators

Data Visualization Tools

Data Visualization Gallery

Chart

Diagram

Gantt

Gauge

Geographic Map

Hierarchy Viewer

Legacy

NBox

Pivot Filter Bar

Pivot Table

Sunburst

Thematic Map

Timeline

Treemap

Drag and Drop

Dynamic Faces

Emailable Page

File Explorer

Help and Hints

LOV Basics

Menu Model Usages

Optimized Lifecycle

Panel Springboard App

PostBack

Query Basics

Sample Page Templates

Table Components Basics

Visual Designs

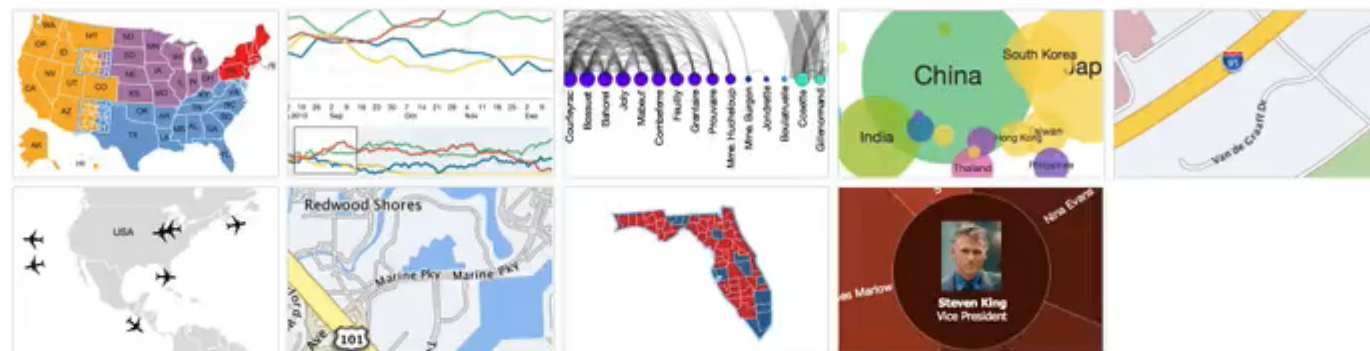
Styles

Commonly Confused

Overview

Components

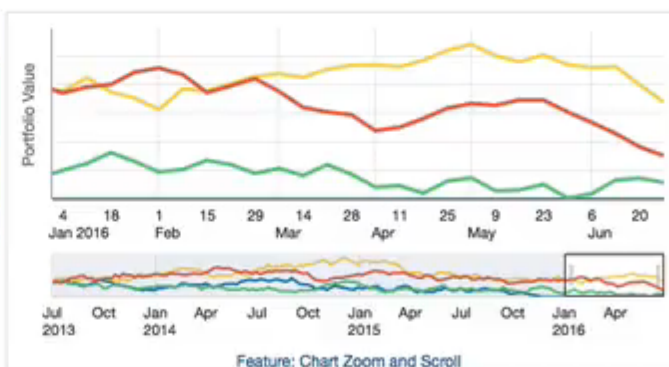
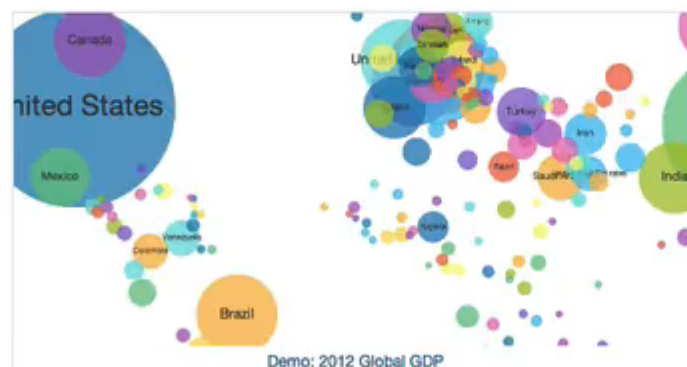
Featured Demos



The **ADF Data Visualizations** deliver responsive interactivity and animation across a broad set of industry leading HTML5 components, including:

- 30+ Chart types, including spark charts, dual-y, and stacked varieties
- Gauges: Dial, LED, Rating, and Status Meter
- Gantt Charts: Project, Resource Utilization and Scheduling
- Maps: Geographic and Thematic
- And Many Others: Diagram, Hierarchy Viewer, Pivot Table, Sunburst, Timeline and Treemap

What's New



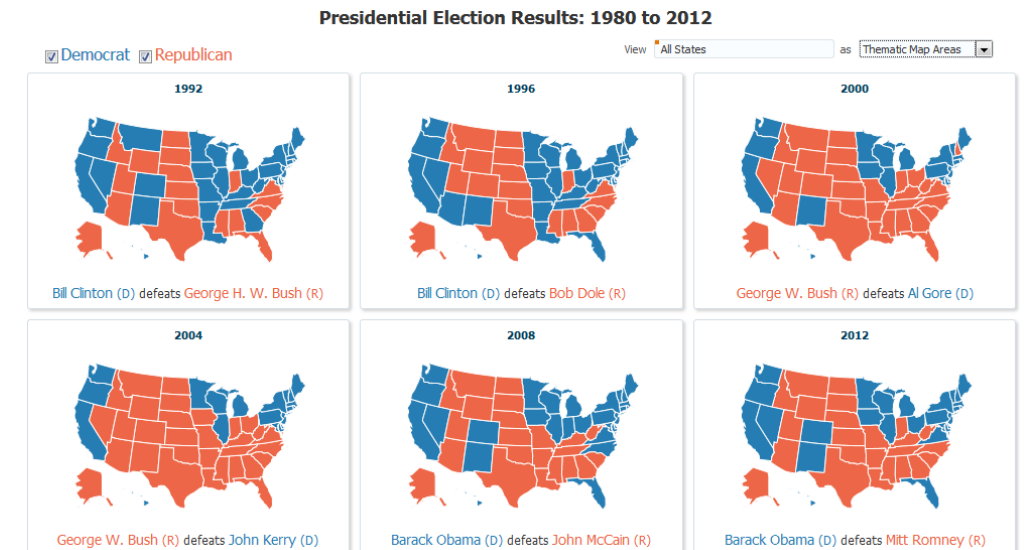
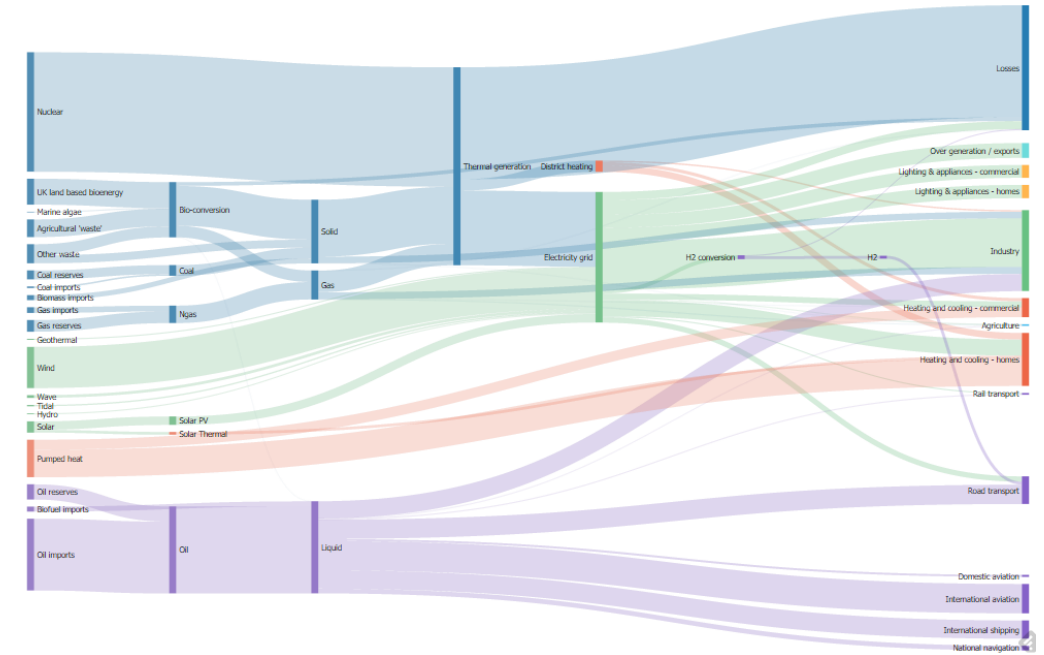
[Print Content](#) [Show Attachment](#)

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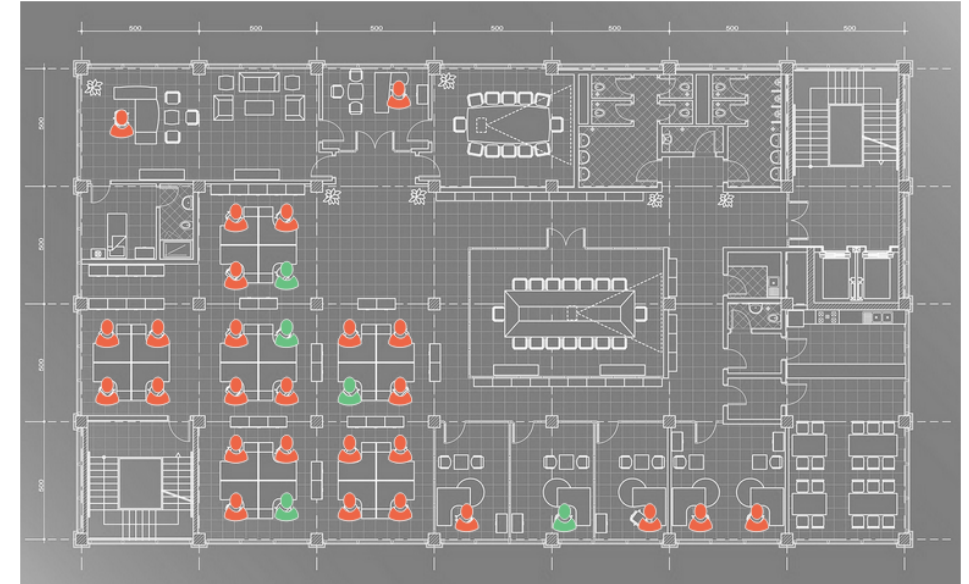
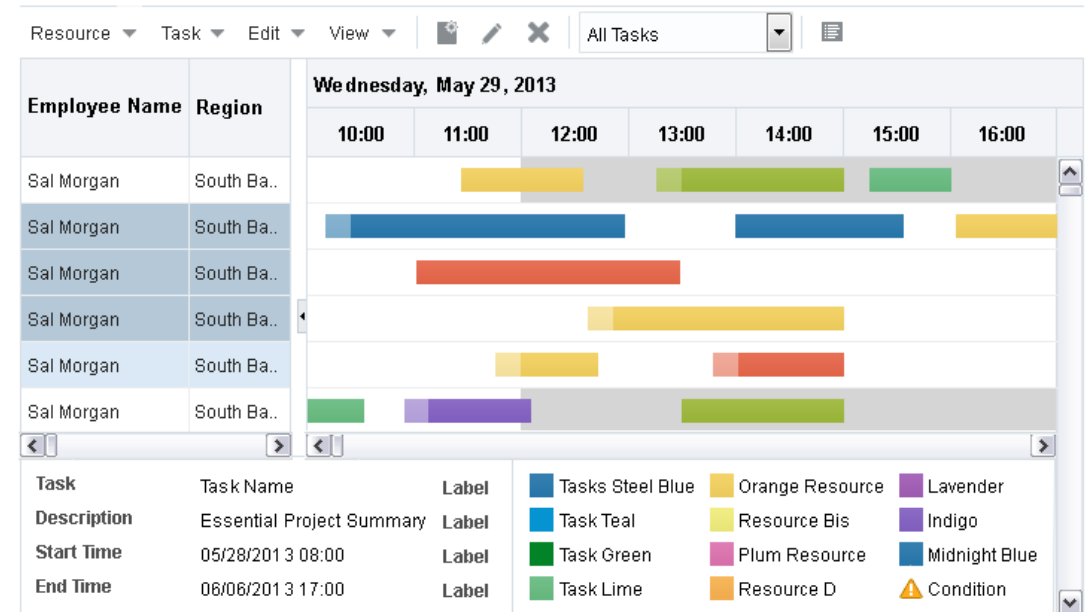
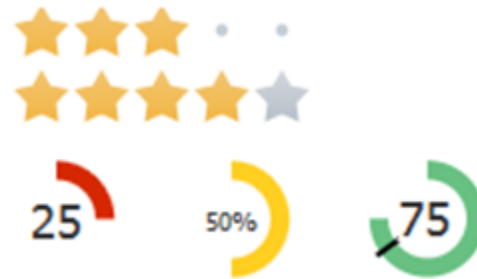
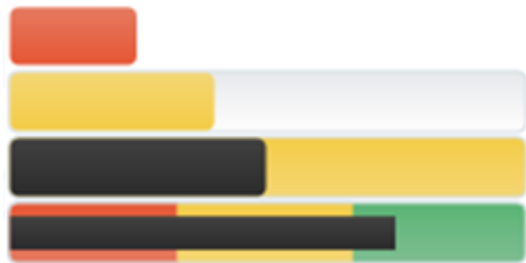
Data Visualization Opportunities

- **Presentations** – reporting via dashboards, charts, static or interactive, data at rest or active
- **Exploratory data analysis** - profiling and discovering patterns
- **Story** - use multiple visualizations together or present a replay of data over time to tell a story



Data Visualization Opportunities

- **Planning** - driving a model via Gantt or Pivot Table
- **Descriptive** - representing a process or tangible item such as a seating chart diagram
- **Data entry** - Entering small amounts of data like ratings



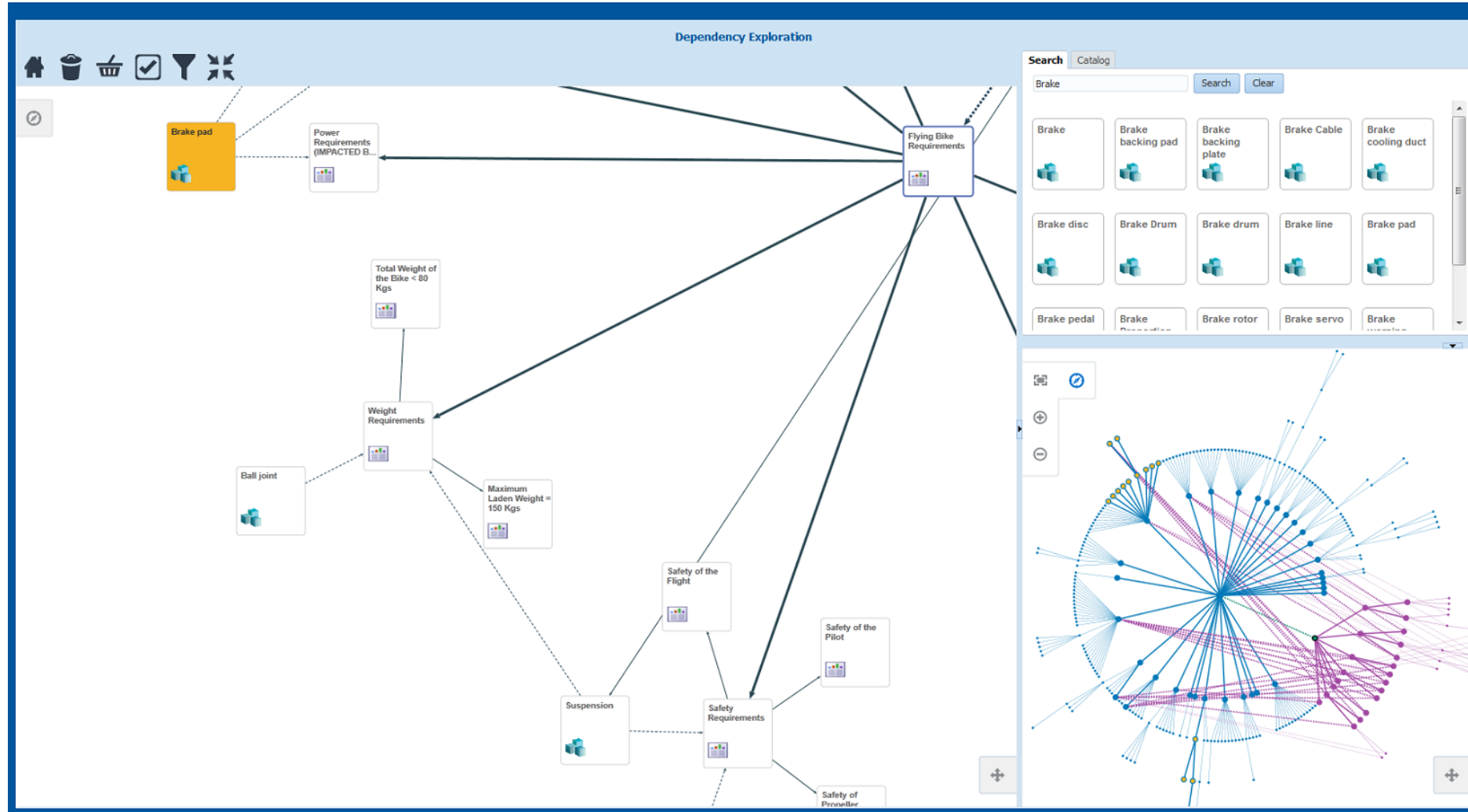
Customer Examples: Oracle Fusion Financials

From Tables to Sunburst



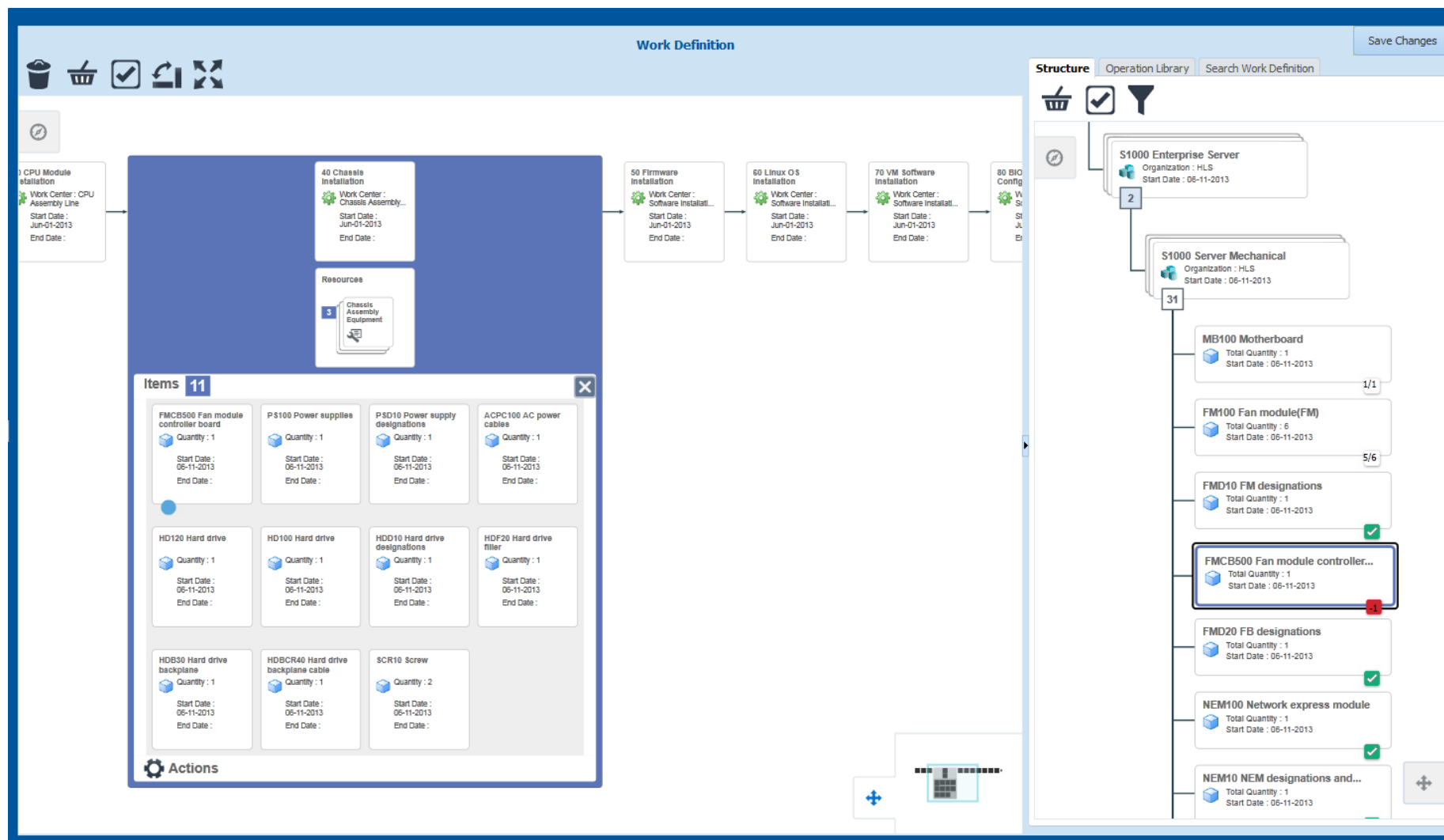
Customer Examples: Visual Information Navigator

Visualizing Complex Relationships in Fusion Apps



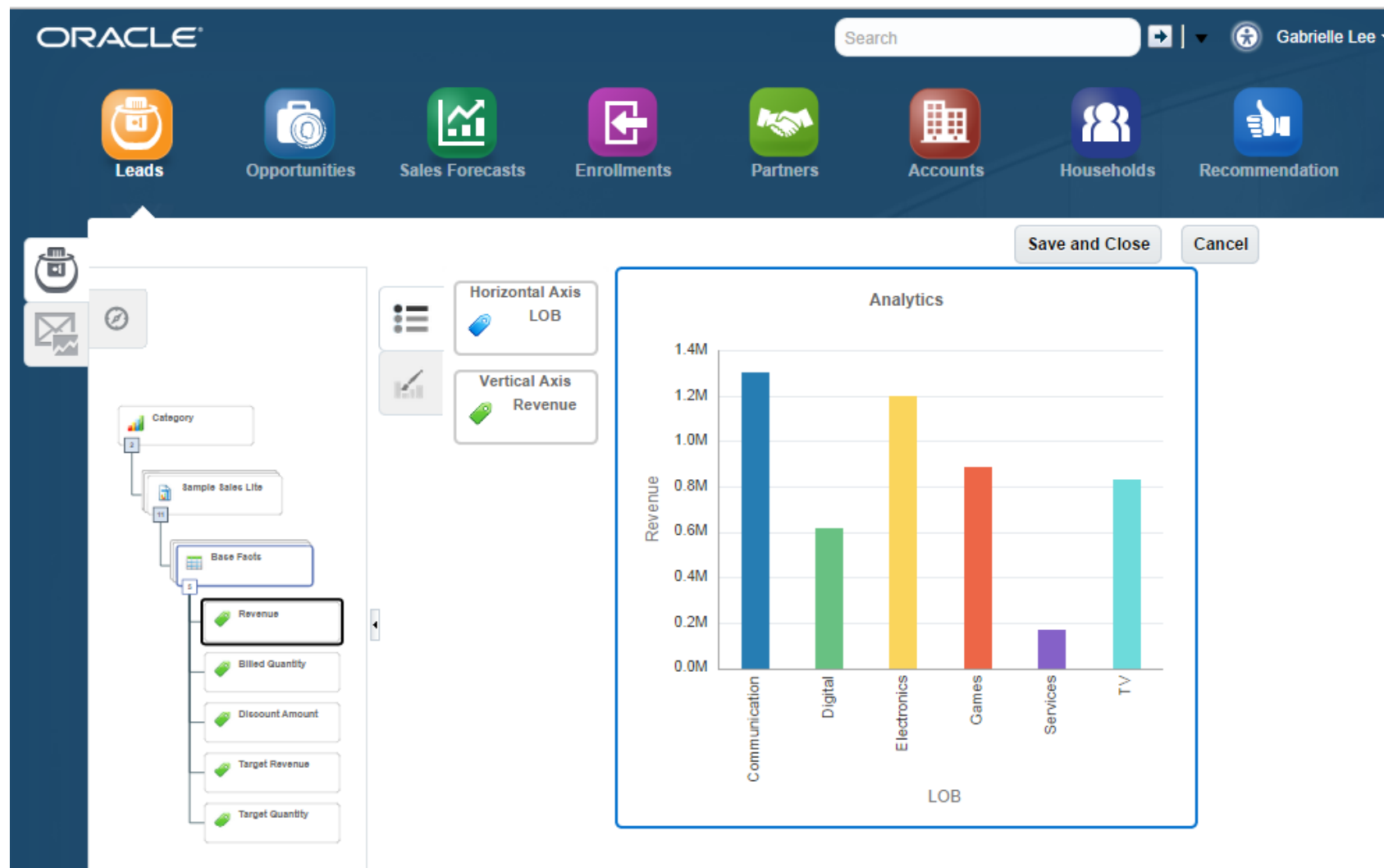
Customer Examples: Visual Information Navigator

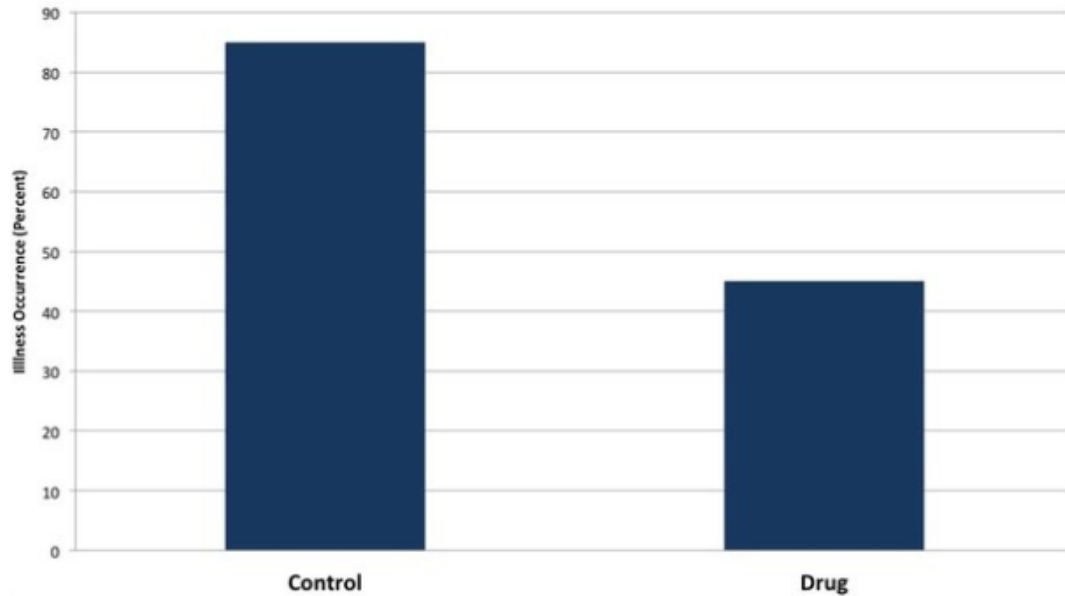
Fusion Manufacturing: Work Definition Management



Customer Examples: Visual Information Builder

Fusion Applications: Report Building UI



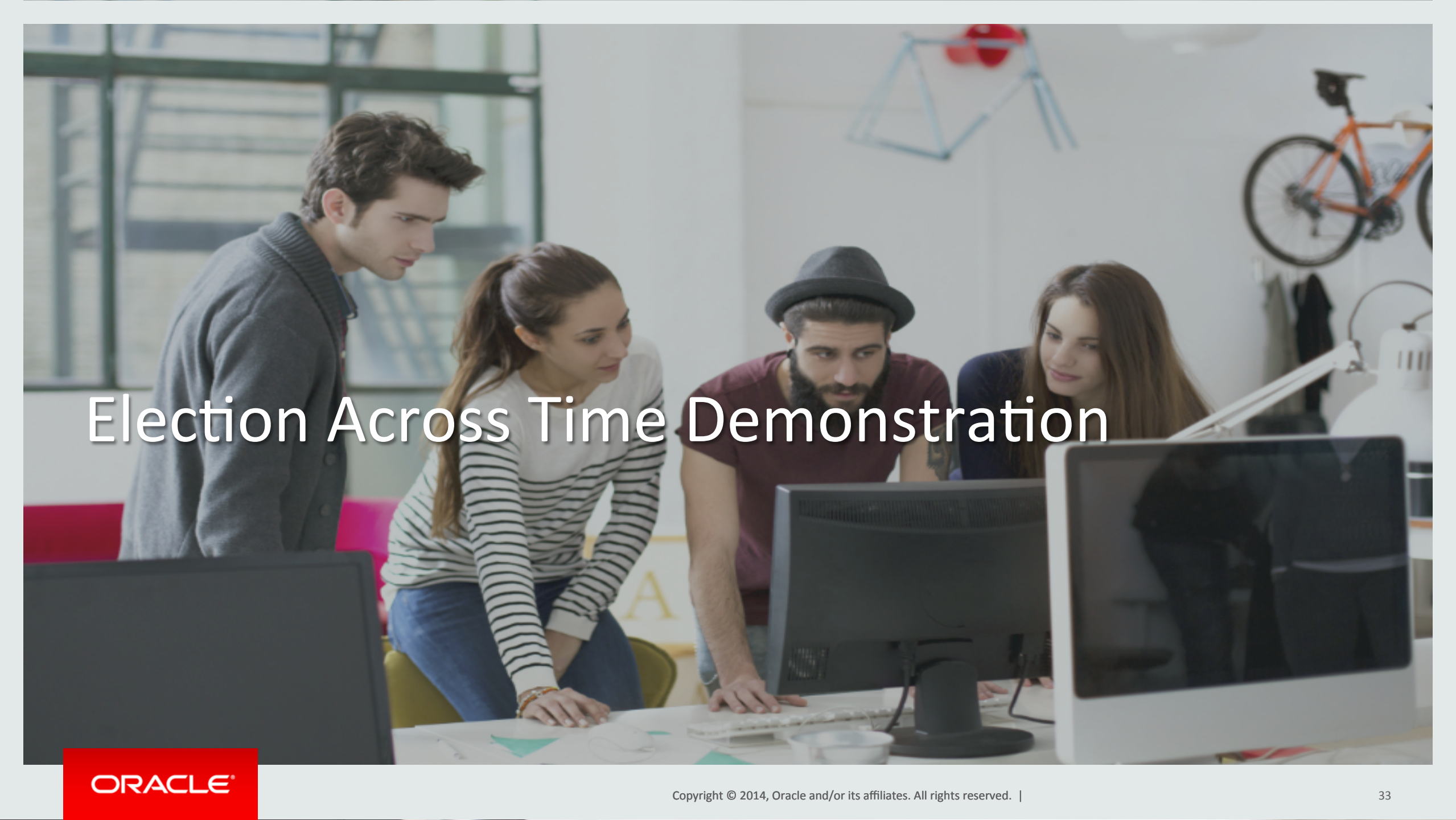


When people see charts like this, they think the drug is more effective than if they just read about the data, a study finds.

Source: Cornell University

Graphs and formulas say "Science!" to consumers, so much so that simply seeing claims about a new drug that were accompanied by data visualizations made people more likely to believe the claims.

— Journal of "Public Understanding of Science" 2014 <http://n.pr/125c7kl>

A group of four people (three men and one woman) are gathered around a desk in a modern office, looking at two computer monitors. The man on the left is standing and leaning over the desk. The woman next to him is also leaning over. The man in the center is wearing a hat and a beard, and the woman on the right is looking at the monitor. The background shows a large window and a bicycle hanging on the wall.

Election Across Time Demonstration

Tag Guide

Feature Demos

Alphabetical

- Active Data Service
 - Active Data Samples
 - Automatic PPR
- Changed Indicator
- Client Behaviors
- Converters and Validators
- Data Visualization Tools
- Drag and Drop
- Dynamic Faces
- Emailable Page
- File Explorer
- Help and Hints
- LOV Basics
- Menu Model Usages
- Optimized Lifecycle
- Panel Springboard App
- PostBack
- Query Basics
- Sample Page Templates
- Table Components Basics

Visual Designs

Styles

Commonly Confused

Presidential Election Results: 1980 to 2012

☒ Democrat ☒ Republican

View All States

as Thematic Map Areas



Print Content

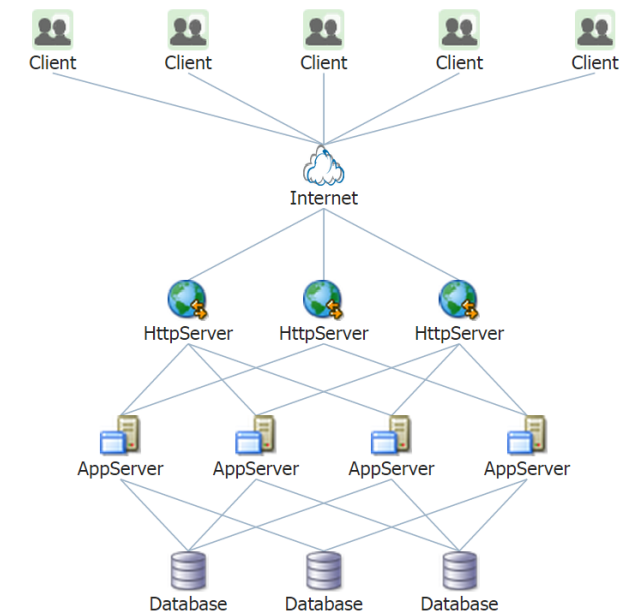
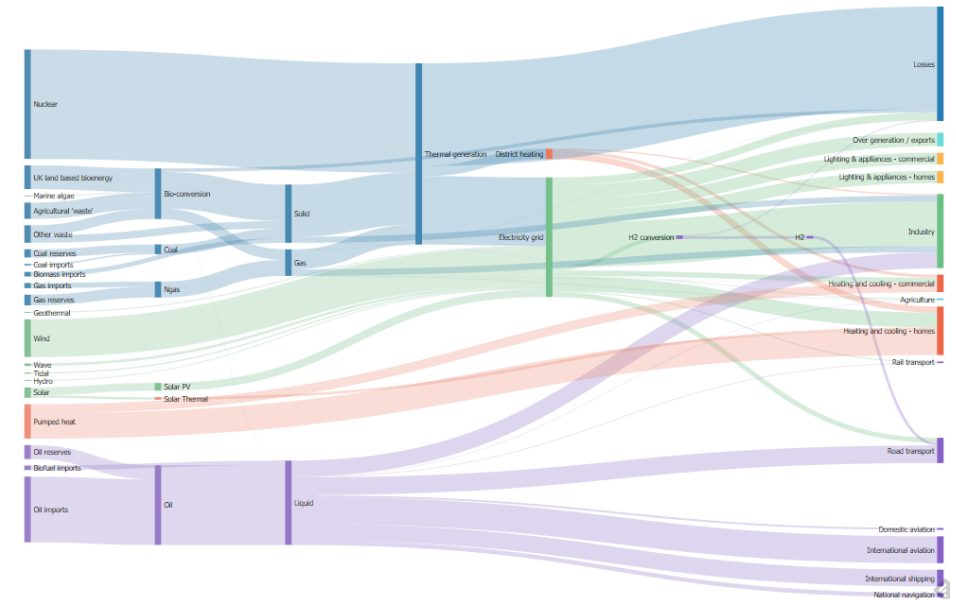
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New Visualization: Diagram

- Visualize different sets of data by displaying nodes and their relationships
- Pluggable framework for the application developers to define custom layouts in javascript
- Tutorial articles available in [DVT Blog](#)
- [Diagram Layout Tutorial](#) video and hosted demos on OTN



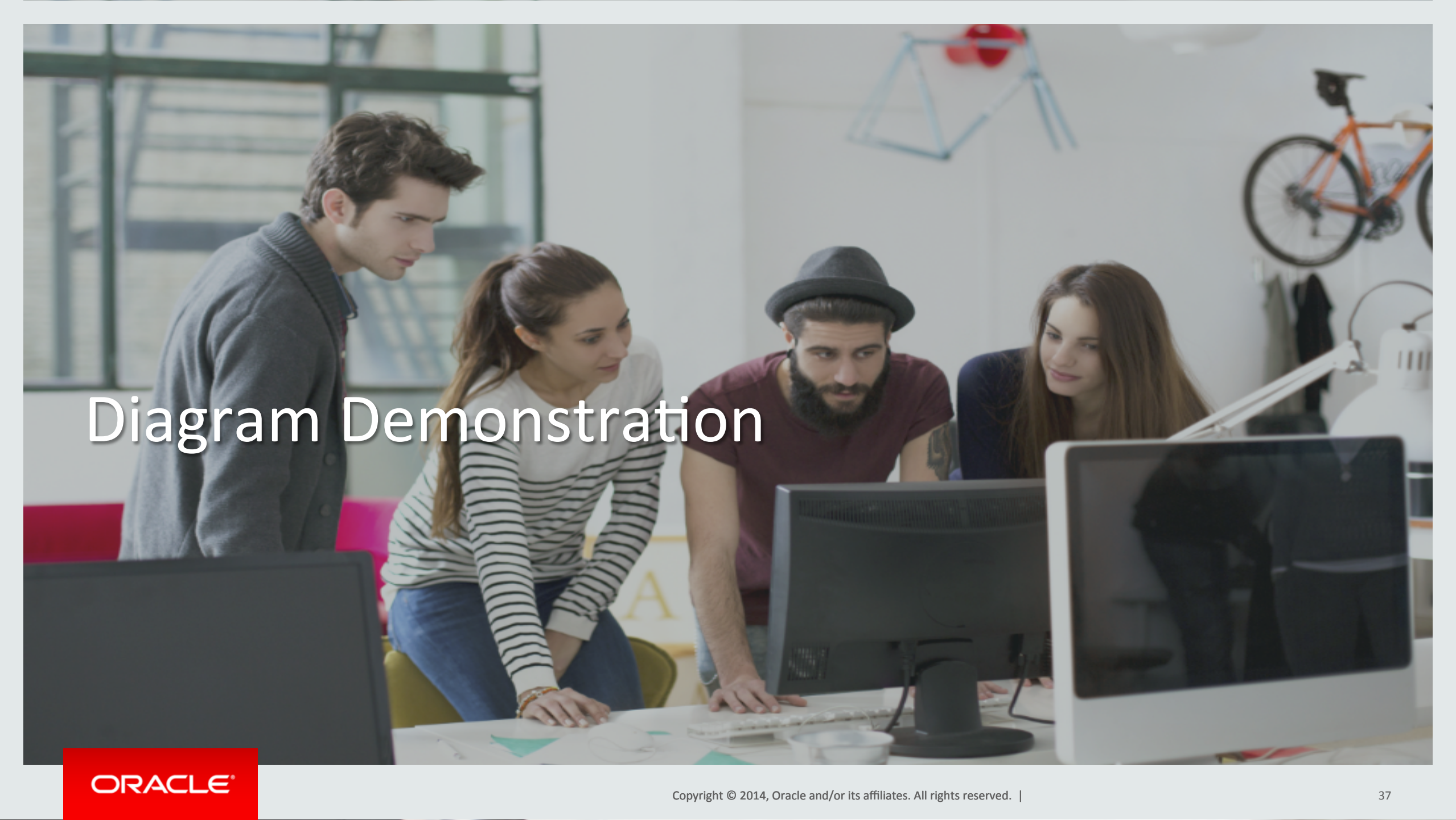
A group of four people (three men and one woman) are gathered around a desk in a modern office, looking at two computer monitors. The man on the left is standing and pointing at the screen. The woman next to him is leaning over the desk. The man with the beard and hat is sitting and looking at the screen. The woman on the right is also sitting and looking at the screen. The office has large windows, a bicycle hanging on the wall, and a desk lamp.

Diagram Demonstration

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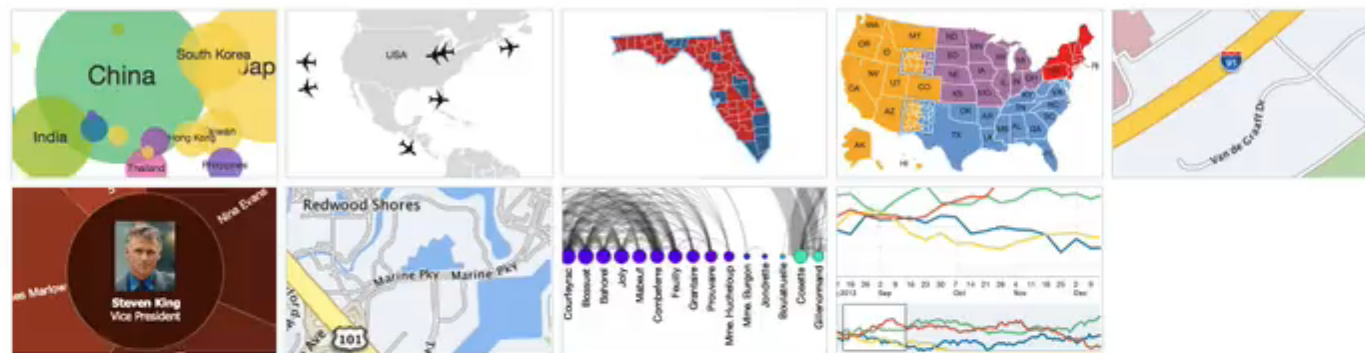
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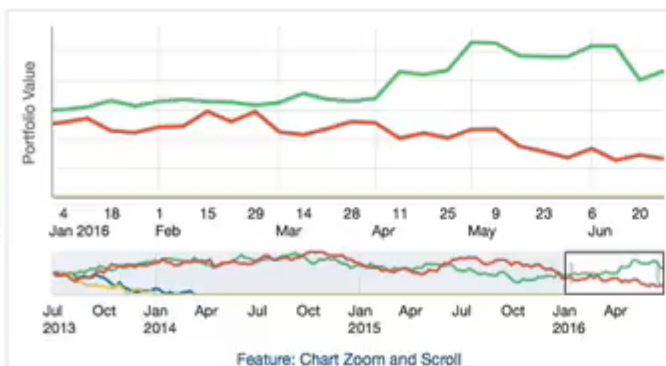
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- 30+ Chart types, including spark charts, dual-y, and stacked varieties
- Gauges: Dial, LED, Rating, and Status Meter
- Gantt Charts: Project, Resource Utilization and Scheduling
- Maps: Geographic and Thematic
- And Many Others: Diagram, Hierarchy Viewer, Pivot Table, Sunburst, Timeline and Treemap

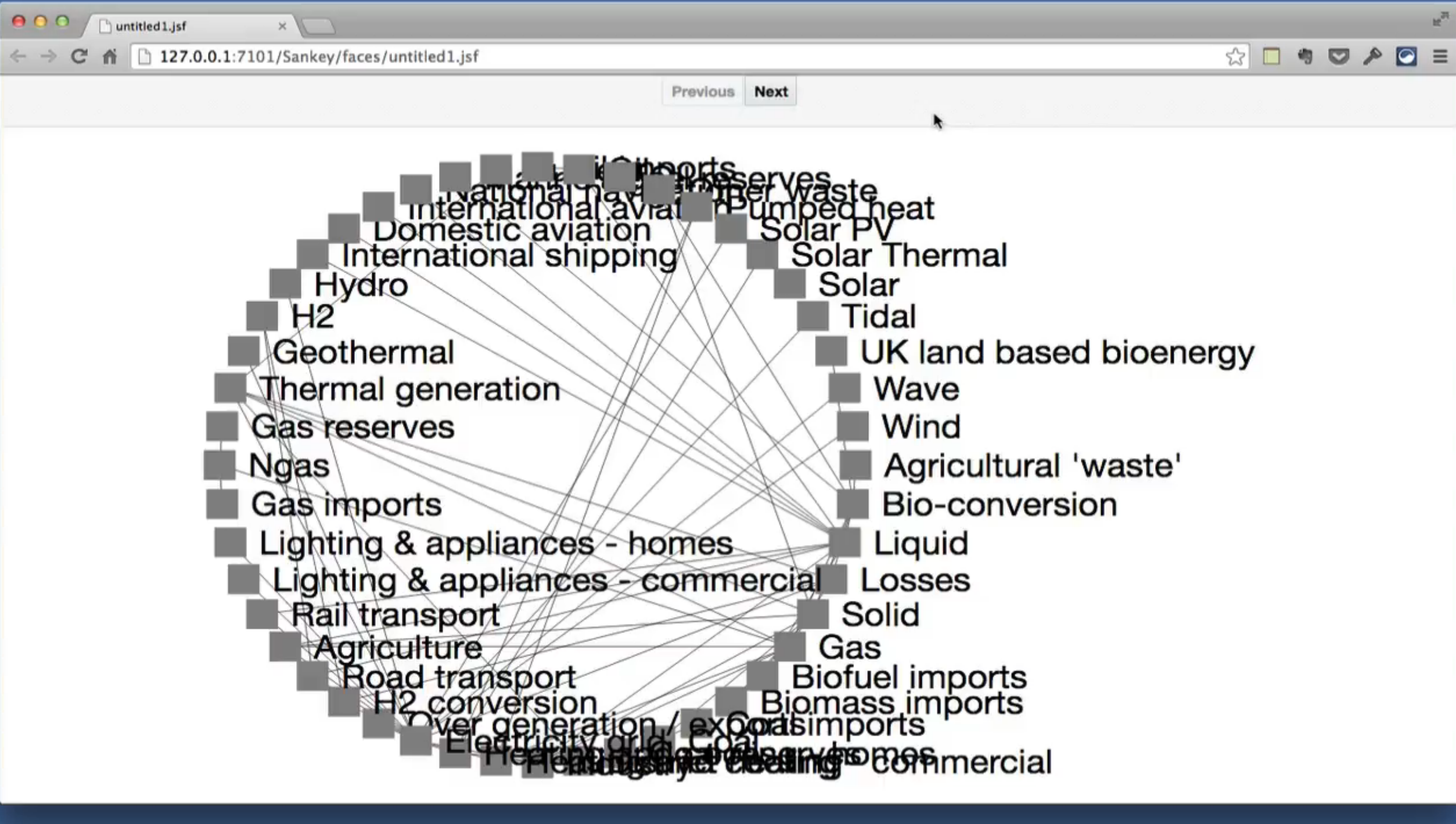
What's New



% Popular Vote	Popular Vote	Electoral Vote
50.0 %	4,235,270	29
49.1 %	4,162,081	0

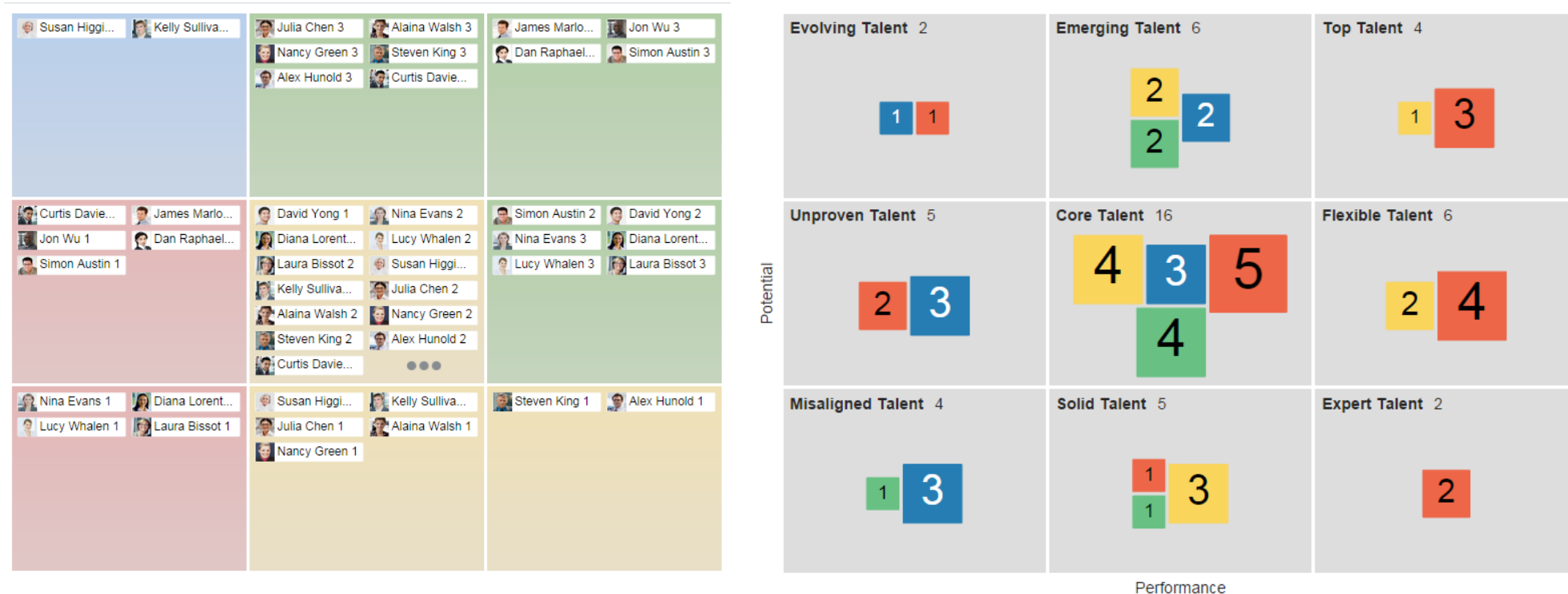


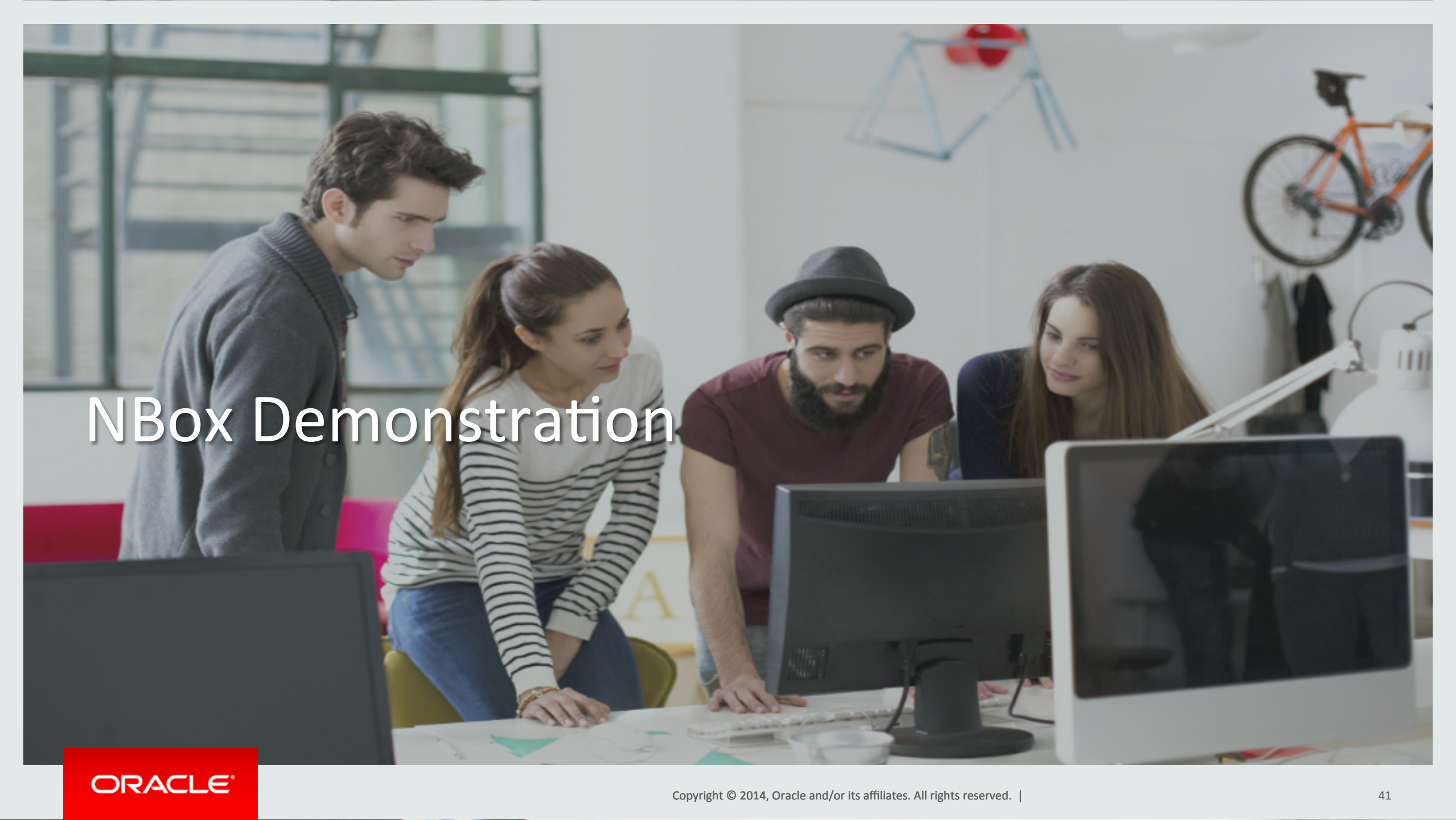
Print Content Show Attachment



New Visualization: NBox

- Visualizes and compares data across two dimensions
- Supports various options for color coding, marker shapes, and grouping



A group of four people (three men and one woman) are gathered around a desk in a modern office, looking at two computer monitors. The man on the left is standing and leaning over the desk. The woman next to him is also leaning over. The man with the beard and hat is sitting at the desk, pointing at the monitor. The woman on the right is also looking at the monitor. The office has large windows, a bicycle hanging on the wall, and a desk lamp.

NBox Demonstration

Tag Guide

Feature Demos

Alphabetical

- Active Data Service
 - Active Data Samples
 - Automatic PPR
- Changed Indicator
- Client Behaviors
- Converters and Validators
- Data Visualization Tools
- Drag and Drop
- Dynamic Faces
- Emailable Page
- File Explorer
- Help and Hints
- LOV Basics
- Menu Model Usages
- Optimized Lifecycle
- Panel Springboard App
- PostBack
- Query Basics
- Sample Page Templates
- Table Components Basics

Visual Designs

Styles

Commonly Confused

- Use the check boxes on the right to toggle the display of the Department and Role attribute groups.
- Once an attribute group is displayed it can also be used to group nodes into summary nodes.

Evolving Talent 2

Susan Higgins 3
Senior Software E...

Kelly Sullivan 3
Product Manage...

Emerging Talent 6

Julia Chen 3
Principal Product ...

Alaina Walsh 3
Senior Product M...

Nancy Green 3
Senior Document...

Steven King 3
Principal Technica...

Alex Hunold 3
Marketing Director

Curtis Davies 3
Principal Marketin...

Top Talent 4

James Marlow 3
Senior Marketing ...

Jon Wu 3
Vice President

Dan Raphaely 3
Software Develop...

Simon Austin 3
Architect

Unproven Talent 5

Curtis Davies 1
Principal Software...

James Marlow 1
Senior Software E...

Jon Wu 1
Product Manage...

Dan Raphaely 1
Principal Product ...

Simon Austin 1
Senior Product M...

Core Talent 16

David Yong 1
Senior Document...

Nina Evans 2
Principal Technica...

Diana Lorentz 2
Marketing Director

Lucy Whalen 2
Principal Marketin...

Laura Bissot 2
Senior Marketing ...

Susan Higgins 2
Vice President

Kelly Sullivan 2
Software Develop...

Julia Chen 2
Architect

Alaina Walsh 2
Principal Software...

Nancy Green 2
Senior Software E...

Steven King 2
Product Manage...

Flexible Talent 6

Simon Austin 2
Principal Marketin...

David Yong 2
Senior Marketing ...

Nina Evans 3
Vice President

Diana Lorentz 3
Software Develop...

Lucy Whalen 3
Architect

Laura Bissot 3
Principal Software...

Misaligned Talent 4

Nina Evans 1
Product Manage...

Diana Lorentz 1
Principal Product ...

Lucy Whalen 1
Senior Product M...

Laura Bissot 1
Senior Document...

Solid Talent 5

Susan Higgins 1
Principal Technica...

Kelly Sullivan 1
Marketing Director

Julia Chen 1
Principal Marketin...

Alaina Walsh 1
Senior Marketing ...

Nancy Green 1
Vice President

Expert Talent 2

Steven King 1
Software Develop...

Alex Hunold 1
Architect

Department

Display ☐Group ☐

Role

Display ☒Group ☐

Group Behavior withinCell

Potential

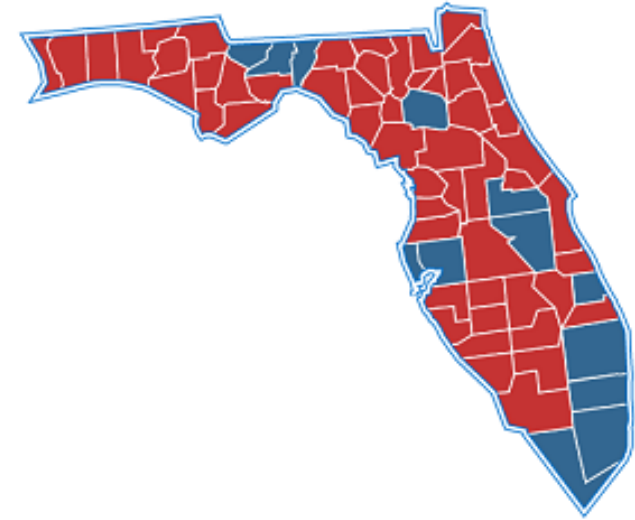
Performance

Print Content

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Thematic Map New Features

- Area layer styling
- Image markers and marker rotation support
- Marker zoom behavior
- Smart data zooming
- Ability to display isolated areas
- Support for custom base maps



A group of four people (three men and one woman) are gathered around a desk in a modern office, looking at computer monitors. The man on the left is standing and leaning over the desk. The woman next to him is also leaning over. The man in the center is wearing a hat and has a beard. The woman on the right is sitting and looking at the monitor. The office has large windows, a bicycle hanging on the wall, and a desk lamp.

Thematic Map Demonstration

Tag Guide

Feature Demos

Alphabetical

- Custom Regions
- Drag And Drop
- Drilling
- Election Results
- Flight Tracker
- Global GDP
- Keyboard Model
- Legend
- Map Provider
- Office Locator
- Olympic Hosts
- Popups
- Styling
- Territories**
- Context Menus

Timeline

Treemap

- Drag and Drop
- Dynamic Faces
- Emailable Page
- File Explorer
- Help and Hints
- LOV Basics
- Menu Model Usages
- Optimized Lifecycle
- Panel Springboard App
- PostBack
- Query Basics
- Sample Page Templates
- Table Components Basics

Visual Designs

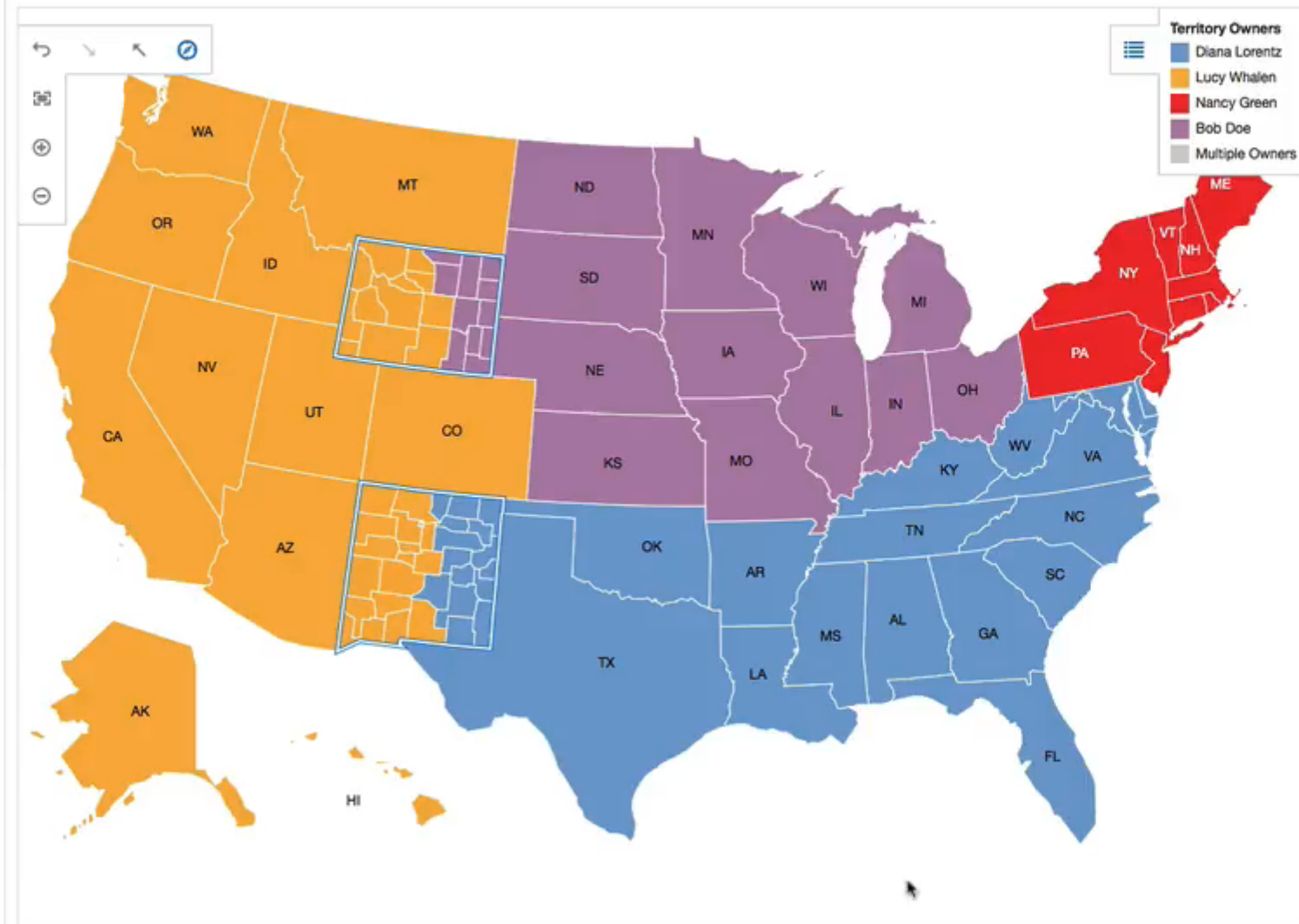
Styles

Commonly Confused

Thematic Map

Territories by State

Territories by County



Print Content

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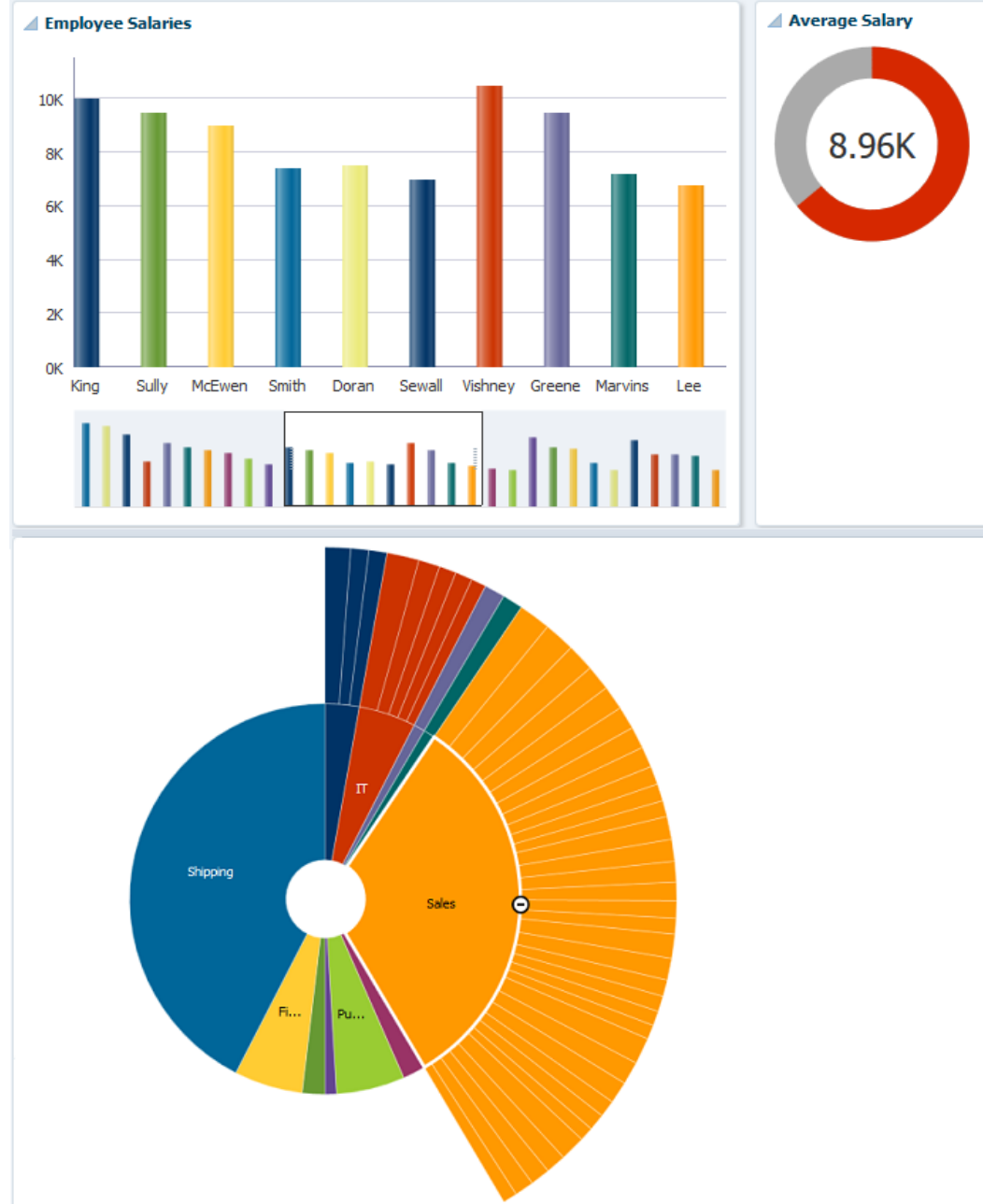
Program Agenda

- 1 Oracle Alta UI
- 2 Data Visualizations Overview
- 3 Data Visualization Opportunities
- 4 New Components & Features
- 5 Hands on Lab

What will you Learn Today?

In this hands-on lab you will learn how to:

- Create a simple ADF application using HR schema for the model
- Create a Chart, turn on zooming and scrolling, format the colors
- Create a circular status meter gauge with thresholds
- Create and format a Sunburst, enable drilling
- Create a Hierarchy Viewer
- Create a Thematic Map



Want to Learn More?

- Visit the Oracle Technology Network at oracle.com/jdev
- Watch the recorded videos (ADF):
 - [DVT New Features Overview](#)
 - [Diagram Layout Tutorial](#)
 - [Chart Formatting Tips](#)
- Follow the new DVT Blog: blogs.oracle.com/data-visualizations/
 - Diagram articles by Duncan Mills
 - Chart formatting tips and videos, more coming soon
- Watch the [Oracle MAF YouTube Channel](#)
- Play with the [Hosted demos](#), available for download
- Download WorkBetter ADF and Mobile samples



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