

Pele



Immersive Content Interaction for Mobile Consumption

John Armitage, Kayhan Atesci, Christophe Viau

This work is a design study* in-progress for how quantitative, and eventually qualitative, content can be deployed and consumed effectively on mobile devices. It also serves as a model for analytic consumption in larger-screen environments.

Exploration Views and Mobl are potential candidates for adopting Pele concepts. Its functional reference is BOBJ Explorer's functionality and beyond, but is intended to be more accessible to casual information consumers.

The vision is to merge product container/navigation with content/visualization



* The UI Designs shown are rendered in a rough wireframe format and often with simulated content.

Scenario

Mid-level Problem-Solver Persona (part Dreamer, part Doer). Merchandise Manager

Automotive Industry

Conducting Product Review

1. Searches, Filters, Navigates, Locates set of ~100 products in a single data set, based on several quantitative criteria
2. Views trends of selected products, looks for patterns, correlations.
- 3 Creates short list of products, creates a more elaborate comparison of the list members
- 4 Saves newly created View, takes action via email or other communication channel.

Design content not yet using this scenario

Dataset : Sales Forecast Q406-Q107 [Edit]

View / Edit Combine With Another Dataset Create Custom Visualization Share Download Duplicate Delete

Go Back

Data Explore

Create Visualization

Save As Configure Cancel

Find

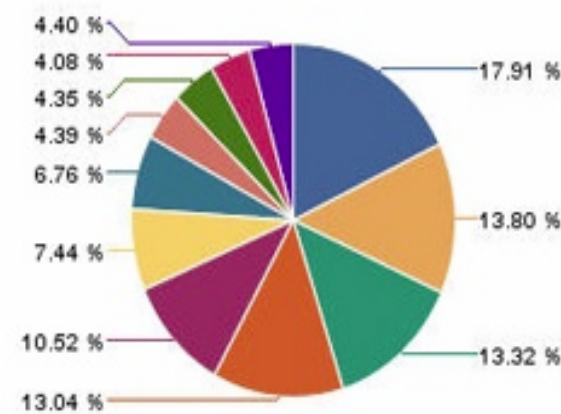
Refreshed on: 2010/01/25 18:04 Records 560 (0s)

Measures:	Quarter	Region	Stage	Territory	Sales Rep
Forecast Deal Size (SUM)	Q4 2006	Worldwide	Qualified Pow...	Central	S Mann
Pipeline Factor (SUM)	Q1 2007	Americas	Pre-Proposal ...	Italy	F Totti
Forecast (SUM)		EMEA	Pending Sale	Germany	M Ballack
Occurrences (COUNT)		Asia Pacific	Qualified Spo...	Northeast	C Rook
			Win	Southwest	R Off
			Qualified Sus...	Southeast	A Charlotte
			Territory	Northwest	S Guy
				Spain	R Aul
				Australia	T Henry
				France	M Viduka
				Explore more...	Explore more...

You are currently exploring all data. Select values to narrow it down.

Displaying: Forecast Territory

- Comparison
- Percentage
- Correlation
- Trend



Territory	Forecast
Central	17.91 % [49,610,432.95]
Italy	13.80 % [38,209,152.16]
Germany	13.32 % [36,891,772.99]
Northeast	13.04 % [36,121,899.6]
Southwest	10.52 % [29,137,533.23]
Southeast	7.44 % [20,611,574.19]
Northwest	6.76 % [18,730,408.63]
Spain	4.39 % [12,158,839.14]
Total (14)	276,973,942.57

This design is intended to represent the capabilities of BOBJ Explorer, deployed on a mobile tablet device and with a much stronger reliance upon visual content representation, particularly in regards to quantitative relationships.

For now we focus on only the client scenario versus the server access to new sources.

Source 1	View 1, View 2, View 3
Source 2	View 4, View 5
Source 3	View 6, View 7, View 8, View 9, View 10, View 11
Source 4	View 12 East Coast Sales - 4%
Source 5	View 13, View 14, View 15, View 16, View 17, View 18, View 19, View 20
Alcohol Sales	View 21, View 22, View 23, View 24, View 25, View 26, View 27, View 28, View 29, View 30,
Source 7	View 31, View 35, View 36, View 37, View 38, View 39, View 40
Source 8	View 41, View 42
Sources	Alcohol Sales



The experience starts with access to a set of Sources. Sources are essentially a data set viewable through one or more View Patterns.

Views default to have an associated analytic display, in this case measuring their popularity/relevance according to numerous scores (recently accessed, ratings, number of times accessed, etc)

Alerts can be surfaced with signals like the red dot.

Sources here are not "technical" data sources, but rather a more intuitive name for a data set from the perspective of a casual consumer.

Exploration Views also has the concept of groups of Views which we call "Collections". For simplicity we do not depict Collections yet here.

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 View 21	Class aptent taciti sociosqu ad litora torquent per conubia nostra, per penatibus et
 View 22	Cum sociis natoque penatibus et magnis dis parturient montes
 View 23	Nam dictum quam in est bibendum dictum. Suspendisse at dignissim purus.
 View 24	● Integer fringilla pellentesque ante
 View 25	Vestibulum volutpat interdum ipsum, ut malesuada arcu posuere laoreet
 View 26	Etiam aliquam rutrum purus nec cursus. Phasellus commodo nisi non tellus purus nec ...
 View 27	Proin eros arcu, porttitor vel vehicula quis, congue ac orci. Cras quis libero lacus.
 View 28	Sales for california, Volume for California, Product Returns for California, Pro...
 View 29	● East Coast Sales - 4%
 Worldwide Sales	General exploration space
 View 31	Praesent id lectus arcu
Alcohol Sales	Attributes 













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View 22	Cum sociis natoque penatibus et magnis dis parturient montes	
		
View 23	Nam dictum quam in est bibendum dictum. Suspendisse at dignissim purus.	
		
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View 25	Vestibulum volutpat interdum ipsum, ut malesuada arcu posuere laoreet	
		
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View 27	Proin eros arcu, porttitor vel vehicula quis, congue ac orci. Cras quis libero lacus.	
		<div style="border: 1px solid black; background-color: #f0f0f0; padding: 5px;"> <p>Thumbnails</p> <p>Strip</p> <p>Find New Views</p> <p>Delete Views</p> <p>Other Operation / Application Commands...</p> </div>
View 28	Sales for california, Volume for California, Product Returns for Ca	
		
View 29	● East Coast Sales - 4%	
		
Worldwide Sales	General exploration space	
		
View 31	Praesent id lectus arcu	
Alcohol Sales	Attributes	
















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		<div style="border: 1px solid black; background-color: #f0f0f0; padding: 5px;">  <ul style="list-style-type: none"> Thumbnails Strip Find New Views Delete Views Other Operation / Application Commands... </div>
View 28	Sales for california, Volume for California, Product Returns for Ca	
		
View 29	 East Coast Sales - 4%	
		
Worldwide Sales	General exploration space	
		
View 31	Praesent id lectus arcu	
Alcohol Sales	Attributes	

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Views can be displayed as thumbnails.
This is not the default because the
thumbnails end up all looking very
similar.



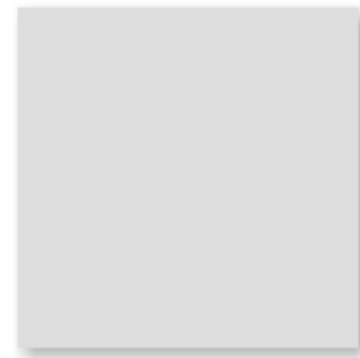
View 21



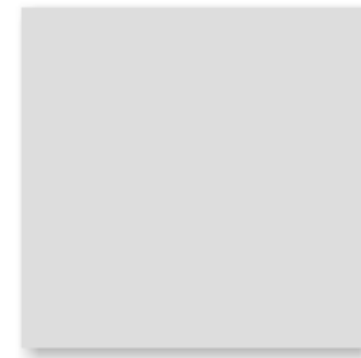
View 22



View 23



View 24 ●



View 25



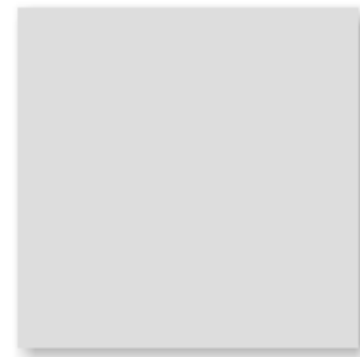
View 26



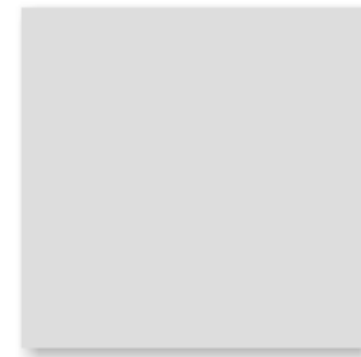
View 27



View 28



View 29 ●



Worldwide Sales



View 31



View 32

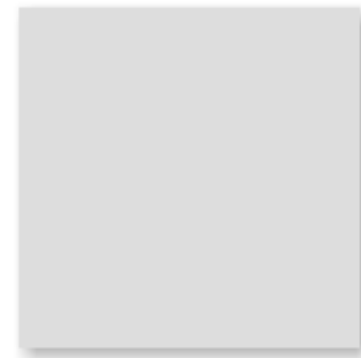




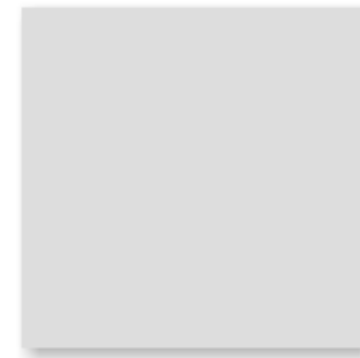
View 21



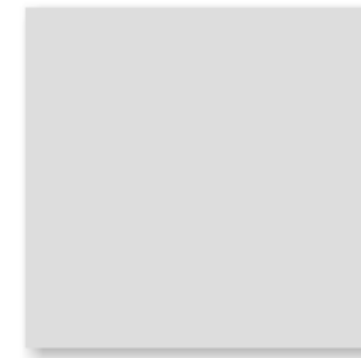
View 22



View 23



View 24 ●



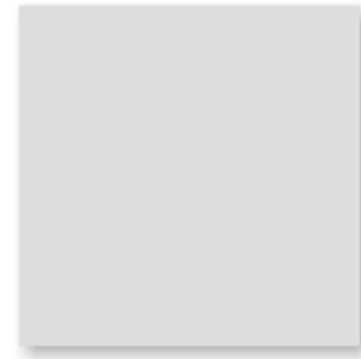
View 25



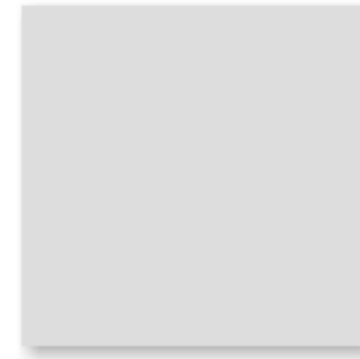
View 26



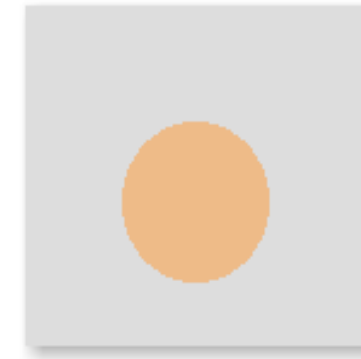
View 27



View 28



View 29 ●



Worldwide Sales



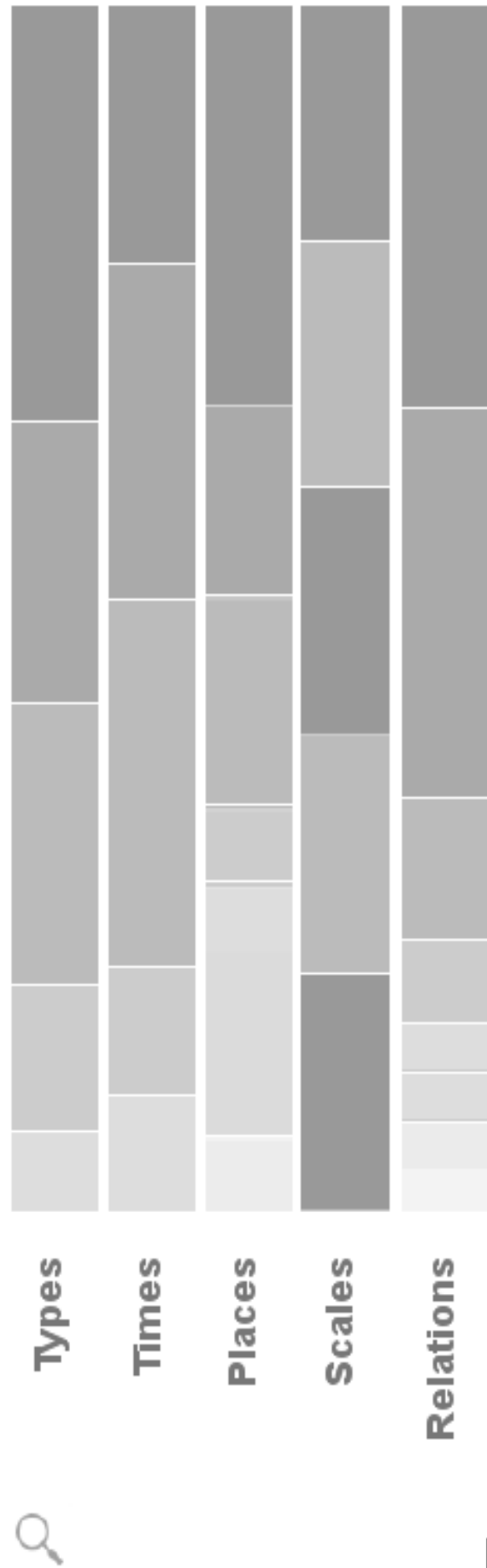
View 31



View 32

Views can be displayed as thumbnails. This is not the default because the thumbnails end up all looking very similar.





2011 Performance (July 28)

2.548

Alcoholic Beverages

\$B Total 0 1 2 3 4



Worldwide Sales

| Sales | Performance | All |



This is a default view of a View. In this case, the View is an overview of the entire Source. The design enables the user to filter and manipulate the view to their liking, and then "bookmark" it into a formal View that they name. This is how Views are created.

Sales is the **Prime Measure**, the default display for the Strip and the viz.

Multiple measures can be added up to a point via a fly-out menu.

The screen is divided into two main spaces: **The Strip** to the left and **The Plain** to the right.

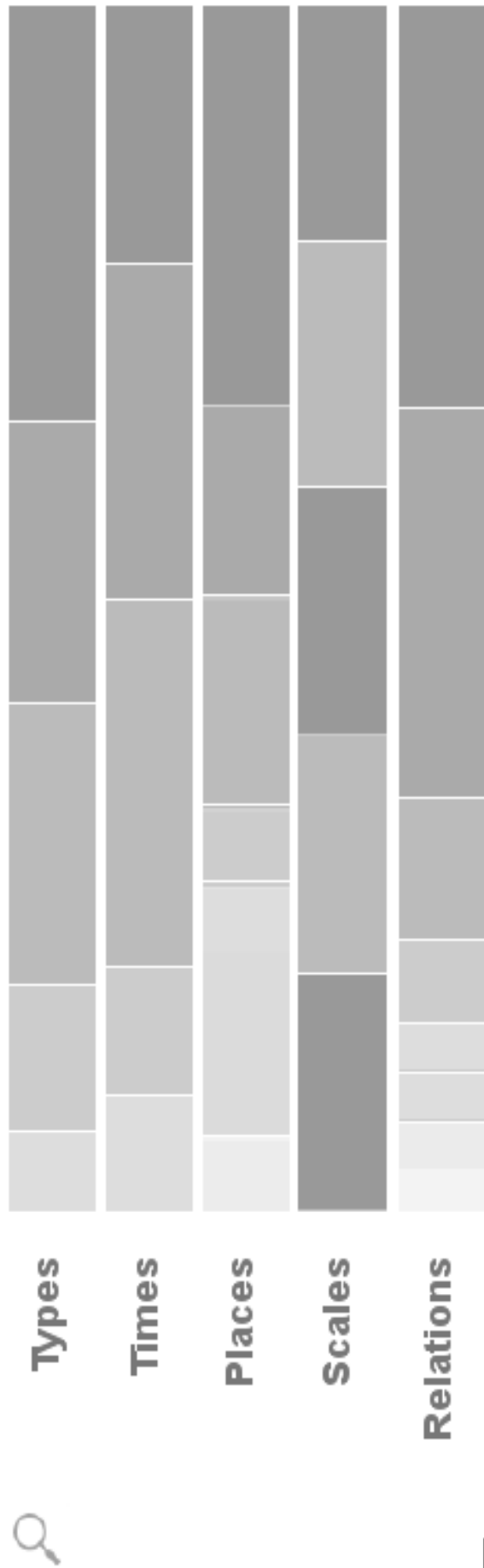
The Strip is for filtering and the Plain is for formatting. (and possibly filtering as a custom adaptation)

In the Strip, Dimensions are grouped into larger universal categories called **Aspects**.

Types, **Times**, and **Places** are obvious Aspects

Scales are Measures turned into categorical units for filtering.

Relations remain undefined but would be the place where filtering could happen based on semantic connections, or network context.



2011 Performance (July 28)

Actual Pace Goal Last Year Alert

2.548

Alcoholic Beverages

\$B Total 0 1 2 3 4

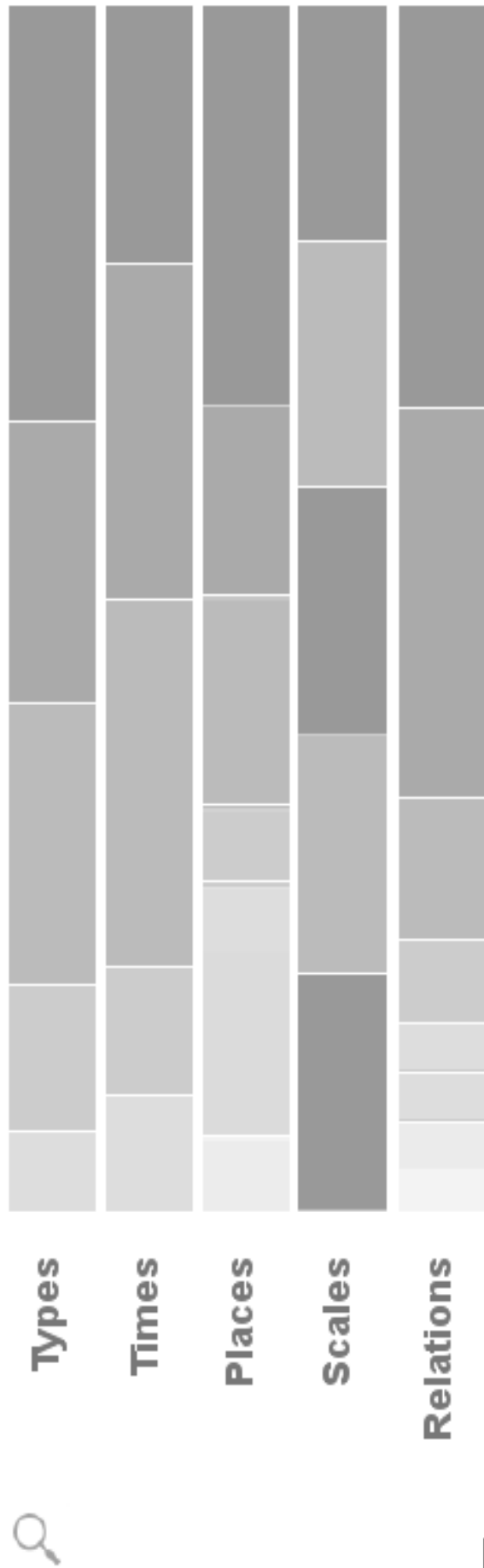
View By					X
Types	Times	Places	Relations	All	
Product Groups	Years	Regions	People		
Product Sub-Groups	Quarters	Countries	????		
Products	Months	Districts			
Ingredients	Weeks	Cities			
Sources	Days	Outlets			

Worldwide Sales

| Sales | Performance | All |

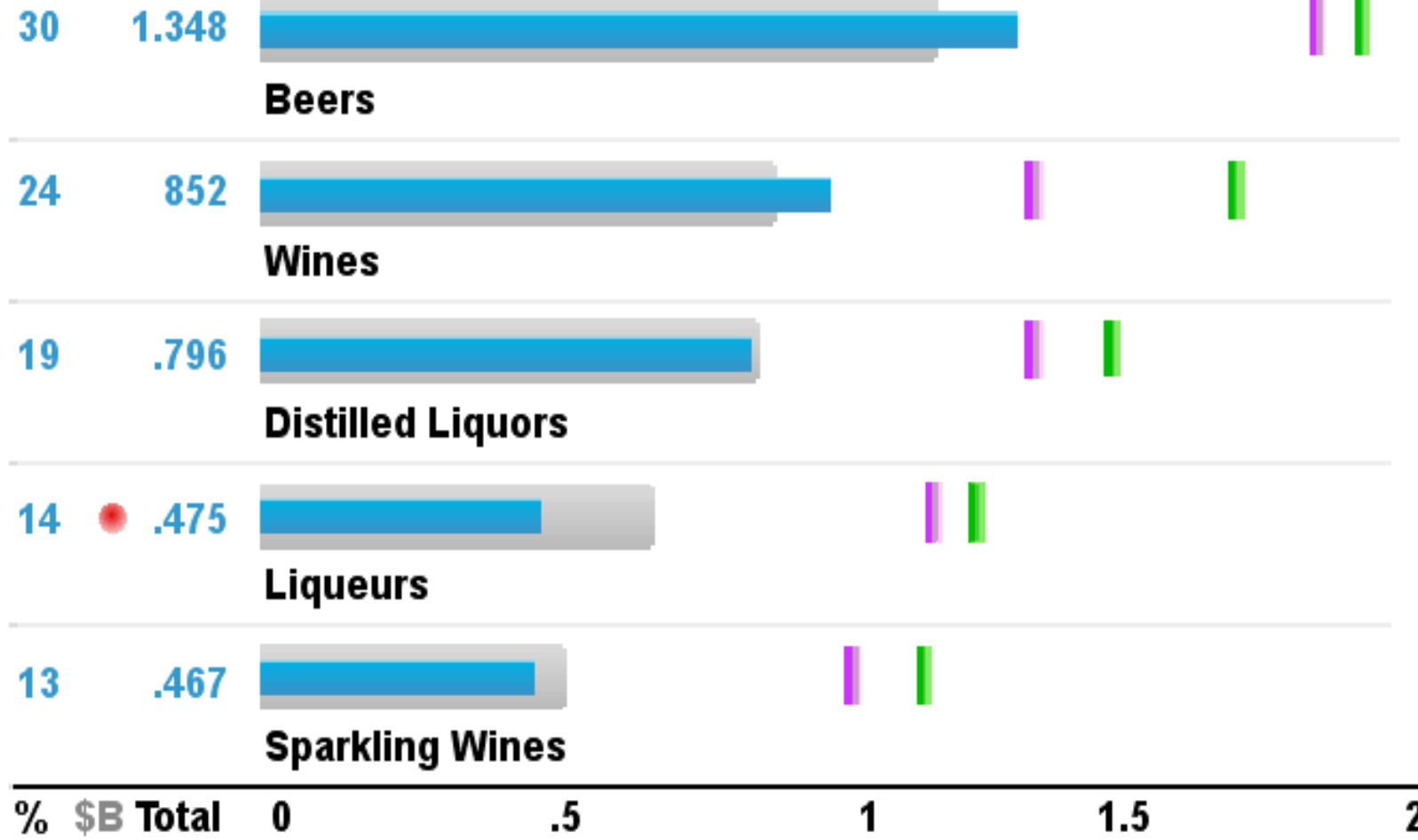


Available Dimensions are listed under the Plain but are not for filtering, rather for formatting the display of what has been filtered (or in this case, not yet filtered).



2011 Performance (July 28)

Actual Pace Goal Last Year Alert



View By					X
Types	Times	Places	Relations	All	
Product Groups	Years	Regions	People		
Product Sub-Groups	Quarters	Countries	????		
Products	Months	Districts			
Ingredients	Weeks	Cities			
Sources	Days	Outlets			

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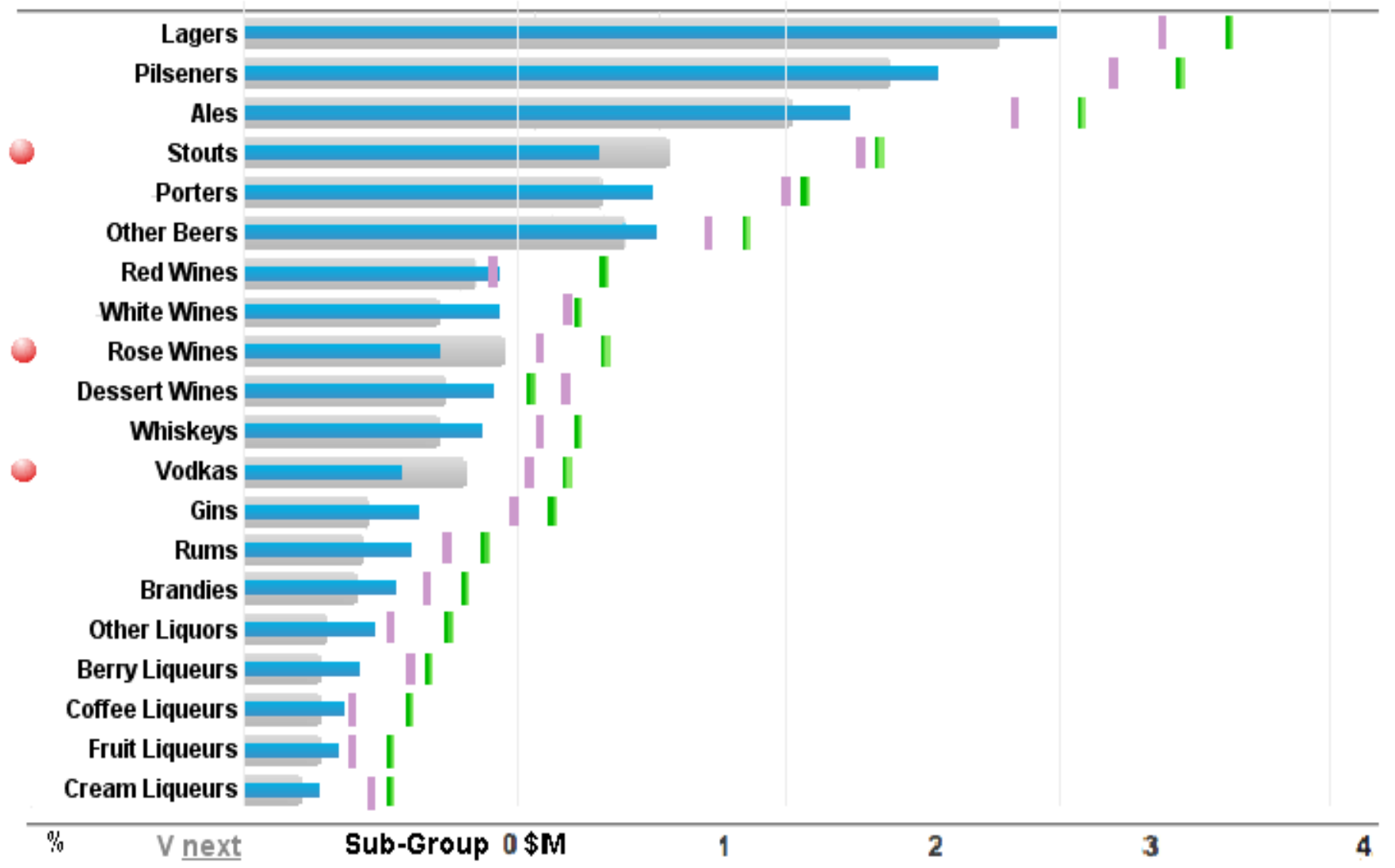


Types Times Places Scales Relations

Worldwide Sales

2011 Performance (July 28)

Actual Pace Goal Last Year Alert



View By X

Types	Times	Places	Relations	All
Product Groups	Years	Regions	People	
Product Sub-Groups	Quarters	Countries	????	
Products	Months	Districts		
Ingredients	Weeks	Cities		
Sources	Days	Outlets		

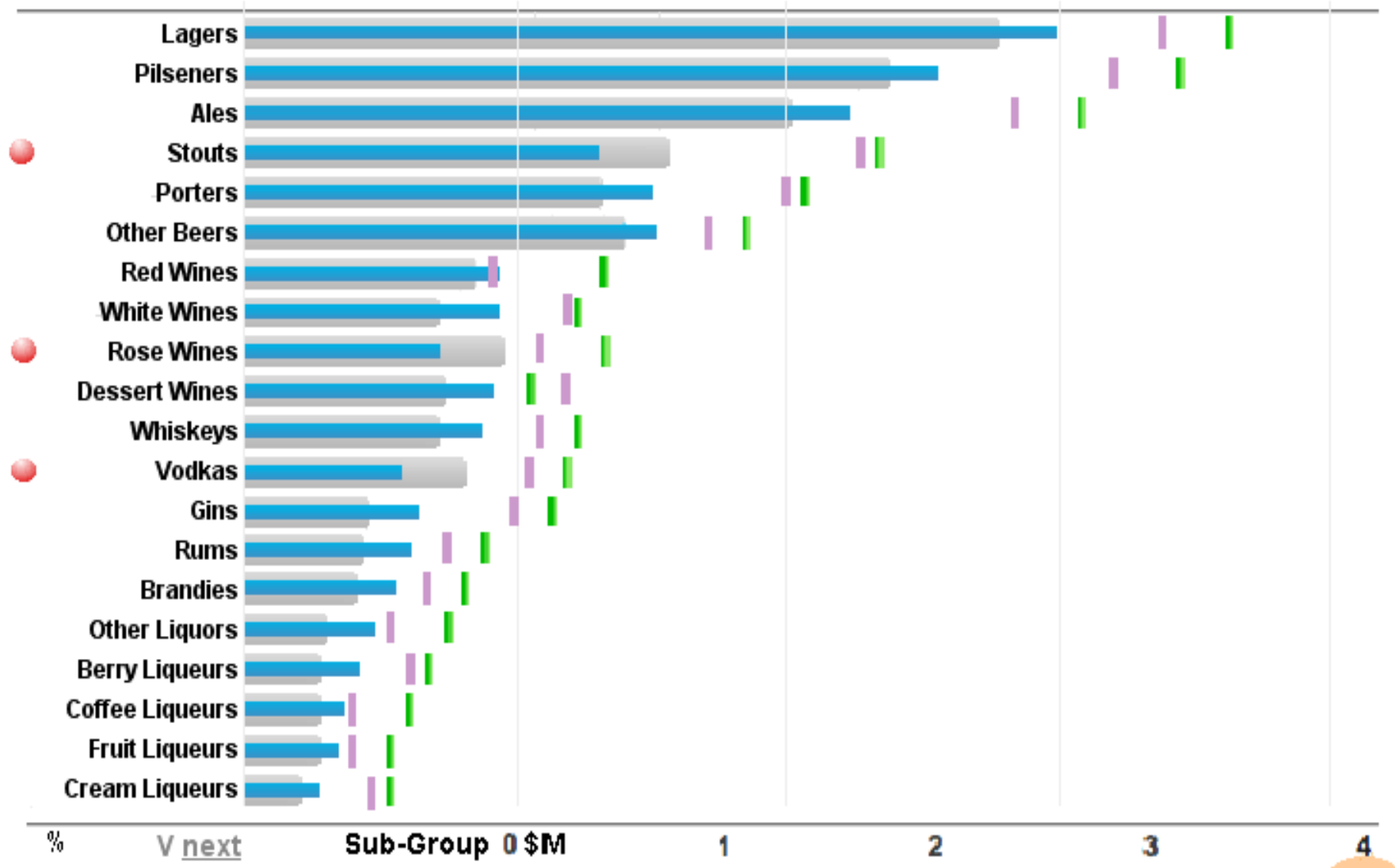
Here the user chooses to look at the same data set broken down by Product Sub-Groups versus by Product Groups. This changes the display format but not the filtering of the Source data.



Types Times Places Scales Relations

2011 Performance (July 28)

Actual Pace Goal Last Year Alert

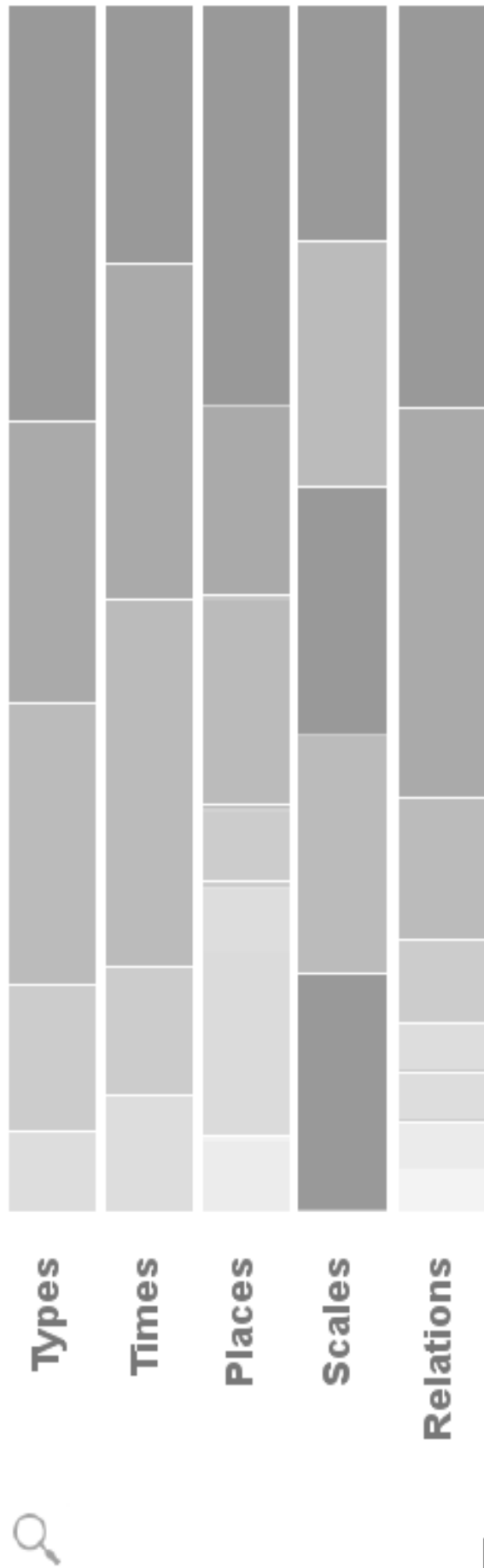


View By

Types	Times	Places	Relations	All
Product Groups	Years	Regions	People	
Product Sub-Groups	Quarters	Countries	????	
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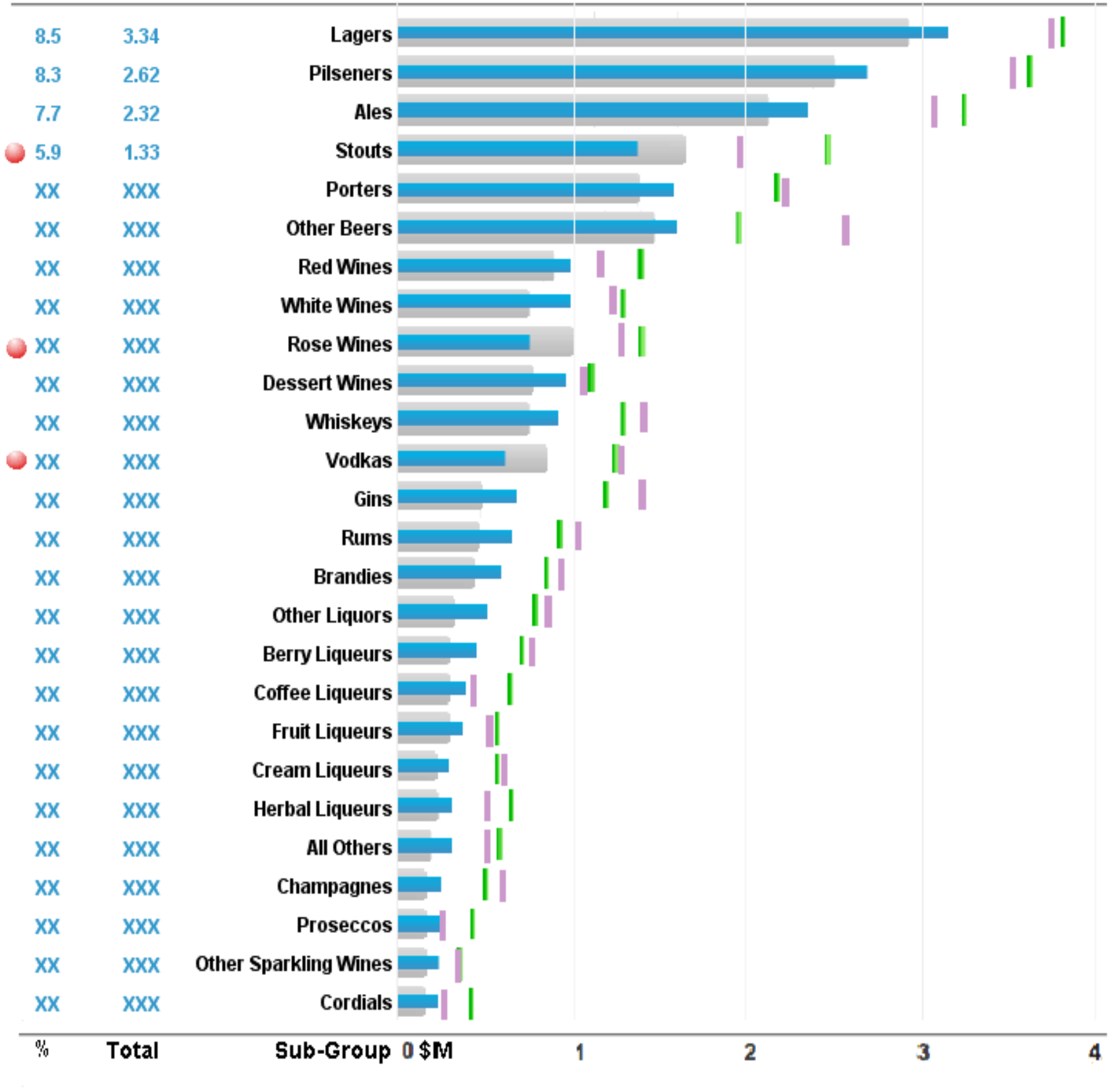




Worldwide Sales

2011 Performance (July 28)

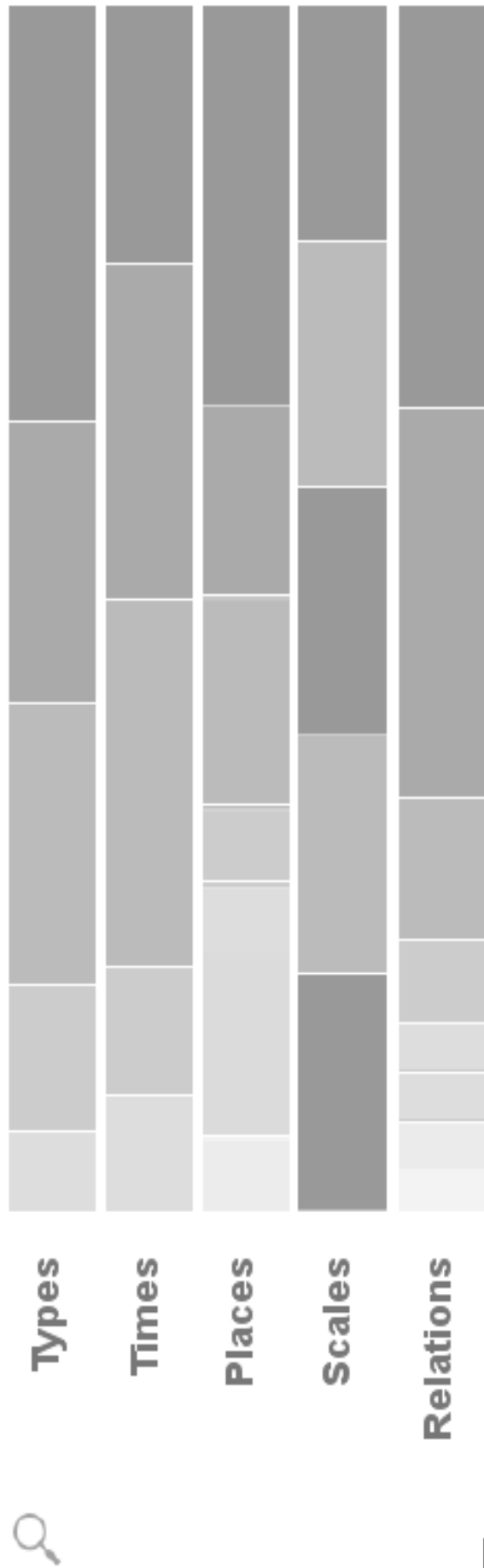
Actual Pace Goal Last Year Alert



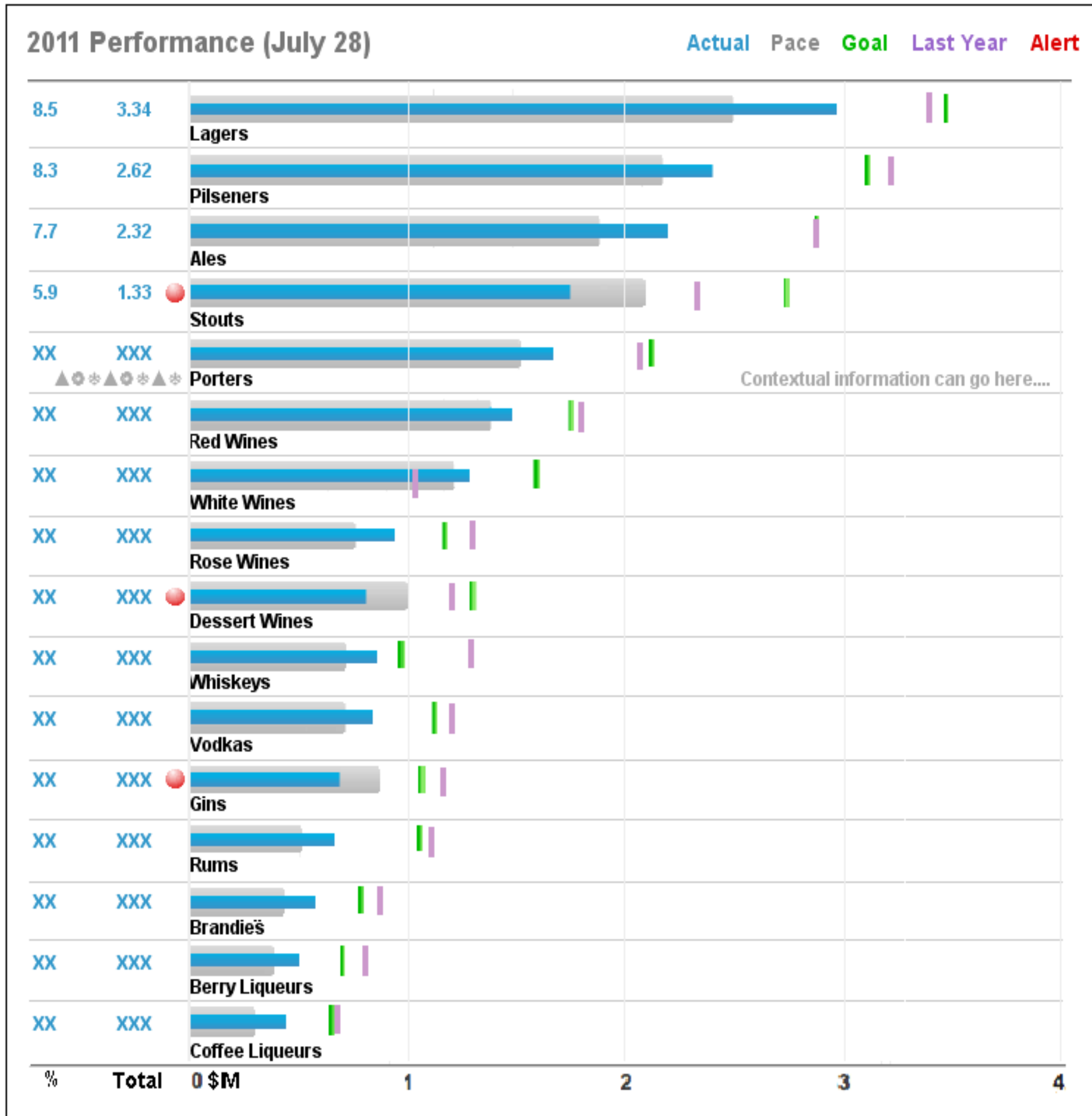
Sales | Performance | by Sub-Group |



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Worldwide Sales



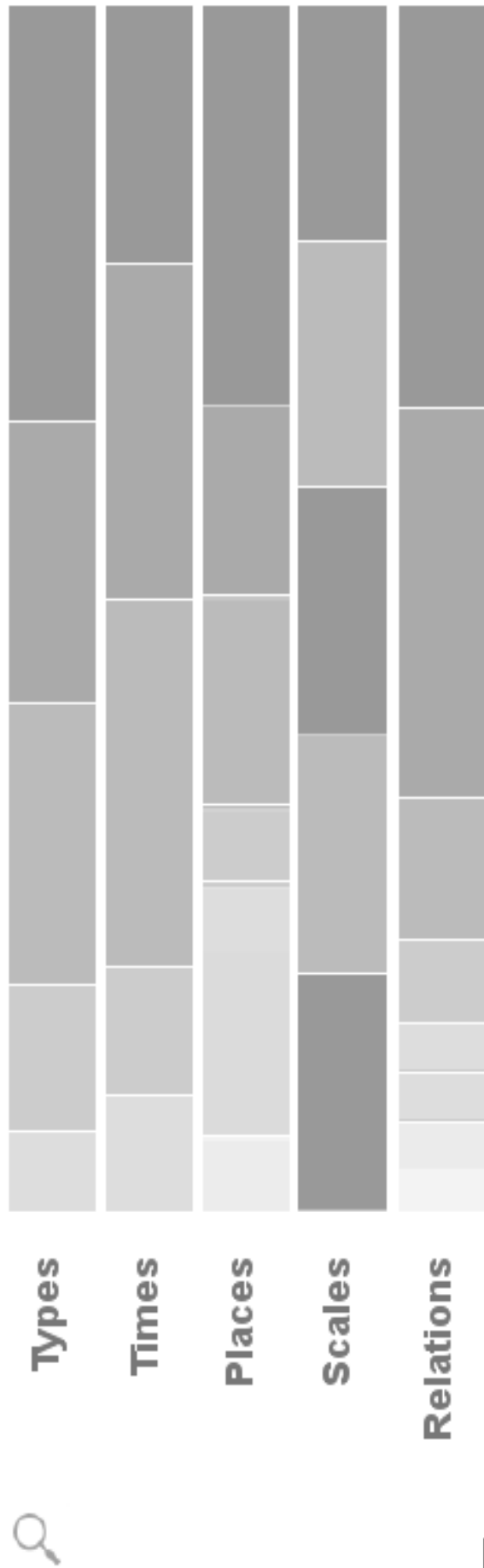
| Sales | Performance | by Sub-Group |



This is an alternate layout for the performance bullets, stacking the titles beneath the bars.

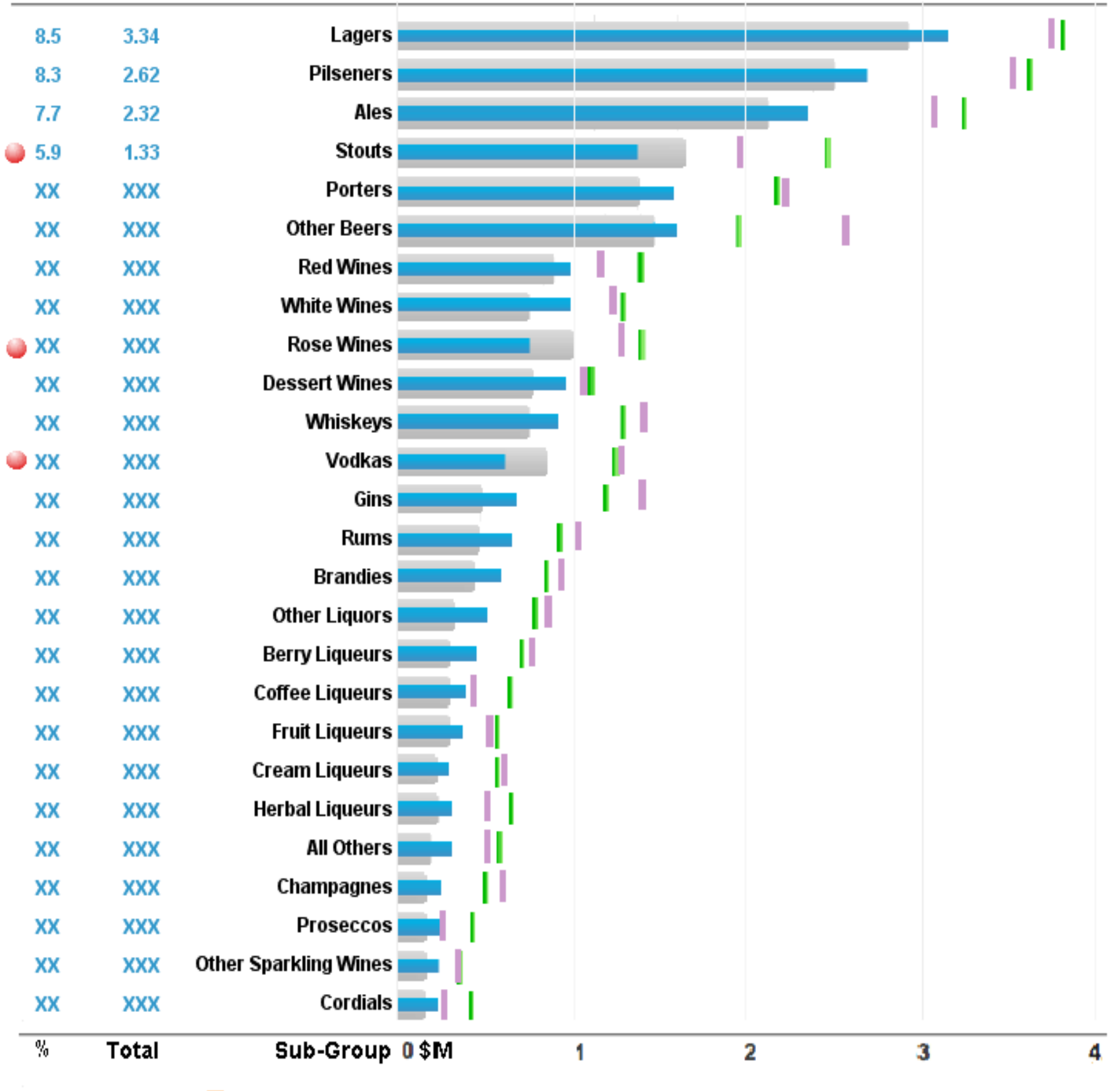
This enables more horizontal space for the bars, larger touch target heights, and room for contextual information.

Where vertical space allows this would be the default view format.



2011 Performance (July 28)

Actual Pace Goal Last Year Alert



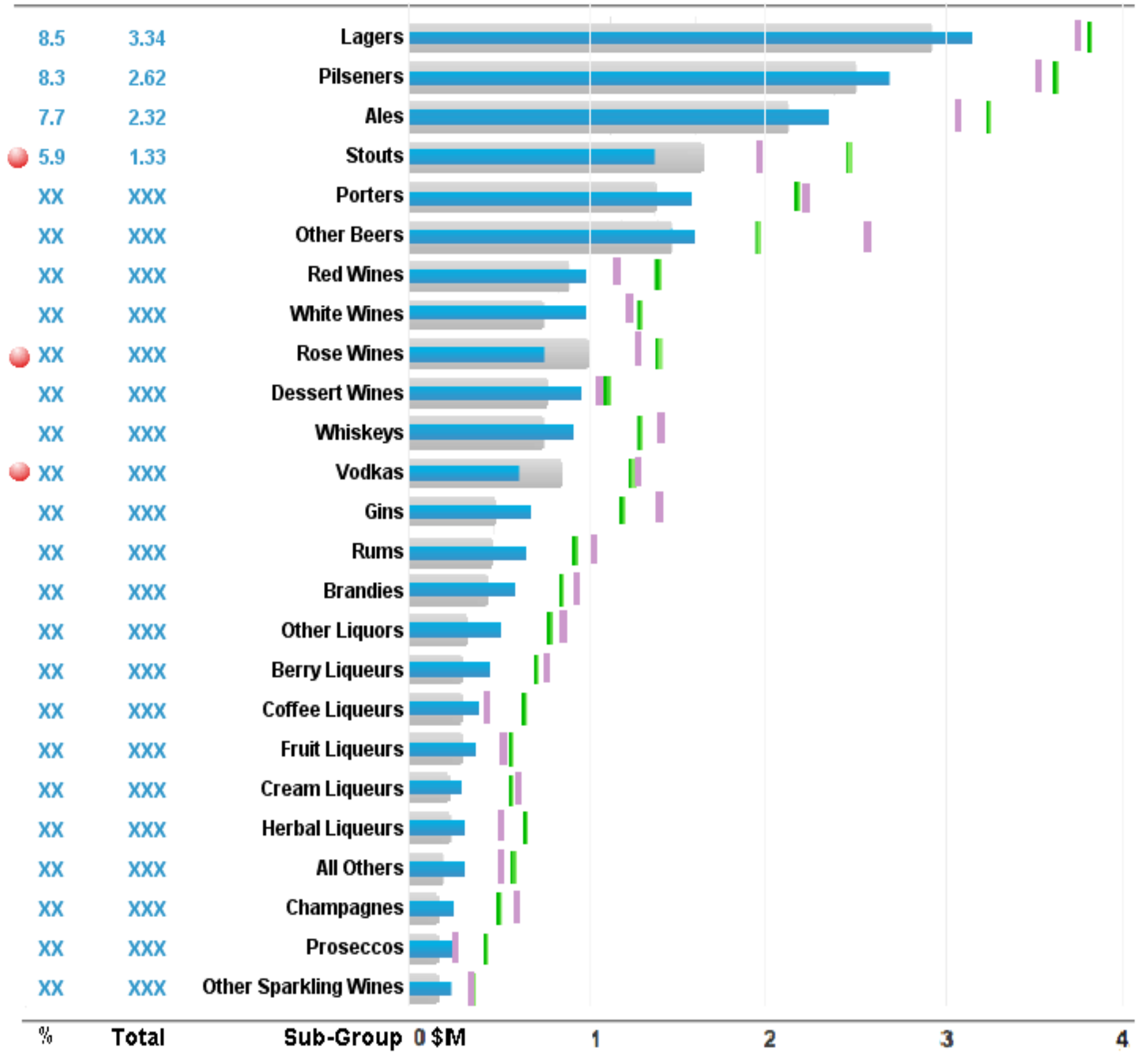
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2011 Performance (July 28)

Actual Pace Goal Last Year Alert



Worldwide Sales

| Sales | Performance | by Sub-Group |

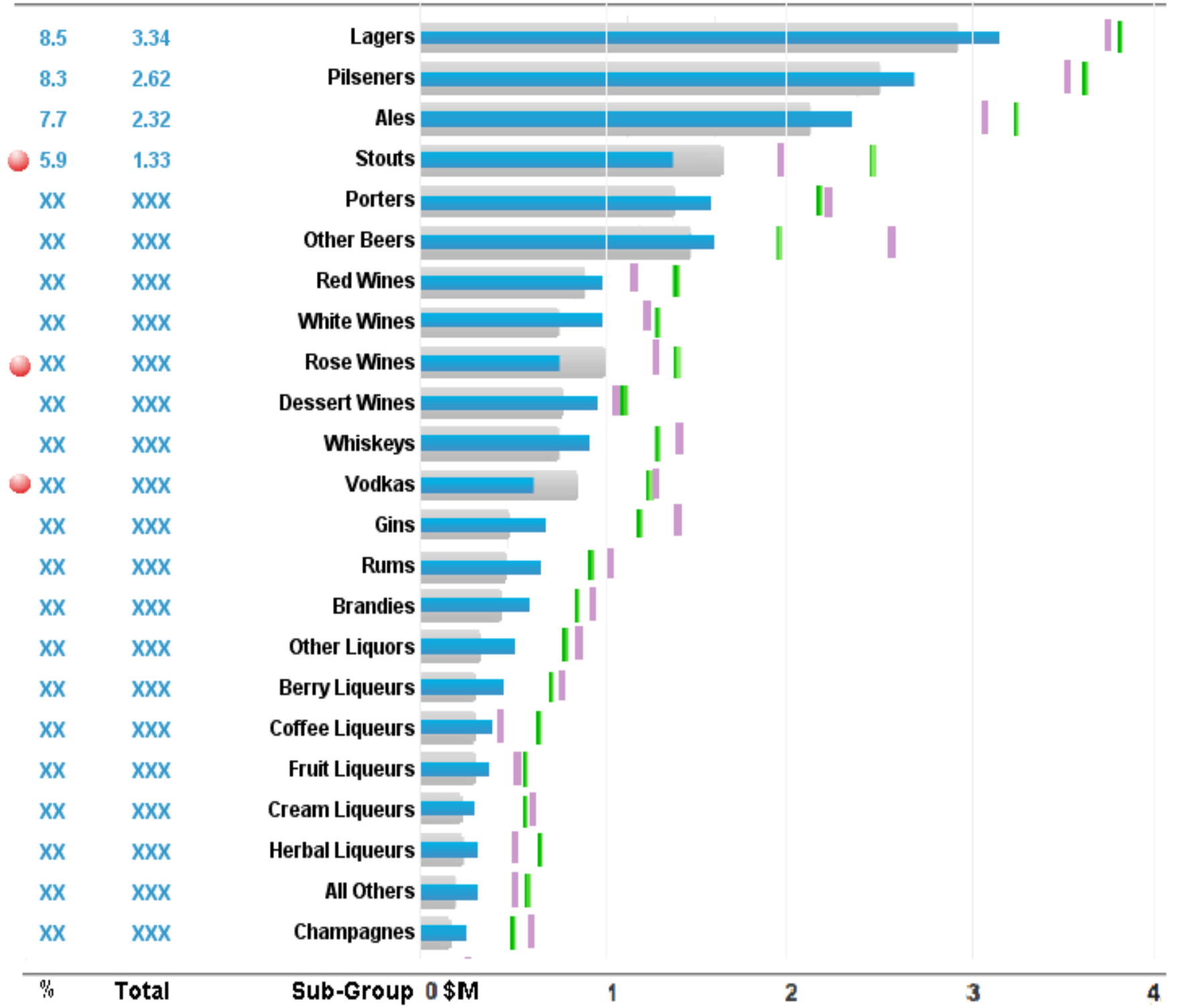




Worldwide Sales

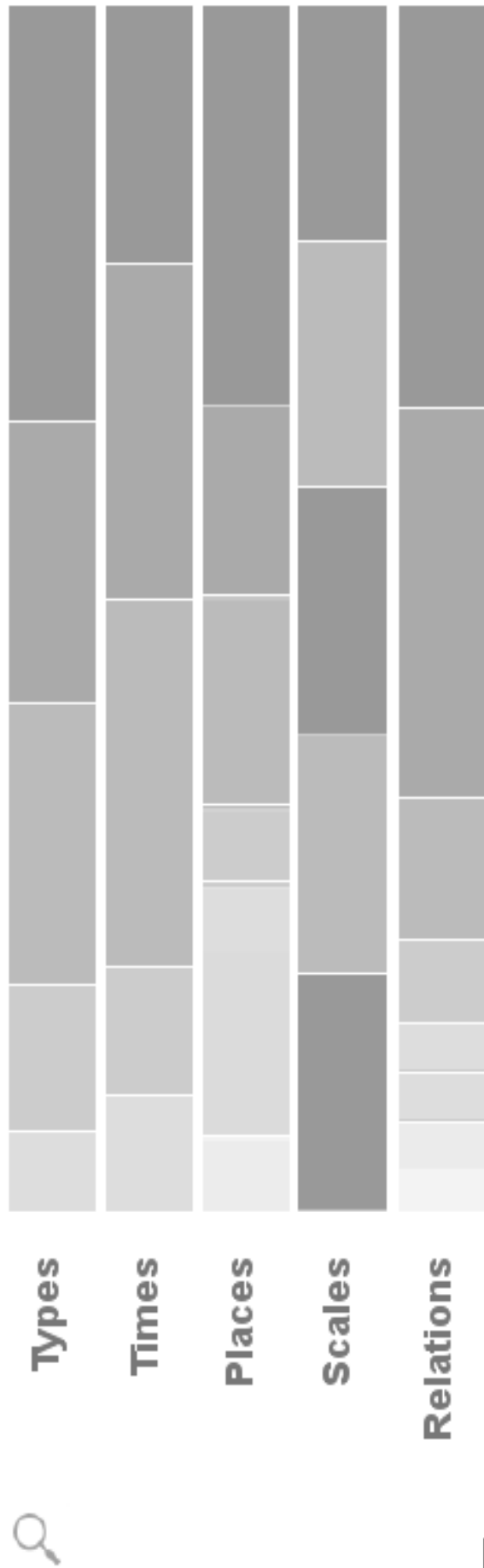
2011 Performance (July 28)

Actual Pace Goal Last Year Alert



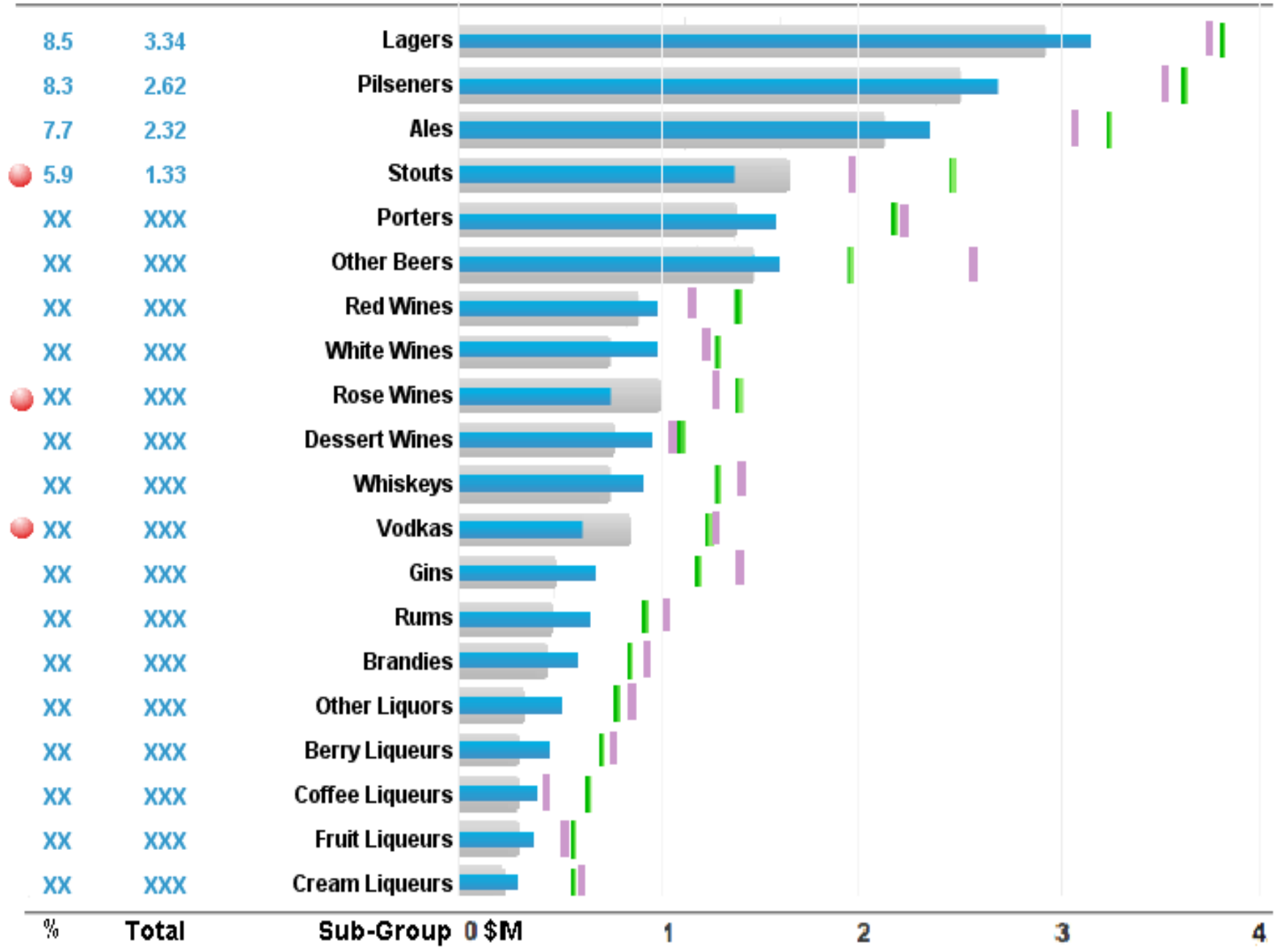
| Sales | Performance | by Sub-Group |





2011 Performance (July 28)

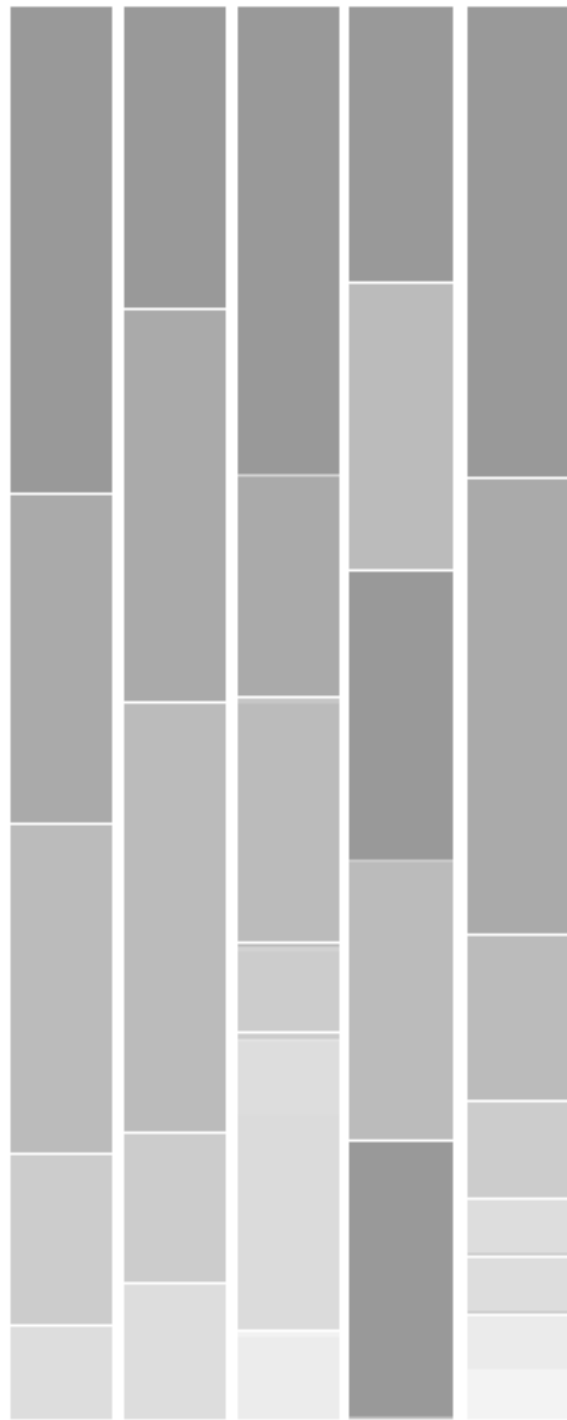
Actual Pace Goal Last Year Alert



Worldwide Sales

| Sales | Performance | by Sub-Group |





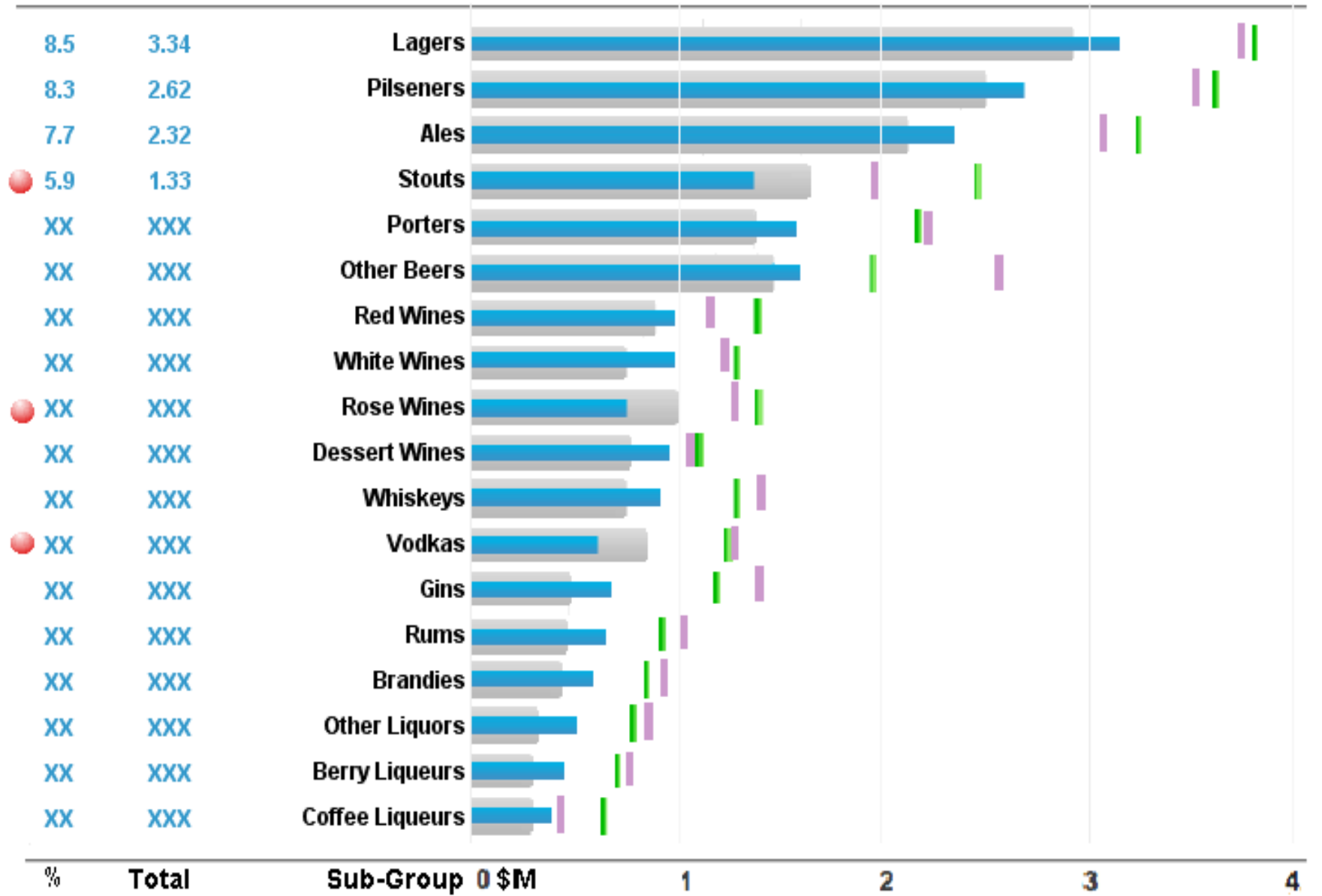
Types
Times
Places
Scales
Relations



Worldwide Sales

2011 Performance (July 28)

Actual Pace Goal Last Year Alert



% Total Sub-Group 0 \$M 1 2 3 4

Sales | Performance | by Sub-Group |

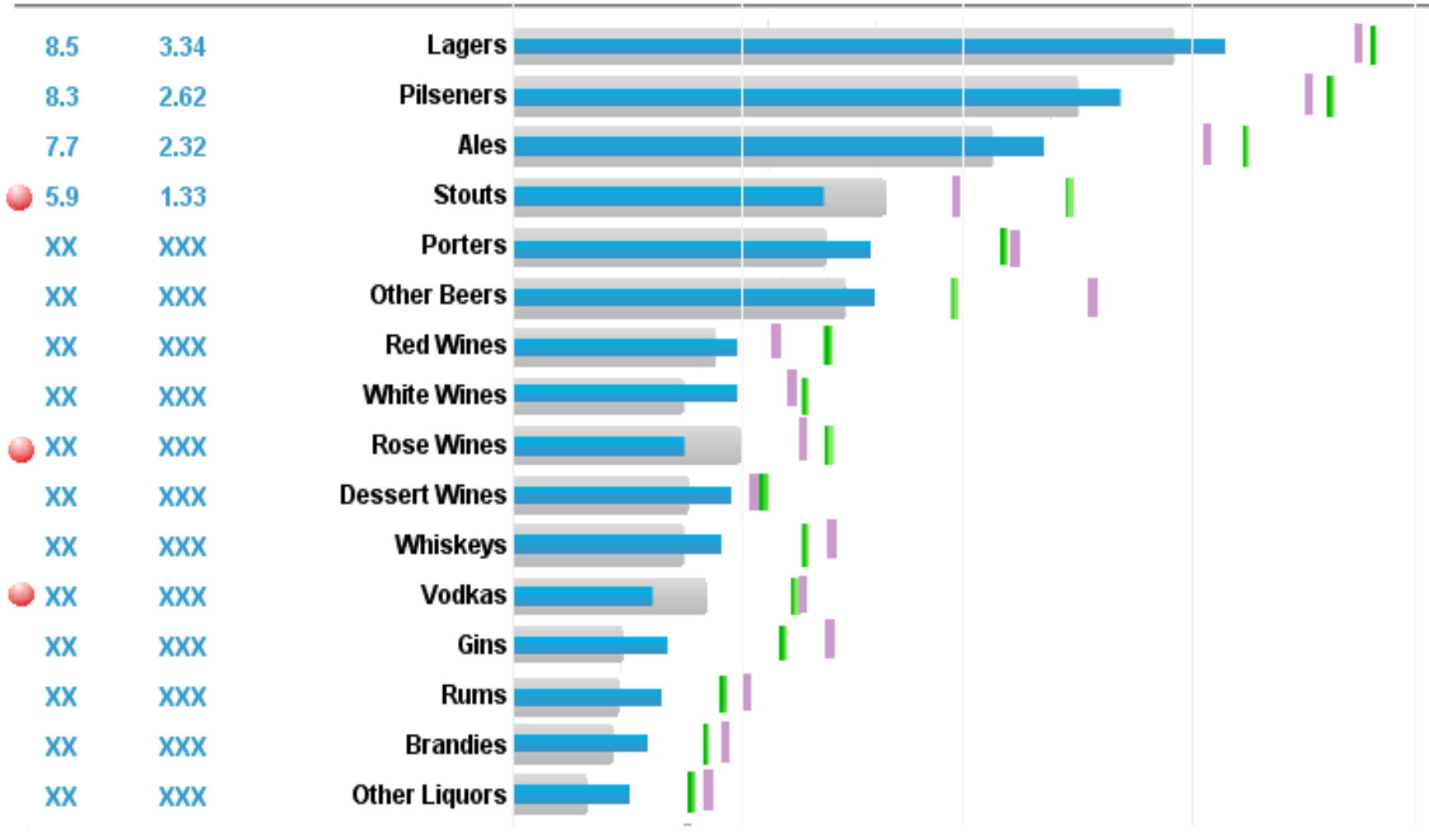


Types Times Places Scales Relations

Worldwide Sales

2011 Performance (July 28)

Actual Pace Goal Last Year Alert



% Total V next 0 \$M 1 2 3 4

View Type X

Tabular	Map	Comparison	Trend	Contribution
List	Map 1	Bar Chart	Line Chart	Stacked Bar
Table	Map 2	Performance	Area Chart	Tree Map
			Keyline	
			Others...	

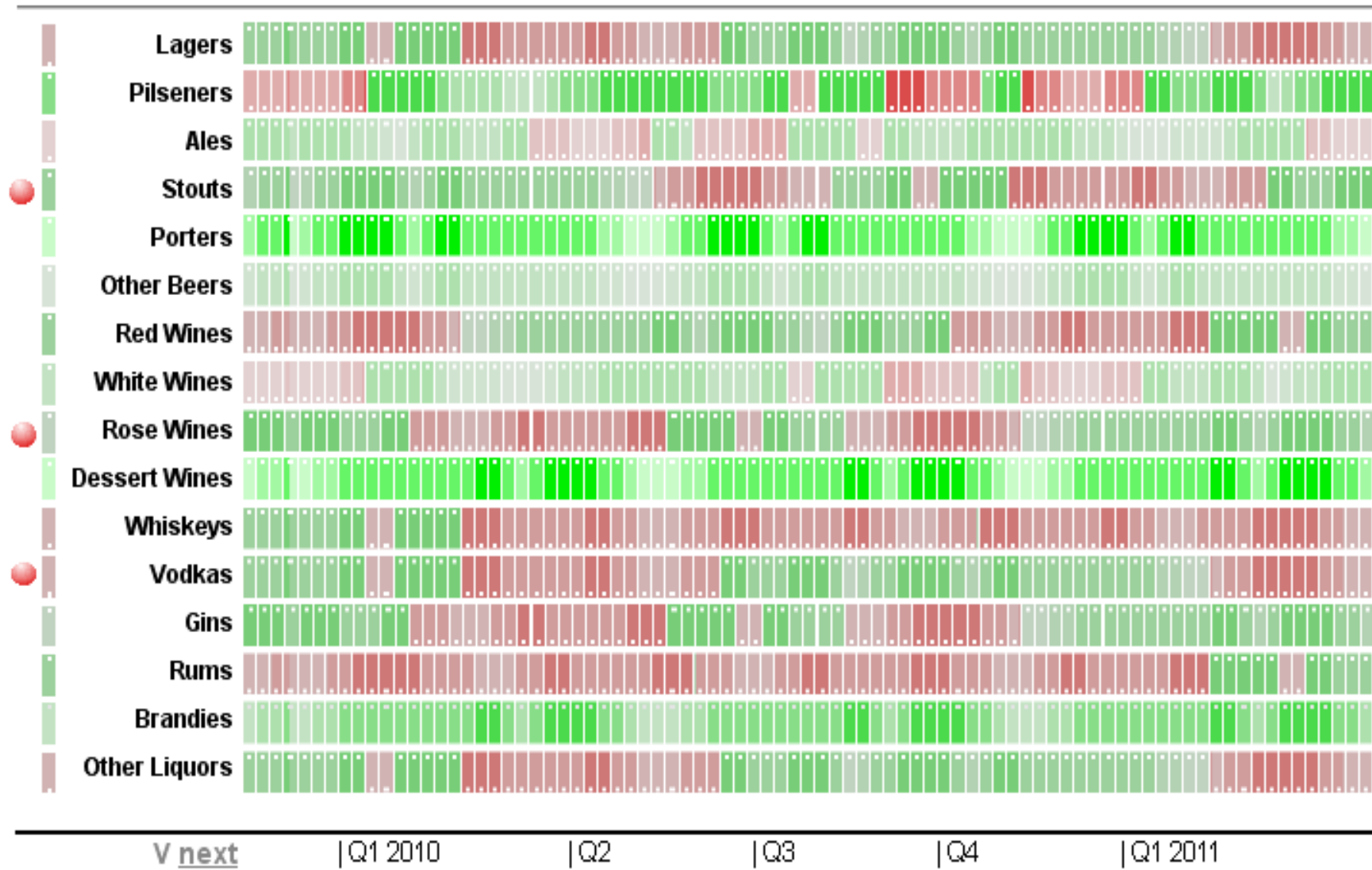
The Visualization Type can be changed from the button title, as in BOBJX Trend//Contribution/Comparison controls.

This is a new viz category called **Performance**.



- Types
- Times
- Places
- Scales
- Relations

2011 Performance (July 28)



View Type					X
Tabular	Map	Comparison	Trend	Contribution	
List	Map 1	Bar Chart	Line Chart	Stacked Bar	
Table	Map 2	Performance	Area Chart	Tree Map	
			Keyline		
			Others...		

The **Keyline Pattern** is an example of a small multiple display. In this case it depicts time series fluctuations in a measure. Instead of rendering each in a sparkline, at this density the display resorts to a heatmap display where green depicts rising values and red dropping ones.

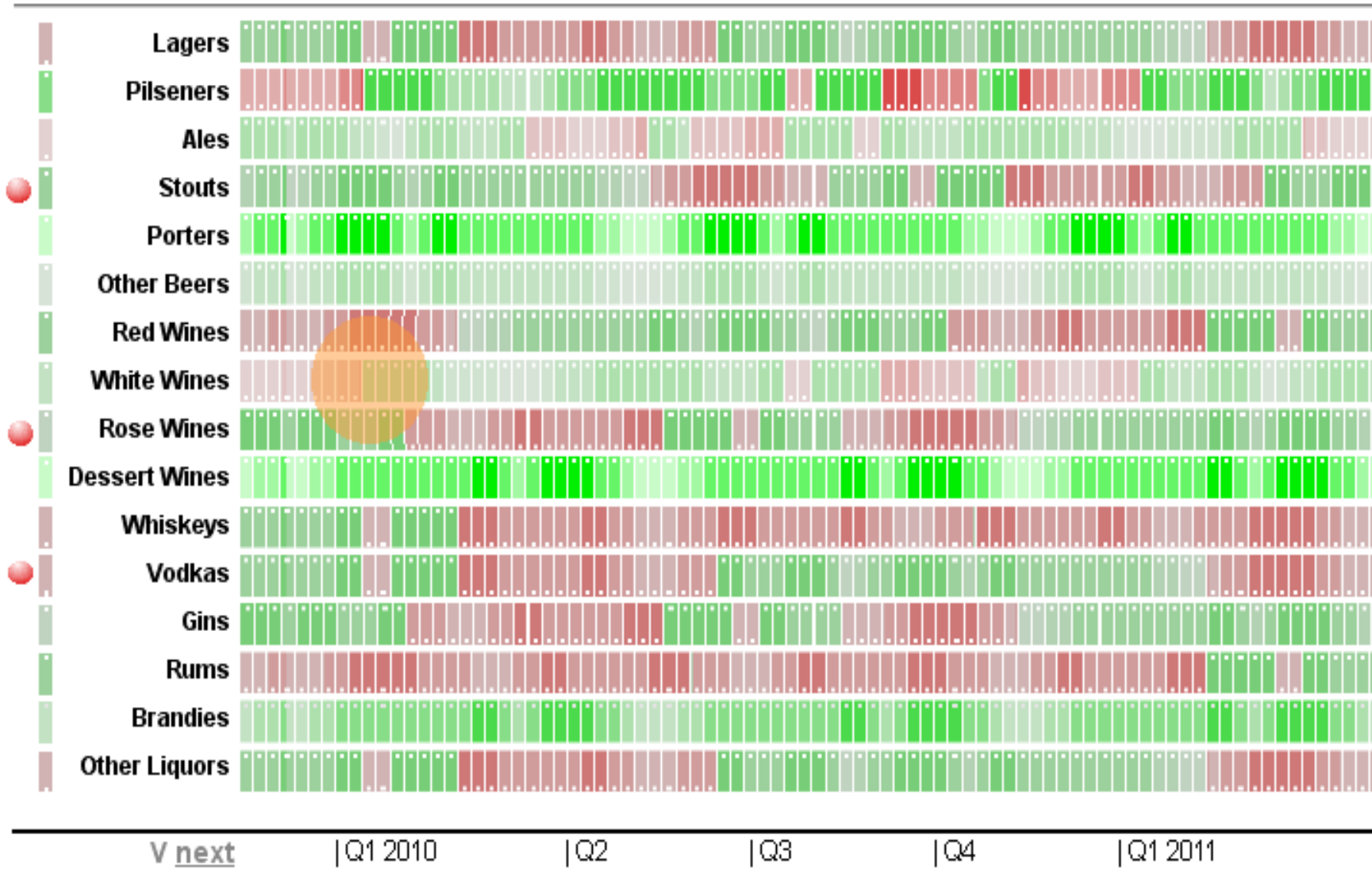
Intensity of the color depicts either the rate or the amount of decline.



Types Times Places Scales Relations

Worldwide Sales

2011 Performance (July 28)



View Type X

Tabular	Map	Comparison	Trend	Contribution
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Table	Map 2	Performance	Area Chart	Tree Map
			Keyline	
			Others...	

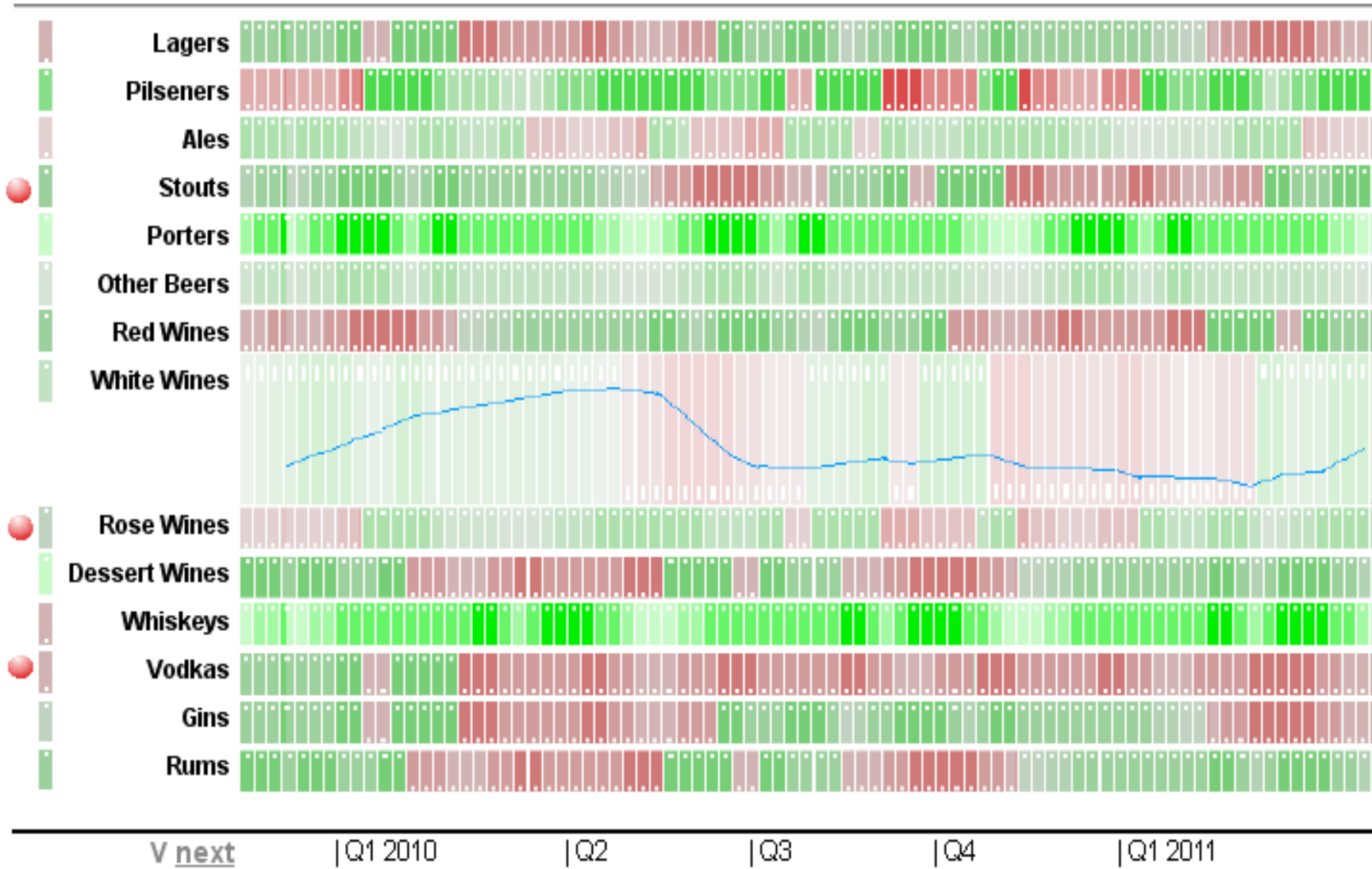
One or more rows in the Keyline can be expanded to reveal a spatially-rendered line chart.



Types Times Places Scales Relations

Worldwide Sales

2011 Performance (July 28)



View Type					X
Tabular	Map	Comparison	Trend	Contribution	
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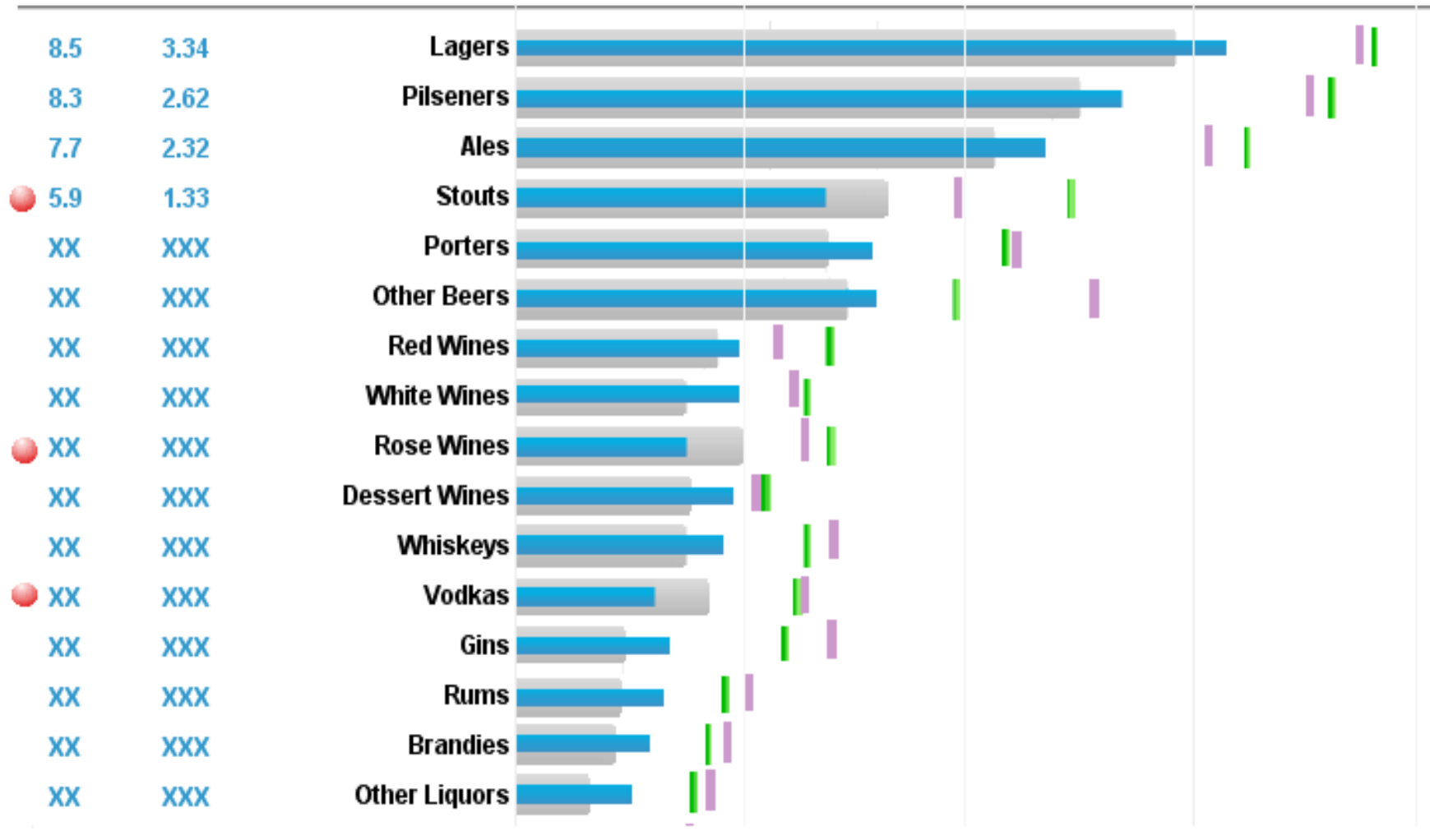


Types Times Places Scales Relations

Worldwide Sales

2011 Performance (July 28)

Actual Pace Goal Last Year Alert

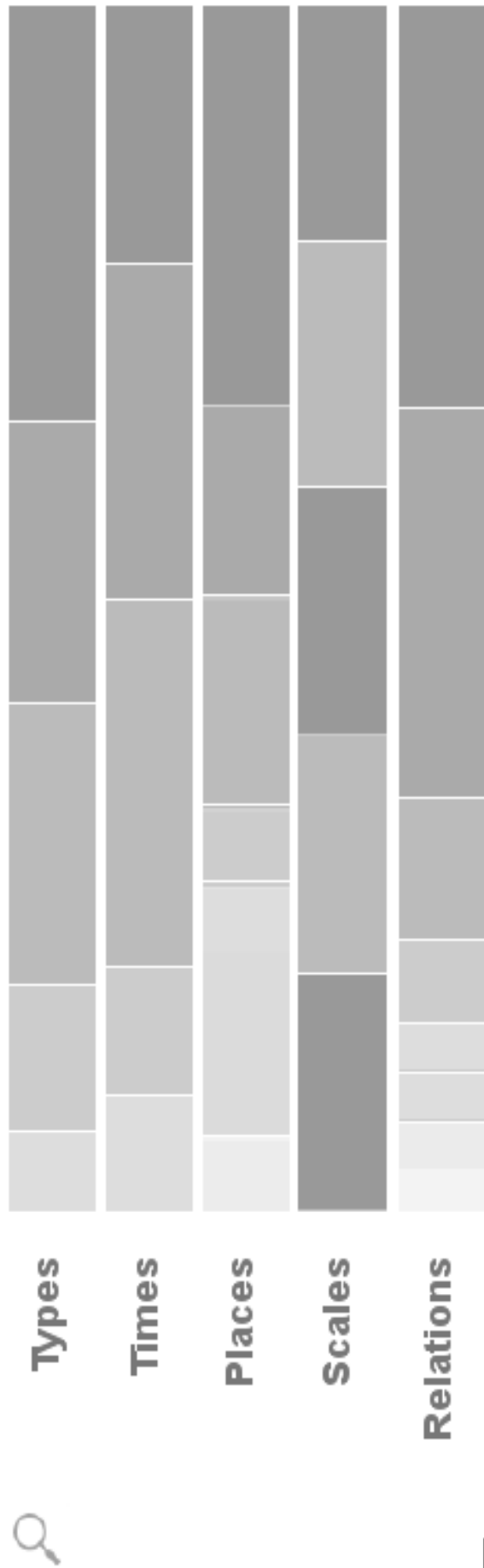


% Total V next 0 \$M 1 2 3 4

View Type X

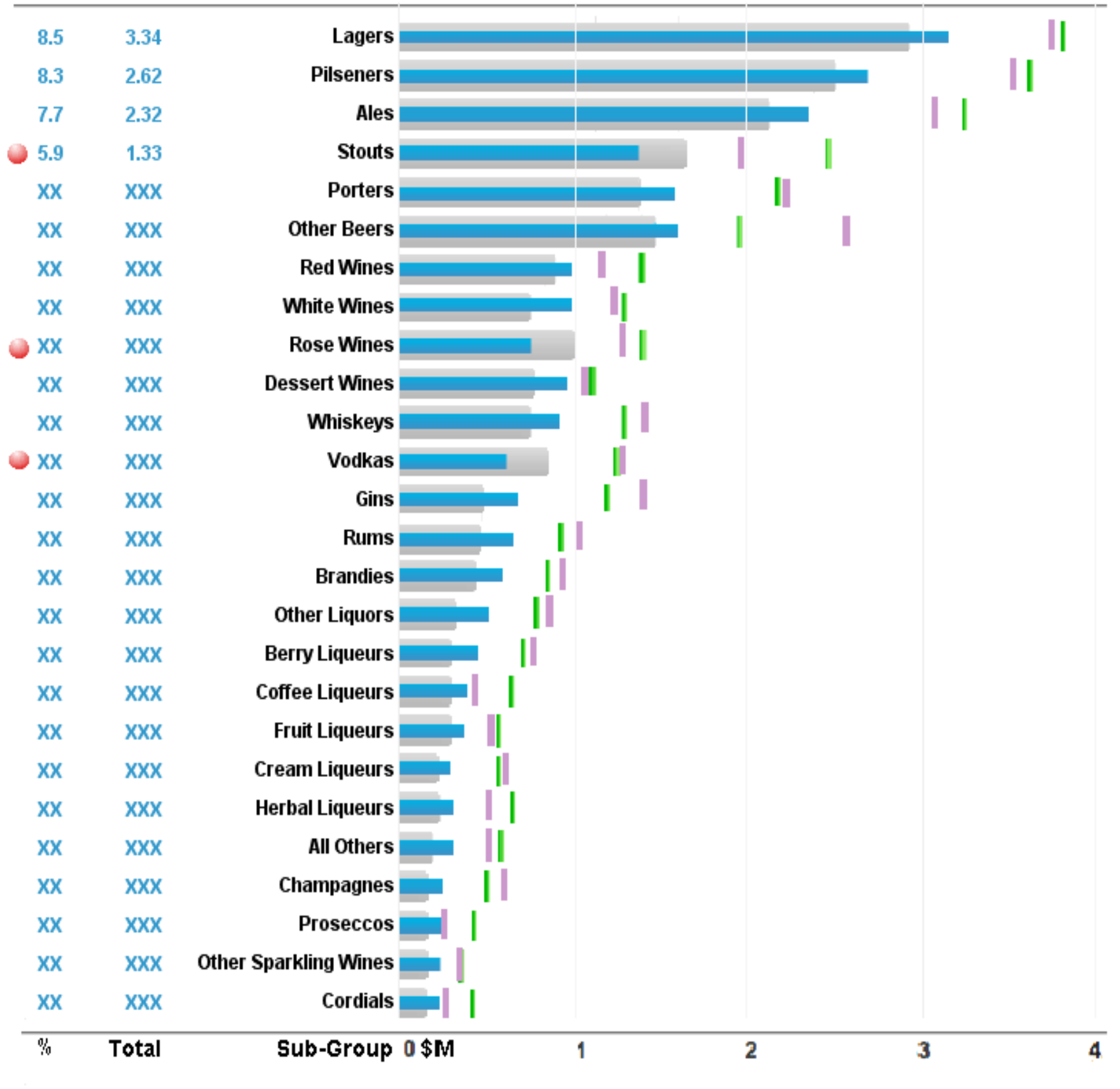
Tabular	Map	Comparison	Trend	Contribution
List	Map 1	Bar Chart	Line Chart	Stacked Bar
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2011 Performance (July 28)

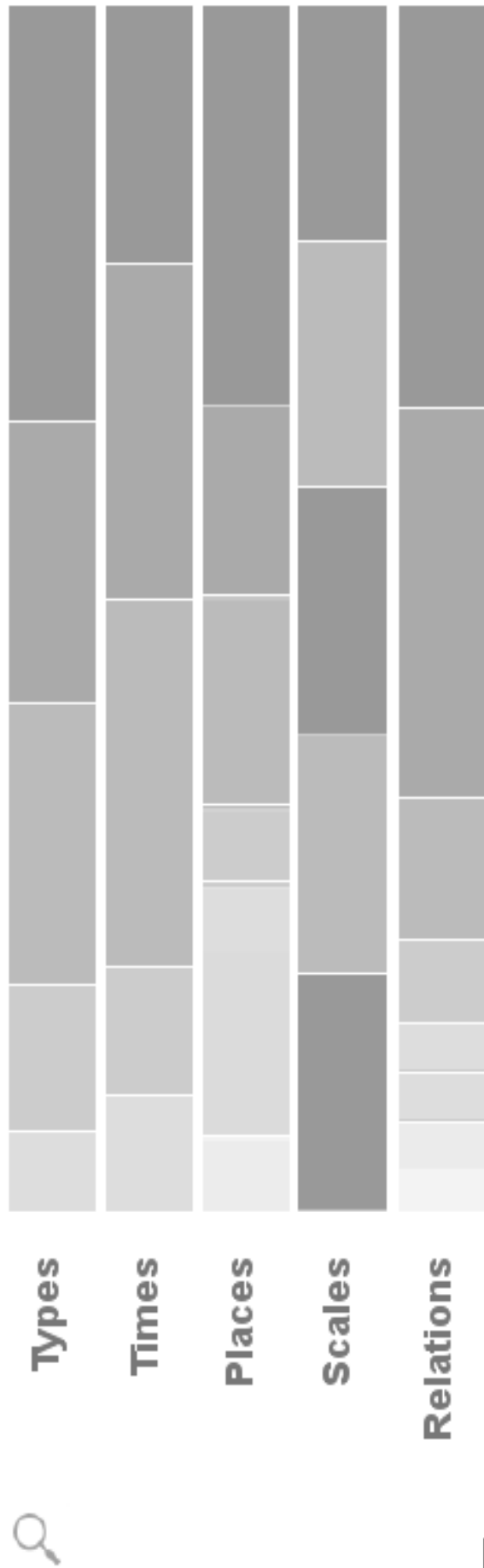
Actual Pace Goal Last Year Alert



Worldwide Sales

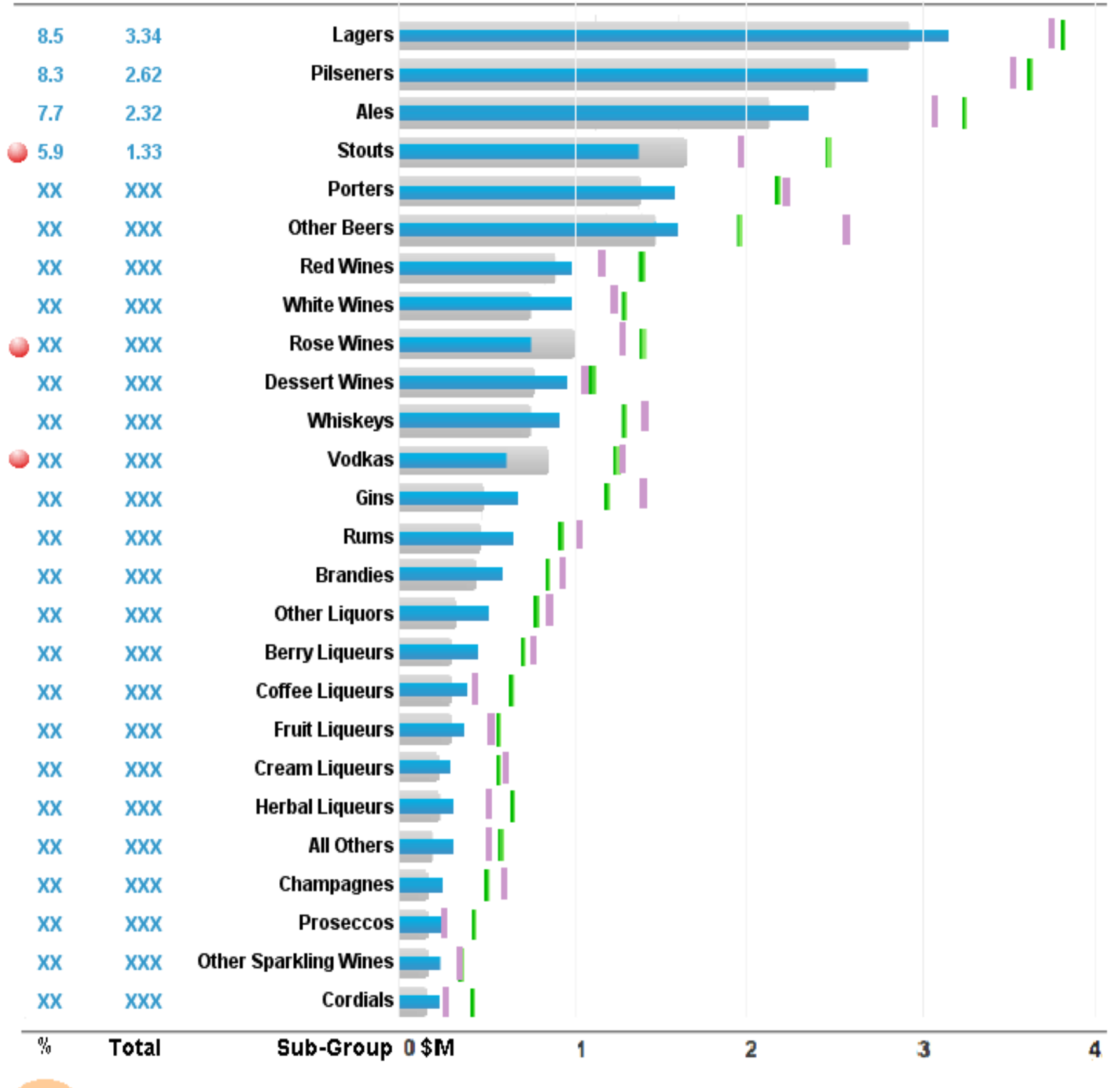
| Sales | Performance | All |





2011 Performance (July 28)

Actual Pace Goal Last Year Alert



Worldwide Sales

| Sales | Performance | All |

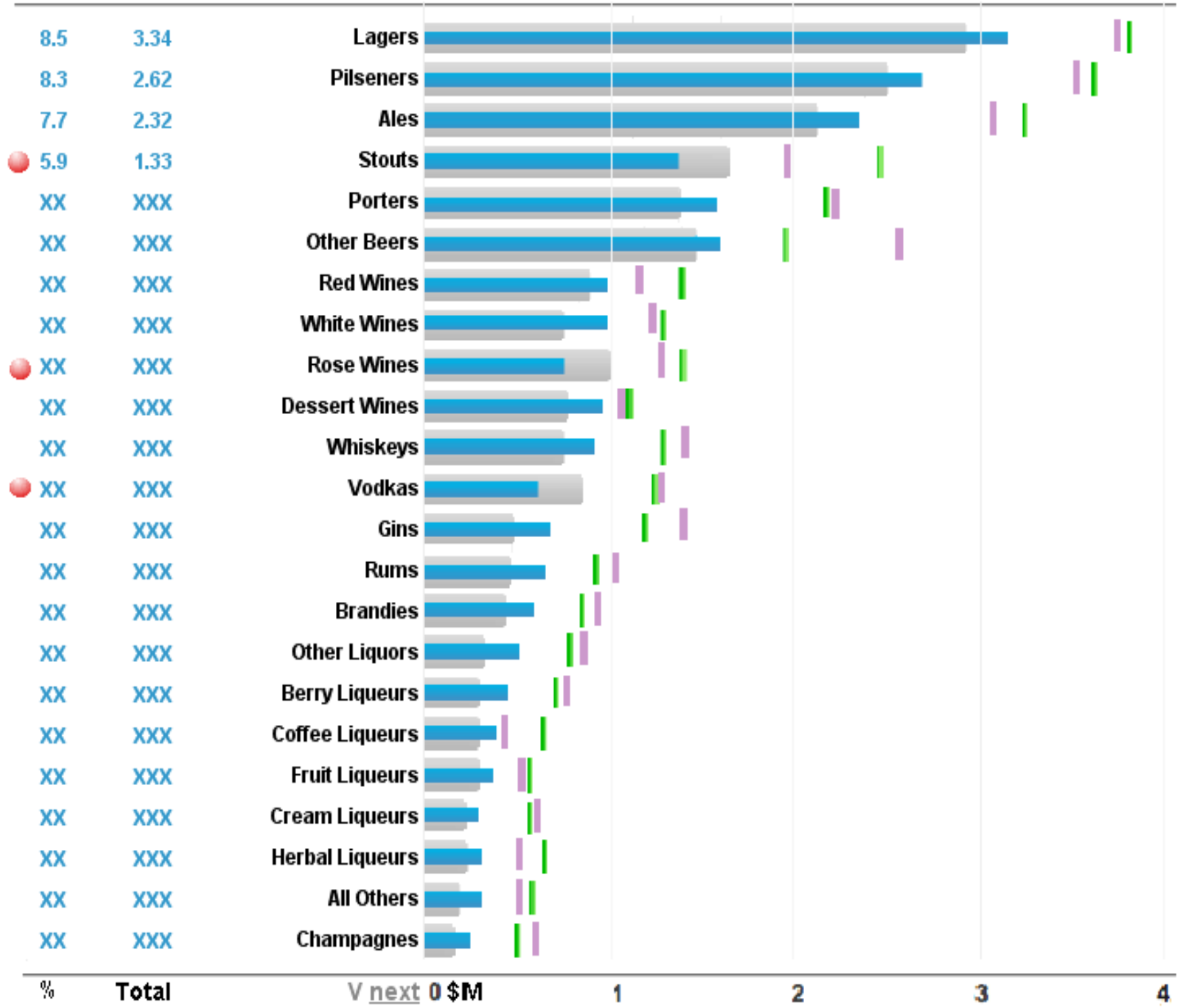


Types Times Places Scales Relations

Worldwide Sales

2011 Performance (July 28)

Actual Pace Goal Last Year Alert



Measures X

| Sales | Unit Volume | Costs | Profit | Context |

Measures are available as in BOBJX, and the Display uses the same auto-charting solution for adding measures, maxing at three.

There is also an option to display compilations of small multiples instead of a densely-layered single chart, thus extending the limit of measures above three.

Worldwide Sales

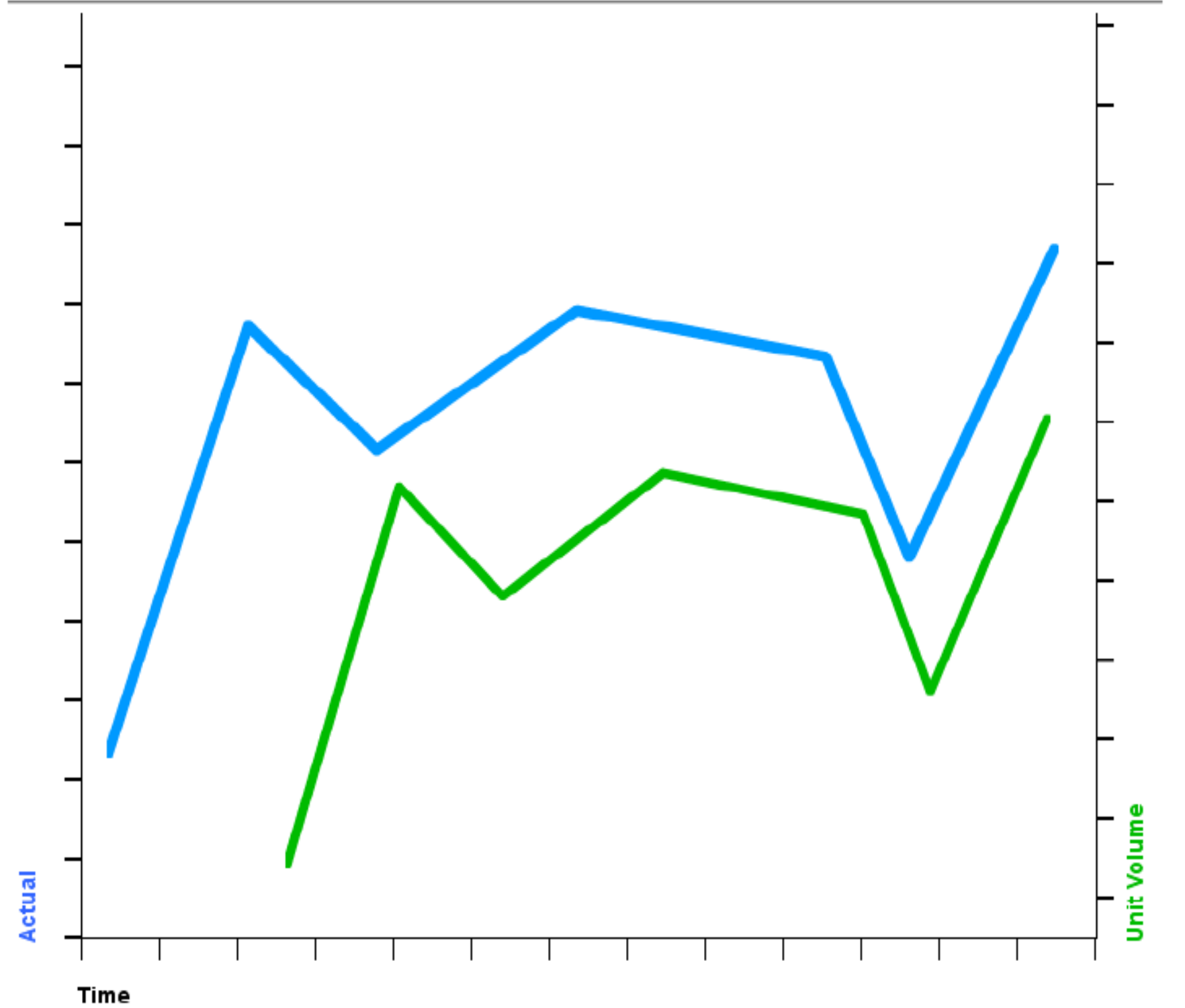
| Sales | Performance | All |



Types
Times
Places
Scales
Relations

2011 Performance (July 28)

Actual Pace Goal Last Year Alert



Measures Combine | Compare X

| Sales | **Unit Volume** | Costs | Profit | Context |

Worldwide Sales

| Sales, Unit Volume | Performance | All |



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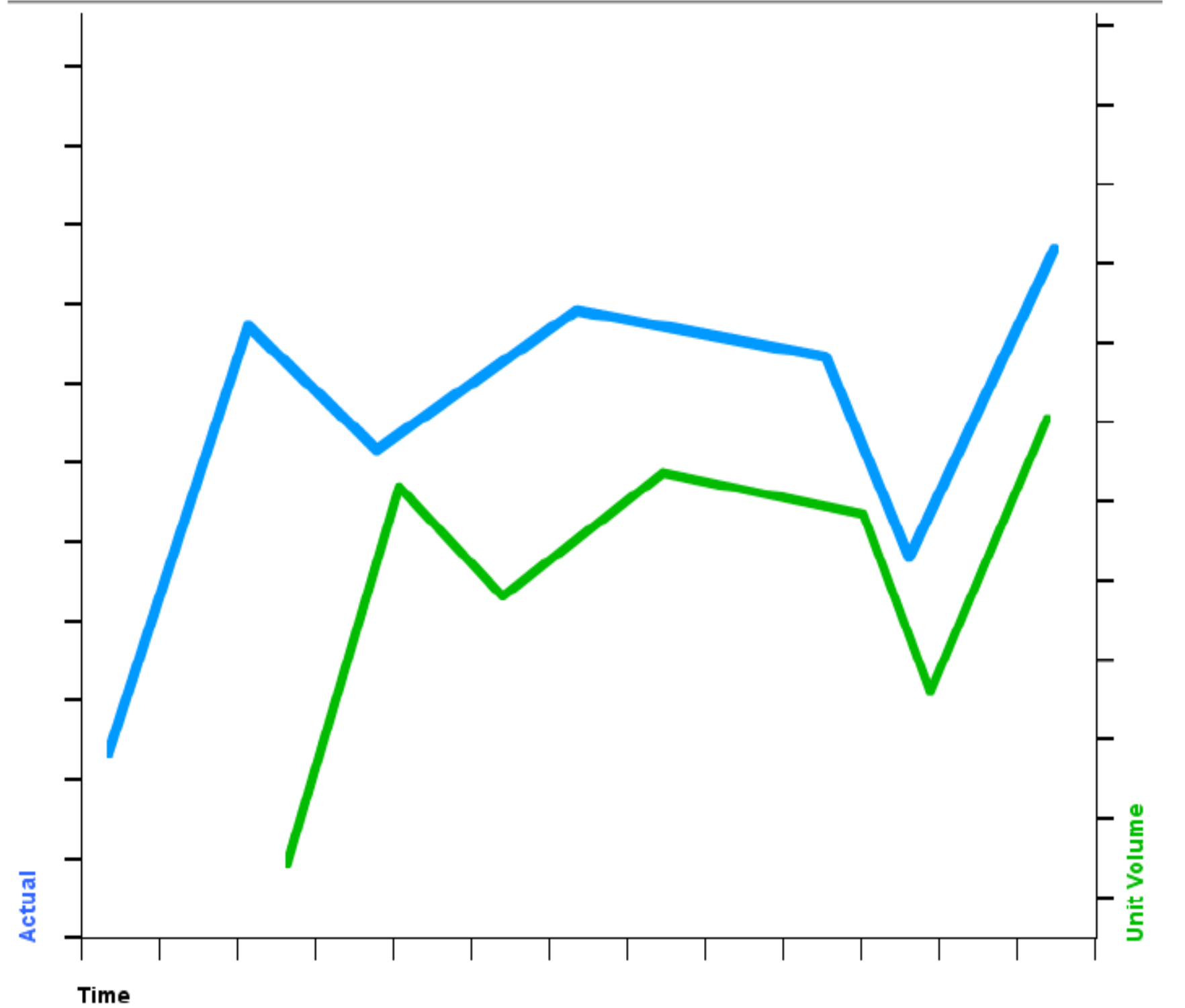
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Types Times Places Scales Relations

Worldwide Sales

2011 Performance (July 28)

Actual Pace Goal Last Year Alert



Measures Combine | Compare X

| Sales | **Unit Volume** | Costs | Profit | Context |

Worldwide Sales

| Sales, Unit Volume | Performance | All |



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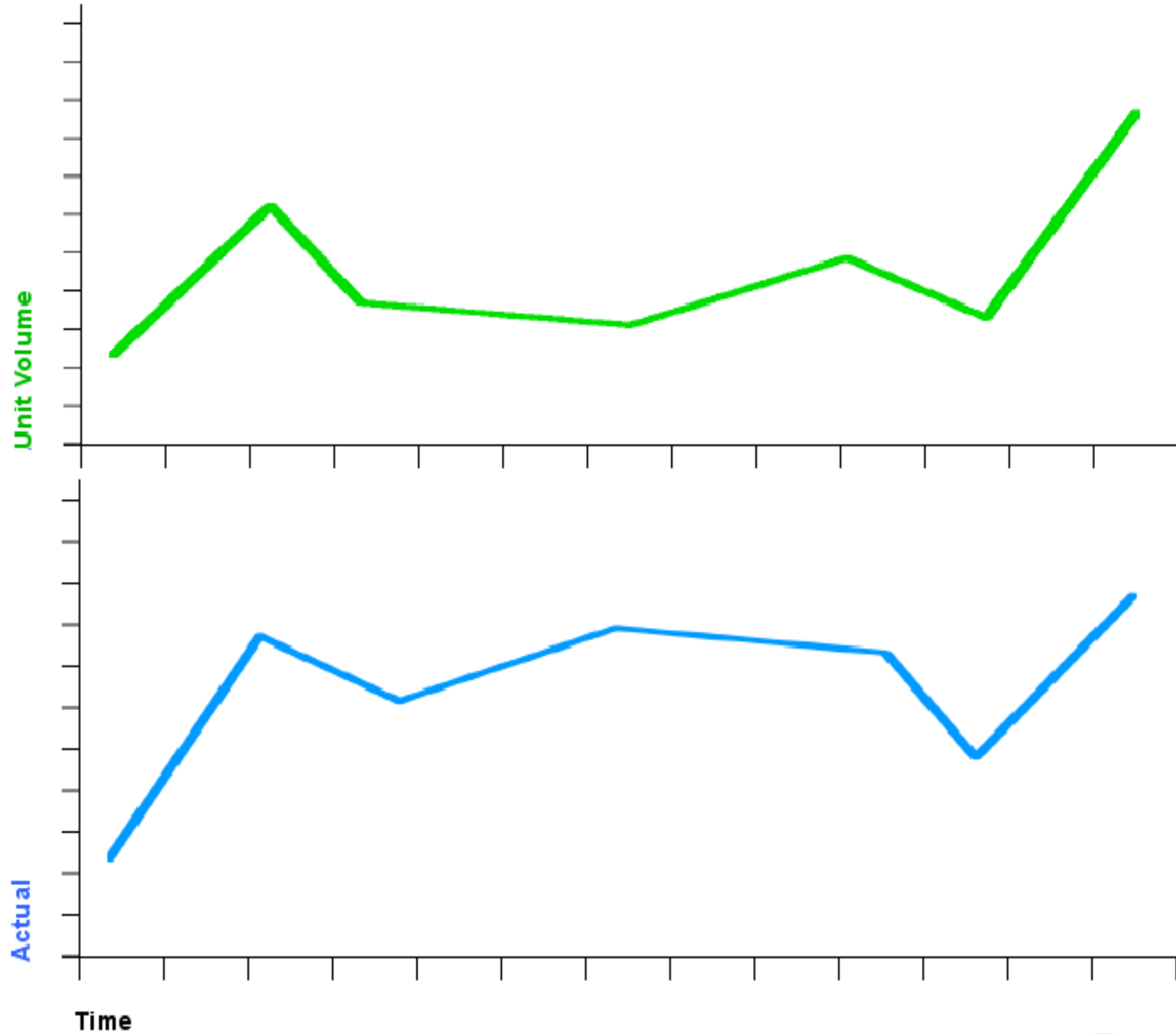
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Types Times Places Scales Relations

Worldwide Sales

2011 Performance (July 28)

Actual Pace Goal Last Year Alert



Measures

Combine | Compare X

| Sales | Unit Volume | Costs | Profit | Context |

Worldwide Sales

| Sales, Unit Volume | Performance | All |



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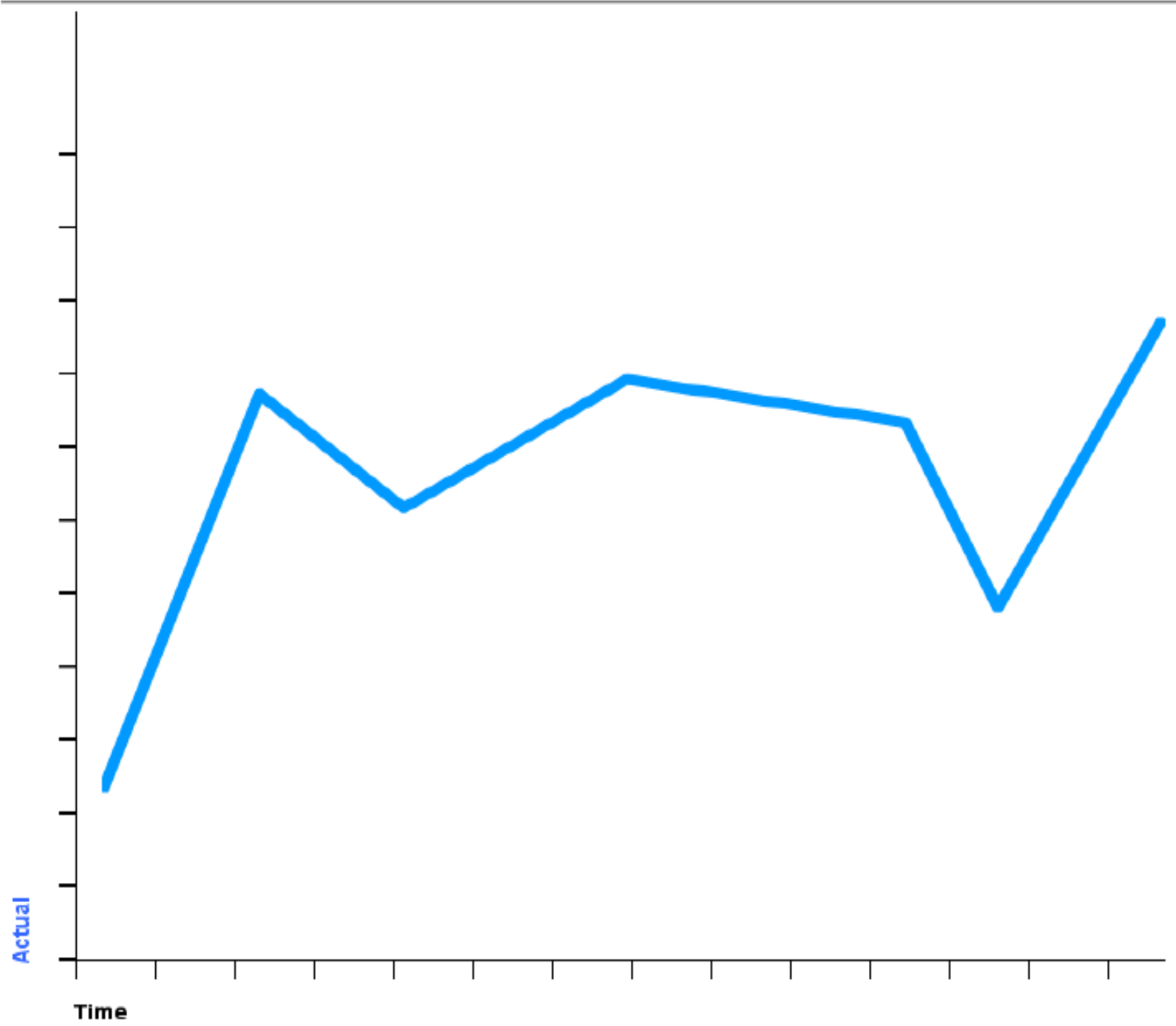
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Types Times Places Scales Relations

Worldwide Sales

2011 Performance (July 28)

Actual Pace Goal Last Year Alert



Measures

| Sales | Unit Volume | Costs | Profit | Context |

Combine | Compare X

Worldwide Sales

| Sales, Unit Volume | Performance | All |



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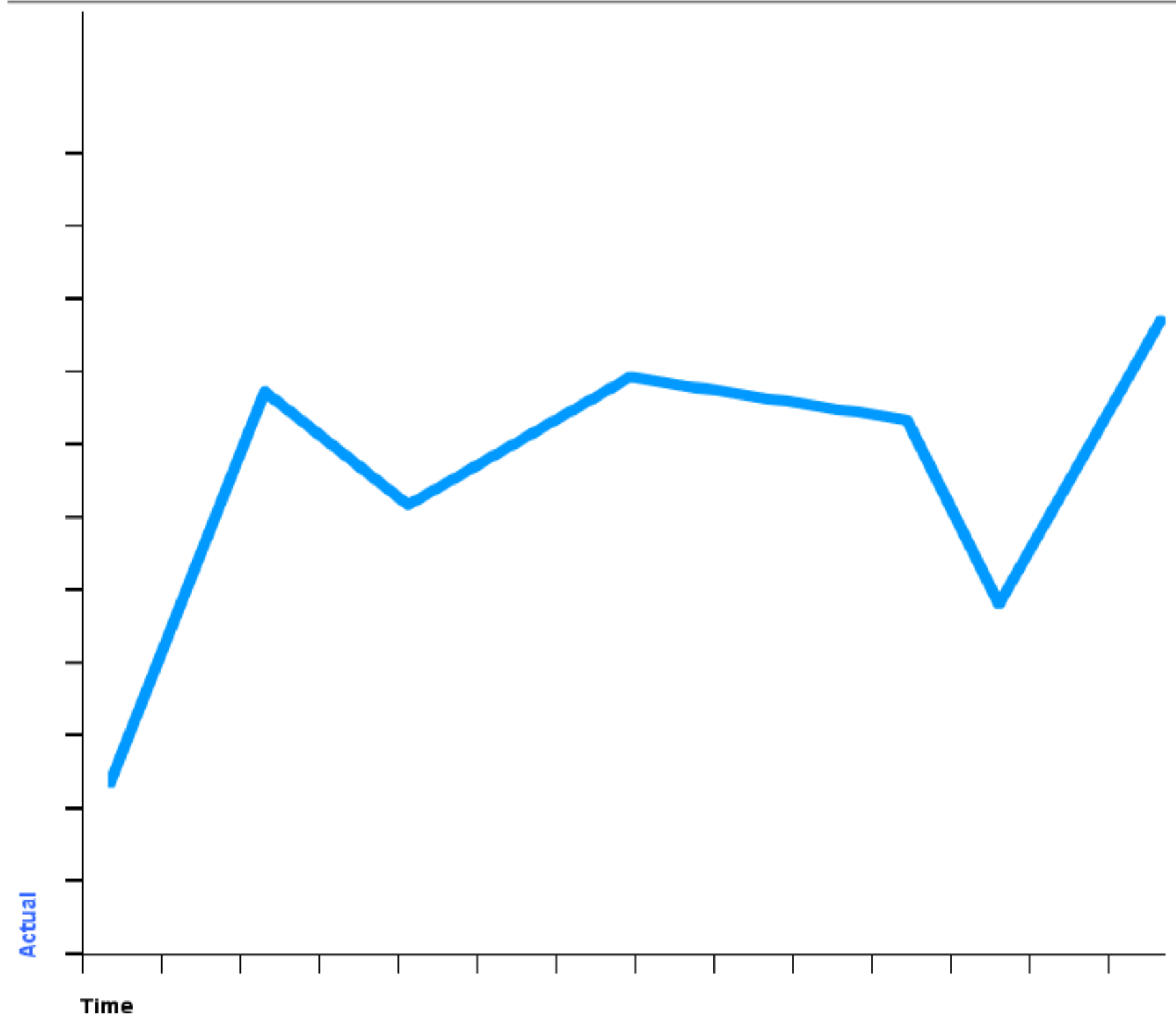
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Types Times Places Scales Relations

Worldwide Sales

2011 Performance (July 28)

Actual Pace Goal Last Year Alert



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| Sales | Performance | All |



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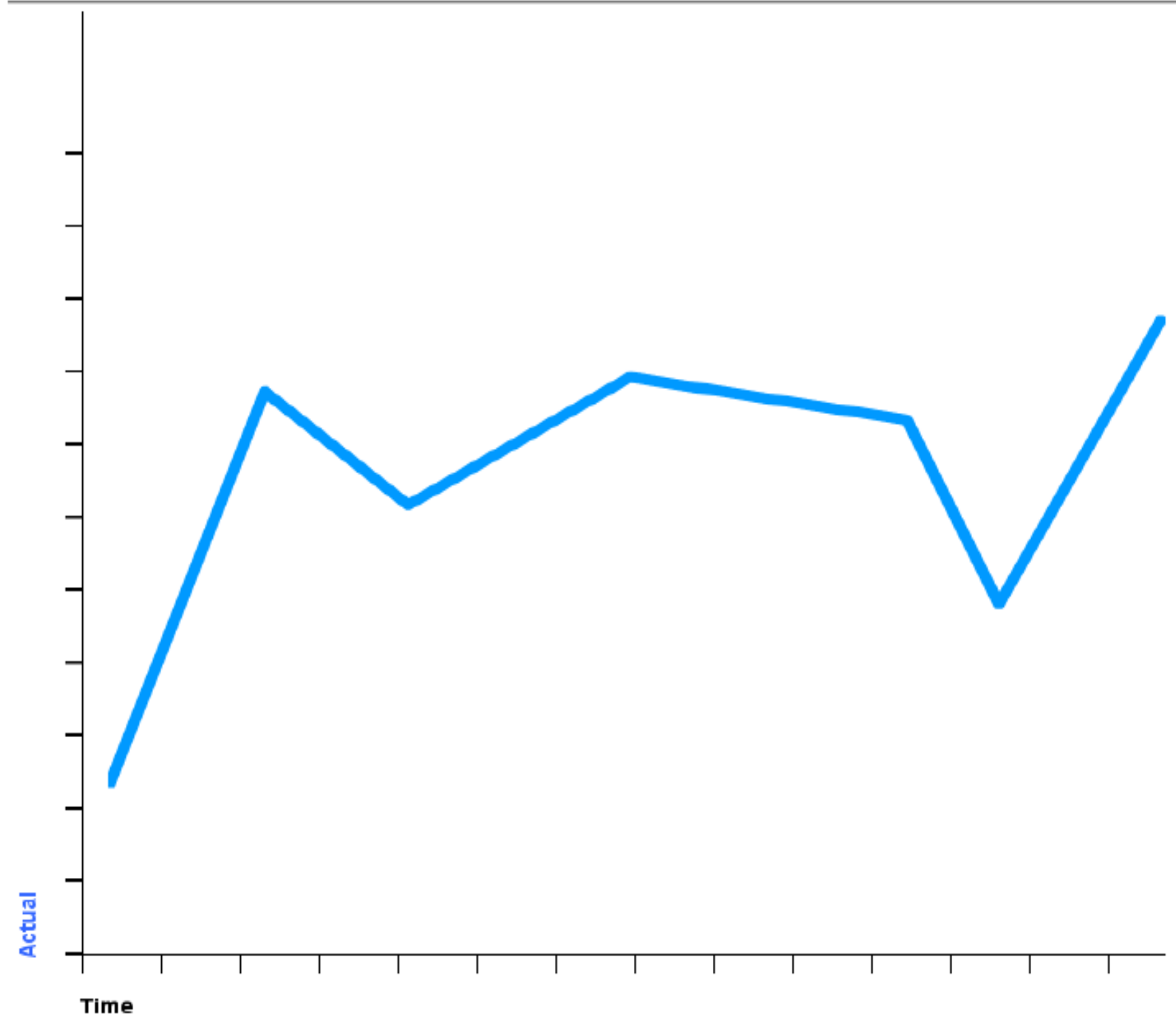
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Types Times Places Scales Relations

Worldwide Sales

2011 Performance (July 28)

Actual Pace Goal Last Year Alert



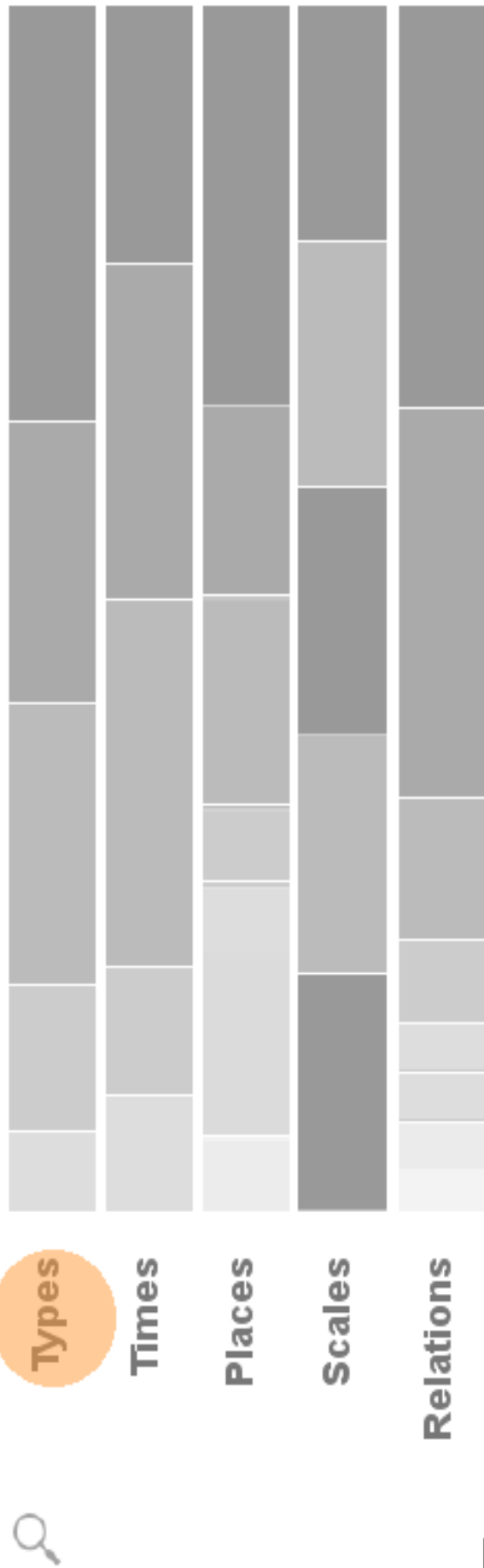
Measures
 | Sales | Unit Volume | Costs | Profit | Context |

| Sales | Performance | All |



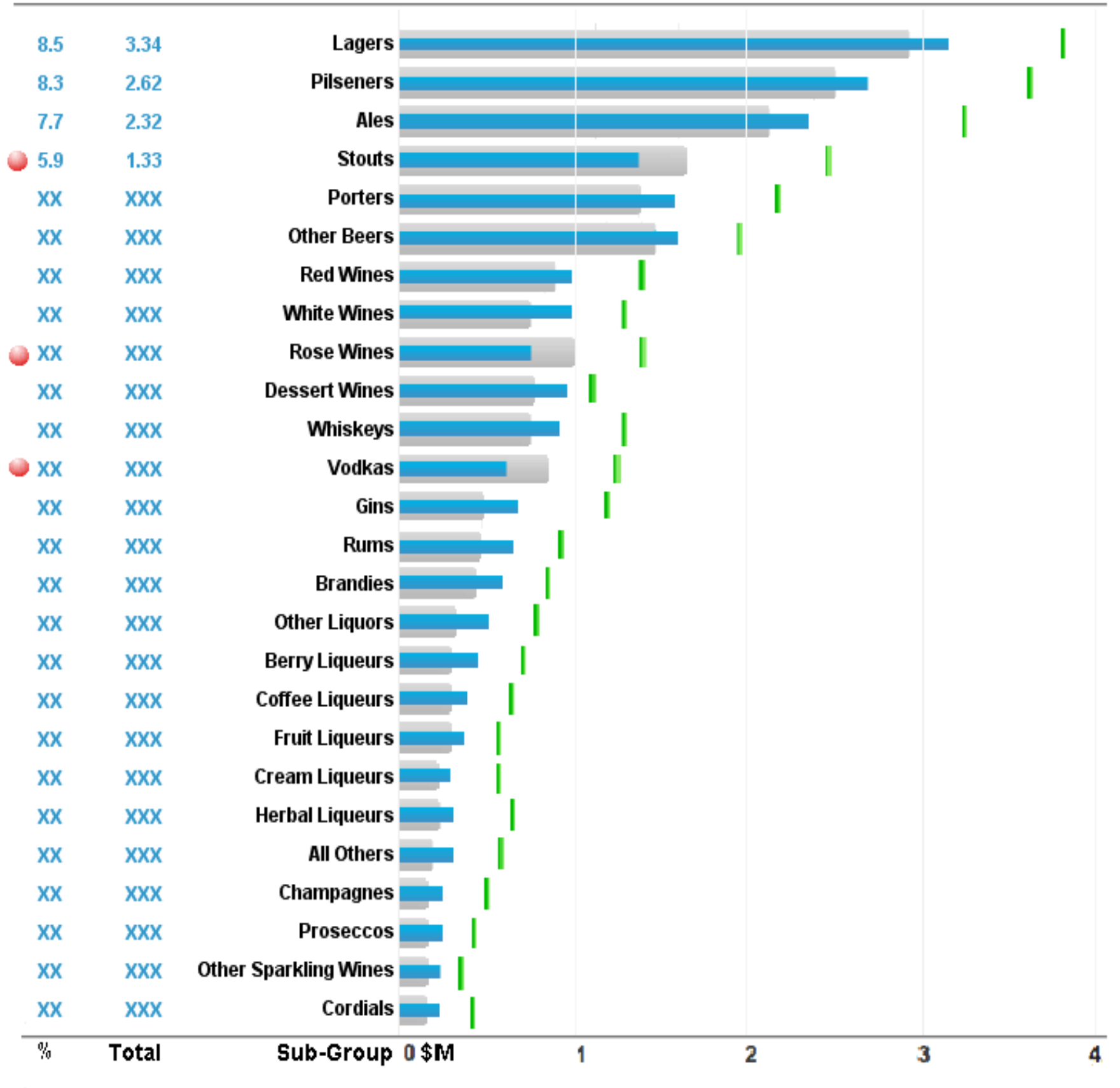
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2011 Performance (July 28)

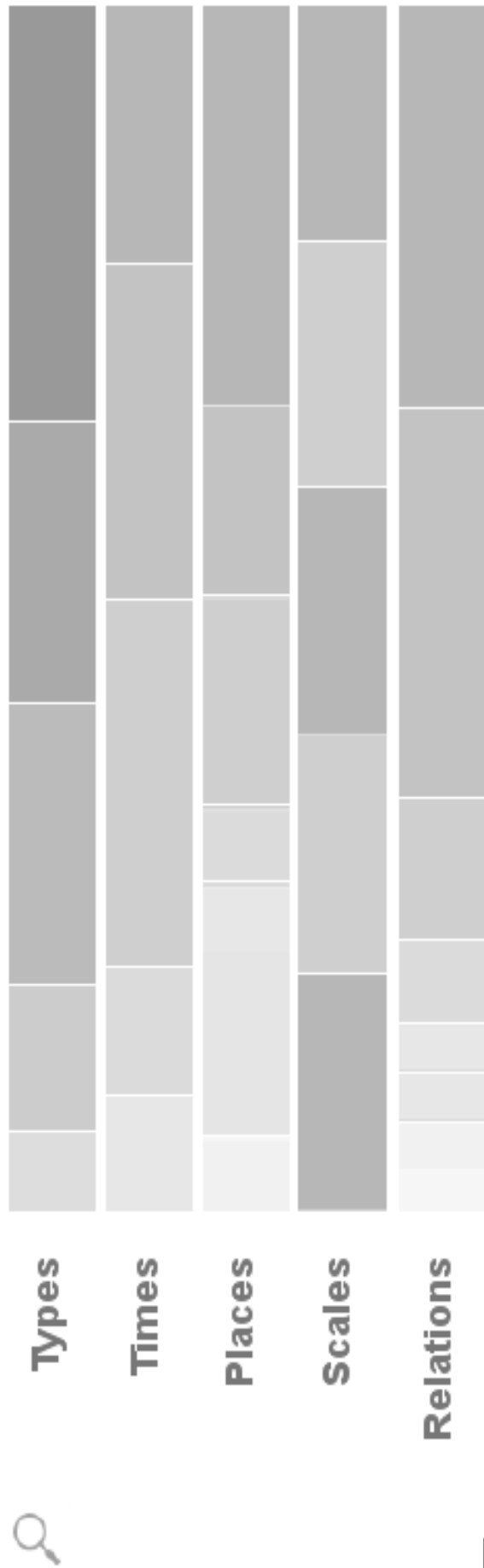
Actual Pace Goal Last Year Alert



Worldwide Sales

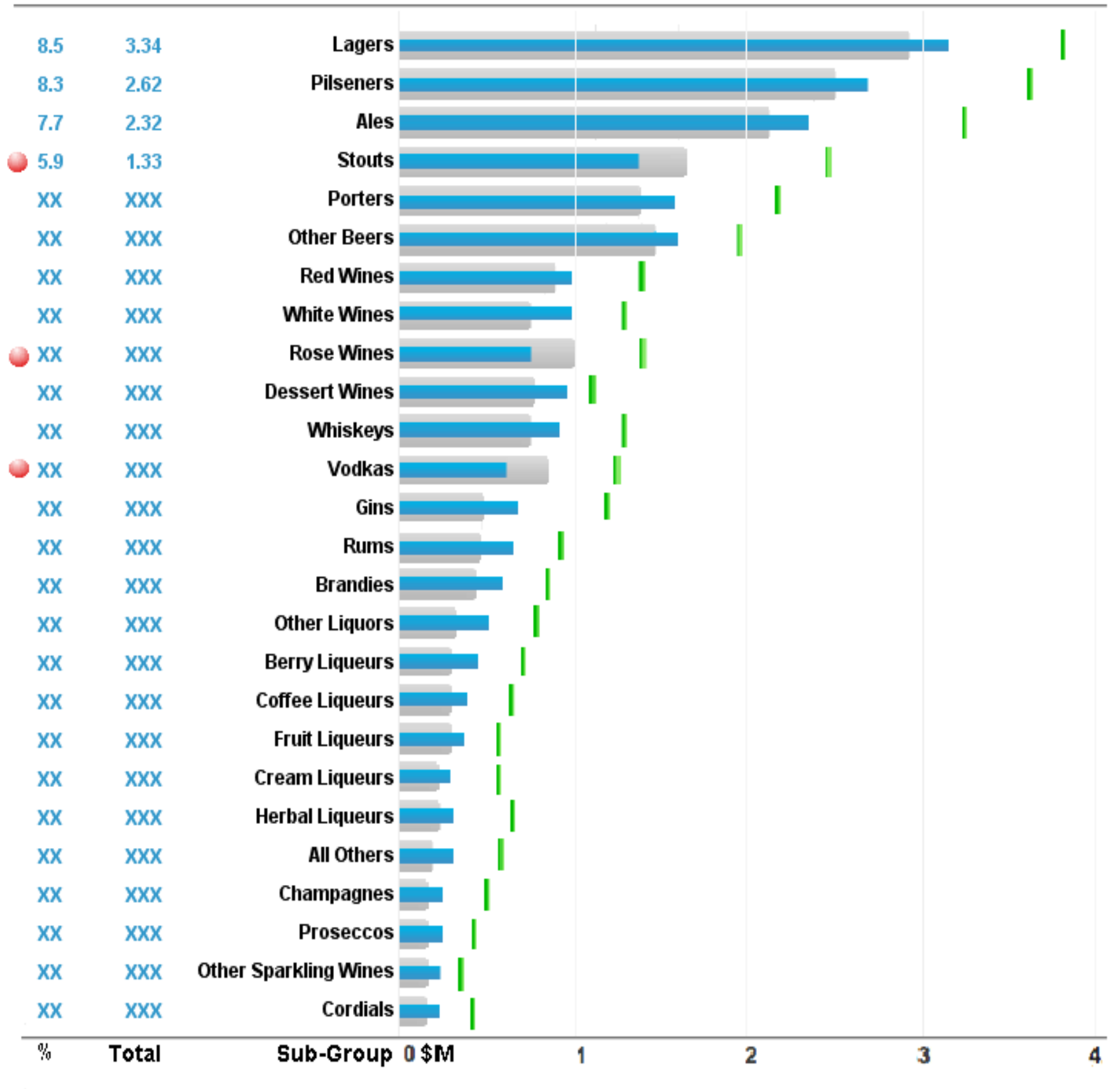
| Sales | Performance | by Sub-Group |





2011 Performance (July 28)

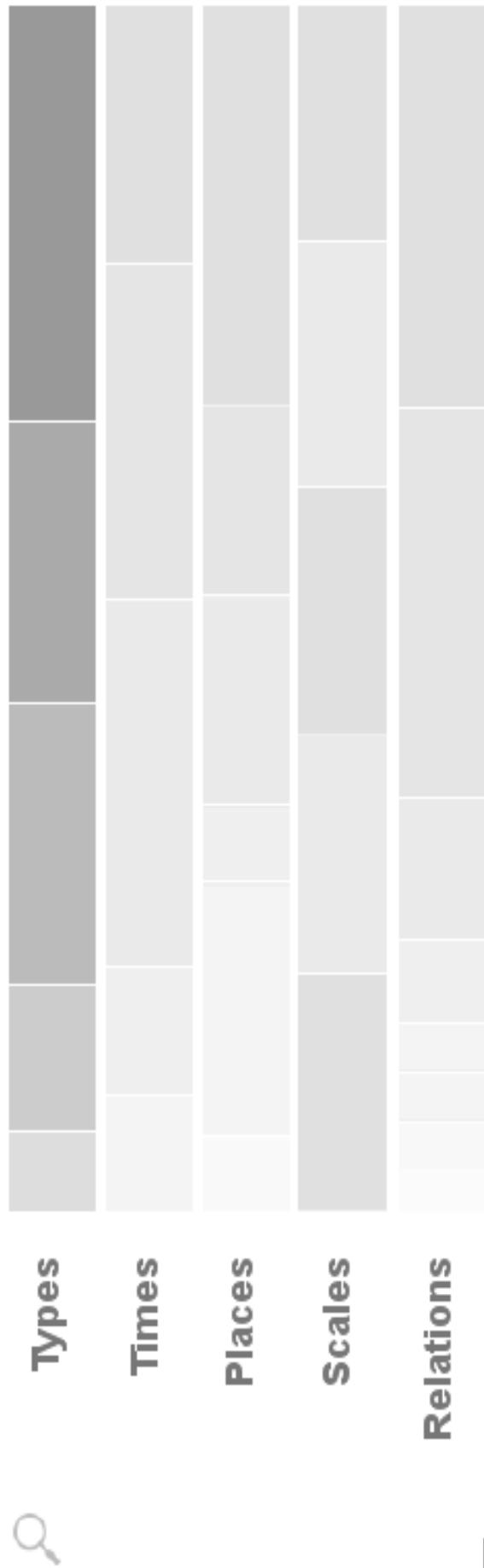
Actual Pace Goal Last Year Alert



Worldwide Sales

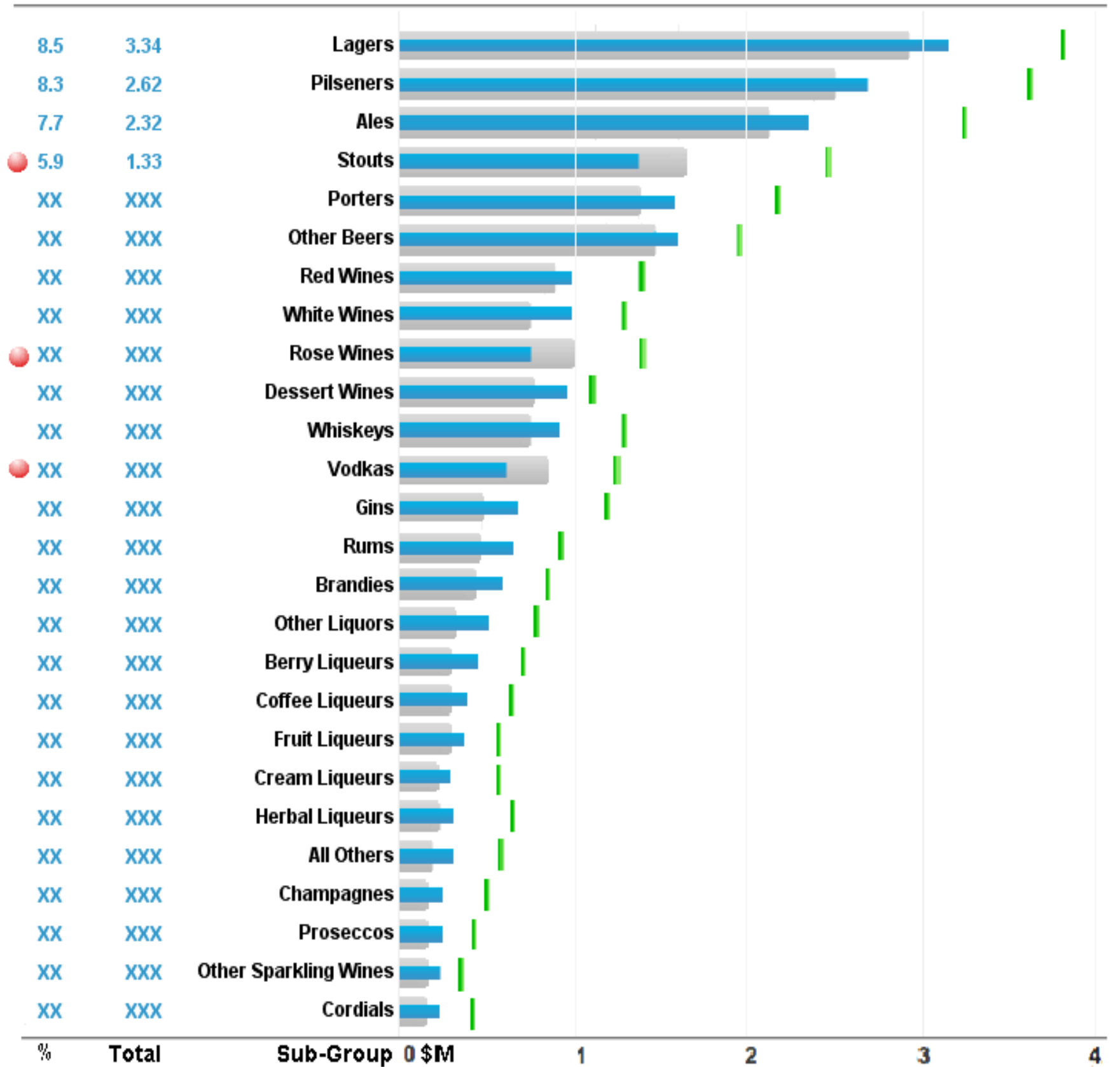
| Sales | Performance | by Sub-Group |





2011 Performance (July 28)

Actual Pace Goal Last Year Alert



Worldwide Sales

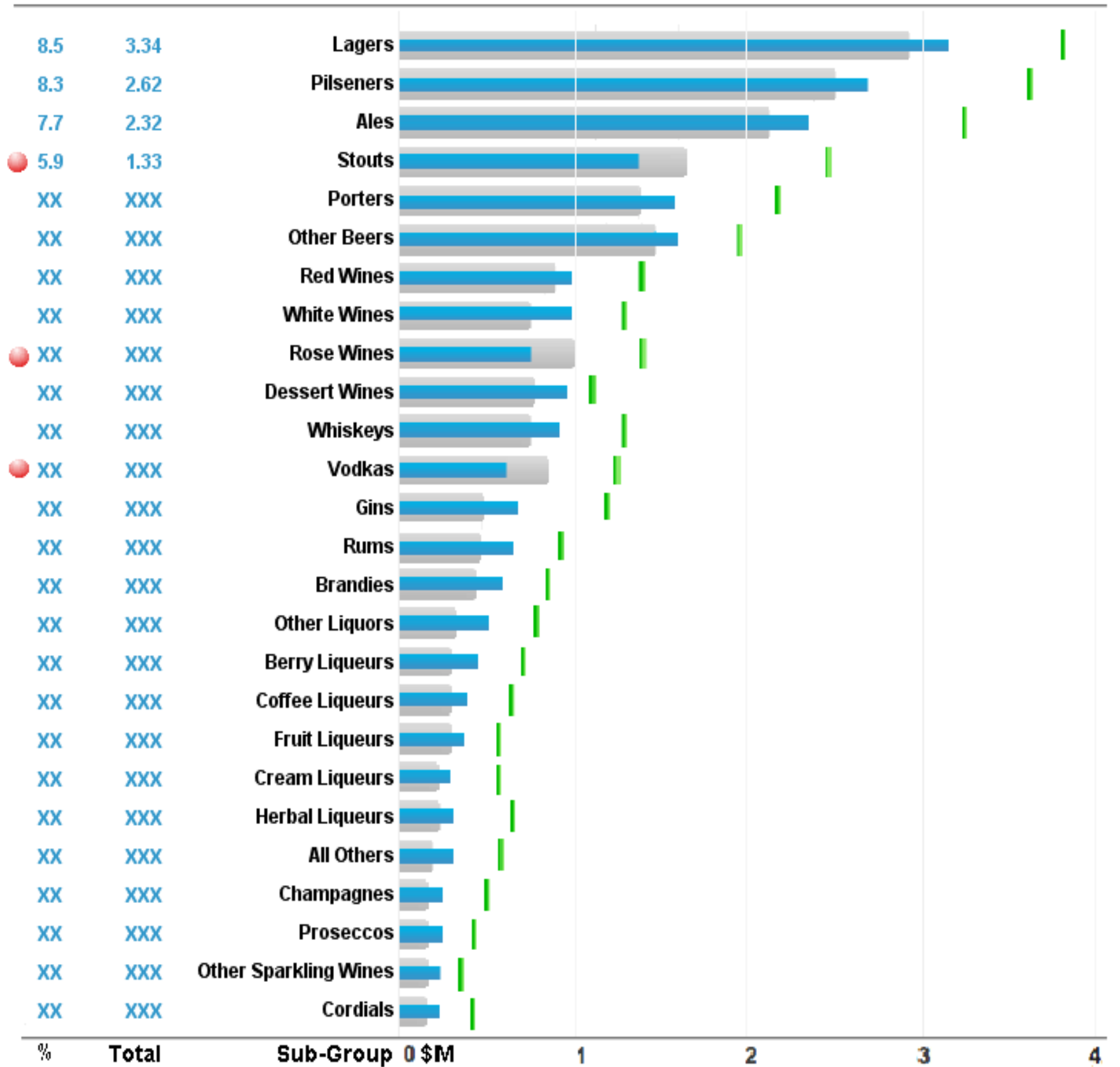
| Sales | Performance | by Sub-Group |



Types
Times
Places
Scales
Relations

2011 Performance (July 28)

Actual Pace Goal Last Year Alert



Worldwide Sales

| Sales | Performance | by Sub-Group |





Types

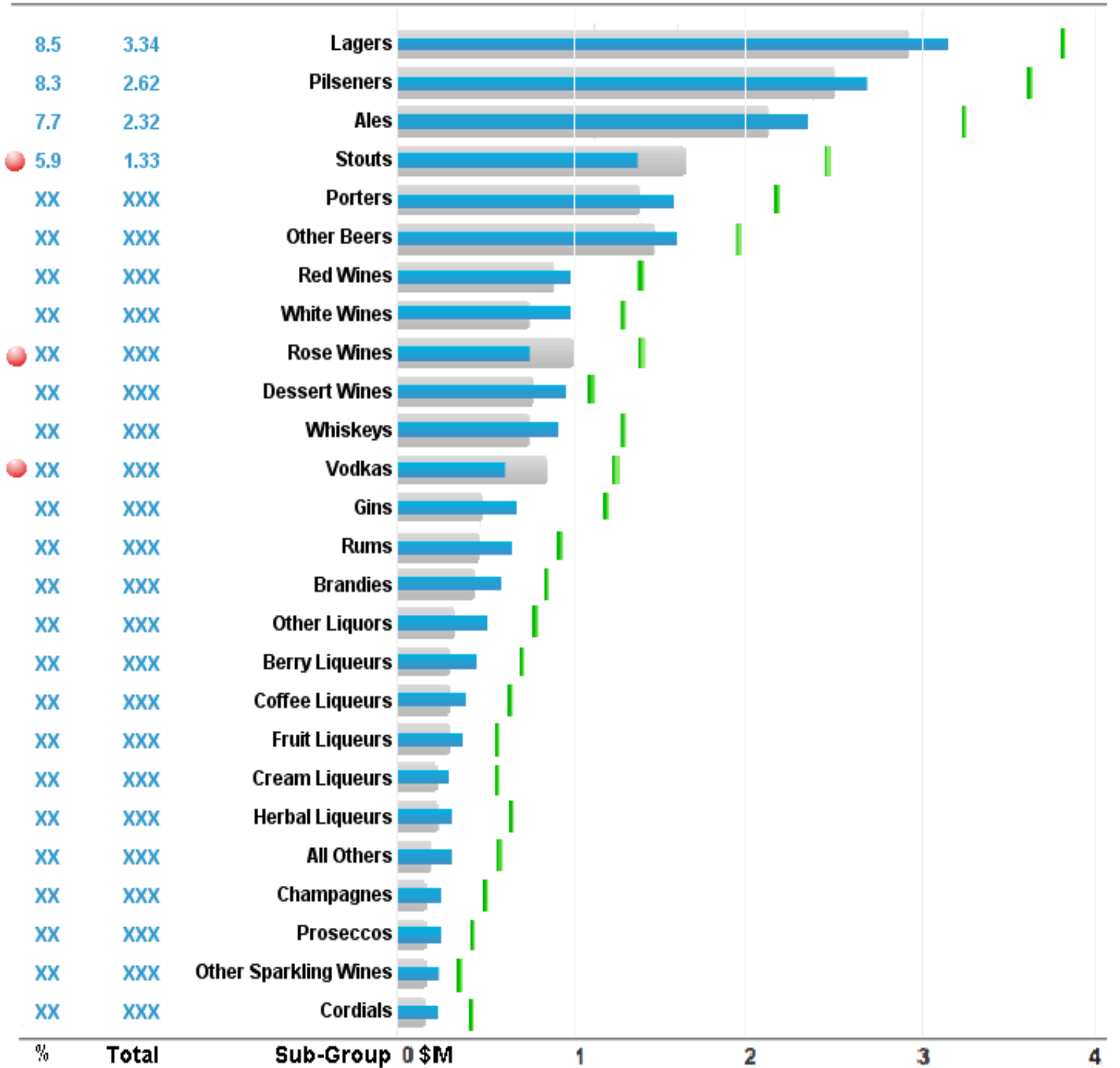
Times

Places

Scales Relations

2011 Performance (July 28)

Actual Pace Goal Last Year Alert



Worldwide Sales

| Sales | Performance | by Sub-Group |





Types

Times

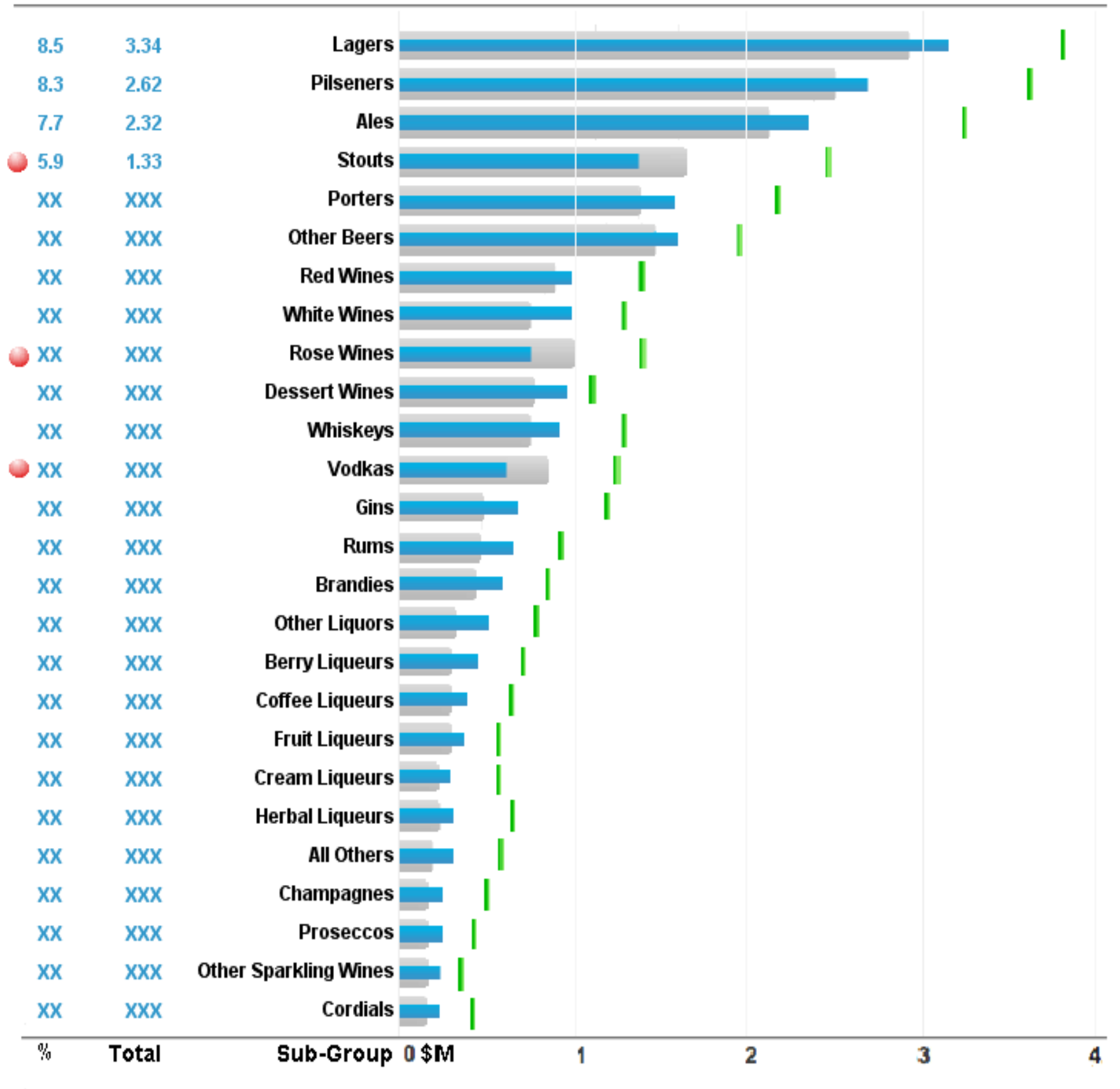
Places Relations

Scales

Relations

2011 Performance (July 28)

Actual Pace Goal Last Year Alert



Worldwide Sales

| Sales | Performance | by Sub-Group |

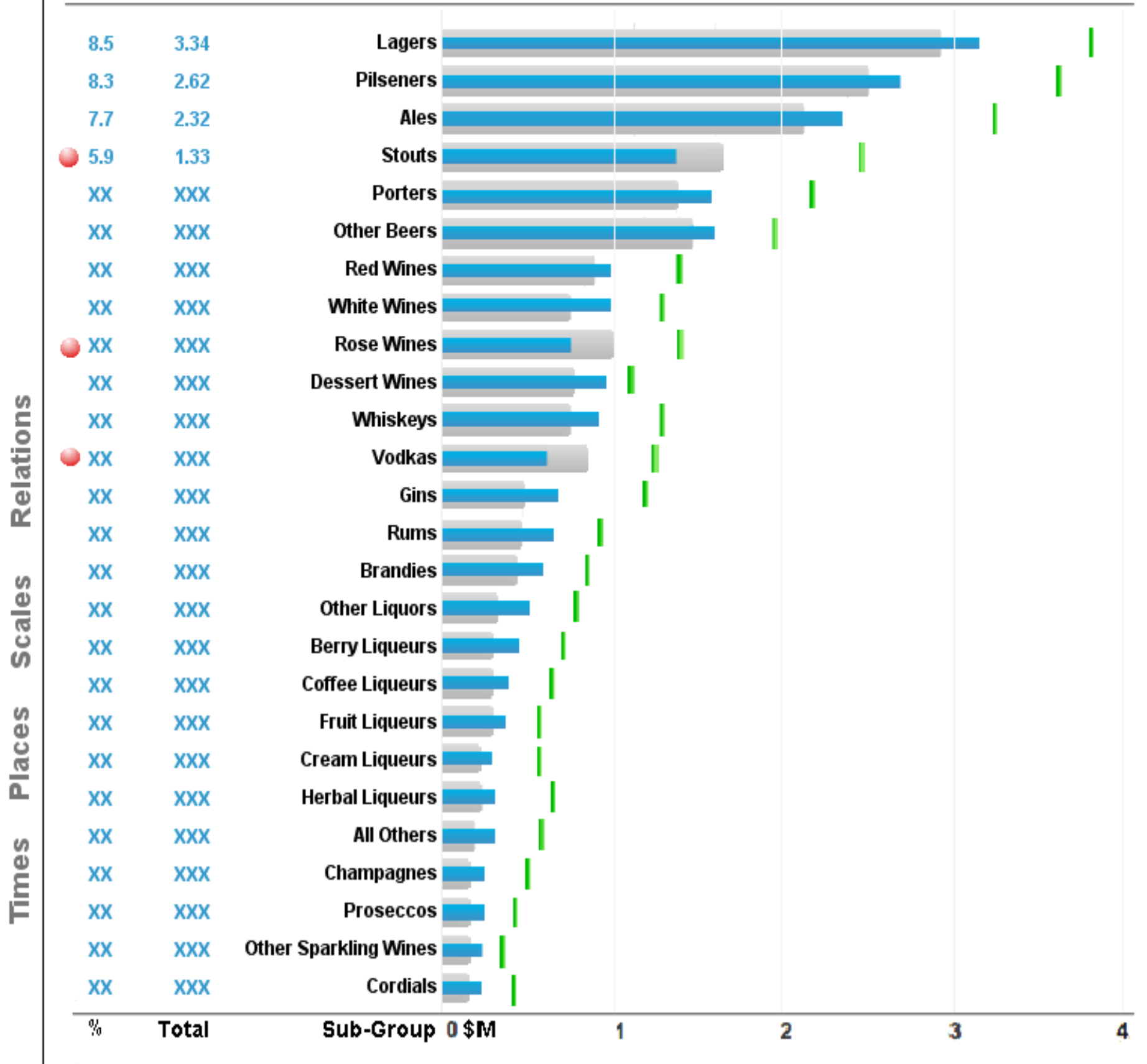




Types

2011 Performance (July 28)

Actual Pace Goal Last Year Alert



Worldwide Sales

| Sales | Performance | by Sub-Group |



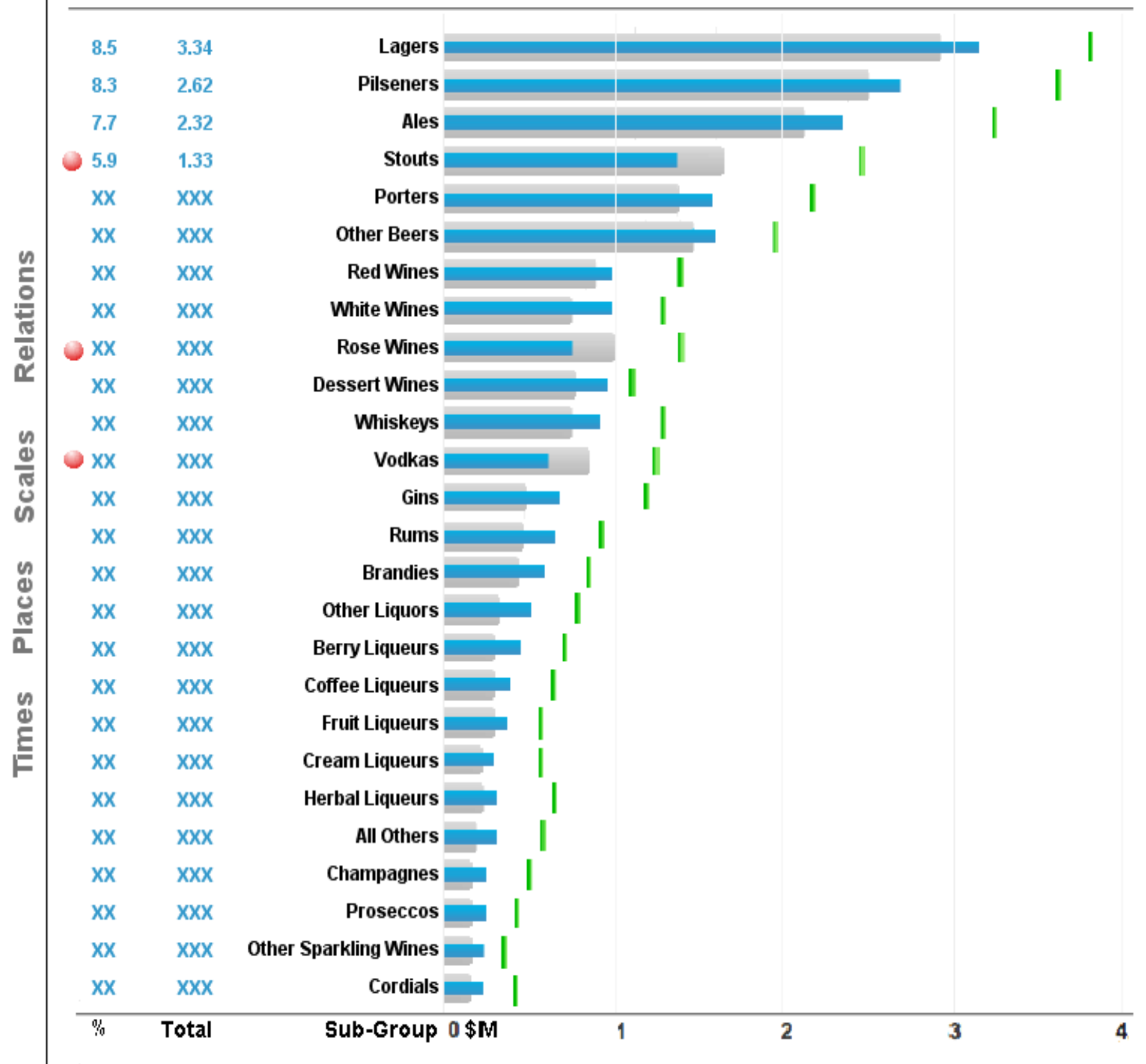


Types

Worldwide Sales

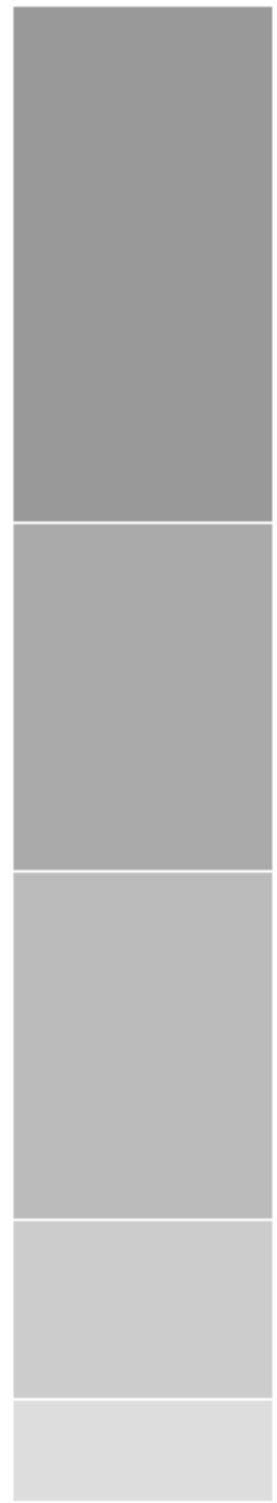
2011 Performance (July 28)

Actual Pace Goal Last Year Alert



| Sales | Performance | by Sub-Group |





Groups

Types



Sub-Groups

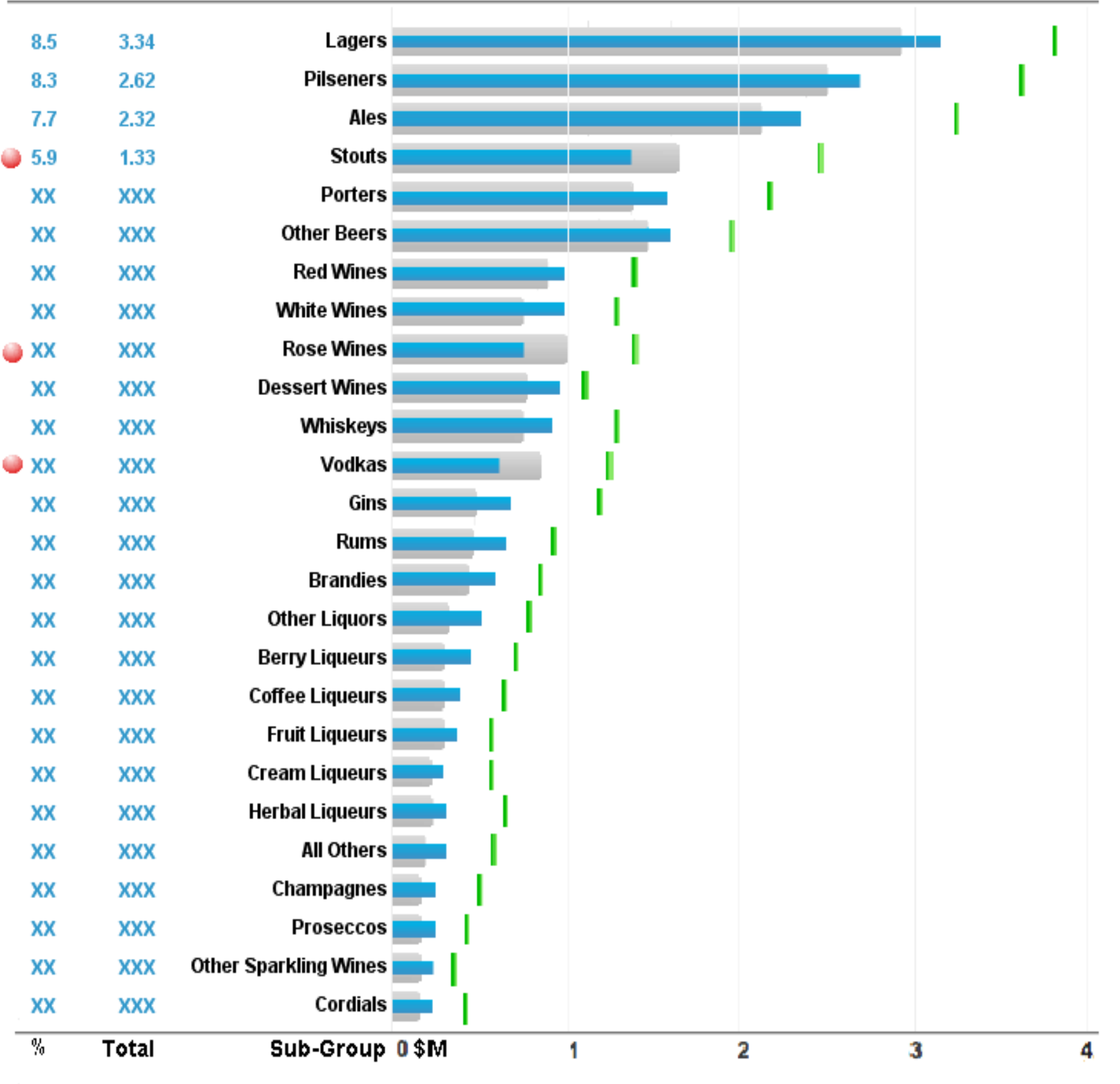
Ingredients

Origins

Times Places Scales Relations

2011 Performance (July 28)

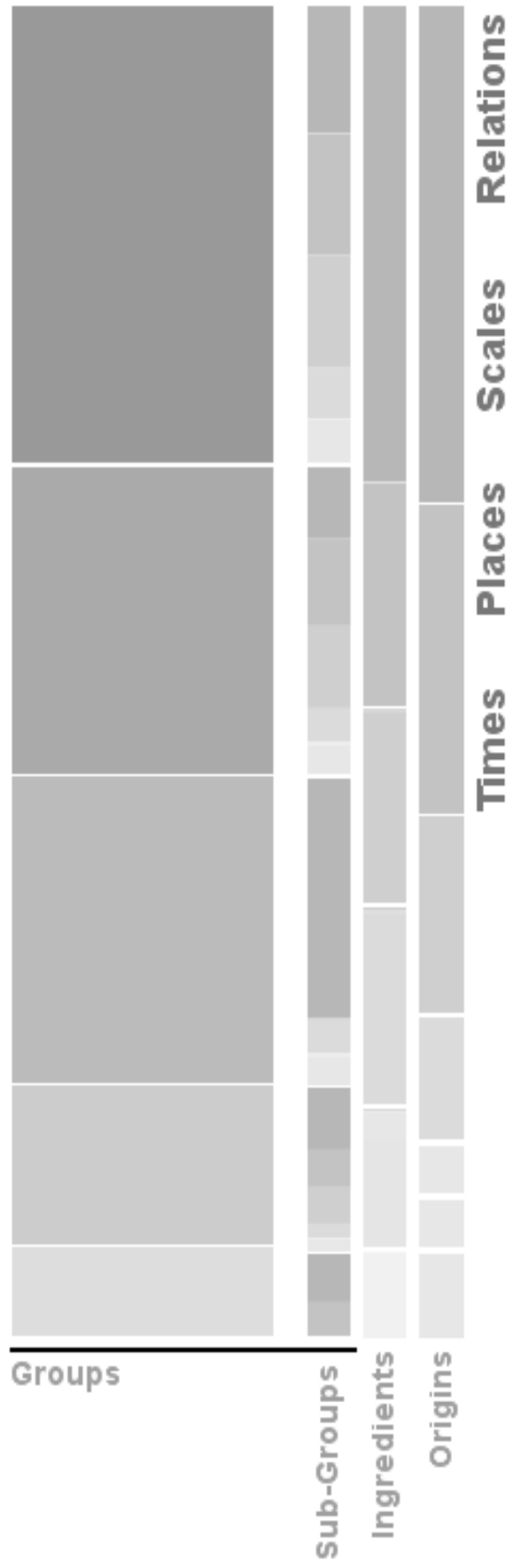
Actual Pace Goal Last Year Alert



Worldwide Sales

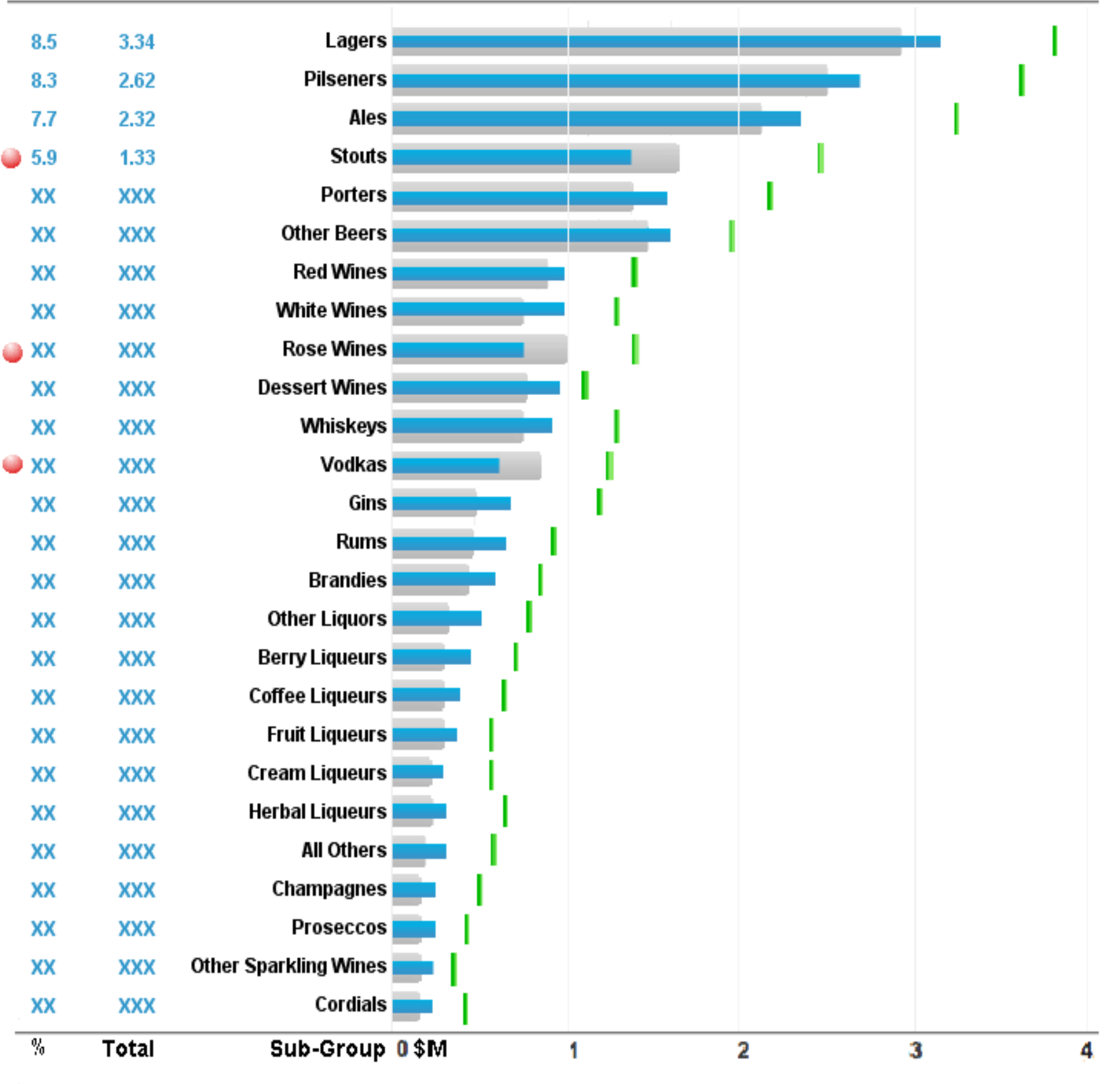
| Sales | Performance | by Sub-Group |





2011 Performance (July 28)

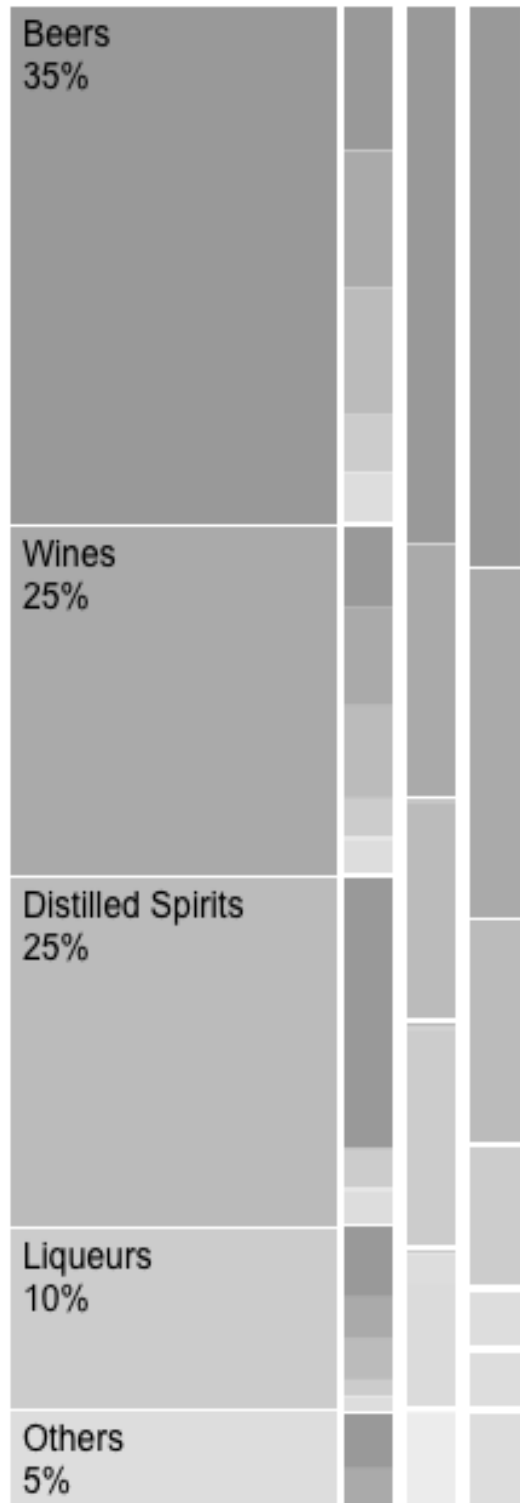
Actual Pace Goal Last Year Alert



Worldwide Sales

| Sales | Performance | by Sub-Group |



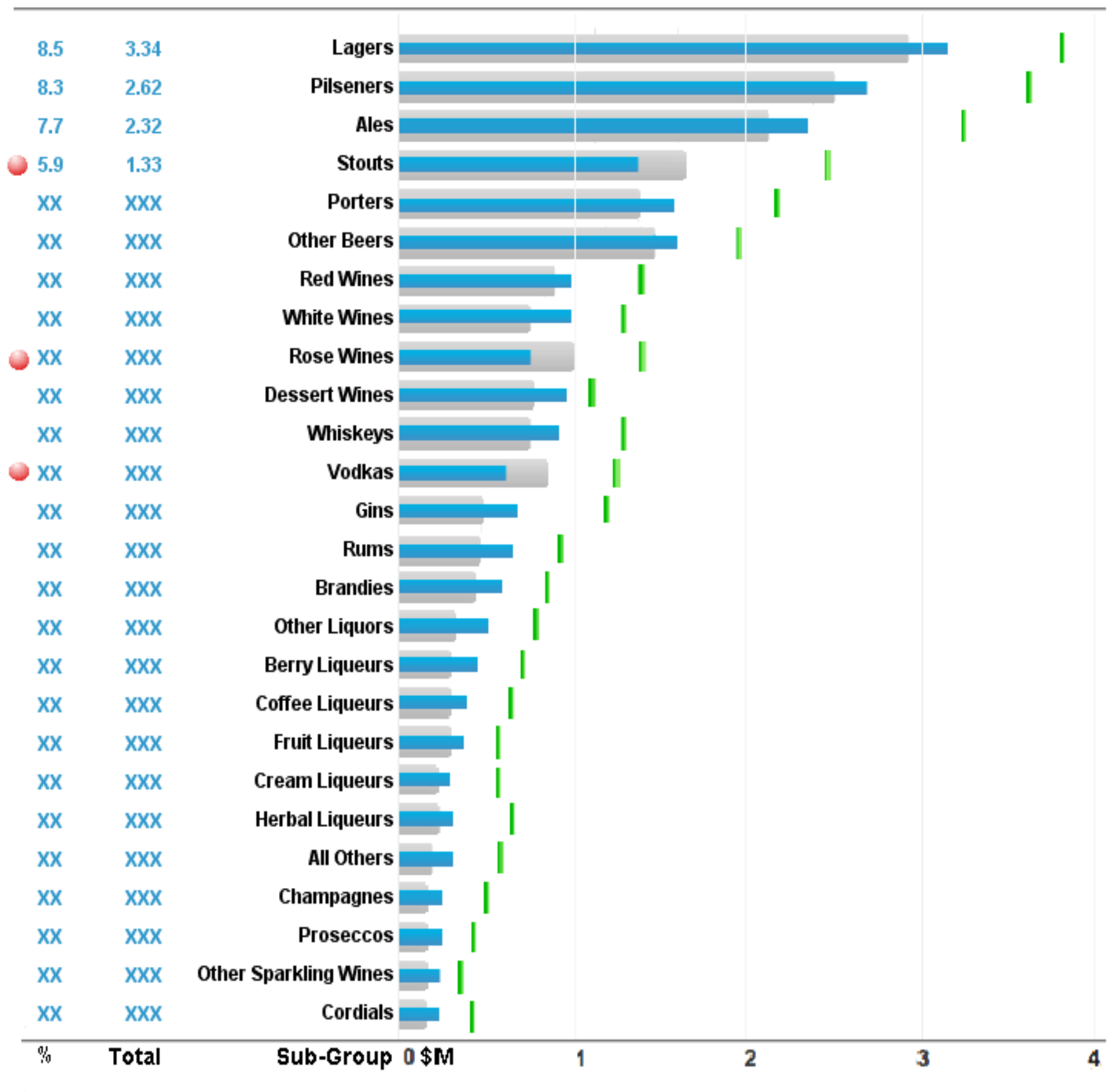


Types

Worldwide Sales

2011 Performance (July 28)

Actual Pace Goal Last Year Alert



| Sales | Performance | by Sub-Group |



Beers
35%

Wines
25%

Distilled Spirits
25%

Liqueurs
10%

Others
5%

Groups

Wine



Types

Sub-Groups

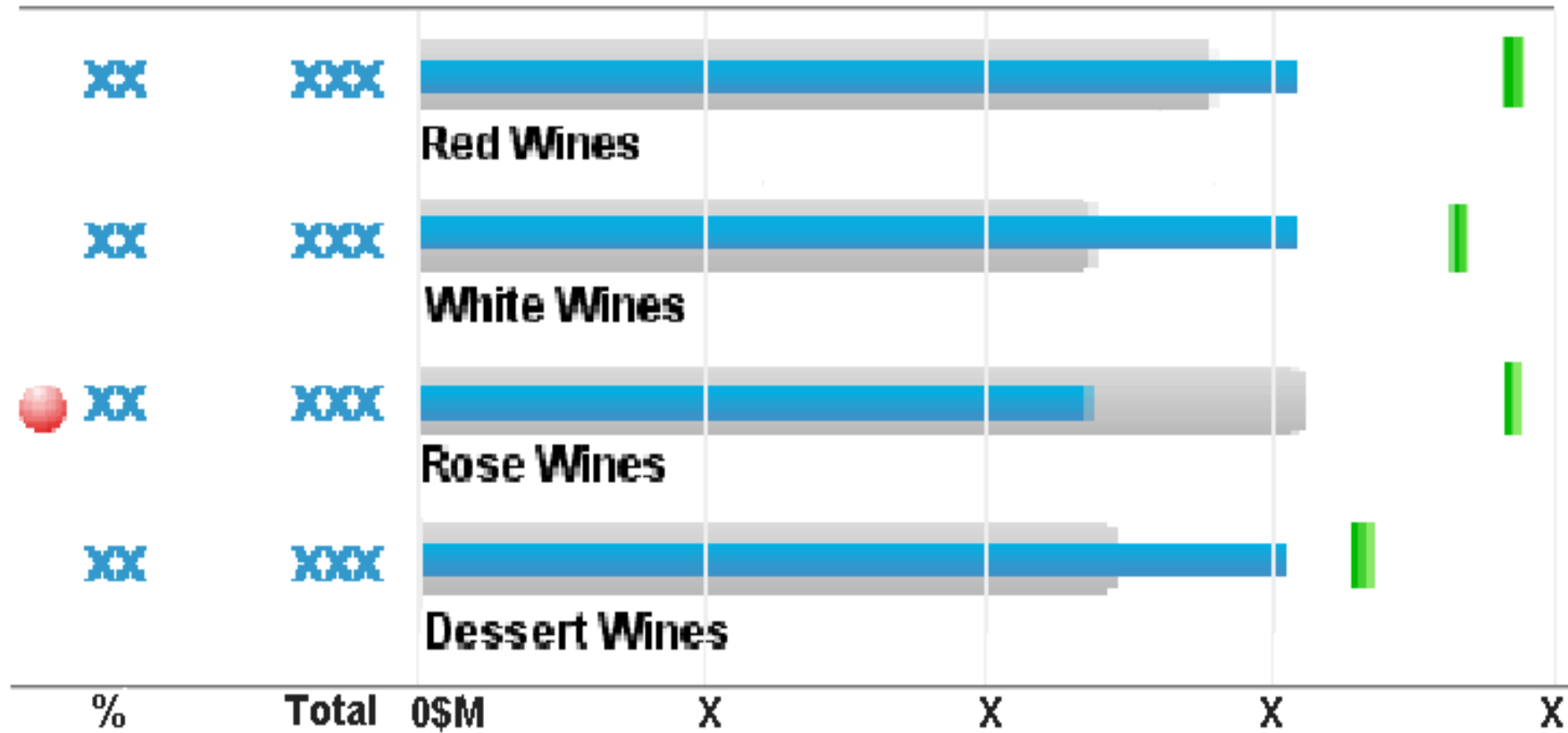
Ingredients

Origins

Relations
Scales
Places
Times

2011 Performance (July 28)

Actual Pace Goal Last Year Alert



Here the User begins to filter the Source data. The Aspect of **Type** is opened to reveal its four Dimensions.

Two of them form a hierarchy and are grouped as such. Opening an aspect defaults to the first dimension by opening it and displaying the members in a Strip Chart according to the Prime Measure (Sales in this case).

As filters are applied, notice how the fragmentation of the other Dimension strips consolidates to represent the smaller number of values resulting from constraining the groups.

E.g Ingredient goes from many to one (grapes).

Notice also how the result data shown in the Plain is constricted as the filtering occurs. (ignore the placeholder numbers).

Groups of inter-dependent hierarchical dimensions are indicated by the simple header bar.

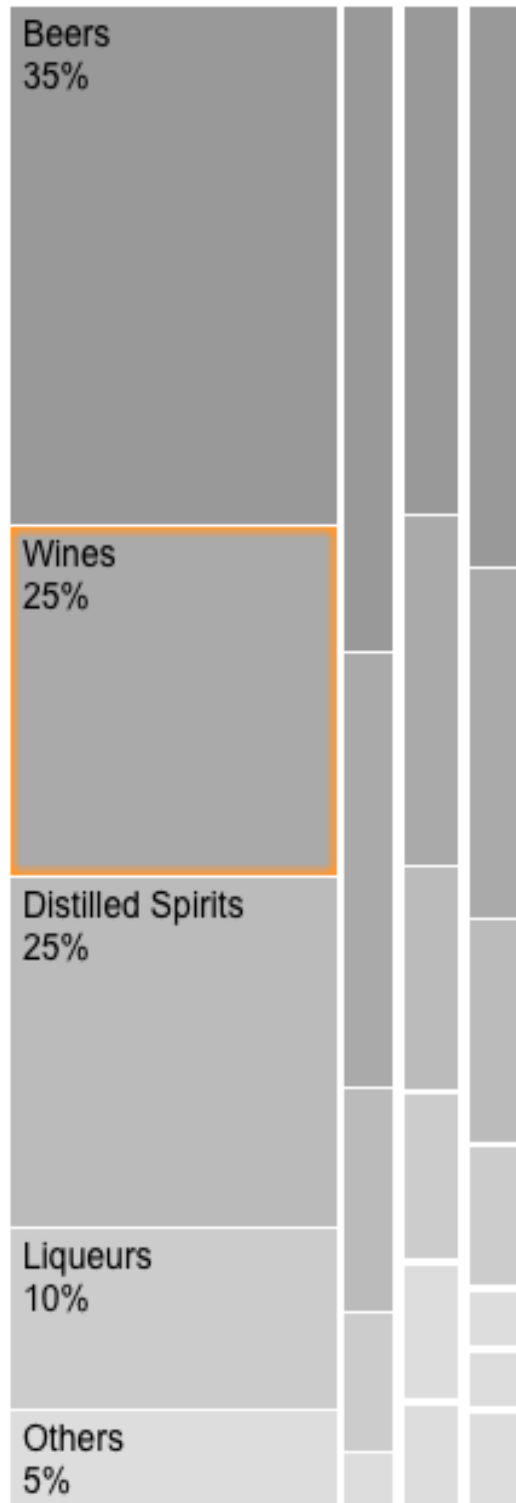
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Worldwide Sales

| Sales | Performance | by Sub-Group |

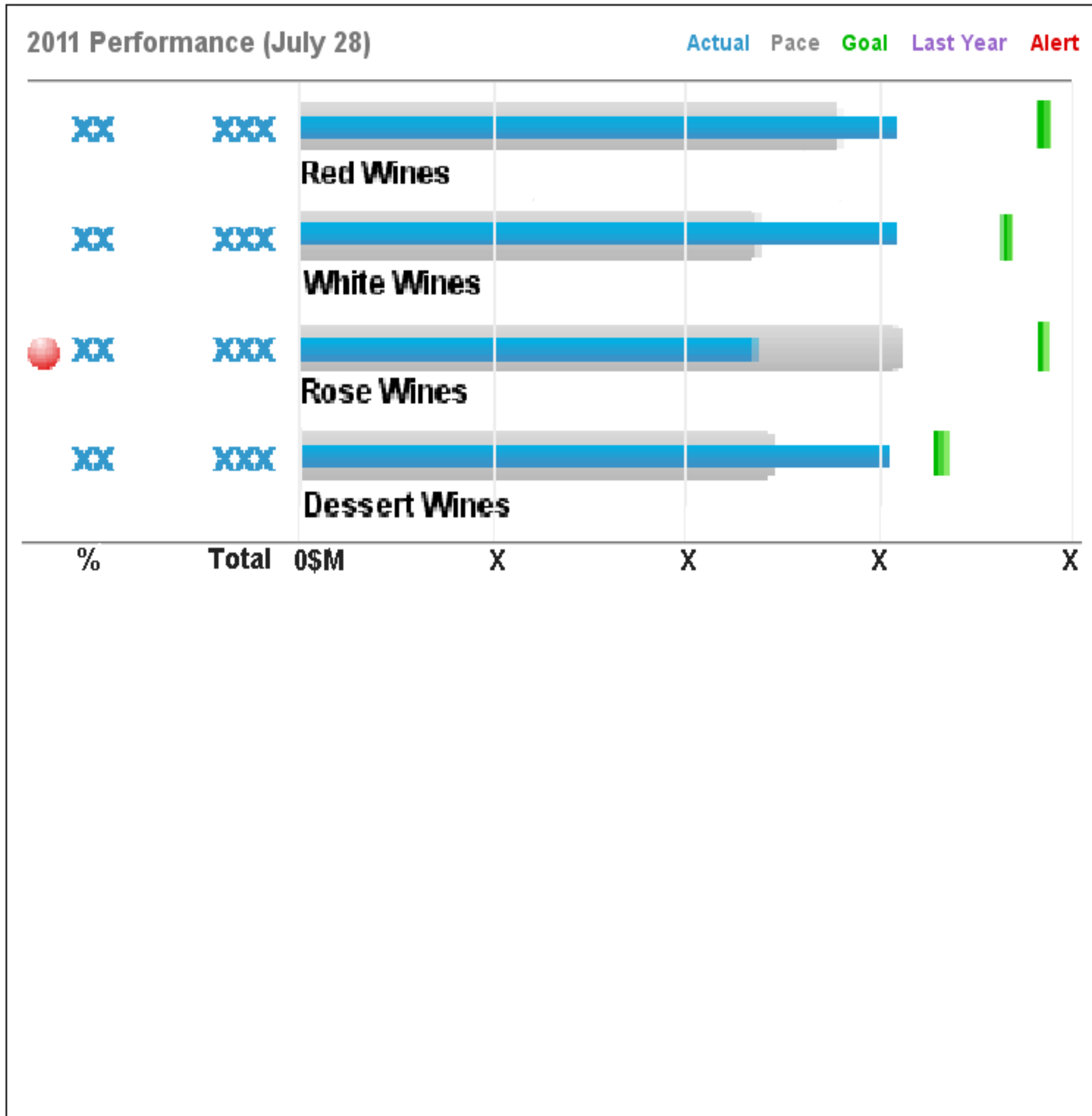




Groups
Wine

Sub-Groups
Ingredients
Origins

Types



Worldwide Sales

| Sales | Performance | by Sub-Group |



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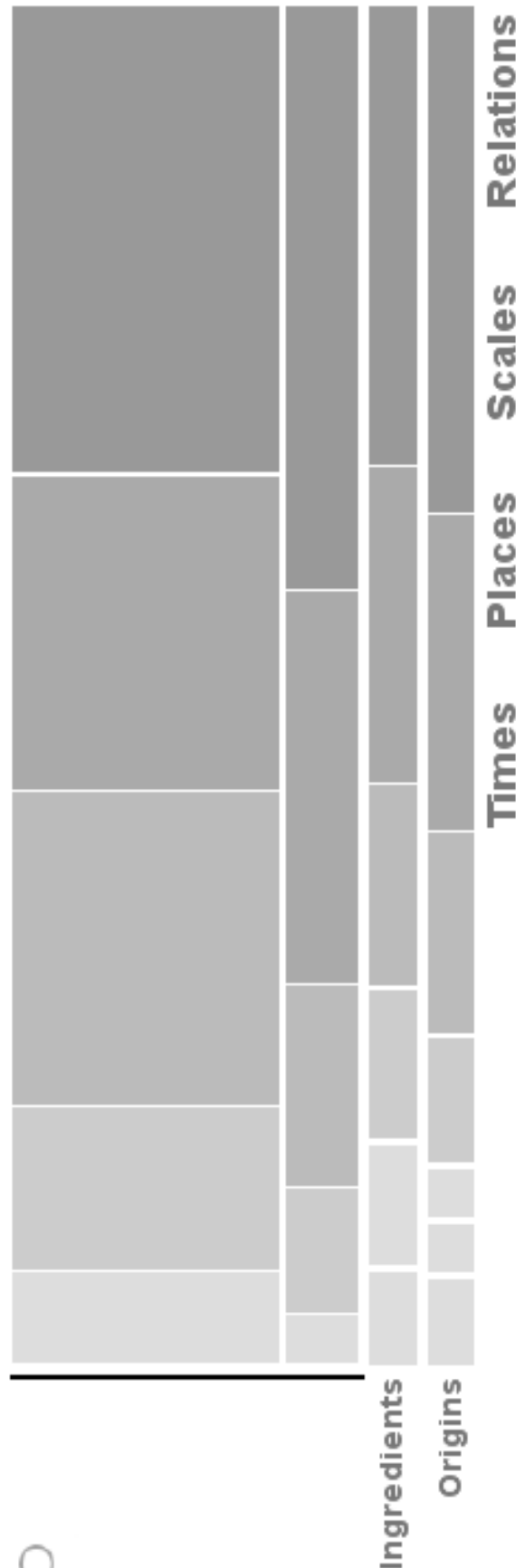
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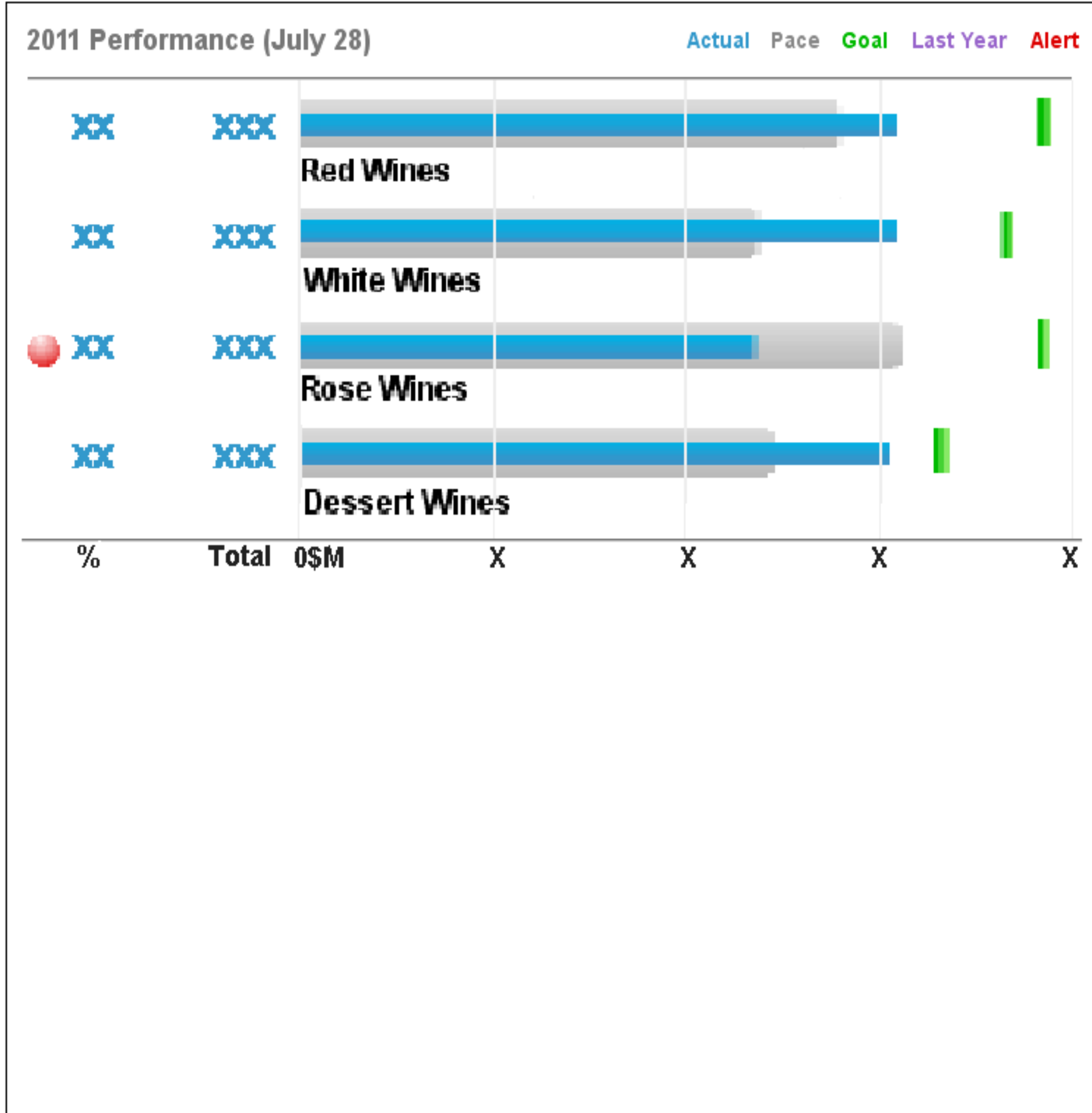
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Types

Worldwide Sales



Sales | Performance | by Sub-Group |



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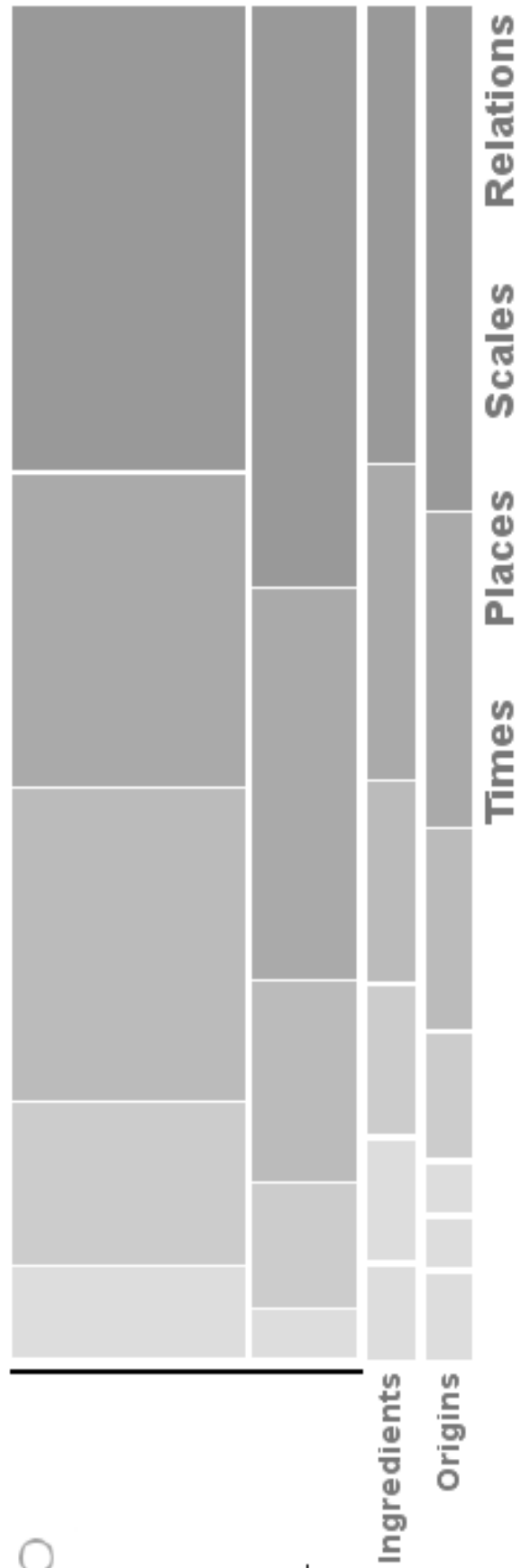
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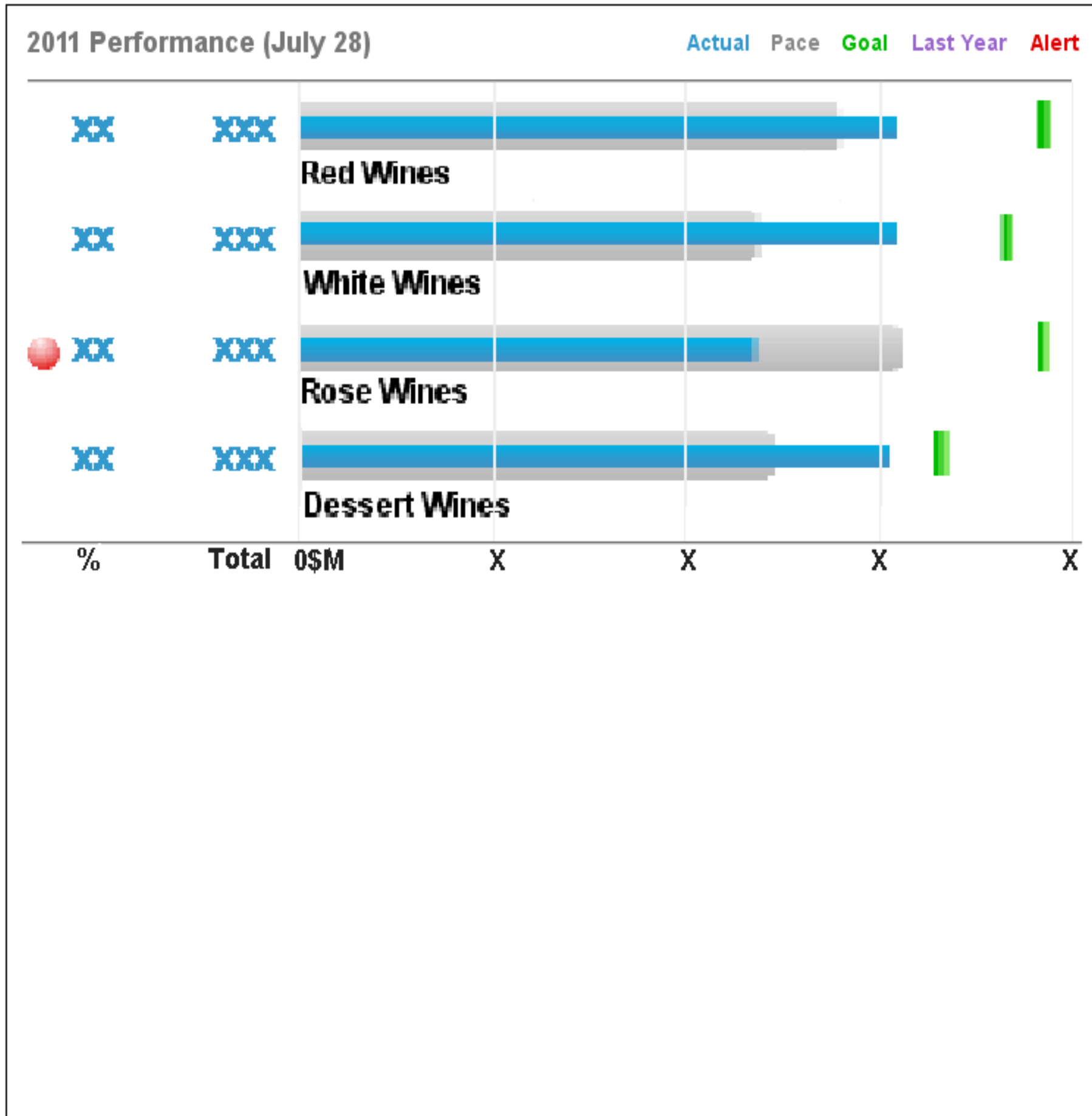
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Types
Worldwide Sales



| Sales | Performance | by Sub-Group |



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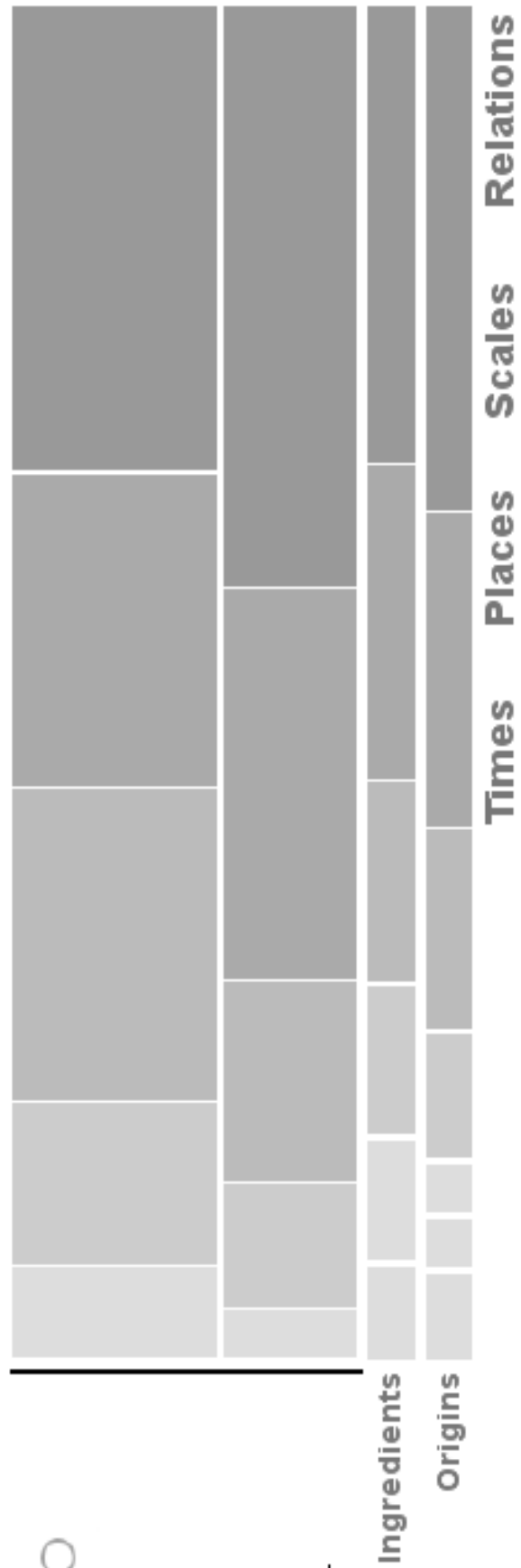
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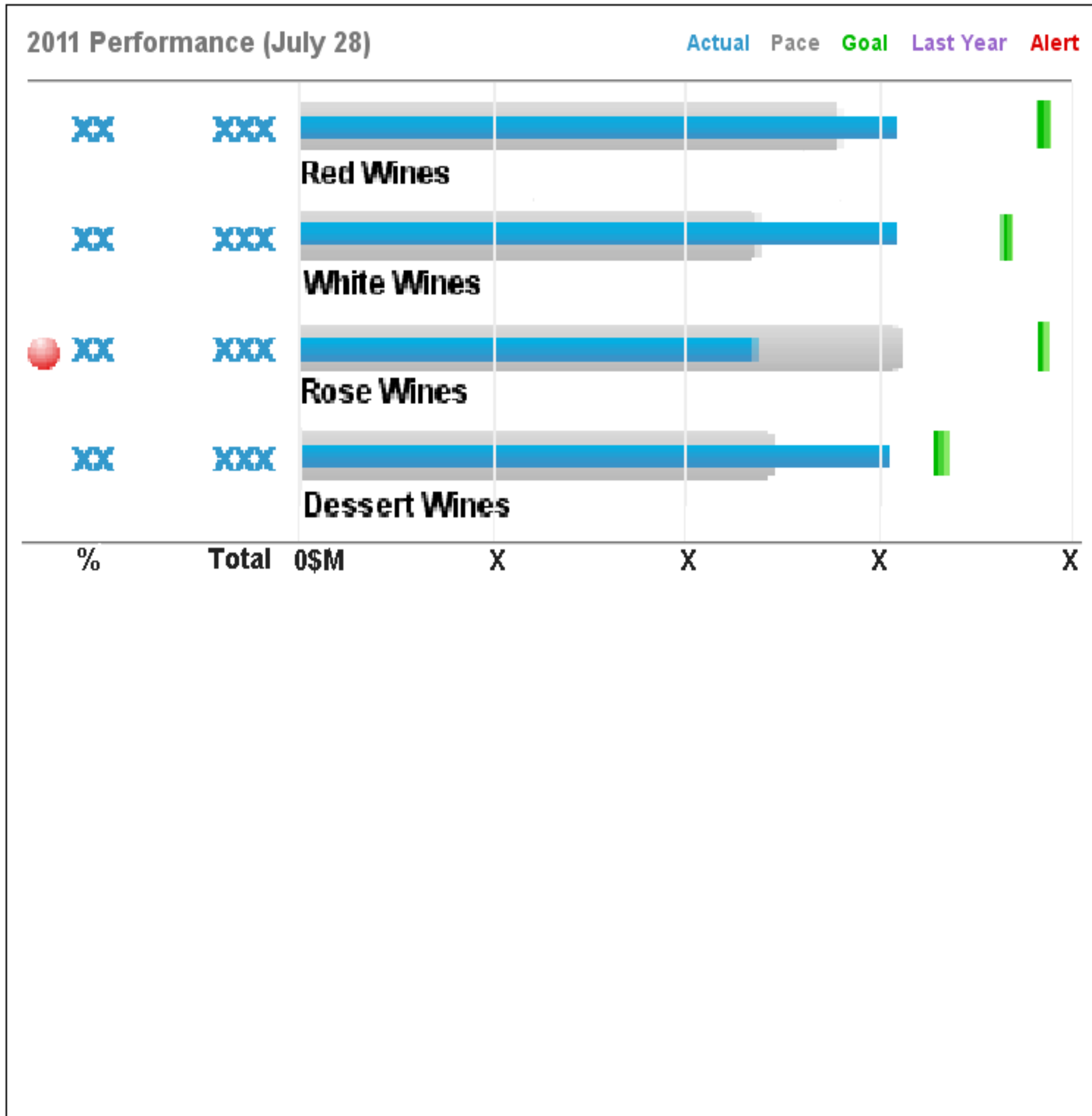
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Types

Worldwide Sales



Sales | Performance | by Sub-Group |



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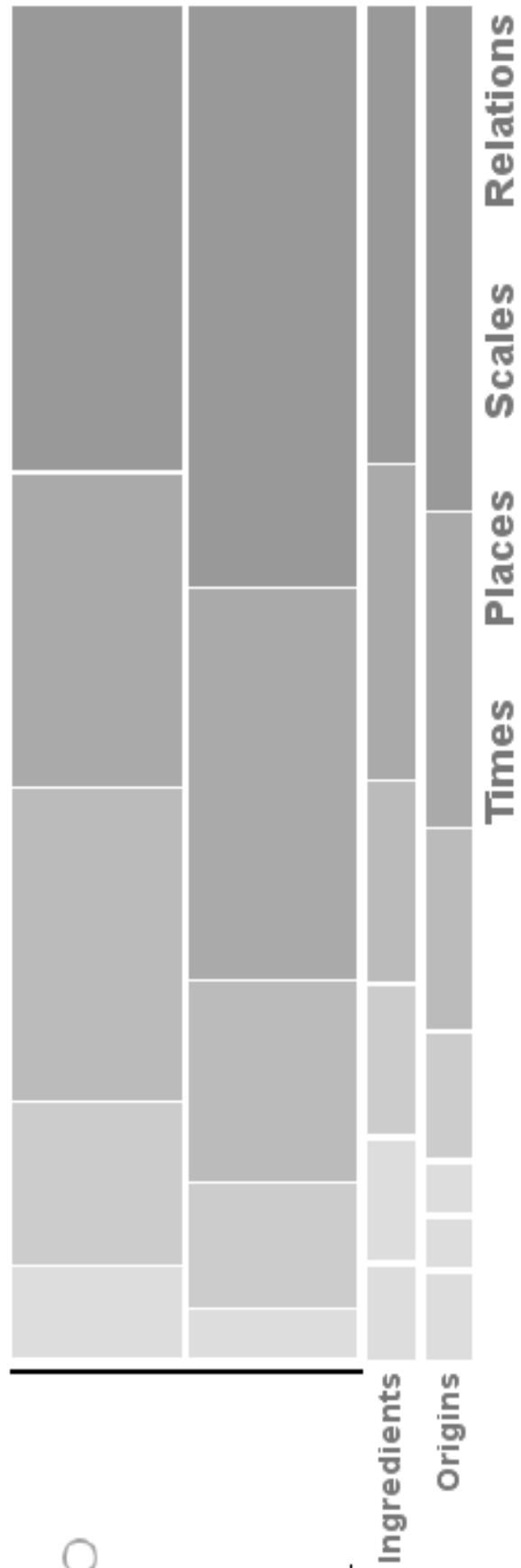
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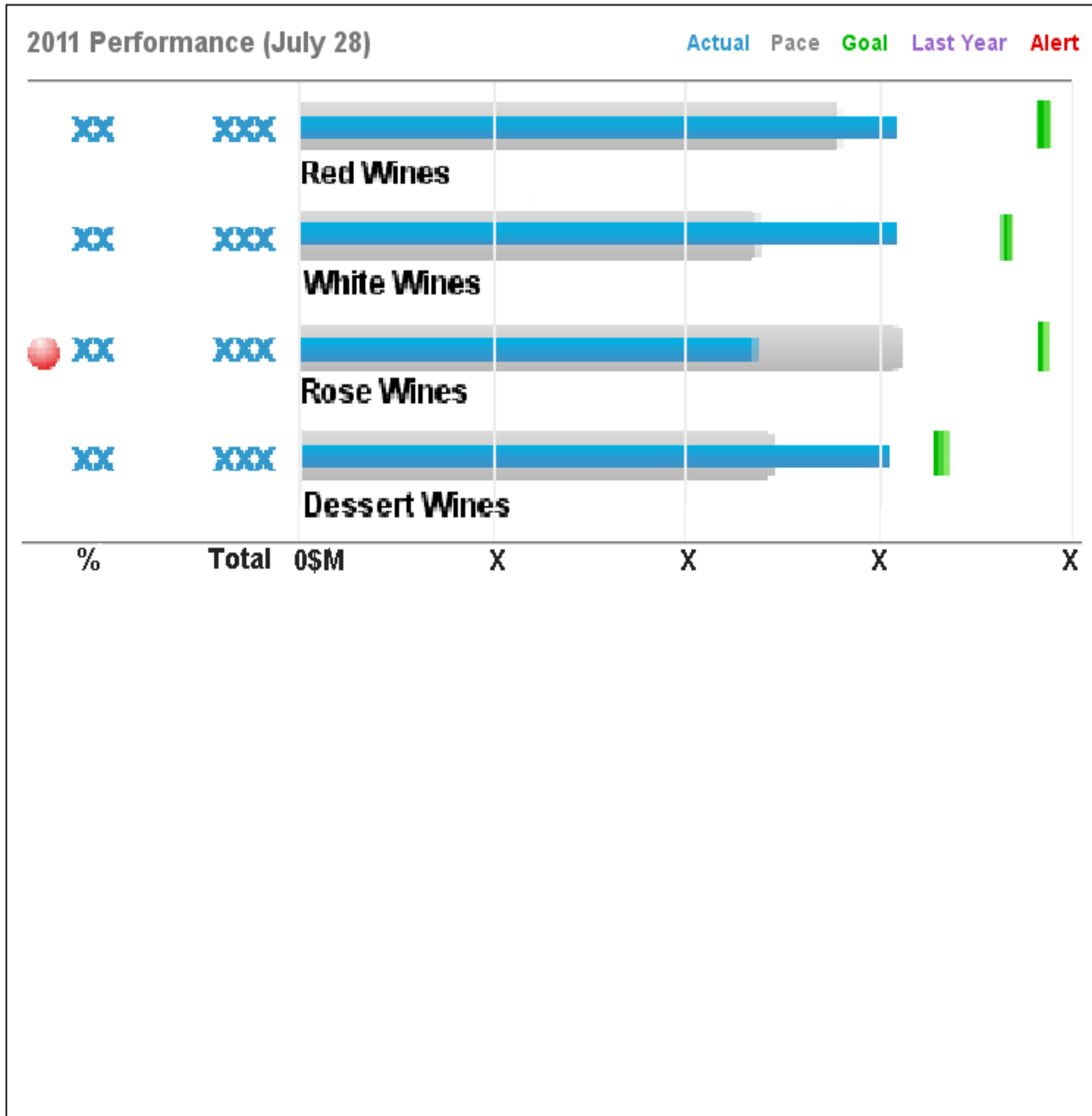
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Types

Worldwide Sales



| Sales | Performance | by Sub-Group |



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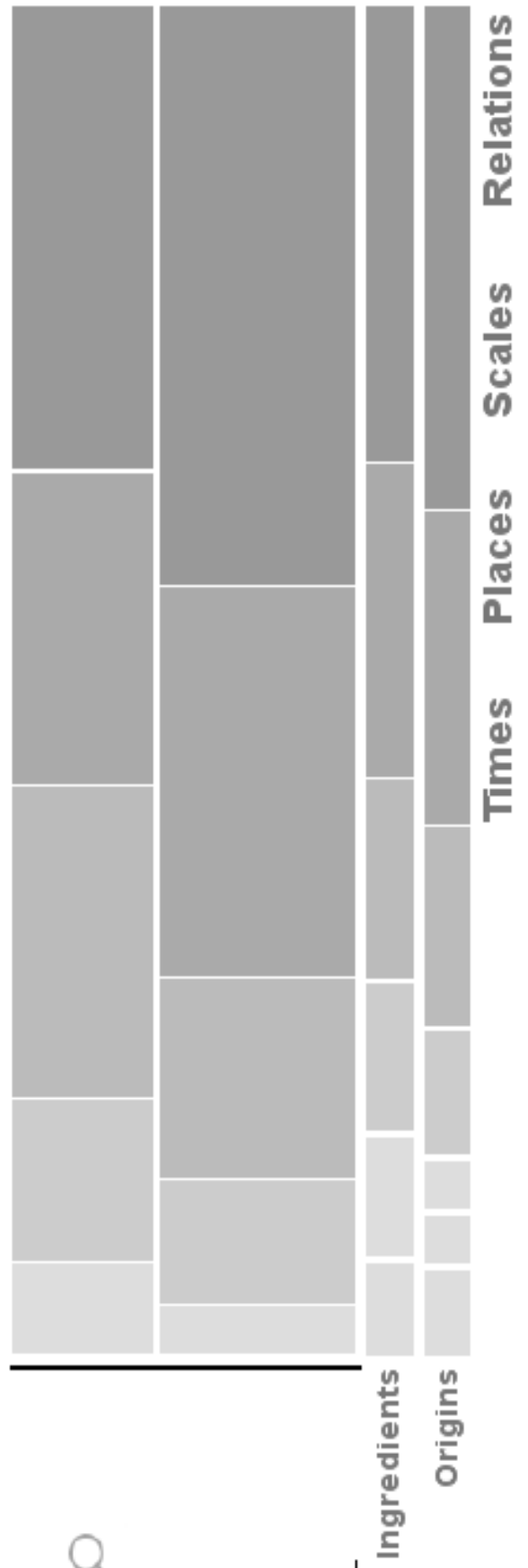
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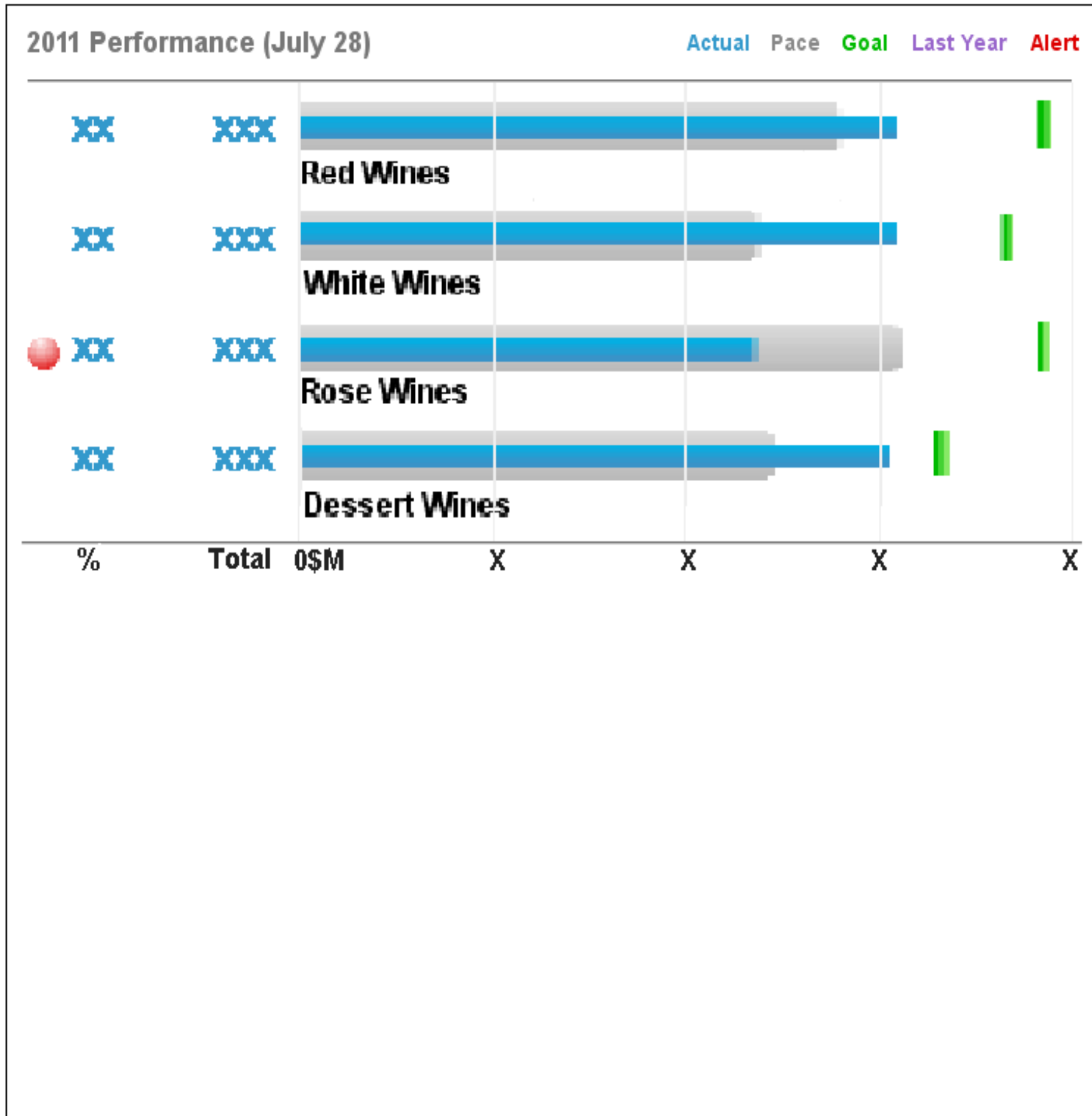
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Types
Worldwide Sales



| Sales | Performance | by Sub-Group |



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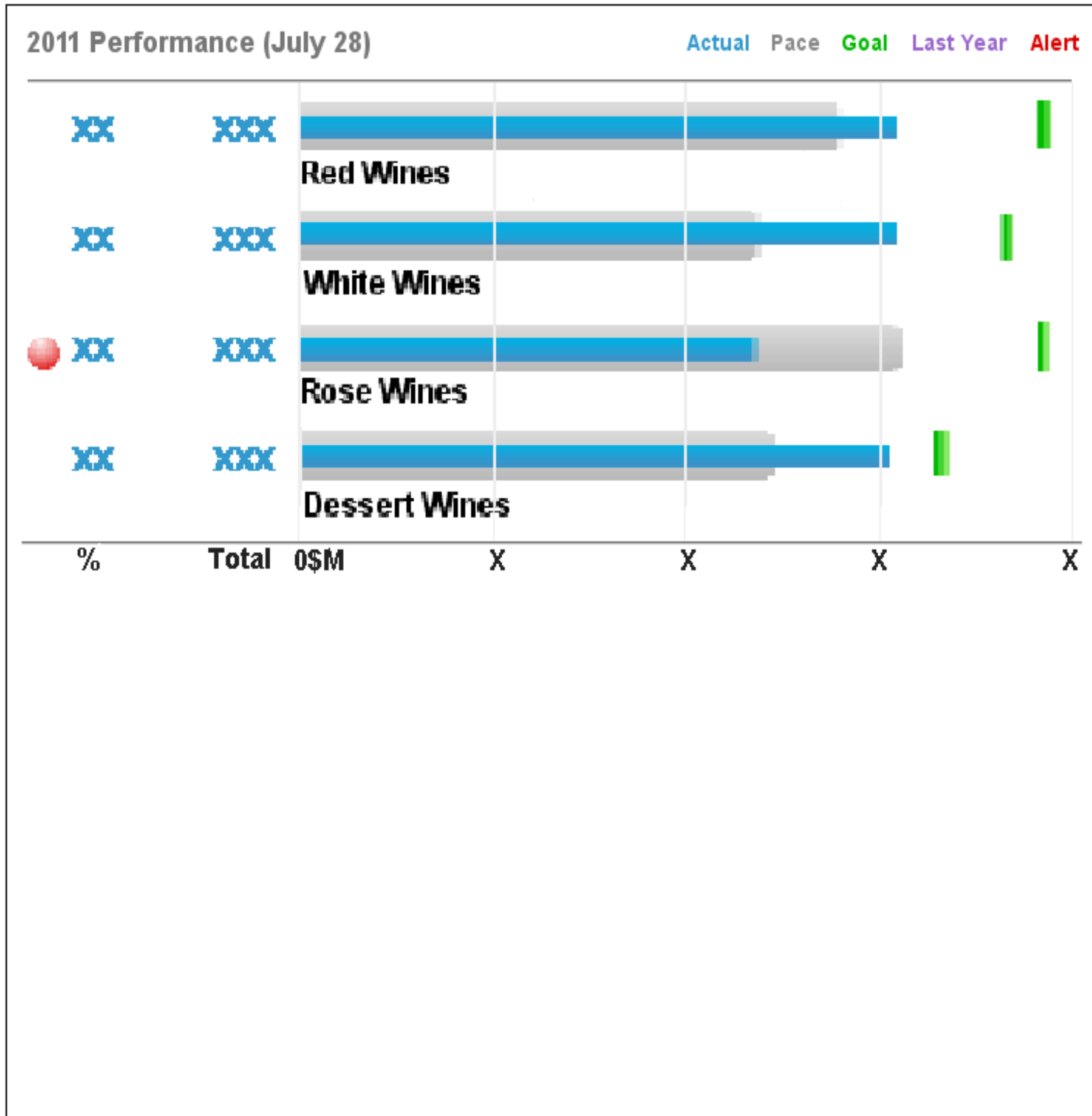
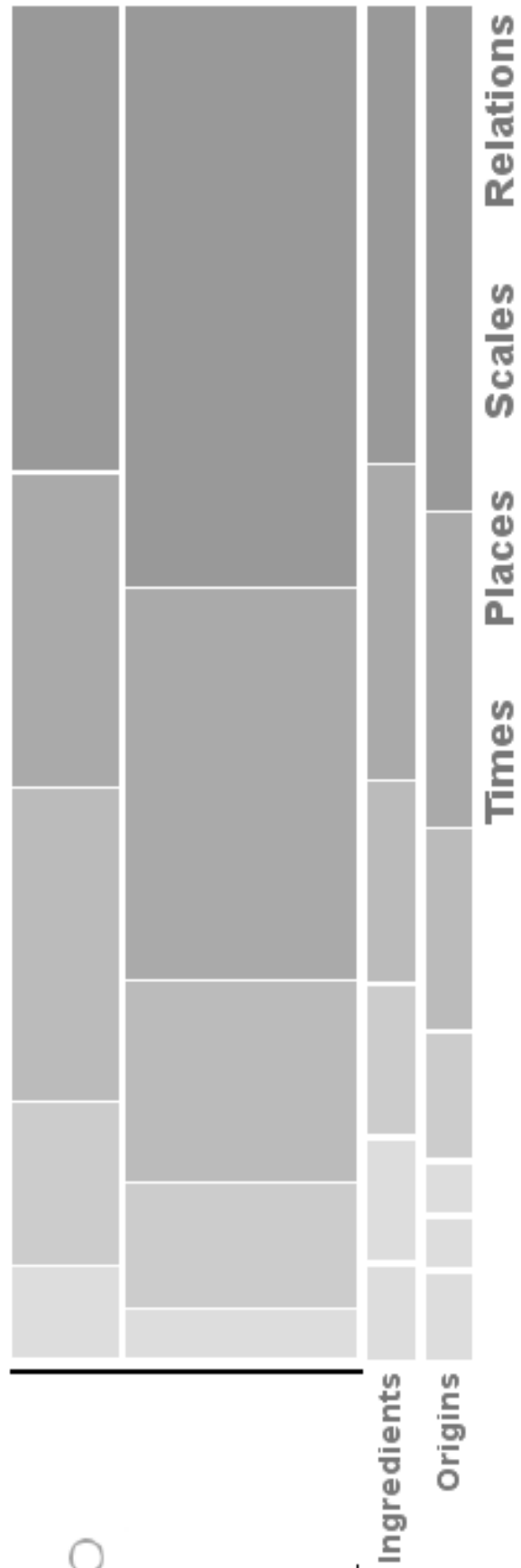
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Worldwide Sales

| Sales | Performance | by Sub-Group |



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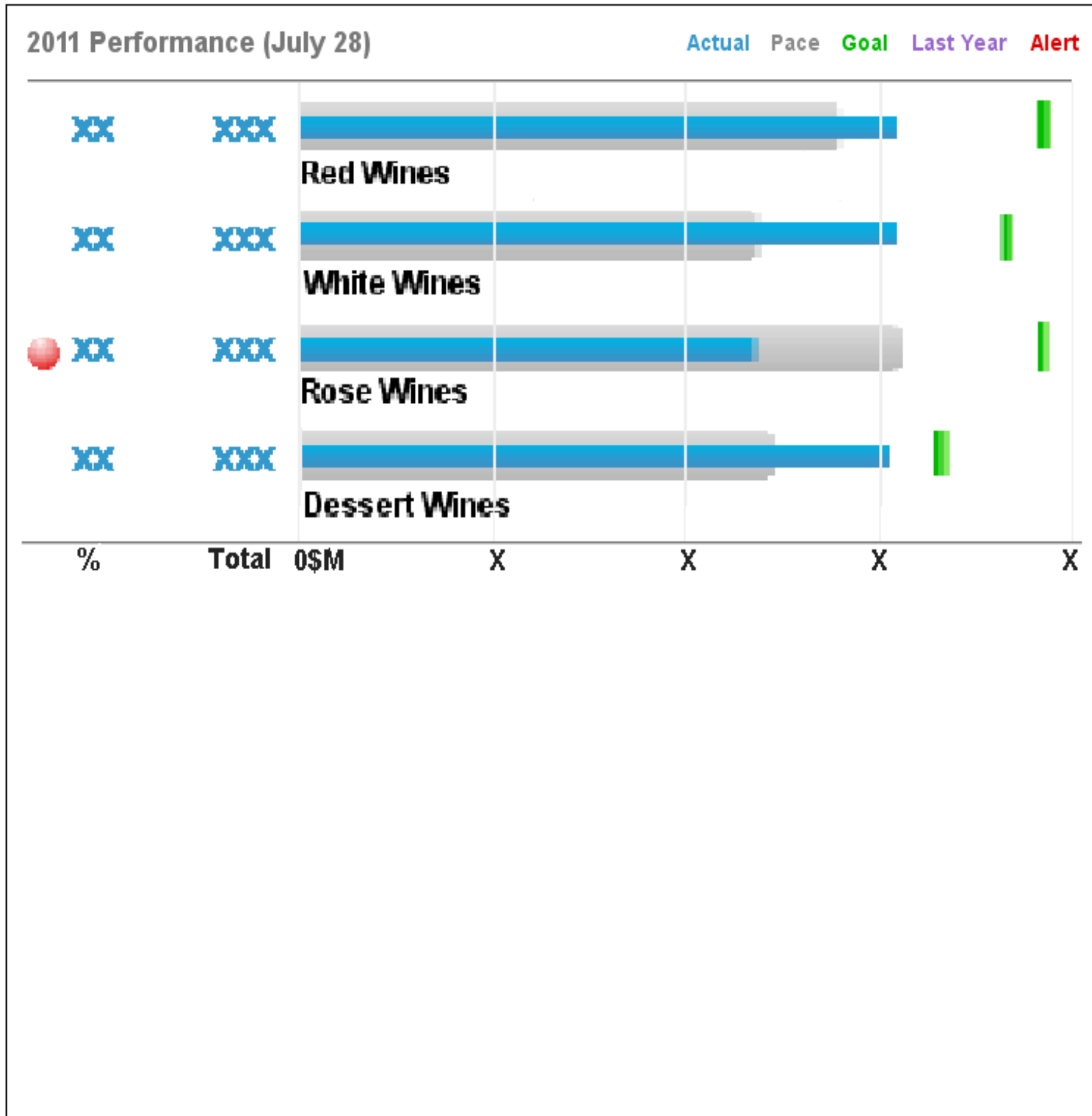
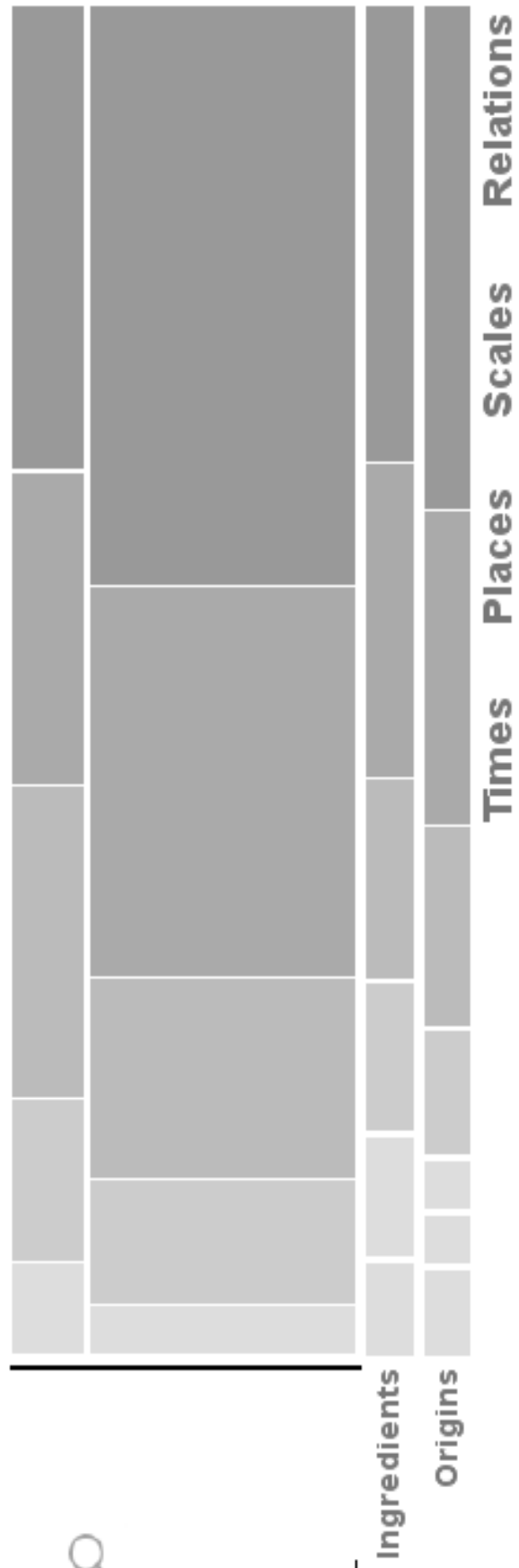
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Worldwide Sales

| Sales | Performance | by Sub-Group |



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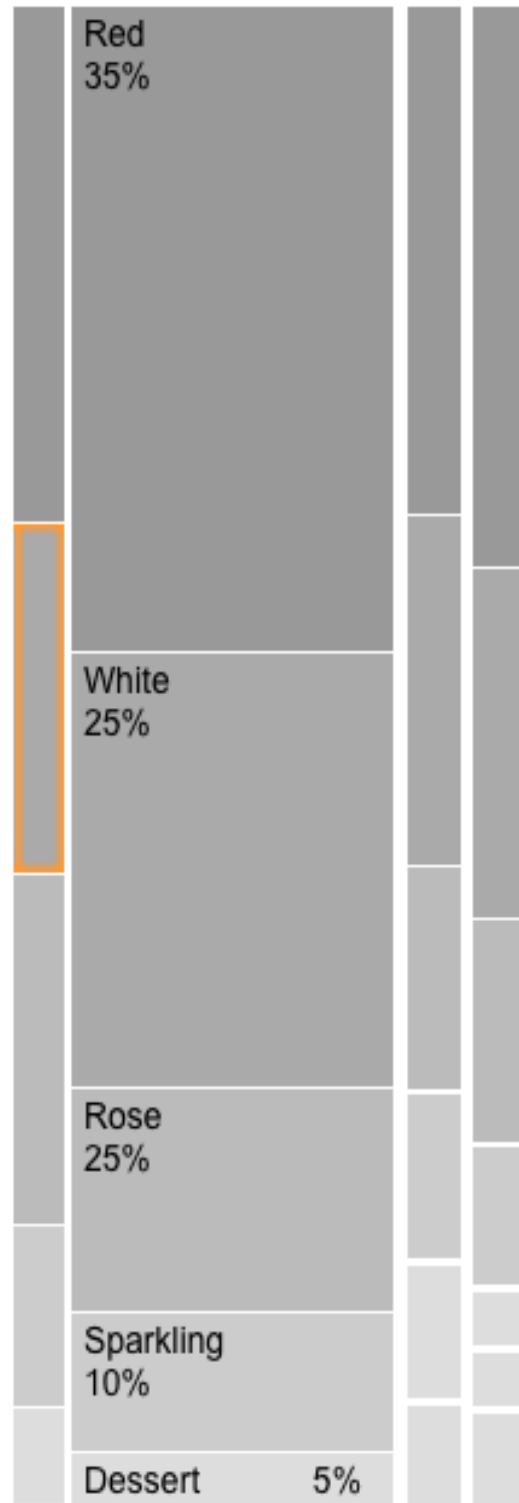
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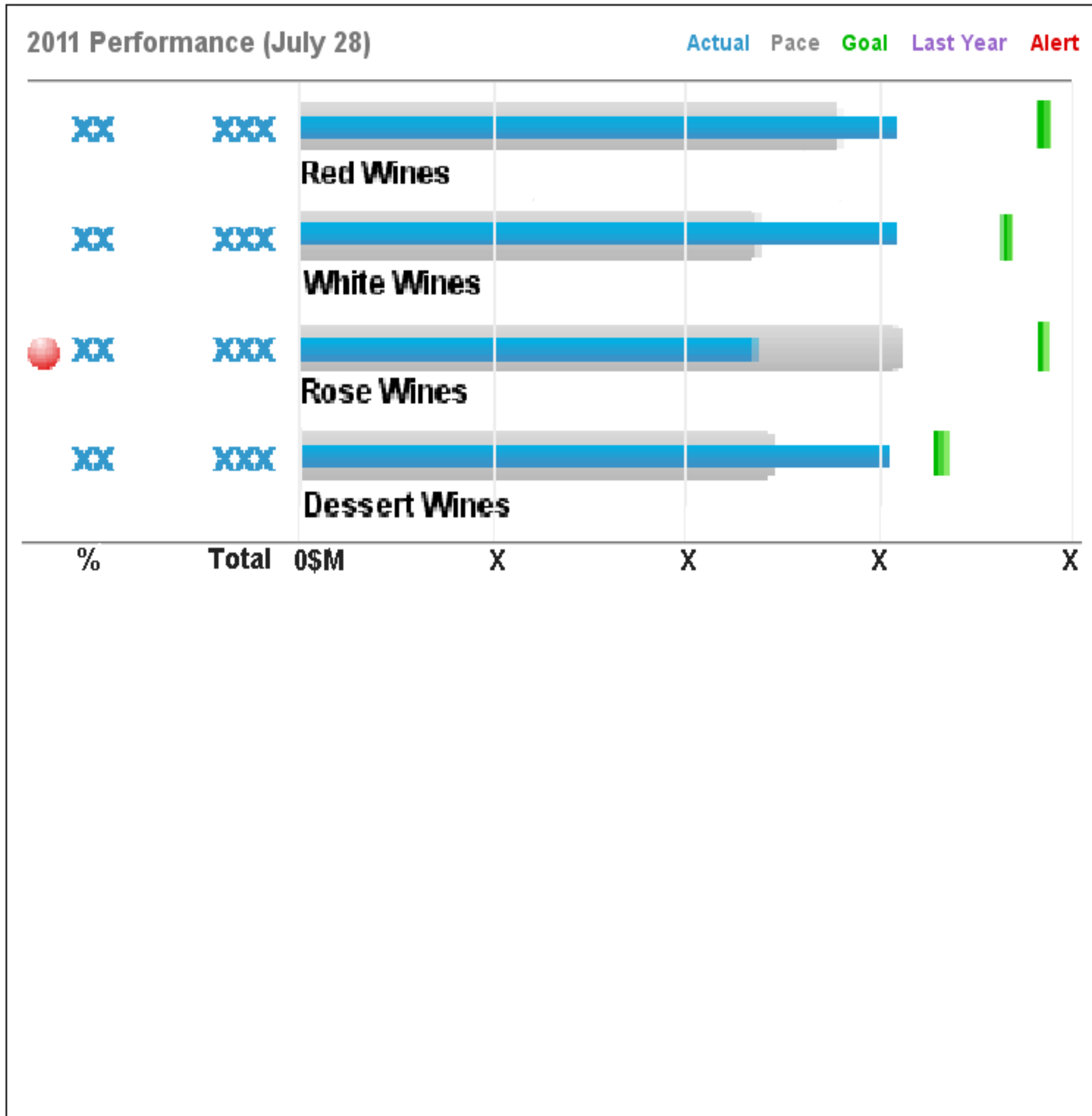


Groups
Sub-Groups
Wine

Ingredients

Origins

Types



Worldwide Sales

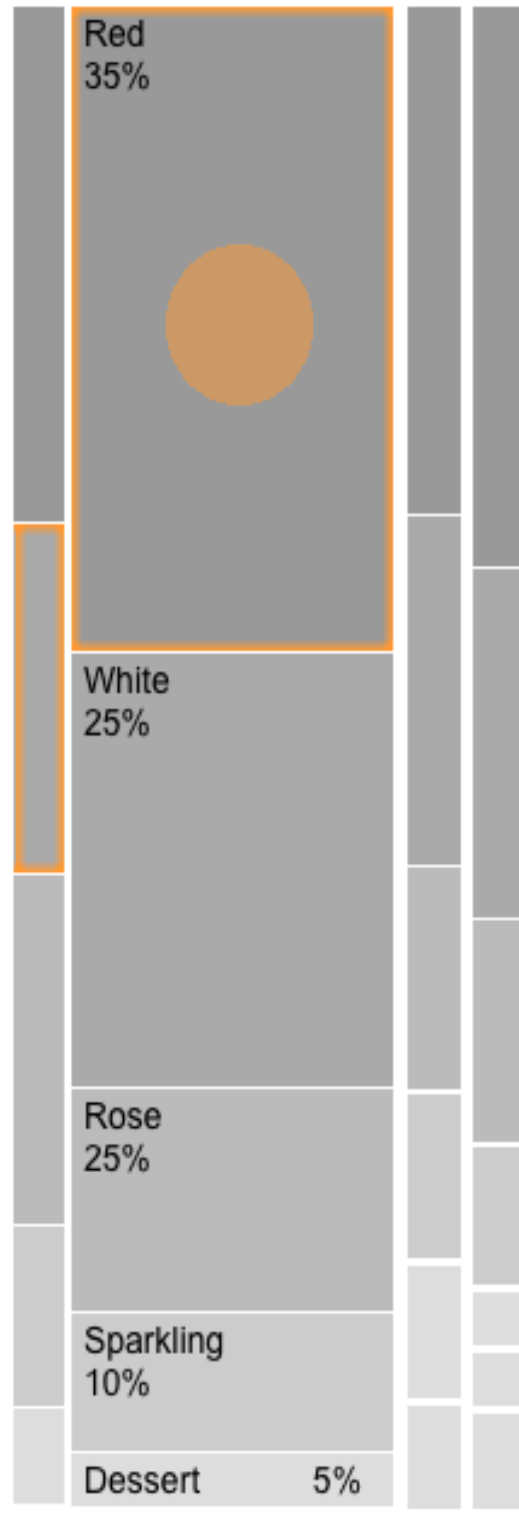
| Sales | Performance | by Sub-Group |



Hierarchical Parent Dimensions collapse to the left as Child Dimensions are opened.

Of course animation is key to these transitions being coherent.

Within Aspects, the Search box applies only to the selected Dimension.

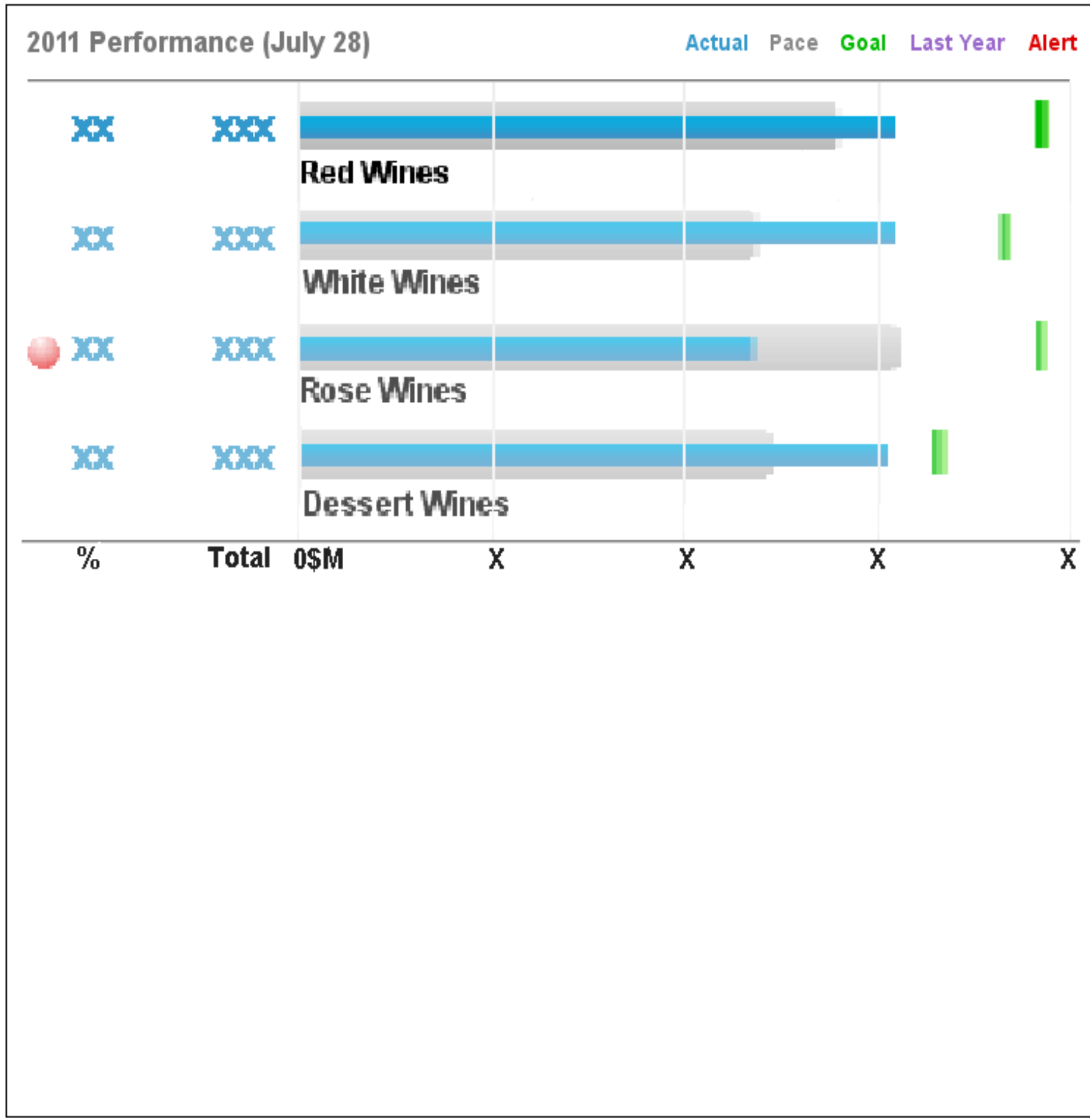


Groups Sub-Groups
 Wine, Red |

Ingredients

Origins

Types



Worldwide Sales

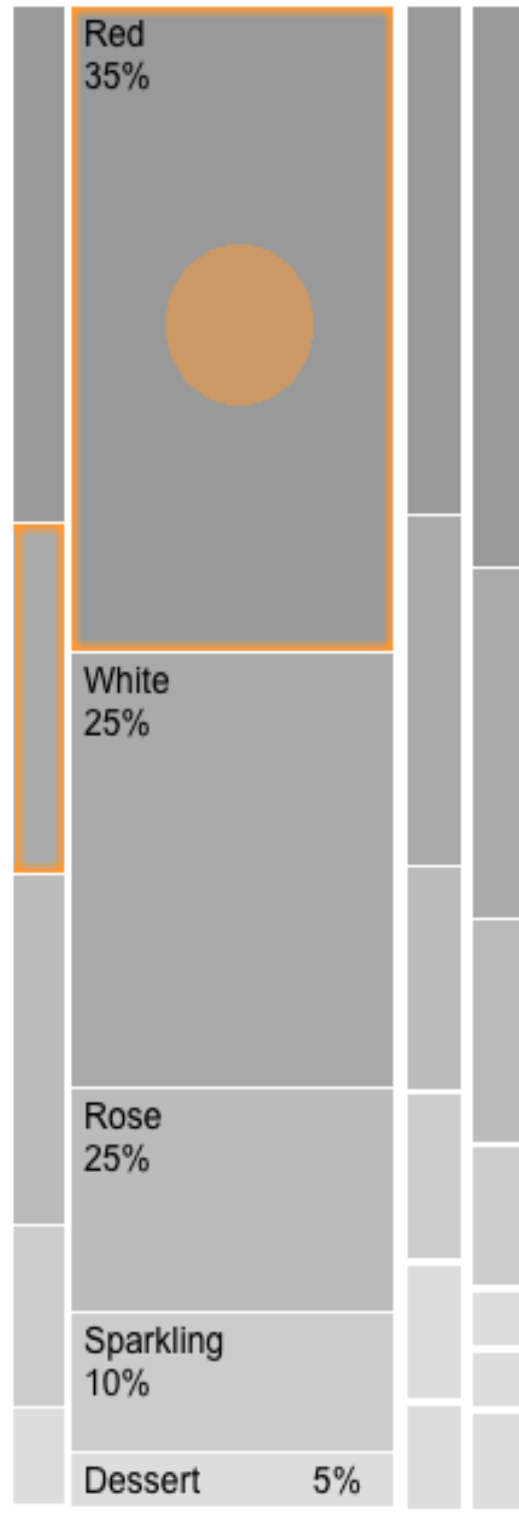
| Sales | Performance | by Sub-Group |



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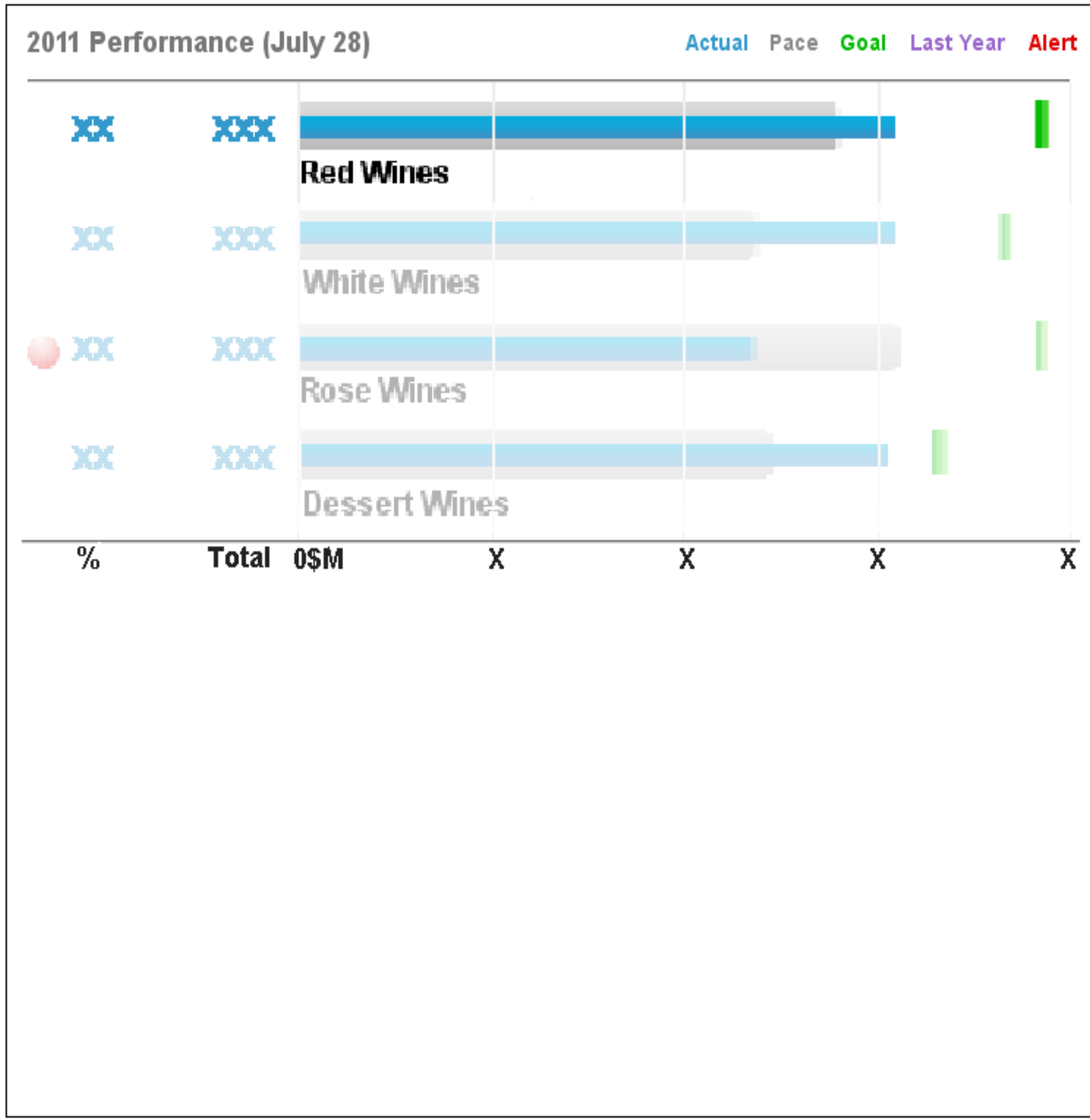
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Groups Sub-Groups
 Wine, Red |

Types

Relations
Scales
Places
Times
Ingredients
Origins



Worldwide Sales

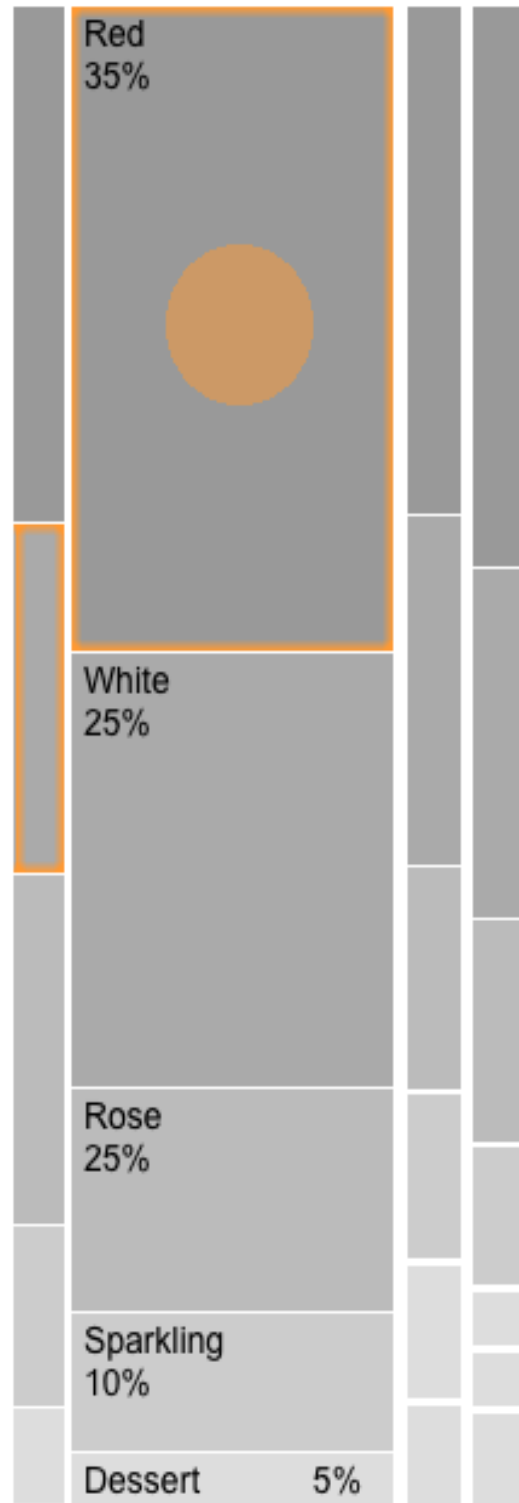
| Sales | Performance | by Sub-Group |



Hierarchical Parent Dimensions collapse to the left as Child Dimensions are opened.

Of course animation is key to these transitions being coherent.

Within Aspects, the Search box applies only to the selected Dimension.



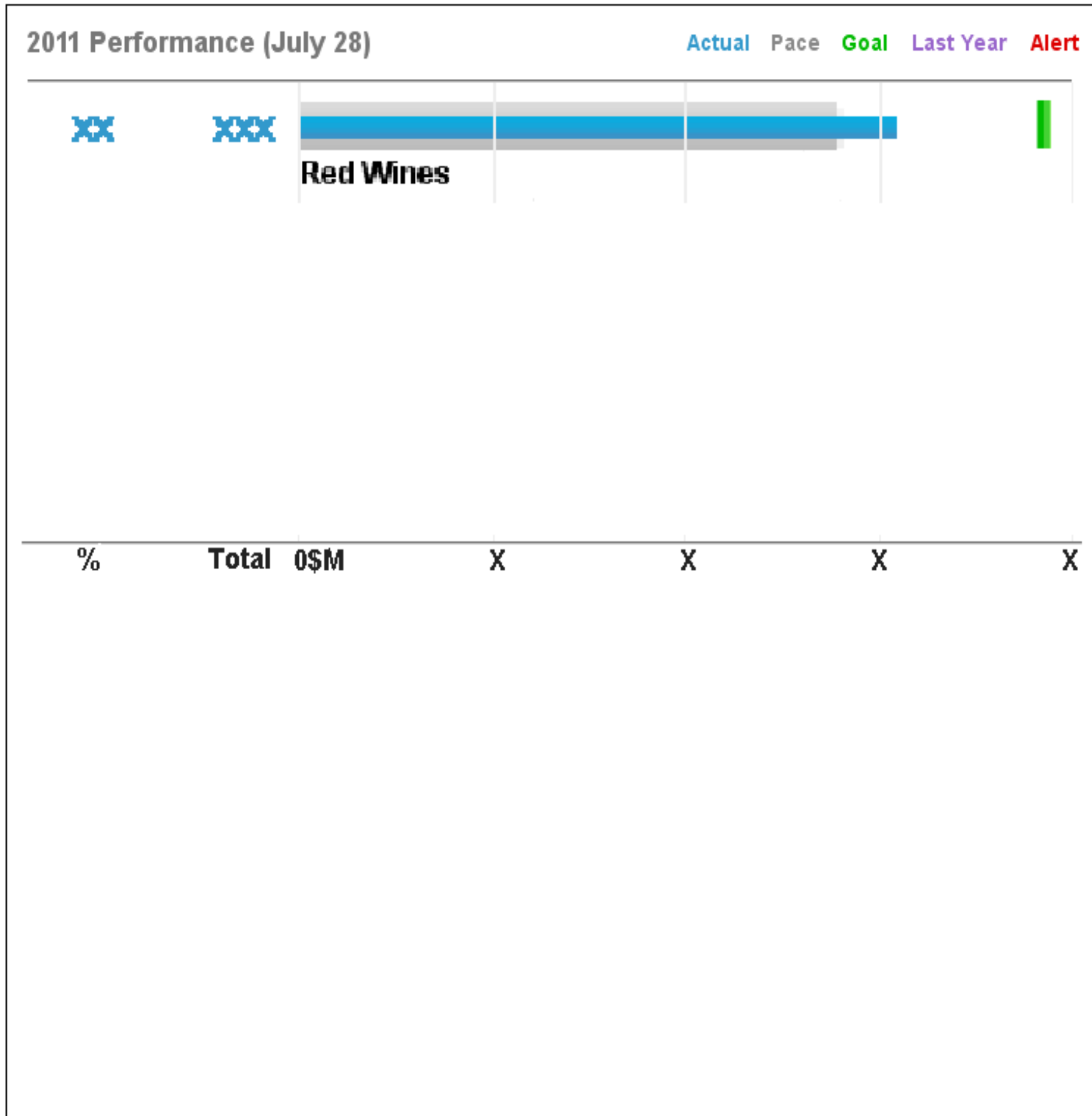
Groups Sub-Groups
 Wine, Red |

Ingredients

Origins

Types

Worldwide Sales | Sales | Performance | by

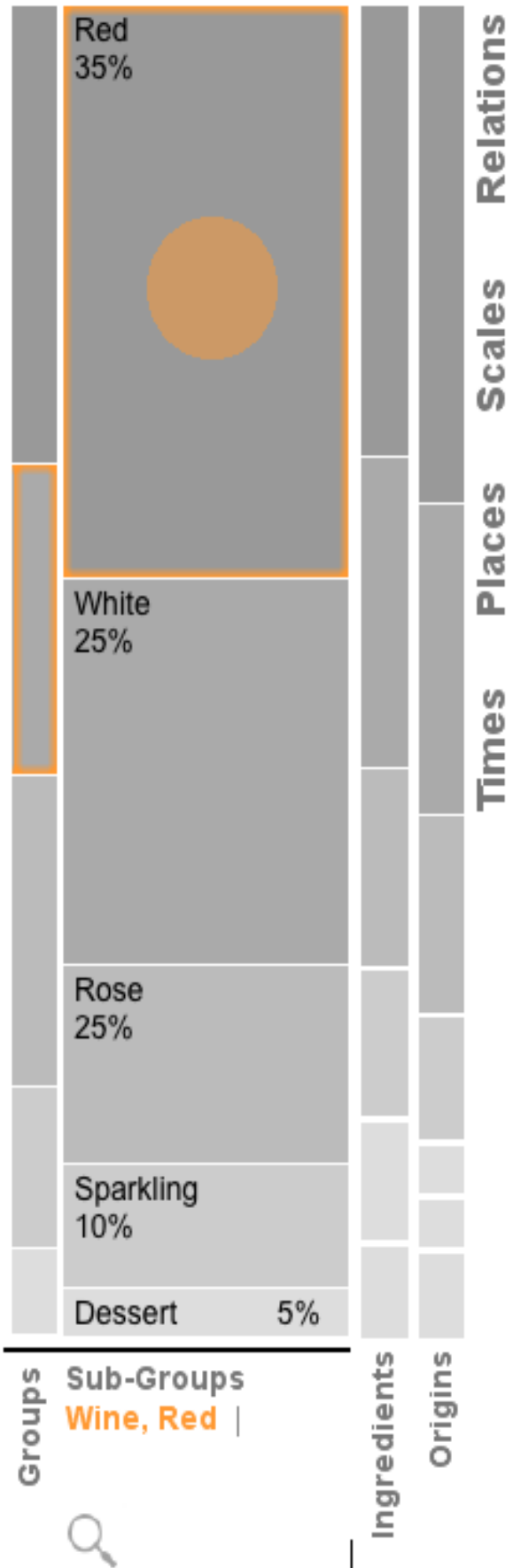


Hierarchical Parent Dimensions collapse to the left as Child Dimensions are opened.

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Hierarchical Parent Dimensions collapse to the left as Child Dimensions are opened.

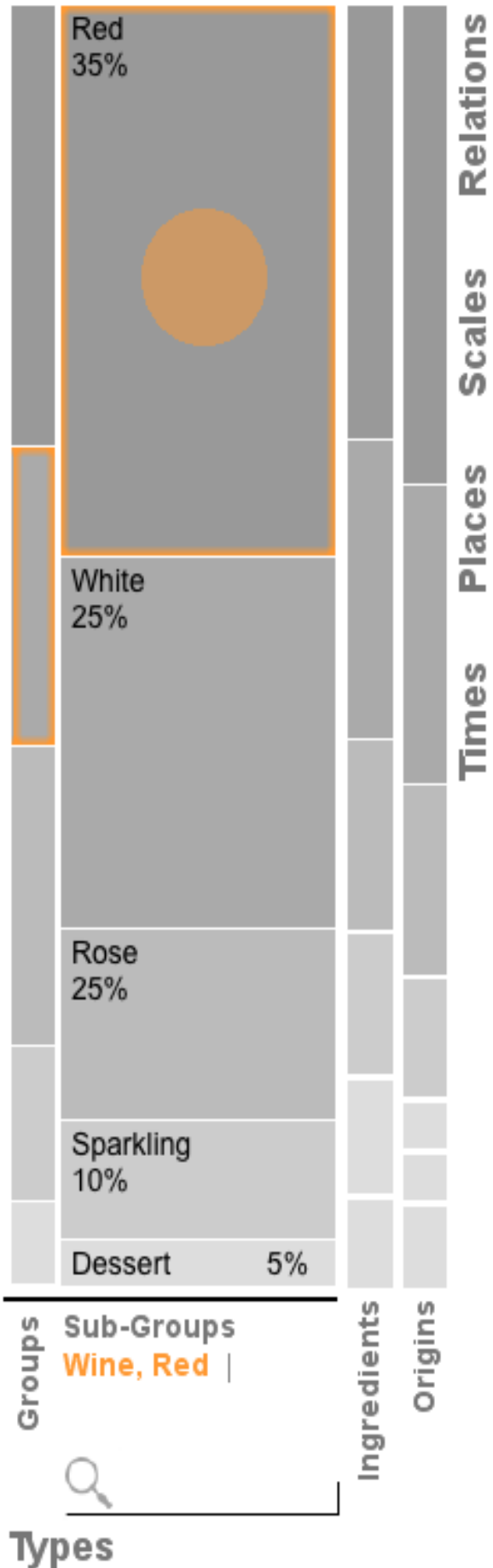
Of course animation is key to these transitions being coherent.

Within Aspects, the Search box applies only to the selected Dimension.

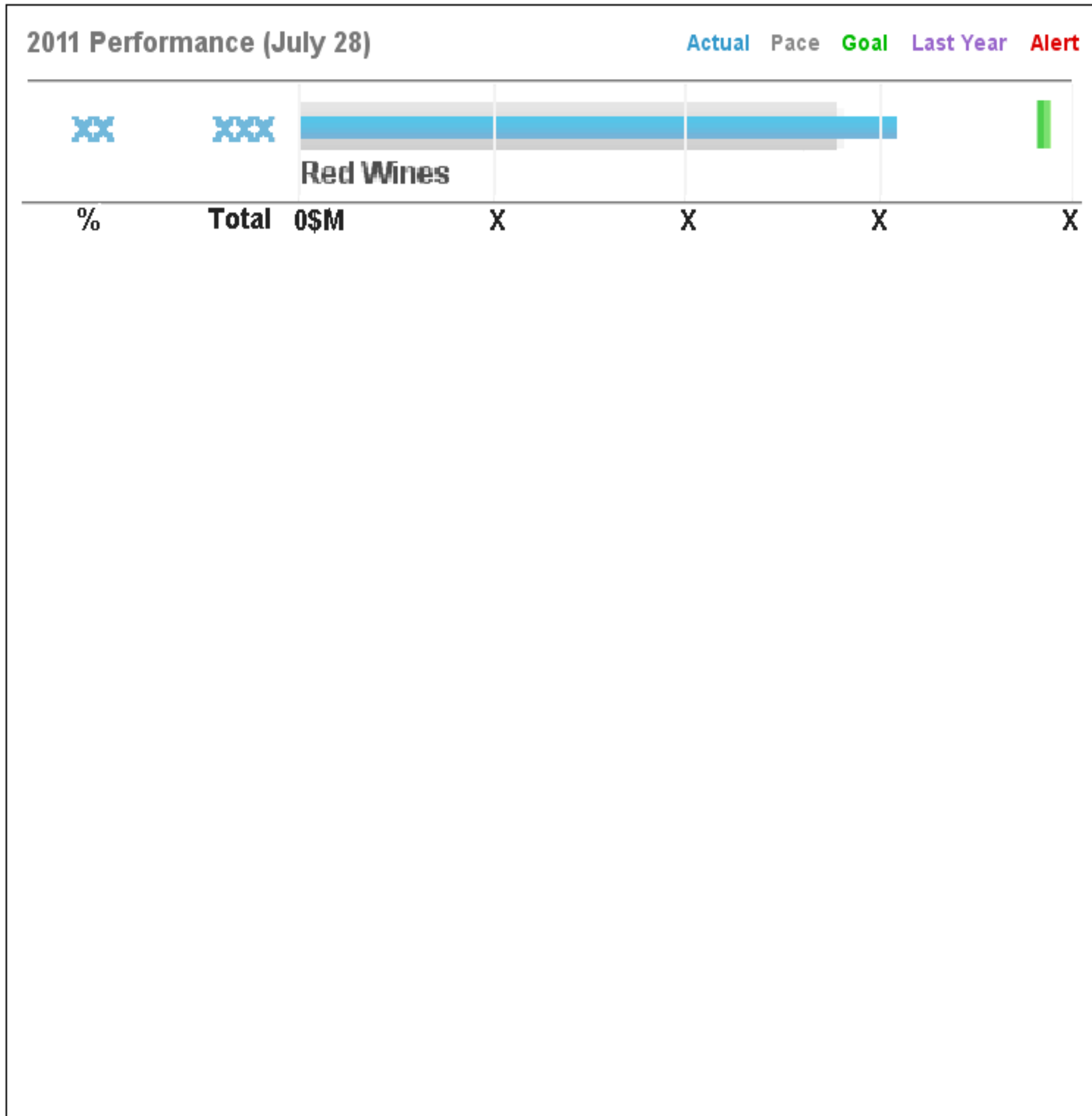
Types
Worldwide Sales

| Sales | Performance | by |





Relations
Scales
Places
Times



Hierarchical Parent Dimensions collapse to the left as Child Dimensions are opened.

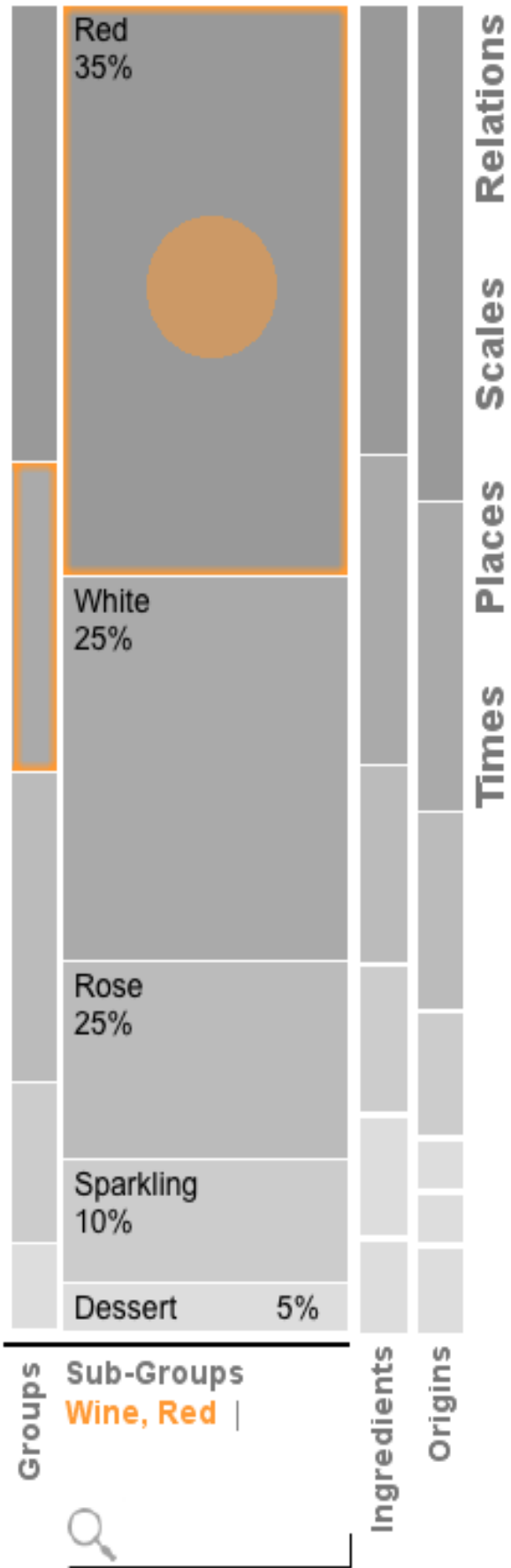
Of course animation is key to these transitions being coherent.

Within Aspects, the Search box applies only to the selected Dimension.

Worldwide Sales

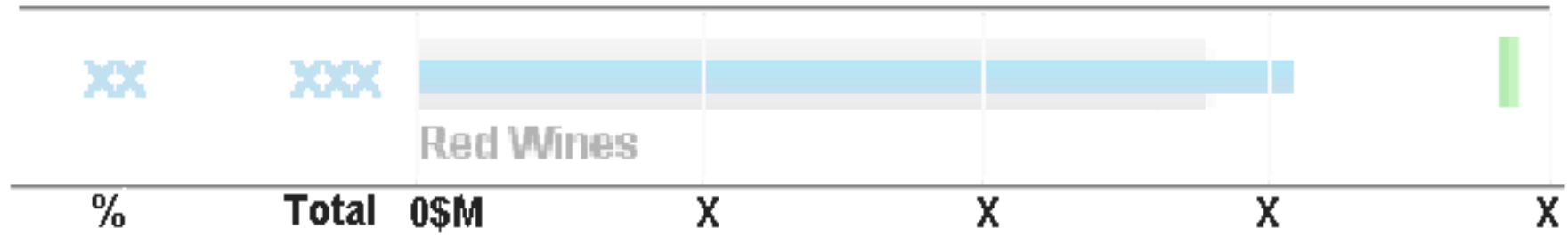
| Sales | Performance | by |





2011 Performance (July 28)

Actual Pace Goal Last Year Alert



Hierarchical Parent Dimensions collapse to the left as Child Dimensions are opened.

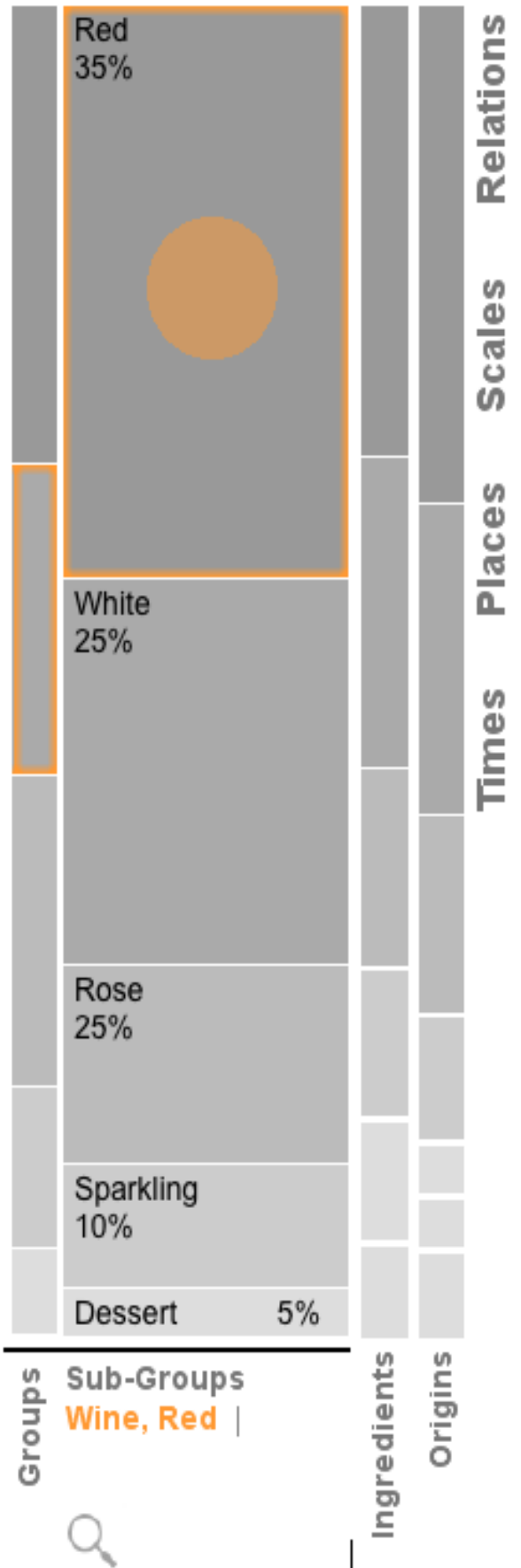
Of course animation is key to these transitions being coherent.

Within Aspects, the Search box applies only to the selected Dimension.

Worldwide Sales

| Sales | Performance | by





2011 Performance (July 28)

Actual Pace Goal Last Year Alert

	Actual	Pace	Goal	Last Year	Alert
%					
Total					
\$M					
	X	X	X	X	X

Hierarchical Parent Dimensions collapse to the left as Child Dimensions are opened.

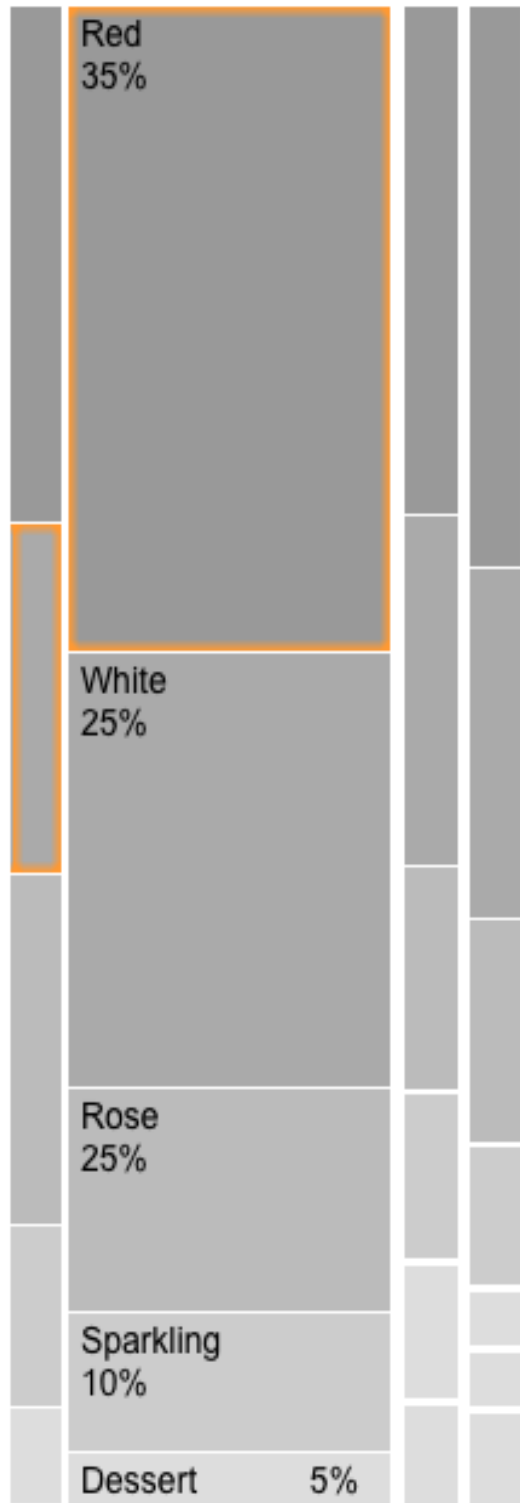
Of course animation is key to these transitions being coherent.

Within Aspects, the Search box applies only to the selected Dimension.

Worldwide Sales

| Sales | Performance | by





Groups Sub-Groups
Wine, Red |



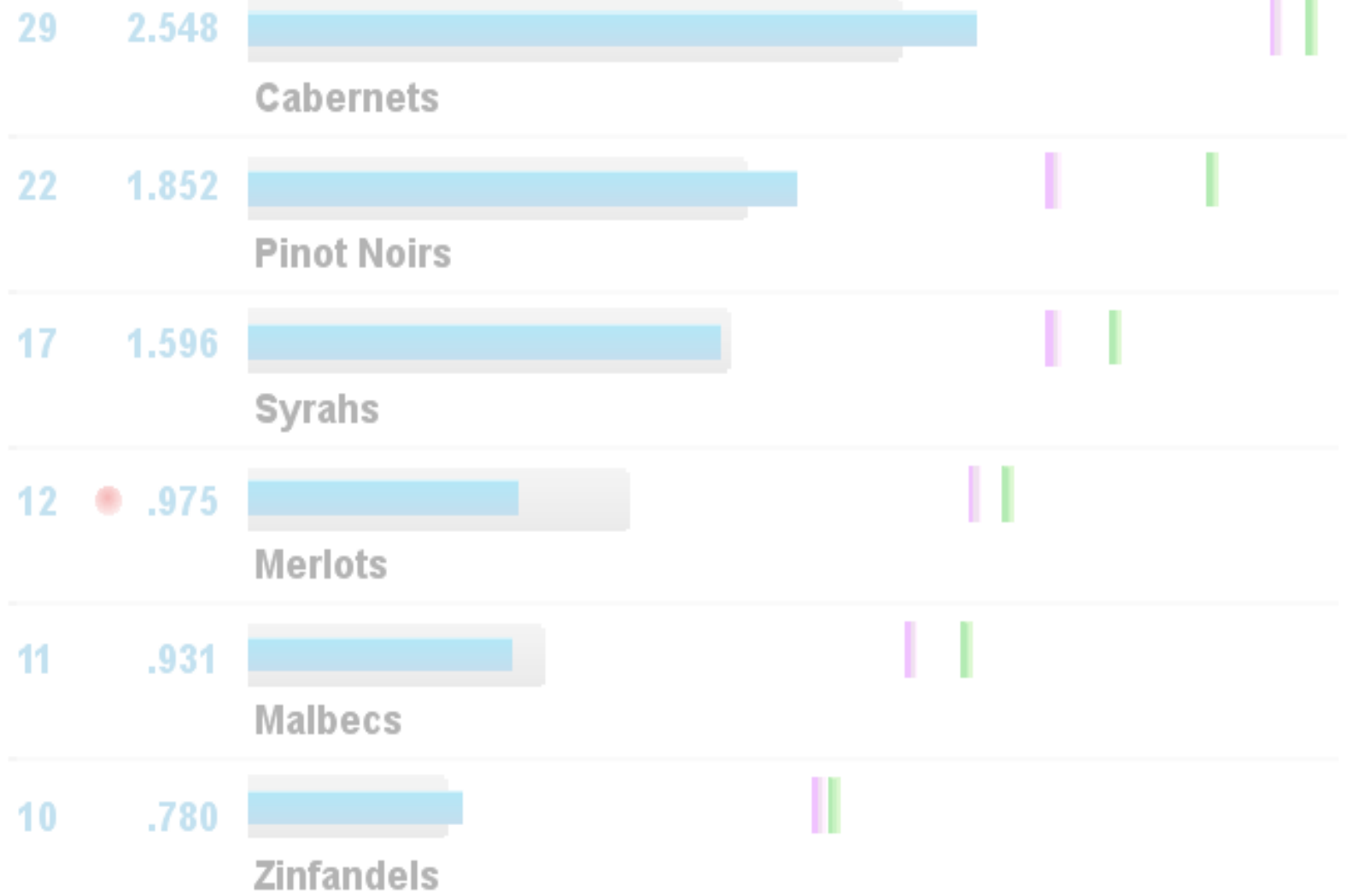
Types

Relations
Scales
Places
Times

Ingredients
Origins

2011 Performance (July 28)

Actual Pace Goal Last Year Alert

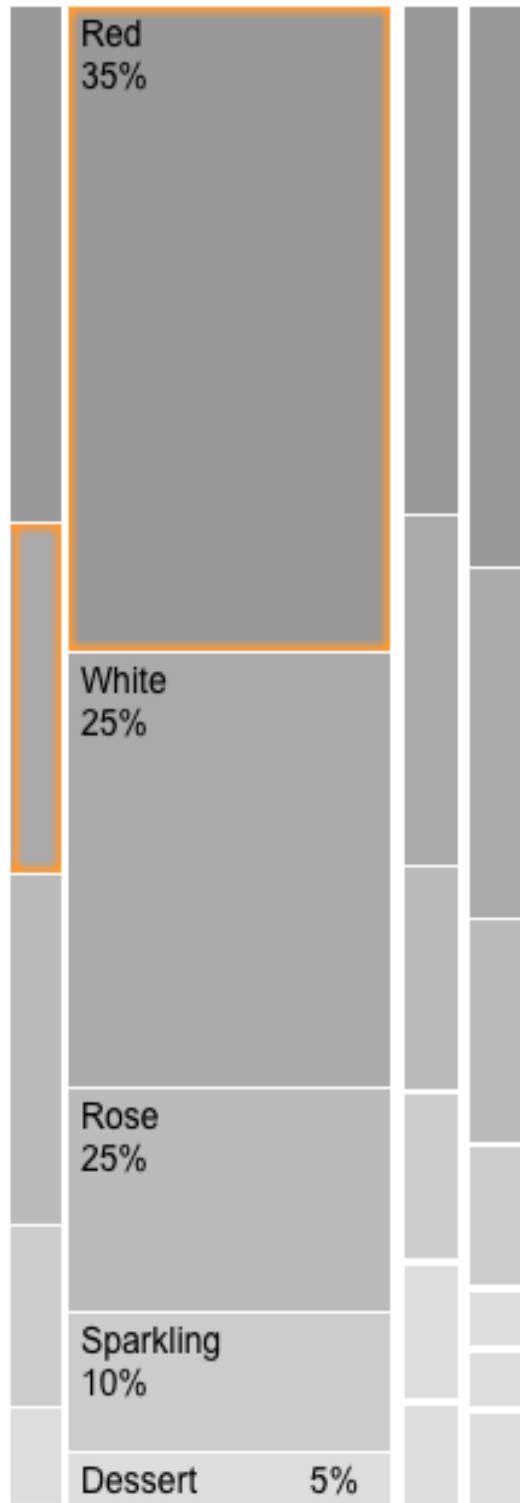


% \$M Total 0 1 2 3 4

Worldwide Sales

| Sales | Performance | by Ingredient |





Groups Sub-Groups
Wine, Red |



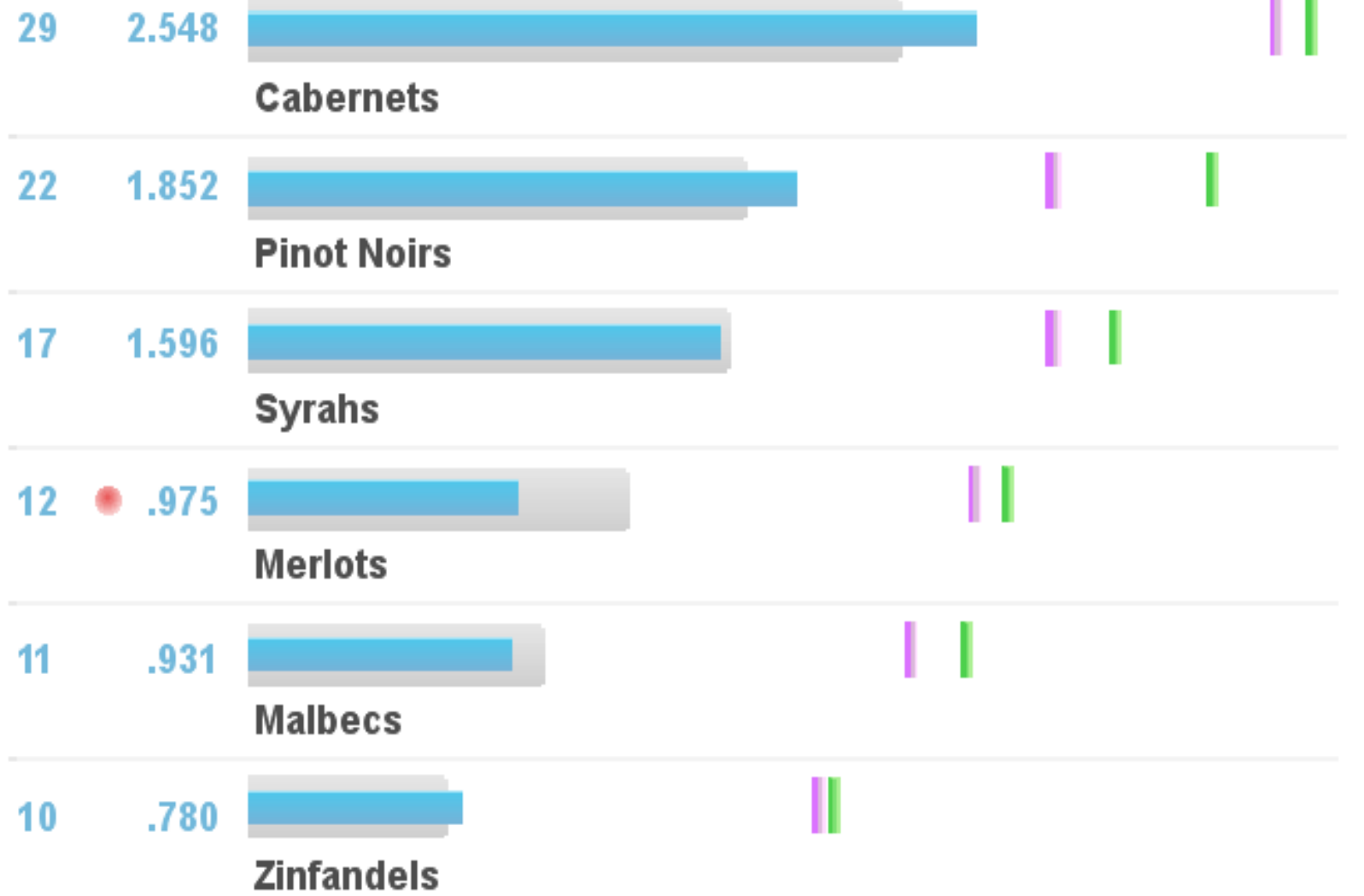
Types

Relations
Scales
Places
Times

Ingredients
Origins

2011 Performance (July 28)

Actual Pace Goal Last Year Alert

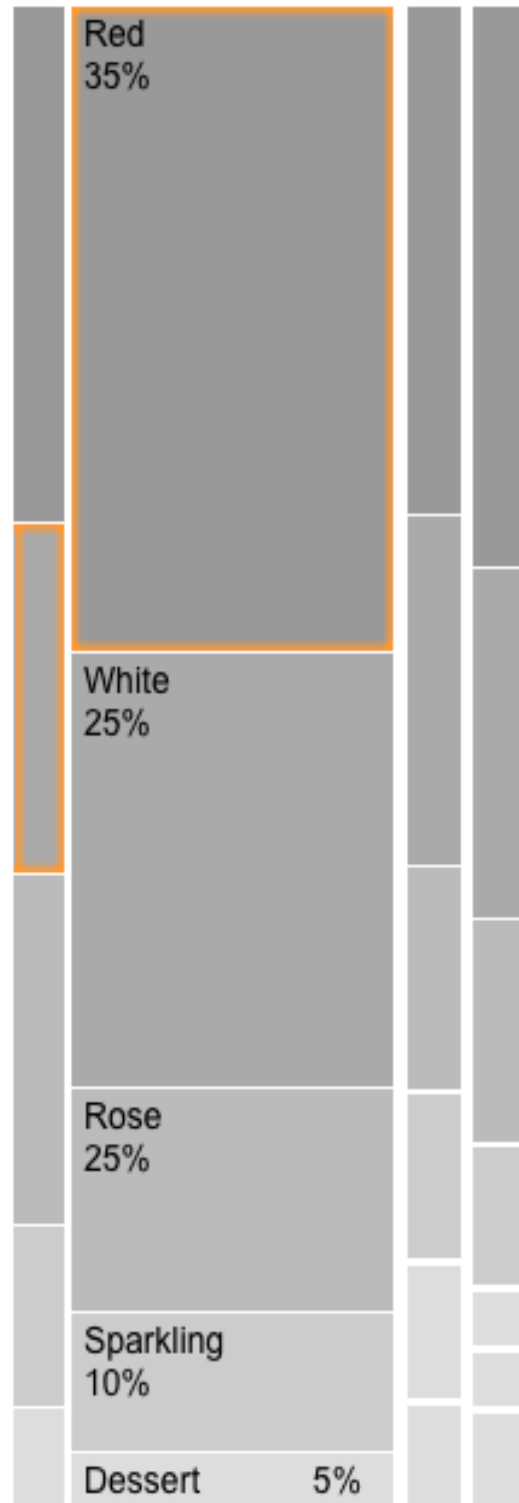


% \$M Total 0 1 2 3 4

Worldwide Sales

| Sales | Performance | by Ingredient |



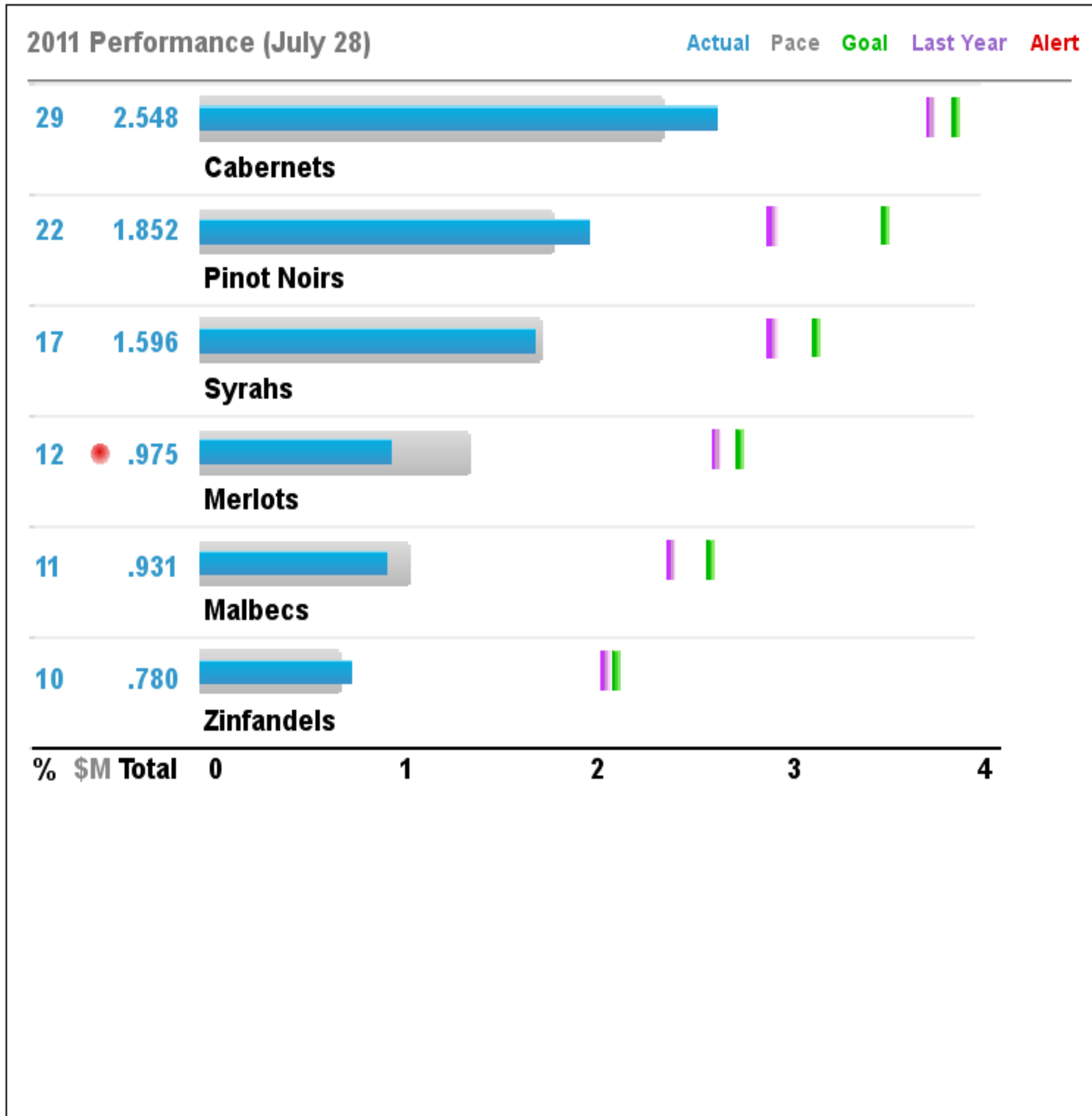


Groups Sub-Groups
 Wine, Red |

Types

Relations
 Scales
 Places
 Times

Ingredients
 Origins

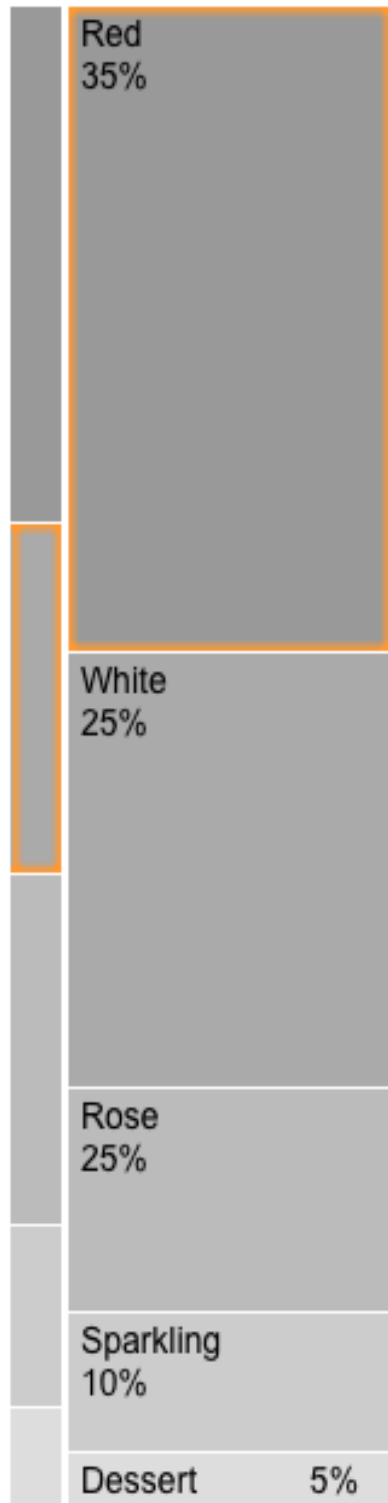


When the View By setting becomes congruent to a selected filter, rendering it useless, another default breakdown is selected automatically.

Worldwide Sales

| Sales | Performance | by Ingredient |

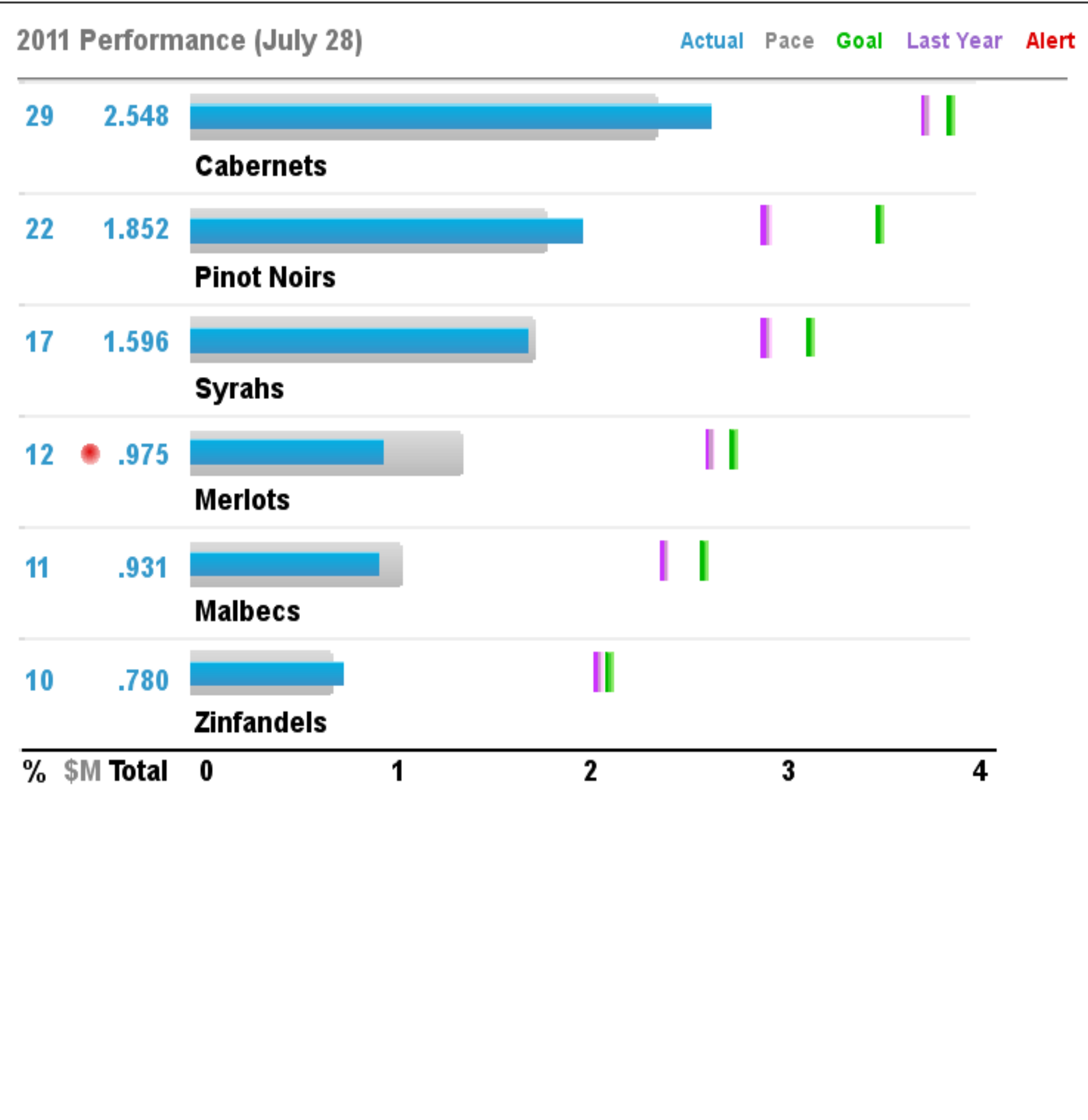




Groups Sub-Groups
Wine, Red |

Types

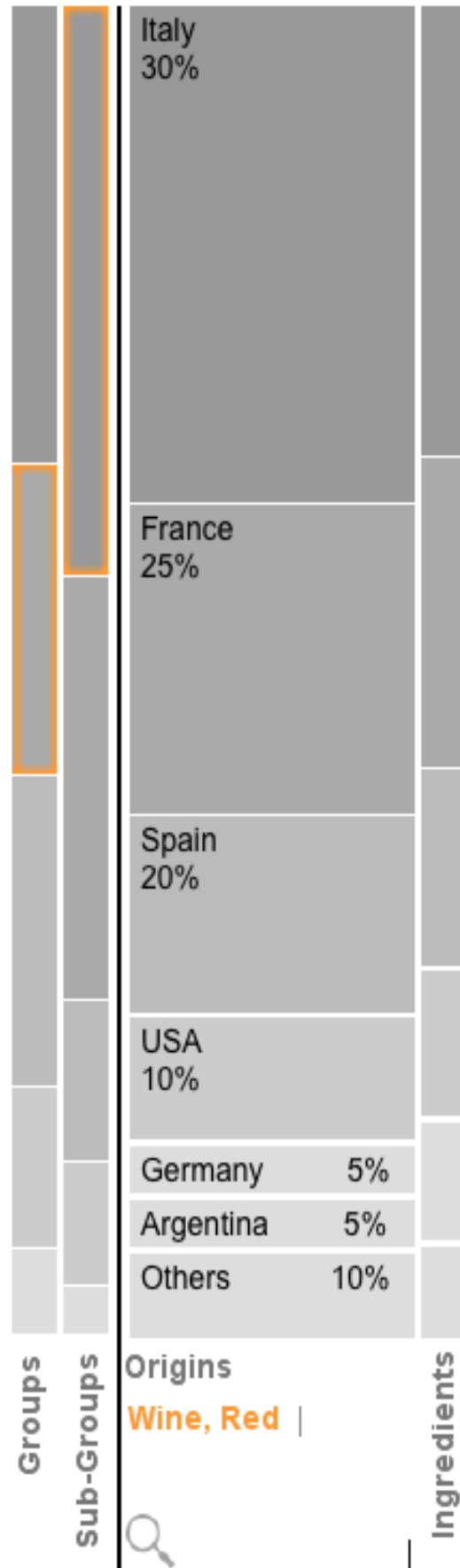
Relations
Scales
Places
Times
Ingredients
Origins



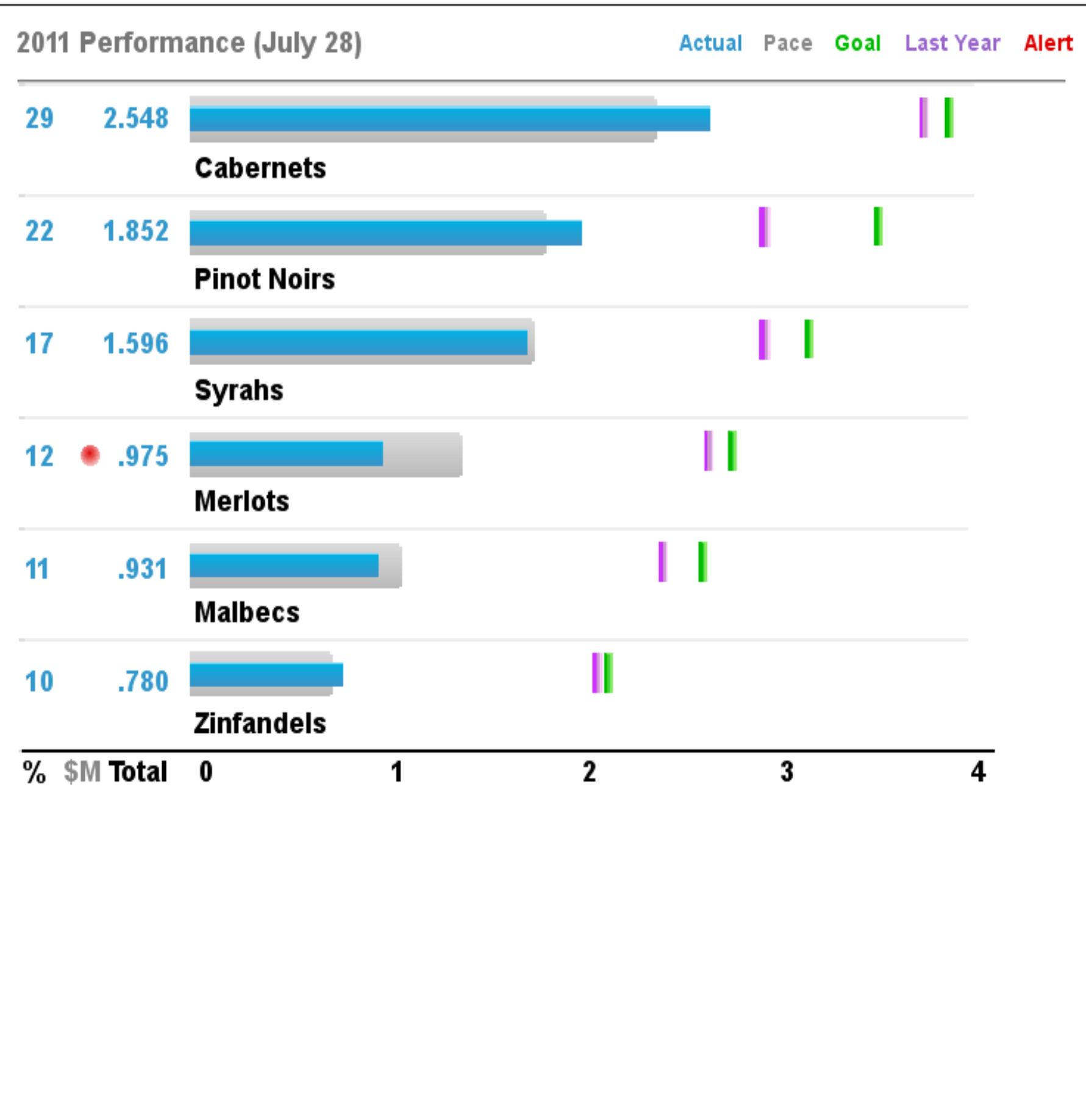
Worldwide Sales

| Sales | Performance | by Ingredient |





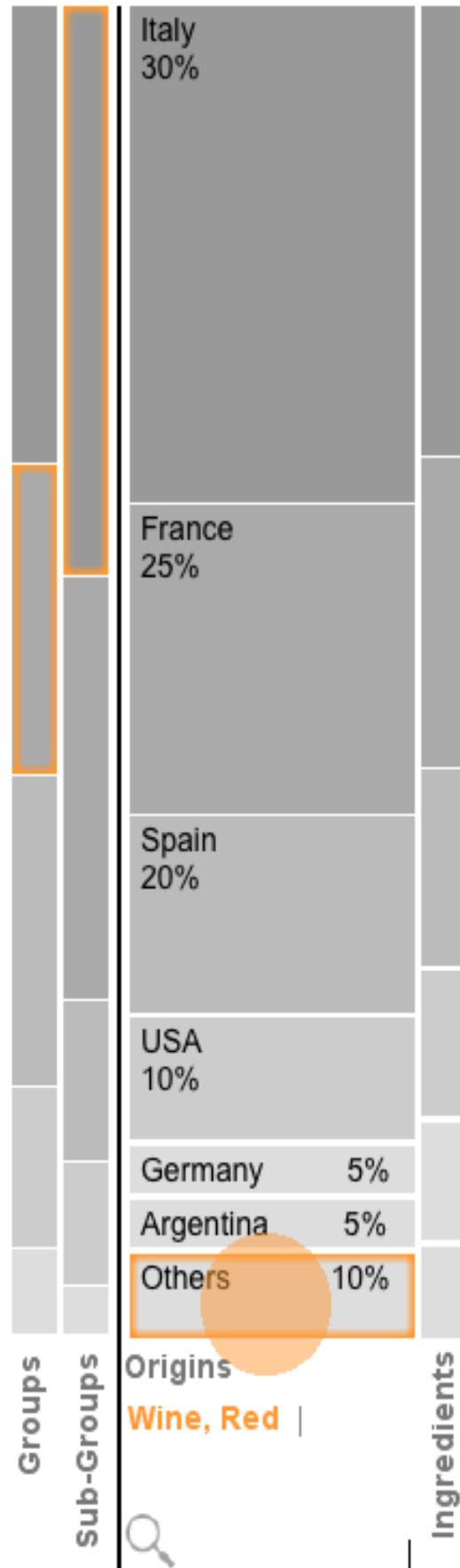
Relations
Scales
Places
Times
Origins
Wine, Red |
Ingredients



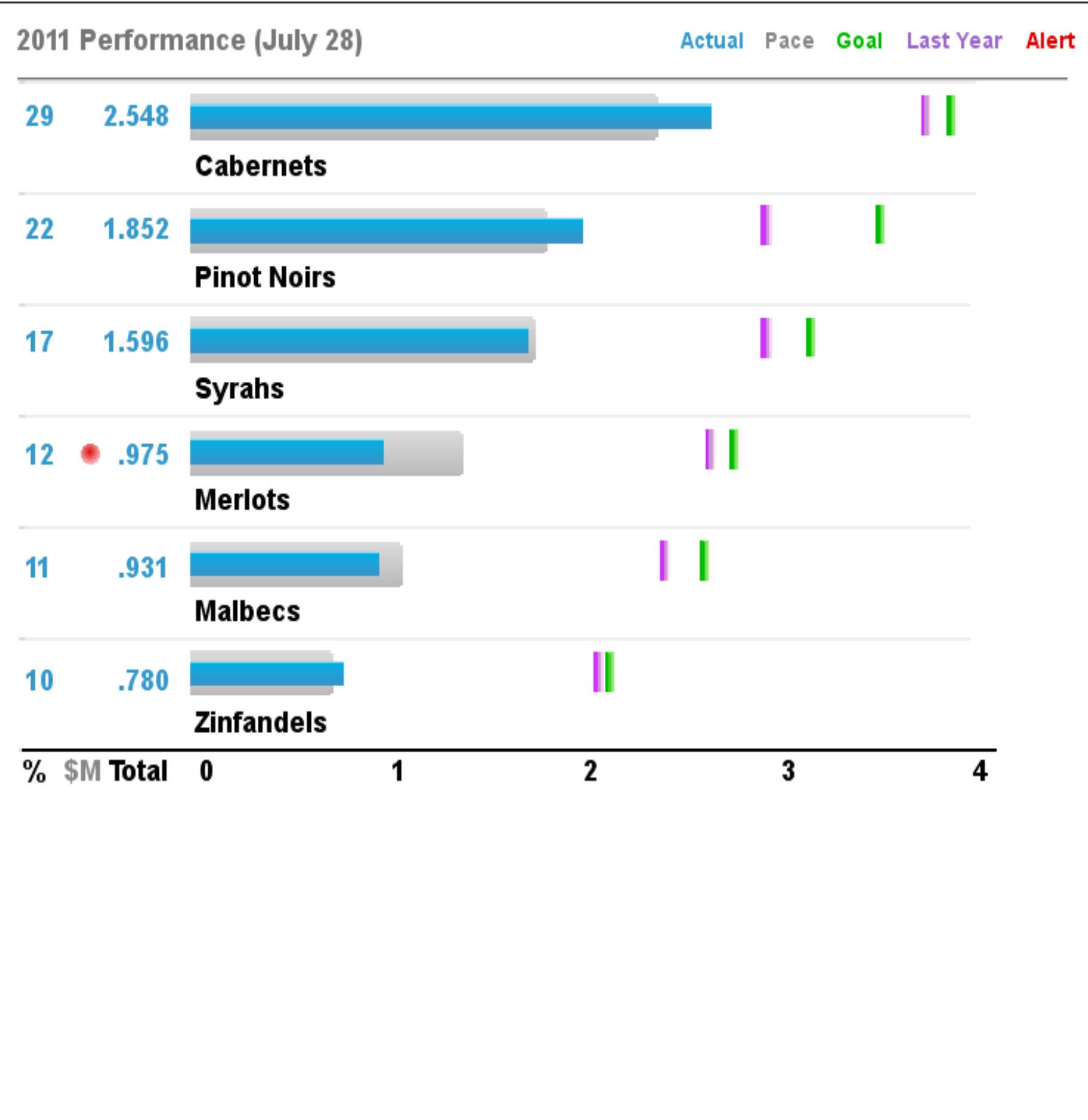
Types
Worldwide Sales

| Sales | Performance | by Ingredient |





Relations
Scales
Places
Times
Origins
Wine, Red |

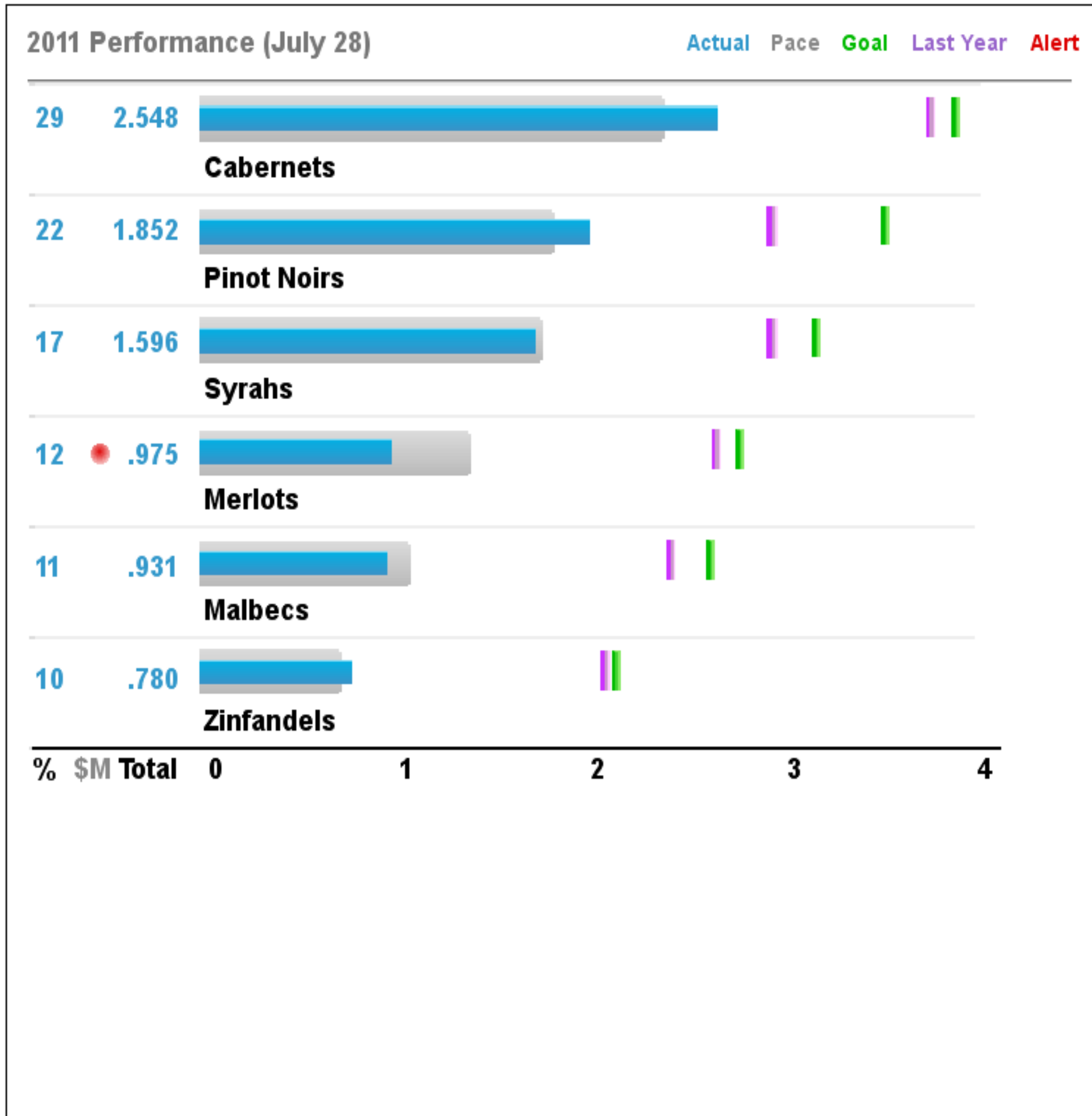
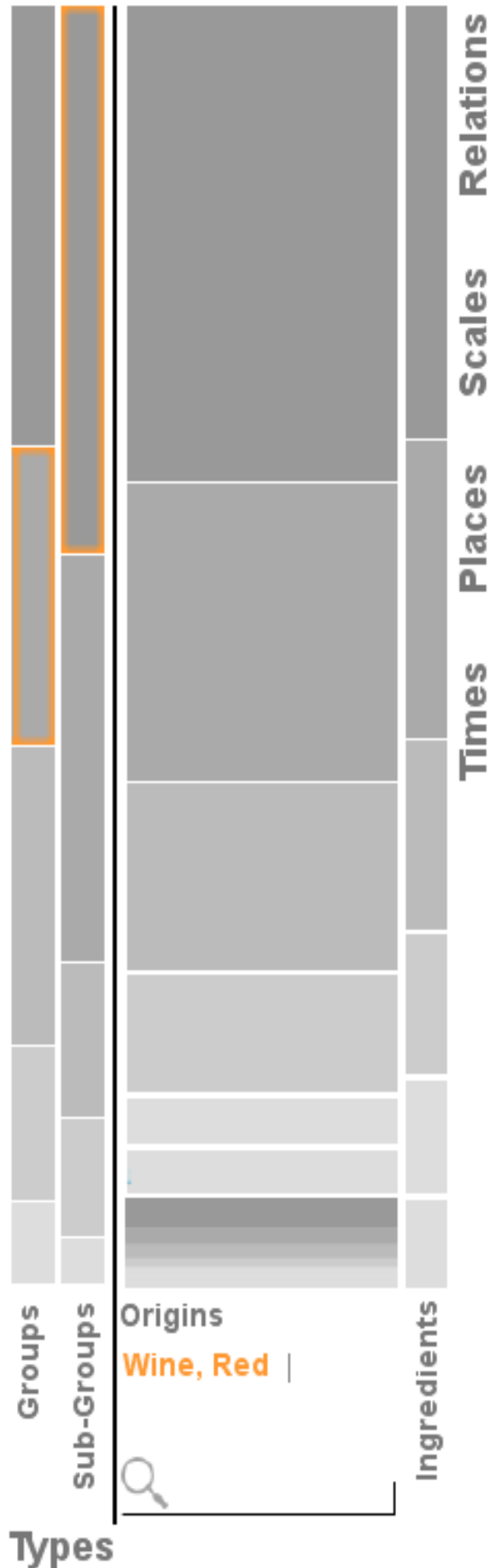


The quantitative Strip Chart display is made more practical by the addition of the Others category. Here the user zooms into this.

Types
Worldwide Sales

| Sales | Performance | by Ingredient |





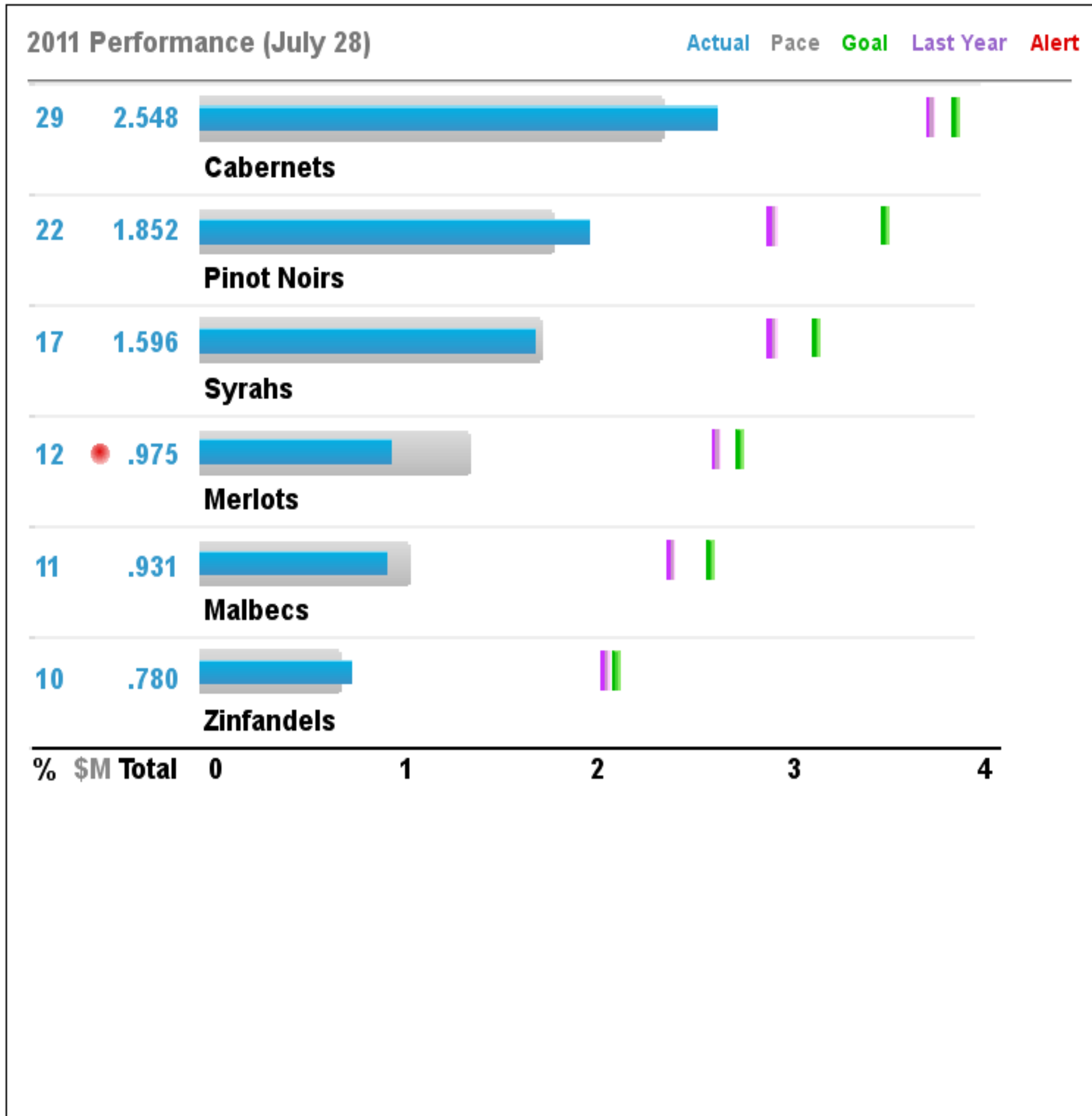
The quantitative Strip Chart display is made more practical by the addition of the Others category. Here the user zooms into this.

Worldwide Sales

| Sales | Performance | by Ingredient |



Groups
 Sub-Groups
 Origins
 Wine, Red |
 Ingredients
 Types

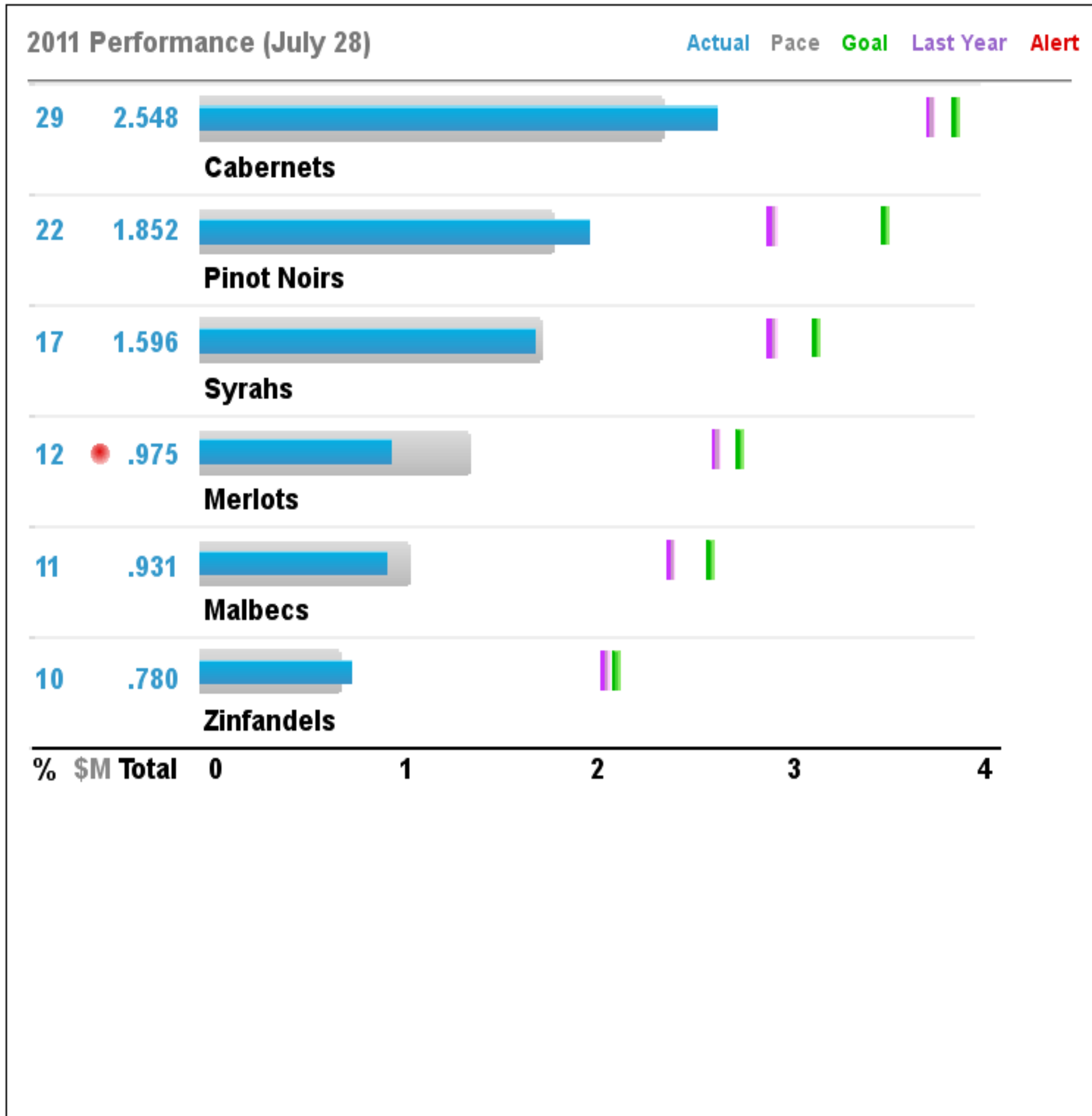
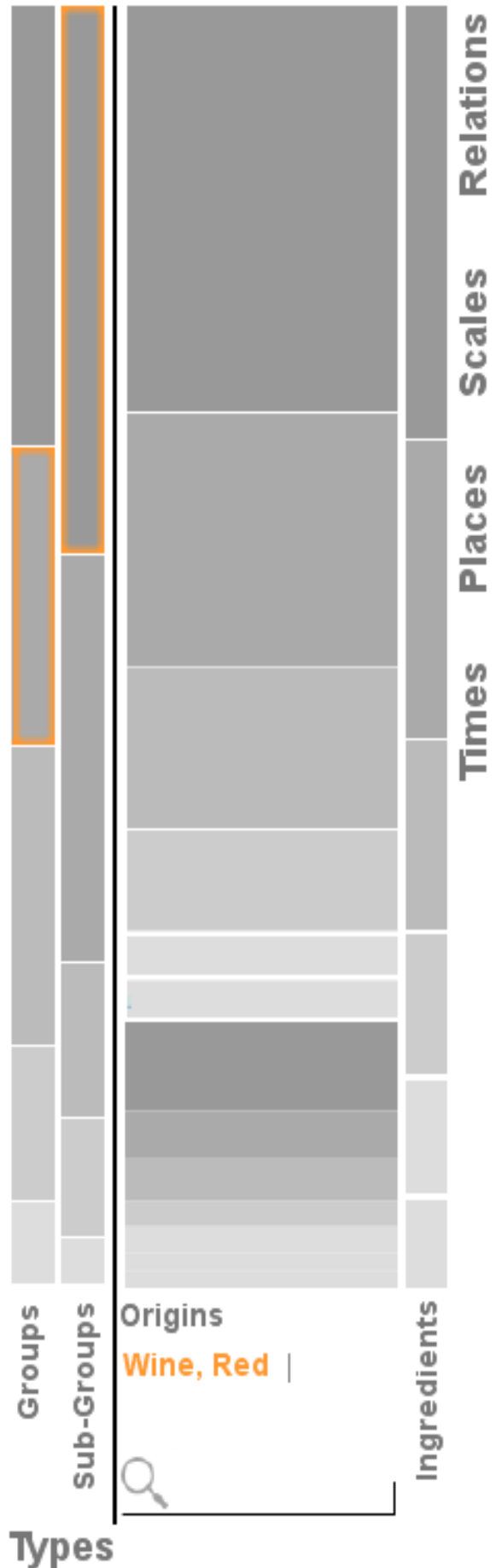


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Worldwide Sales

| Sales | Performance | by Ingredient |



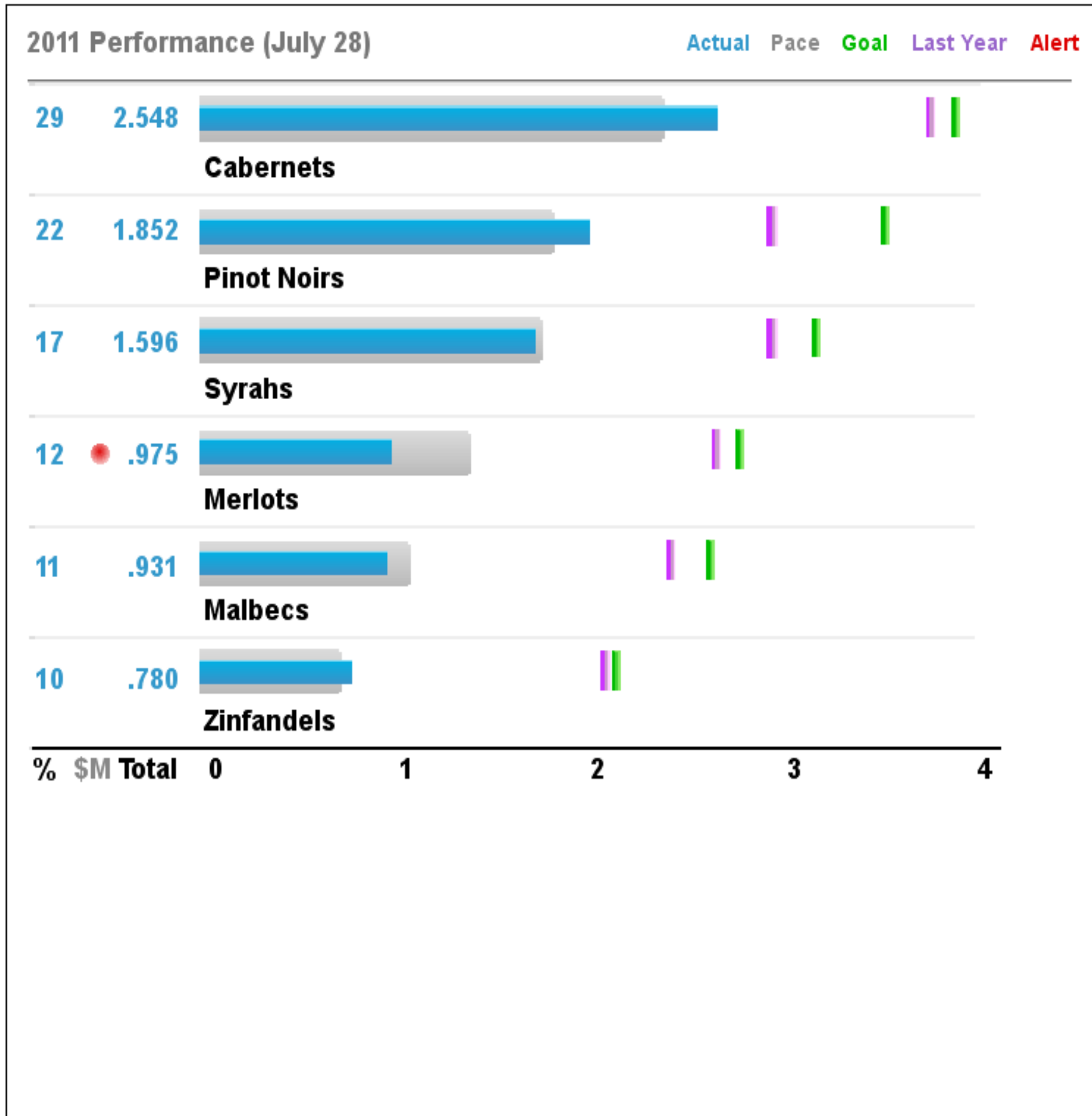
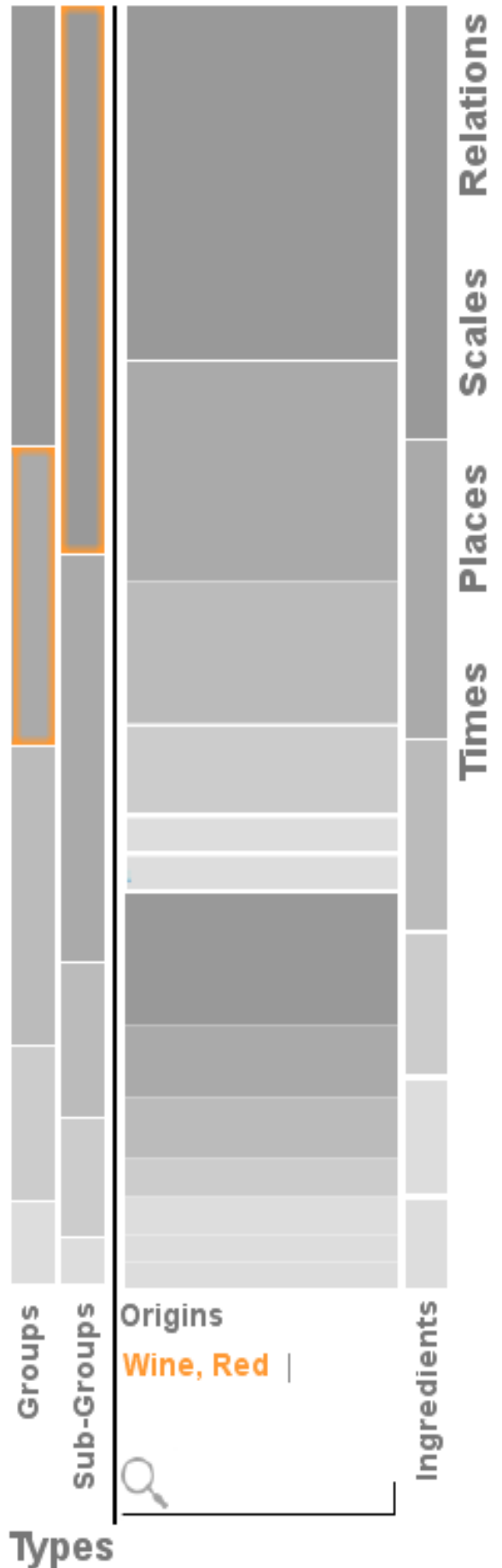


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Worldwide Sales

| Sales | Performance | by Ingredient |





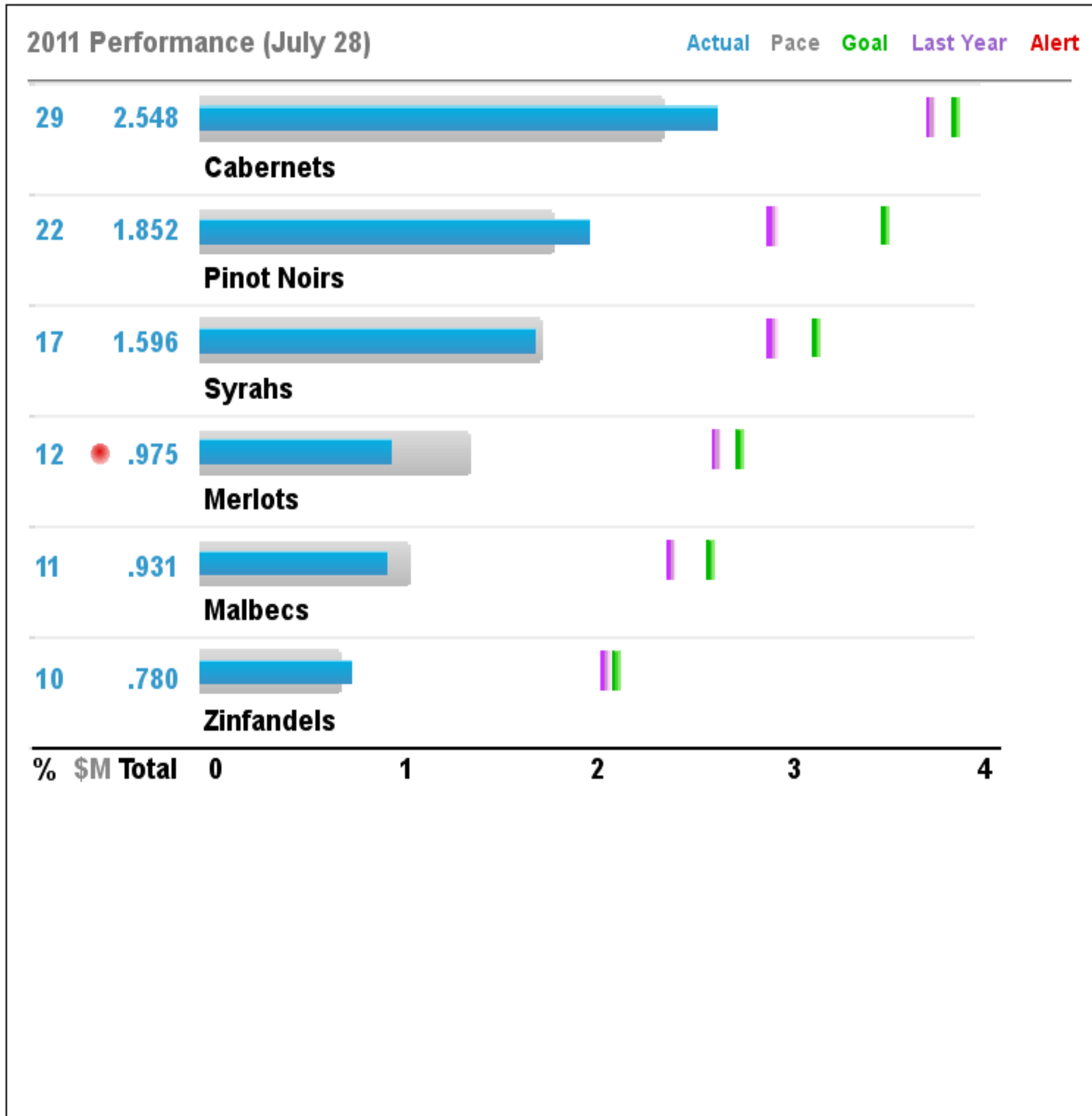
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Worldwide Sales

| Sales | Performance | by Ingredient |



Groups
 Sub-Groups
 Origins
 Wine, Red |
 Ingredients
 Types



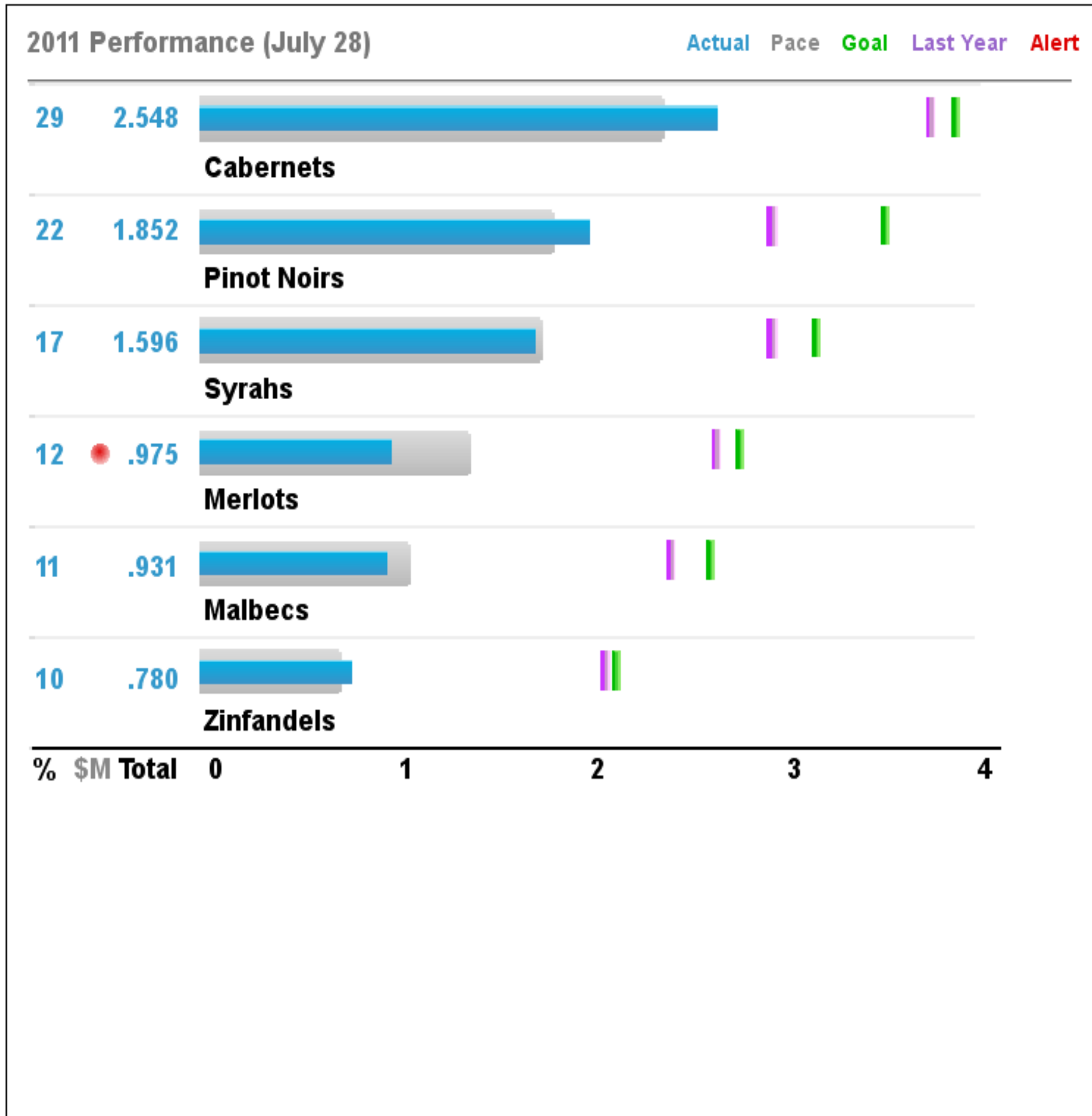
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Worldwide Sales

| Sales | Performance | by Ingredient |



Groups
 Sub-Groups
 Origins
 Wine, Red |
 Ingredients
 Types

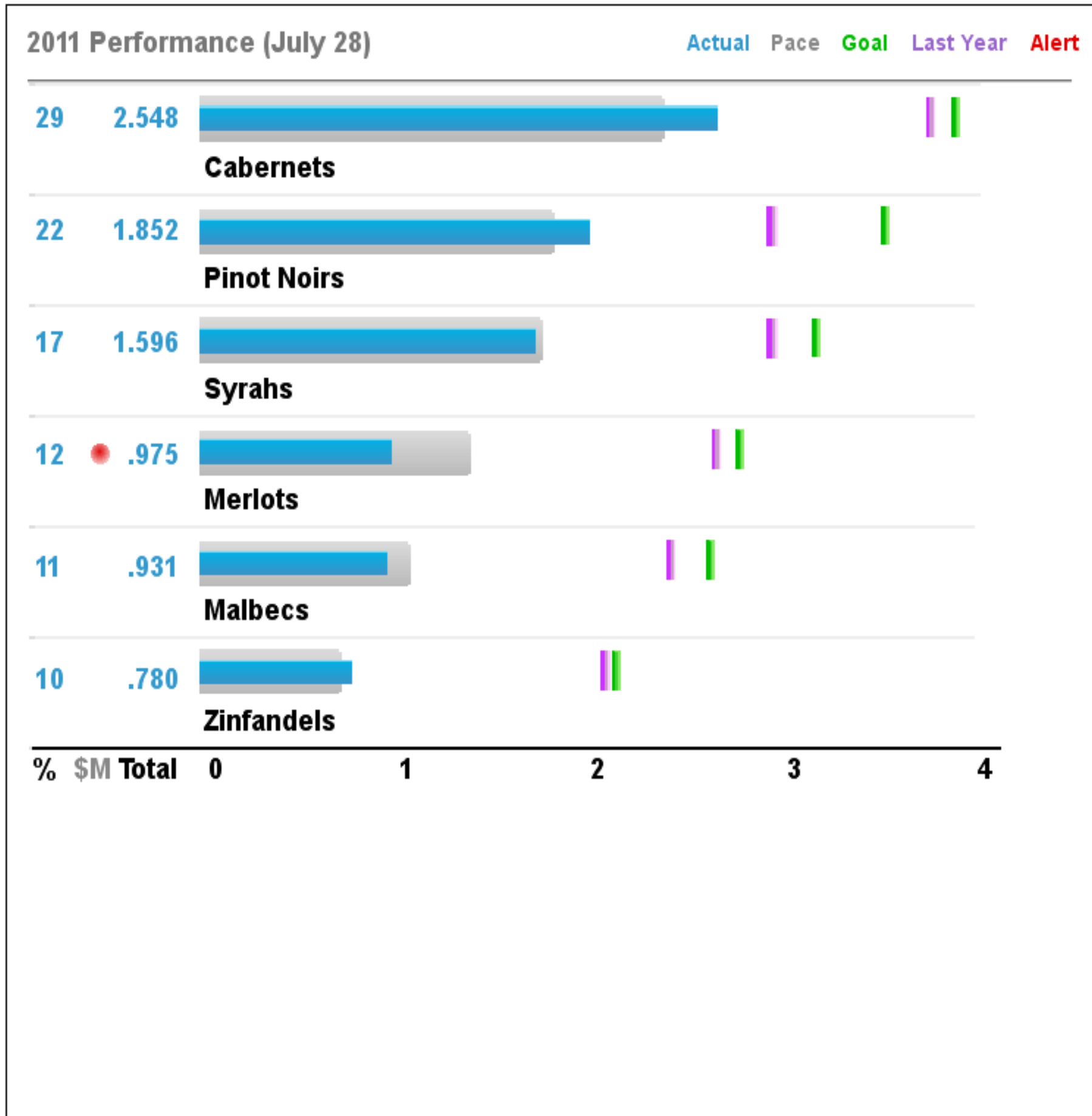
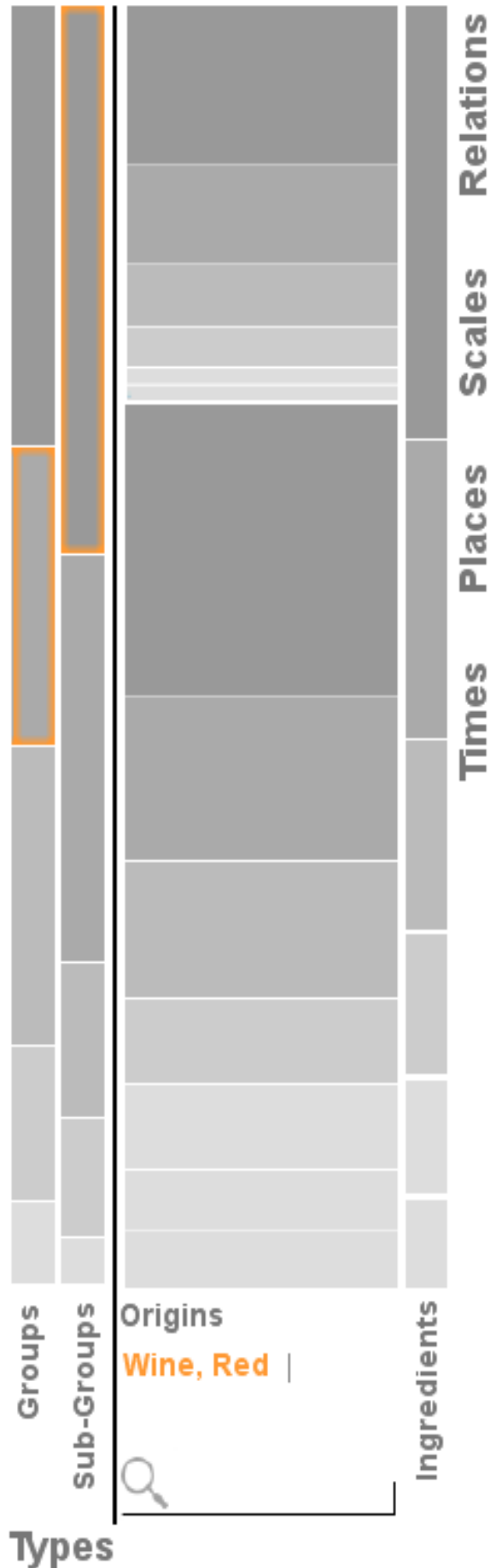


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Worldwide Sales

| Sales | Performance | by Ingredient |



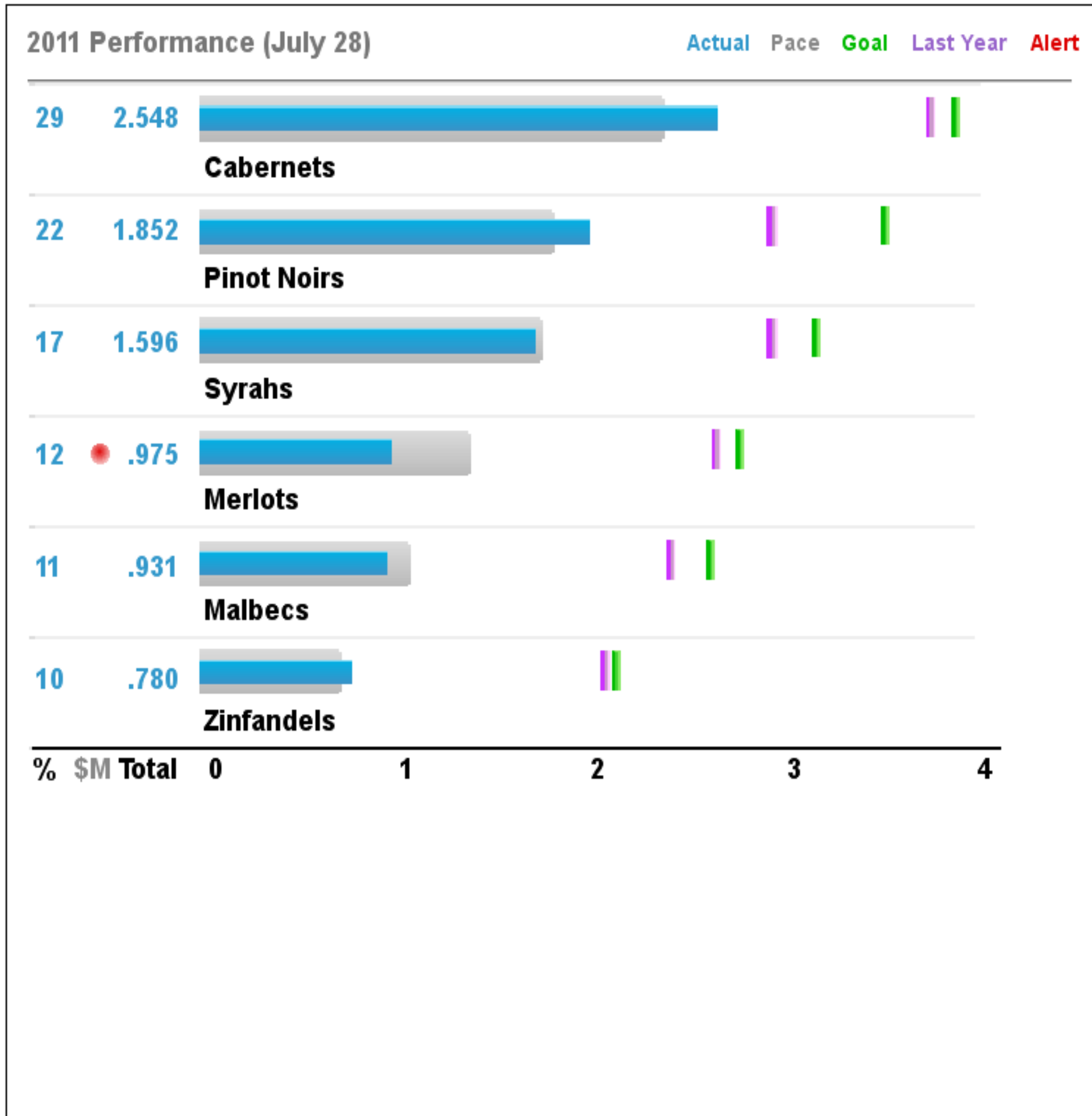
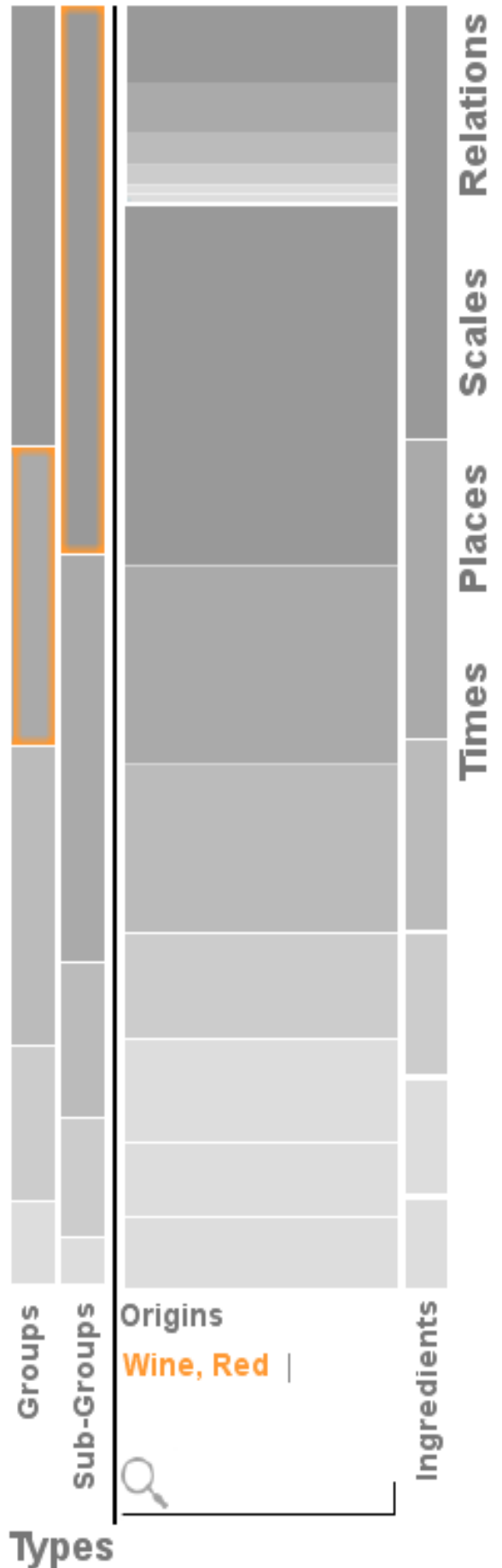


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Worldwide Sales

| Sales | Performance | by Ingredient |





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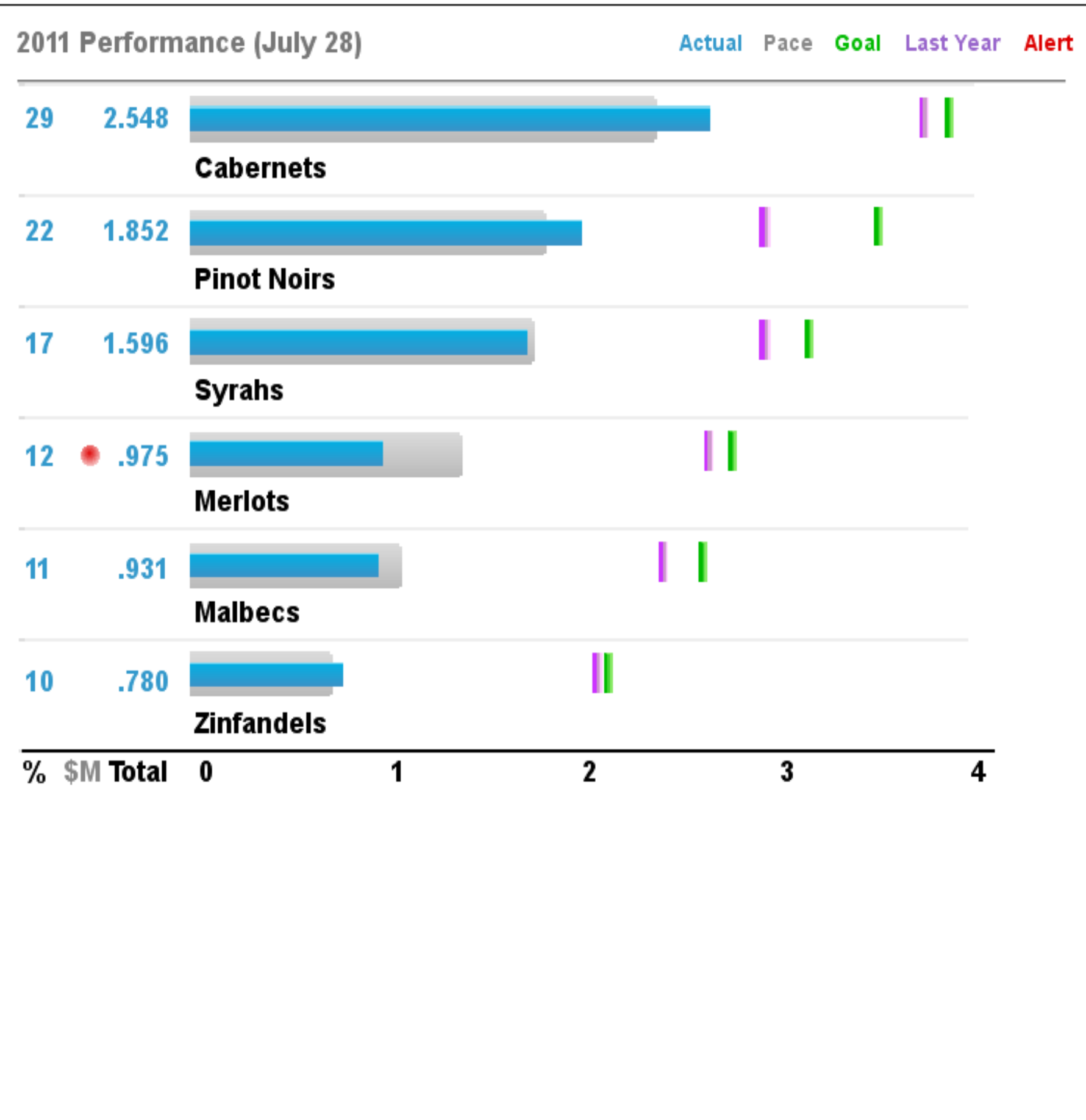
Worldwide Sales

| Sales | Performance | by Ingredient |



Groups	Sub-Groups	Origins	Ingredients	
		Wine, Red		
		Peru		5%
		Others		.5%
		Chile		1%
		South Africa		1%
		Canada		2%
		New Zealand		2%
		Portugal		3%
		Others		10%

Relations
Scales
Places
Times

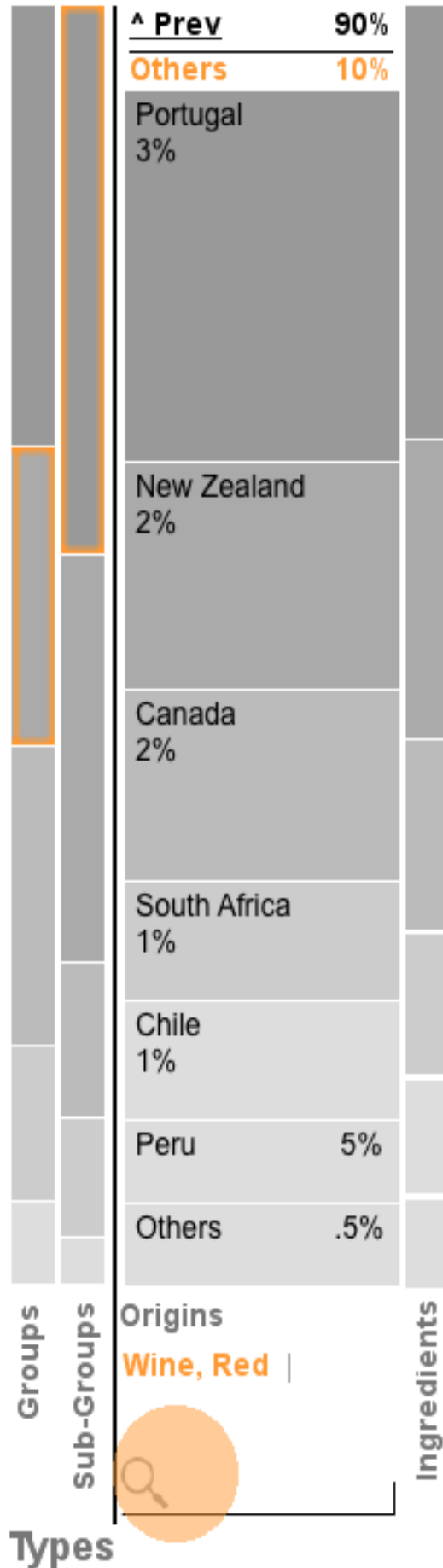


Selecting an Others Category zooms into its content and collapses larger categories to the top of the strip.

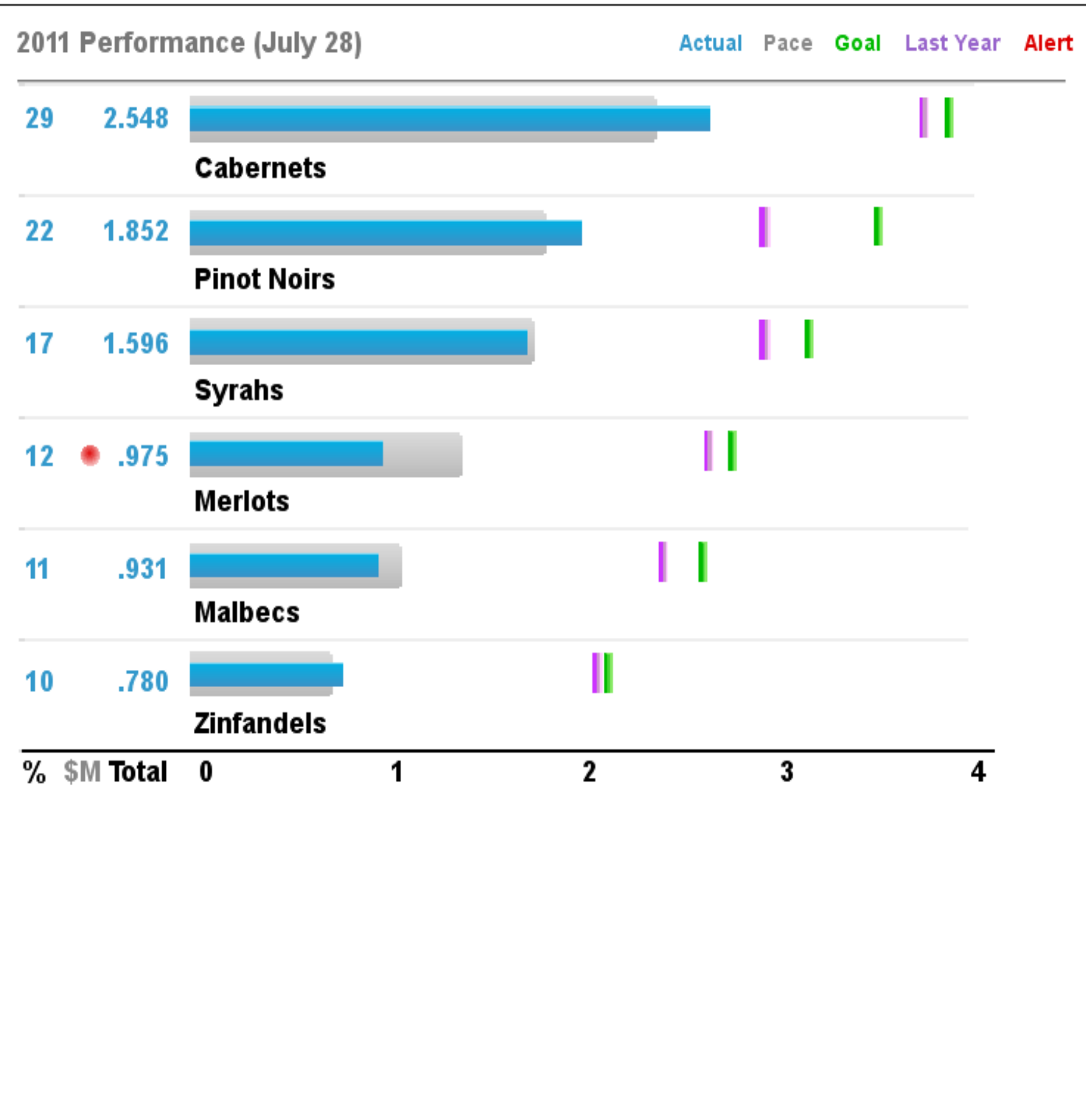
Worldwide Sales

| Sales | Performance | by Ingredient |





Relations
Scales
Places
Times
Origins
Wine, Red |

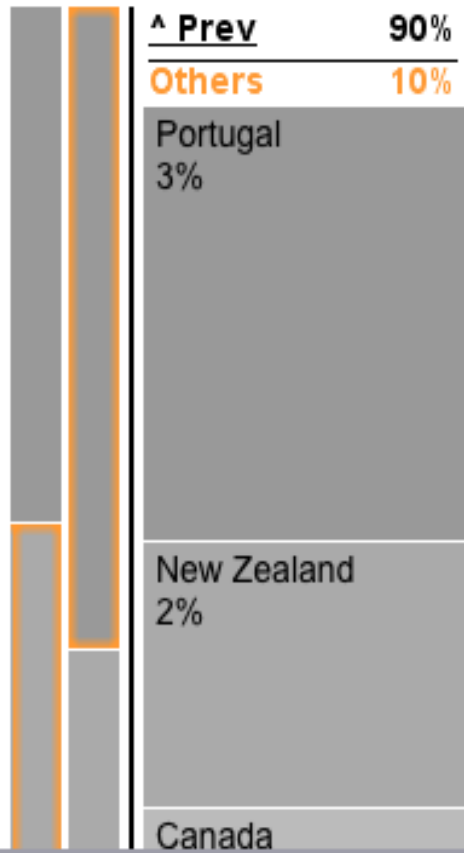


Text search acts only upon the expanded Dimension, or upon all Aspects/Dimensions when no Aspects have been selected.

Worldwide Sales

| Sales | Performance | by Ingredient |

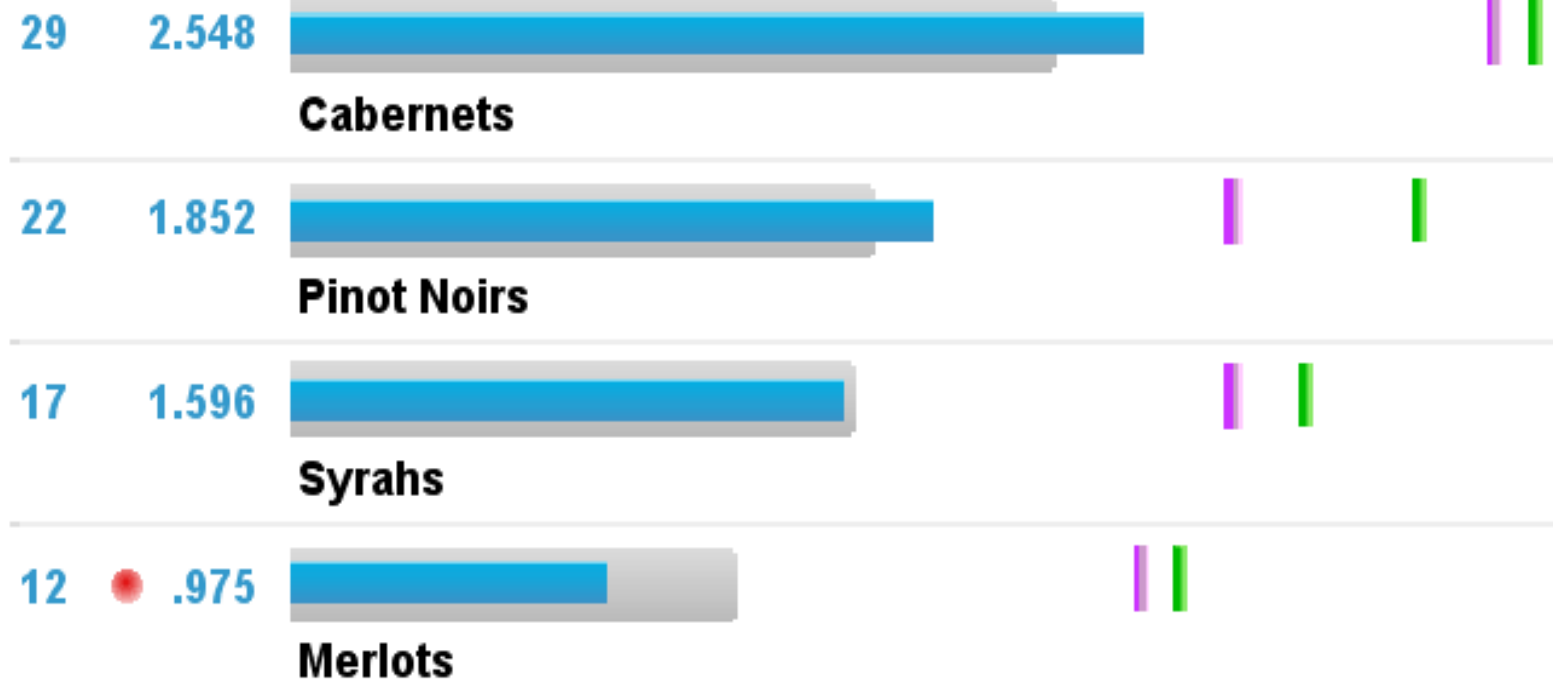




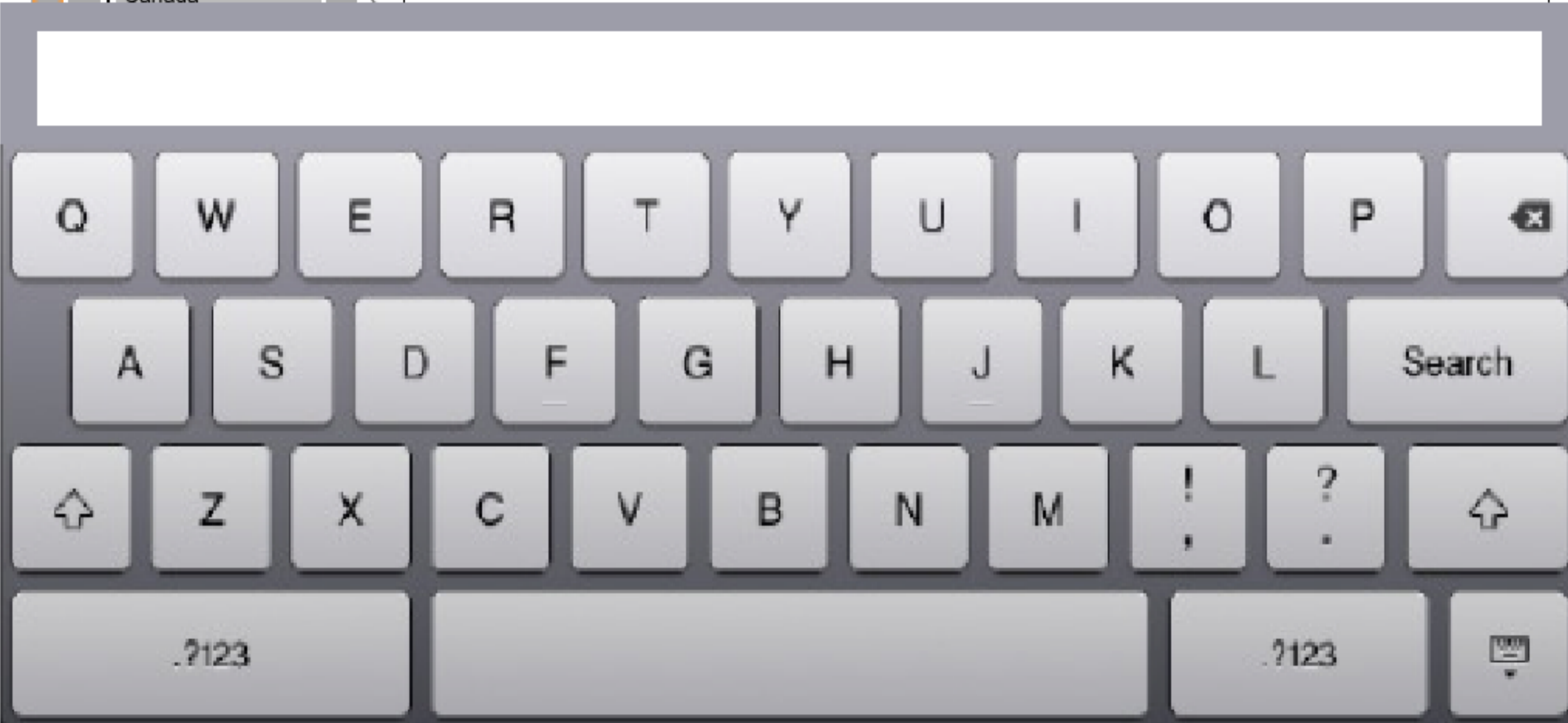
Relations
Scales
Places

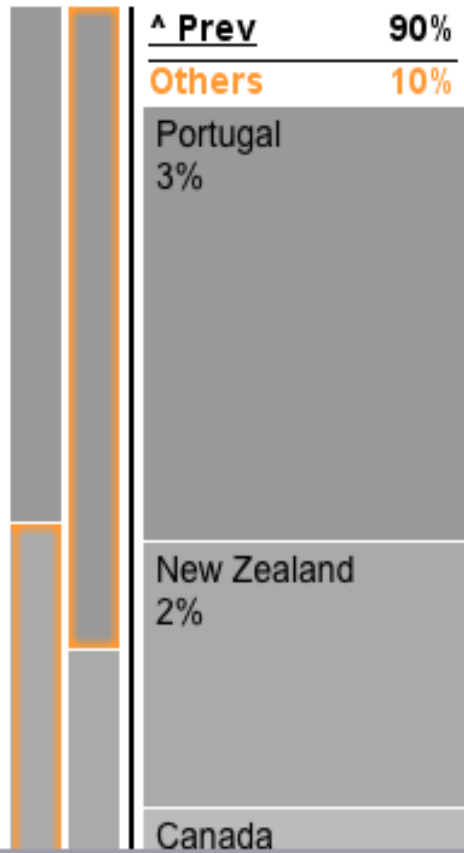
2011 Performance (July 28)

Actual Pace Goal Last Year Alert



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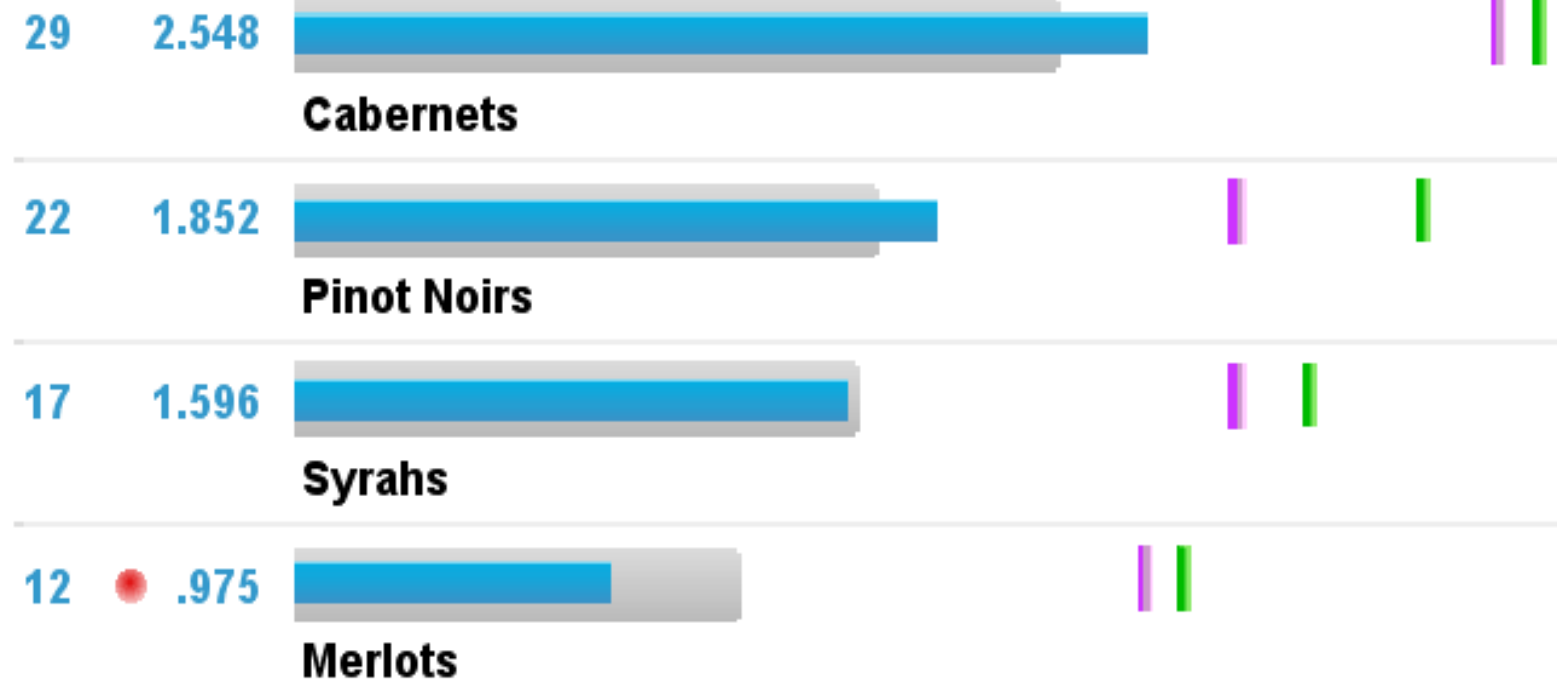




Relations
Scales
Places

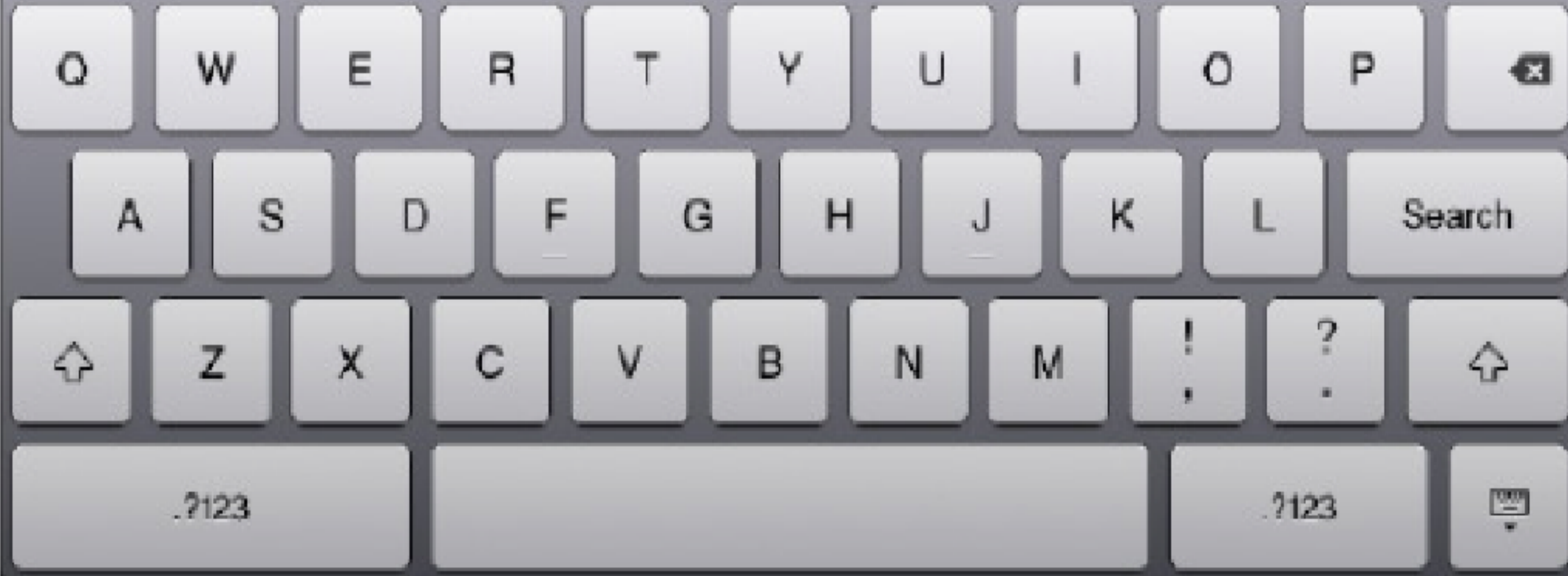
2011 Performance (July 28)

Actual Pace Goal Last Year Alert



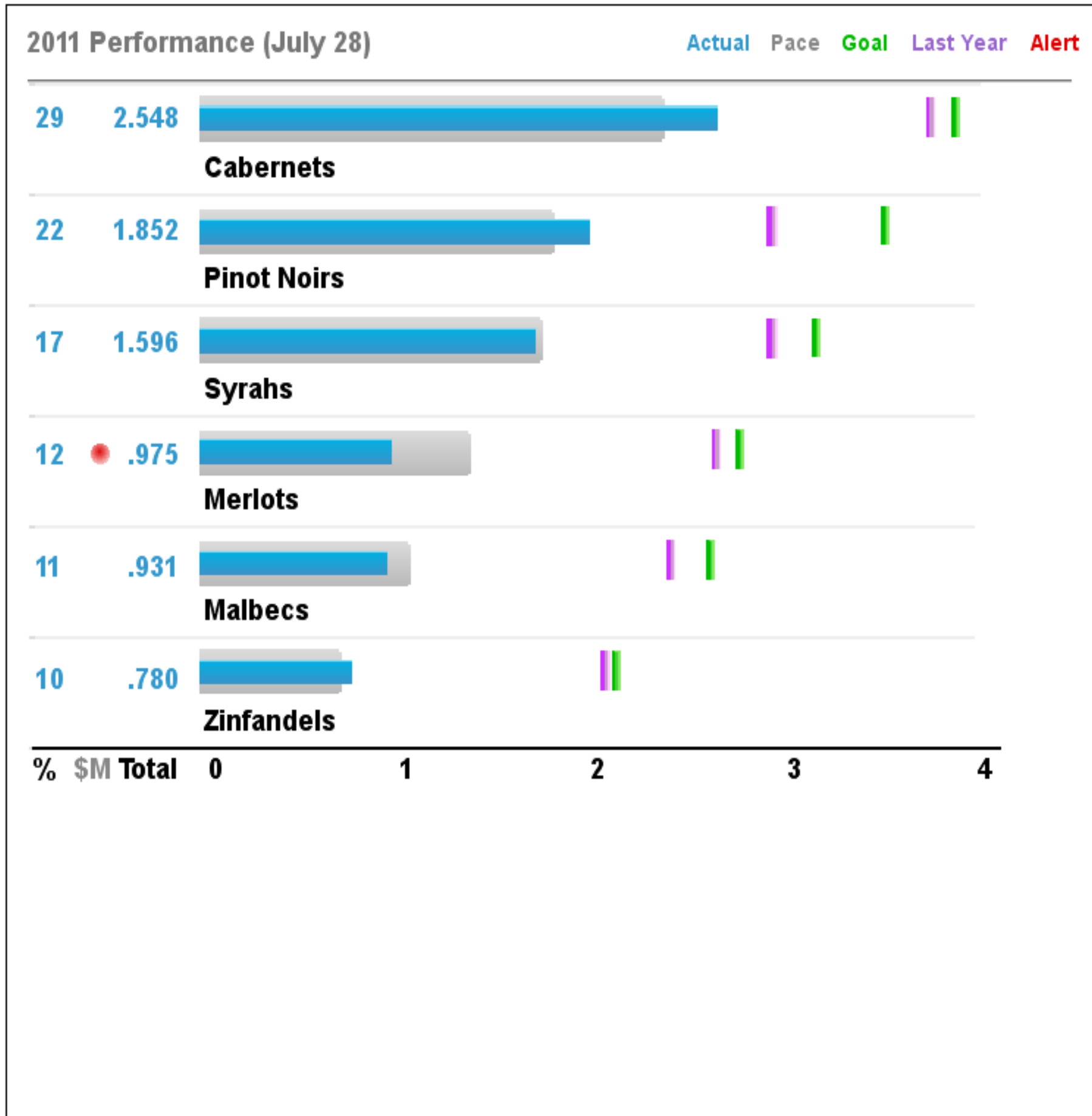
Text search acts only upon the expanded Dimension, or upon all Aspects/Dimensions when no Aspects have been selected.

Turkey



Search results scroll ahead to the closest match.

Origins	Relations	Scales	Places	Times
Taiwan	.1			
Tajikistan	.1			
Tanzania, United Rep. of	.1			
Thailand	.1			
Timor-Leste (East Timor)	.1			
Togo	.1			
Tokelau	.1			
Tonga	.01			
Trinidad & Tobago				
Tunisia	.1			
Turkey	.3			
Turkmenistan	.02			
Turks and Caicos Is.	.1			
Uganda	.1			
Ukraine	.1			
United Kingdom	3			
United States	20			
	%			



Worldwide Sales

| Sales | Performance | by Ingredient |

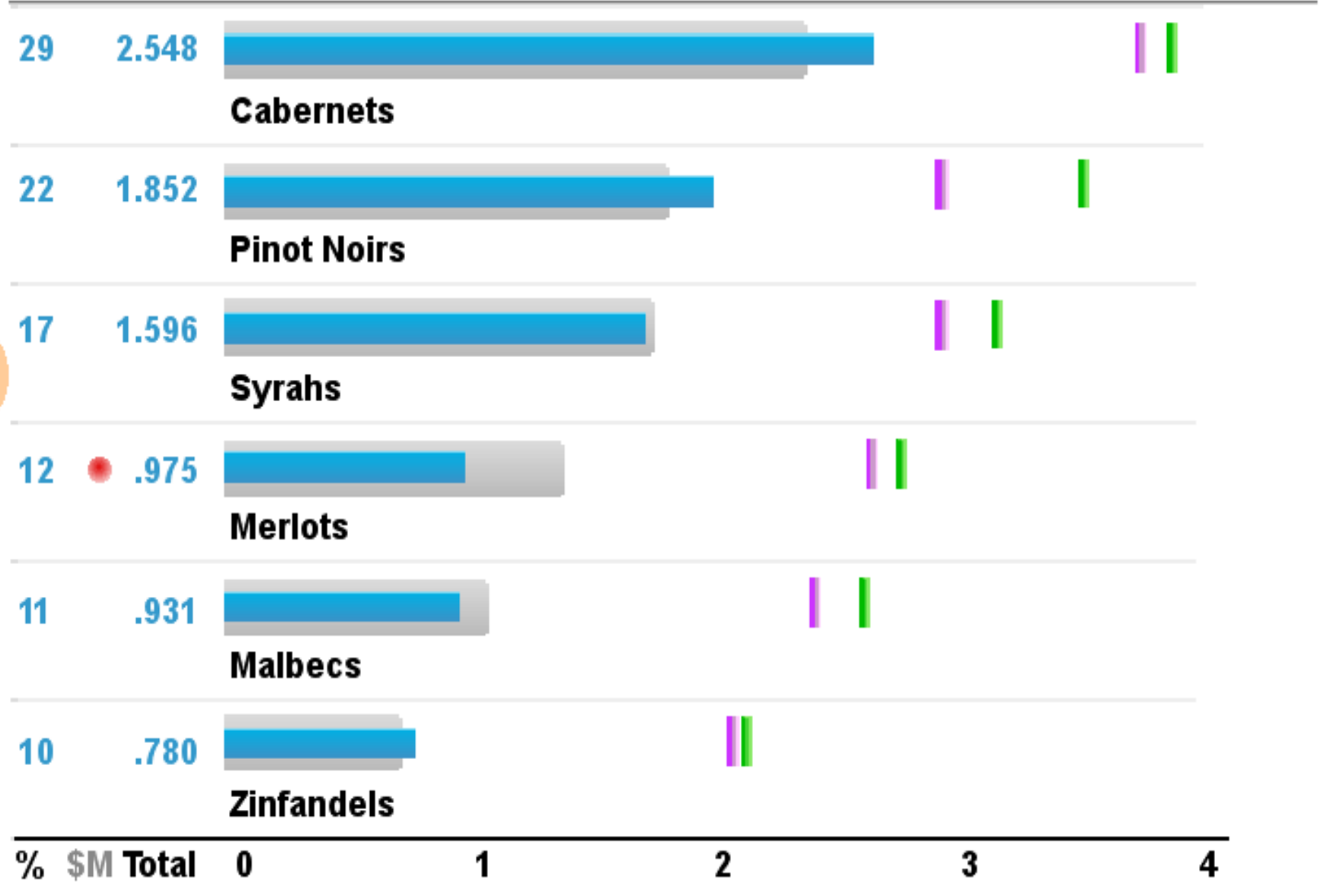


Origins	
Wine, Red	
Groups	
Sub-Groups	
Ingredients	
Relations	
Scales	
Places	
Times	

Taiwan	.1
Tajikistan	.1
Tanzania, United Rep. of	.1
Thailand	.1
Timor-Leste (East Timor)	.1
Togo	.1
Tokelau	.1
Tonga	.01
Trinidad & Tobago	
Tunisia	.1
Turkey	.3
Turkmenistan	.02
Turks and Caicos Is.	.1
Uganda	.1
Ukraine	.1
United Kingdom	3
United States	20
	%

2011 Performance (July 28)

Actual Pace Goal Last Year Alert



% \$M Total 0 1 2 3 4

Choosing another Aspect collapses the previously opened Aspect. If selections exist in that Aspect, it collapses to a vertical slice at the left with its selections displayed as text. If no selections are made the Aspect returns to the right of the Strip.

The chosen Aspect, Place, happens to be all hierarchical. Its Strip Charts show the growing fragmentation of Sales numbers as the categories become more granular. This provides a pattern overview of the data structure, much like a treemap does.

Worldwide Sales

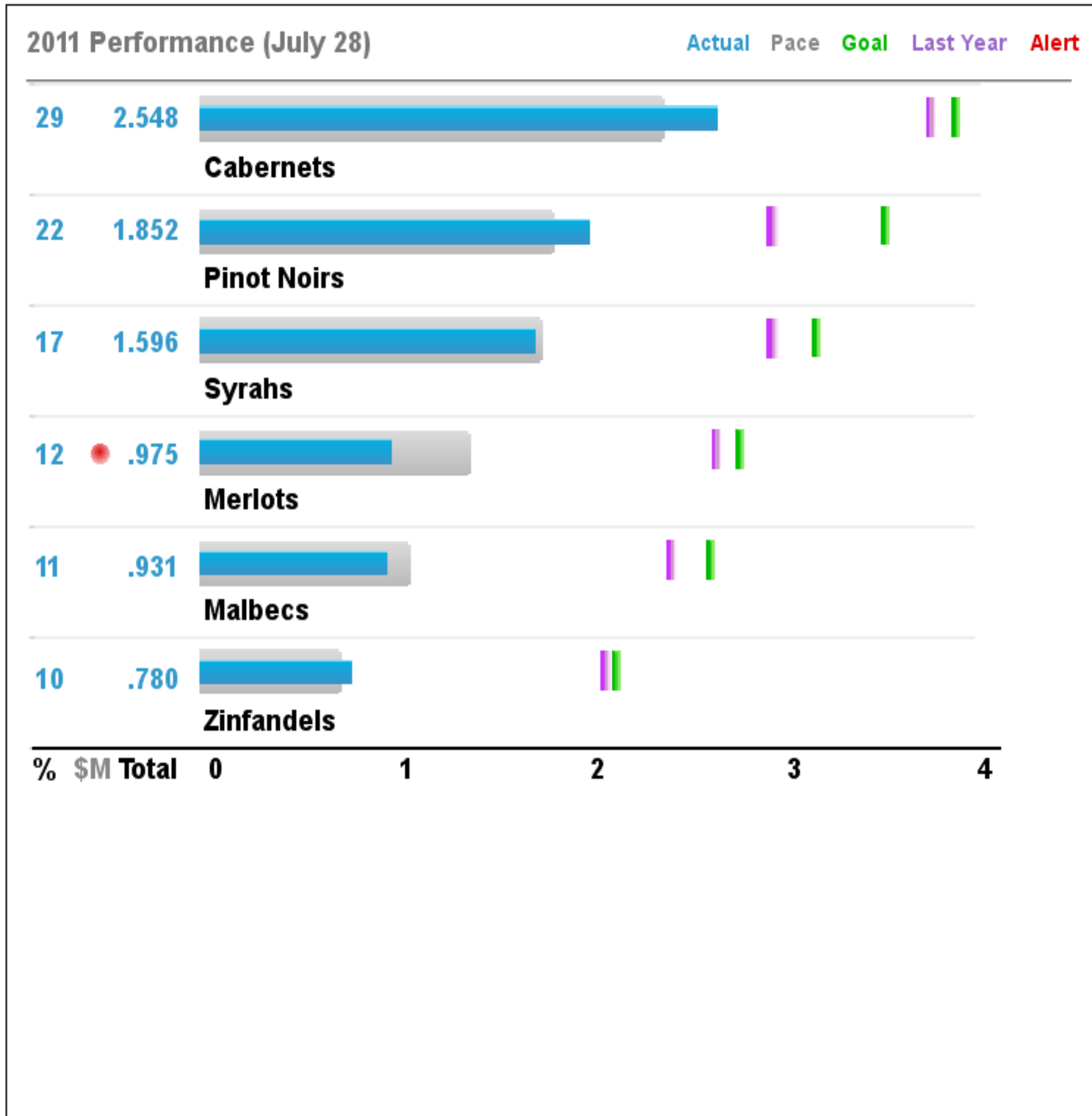
| Sales | Performance | by Ingredient |



Origins	
Wine, Red	
Groups	
Sub-Groups	
Types	

Worldwide Sales

Relations
Scales
Places
Times
Ingredients



| Sales | Performance | by Ingredient |

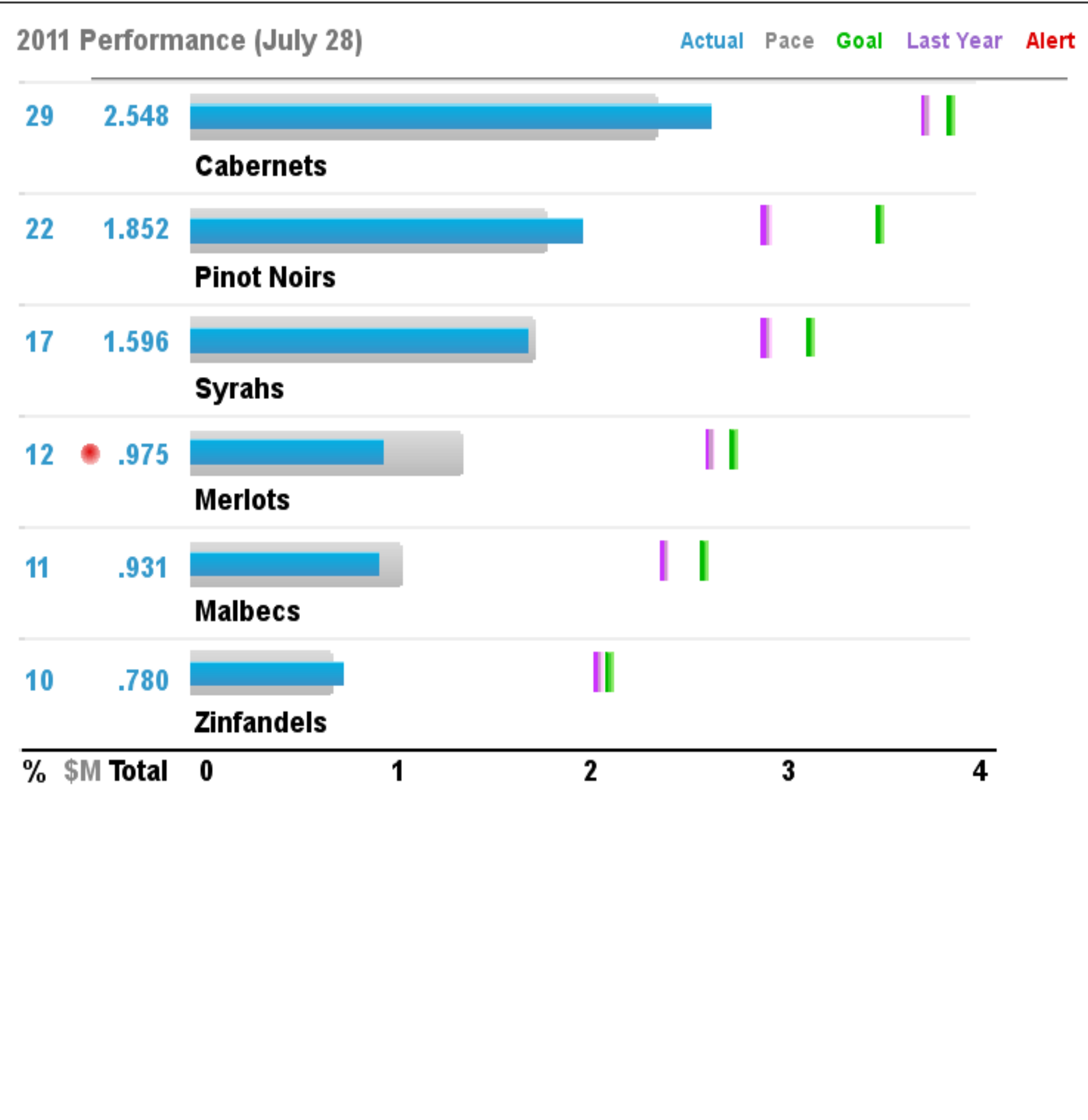


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Origins	
Wine, Red	
Taiwan	.1
Tajikistan	.1
Tanzania, United Rep. of	.1
Thailand	.1
Timor-Leste (East Timor)	.1
Togo	.1
Tokelau	.1
Tonga	.01
Trinidad & Tobago	
Tunisia	.1
Turkey	.3
Turkmenistan	.02
Turks and Caicos Is.	.1
Uganda	.1
Ukraine	.1
United Kingdom	3
United States	20
	%

Relations
Scales
Places
Times
Ingredients



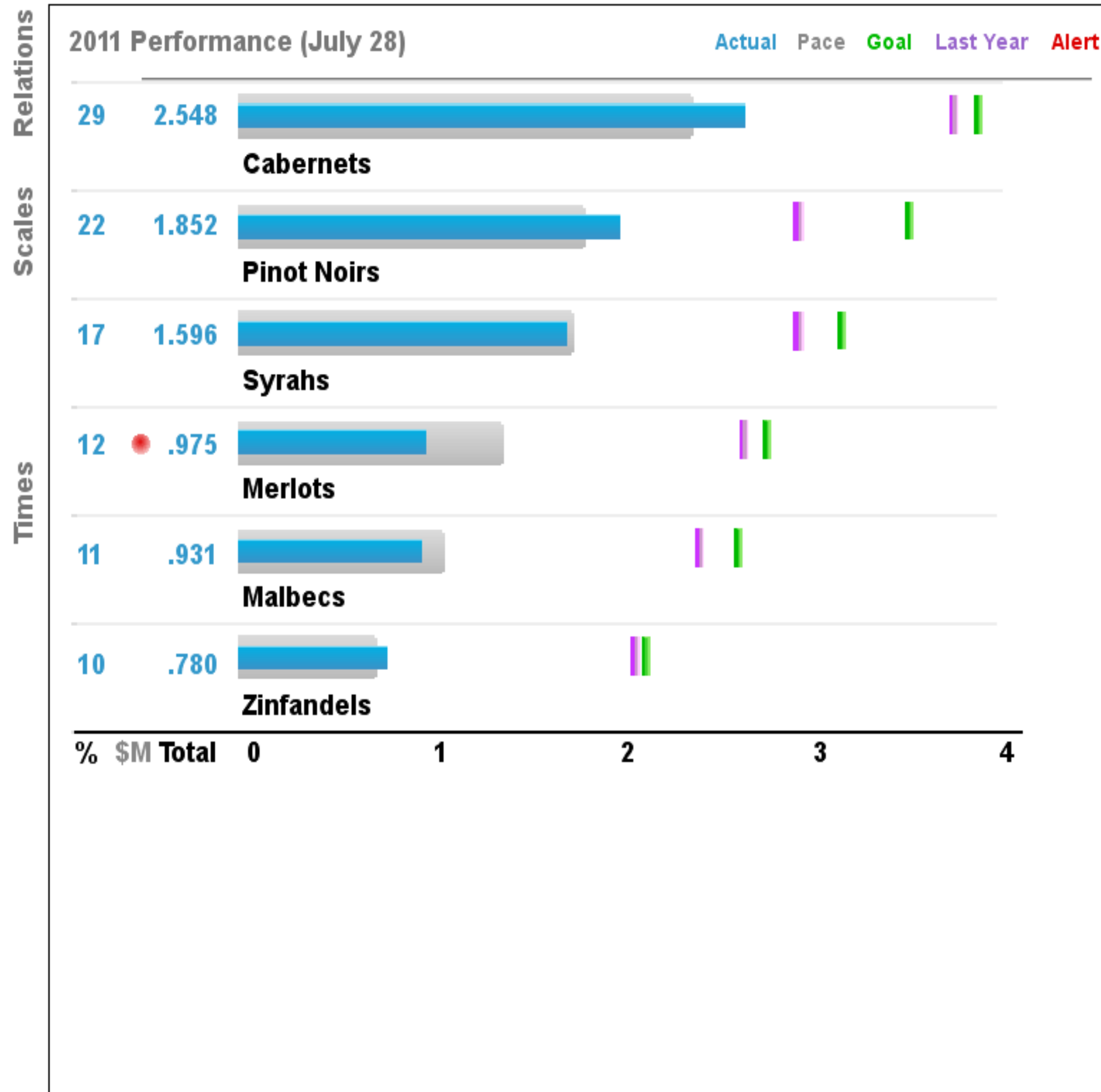
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Worldwide Sales

| Sales | Performance | by Ingredient |

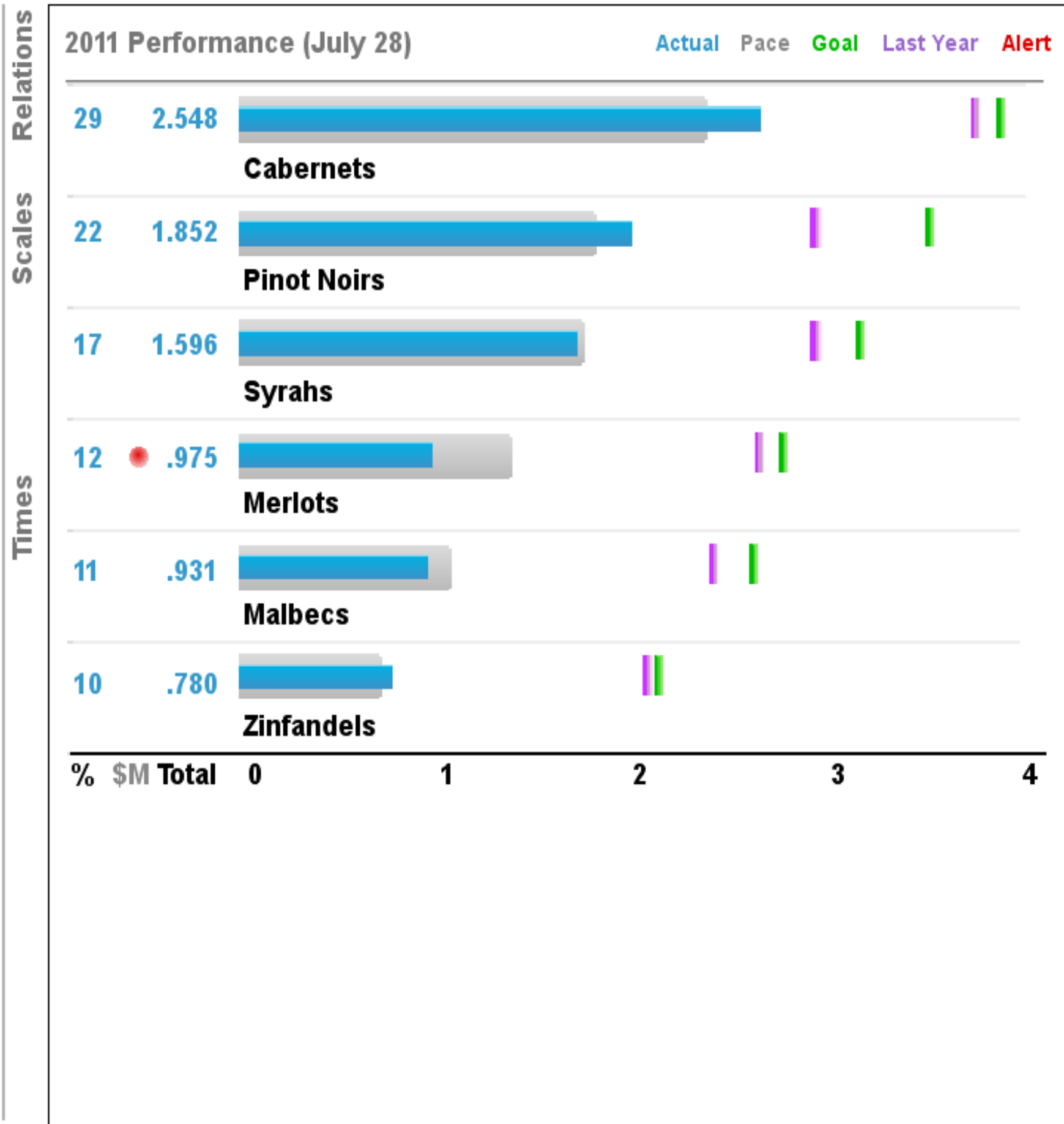




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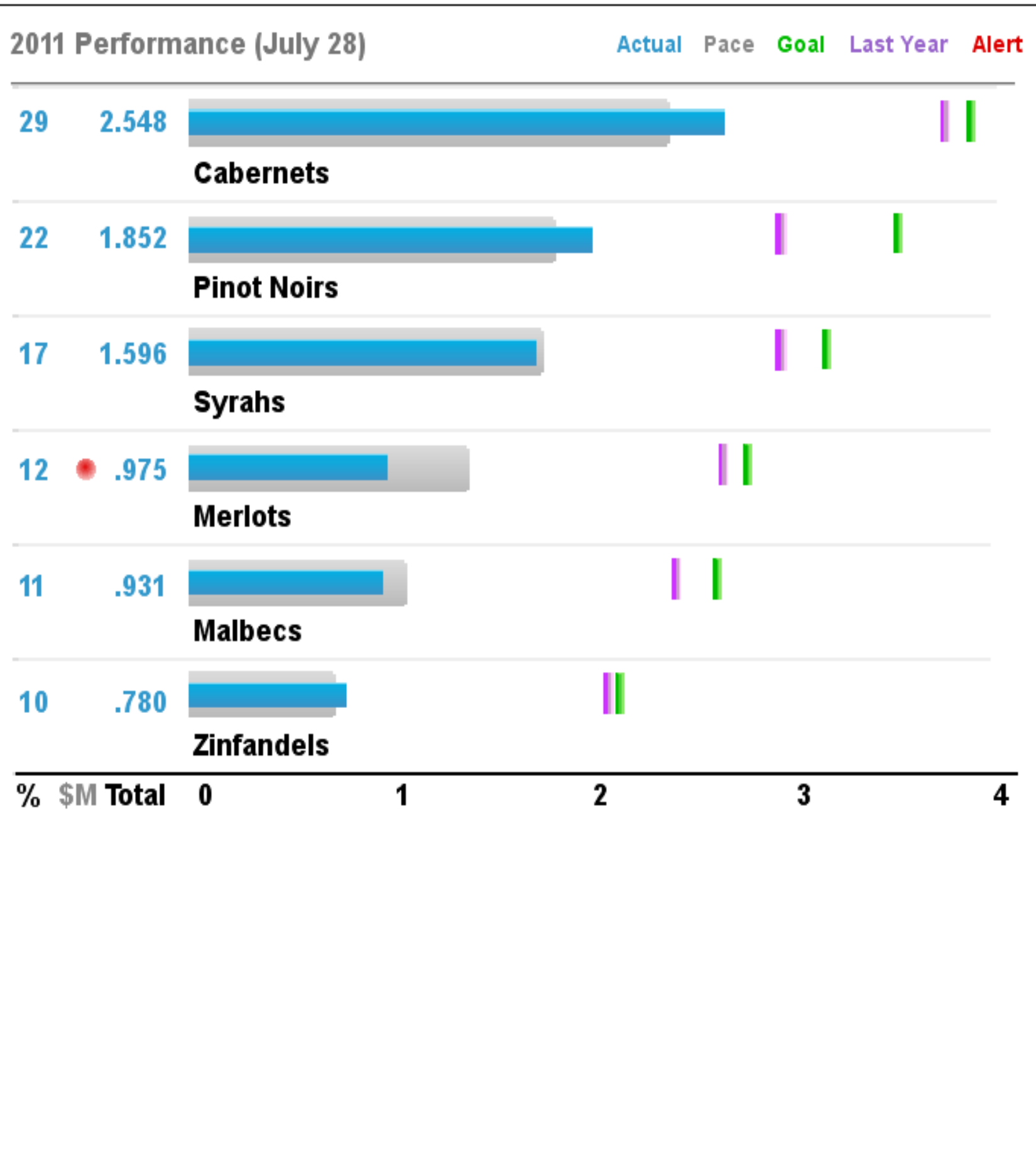




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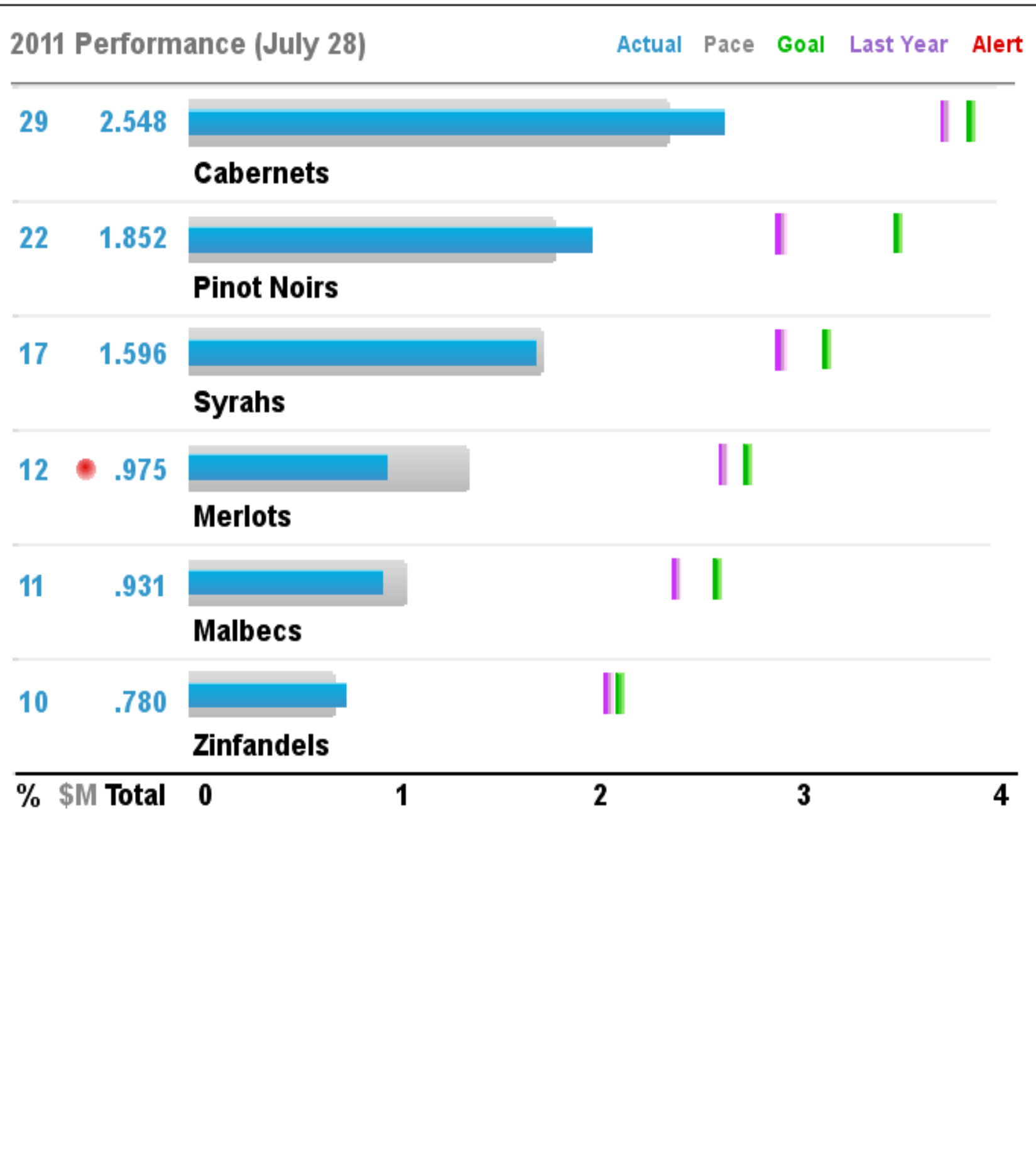
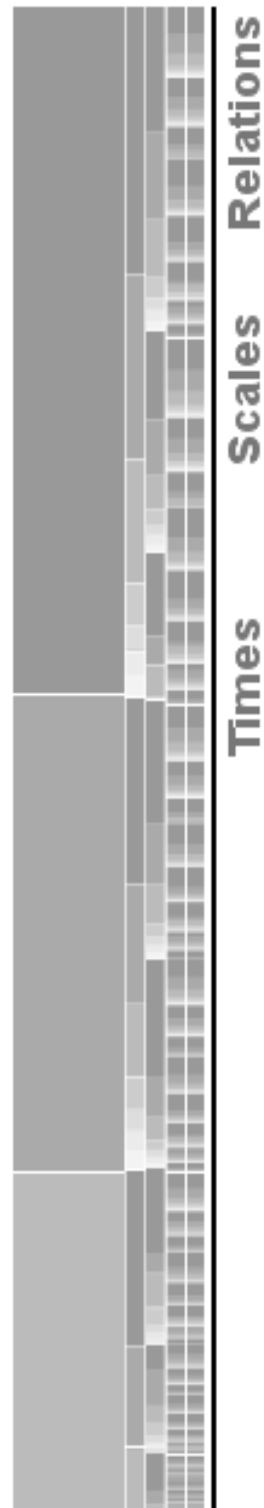




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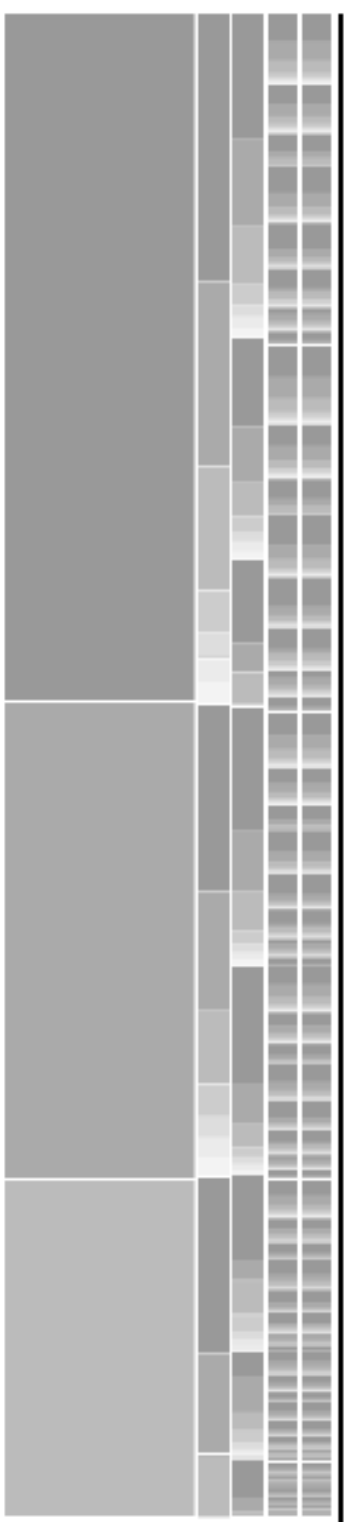


Types Wine, Red |

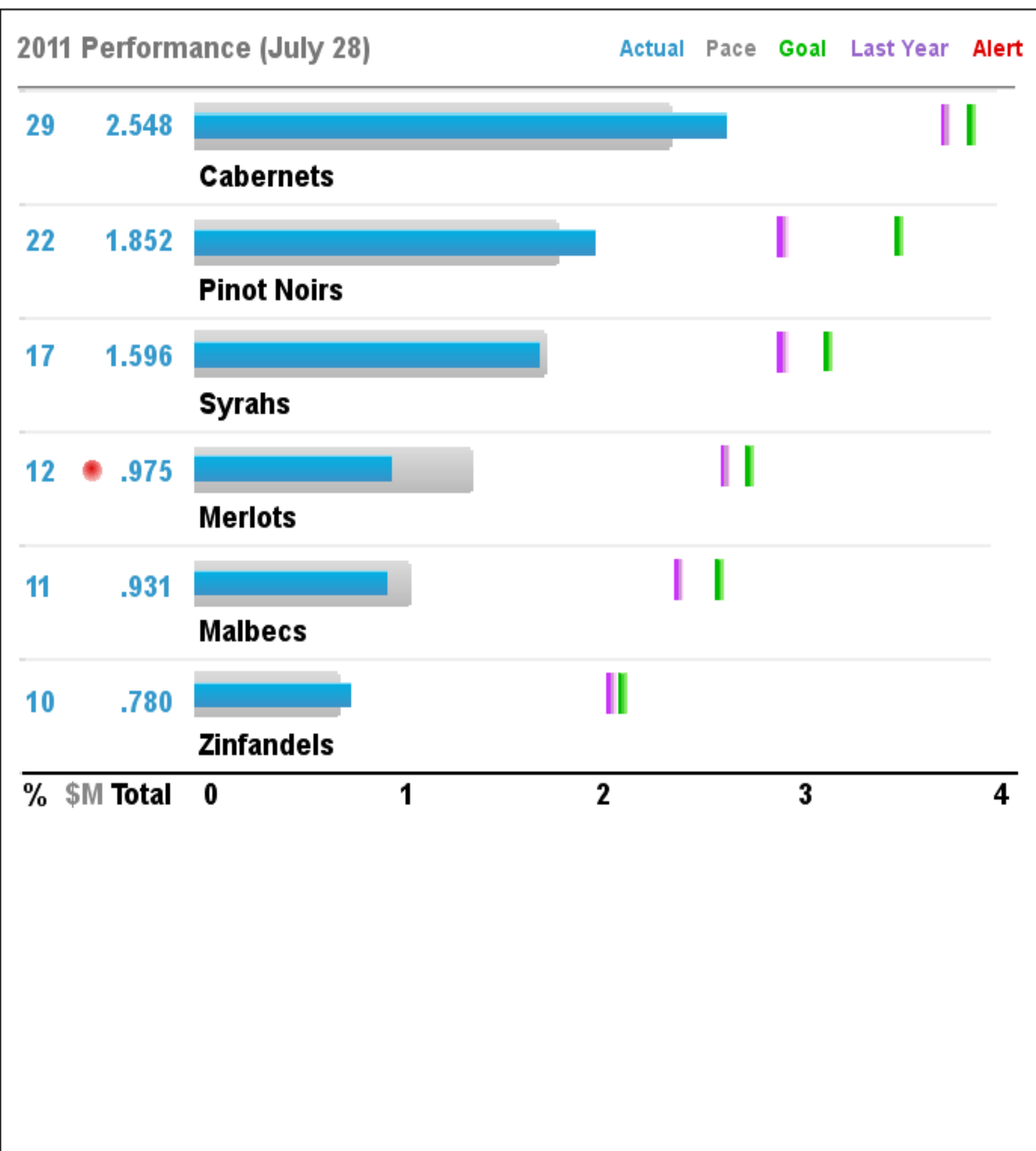
Regions

Countries
Districts
Cities
Outlets

Places



Relations
Scales
Times



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Worldwide Sales | Sales | Performance | by Ingredient |



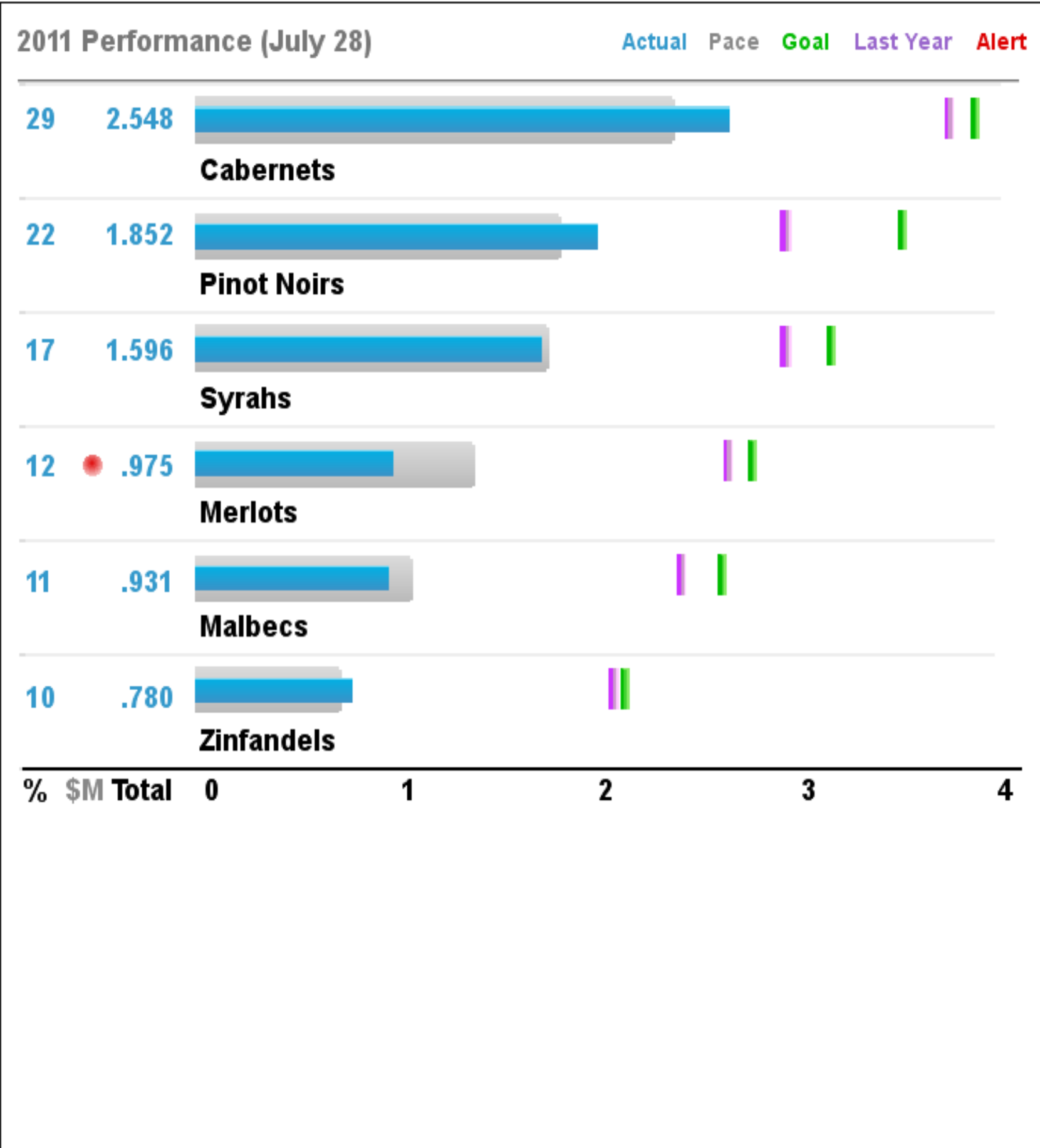
Types Wine, Red |

Regions

Countries
Districts
Cities
Outlets

Places

Relations
Scales
Times

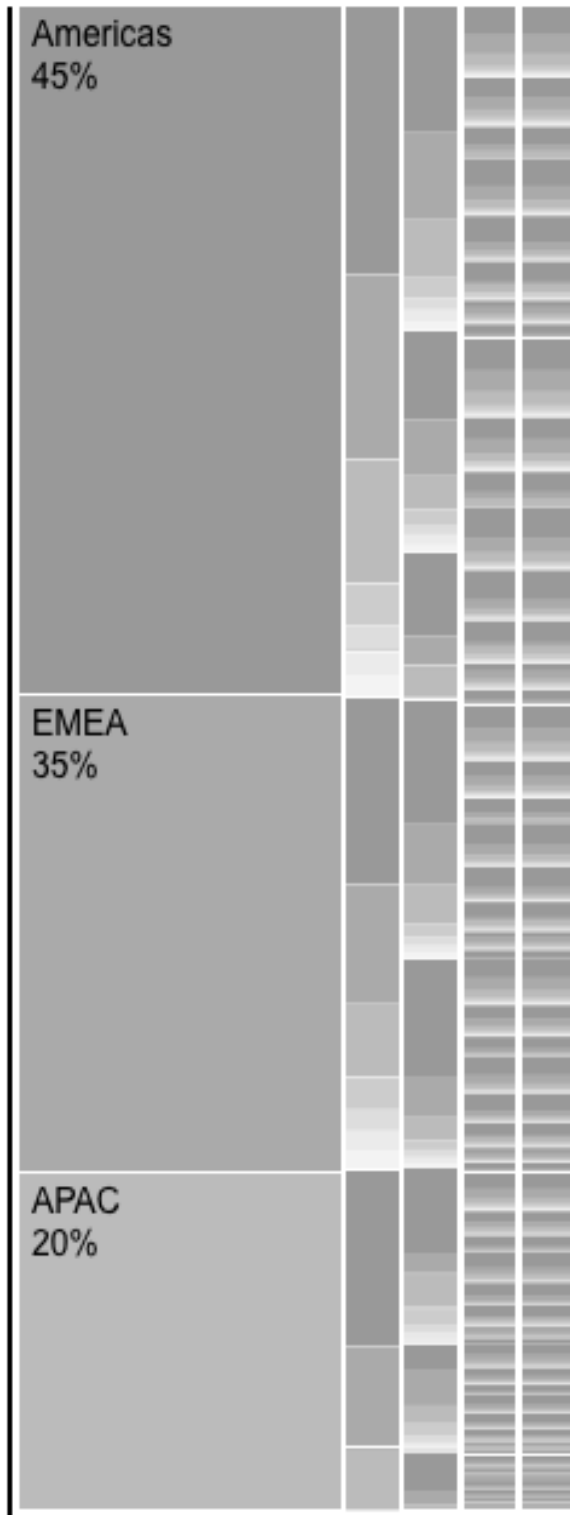


Choosing another Aspect collapses the previously opened Aspect. If selections exist in that Aspect, it collapses to a vertical slice at the left with its selections displayed as text. If no selections are made the Aspect returns to the right of the Strip.

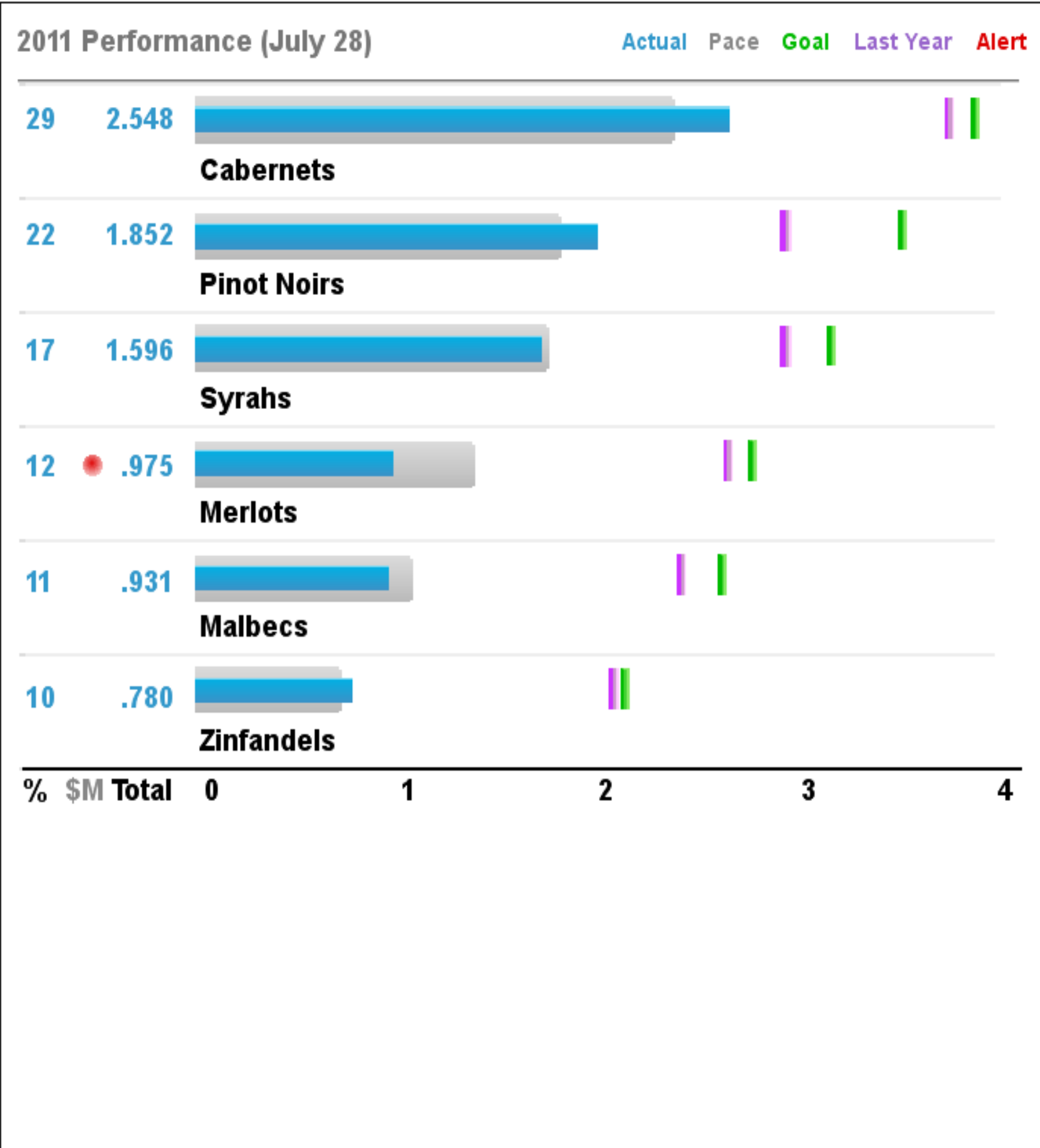
The chosen Aspect, Place, happens to be all hierarchical. Its Strip Charts show the growing fragmentation of Sales numbers as the categories become more granular. This provides a pattern overview of the data structure, much like a treemap does.

Worldwide Sales | Sales | Performance | by Ingredient |





Relations
Scales
Times



Choosing another Aspect collapses the previously opened Aspect. If selections exist in that Aspect, it collapses to a vertical slice at the left with its selections displayed as text. If no selections are made the Aspect returns to the right of the Strip.

The chosen Aspect, Place, happens to be all hierarchical. Its Strip Charts show the growing fragmentation of Sales numbers as the categories become more granular. This provides a pattern overview of the data structure, much like a treemap does.

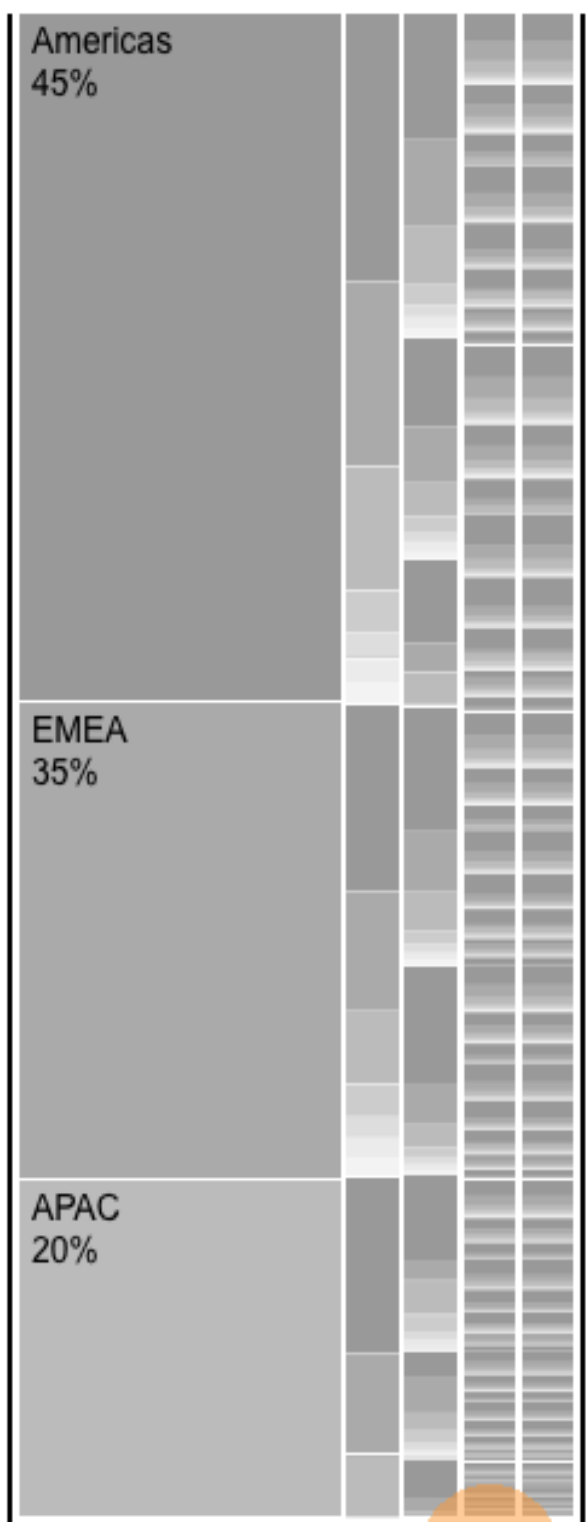
Types Wine, Red |
Regions
Places

Countries
Districts
Cities
Outlets

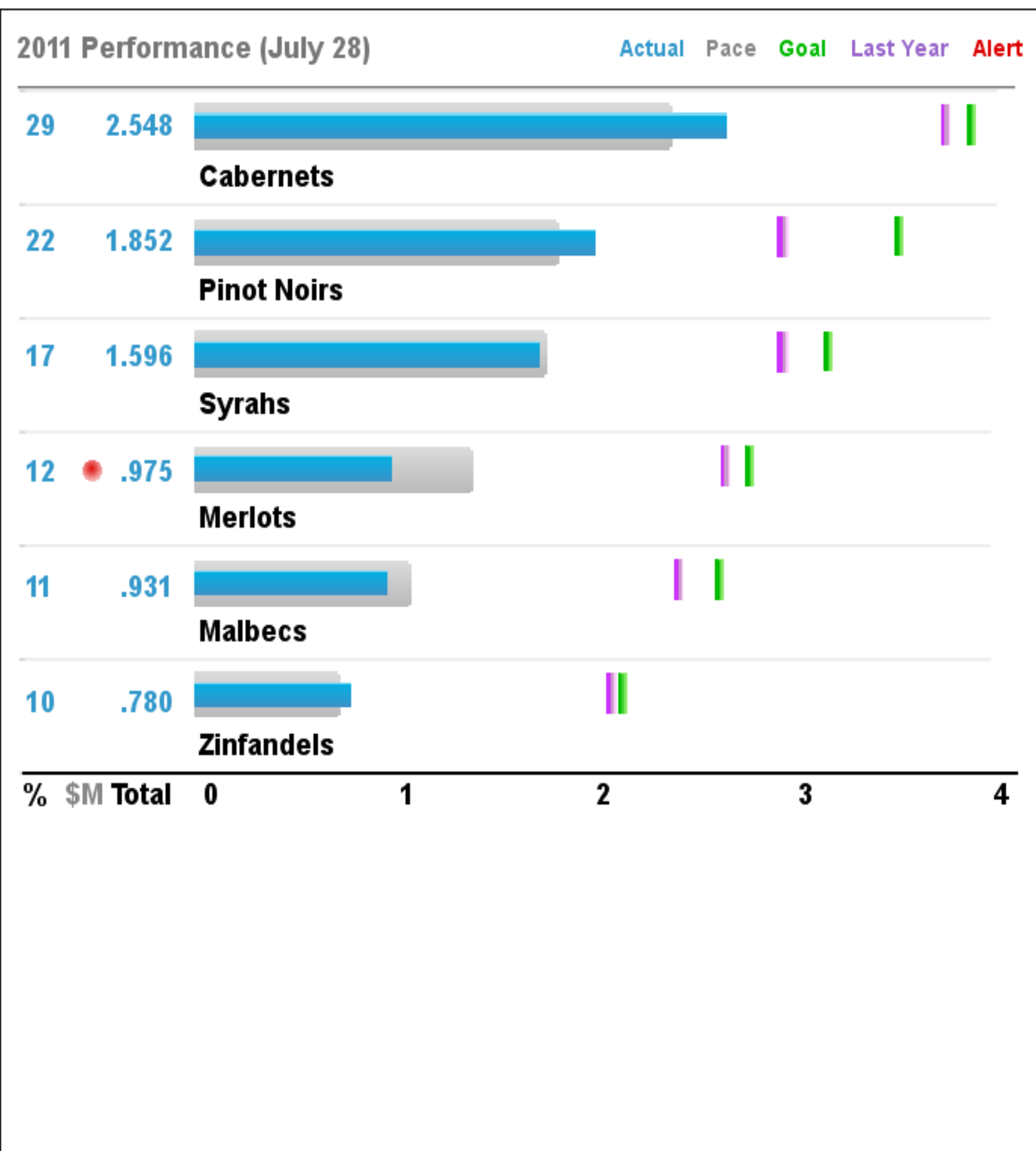
Worldwide Sales | Sales | Performance | by Ingredient |



Types Wine, Red |



Relations Scales Times



Choosing another Aspect collapses the previously opened Aspect. If selections exist in that Aspect, it collapses to a vertical slice at the left with its selections displayed as text. If no selections are made the Aspect returns to the right of the Strip.

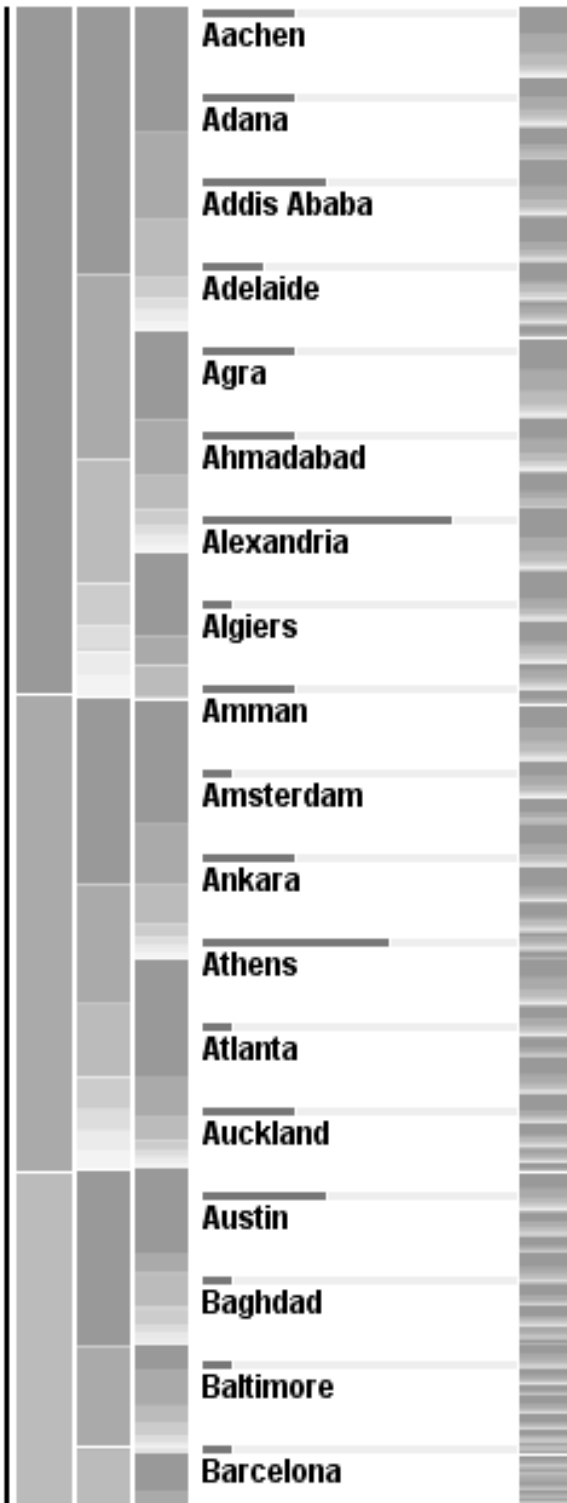
The chosen Aspect, Place, happens to be all hierarchical. Its Strip Charts show the growing fragmentation of Sales numbers as the categories become more granular. This provides a pattern overview of the data structure, much like a treemap does.

Worldwide Sales | Sales | Performance | by Ingredient |



Types Wine, Red |

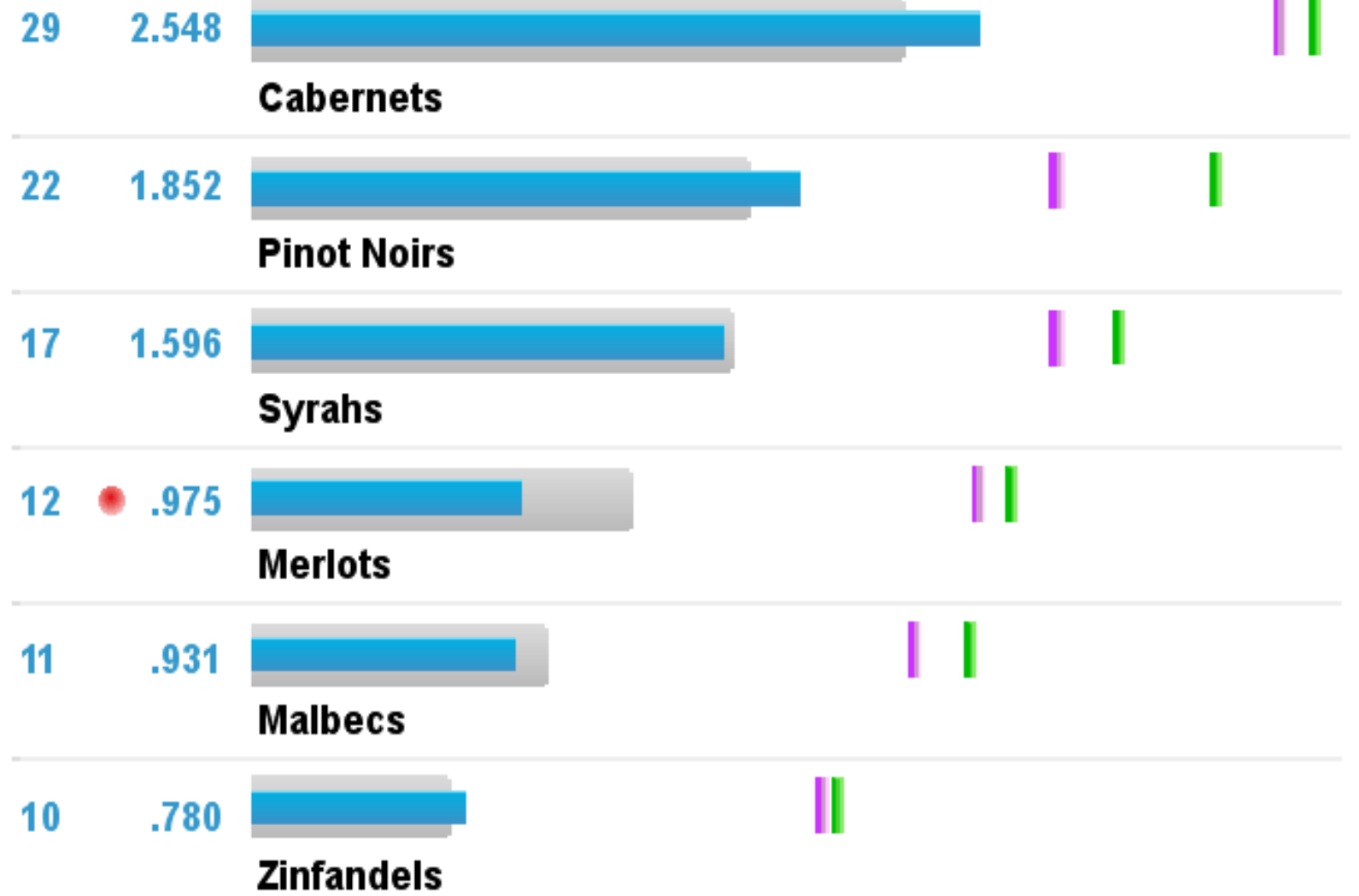
Regions
Countries
Districts
Cities
Places



Relations
Scales
Times

2011 Performance (July 28)

Actual Pace Goal Last Year Alert



% \$M Total 0 1 2 3 4

Going directly to a child dimension for selection within a hierarchy, I see the full, unfiltered list of all members at that level (as in BOBJX).

If the list is too long and/or fragmented to draw a meaningful Strip Chart, the display switches to a list with a relative-size microchart bar display of the Prime Measure.

Worldwide Sales

| Sales | Performance | by Ingredient |



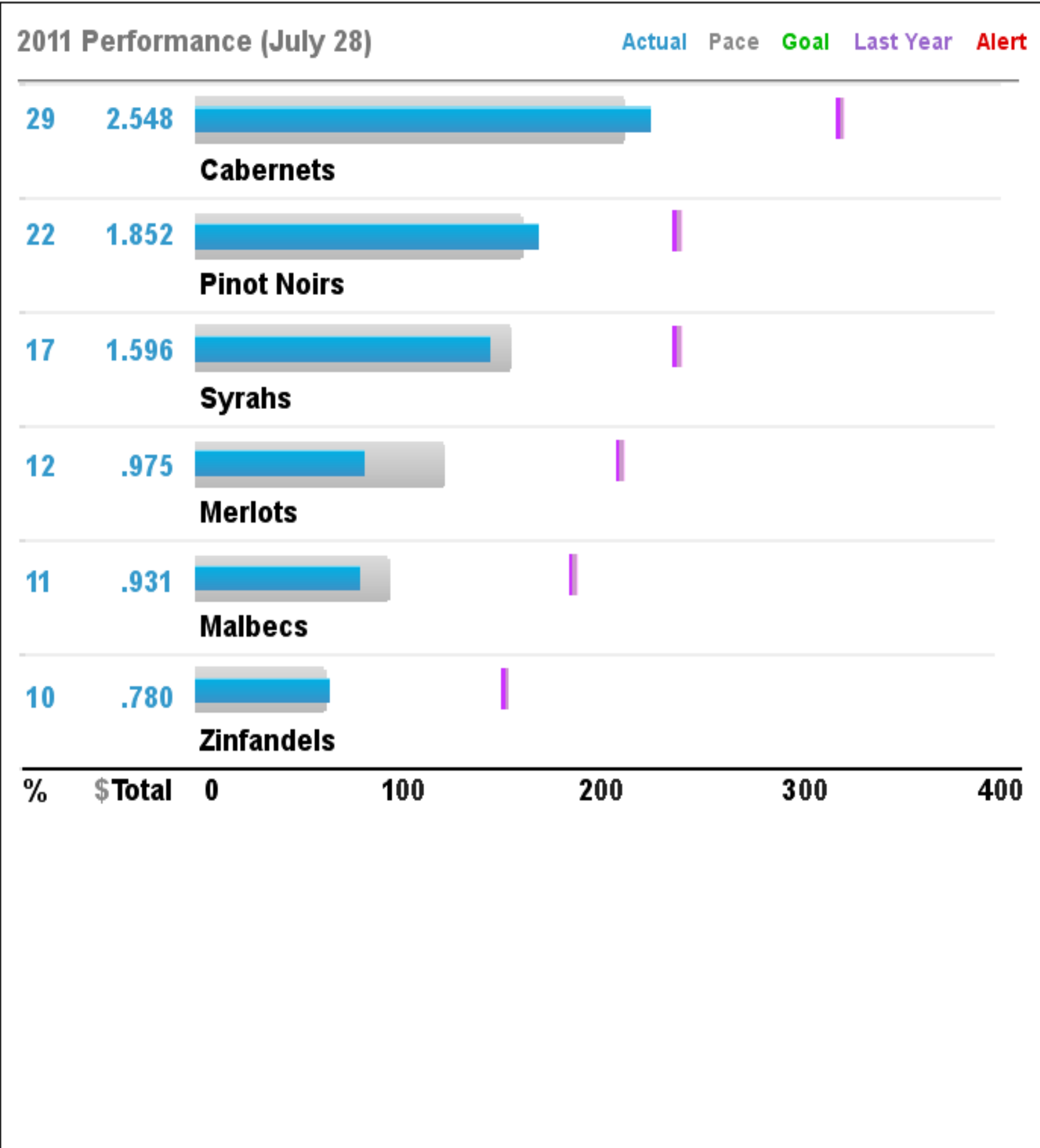
Types Wine, Red |

Regions
Countries
Districts
Cities
Amsterdam

Outlets

Places

Relations
Scales
Times



Selecting a value within a Child Dimension prevents selection of parent dimension values, leaving them dimmed as here.

However, notice how any child dimensions in this case are filtered bases on the selection...in this case, to the three Outlets in Amsterdam.



Types Wine, Red |

Regions
Countries
Districts
Places

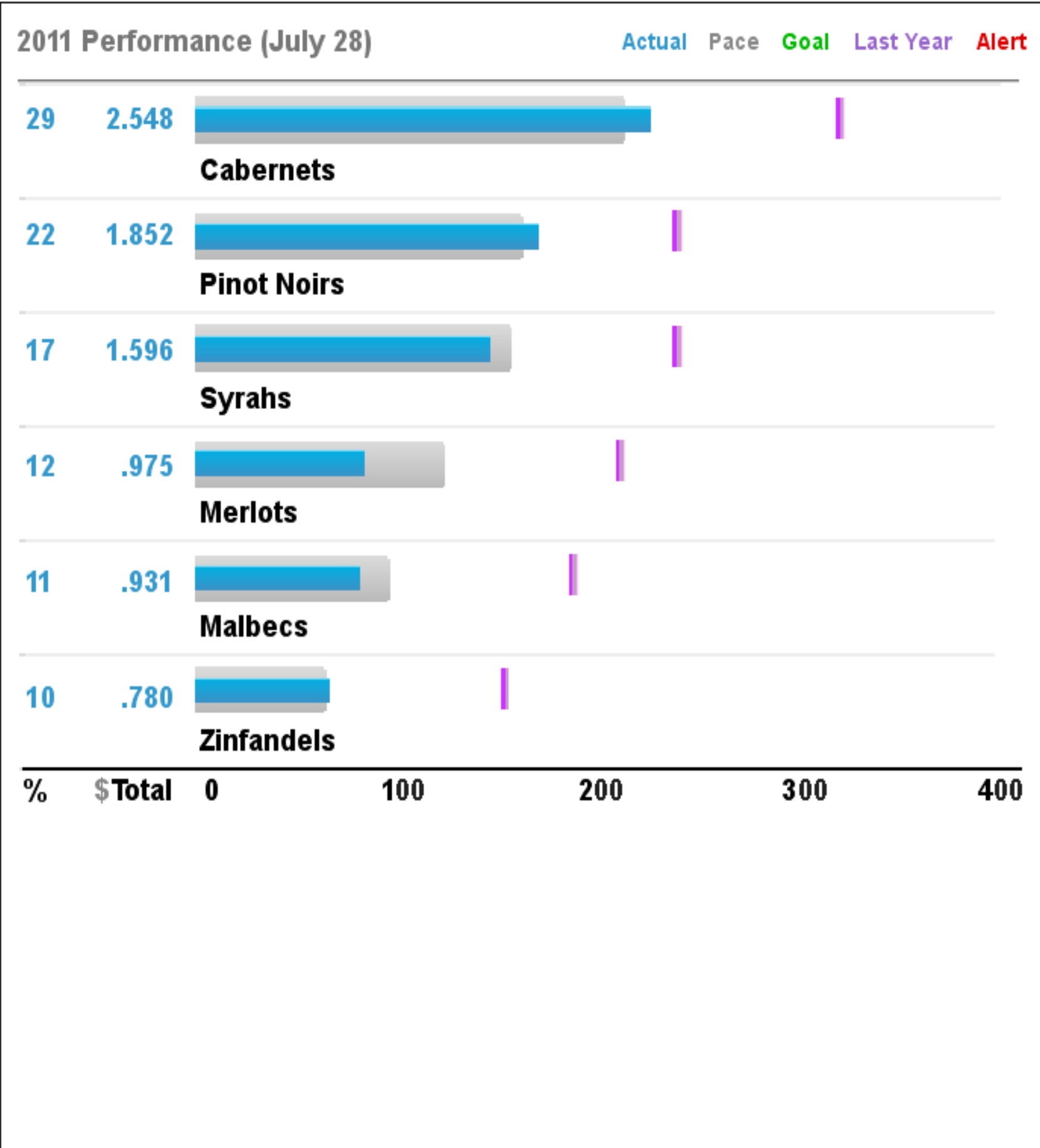
Cities
Amsterdam



Outlets

- Aachen
- Adana
- Addis Ababa
- Adelaide
- Agra
- Ahmadabad
- Alexandria
- Algiers
- Amman
- Amsterdam
- Ankara
- Athens
- Atlanta
- Auckland
- Austin
- Baghdad
- Baltimore
- Barcelona

Relations
Scales
Times



Selecting a value within a Child Dimension prevents selection of parent dimension values, leaving them dimmed as here.

However, notice how any child dimensions in this case are filtered bases on the selection...in this case, to the three Outlets in Amsterdam.

Worldwide Sales | Sales | Performance | by Ingredient |



Types Wine, Red

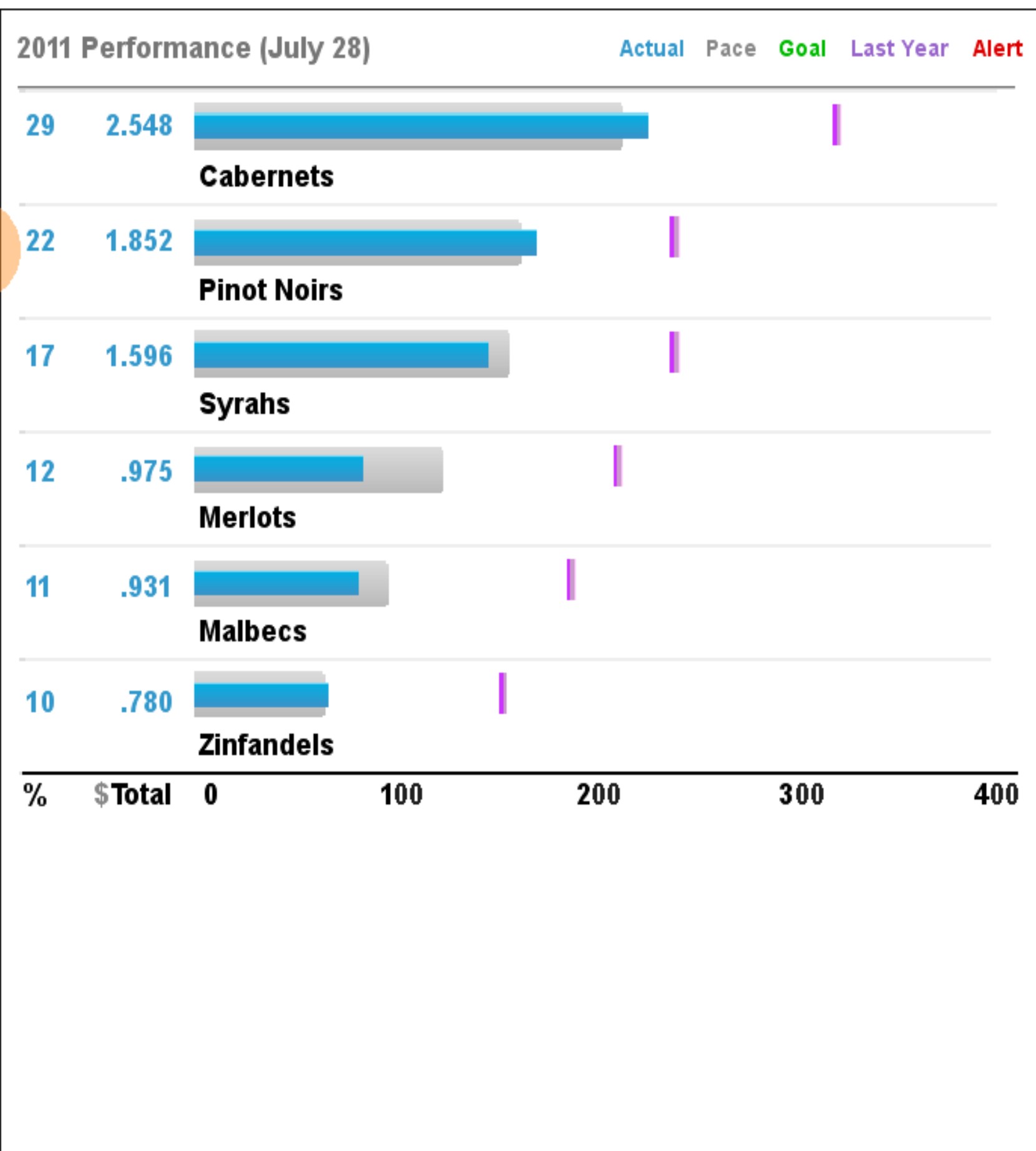
Regions
Countries
Districts
Cities
Amsterdam

Outlets

Places

- Aachen
- Adana
- Addis Ababa
- Adelaide
- Agra
- Ahmadabad
- Alexandria
- Algiers
- Amman
- Amsterdam
- Ankara
- Athens
- Atlanta
- Auckland
- Austin
- Baghdad
- Baltimore
- Barcelona

Relations
Scales
Times



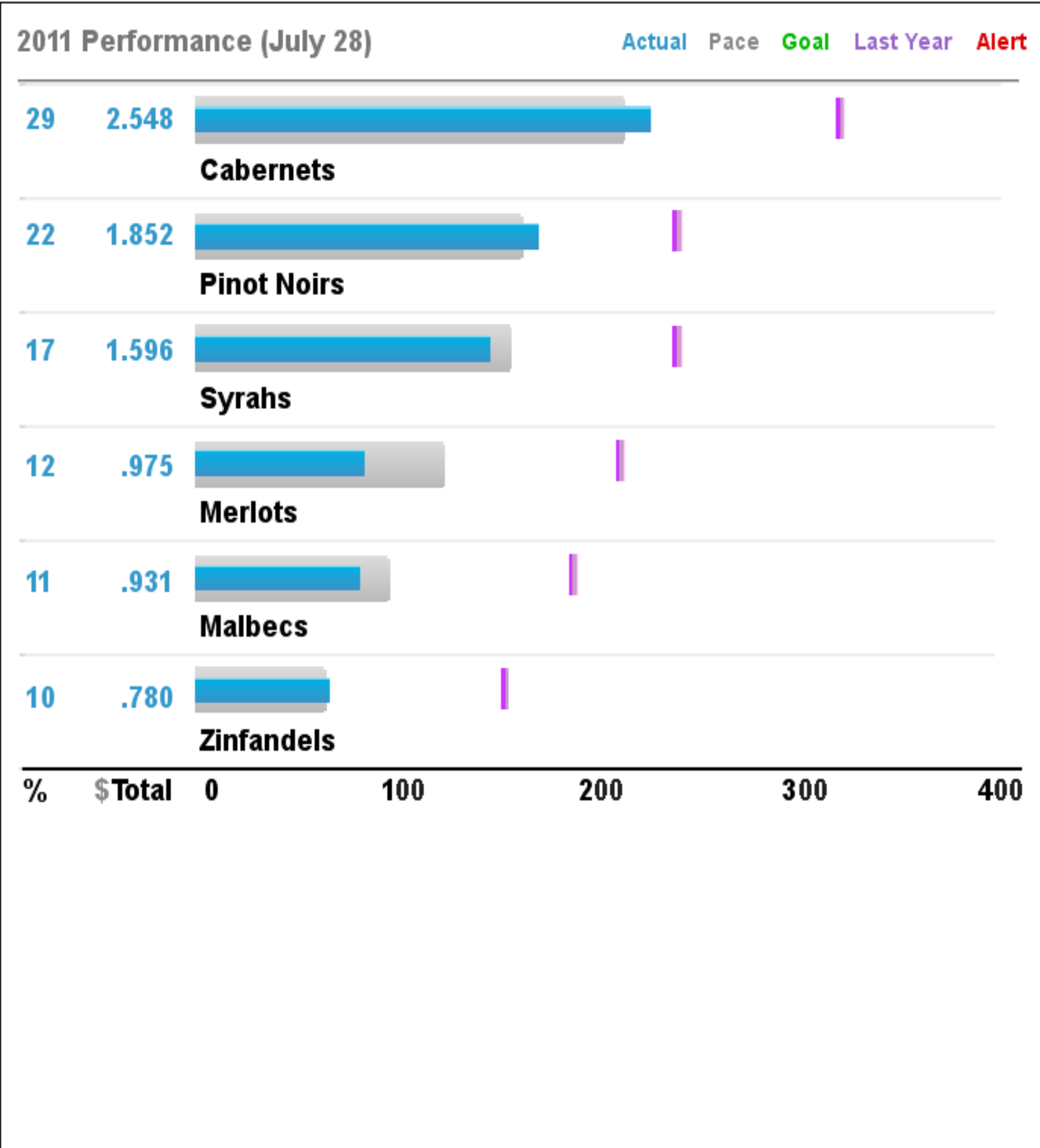
Selecting a value within a Child Dimension prevents selection of parent dimension values, leaving them dimmed as here.

However, notice how any child dimensions in this case are filtered bases on the selection...in this case, to the three Outlets in Amsterdam.



80-100%	Cabernet 1 Merlot 1 Cabernet 2 Malbec 1 Syrah 1				
60-80%	Maecenas vel orci nunc id posuere nulla In ante felis porttitor vitae				
40-60%	In ante felis porttitor vitae imperdiet a pulvinar a sem Pellentesque				
20-40%	id posuere nulla In ante felis porttitor vitae imperdiet a pulvinar a sem				
0-20%	Cabernet 14 Merlot 11 Cabernet 9 Pinot Noir 1 Syrah 7				
Sales		Unit Volume	Cost	Profit	Content

Times Relations



Scales take all the measures and segment them by a meaningful means for filtering by size. This in effect is converting measures into categorical data, forming a Dimension.



80-100%
 Cabernet 1
 Merlot 1
 Cabernet 2
 Malbec 1
 Syrah 1

60-80%
 Maecenas
 vel orci nunc
 id posuere nulla
 In ante felis
 porttitor vitae

40-60%
 In ante felis
 porttitor vitae
 imperdiet a
 pulvinar a sem
 Pellentesque

20-40%
 id posuere nulla
 In ante felis
 porttitor vitae
 imperdiet a
 pulvinar a sem

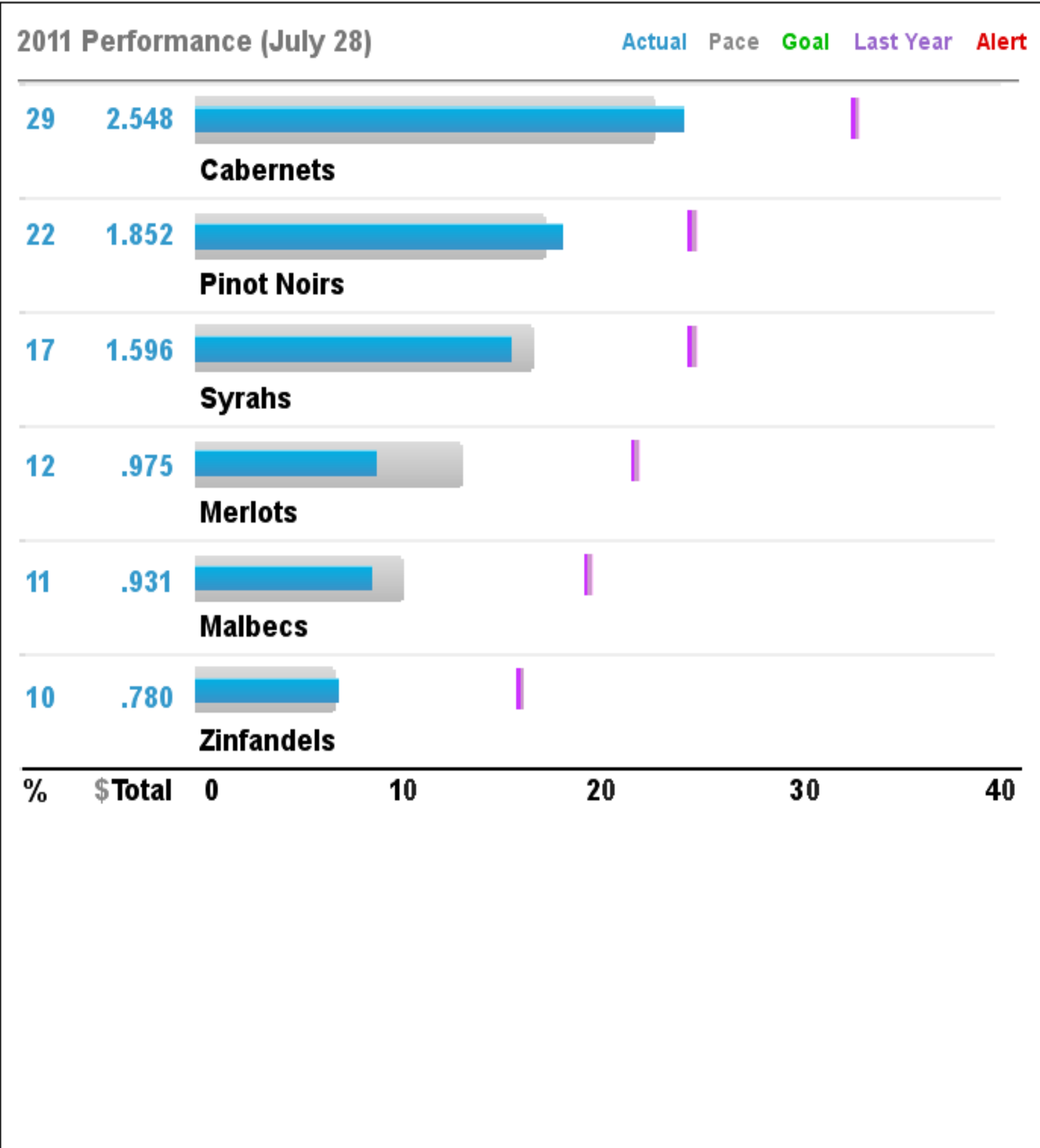
0-20%
 Cabernet 14
 Merlot 11
 Cabernet 9
 Pinot Noir 1
 Syrah 7

Sales
 80-100%

Unit Volume
 Cost
 Profit
 Content

Scales

Times Relations



Scales take all the measures and segment them by a meaningful means for filtering by size. This in effect is converting measures into categorical data, forming a Dimension.



80-100%
Cabernet 1
Merlot 1
Cabernet 2
Malbec 1
Syrah 1
.....

60-80%
Maecenas
vel orci nunc
id posuere nulla
In ante felis
porttitor vitae
.....

40-60%
In ante felis
porttitor vitae
imperdiet a
pulvinar a sem
Pellentesque
.....

20-40%
id posuere nulla
In ante felis
porttitor vitae
imperdiet a
pulvinar a sem
.....

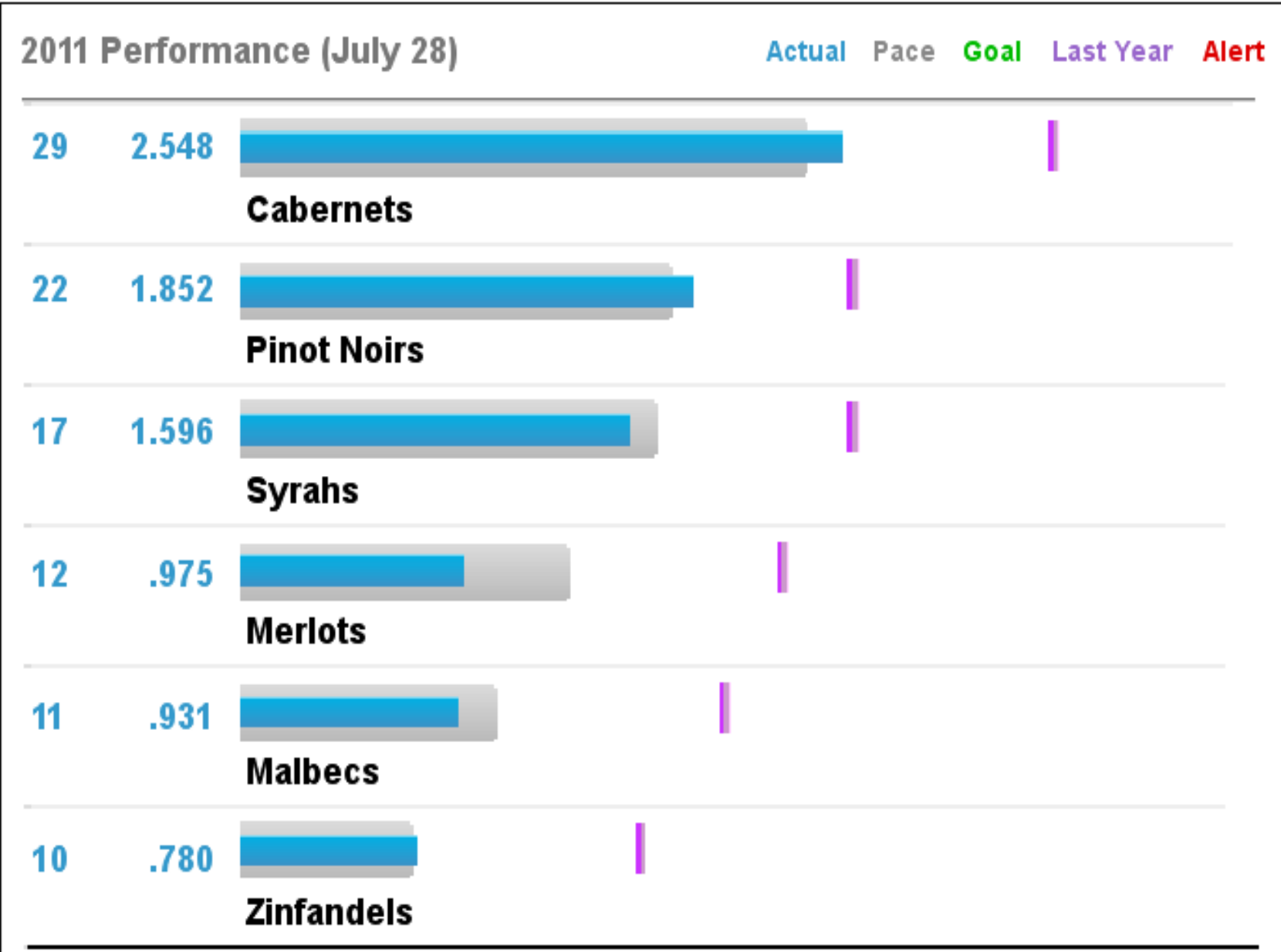
0-20%
Cabernet 14
Merlot 11
Cabernet 9
Pinot Noir 1
Syrah 7
.....

Sales
80-100%

Unit Volume
Cost
Profit
Content

Scales

Times Relations



- Save View
- Save as View
- Home
- Go Back
- Etc.
-



Scales take all the measures and segment them by a meaningful means for filtering by size. This in effect is converting measures into categorical data, forming a Dimension.

80-100%	Cabernet 1			
	Merlot 1			
	Cabernet 2			
	Malbec 1			
	Syrah 1			

60-80%	Maecenas vel orci nunc id posuere nulla In ante felis porttitor vitae			
--------	---	--	--	--

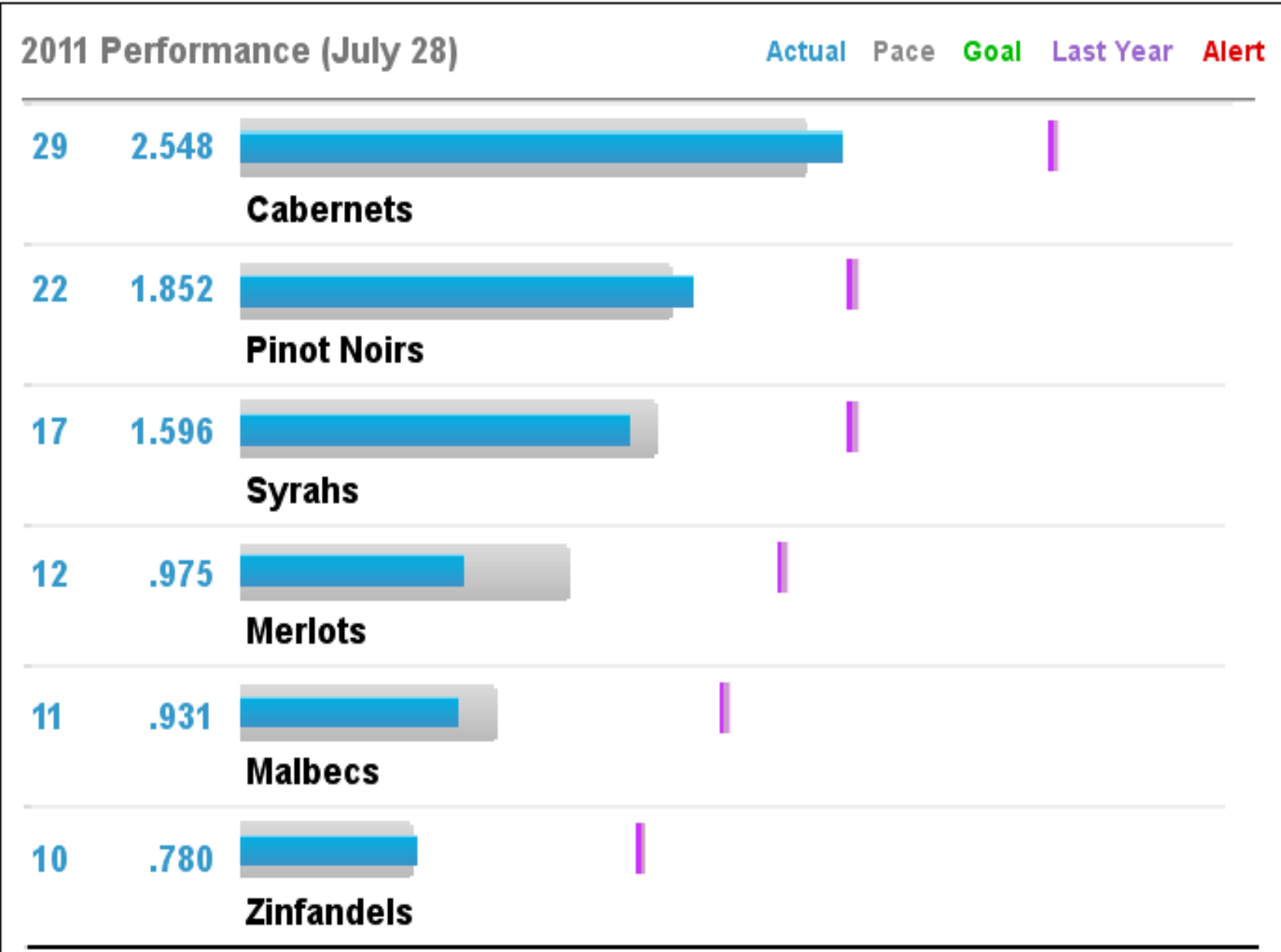
40-60%	In ante felis porttitor vitae imperdiet a pulvinar a sem Pellentesque			
--------	---	--	--	--

20-40%	id posuere nulla In ante felis porttitor vitae imperdiet a pulvinar a sem			
--------	---	--	--	--

0-20%	Cabernet 14 Merlot 11 Cabernet 9 Pinot Noir 1 Syrah 7			
-------	---	--	--	--

Sales	Unit Volume	Cost	Profit	Content
80-100%				

Times Relations



- Save View
- Save as View
- Home
- Go Back
- Etc.



Scales take all the measures and segment them by a meaningful means for filtering by size. This in effect is converting measures into categorical data, forming a Dimension.

80-100%
Cabernet 1
Merlot 1
Cabernet 2
Malbec 1
Syrah 1
.....

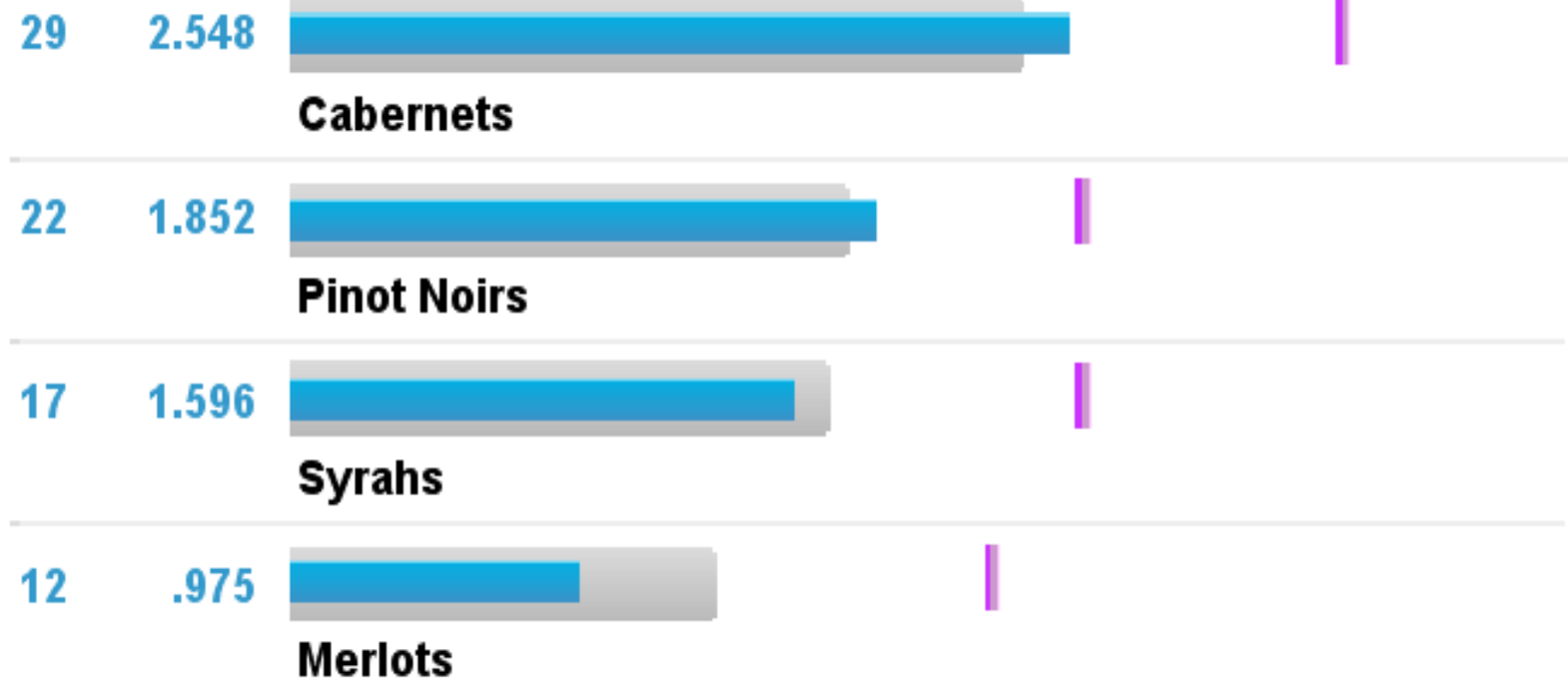
60-80%
Maecenas
vel orci nunc
id posuere nulla
In ante felis
porttitor vitae
.....

40-60%
In ante felis
porttitor vitae
imperdiet a
pulvinar a sem
Dellenteque

Times Relations

2011 Performance (July 28)

Actual Pace Goal Last Year Alert



Scales take all the measures and segment them by a meaningful means for filtering by size. This in effect is converting measures into categorical data, forming a Dimension.

All Alcohol Sales | Sales | Performance | Sub-Groups | Wine, Red | Amsterdam | 80%-100% |



80-100%
Cabernet 1
Merlot 1
Cabernet 2
Malbec 1
Syrah 1
.....

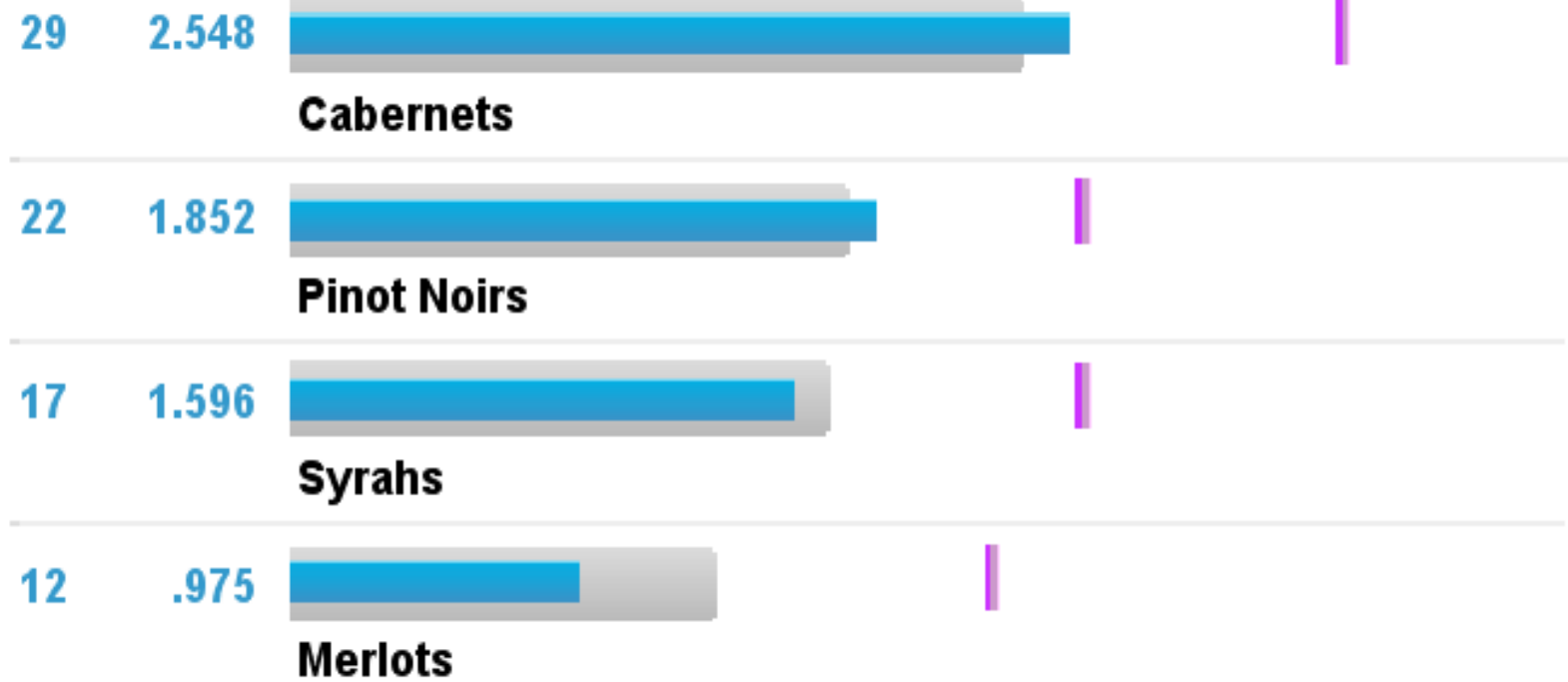
60-80%
Maecenas
vel orci nunc
id posuere nulla
In ante felis
porttitor vitae
.....

40-60%
In ante felis
porttitor vitae
imperdiet a
pulvinar a sem
Dellenteque

Times Relations

2011 Performance (July 28)

Actual Pace Goal Last Year Alert



Scales take all the measures and segment them by a meaningful means for filtering by size. This in effect is converting measures into categorical data, forming a Dimension.

All Alcohol Sales | Sales | Performance | Sub-Groups | Wine, Red | Amsterdam | 80%-100% |



80-100%
Cabernet 1
Merlot 1
Cabernet 2
Malbec 1
Syrah 1
.....

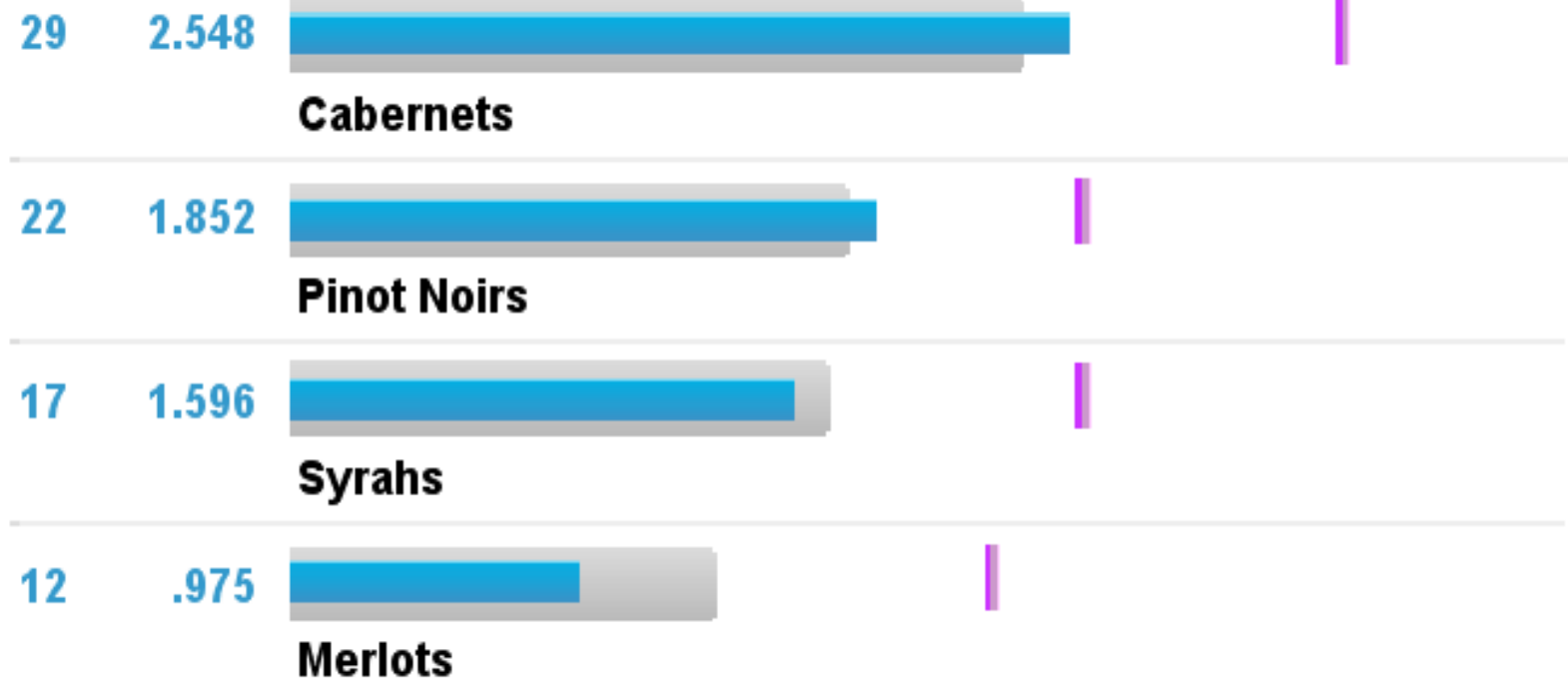
60-80%
Maecenas
vel orci nunc
id posuere nulla
In ante felis
porttitor vitae
.....

40-60%
In ante felis
porttitor vitae
imperdiet a
pulvinar a sem
Dellenteque

Times Relations

2011 Performance (July 28)

Actual Pace Goal Last Year Alert



Scales take all the measures and segment them by a meaningful means for filtering by size. This in effect is converting measures into categorical data, forming a Dimension.

Top Reds Amst.



80-100%	Cabernet 1			
	Merlot 1			
	Cabernet 2			
	Malbec 1			
	Syrah 1			
.....				

60-80%	Maecenas			
	vel orci nunc			
	id posuere nulla			
	In ante felis			
	porttitor vitae			
.....				

40-60%	In ante felis			
	porttitor vitae			
	imperdiet a			
	pulvinar a sem			
	Pellentesque			
....				

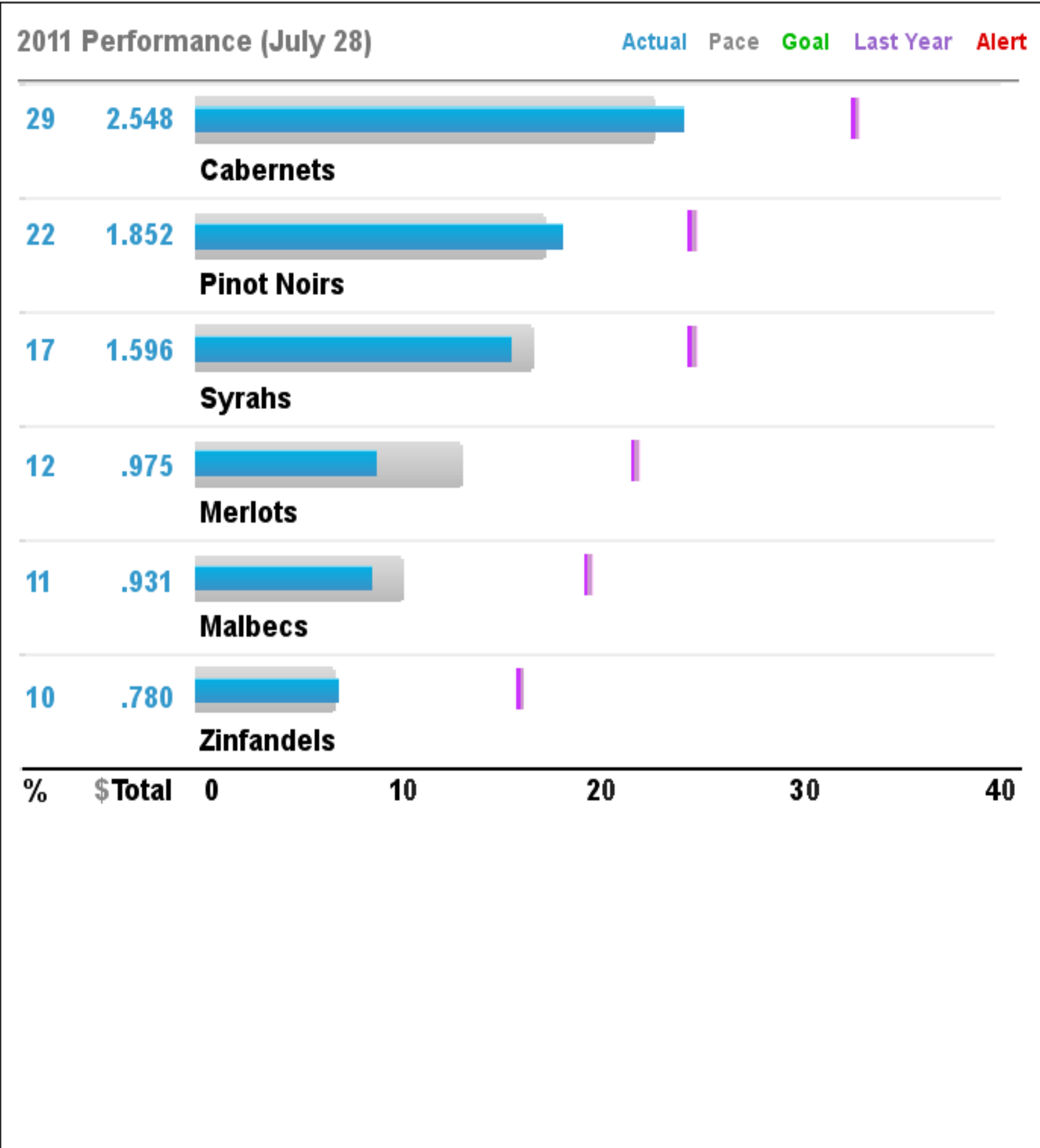
20-40%	id posuere nulla			
	In ante felis			
	porttitor vitae			
	imperdiet a			
	pulvinar a sem			
.....				

0-20%	Cabernet 14			
	Merlot 11			
	Cabernet 9			
	Pinot Noir 1			
	Syrah 7			
.....				

Sales	Unit Volume	Cost	Profit	Content
80-100%				

Scales













Times Relations



This is included as the latest example of the best-practice default SAP display language. It also demonstrates the new analytic pattern of the Performance Block (bullet charts with goals and paces).

Flashback....."Top Reds Amst." now appears as a new View in the User's list.

Meta-data automatically form a (editable) Description for the View, derived from its selection parameters.

 View 21	Class aptent taciti sociosqu ad litora torquent per conubia nostra, per penatibus et
 View 22	Cum sociis natoque penatibus et magnis dis parturient montes
 View 23	Nam dictum quam in est bibendum dictum. Suspendisse at dignissim purus.
 View 24	● Integer fringilla pellentesque ante
 View 25	Vestibulum volutpat interdum ipsum, ut malesuada arcu posuere laoreet
 View 26	Eliam aliquam rutrum purus nec cursus. Phasellus commodo nisi non tellus purus nec ...
 View 27	Proin eros arcu, porttitor vel vehicula quis, congue ac orci. Cras quis libero lacus.
 View 28	Sales for california, Volume for California, Product Returns for California, Pro...
 View 29	● East Coast Sales - 4%
 Explore Alcohol Sales	All Alcohol Sales
 Top Reds Amst.	All Alcohol Sales Sales Performance Sub-Groups Wine, Red Amsterdam 80%-100%
Views	Attributes 

80-100%
 Cabernet 1
 Merlot 1
 Cabernet 2
 Malbec 1
 Syrah 1

60-80%
 Maecenas
 vel orci nunc
 id posuere nulla
 In ante felis
 porttitor vitae

40-60%
 In ante felis
 porttitor vitae
 imperdiet a
 pulvinar a sem
 Pellentesque

20-40%
 id posuere nulla
 In ante felis
 porttitor vitae
 imperdiet a
 pulvinar a sem

0-20%
 Cabernet 14
 Merlot 11
 Cabernet 9
 Pinot Noir 1
 Syrah 7

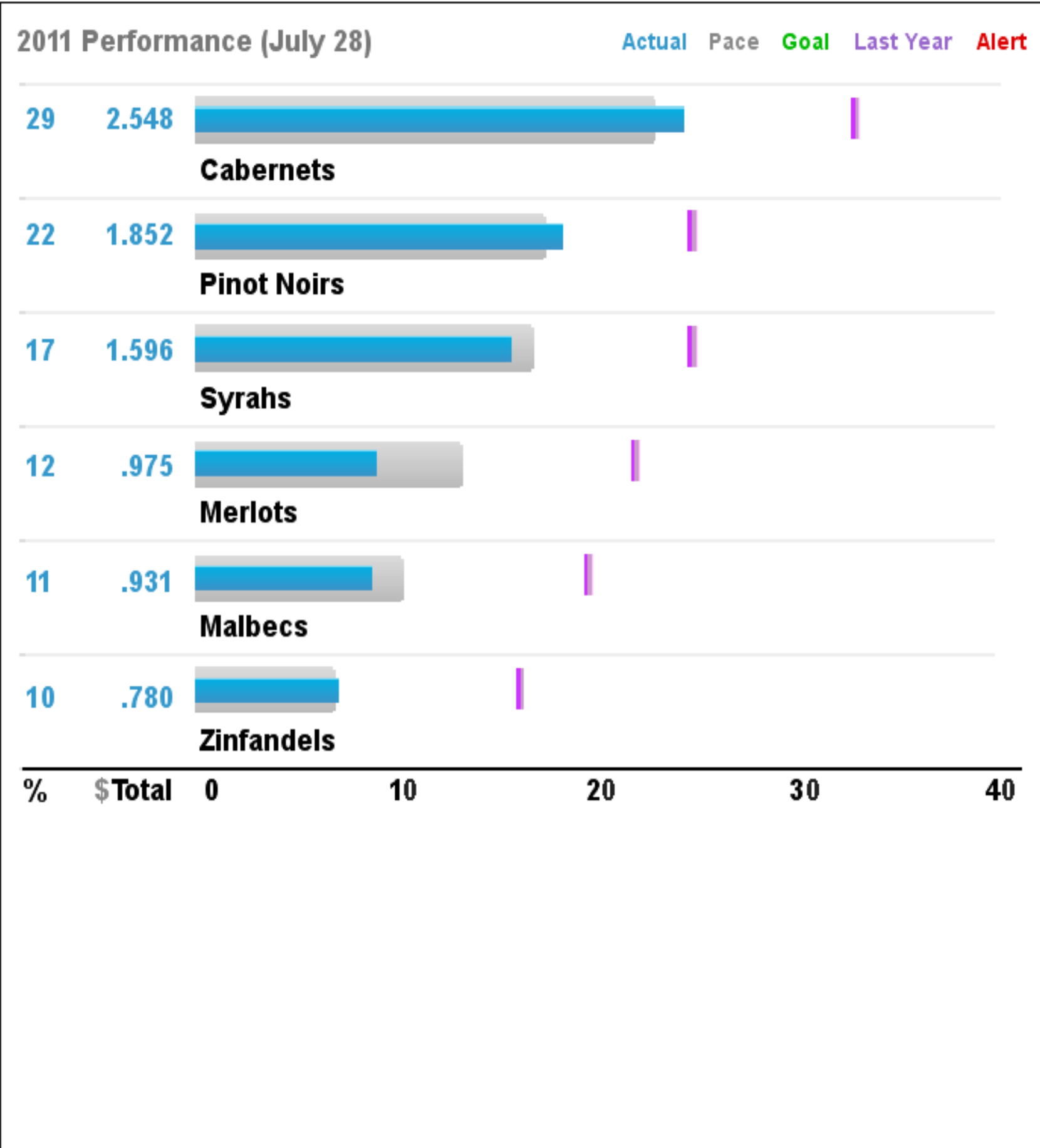
Sales
 80-100%



Scales

Unit Volume
 Cost
 Profit
 Content

Times Relations



Filtered Aspects can be re-opened and edited at will.

80-100%
Cabernet 1
Merlot 1
Cabernet 2
Malbec 1
Syrah 1
.....

60-80%
Maecenas
vel orci nunc
id posuere nulla
In ante felis
porttitor vitae
.....

40-60%
In ante felis
porttitor vitae
imperdiet a
pulvinar a sem
Pellentesque
....

20-40%
id posuere nulla
In ante felis
porttitor vitae
imperdiet a
pulvinar a sem
.....

0-20%
Cabernet 14
Merlot 11
Cabernet 9
Pinot Noir 1
Syrah 7
.....

Sales
80-100%

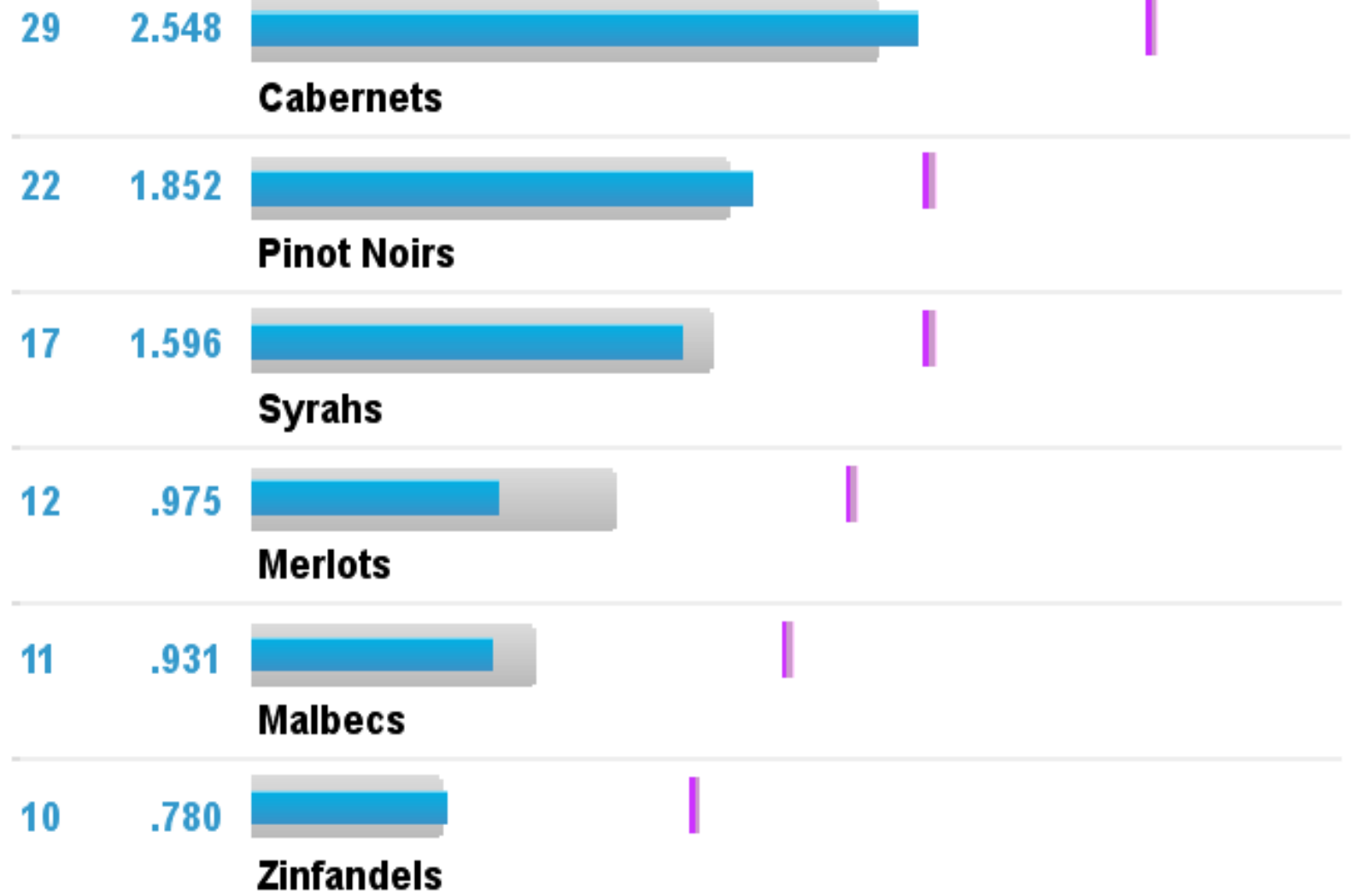
Search icon
Scales

Unit Volume
Cost
Profit
Content

Times Relations

2011 Performance (July 28)

Actual Pace Goal Last Year Alert



% \$Total 0 10 20 30 40

Top Reds Amst.

| Sales | Performance | by Ingredient |



Filtered Aspects can be re-opened and edited at will.

Places Amsterdam | Scales 80-100% |

Beers 35%

Wines 25%

Distilled Spirits 25%

Liqueurs 10%

Others 5%

Groups
Wine, Red |

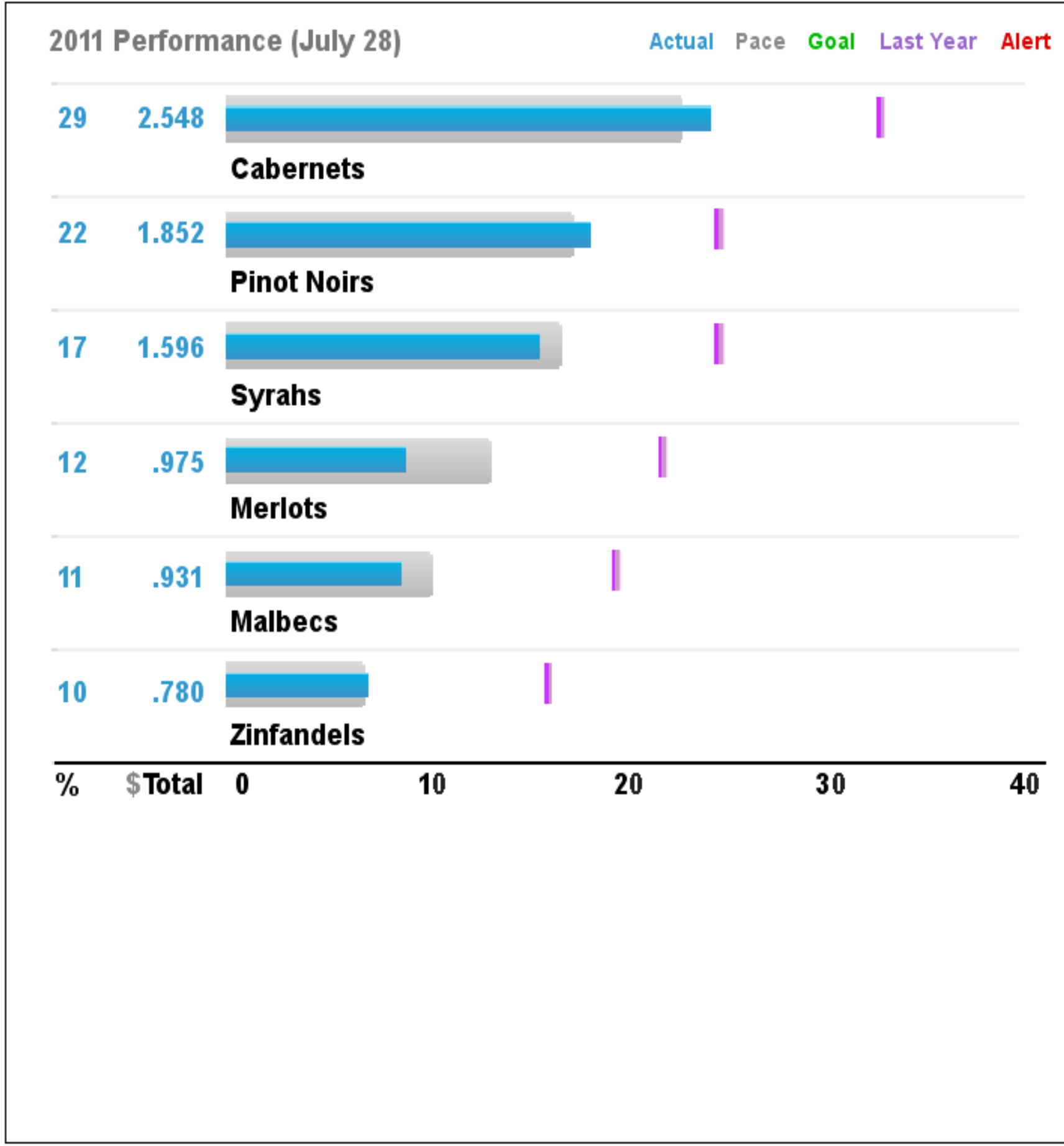
Types

Sub-Groups

Ingredients

Origins

Times Relations

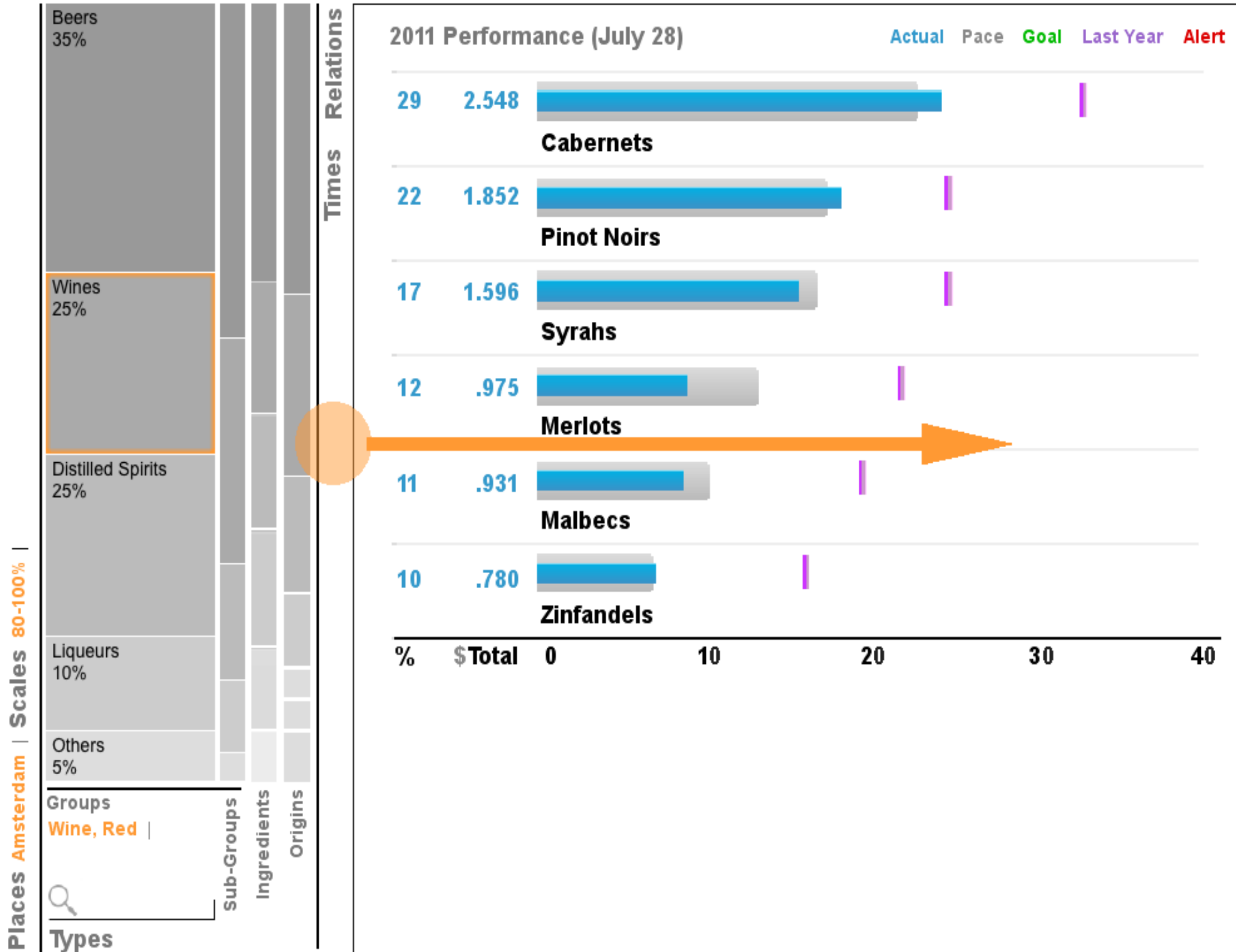


Top Reds Amst.

| Sales | Performance | by Ingredient |



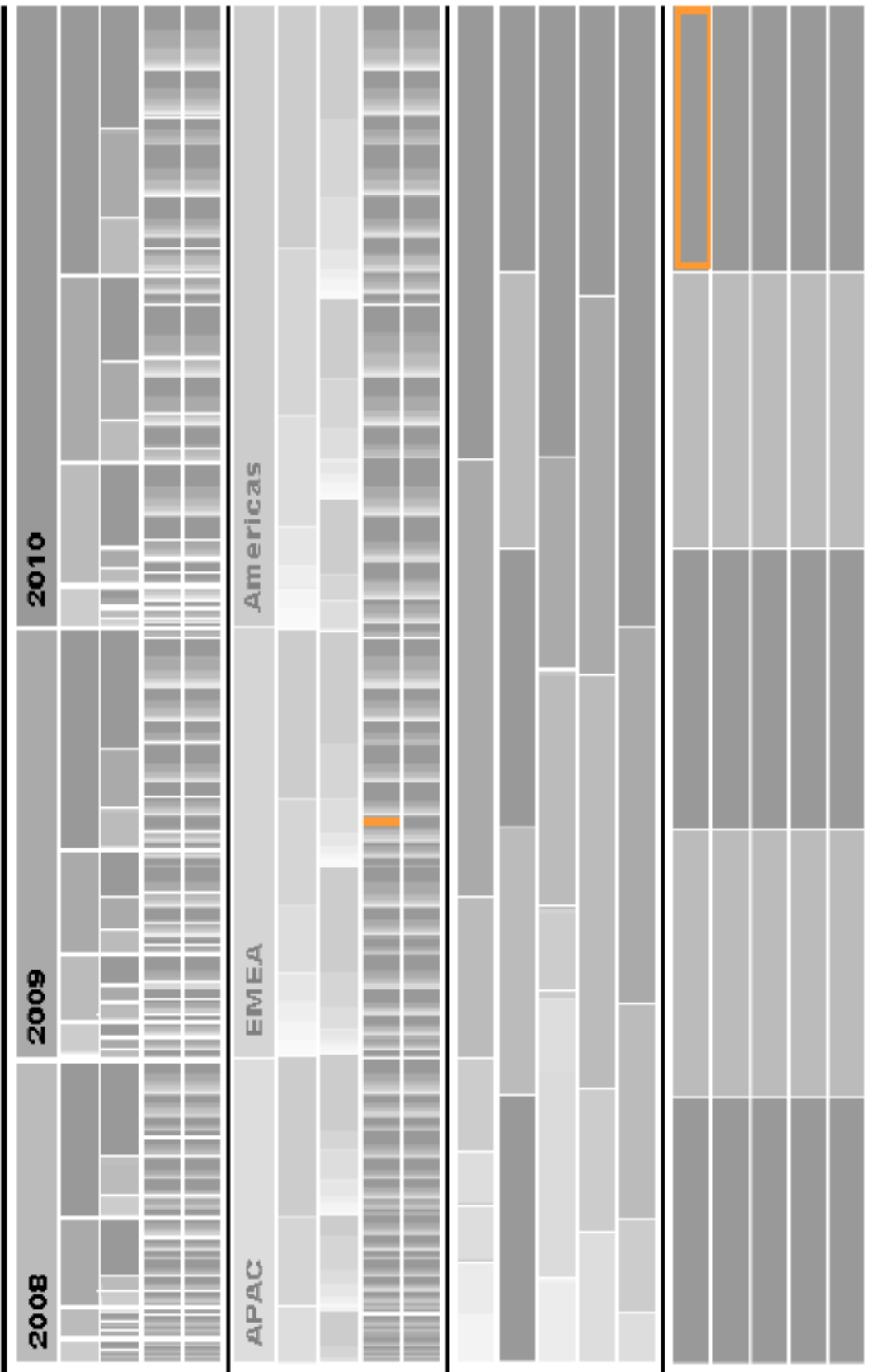
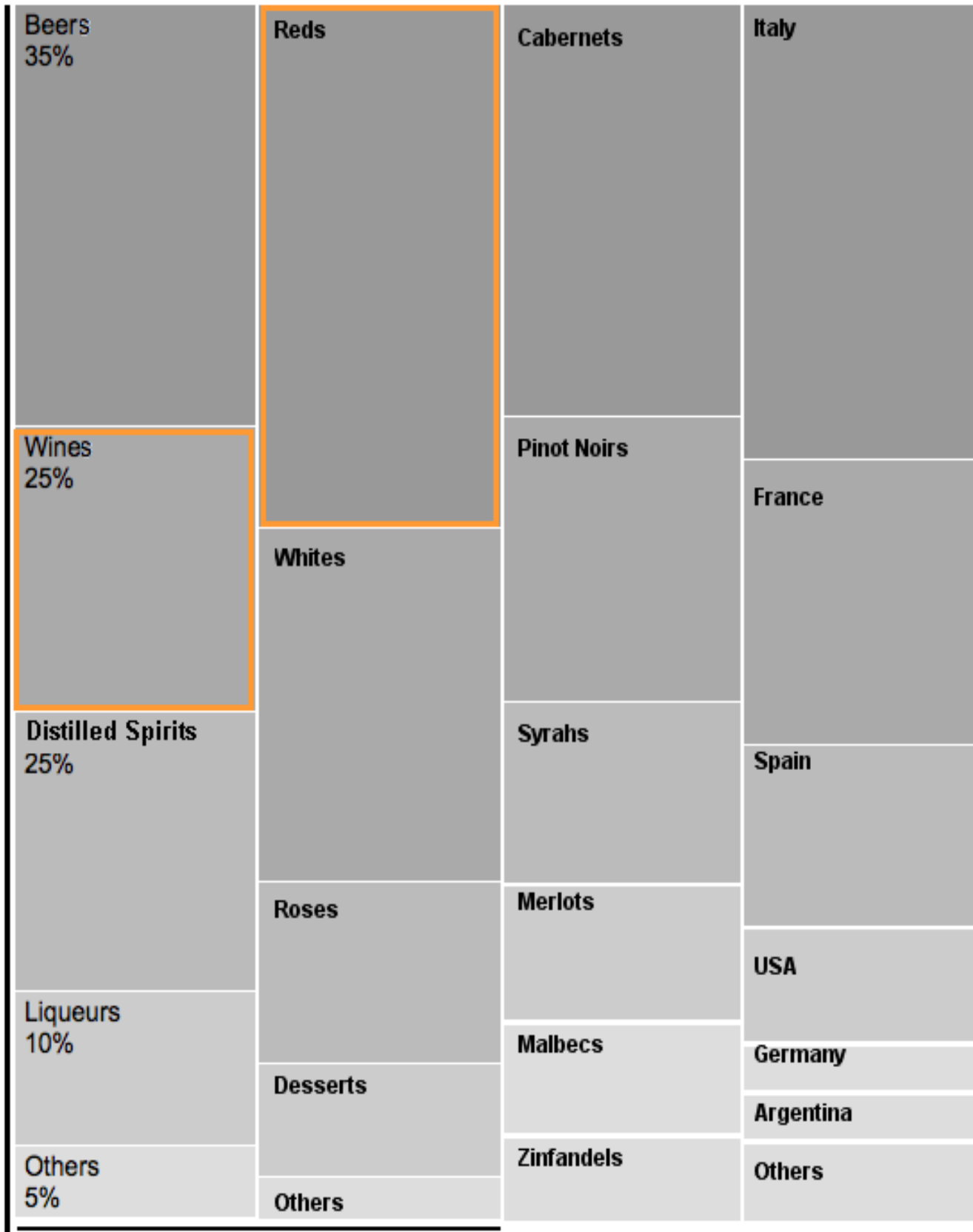
The Strip can be expanded to fill the whole screen.



Top Reds Amst.

| **Sales | Performance | by Ingredient |**



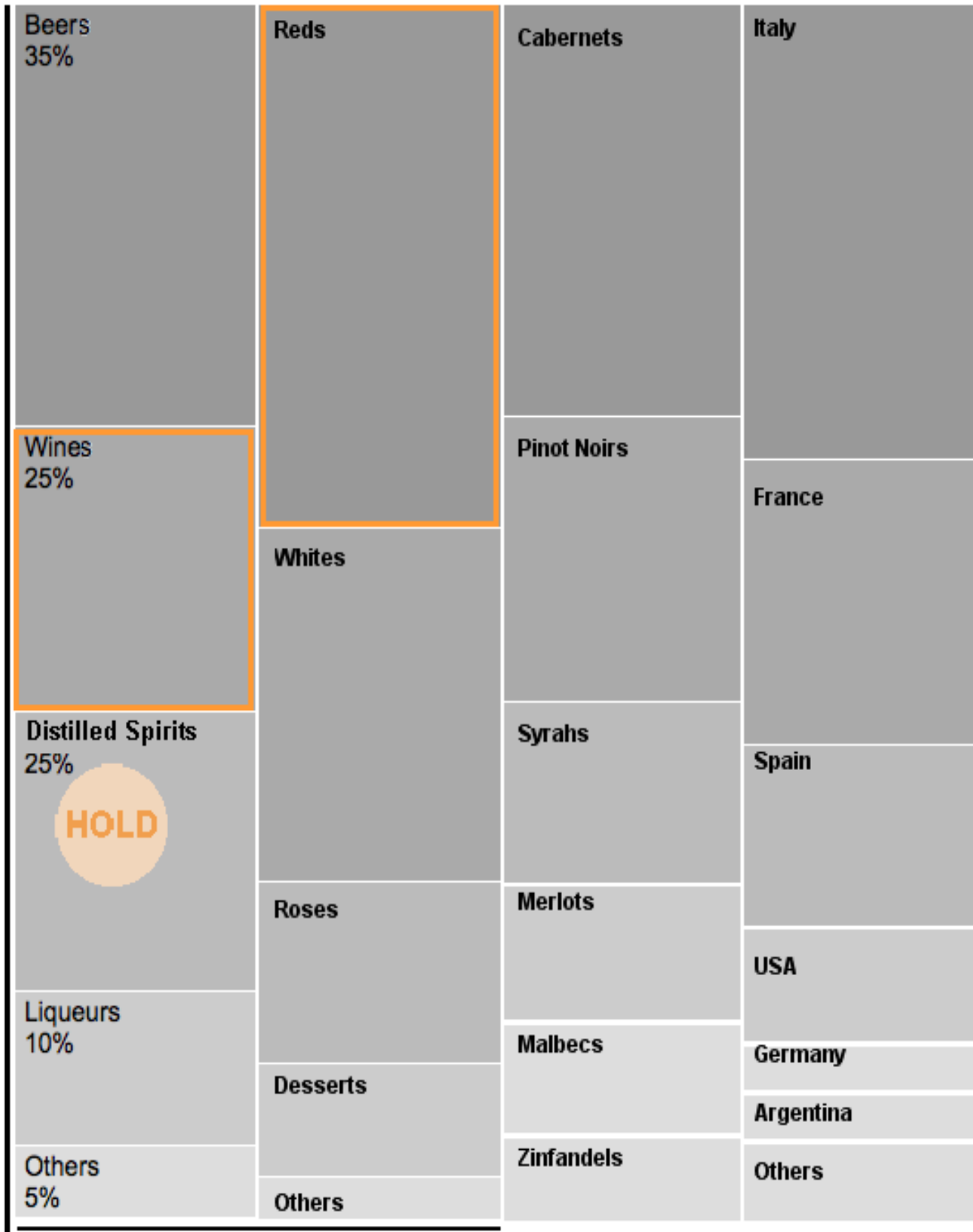


Groups | Sub-Groups | Ingredients | Origins | Times | Places | Relations | Scales
 Wine, Red | Amsterdam | 80-100% |

Top Reds Amst. | Sales |



This enables an overview of all filter selections and the overall distribution of the chosen Measure across all Aspects and Dimensions.

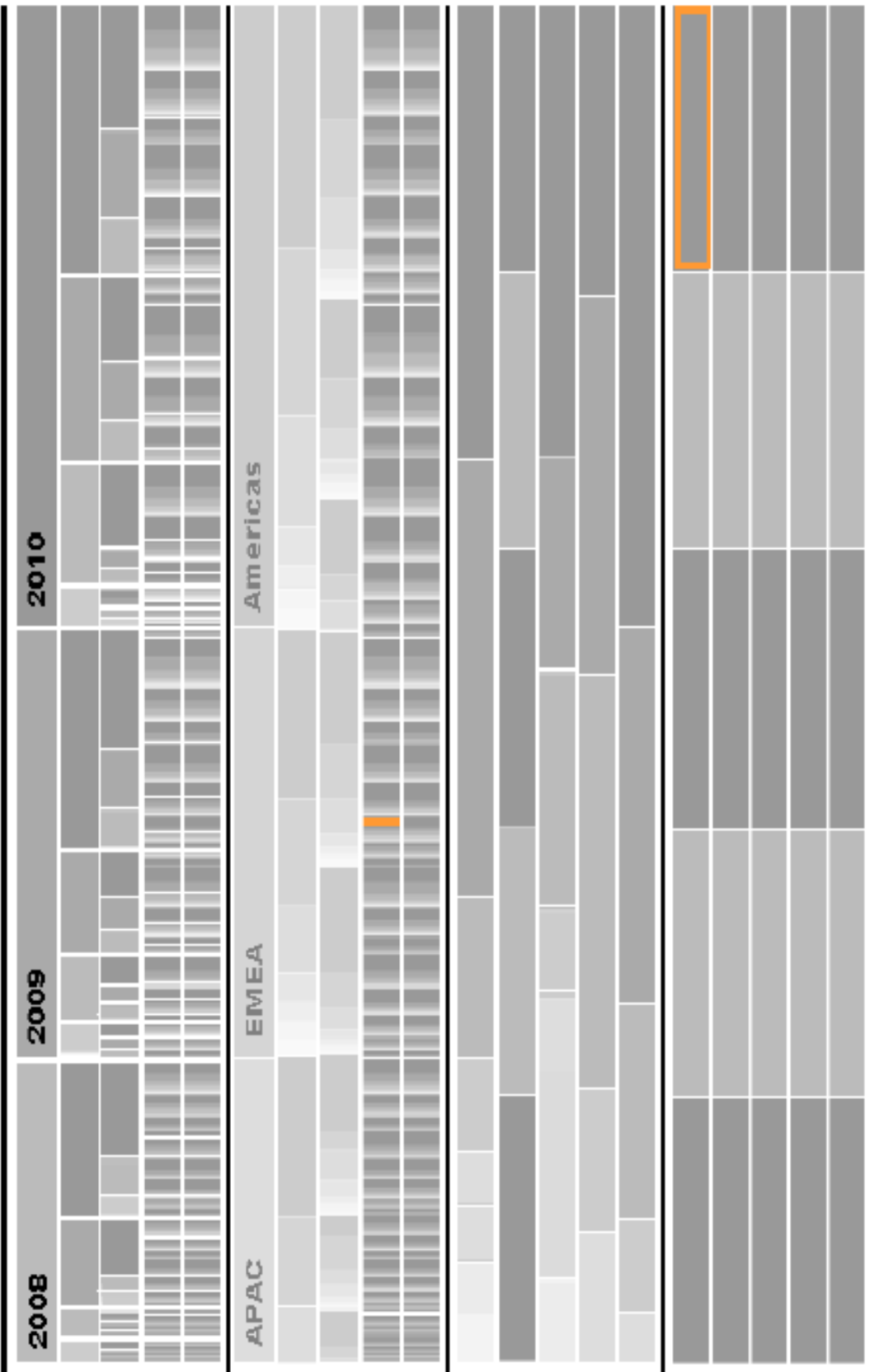


Groups | Sub-Groups | Ingredients | Origins

Wine, Red |

Types

Top Reds Amst. | Sales |

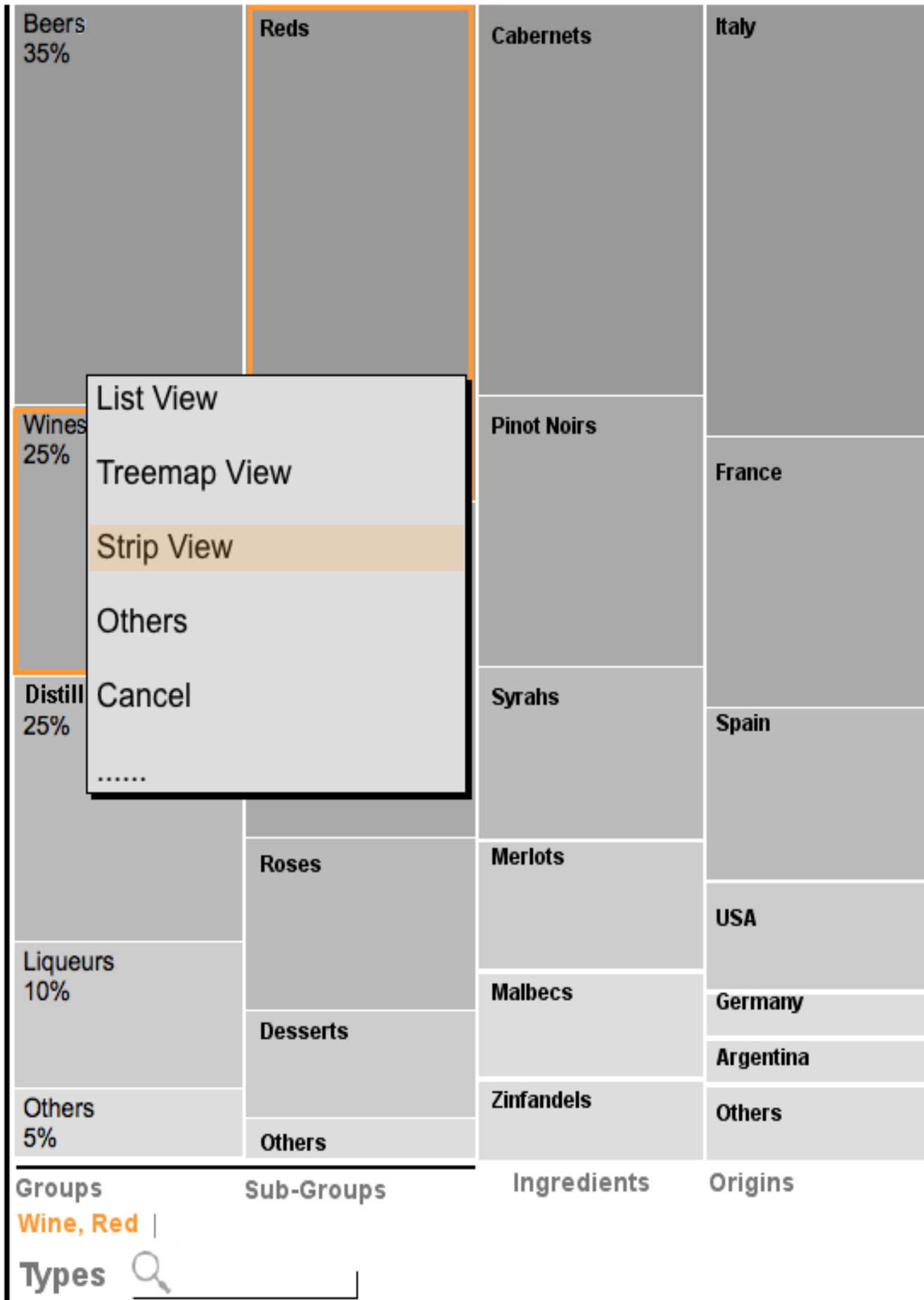


Times | Places | Relations | Scales

Amsterdam | 80-100% |

The Strip chart can be changed into a more "zoomed in" display called the **Columnar Tree Map (CTM)**. The CTM enables a Strip display to wrap itself among the columns and occupy the entire display.





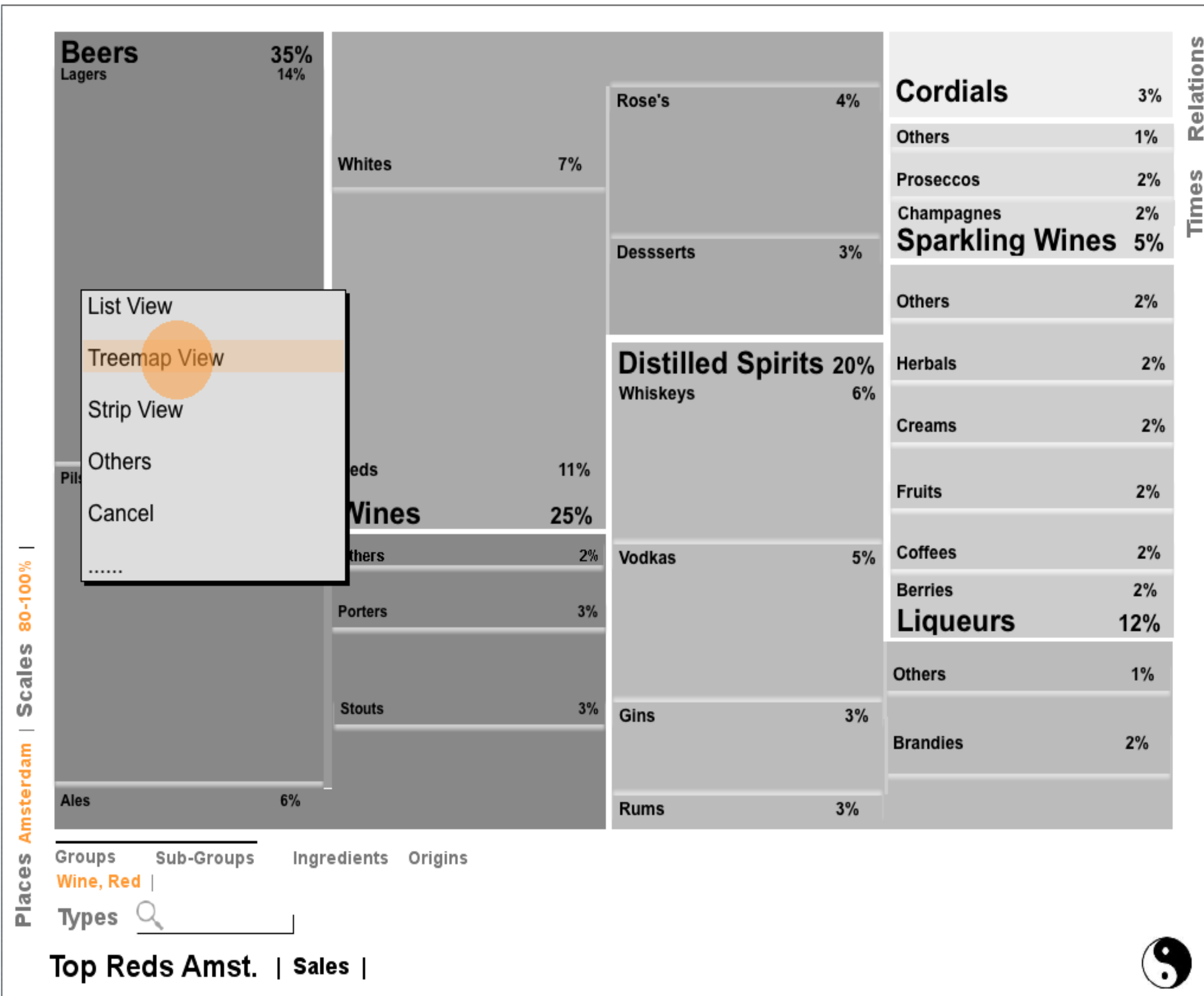
- List View
- Treemap View
- Strip View
- Others
- Cancel
-



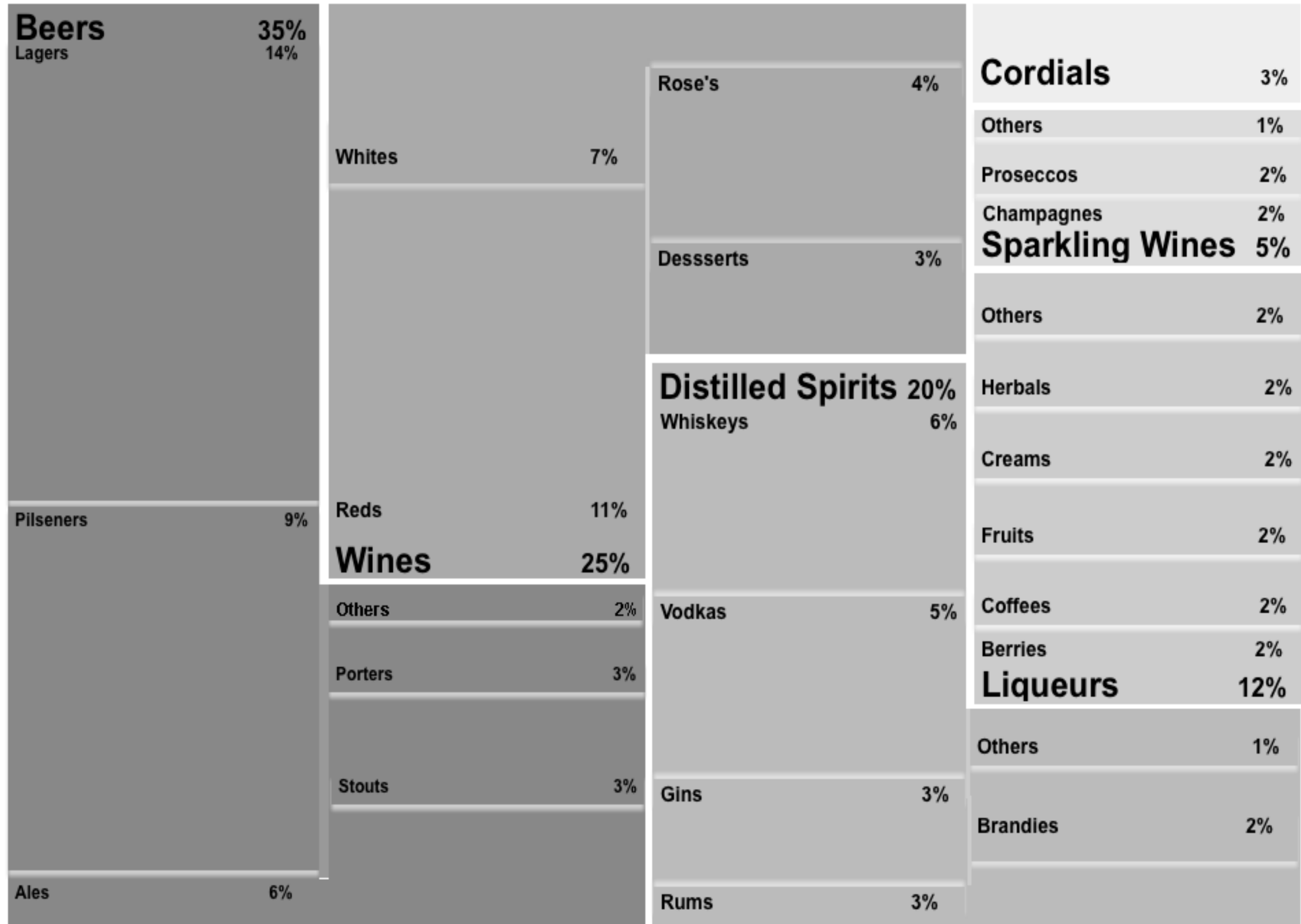
The Strip chart can be changed into a more "zoomed in" display called the **Columnar Tree Map (CTM)**. The CTM enables a Strip display to wrap itself among the columns and occupy the entire display.

Top Reds Amst. | Sales |





The Strip chart can be changed into a more "zoomed in" display called the **Columnar Tree Map (CTM)**. The CTM enables a Strip display to wrap itself among the columns and occupy the entire display.



Groups Sub-Groups Ingredients Origins

Wine, Red |

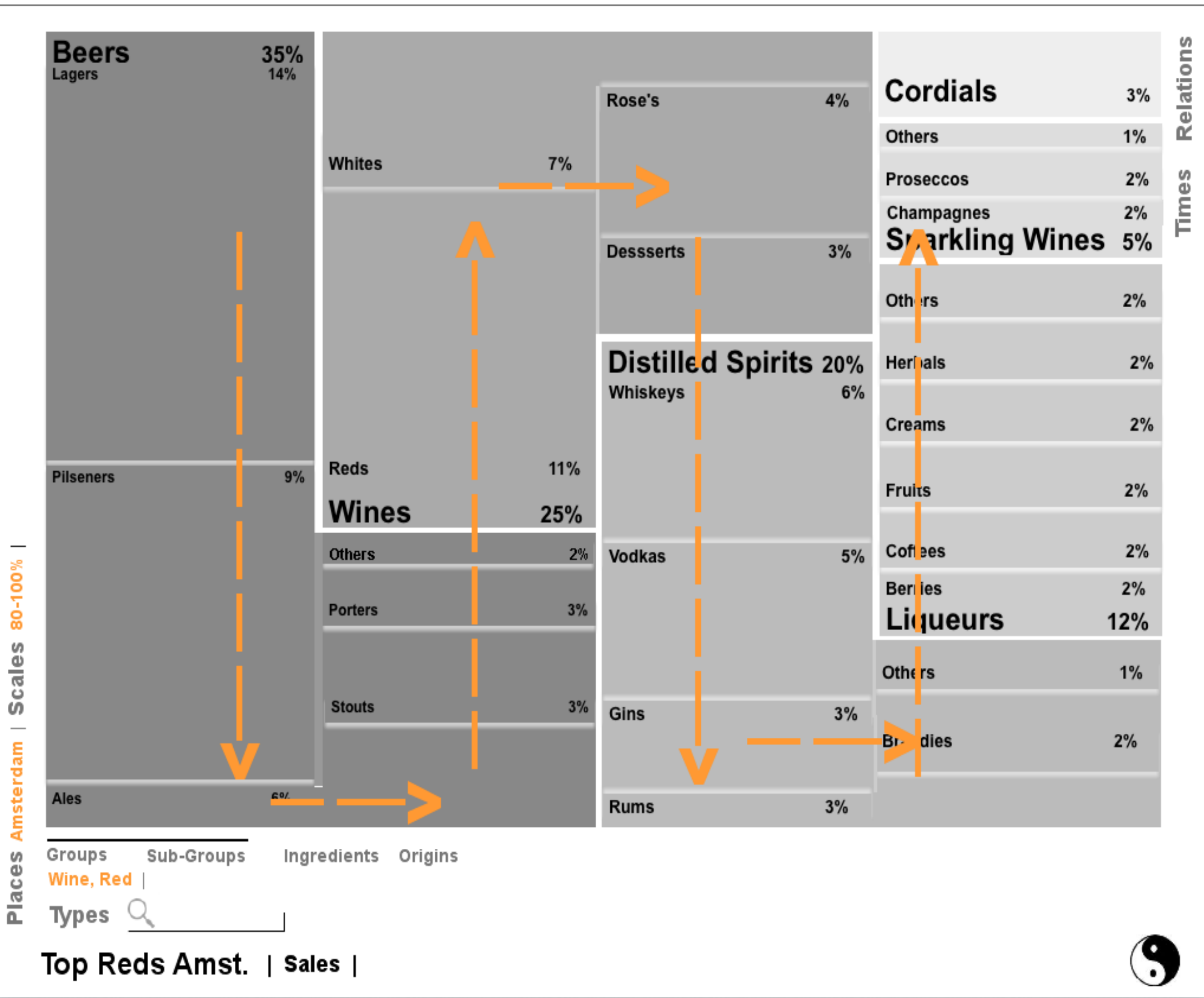
Types

Top Reds Amst. | Sales |



The Strip chart can be changed into a more "zoomed in" display called the **Columnar Tree Map (CTM)**. The CTM enables a Strip display to wrap itself among the columns and occupy the entire display.

Times Relations



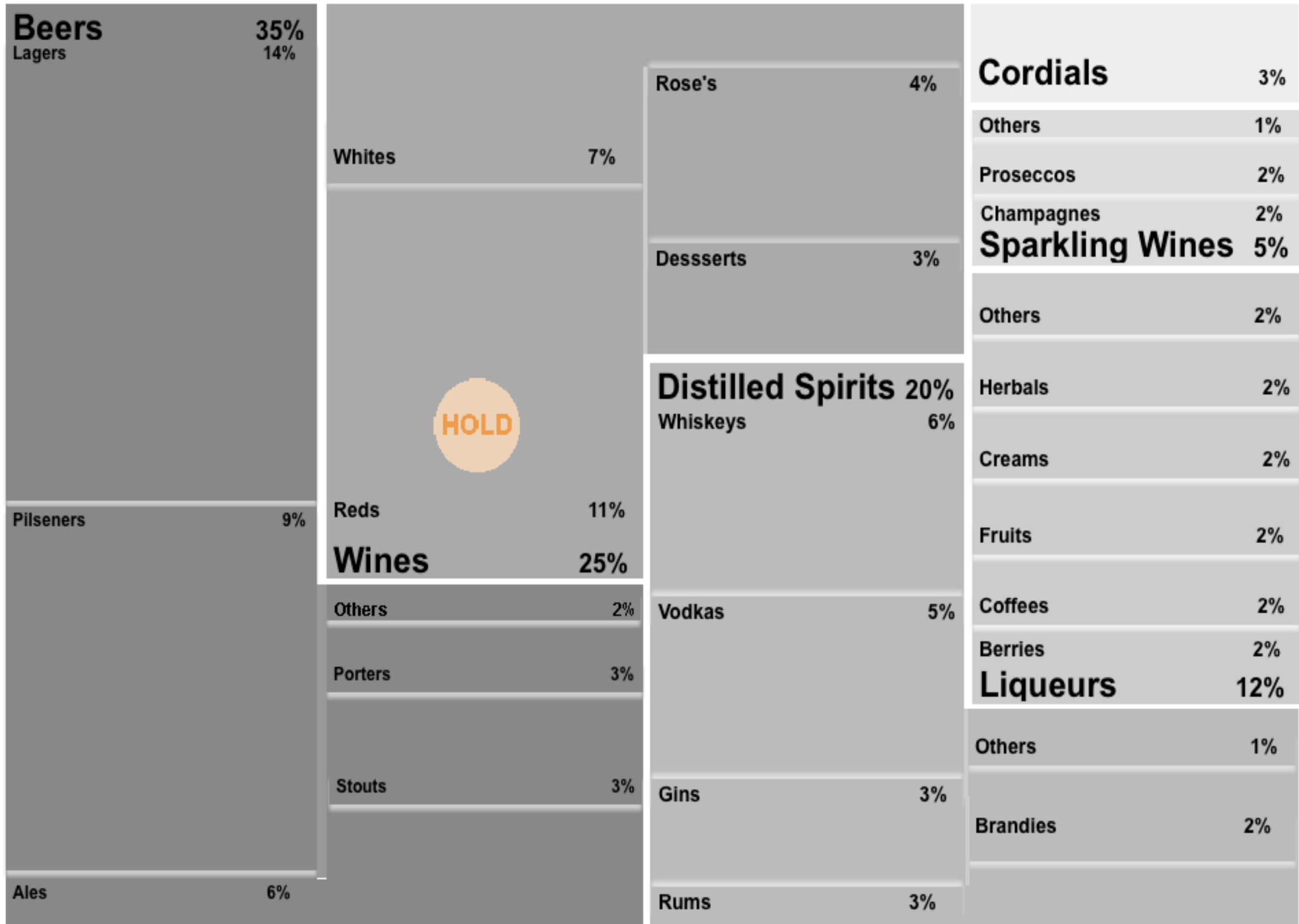
The display is driven by an underlying grid for positioning of the columns.

The Columnar algorithm is simple. It is rendered here being displayed on the iPad device, but in fact can be deployed on any rectangular screen.

Given a quantitative data set (say sales for the 50 United States), the algorithm would use the amount of sales contribution from each state to the whole nation to calculate each state's percentage contribution. For example, California might contribute 22%, Texas 19%, and smaller states like Wyoming 1% or less.

The algorithm then assigns a spatial mapping of the percentages along a 1-dimensional continuum, and then "flows" this 1-dimensional mapping along the pre-determined columns that divide the screen.

Times Relations



Times Relations

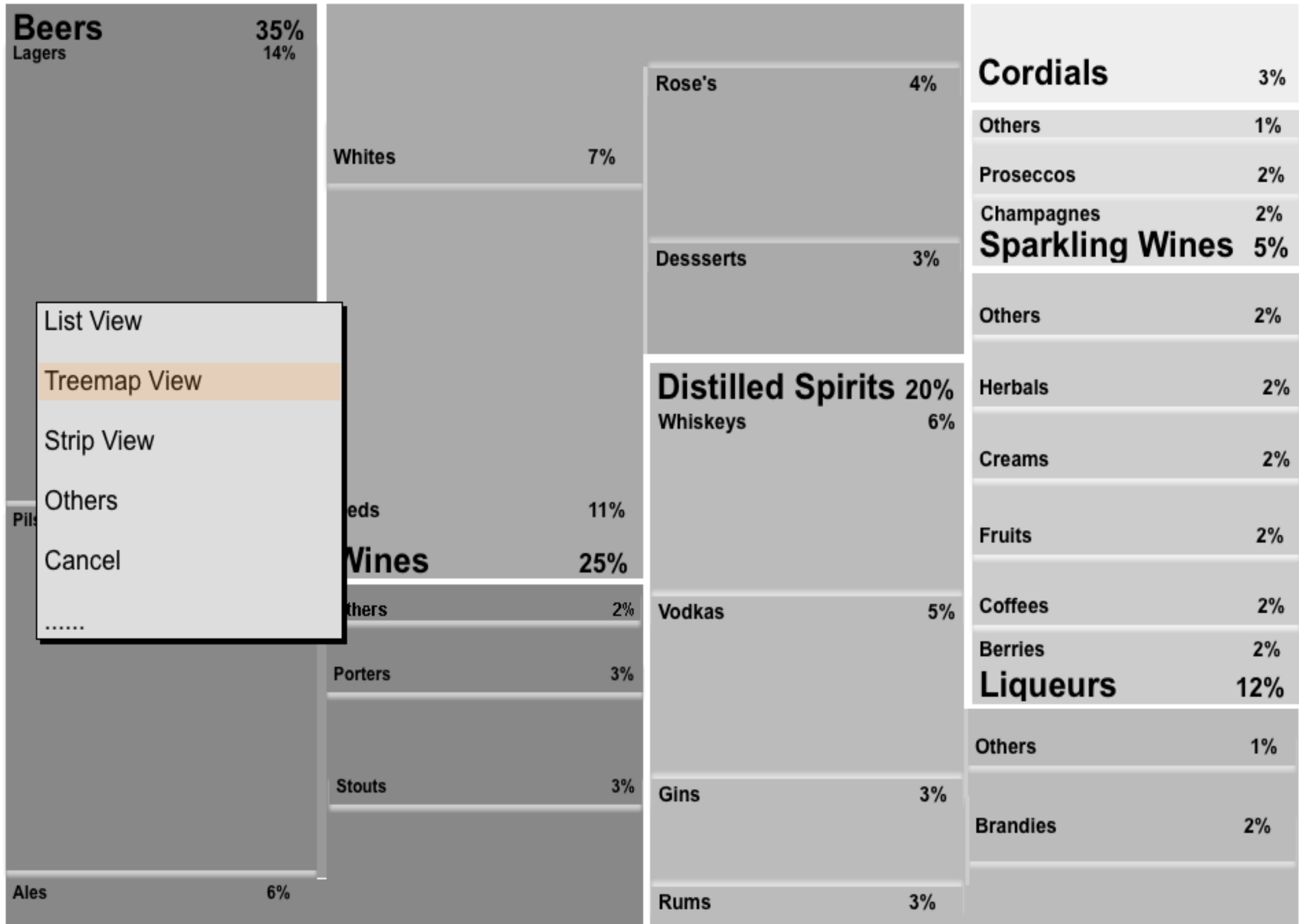
Groups Sub-Groups Ingredients Origins

Wine, Red |

Types

Top Reds Amst. | Sales |





Times Relations

- List View
- Treemap View**
- Strip View
- Others
- Cancel
-

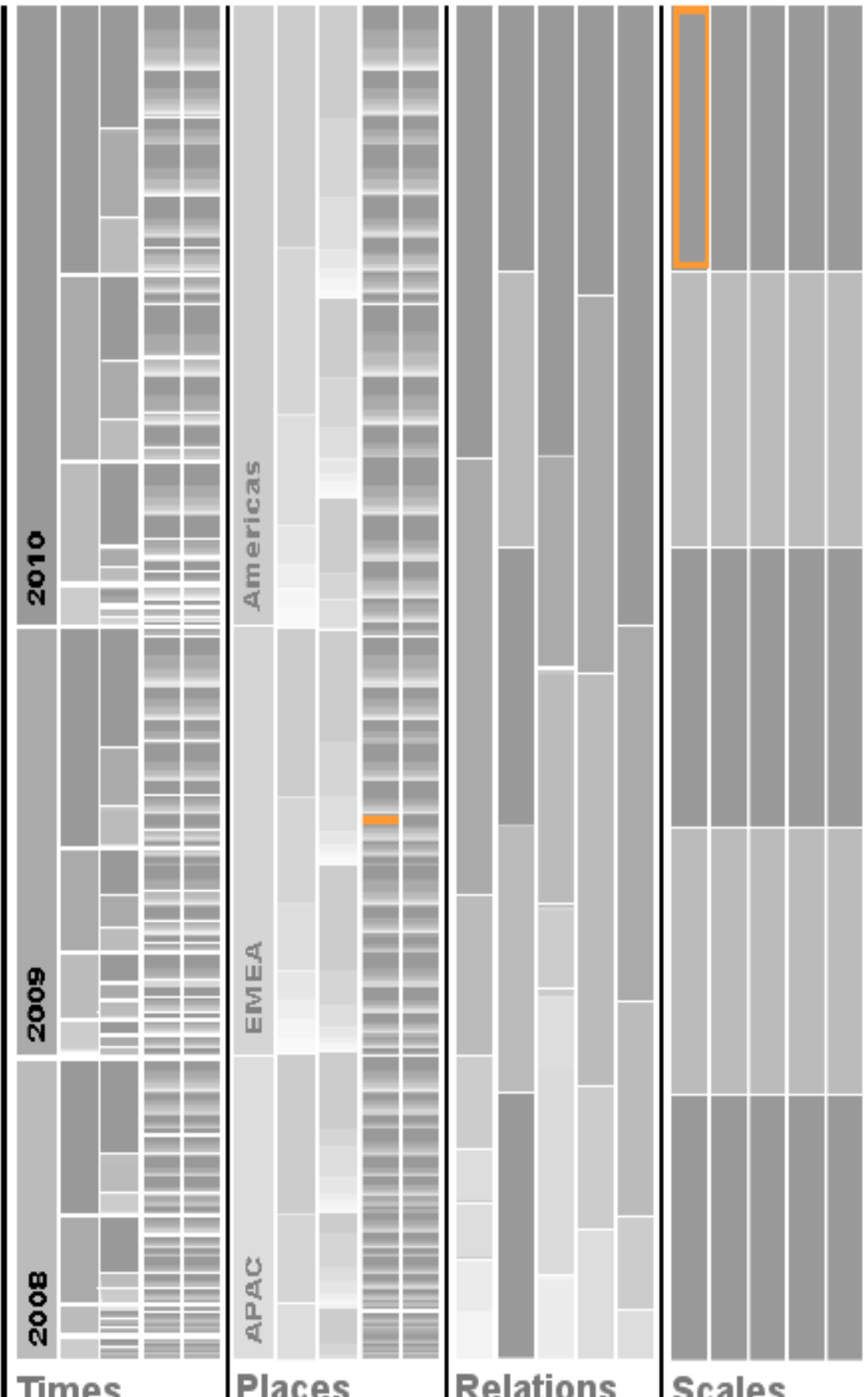
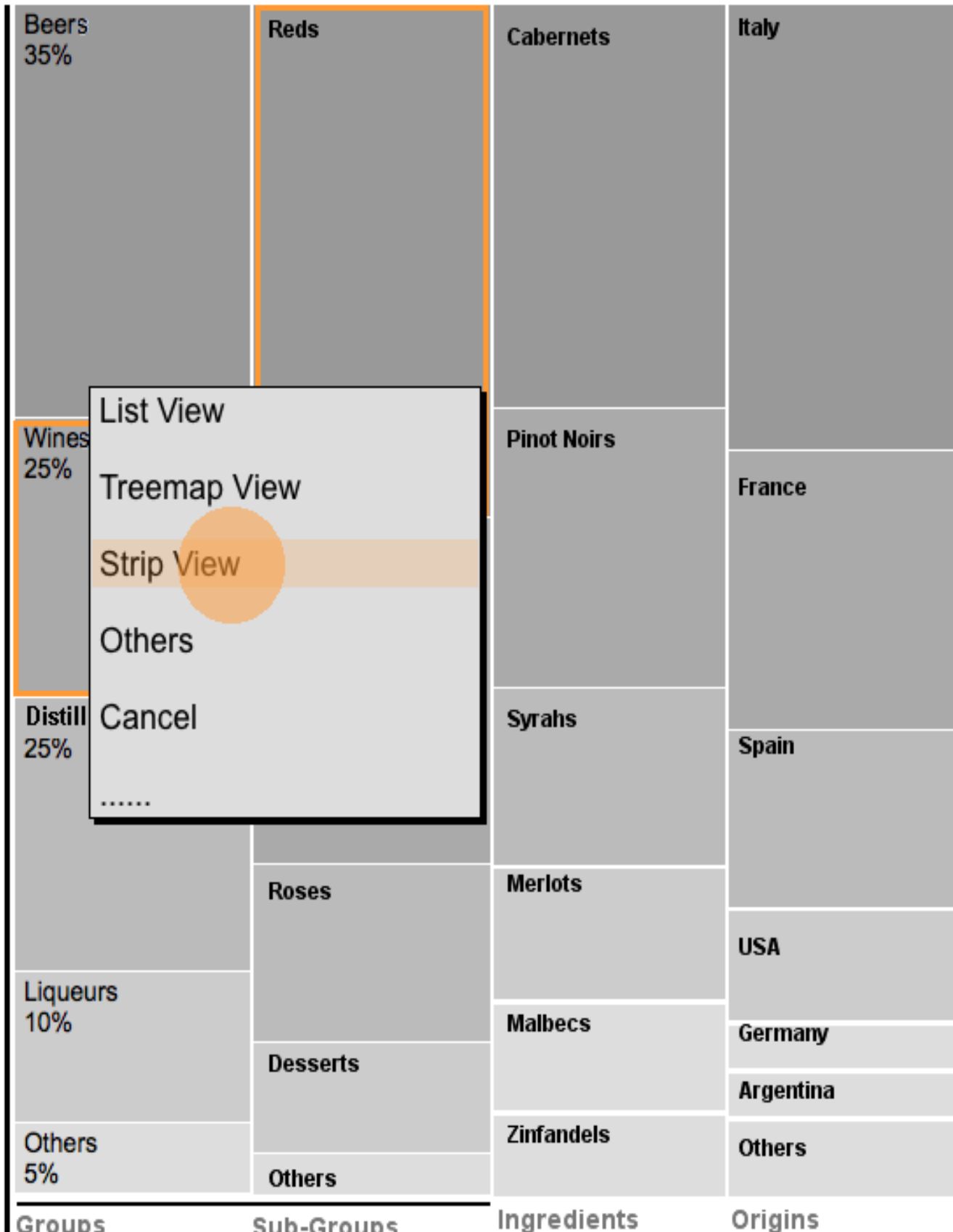
Groups Sub-Groups Ingredients Origins

Wine, Red |

Types

Top Reds Amst. | Sales |



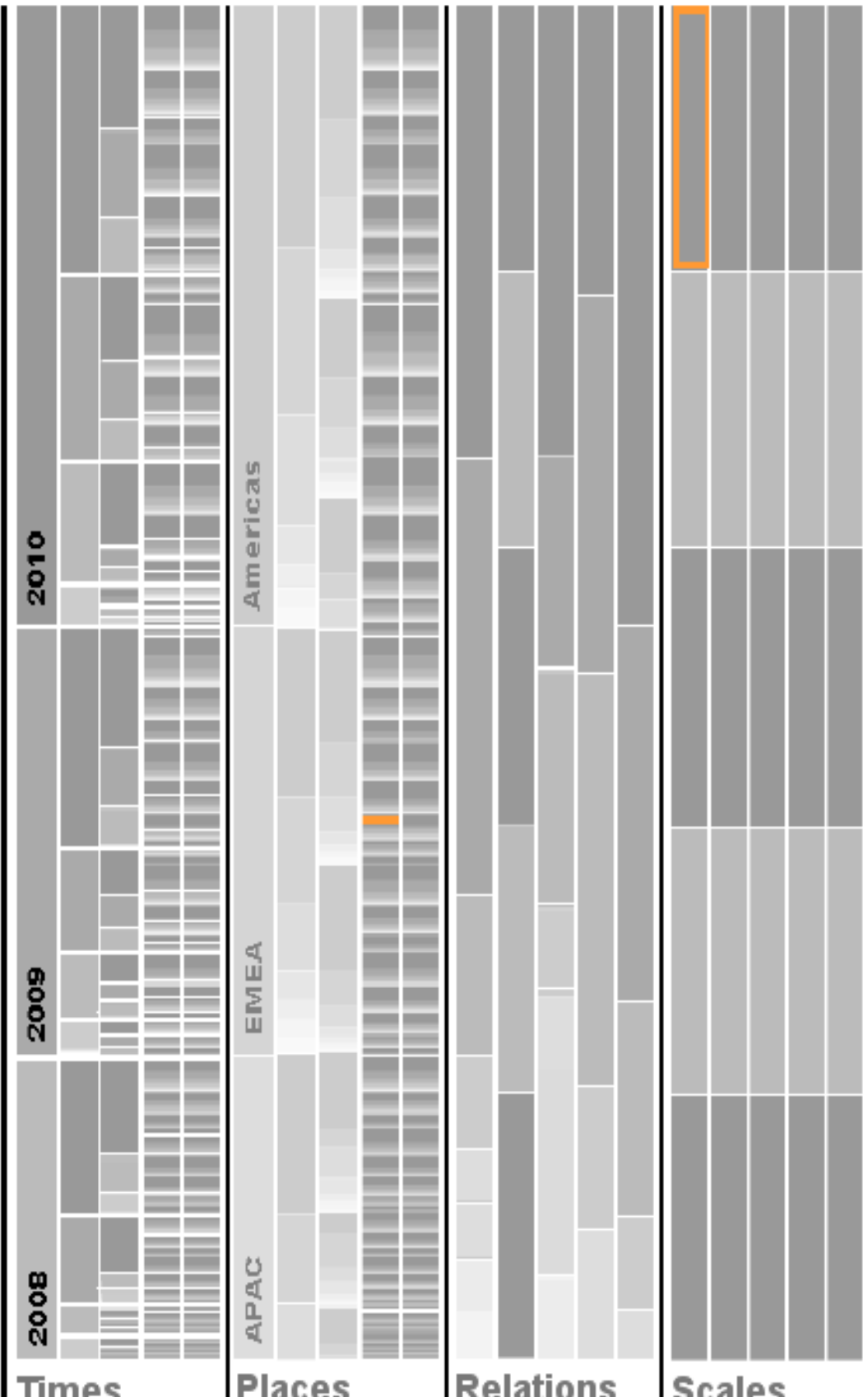
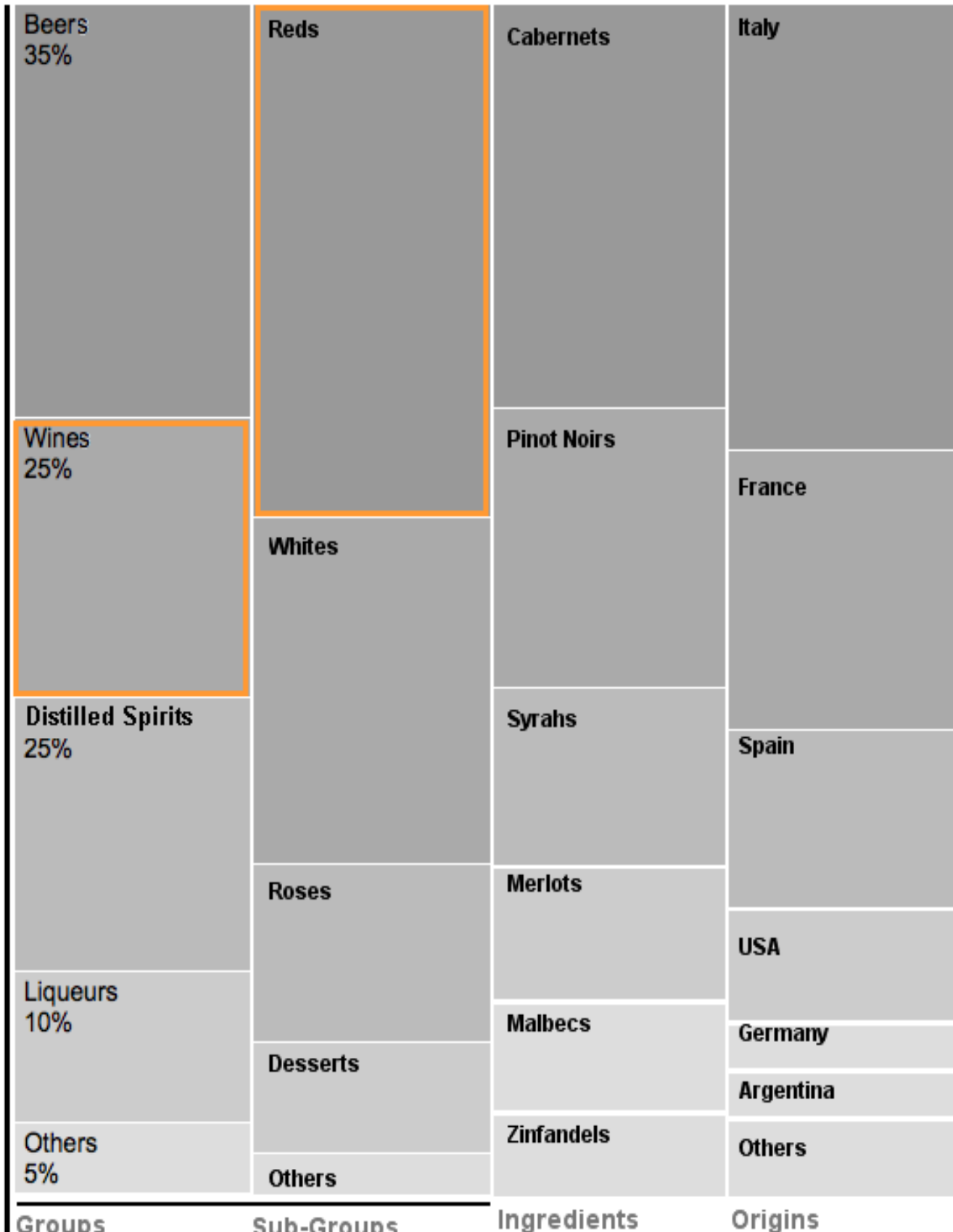


List View
 Treemap View
 Strip View
 Others
 Cancel

Groups | Sub-Groups | Ingredients | Origins
 Wine, Red |
 Types

Top Reds Amst. | Sales |

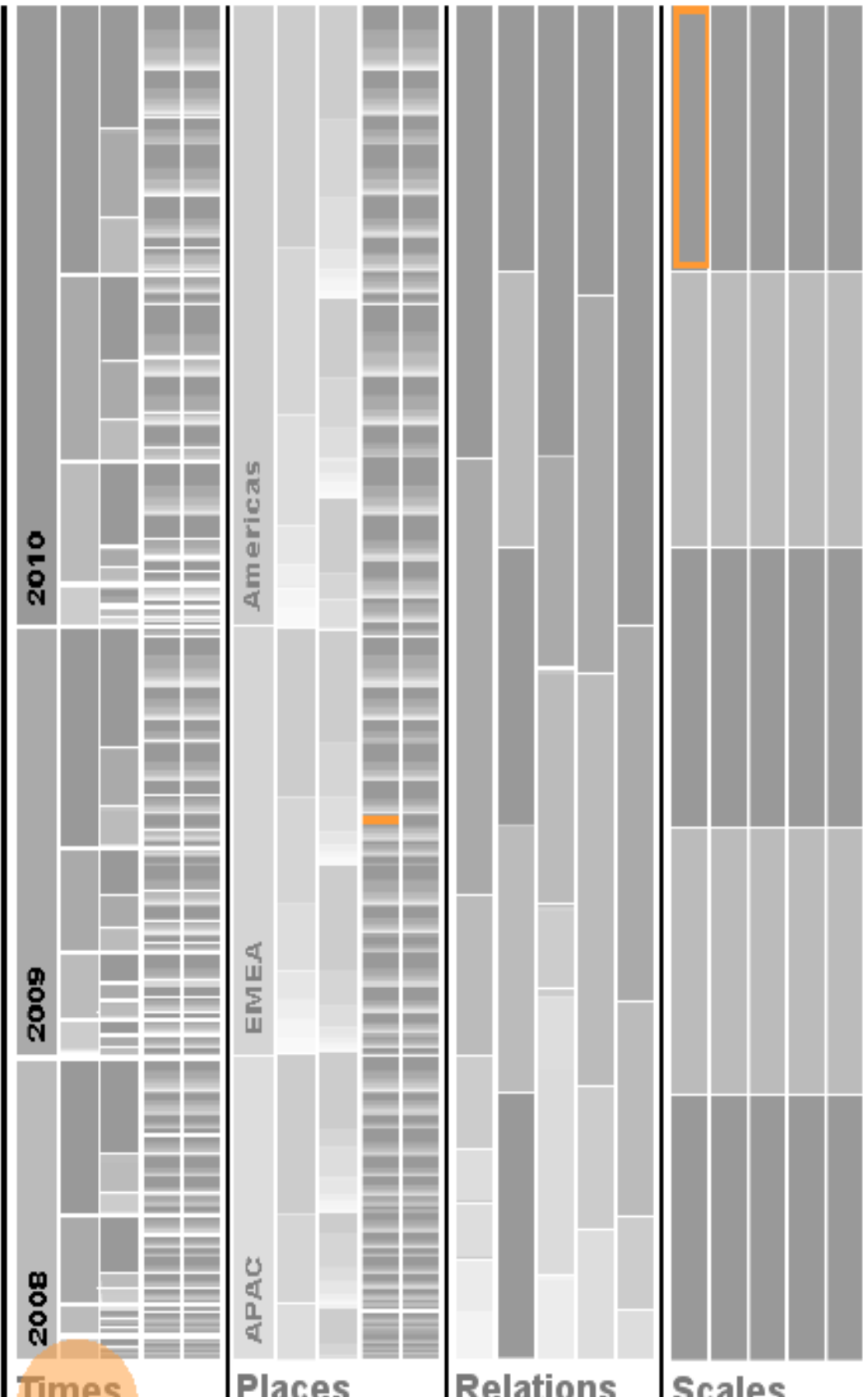
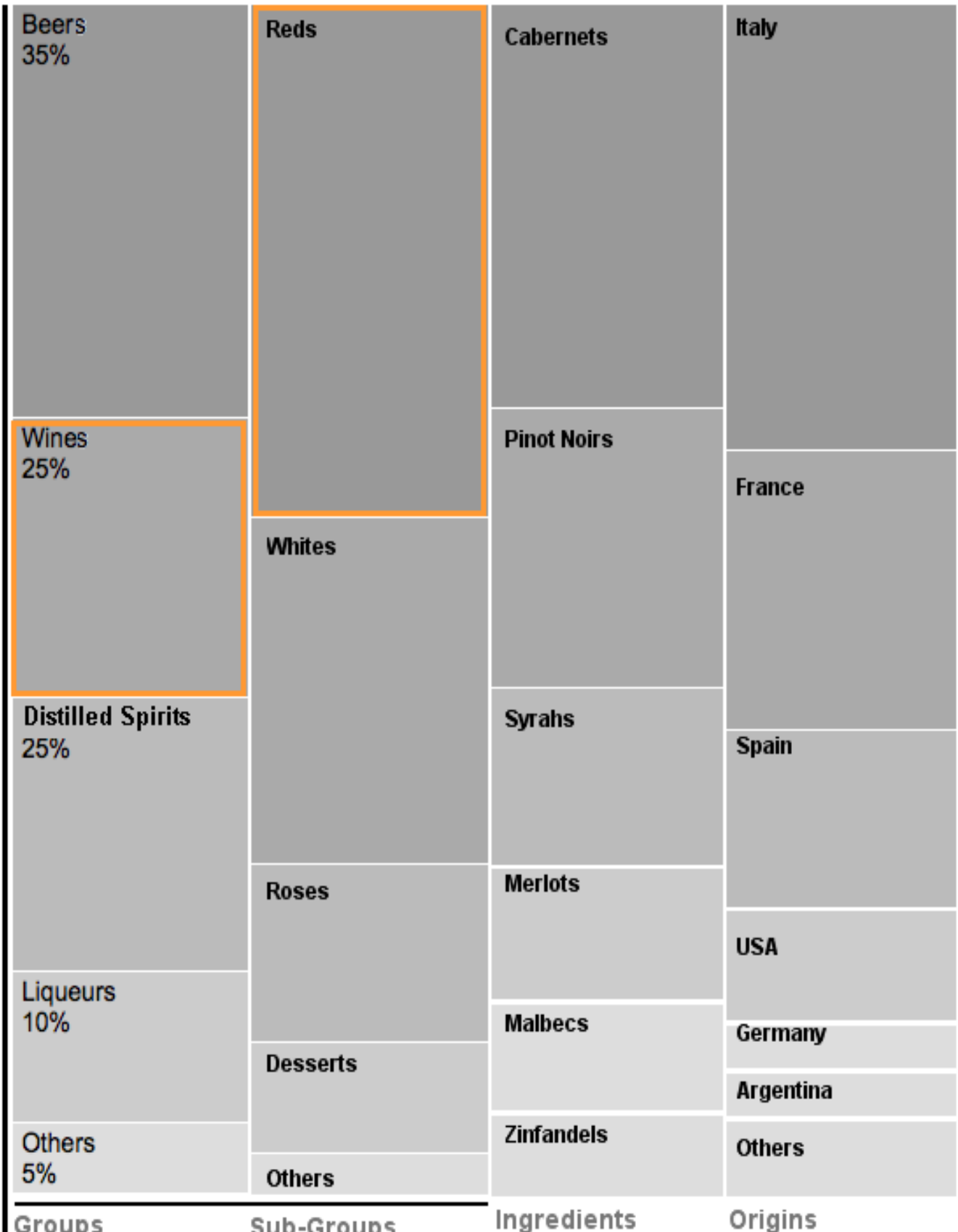




Wine, Red |
Types

Top Reds Amst. | Sales |

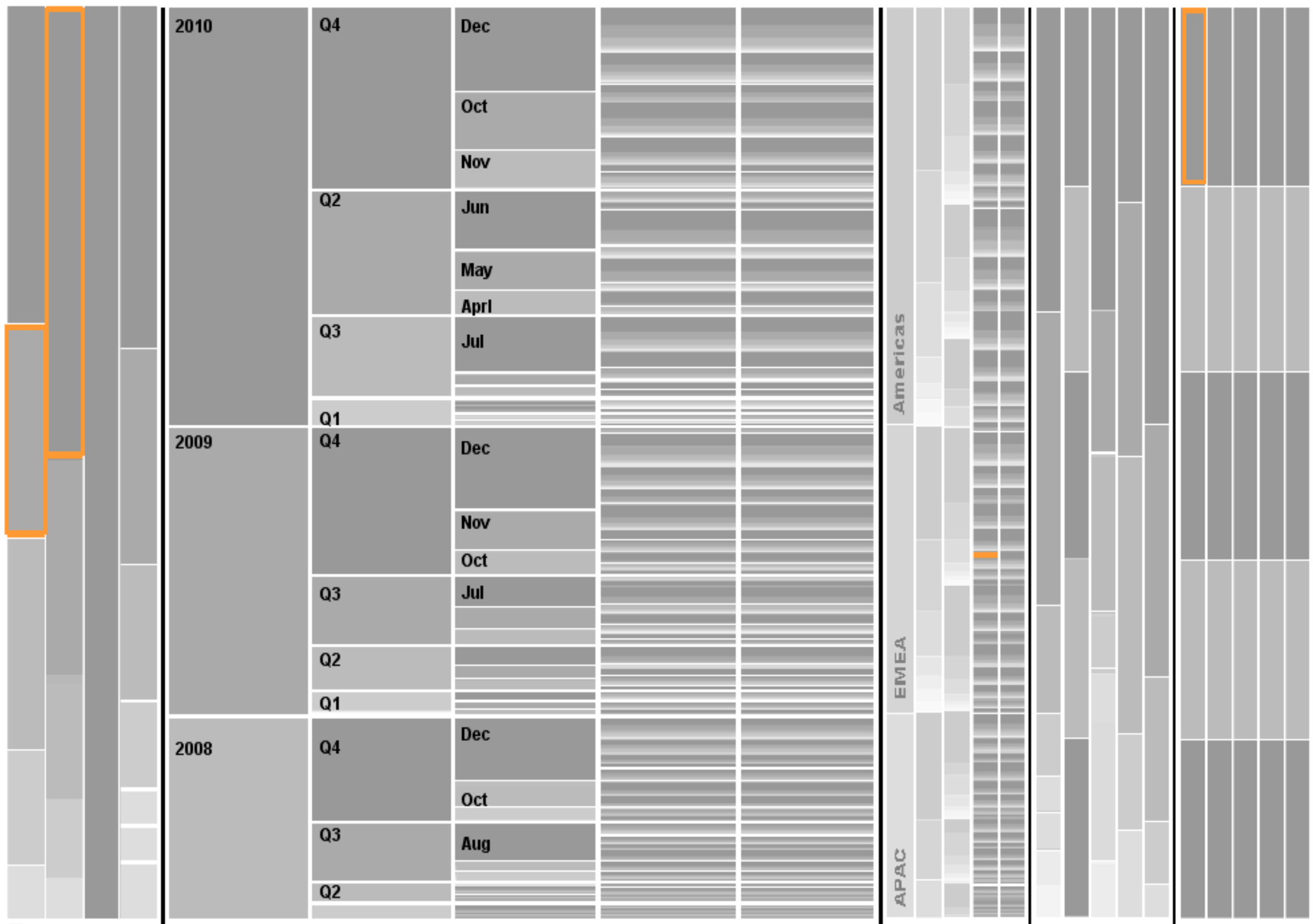




Wine, Red |
Types 🔍

Top Reds Amst. | Sales |





Types
Wine, Red |

Places
Amsterdam |

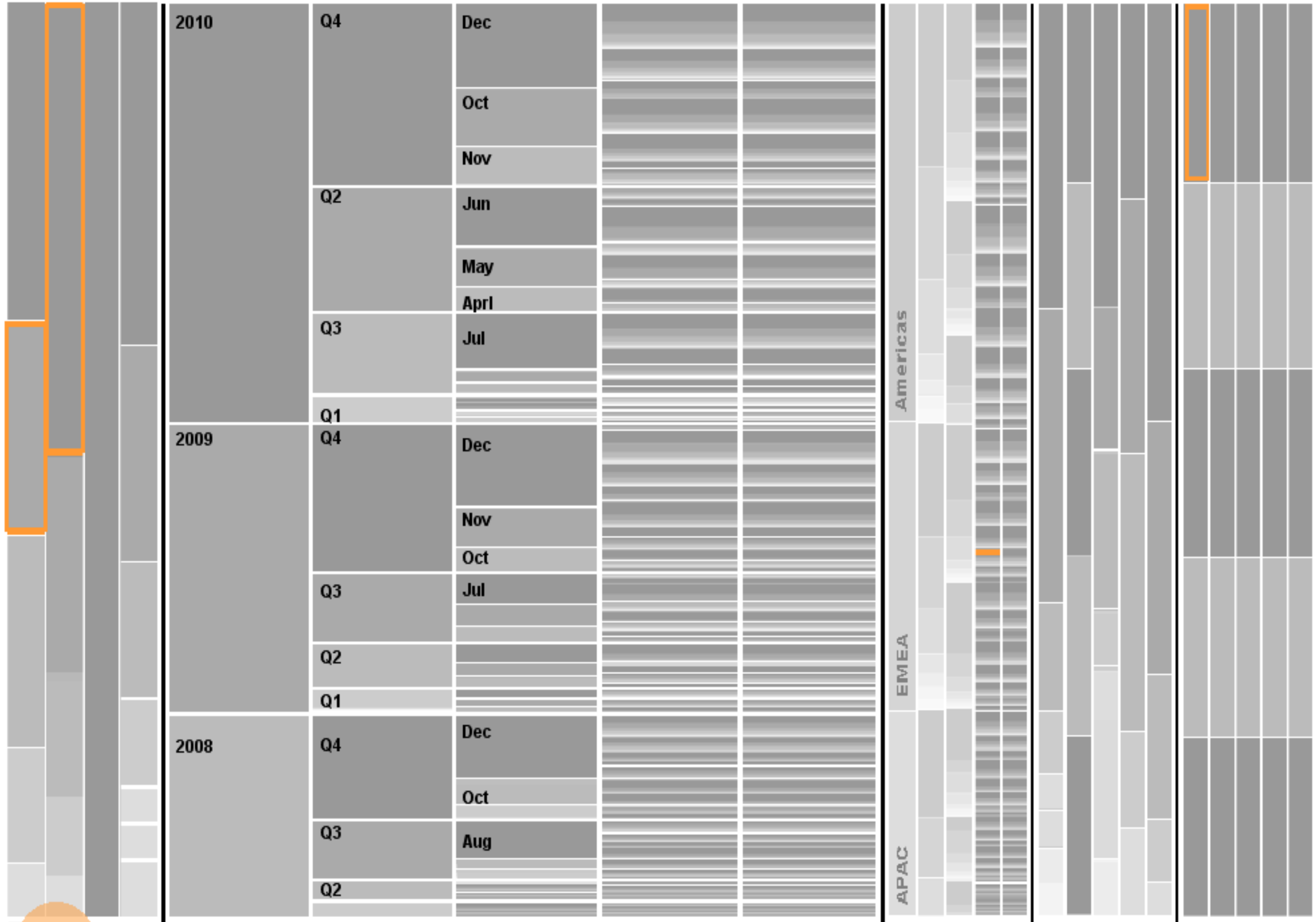
Relations

Scales
80-100% |

Top Reds Amst. | Sales |



Times is a strictly hierarchical Aspect, which here uses the **Icicle Chart** pattern to show the sales breakdown by time.



Times is a strictly hierarchical Aspect, which here uses the **Iceberg Chart** pattern to show the sales breakdown by time.

Types
Wine, Red |

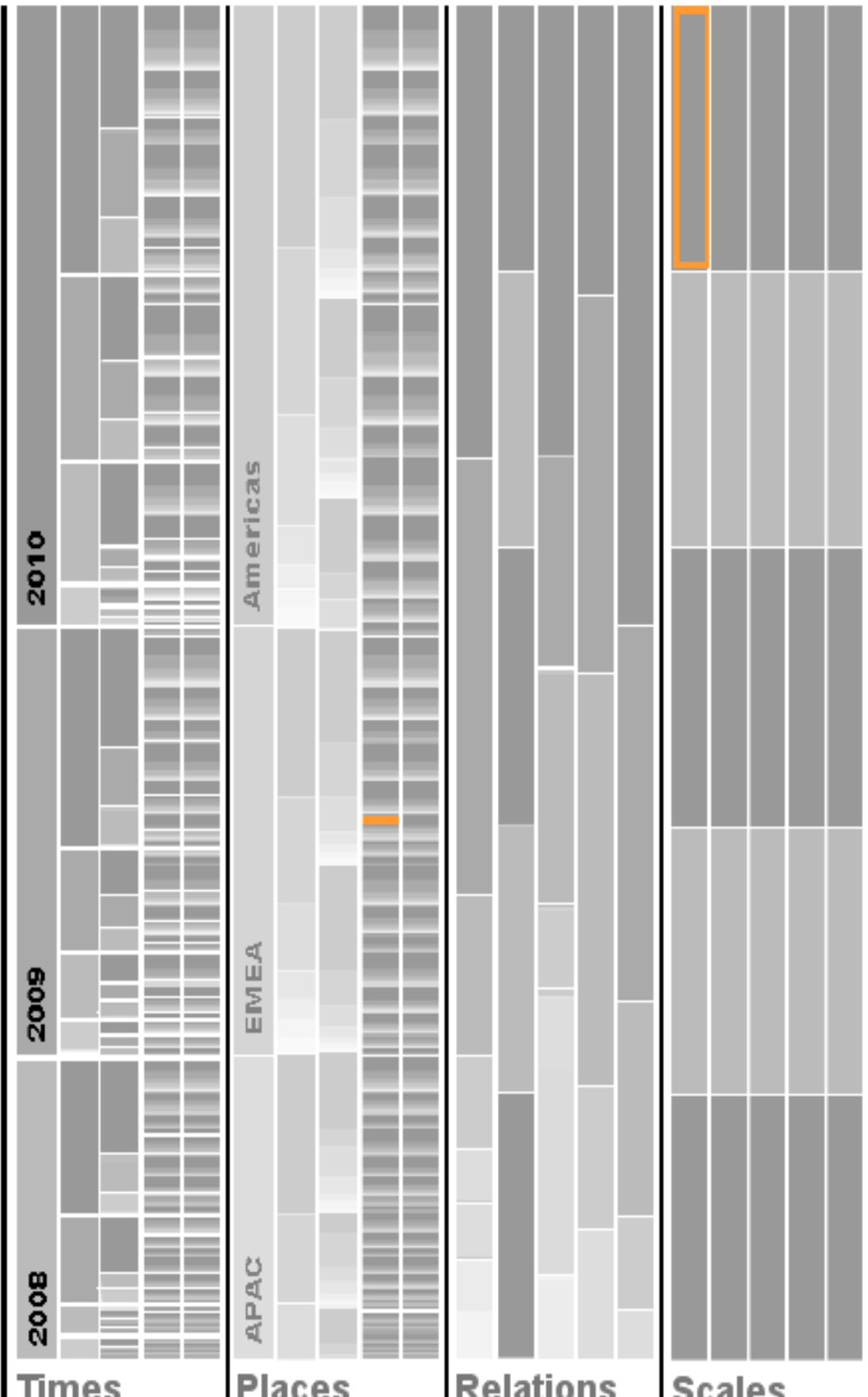
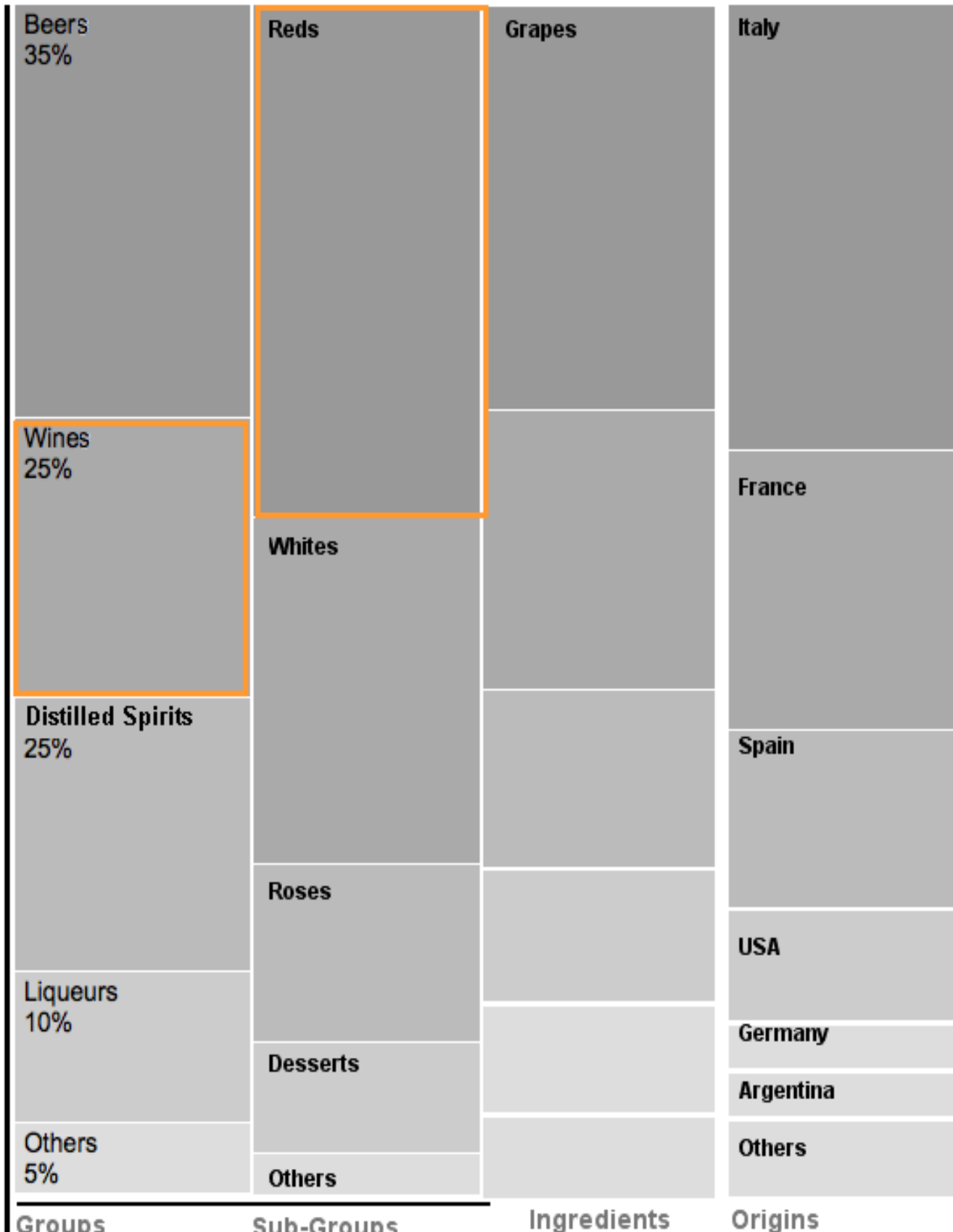
Places
Amsterdam |

Relations

Scales
80-100% |

Top Reds Amst. | Sales |

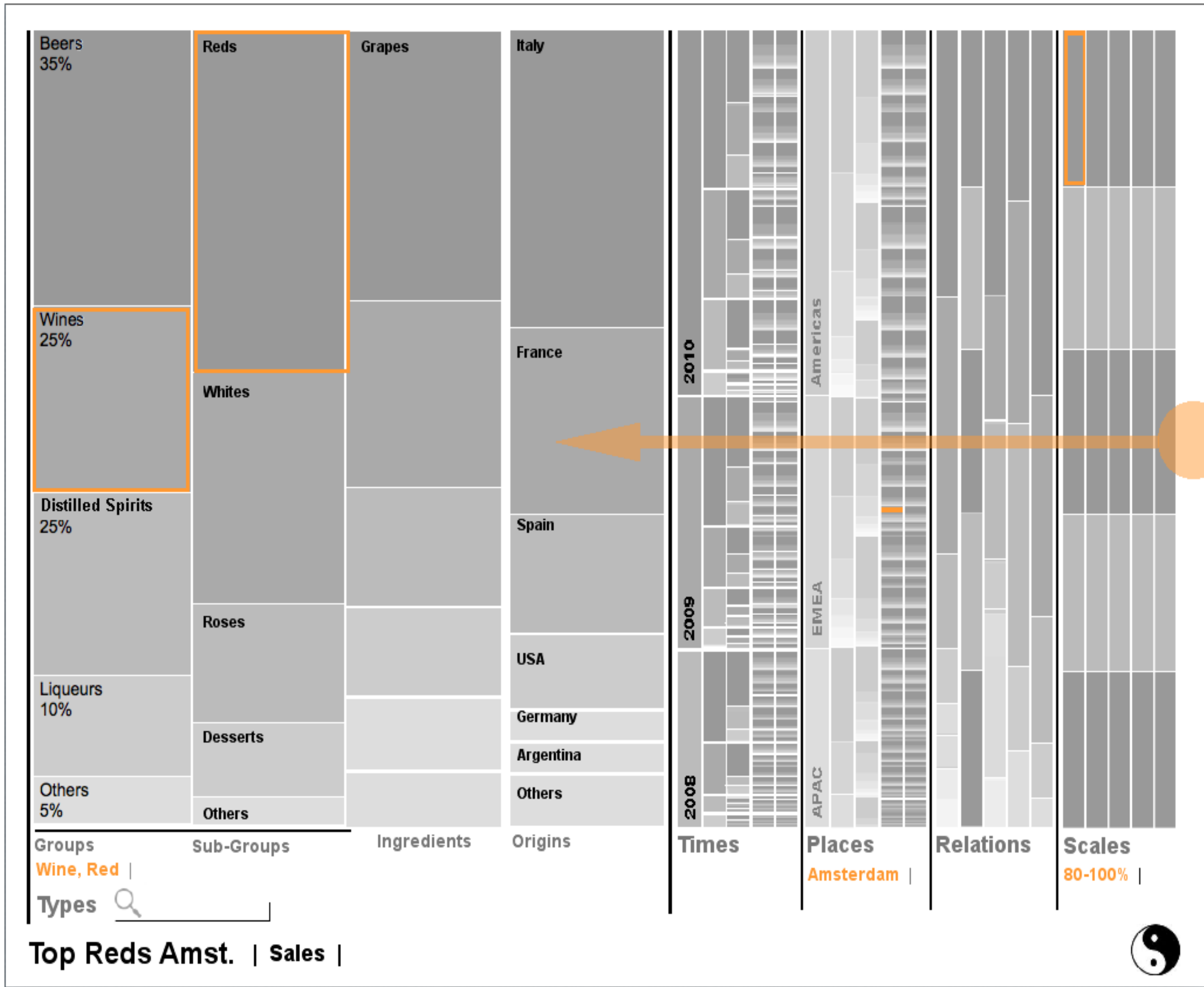




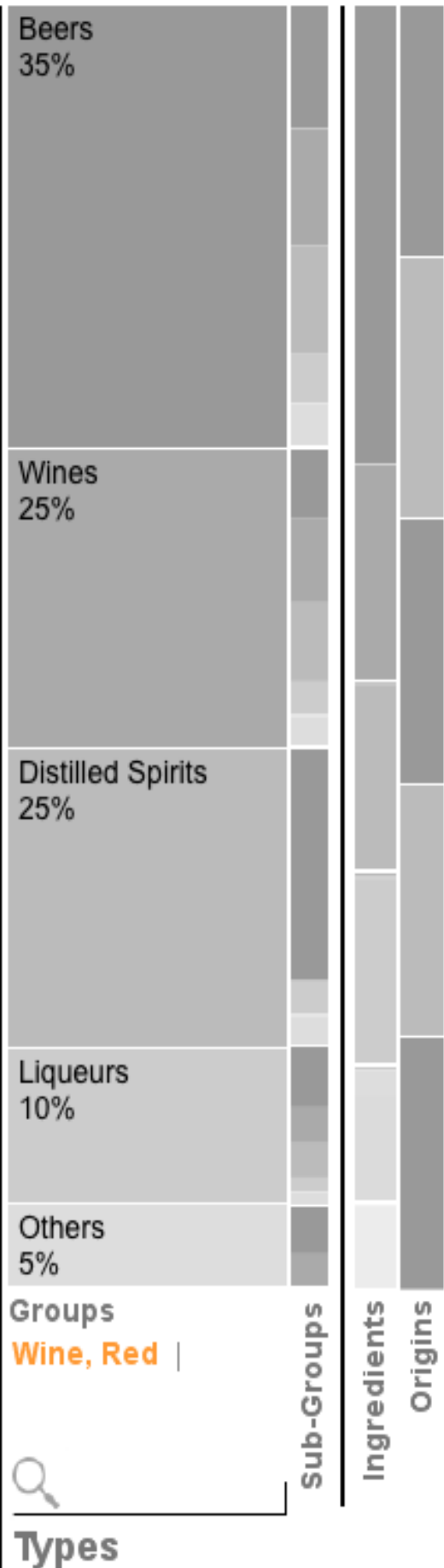
Groups
Wine, Red |
Types

Top Reds Amst. | Sales |



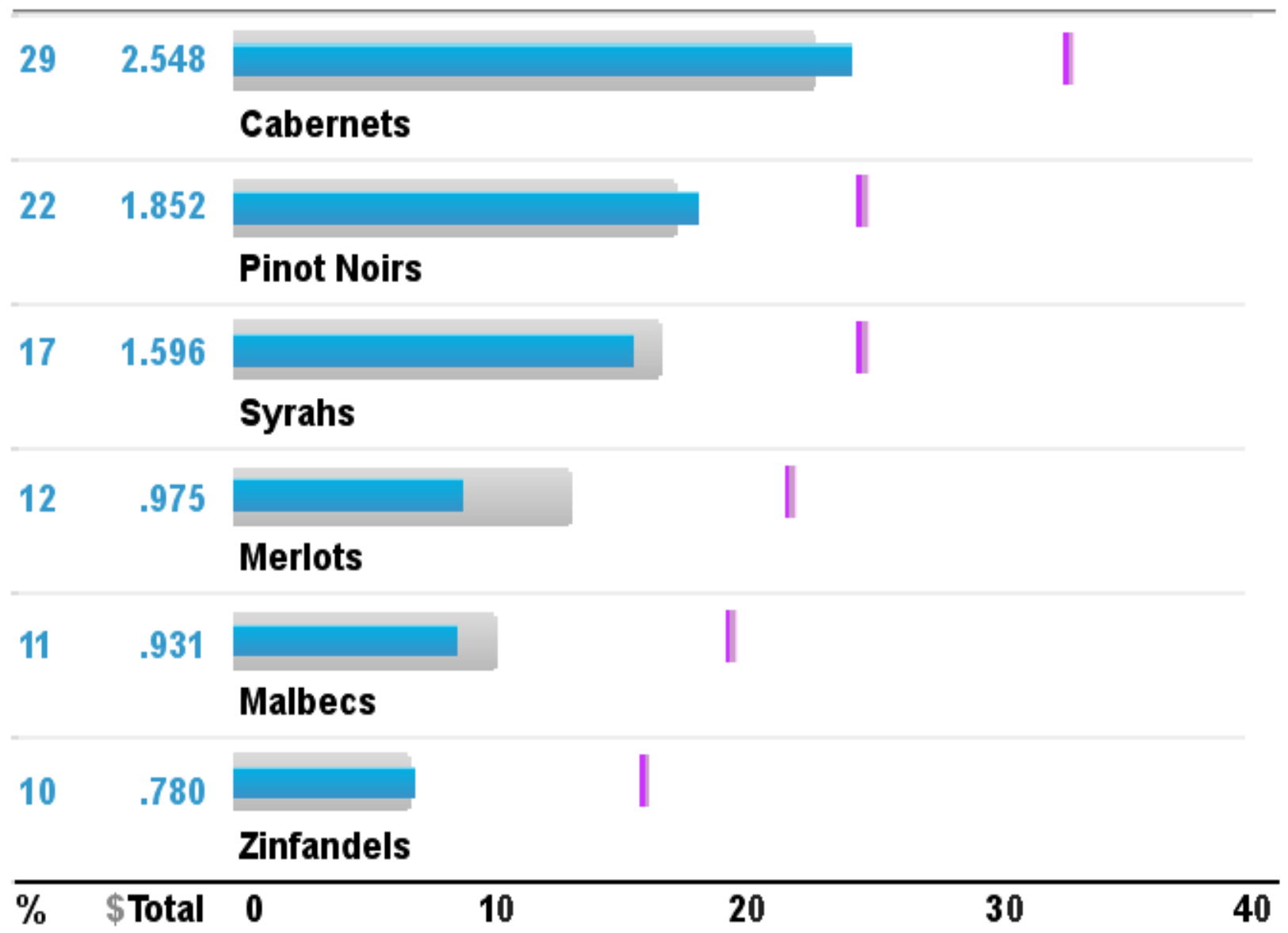


Places Amsterdam | Scales 80-100% |



Times Relations

2011 Performance (July 28)

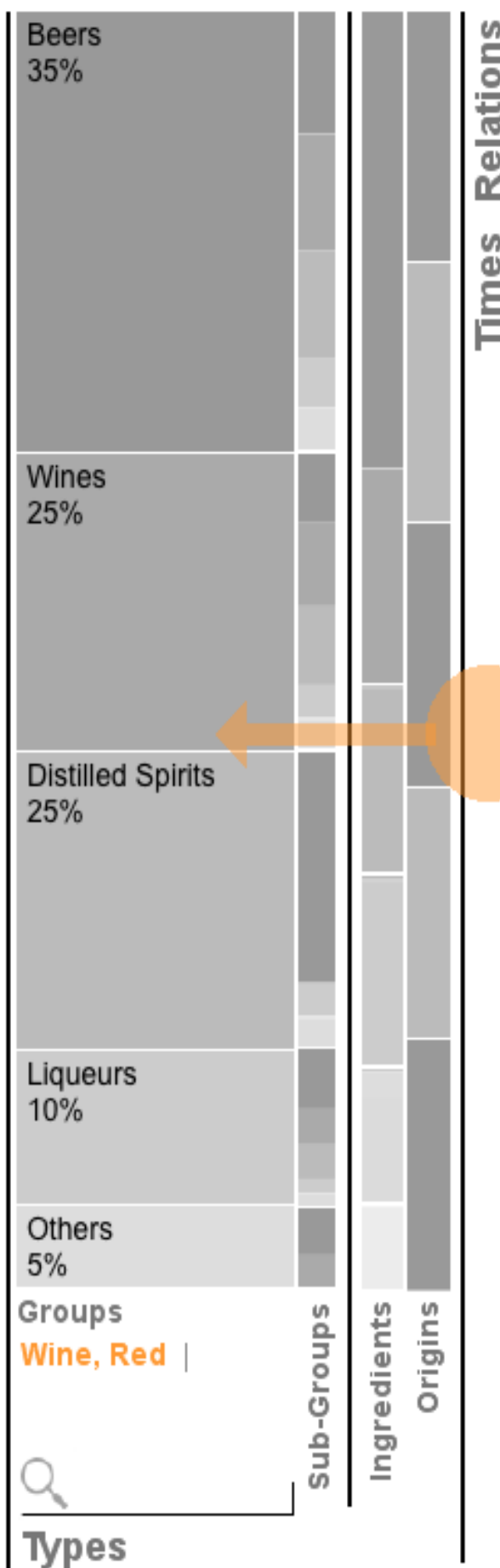


Top Reds Amst.

| Sales | Performance | by Sub-Group |

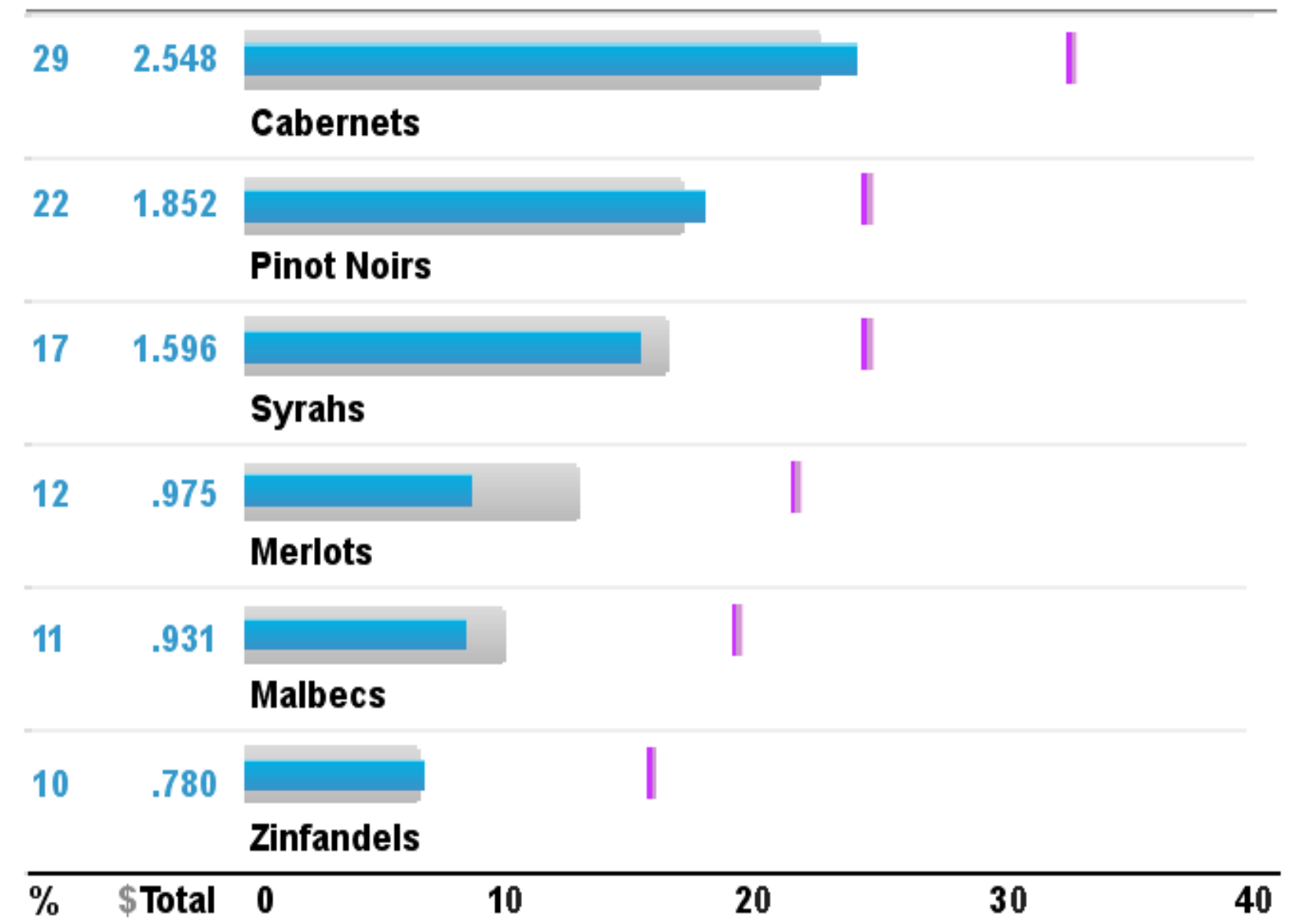


Places Amsterdam | Scales 80-100% |



Times Relations

2011 Performance (July 28)



Conversely, the Plain can be expanded to occupy the entire screen.

This state could be used as a "locked-down" published view, hiding the more complex Strip from content consumers but enabling them to format the display and change measures.

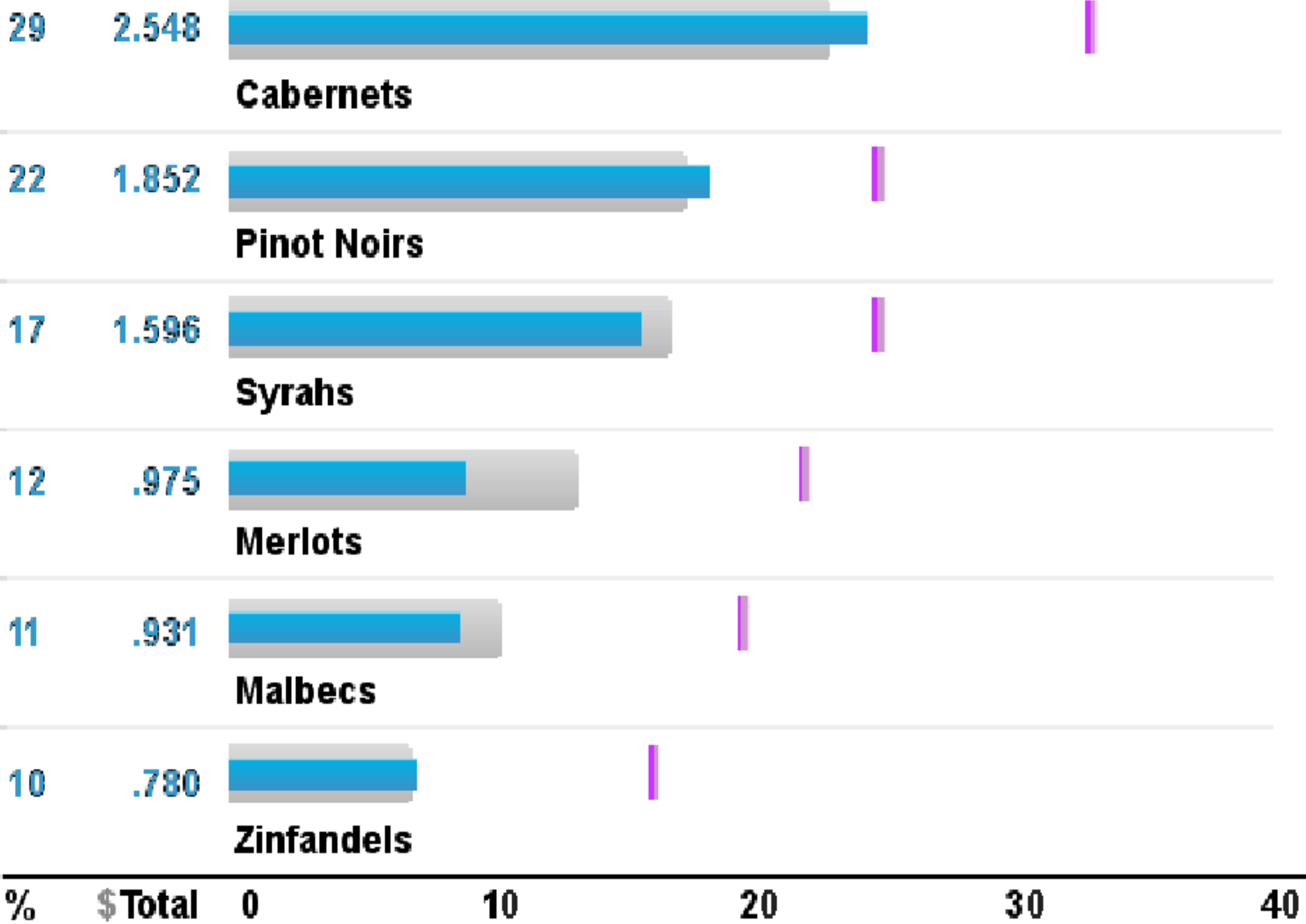
Top Reds Amst.

| Sales | Performance | by Sub-Group |



Types Wine, Red | Places Amsterdam | Scales 80-100% | Times Relations

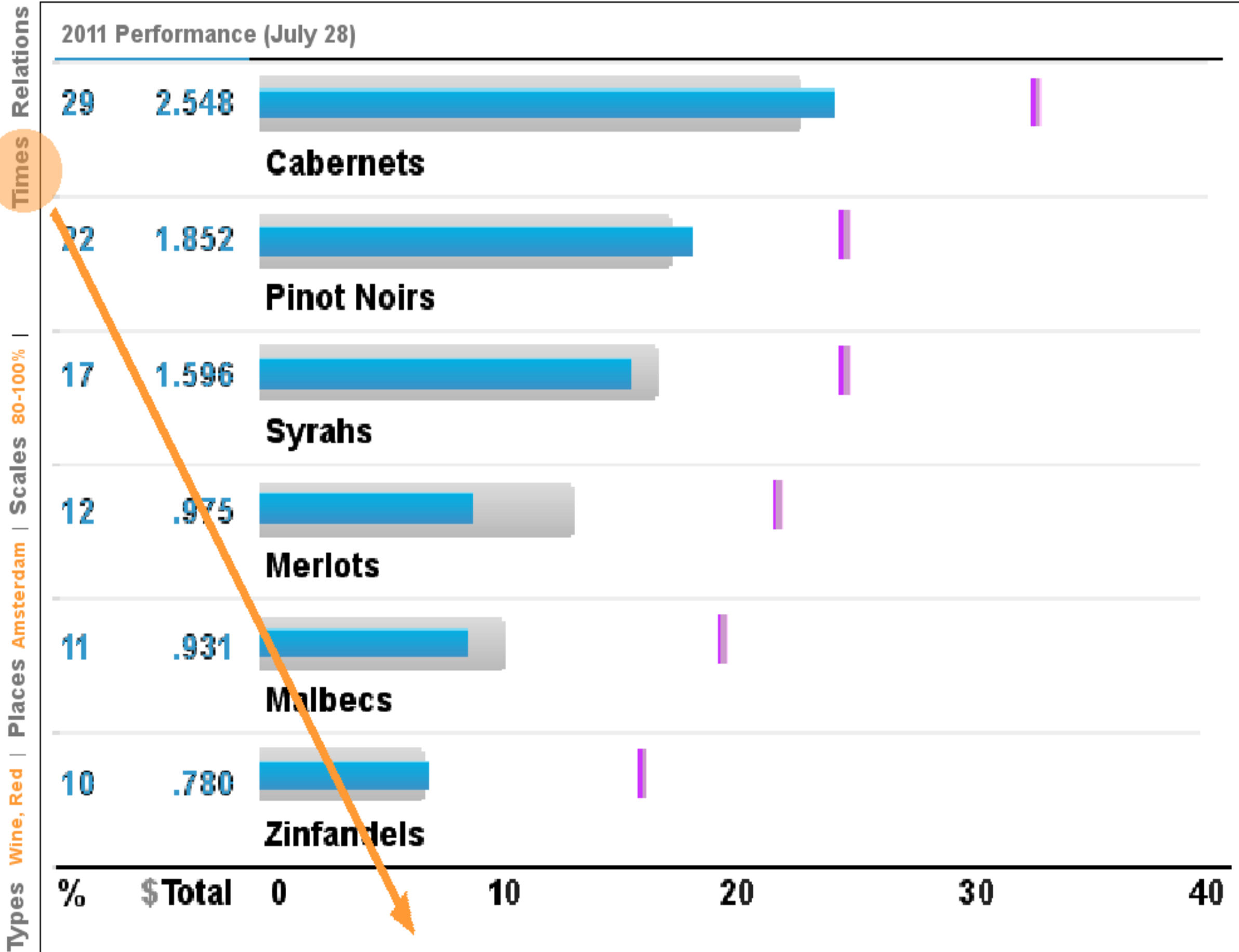
2011 Performance (July 28)



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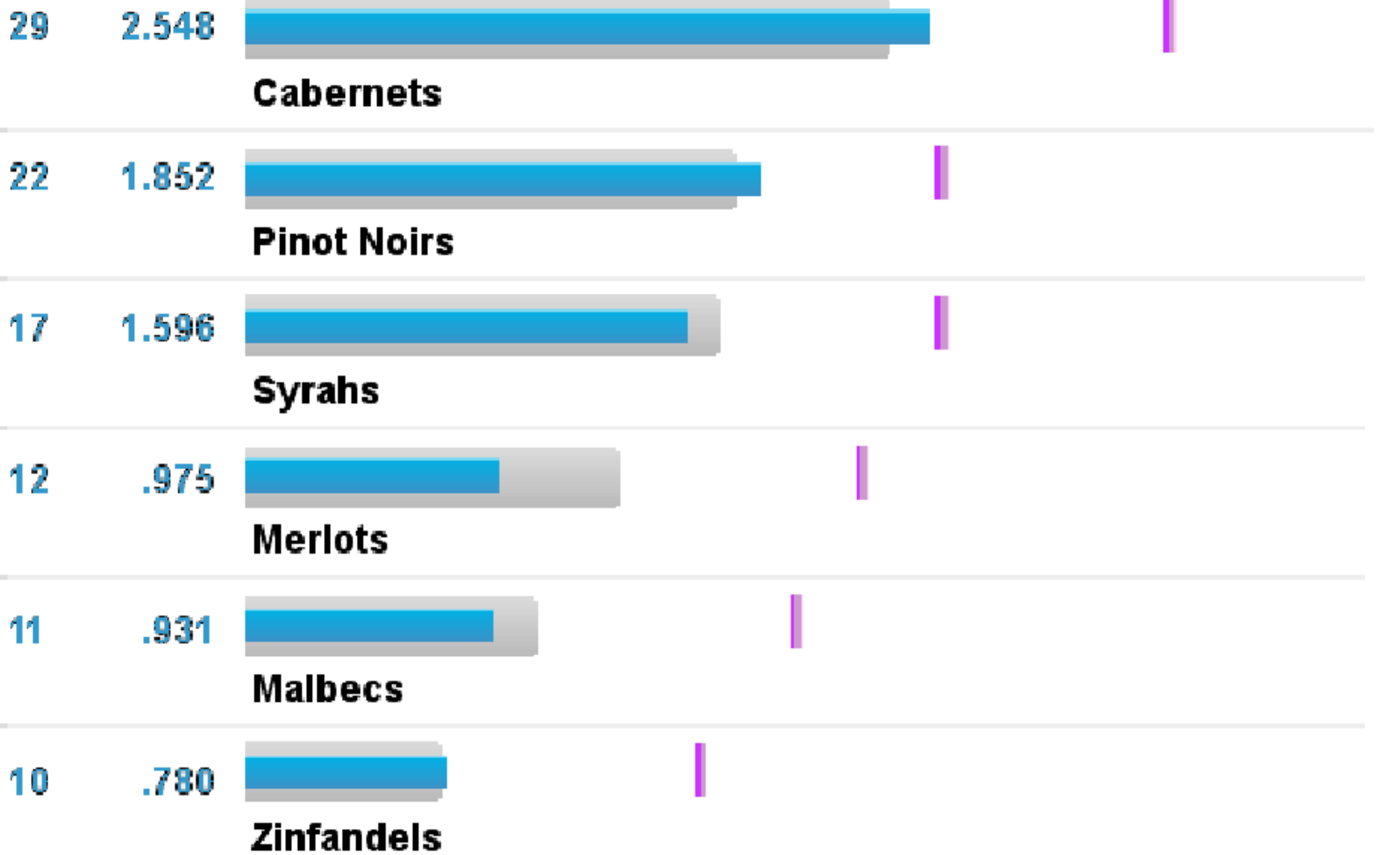


Or, certain Aspects or Dimensions from the Strip can be dropped into the Plain for in-situ filtering as needed by the consumers, as done here with a Time scale with pinch-constrain filtering and perhaps a playback head.



Relations

2011 Performance (July 28)



%	\$ Total	0	10	20	30	40
Times X						
Q2	Q3	Q4	Q1 2008	Q2	Q3	Q4
Q1 2009	Q2	Q3				

Types Wine, Red | Places Amsterdam | Scales 80-100%

Top Reds Amst. | Sales | Performance | by Sub-Group |

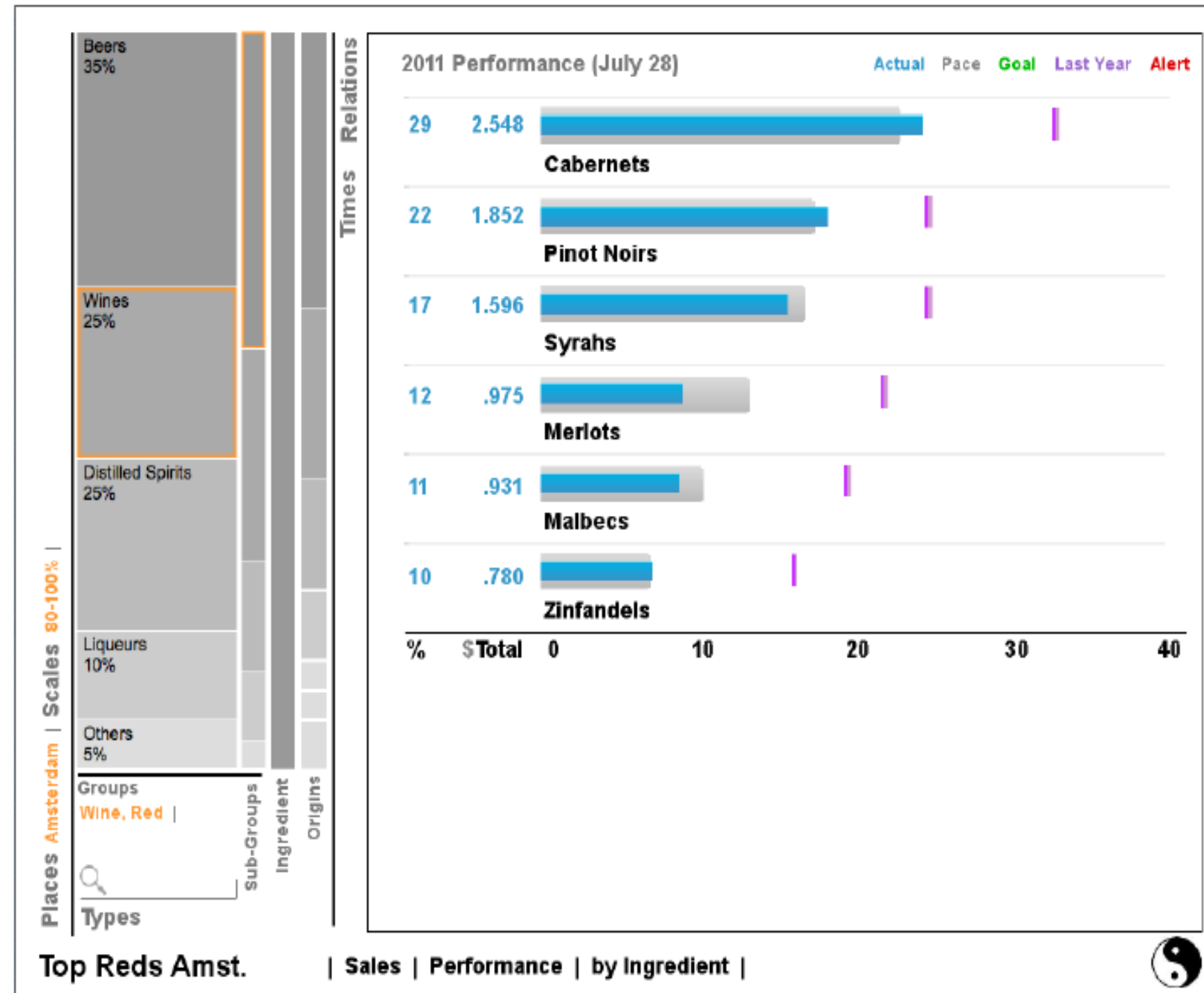


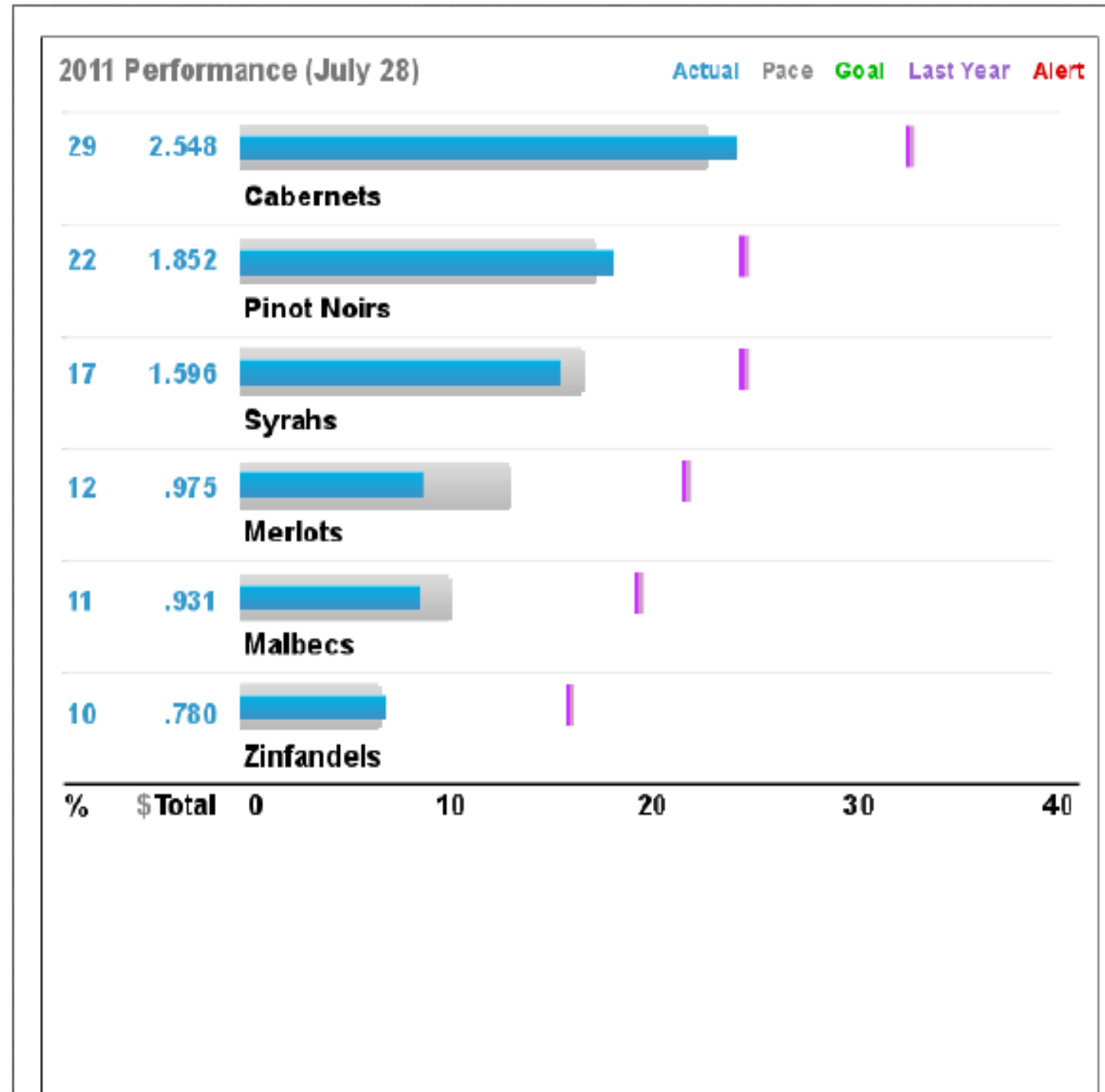
Or, certain Aspects or Dimensions from the Strip can be dropped into the Plain for in-situ filtering as needed by the consumers, as done here with a Time scale with pinch-constrain filtering and perhaps a playback head.

Mobile devices swap displays between landscape and portrait views.

Most apps maintain their content layout and re-draw it to fit the new format. This design uses unique custom layouts for portrait and landscape modes.

Some elements flip on their axis and others do not.

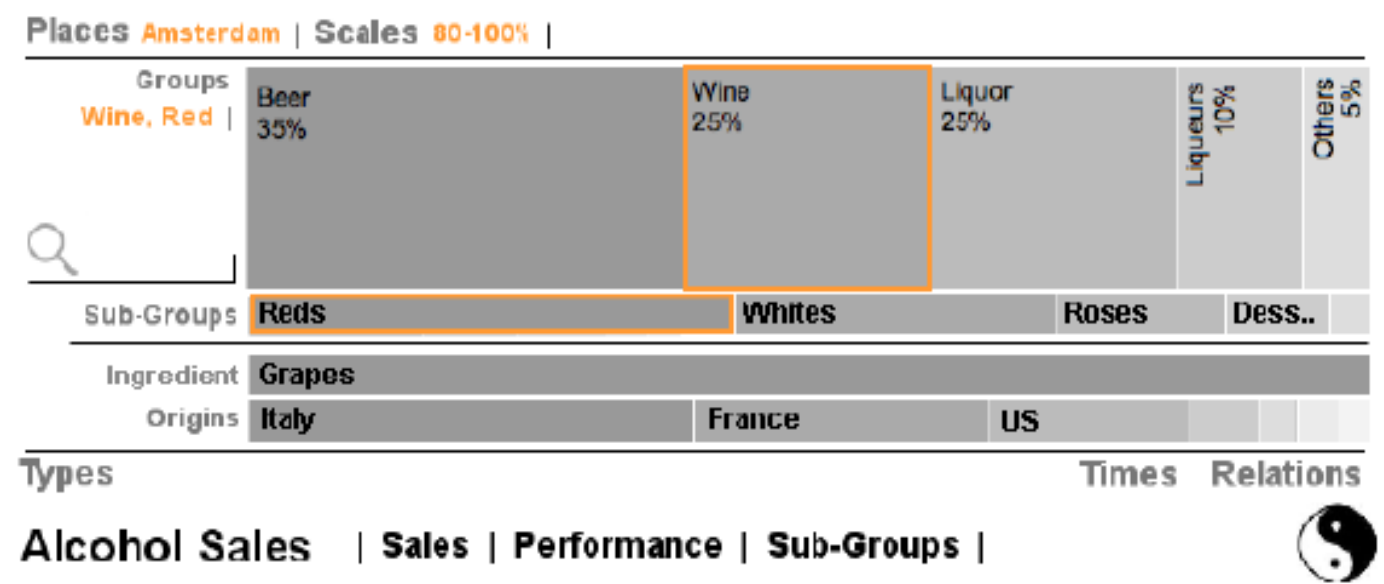




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Main Principles:

- 1. Linear, 1-Dimensional versus 2/3-D spatial depictions (bars)**
- 2. Comparative depictions (versus other values, history, goals, etc.)**
- 3. Prescriptive turnkey systems versus widely inclusive toolkits**
- 4. Latticed layout for scrolling and drilldown**
- 5. Mobile-first but fully adaptable, scaling layout and interaction**
- 6. Multiple-duty for screen elements (titles as buttons, etc.)**
- 7. Buttons at screen bottom for touchscreen ergonomics**
- 8. Browser paradigms for navigation, customization**
- 9. Brilliant (really smart), element scaling / formatting**
- 10. Functional & delightful state transition animations**
- 11. Conveying Imprecision where applicable**