



Dynamic SVG graphs for XForms



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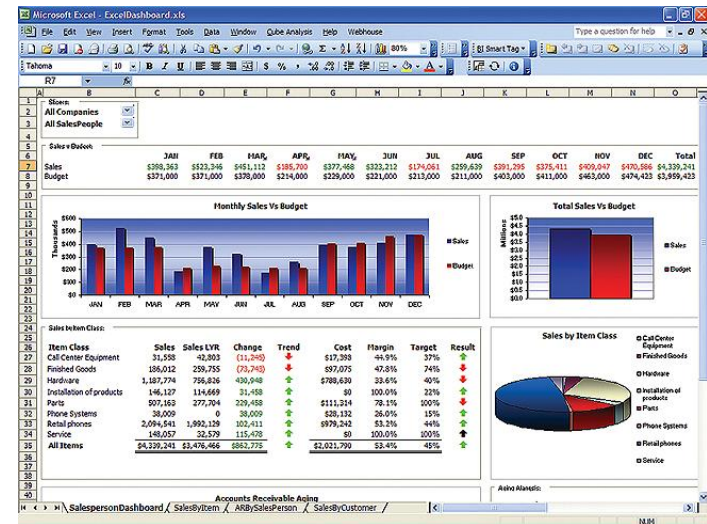
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Business Web Applications

Graphs wanted for dashboards!

Today's Web Applications are based on server-side graph generation.


Because of Microsoft Excel, users consider graphs as a must-have.



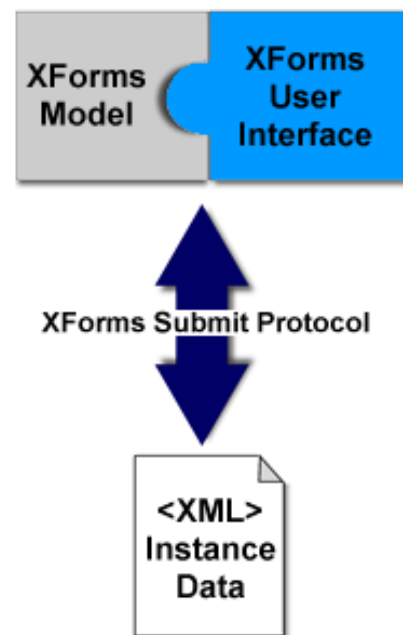
XForms

Rich forms without Javascript including validation and submission.

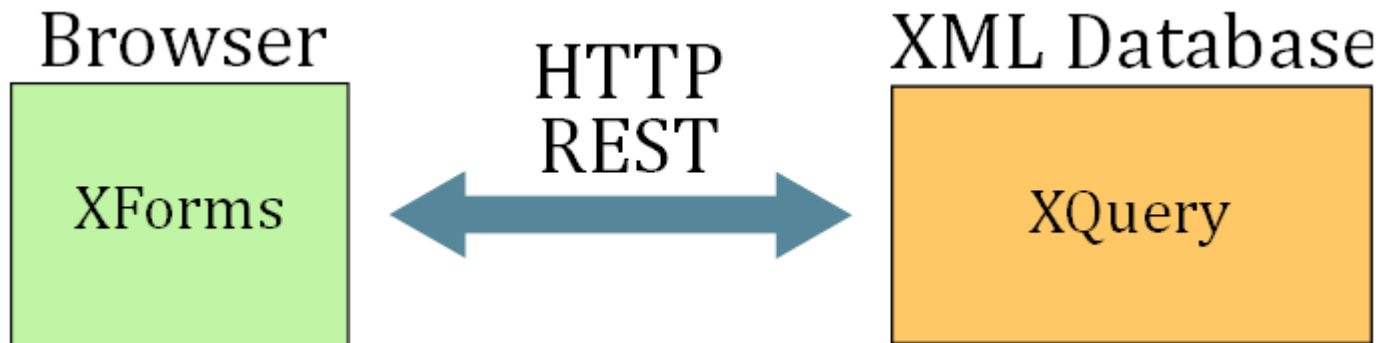
Can be hosted by HTML pages.

 W3C[®] XForms 1.1
W3C Recommendation 20 October 2009

```
<xf:input ref="number">  
  <xf:label>Credit Card Number:</xf:label>  
</input>  
<xf:input ref="expiry">  
  <xf:label>Expiration Date:</xf:label>  
</xf:input>  
.....
```



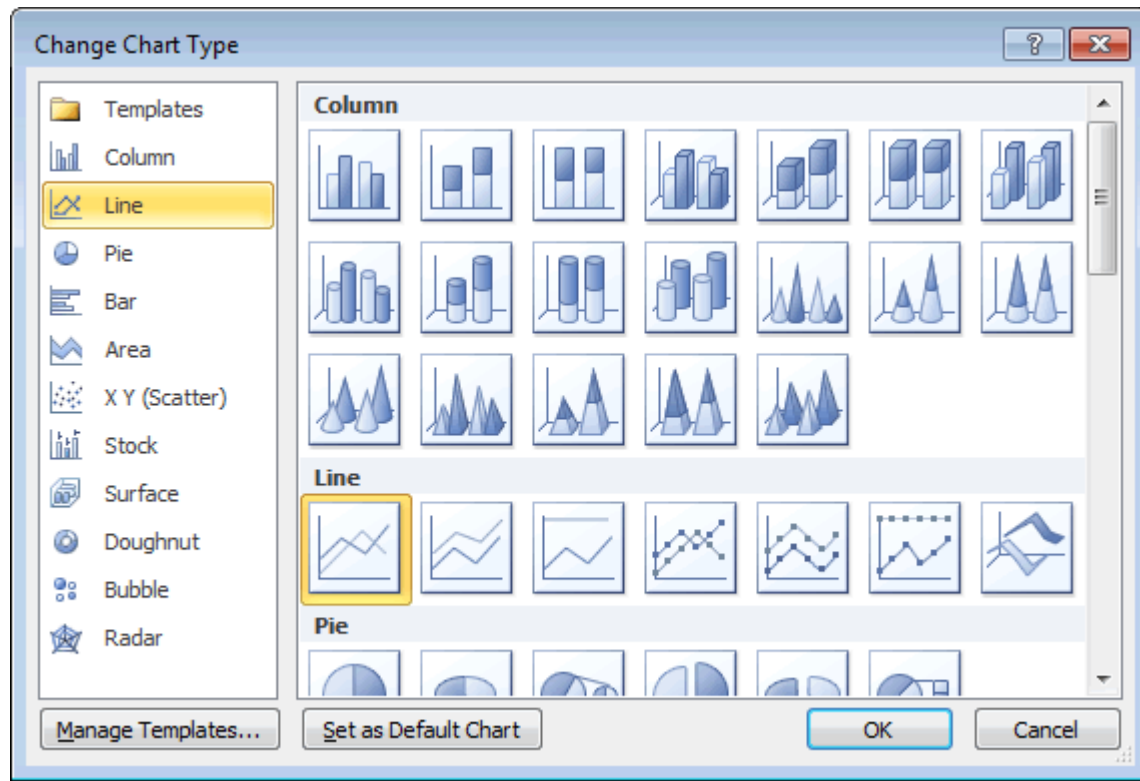
A full-XML Architecture



Zero translation!

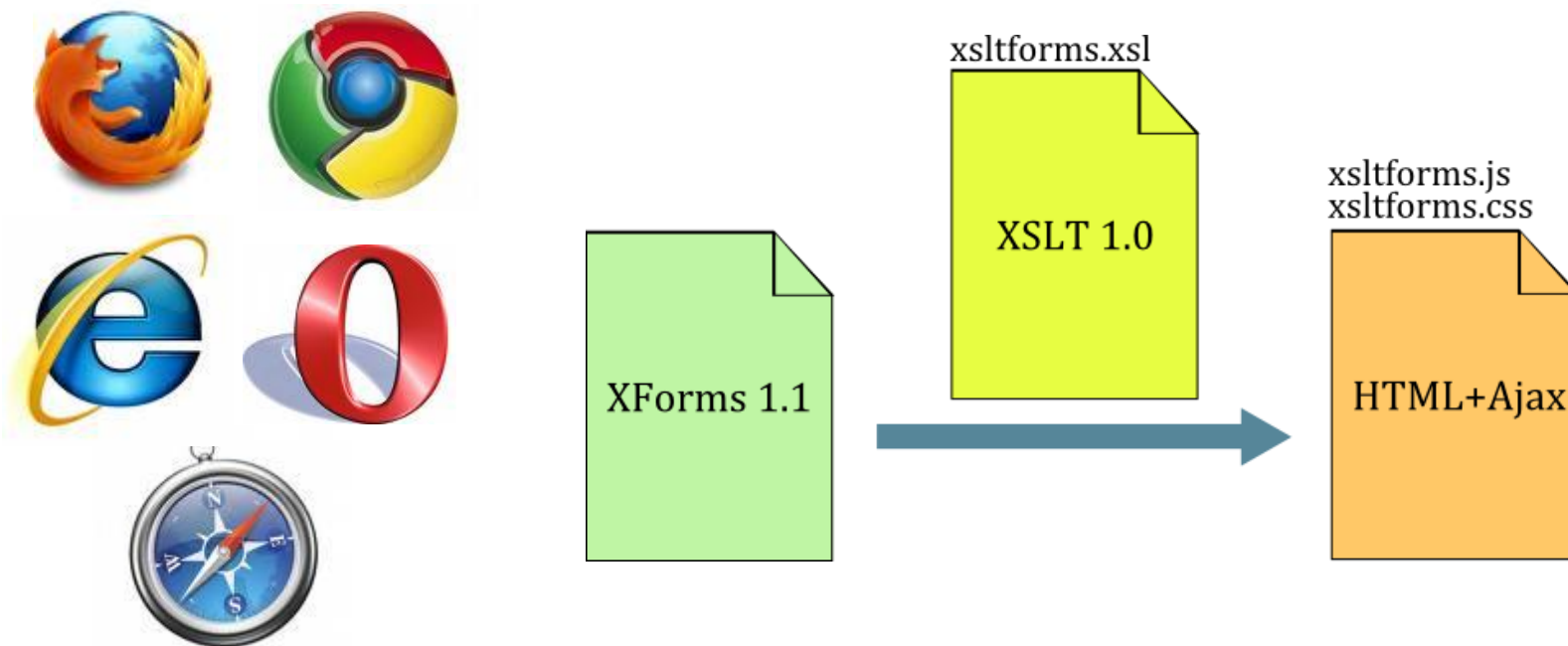
Rich Graphs

Users are expecting a wide choice!



Existing Components...

XSLTForms: a client-side XForms implementation based on XSLT and AJAX



Existing Components...



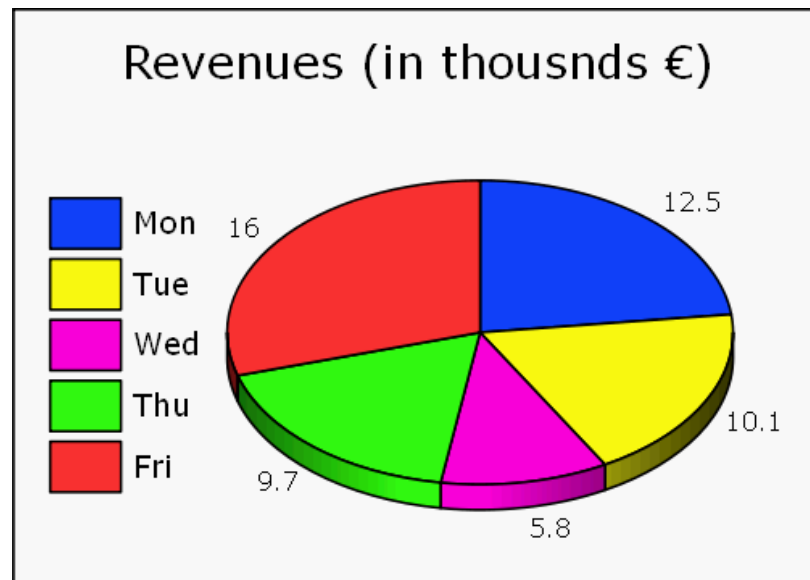
Graph2svg: Powerful XSLT 2.0 stylesheets to transform chart data into rich SVG graphs.

Developed by Jakub Vojtíšek

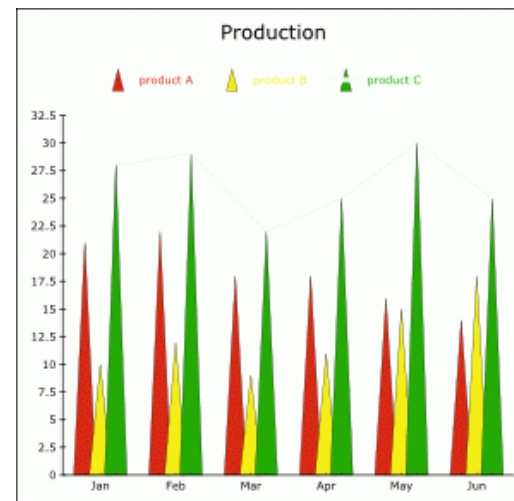
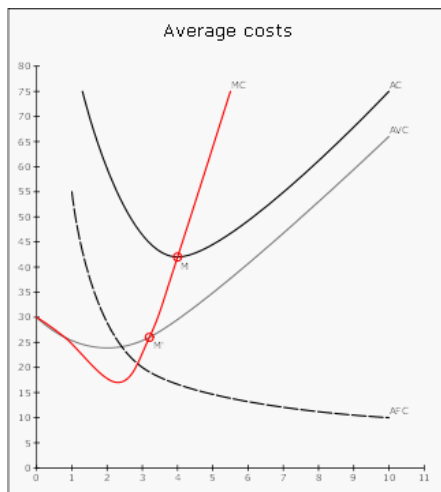
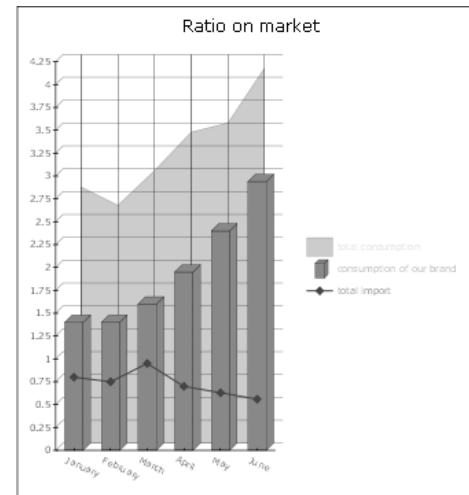
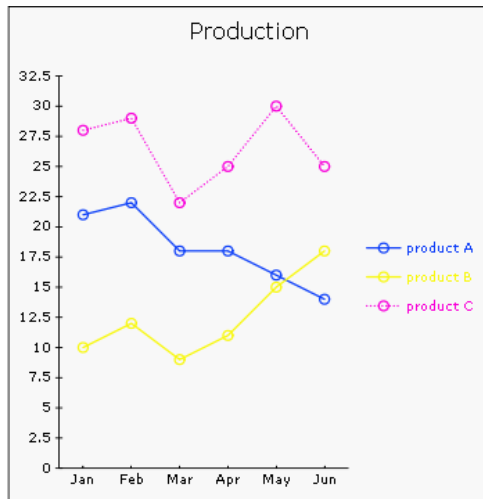
http://graph2svg.jinak.cz/about_en.html

Existing Components...

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE osgr SYSTEM "osgr.dtd">
<osgr
xmlns="http://graph2svg.googlecode.com"
graphType="pie" effect="3D" legend="left"
labelOut="value">
  <title>Revenues (in thousnds
&#x20ac;)</title>
  <names>
    <name>Mon</name>
    <name>Tue</name> ...
  </names>
  <values>
    <value>12.5</value>
    <value>10.1</value> ...
  </values>
</osgr>
```



Existing Components...





Existing Components...

Native SVG support for FireFox, Chrome, Opera and Safari.

Internet Explorer 9 with SVG:

When? For Windows XP too?

Alternative solutions:

SVGWeb, svg2xaml, svg2vml, ...

SVG and XForms

- Inline SVG with XForms controls:
 - A more or less limited approach
- SVG instances:
 - Use of `xf:output` with `@mediatype="image/svg+xml"`
 - Not a modular architecture
- SVG widgets as XSLT stylesheets:
 - Transformations are to be performed at refresh



Selected Components

- XSLTForms to be improved
- Graph2svg to be rewritten in XSLT 1.0
- A simple gauge widget to be developed
- Svg2xaml to be improved for Internet Explorer support only

XSLTForms improved

- `@mediatype="image/svg+xml"` added :
 - OBJECT element added for HTML
 - Extra XSLT transformation for Internet Explorer
- XPath transform() function added with external XSLT 1.0 stylesheet

Graph2svg for XSLT 1.0

- XPath 2.0 is much more complex than XPath 1.0
 - "max((a,b))" replaced by " $(a - b) * \text{number}(a > b) + b$ "
- Math functions such as sin(), log() have to be written using specific algorithms with recursive named templates

A Gauge Widget

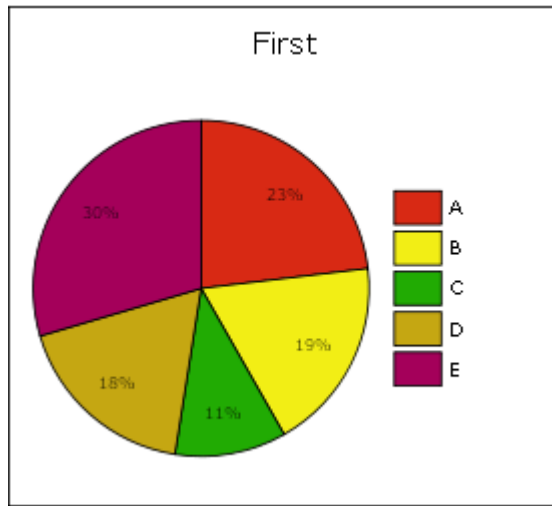
```

<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
                xmlns:gs="http://graph2svg.googlecode.com" version="1.0">
  <xsl:output method="xml" encoding="UTF-8"/>
  <xsl:template match="gs:ongr">
    .....
    <svg xmlns="http://www.w3.org/2000/svg" version="1.0" width="177"
        height="203.20624" style="overflow:hidden">
      .....
      <text x="89.330505" y="14.316406" style="font-size:20px;
        text-anchor:middle;fill:#333333;fill-opacity:1;stroke:none;
        font-family:arial"><xsl:value-of select="gs:title"/></text>
      .....
      <g transform="rotate({(gs:value - gs:min) * 270 div gs:max}, 98, 98)">
        .....
      </g>
    </svg>
  </xsl:template>
</xsl:stylesheet>

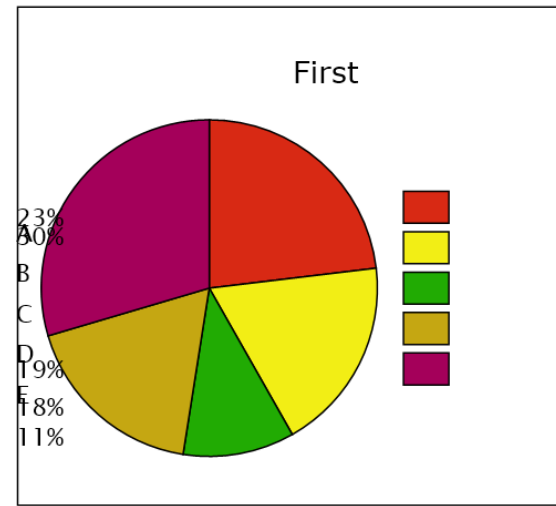
```



Svg2xaml to improve



SVG

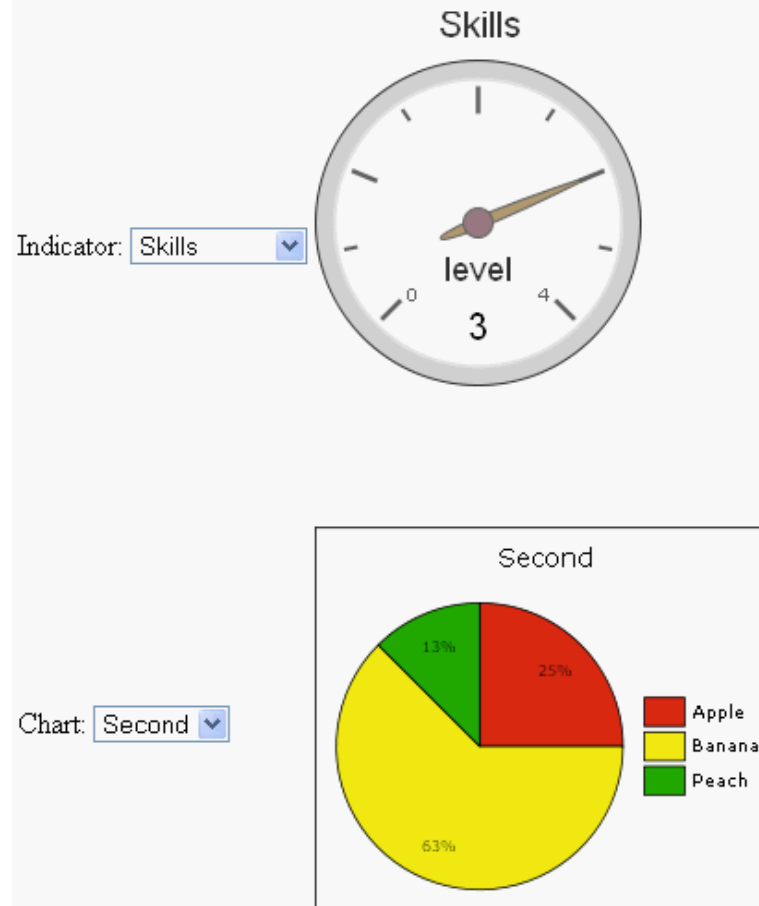


XAML

XSLTForms Demo

Debug W3C XForms 1.1  powered by XSLTForms

Graph Tests with XSLTForms



Conclusion

- SVG is a very good solution for dynamic graphs generated with XForms at client-side
- Even if workarounds can be found, native SVG is very important for compatibility and performance



Questions?

Thank you for your attention!

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