

CDF beyond CDE

... and 5 things you didn't know about slot machines

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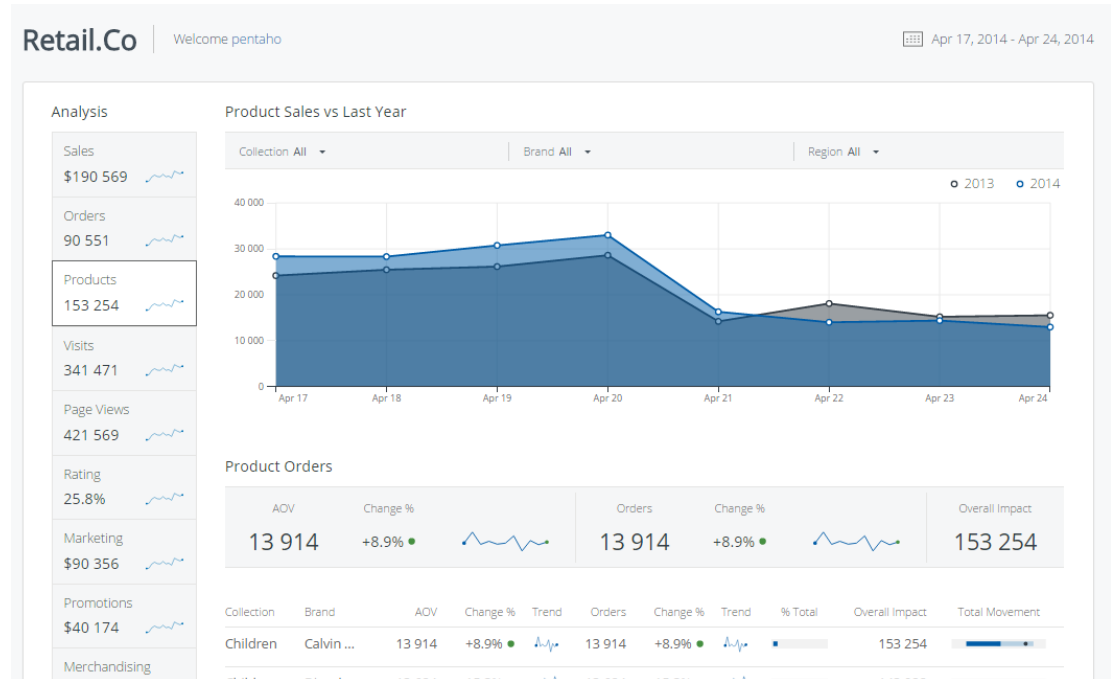
Goal

- Make your life developing in CDF much easier.
- Show how CDF works with, and without CDE and leverage the power of JavaScript.

What is CDF?



- Community Dashboard Framework
- allows the creation of highly customizable dashboards on top of the Pentaho Business Intelligence server
- CDF is based on web development standards such as CSS, HTML5 and JavaScript
- Targeted at developers, CDF is an effective solution to combine Data with an appealing Visualization layer.



What kind of things does CDF do?

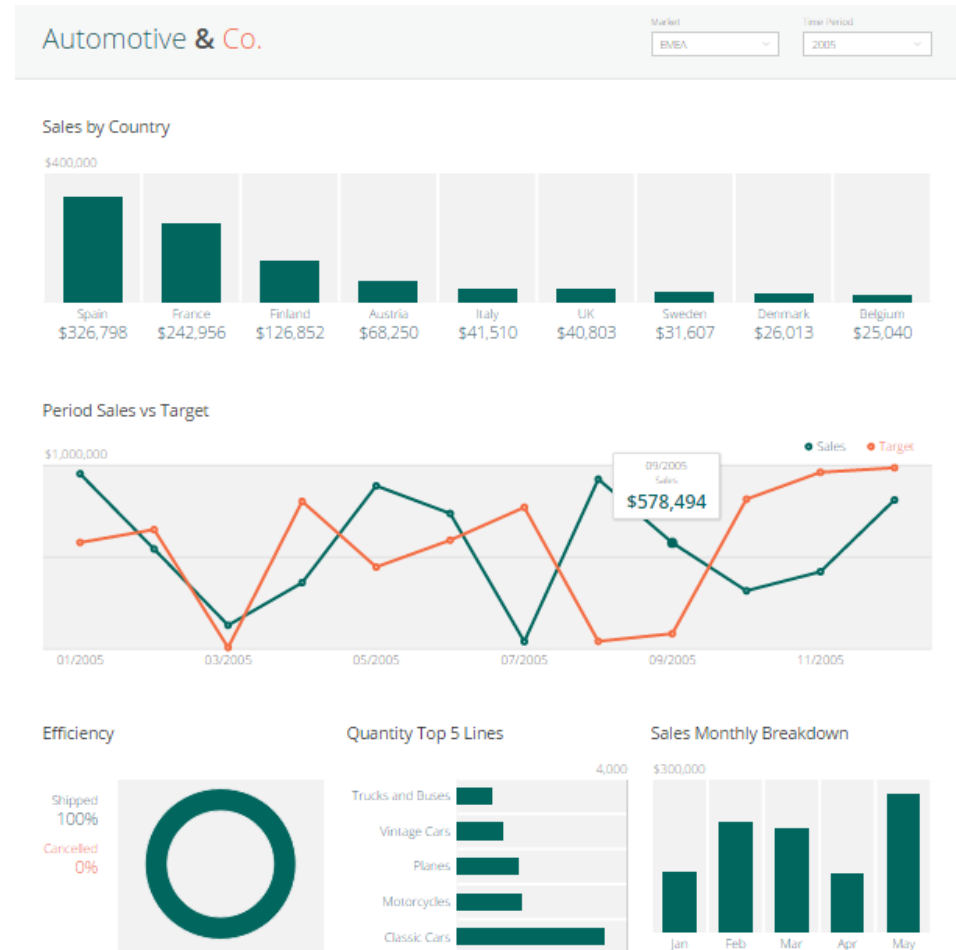
- Components:
 - Charts
 - Selectors
 - Tables
 - Maps
- Parameters:
 - Synchronize parameter values over components
 - Set parameters to specific values
- Queries:
 - Execute queries to backend with a certain priority

CDF Basics

- Needed:
 - Page-layout
 - Data
 - Chart
- CDF Concepts:
 - Layout (rows, columns) > containers
 - DataSource > SQL/MDX Query
 - Component > Chart
- *A chart component uses a datasource and needs a container to render in*

blah blah blah.... tl;dr

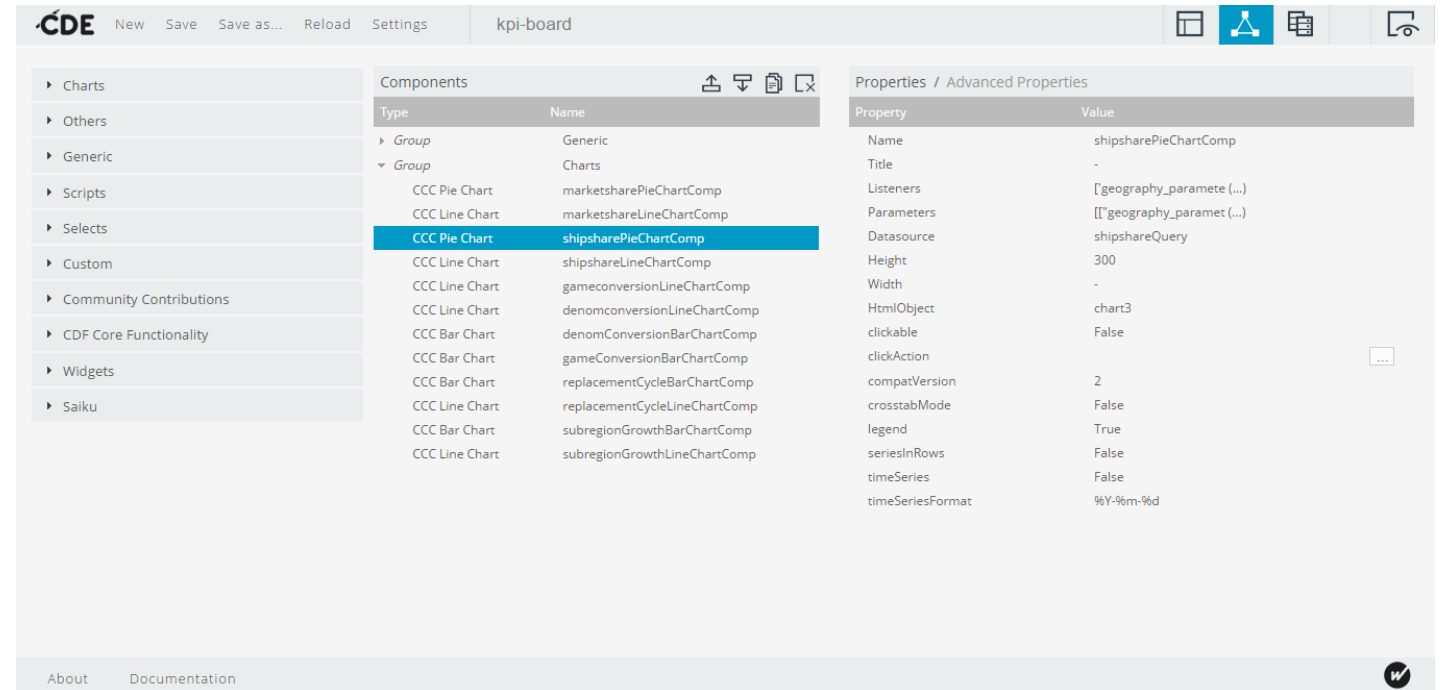
- Pixel-perfect dashboards
- For developers, extremely powerfull
- Can be used stand-alone or with CDE
- To use only CDF, you need to master JavaScript



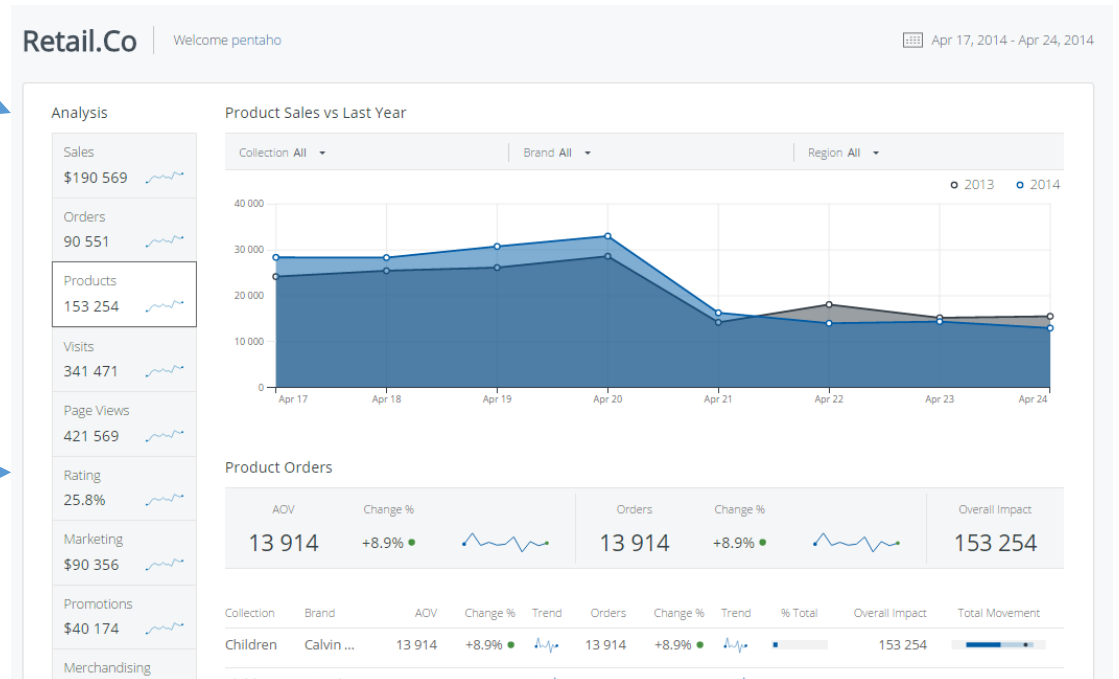
Then, what is CDE?



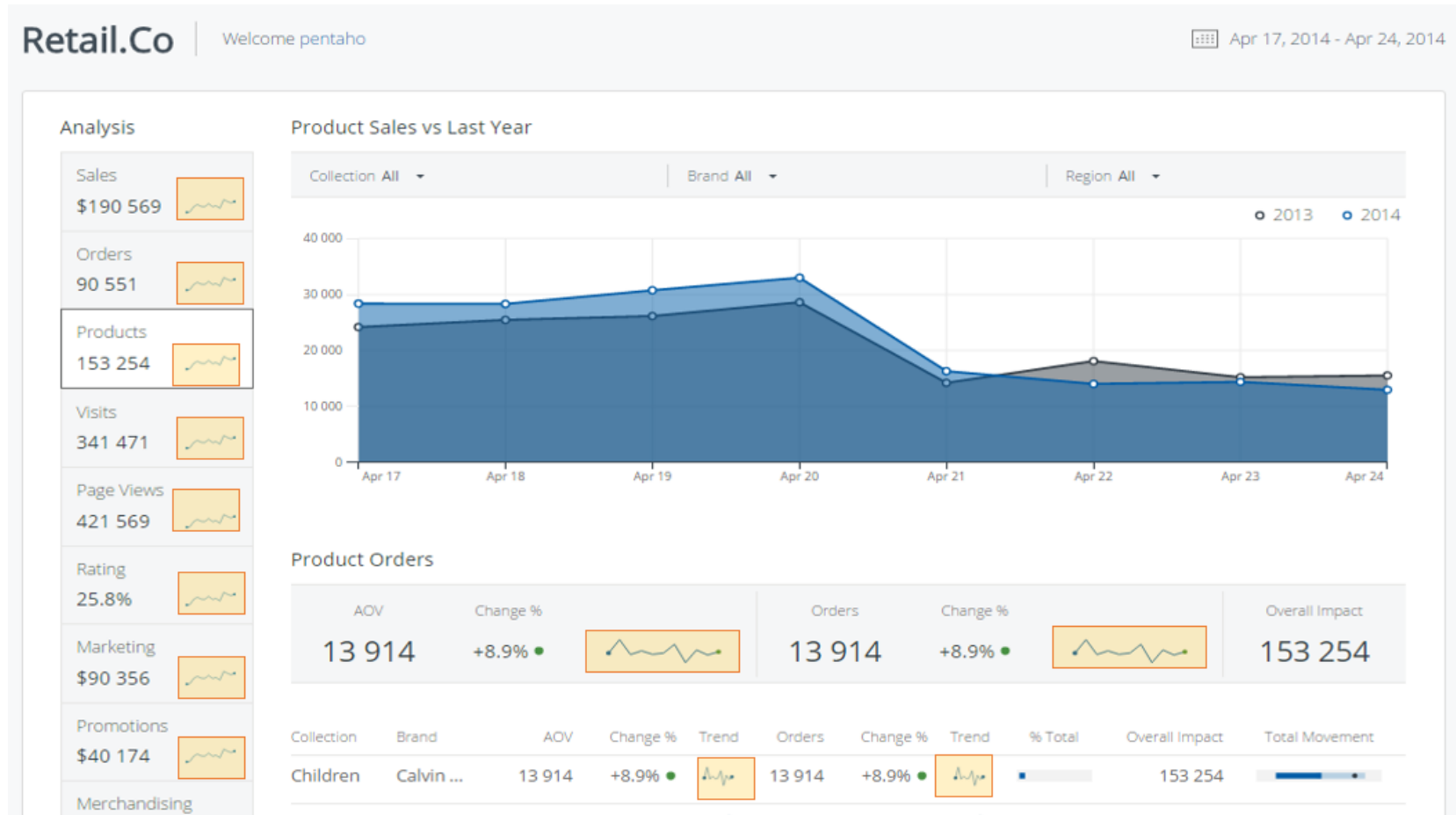
- BA-Server plugin
- Editor for dashboard definitions
- Produces JavaScript that CDF can render
- No need for JavaScript knowledge required
- but... involves a lot of clicks



Very nice, but what has this to do with..... anything?

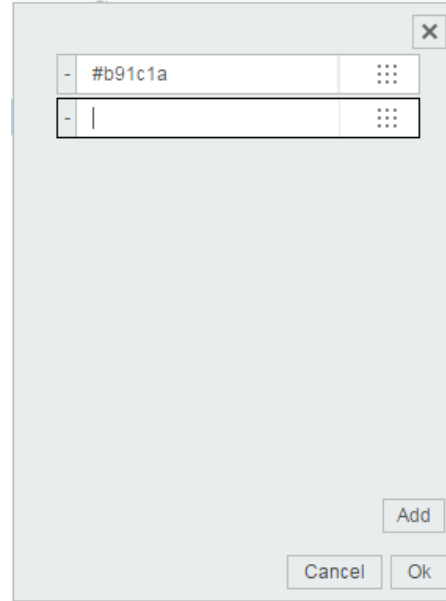


What if your boss wants new colors?



Click Count

- Component
- Advanced Properties
- Colors
- Copy Paste color(s)
- OK



60
clicks!!

Type	Name
Group	Charts
CCC Pie Chart	pie_chart
CCC Bar Chart	bar_chart
CCC Line Chart	line_chart

Property	Value
Name	pie_chart
Title	-
Listeners	[]
Parameters	[]
Datasource	chart_data
Height	400
Priority	5
Refresh Period	-
Width	400
colors	[]
HtmlObject	chart_div
Execute at start	True

Ingredient 1: Chart defaults

```
var ChartDefaults = {  
  chartDefinition: {  
    height: 250,  
    dotsVisible: true,  
    dot_fillStyle: "#FFFFFF",  
    line_lineWidth: 1,  
    colors: ['#b91c1a', '#FF4040', '#FF8080',  
             '#FFC0CB', '#E0E0E0', '#BABABA',  
             '#878787', '#4D4D4D'],  
    baseAxisTitleFont: "10px 'Roboto'",  
    baseAxisFont: "10px 'Roboto'",  
    legendFont: "10px 'Roboto'",  
    ortho2AxisFont: "10px 'Roboto'",  
    ortho2AxisLabelFont: "10px 'Roboto'",  
    ortho2AxisTitleFont: "10px 'Roboto'",  
    orthoAxisFont: "10px 'Roboto'",  
    orthoAxisLabelFont: "10px 'Roboto'",  
    orthoAxisTitleFont: "10px 'Roboto'",  
    plot2ValuesFont: "10px 'Roboto'",  
    smallTitleFont: "10px 'Roboto'",  
    titleFont: "10px 'Roboto'",  
    trendValuesFont: "10px 'Roboto'",  
    valuesFont: "10px 'Roboto'"  
  }  
};
```

Ingredient 2: A way to apply settings

- jQuery.extend can help us to apply our settings

» `jQuery.extend([deep], target[, object1][, objectN])`

```
var defaults = {  
  validate: false,  
  limit: {max: 5, min: 1},  
  name: "foo"  
};  
var options = {  
  validate: true,  
  limit: {max: 10}  
};  
var settings = $.extend(true, {}, defaults, options);
```

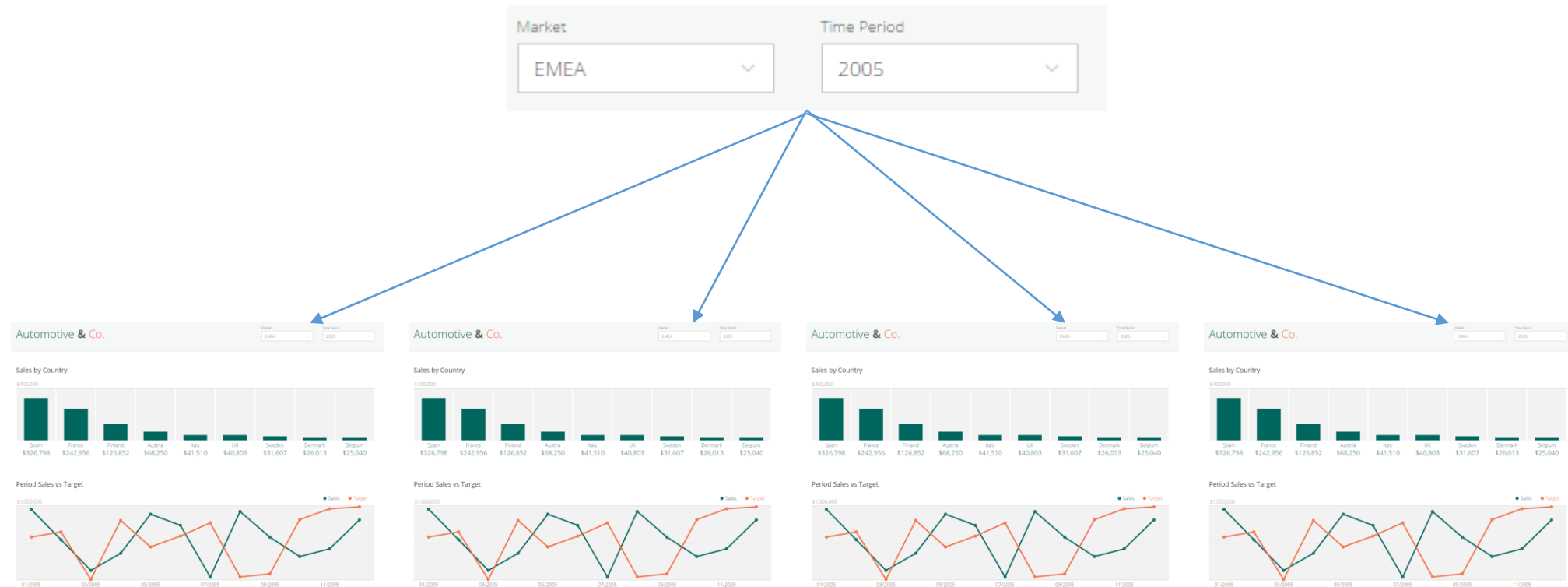
- First take our chart options and then apply the defaults

Ingredient 3: A way to execute this...

- Hook before the object gets 'executed'
- CDF Component Lifecycle to the rescue!
 - PreExecution
 - PostFetch – Right after the data has been fetched
 - PostExecution
 - PreChange
 - PostChange

```
function() {  
    $.extend(true, this, ChartDefaults);  
}
```

Use Case 2: Reusable selectors



Ingredient 1: data

- /public/pentaho_meetup/parameters.cda

```
<?xml version="1.0" encoding="UTF-8"?>
<CDADescriptor>
  <DataSources>
    <Connection id="supplier_query" type="sql.jndi">
      <Jndi>pentaho_meetup</Jndi>
    </Connection>
  </DataSources>
  <DataAccess access="public" connection="supplier_query"
id="supplier_query" type="sql">
    <Cache duration="3600" enabled="true"/>
    <Columns/>
    <Parameters/>
    <Query>SELECT supplier_name FROM supplier</Query>
  </DataAccess>
</CDADescriptor>
```

Properties	
Property	Value
Name	supplier_query
Access Level	Public
Jndi	pentaho_meetup
Query	SELECT supplier_name (...)
Parameters	[]
Calculated Columns	[]
Columns	[]
Output Options	[]
Output Mode	Include
Cache Keys	[]
Cache Duration	3600
Cache	True

Ingredient 2: a component

- Selector is a JS-object

```
var render_supplier_select = {  
  type: "Select",  
  name: "render_supplier_select",  
  priority: 5,  
  parameter: "supplier_parameter",  
  htmlObject: "supplier_div",  
  valueAsId: false,  
  executeAtStart: true,  
  queryDefinition: {  
    dataAccessId: "supplier_query",  
    path: "/public/pentaho_meetup/parameters.cda"  
  }  
};
```

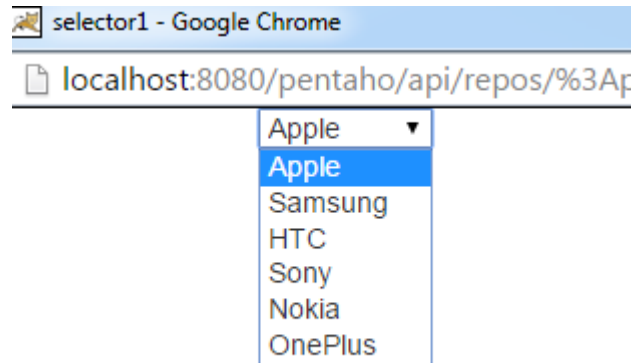
Properties / Advanced Properties	
Property	Value
Name	supplier_select
Parameter	supplier_parameter
Listeners	[]
Parameters	[]
jQuery Plugin	-
Value as id	True
Datasource	supplier_query
Values array	[]
HtmlObject	supplier_div

Ingredient 3: Add component to dashboard

```
var render_supplier_select = {  
  type: "Select",  
  name: "render_supplier_select",  
  priority: 5,  
  parameter: "supplier_parameter",  
  htmlObject: "supplier_div",  
  valueAsId: false,  
  executeAtStart: true,  
  queryDefinition: {  
    dataAccessId: "supplier_query",  
    path: "/public/pentaho_meetup/selector1.cda"  
  }  
};  
Dashboards.addParameter('supplier_parameter');  
Dashboards.addComponent(render_supplier_select);
```

Ingredient 4: Apply on dashboard of choice

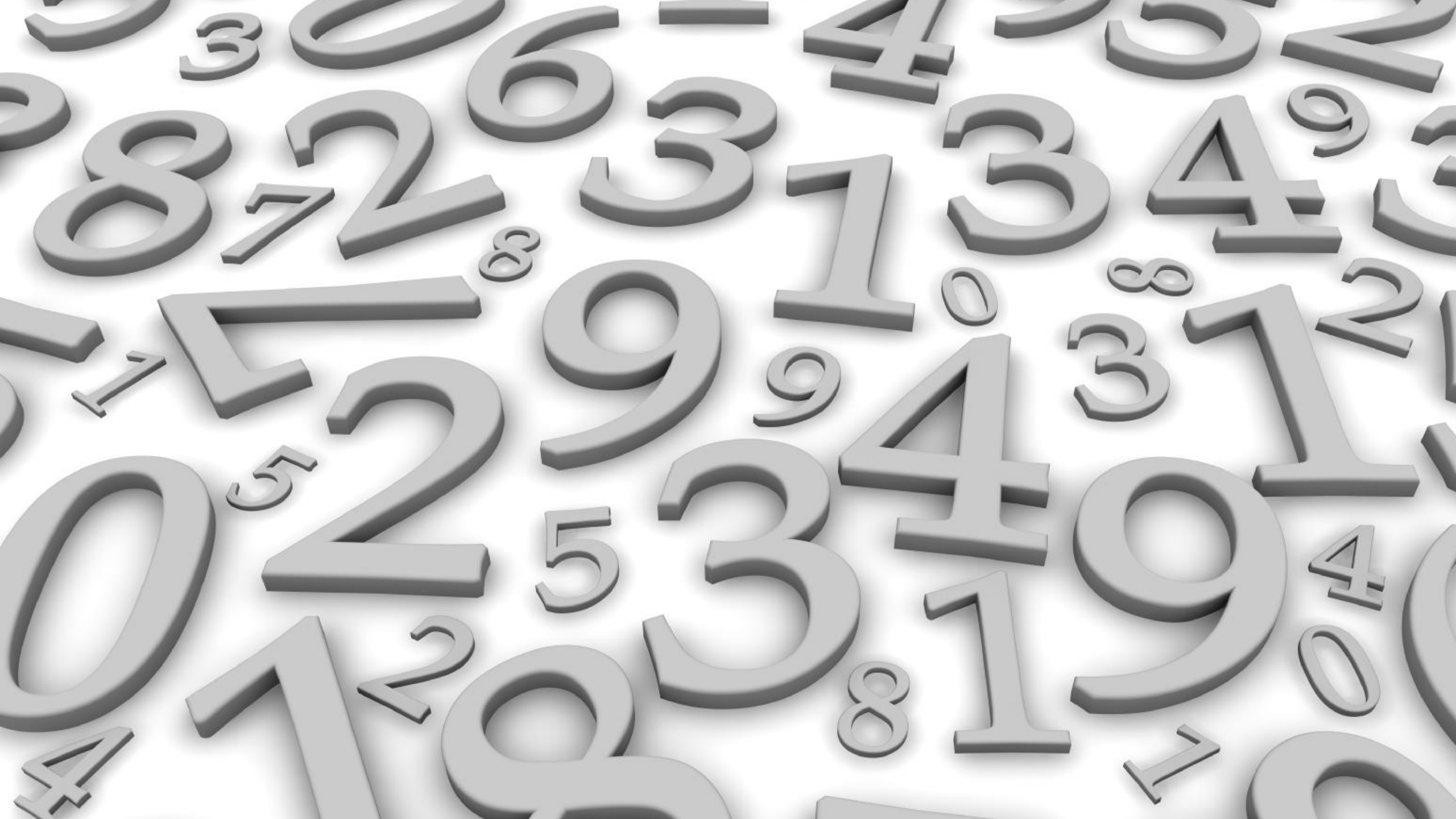
- Create external javascript file
- Create placeholder
- Include JavaScript
- Profit!!!



Conclusion

- Some JavaScript knowledge is very convenient for developing with CDF and CDE
- It will make life a lot easier and your dashboards more beautiful and easier to maintain
- Tips:
 - Learn the basics of JavaScript and while you're at it a bit of jQuery
 - Learn to use the Developer-tools of the browser.
 - Keep you eye out for: Learning Pentaho Ctools by Miguel Gaspar (Out March 1, 2016)

5 things you didn't know about slot machines





1:163.840

85% - 99%

\$1250.-