An Evaluation of RIA Frameworks

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Outline

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- Concepts of RIA
- Evaluation of RIA Frameworks
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Introduction

- RIA means Rich Internet Application
- The main goal of this work was to make an evaluation of RIA Frameworks. Why?
  - Because there are a lot of RIA Frameworks.
  - It’s important to select the best.
Motivation

- What is the best RIA framework?
- How to evaluate a RIA Framework?
Motivation

Who will Win?

Adobe Flex  Microsoft SilverLight  JavaFX  OpenLaszlo
RIA Concepts

RIA Definition

Among several definitions of RIA, Macromedia defines RIA’s as combination of:

- Best of desktop software applications;
- Best of communications;
- Best of the web.

Source: Macromedia, 2002
RIA Concepts

- **RIA framework:**
  The tools and environments that allow the development of RIA.
  - Examples: Adobe Flex, JavaFX, Microsoft Silverlight, OpenLaszlo
    ... among others.
Evaluation of RIA Frameworks

- To make an evaluation of a RIA Framework the first step was to select the evaluation criteria;

- Selected parameters were: Maturity, IDE Integration, UI Code, Community Involvement and Software requirements.

- Evaluated frameworks were: Adobe Flex, Microsoft Silverlight, Sun JavaFX and OpenLaszlo.
Maturity

- Maturity is measured by the current version of the framework.

Adobe Flex
- 2002
  The current version is Flex V4 SDK beta 2

Microsoft SilverLight
- 2007
  The current version is 4.0 beta 1.

JavaFX
- 2008
  The current version is JavaFx 1.2

OpenLaszlo
- 2001
  The current version is OpenLaszlo 4.6.1
IDE Integration

- IDE integration is measured according to the existence of a plug-in for Eclipse.

Adobe Flex
Adobe Flex Builder 3.0.2 Professional Eclipse Plugin

Microsoft SilverLight
Eclipse4SL

JavaFX
JavaFx Plugin for Eclipse

OpenLaszlo
IDE4Laszlo
UI code

- Analysis of the programming language used in the development.

- Adobe Flex
  - MXML

- Microsoft Silverlight
  - XAML

- JavaFX
  - JavaFX Script

- OpenLaszlo
  - LZX
Community Involvement

- Community involvement is more easily recognized by the number of technical documentation produced, like tutorials, hints, and bug’s database.

- The measurement of community involvement was made based on the number of results obtained by Google containing the name of the framework and the term tutorial.

<table>
<thead>
<tr>
<th>Framework</th>
<th>Search Terms</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adobe Flex</td>
<td>flex tutorial</td>
<td>3,620,000</td>
</tr>
<tr>
<td>Microsoft Silverlight</td>
<td>silverlight tutorial</td>
<td>1,600,000</td>
</tr>
<tr>
<td>JavaFX</td>
<td>javafx tutorial</td>
<td>334,000</td>
</tr>
<tr>
<td>OpenLaszlo</td>
<td>openlaszlo tutorial</td>
<td>118,000</td>
</tr>
</tbody>
</table>
Community Involvement

- Adobe Flex: Very Good
- Microsoft SilverLight: Good
- JavaFX: Sufficient
- OpenLaszlo: Weak
Software Requirements

- Software Requirements in this context, is the plug-ins or software needed to run an application.

- Adobe Flex
- Microsoft SilverLight
- JavaFX
- OpenLaszlo
  - Adobe Flash Player
  - Silverlight Plug-in
  - Java Plug-in with JavaFX extension
  - Adobe Flash Player or DHTML
Results

- This table summarizes the comparison results.

<table>
<thead>
<tr>
<th>Evaluation Parameters</th>
<th>RIA Frameworks</th>
<th>Adobe Flex 1</th>
<th>Microsoft Silverlight 2</th>
<th>JavaFx 3</th>
<th>OpenLaszlo 4</th>
<th>Lider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maturity</td>
<td></td>
<td>4.0 beta 2</td>
<td>4.0</td>
<td>1.2</td>
<td>4.6.1</td>
<td>4</td>
</tr>
<tr>
<td>UI Code</td>
<td></td>
<td>MXML</td>
<td>XAML</td>
<td>JavaFX Script</td>
<td>LZX</td>
<td>1,2,4</td>
</tr>
<tr>
<td>IDE Integration</td>
<td></td>
<td>Adobe® Flex® Builder 3.0.2 Prof.</td>
<td>Eclipse4SL</td>
<td>JavaFX 1.2 Plugin</td>
<td>IDE4Laszlo</td>
<td>2,3,4</td>
</tr>
<tr>
<td>Community involvement</td>
<td></td>
<td>Very Good</td>
<td>Good</td>
<td>Sufficient</td>
<td>Weak</td>
<td>1</td>
</tr>
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<td>Adobe Flash Player</td>
<td>Silverlight Plug-in</td>
<td>Java Plug-in with JavaFX extension</td>
<td>Adobe Flash Player or DHTML</td>
<td>1,4</td>
</tr>
</tbody>
</table>
Conclusion

- Each RIA framework has its own strengths and limitations;
- After this work, I think at moment the better RIA Framework is Adobe Flex due to: maturity, software requirement (Adobe Flash Player), and Community Involvement.

(Possible) Future Work

Include other parameters in the comparison, like: code complexity management, Web services support, user experience, among others.
Questions?

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