Dynamic SVG graphs for XForms

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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.

XForms 1.1
W3C Recommendation 20 October 2009

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

A full-XML Architecture

Browser

XForms

HTTP
REST

XML Database

XQuery

Zero translation!
Rich Graphs

Users are expecting a wide choice!
Existing Components...

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

[Diagram showing XForms 1.1, xsltforms.xsl, XSLT 1.0, xsltforms.js, xsltforms.css, and HTML+Ajax]
Existing Components...

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

Developed by Jakub Vojtíšek

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 thousands €)</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:
  o A more or less limited approach

• SVG instances:
  o Use of xf:output with @mediatype="image/svg+xml"
  o Not a modular architecture

• SVG widgets as XSLT stylesheets:
  o 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) * number(a &gt; 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">
    ..........  
  </xsl:template>
</xsl:stylesheet>
```

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Svg2xaml to improve

SVG

XAML

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Graph Tests with XSLTForms

Skills

Indicator: Skills

Chart: Second

Second

- Apple: 25%
- Banana: 63%
- Peach: 13%

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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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