Building Rich Applications with Appcelerator

Matt Raible
Colorado Software Summit 2008
http://www.linkedin.com/in/mraible
Introductions

- Your experience with web applications?
- Have you heard of SOFEA or SOUI?
- Experience with RIA Frameworks?
- What do you want to get from this session?
Raible
My Education

Здравствуйте!
My Career

http://flickr.com/photos/castor_lycan/304065526/
The Problem

Struts

Struts²

Spring

Spring 2.0

tapestry

Appcelerator

Webwork

“I’ve been Thinking in Java, now I’m Thinking in Flex.”
Bruce Eckel, Author, Thinking in Java

Google

Google Web Toolkit

ZK

Simply Rich

Grails

Rails

Rails

Wicket
How do you choose?
Eliminate, Don’t Include

It’s not about including choices, it’s about eliminating them.
Session Agenda

- SOFEA and SOUI
- Appcelerator Overview
  - Creating a Project
  - Application Demo
- Comparison with Flex and GWT
- Conclusion and Q & A
SOFEA and SOUI

- SOFEA first introduced in Life above the Service Tier on 10/12/2007.
  

- SOUI introduced by Nolan Wright and Jeff Haynie in early November 2007.
  
SOFEA and SOUI (Continued)

- SOFEA Authors have since formed the Thin Server Architecture Working Group.  
  ➤ [http://www.thinserverarchitecture.com](http://www.thinserverarchitecture.com)

- Nolan and Jeff developed Appcelerator.  
  ➤ [http://www.appcelerator.org](http://www.appcelerator.org)
SOFEA Principles

- Decouple the three orthogonal Presentation Tier processes of Application Download, Presentation Flow and Data Interchange. This is the foundational principle of SOFEA.
- Explore various Application Download options to exploit usefully contrary trade-offs around client footprint, startup time, offline capability and a number of security-related parameters.
- Presentation Flow must be driven by a client-side component and never by a server-side component.
- Data Interchange between the Presentation Tier and the Service Tier must not become the weakest link in the end-to-end application chain of data integrity.
- Model-View-Controller (MVC) is a good pattern to use to build the Presentation Tier.
**SOFEA (Service-Oriented Front-End Architecture)**

- **Presentation Flow (PF)**
  - Managed entirely by the client application

- **Client Application**
  - Model
  - Controller

- **Application Container**
  - Native OS, browser, JVM, browser plugin, or other runtime

- **Download Server**
  - Application Download (AD)
  - Not involved in Presentation Flow or Data Interchange

- **SOA Business Services**
  - SOAP
  - REST
  - Data Interchange (DI)

**XML-formatted data, Client/Server and/or Peer-to-Peer styles**
Recommended Frameworks

- DHTML/AJAX frameworks for Modern Browsers
  - Largely handcoded with third party JavaScript libraries
  - Google Web Toolkit
  - TIBCO General Interface Builder
- XML Dialects for Advanced Browsers
  - XForms and XHTML 2.0
  - Mozilla XUL
  - Microsoft SilverLight/XAML
- Java frameworks
  - Java WebStart (with/without Spring Rich Client)
  - JavaFX
- Adobe Flash-based frameworks
  - Adobe Flex
  - OpenLaszlo
Appcelerator
SOA in the Browser

1. `<div on="click then r:login.request">Login</div>`
2. `<img src="indicator.gif" on="r:login.request then show" style="display:none"/>
3. `@Service (request="login.request", response="login.response")
   protected void myService (Message req, Message resp)
   {
     // service logic
   }

- Browser
- Server
- Message Broker
- Service Broker`
Web Expression Language

- Widget Syntax

```xml
<app:iterator property="rows" on="r:user.response then execute">
  <html:div>
    {{first_name}} {{last_name}}
  </html:div>
</app:iterator>
```

- Web Expression Language Syntax

```xml
<div set="control[app:iterator]" property="rows" on="r:user.response then execute">
  <div>
    {{first_name}} {{last_name}}
  </div>
</div>
```

- [http://try.appcelerator.org](http://try.appcelerator.org)
Widgets

Happiness Meter

- Easy to Use
- Fun to Use
- Makes me coffee

Appcelerator
Flex
Open Lazlo
Google Web Toolkit

Select Start Date

My Grid Panel

Sort Ascending
Sort Descending
Columns

public class LoginService {

    @Service(request = "login.request", response = "login.response")
    protected void login(Message request, Message response)
            throws Exception
    {
        // get request data
        String username = request.getData().getString("username");
        String password = request.getData().getString("password");

        Also has Service Integration Points for PHP, Ruby, .NET, Python and Perl.
Other Examples

- **appTunes** - widget that wraps Flex Cover Flow widget
- **Snappshot** - photo editing application
- **Radio Javan** - Persian music online
- **SkyBlox** - builds neighborhoods
- More at [http://www.appcelerator.org/demos](http://www.appcelerator.org/demos)
Creating a Project

- Download and install from [http://appcelerator.org/download](http://appcelerator.org/download)
- `app create:project` *directory*
  `project_name` *java*
- `app run:project`
- Go to [http://localhost:4000](http://localhost:4000)
- To create a war, run `ant`
Application Demo
Get the Source

- https://svn.appcelerator.org/appcelerator_sdk/trunk/
- https://svn.appcelerator.org/appcelerator_ide/trunk/
- https://svn.appcelerator.org/appcelerator_doc/trunk/
- https://svn.appcelerator.org/appcelerator_examples/trunk/
Comparing RIA Frameworks
Adobe Flex

- Flex SDK under Mozilla Public License
- Active Community
  - Yahoo Group: [http://tech.groups.yahoo.com/group/flexcoders](http://tech.groups.yahoo.com/group/flexcoders)
  - User Groups: [http://flex.org/usergroups_list](http://flex.org/usergroups_list)
- 360|Flex
- Recommended Books
  - Flexible Rails by Peter Armstrong
  - Flex 3 in Action by Tariq Ahmed
  - Flex on Java by Allmon and Anderson
Google Web Toolkit

- [http://code.google.com/webtoolkit](http://code.google.com/webtoolkit)
- Apache 2.0 License
- Active Community
  - [http://groups.google.com/group/Google-Web-Toolkit](http://groups.google.com/group/Google-Web-Toolkit)
- Pearson’s Google Web Toolkit Conference and Google I/O
- Recommended Books
  - GWT in Action by Hanson and Tacy
  - GWT in Practice by Cooper and Collins
  - Google Web Toolkit Solutions by Geary and Gordon
Appcelerator

- [http://appcelerator.org](http://appcelerator.org)
- Apache 2.0 License
- Active Community
  - [http://www.appcelerator.org/groups](http://www.appcelerator.org/groups)
- No Conference
- No Books
Adobe Flex

**Pros**
- Produces Flash UI
- Funded by Adobe
- Has many successful client stories
- Supports REST easily

**Cons**
- Not Search Engine Friendly
- Doesn’t render HTML content well
- Doesn’t print well by default
- No Zero Turnaround w/o IDE
GWT

**Pros**
- Write Java ➡ Produces JavaScript
- Vibrant Community
- Zero Turnaround in Hosted Mode

**Cons**
- Only good for Java Developers
- Doesn’t support REST very well
- Operates within the confines of the browser’s JavaScript sandbox
Appcelerator

- **Pros**
  - Easy to Author
  - Good Documentation
  - Java, Ruby, PHP, .NET or Python

- **Cons**
  - Not Widely Used
  - Creating an application requires registration
  - Not a Full-Stack Framework
Flex vs. JavaScript


Use the Best Tool for the Job

- Open Web: Ajax
- Video and Rich Media: Flex
- HTML Rendering: Ajax
- Vector Graphics and Bitmap Manipulation: Flex
- Accessibility: Flex
Flex vs. Ajax Performance

http://www.jamesward.com/census
Jobs

Monster.com - 100 miles of Denver, Colorado
Skills from My Network

- GWT
- Flex
- Ajax

Located in or near 80210
Conclusion

- Appcelerator is easy if you like HTML and CSS, but don’t like JavaScript.
- Appcelerator is not a full-stack framework.
- Flex/Flash is not as restricted by the browser sandbox.
- Flex supports REST better.
- SOFEA UIs are fun to develop, but not for every application.
- Don’t Believe The Hype!
  Prototype and draw your own conclusions.
My Thoughts

- **Flex** or **Ext JS** when you have a REST backend
  - REST backends are easy with Rails, Grails and Struts 2
- **GWT** if you’re a Swing or backend developer
- **Appcelerator** if you want to be language neutral or don’t like authoring JavaScript
Questions?

matt@raibledesigns.com
http://raibledesigns.com
http://twitter.com/mraible
Download Presentation
http://raibledesigns.com/rd/page/publications