

# JBoss Community

# GOING MOBILE

## With Your RichFaces Applications

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JAX - San Francisco  
2012-07-09

# THE PLAN

Why the Mobile Web?  
Why JSF?  
Why RichFaces?



# WHO AM I?

Senior Software Engineer at Red Hat  
RichFaces Project Lead  
Represent Red Hat on the JSF 2.2 EG (JSR-344)  
Seam Faces module lead



# WHY MOBILE?

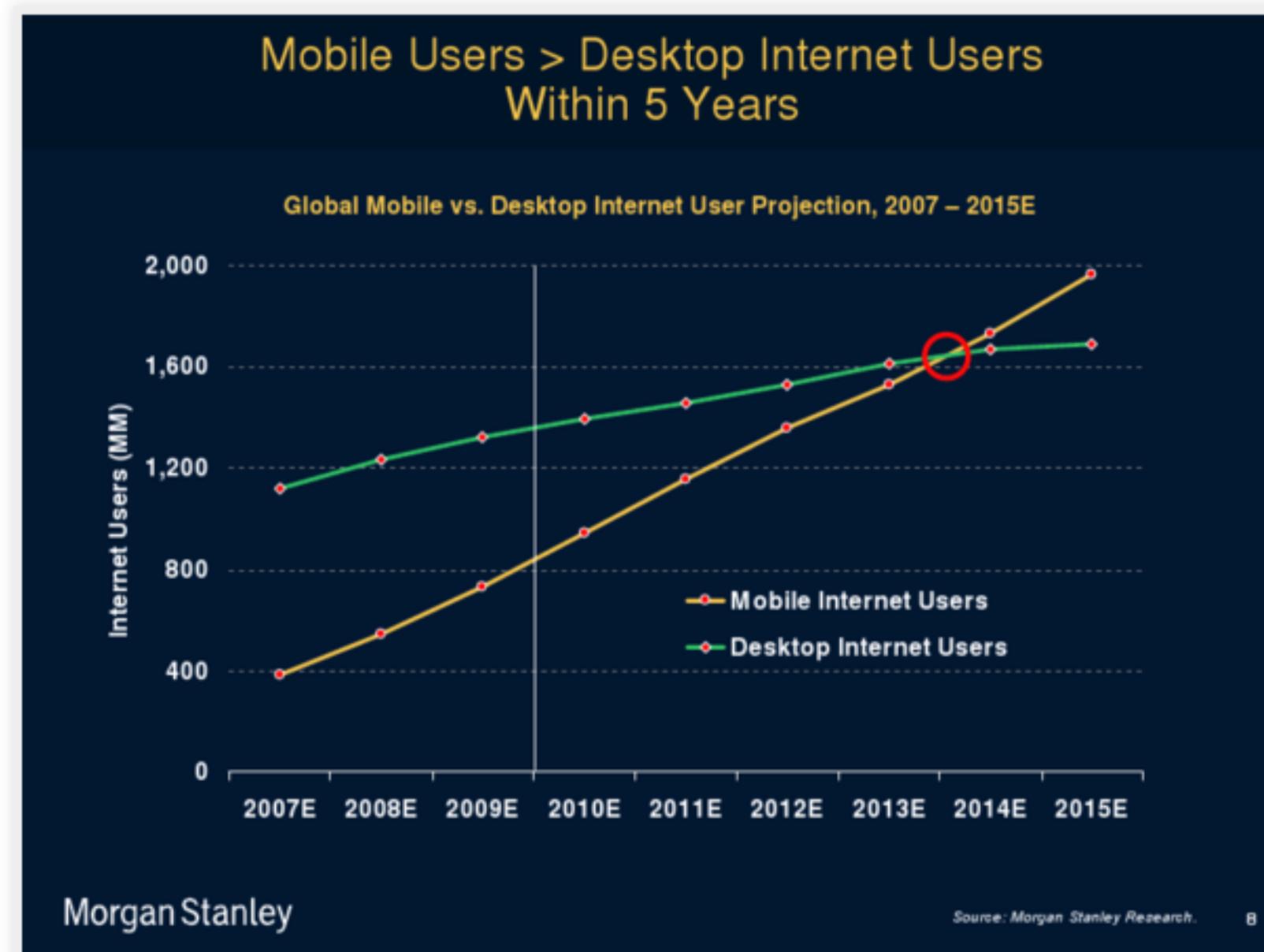
I write desktop apps!



# SMARTPHONES!



# MOBILE PHONES ARE EVERYWHERE!



# CHOOSE: NATIVE APP OR MOBILE

Native:

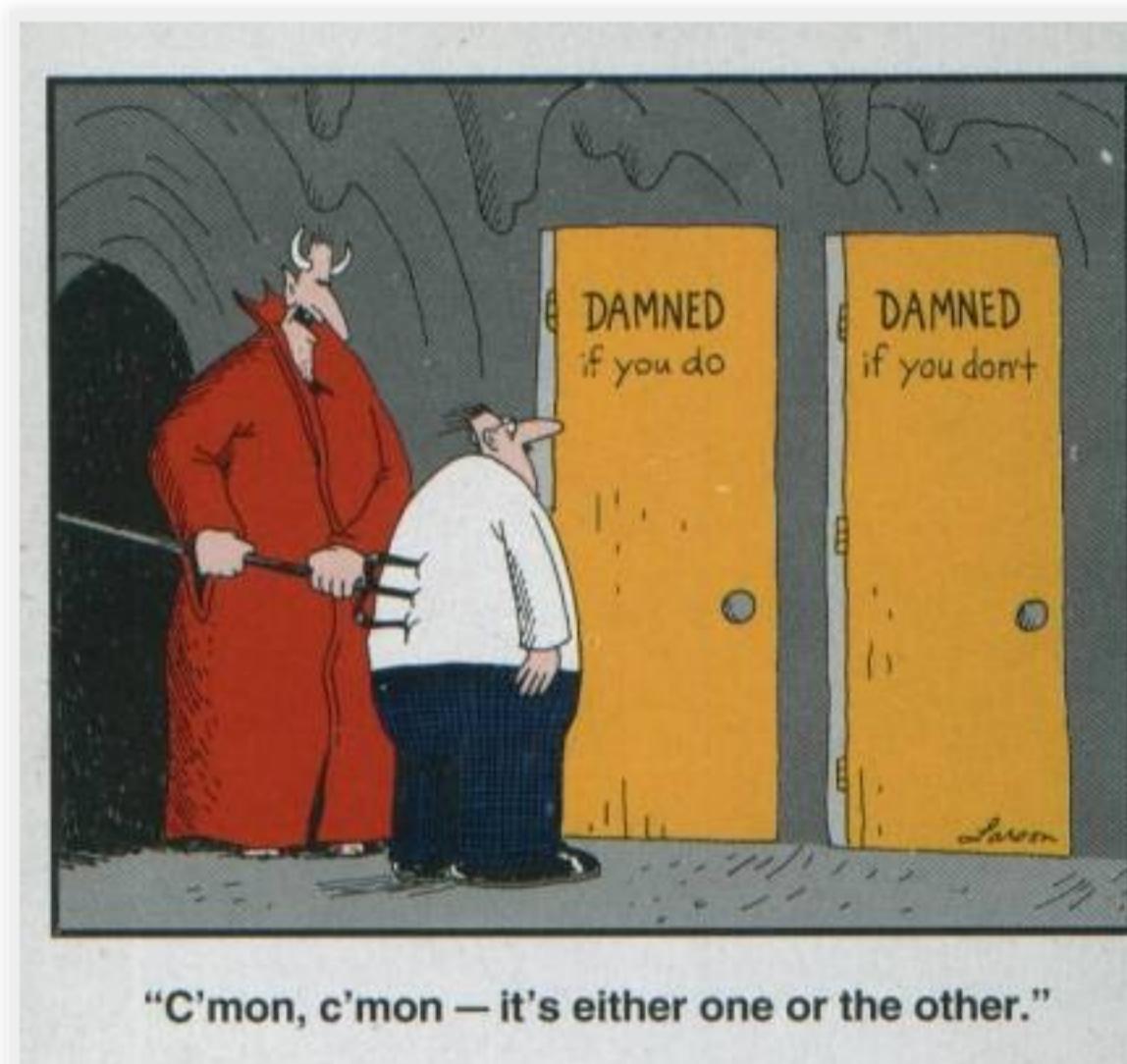
- Responsive
- Touch-specific controls
- Native L&F

Web:

- Common across platforms
- HTML 5 / CSS 3 / javascript

# CHOOSE: NATIVE APP OR MOBILE

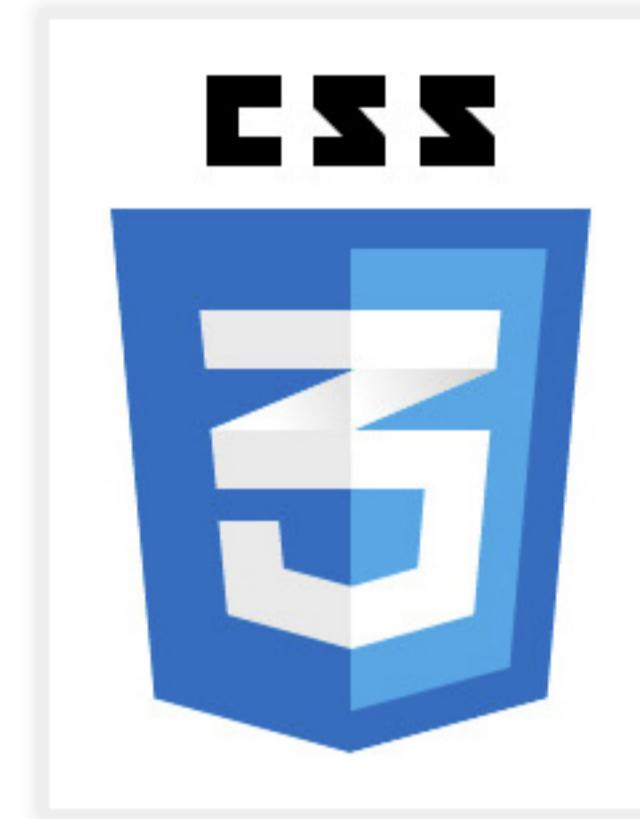
So how do I choose?



**YOU NEED A MOBILE WEB  
APP REGARDLESS!**

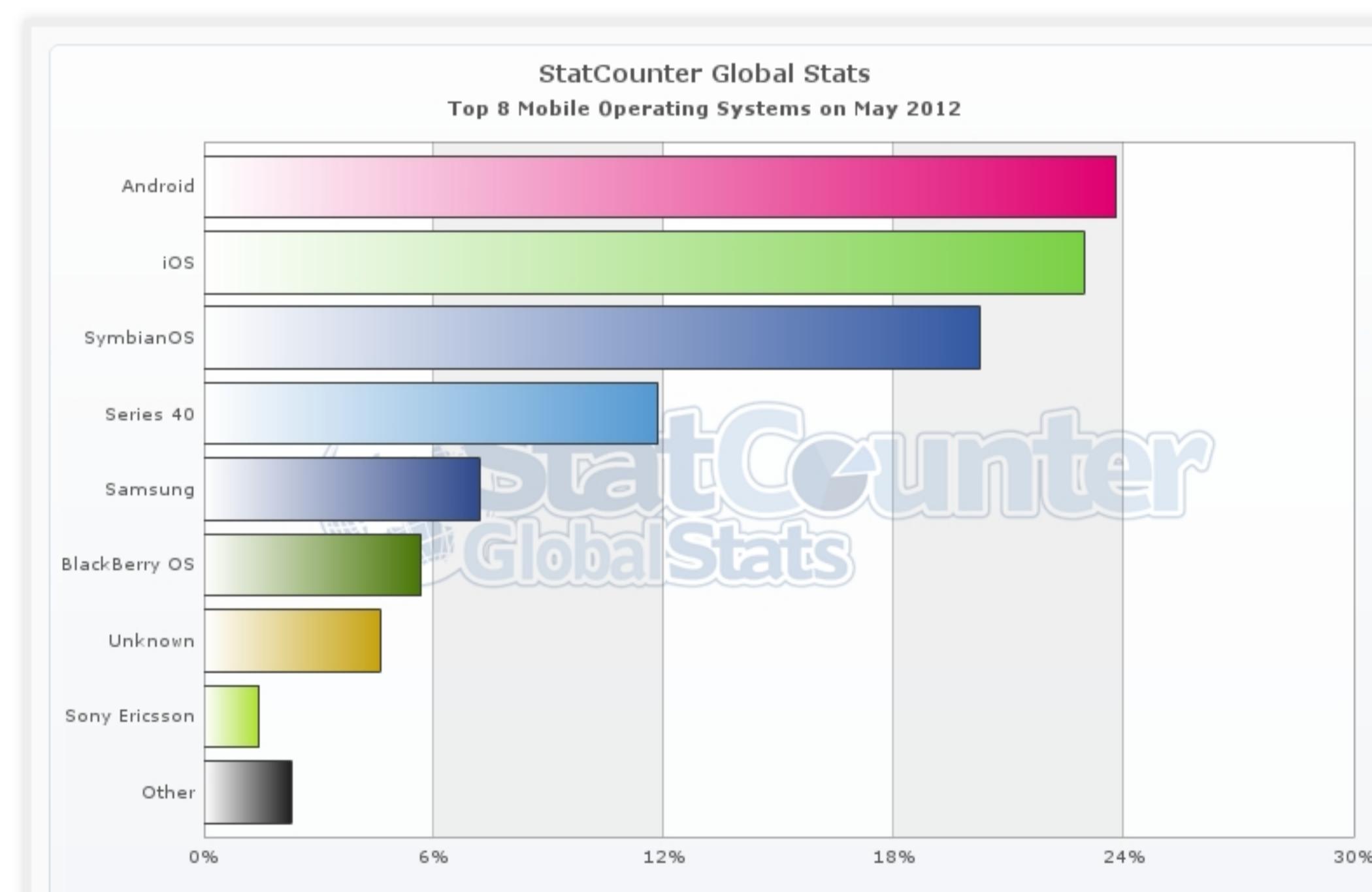
# MOBILE WEB IS READY

HTML 5  
CSS 3  
JavaScript



Html 5 Web App → Native App

# TARGET = WEBKIT



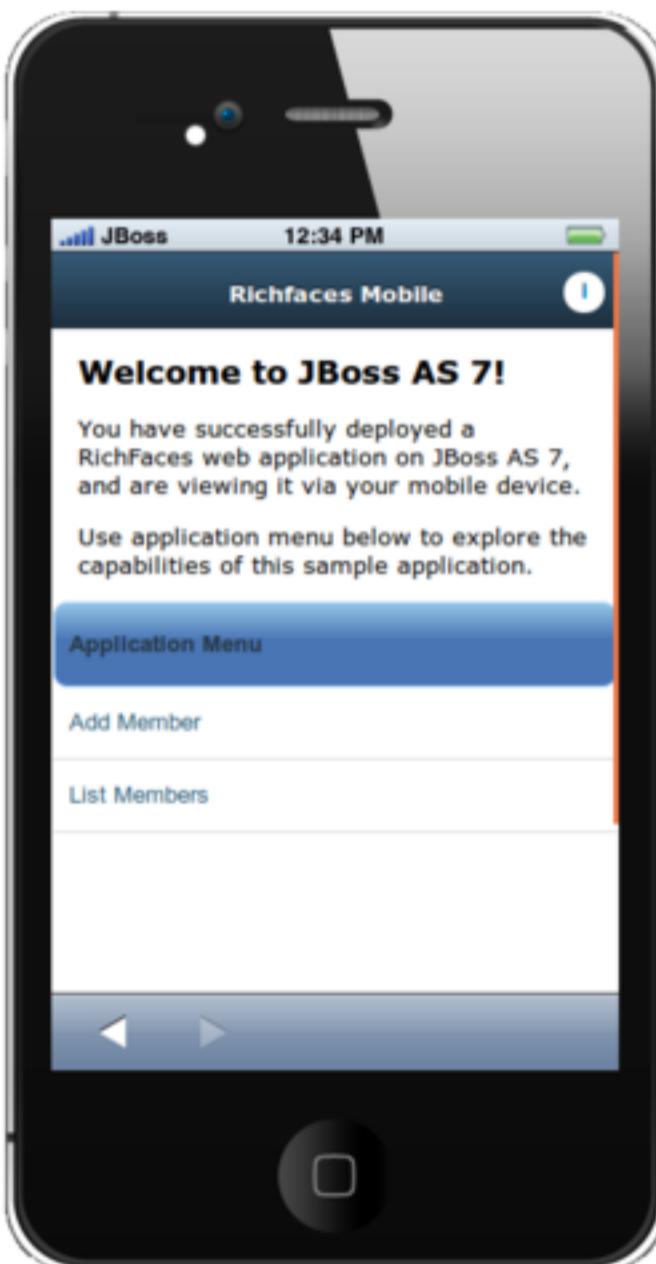
# JAVASCRIPT APIs

Geo-location  
Local Storage  
Web Sockets  
Canvas  
Drag and Drop

[bit.ly/webkit-comparison](http://bit.ly/webkit-comparison)

# HIDE THE LOCATION BAR

```
hideURLBar: function() {  
    //hide the url bar on mobile devices  
    setTimeout(scrollTo, 100, 0, 1)  
}
```



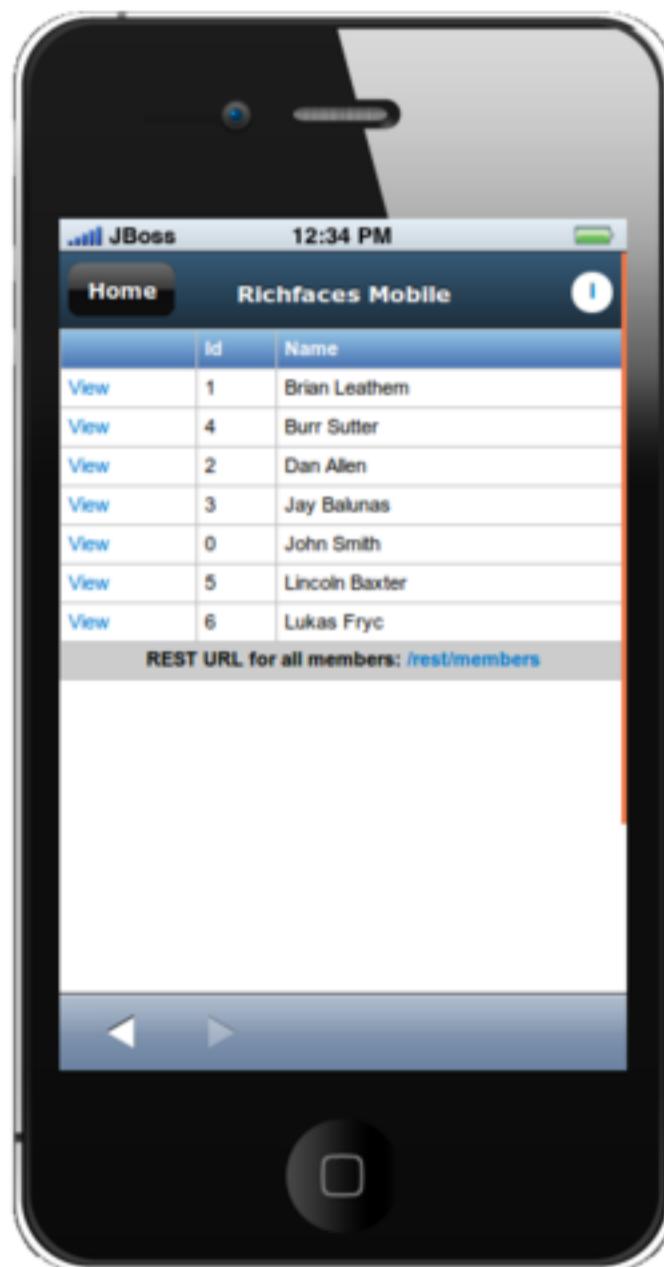
# ORIENTATION DETECTION



# ORIENTATION DETECTION

```
/* portrait screen width */
@media screen and (max-width: 480px) {
    .portrait {
    }
    .landscape {
        display:none;
    }
}

/* landscape/desktop device widths */
@media screen and (min-width: 481px) {
    .portrait {
        display:none;
    }
    .landscape {
    }
}
```



# HARDWARE ACCELERATION

Activate The GPU For Compositing Each Page

```
.page {  
  ...  
  -webkit-transform: translate3d(0, 0, 0);  
}
```

# HTML 5 PRESENTATION

```
<section>
  <h2>The plan</h2>
  <ul>
    <li>Why the Mobile Web?</li>
    <li>Why JSF?</li>
    <li>Why RichFaces?</li>
  </ul>
</section>
```

# PLETHORA OF FRAMEWORKS



# PLETHORA OF FRAMEWORKS



+ JSF !!

# WHY JSF?

What Do We Like About JSF?



# JSF BECAUSE...

Standardized as part of Java EE



# JSF BECAUSE...

Ajax is baked-in  
to the framework

AJAX

# JSF BECAUSE...

Component-oriented  
programming model



# JSF BECAUSE...

Facelets:  
A powerful templating mechanism



# JSF BECAUSE...

**Build on our investment in JSF/RichFaces technology!**



# ADAPTING JSF TO BE “MOBILE READY”

Responsive

Touch-specific controls

Mobile L&F

# ADAPTING JSF TO BE “MOBILE READY”

Responsive

- Single Page programming model (via JSF AJAX)

Touch-specific controls

Mobile L&F

# ADAPTING JSF TO BE “MOBILE READY”

## Responsive

- Single Page programming model (via JSF AJAX)

## Touch-specific controls

- CSS 3 styling

## Mobile L&F

# ADAPTING JSF TO BE “MOBILE READY”

## Responsive

- Single Page programming model (via JSF AJAX)

## Touch-specific controls

- CSS 3 styling

## Mobile L&F

- Component libraries

# DEVICE DETECTION



# DEVICE DETECTION

## User Agent String

```
Mozilla/5.0 (X11; Linux x86_64) AppleWebKit/536.5  
           (KHTML, like Gecko) Chrome/19.0.1084.56 Safari/536.5
```

# DEVICE DETECTION

## Server Side: UAgentInfo

```
public class UAgentInfo implements Serializable {  
    ...  
    public void initDeviceScan() {  
        this.isIphone = detectIphoneOrIpod();  
        this.isAndroidPhone = detectAndroidPhone();  
        this.isTierTablet = detectTierTablet();  
        this.isTierIphone = detectTierIphone();  
        this.isTierRichCss = detectTierRichCss();  
        this.isTierGenericMobile = detectTierOtherPhones();  
    }  
    ...
```

# DEVICE DETECTION

## JSF Bean: UserAgent

```
@Model  
public class UserAgent {  
  
    private UAgentInfo uAgentInfo;  
  
    @PostConstruct  
    public void init() {  
        FacesContext context = FacesContext.getCurrentInstance();  
        HttpServletRequest request = (HttpServletRequest)  
            context.getExternalContext().getRequest();  
        String userAgentStr = request.getHeader("user-agent");  
        String httpAccept = request.getHeader("Accept");  
        uAgentInfo = new UAgentInfo(userAgentStr, httpAccept);  
    }  
}
```

# DEVICE DETECTION

## URL Rewriting: ReWrite

```
public Configuration getConfiguration(final ServletContext context) {  
    return ConfigurationBuilder.begin()  
        .defineRule()  
        .when(Direction.isInbound()  
        .and(Path.matches("/").or(Path.matches("/index.jsf")))  
        .and(UserAgent.isMobile())  
        ) .perform(Forward.to("/mobile/"));  
}
```

# THE RICHFACES VALUE ADD

For mobile JSF apps



# THE RICHFACES SHOWCASE

Mobile compatible components  
<http://showcase.richfaces.org>



# A4J:PUSH

## Facelet Source

```
<a4j:push address="pushCdi"
    ondataavailable="jQuery('li').text(event.rf.data)
                    .prependTo('#messages')" />
<ul id="messages" />
```

## Java Source

```
@Inject
@Push(topic = "pushCdi")
Event<String> pushEvent;

public void sendMessage() {
    pushEvent.fire("My Message");
}
```

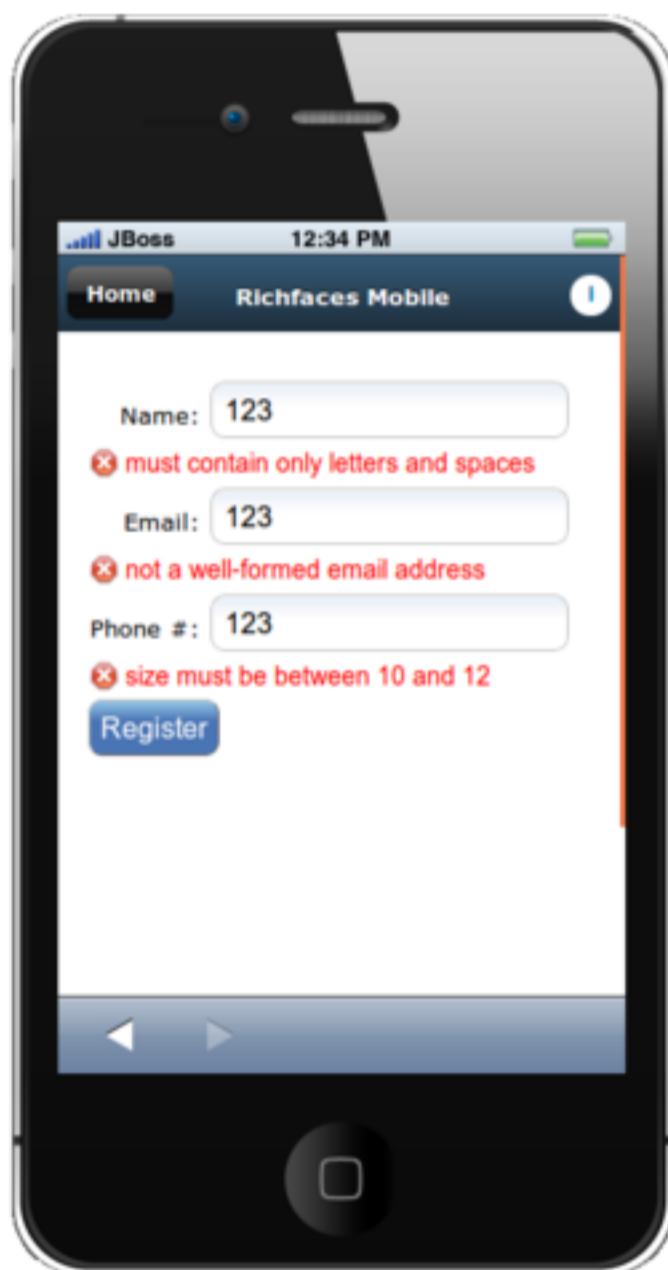
# A4J: PUSH IN TWEETSTREAM

JBW 2011 Keynote



# CLIENT-SIDE VALIDATION

Perform validation locally

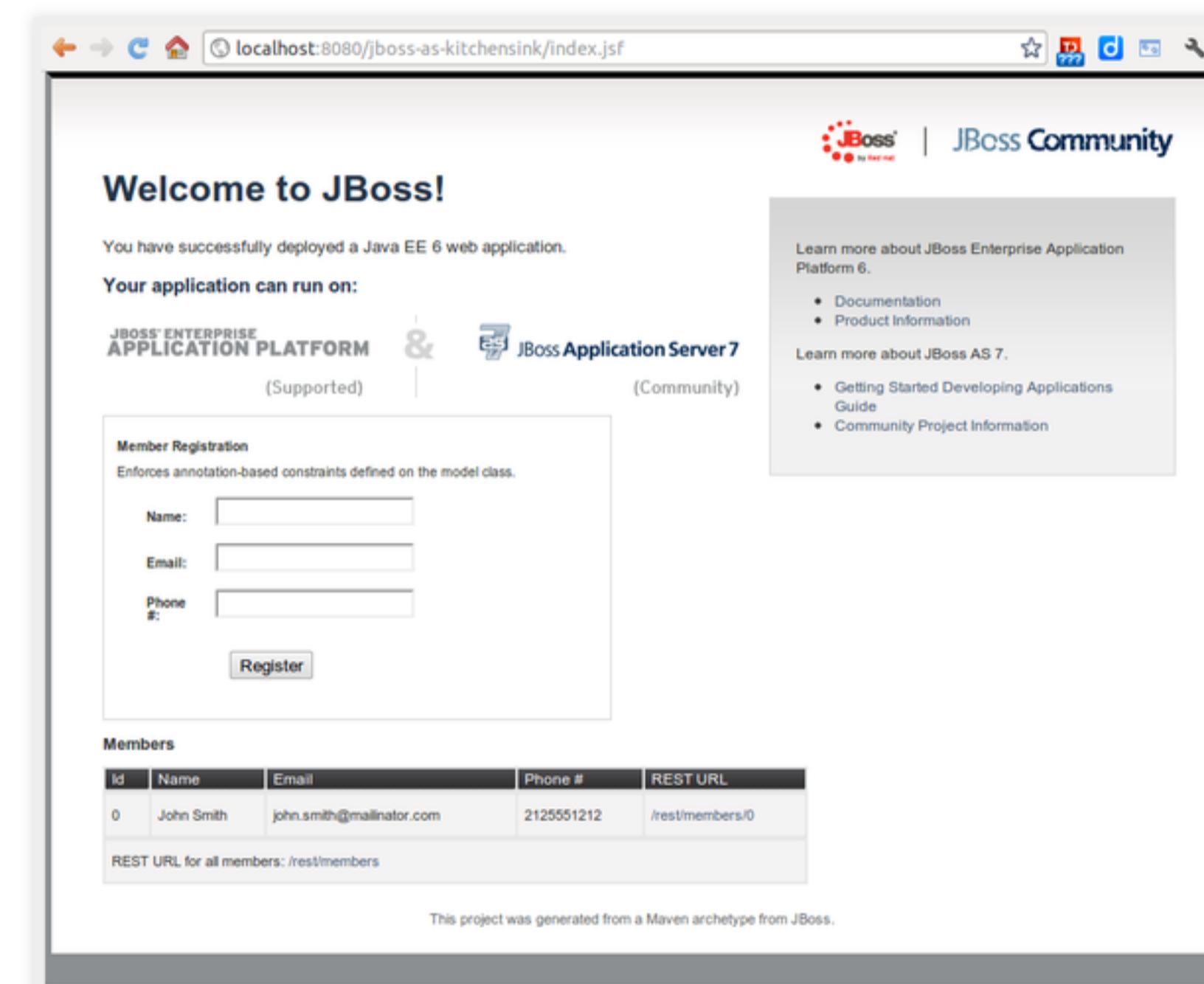


# A4J:JSFUNCTION

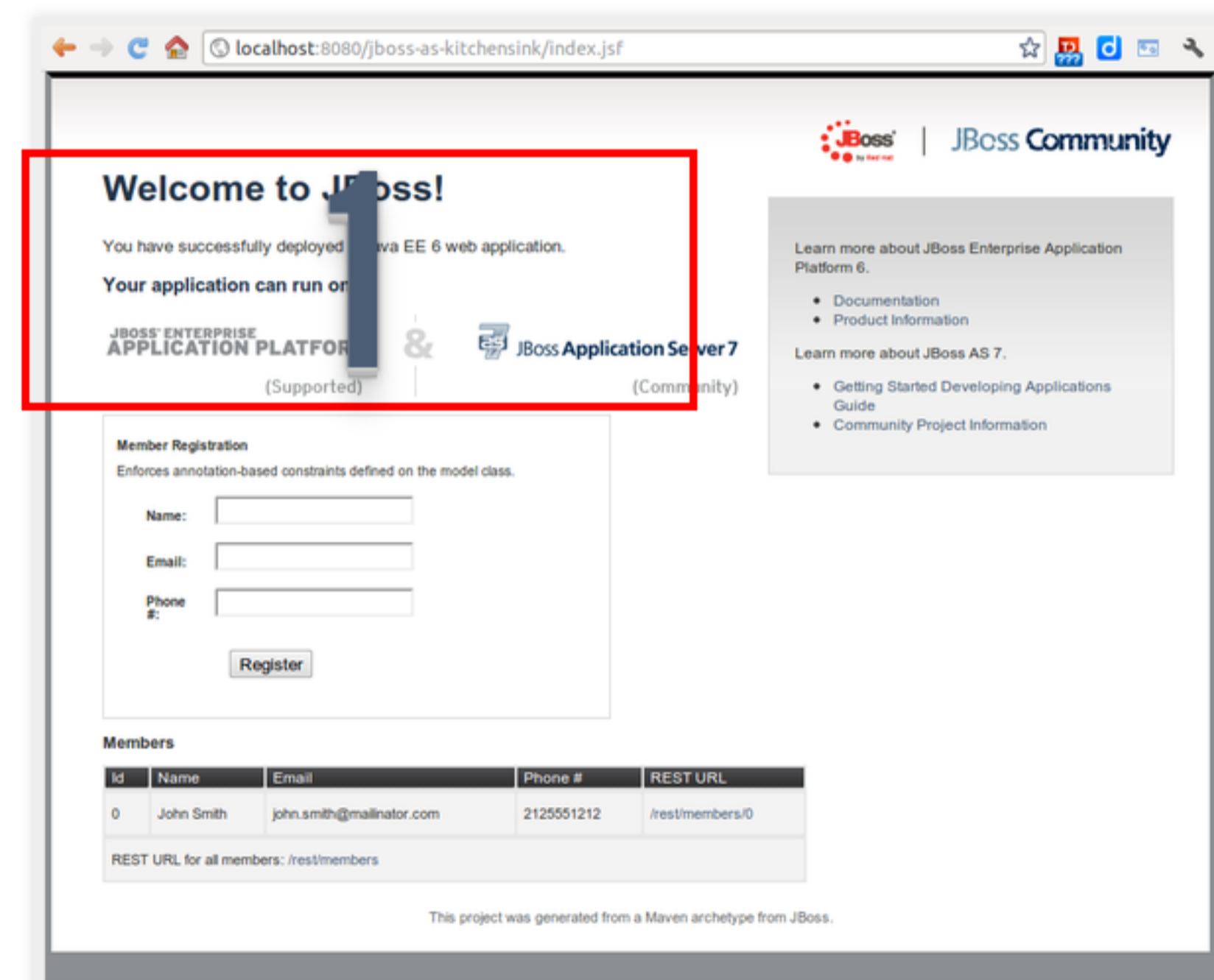
**A facelet component interface to the JSF AJAX API**

```
<a4j:jsFunction name="updateName" render="showname">
    <a4j:param name="name" assignTo="#{functionBean.text}" />
</a4j:jsFunction>
```

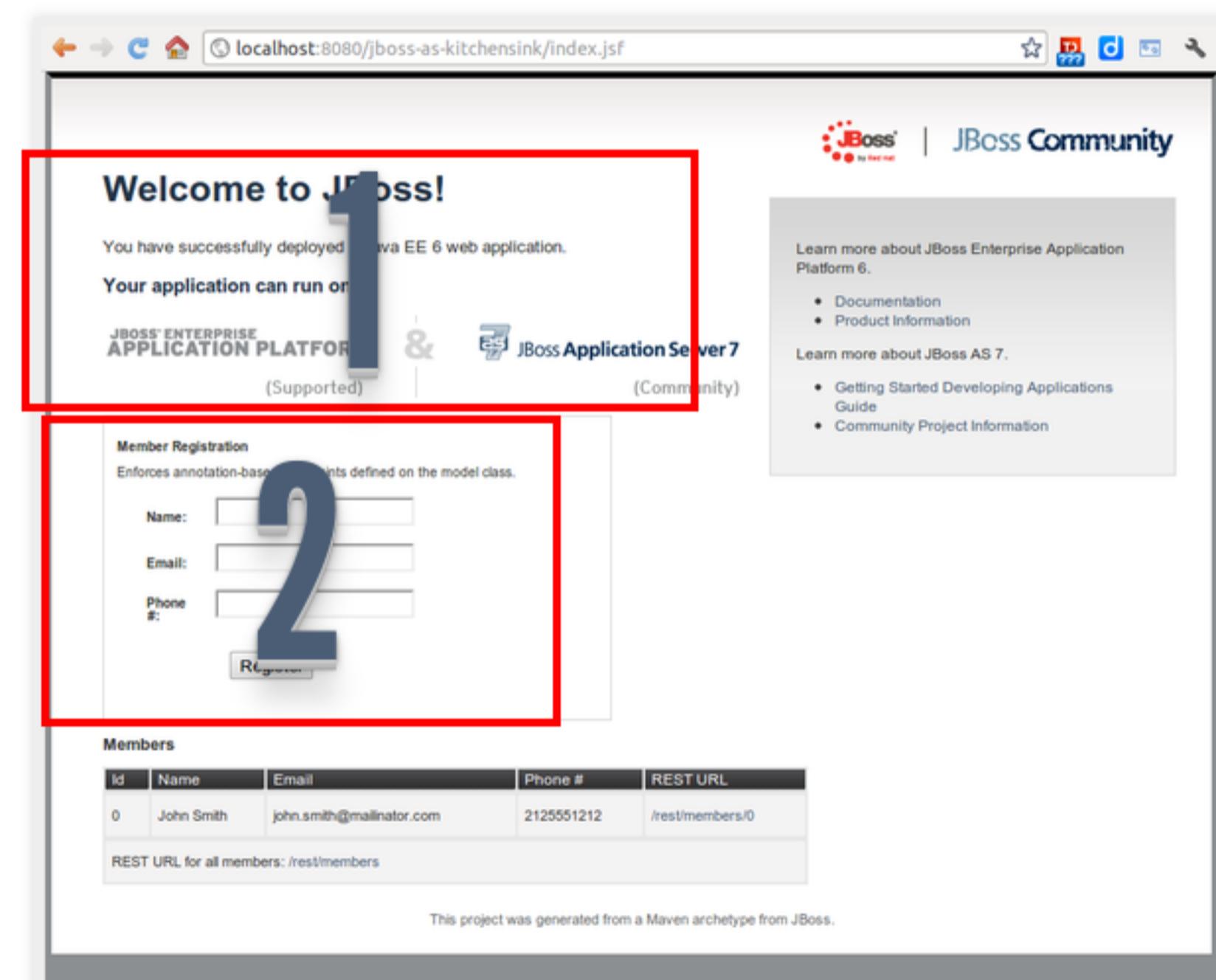
# CASE STUDY: “KITCHENSINK” QUICKSTART



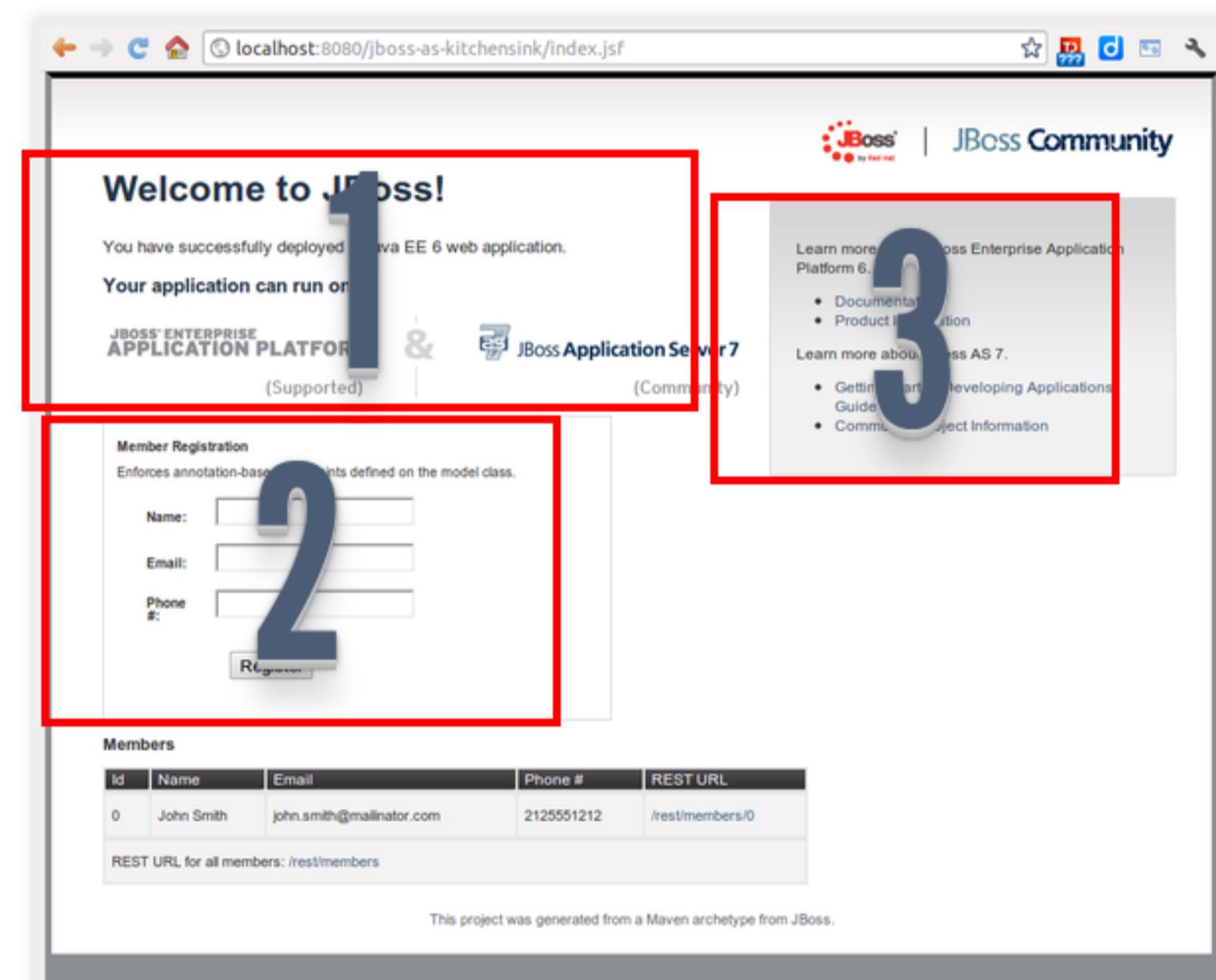
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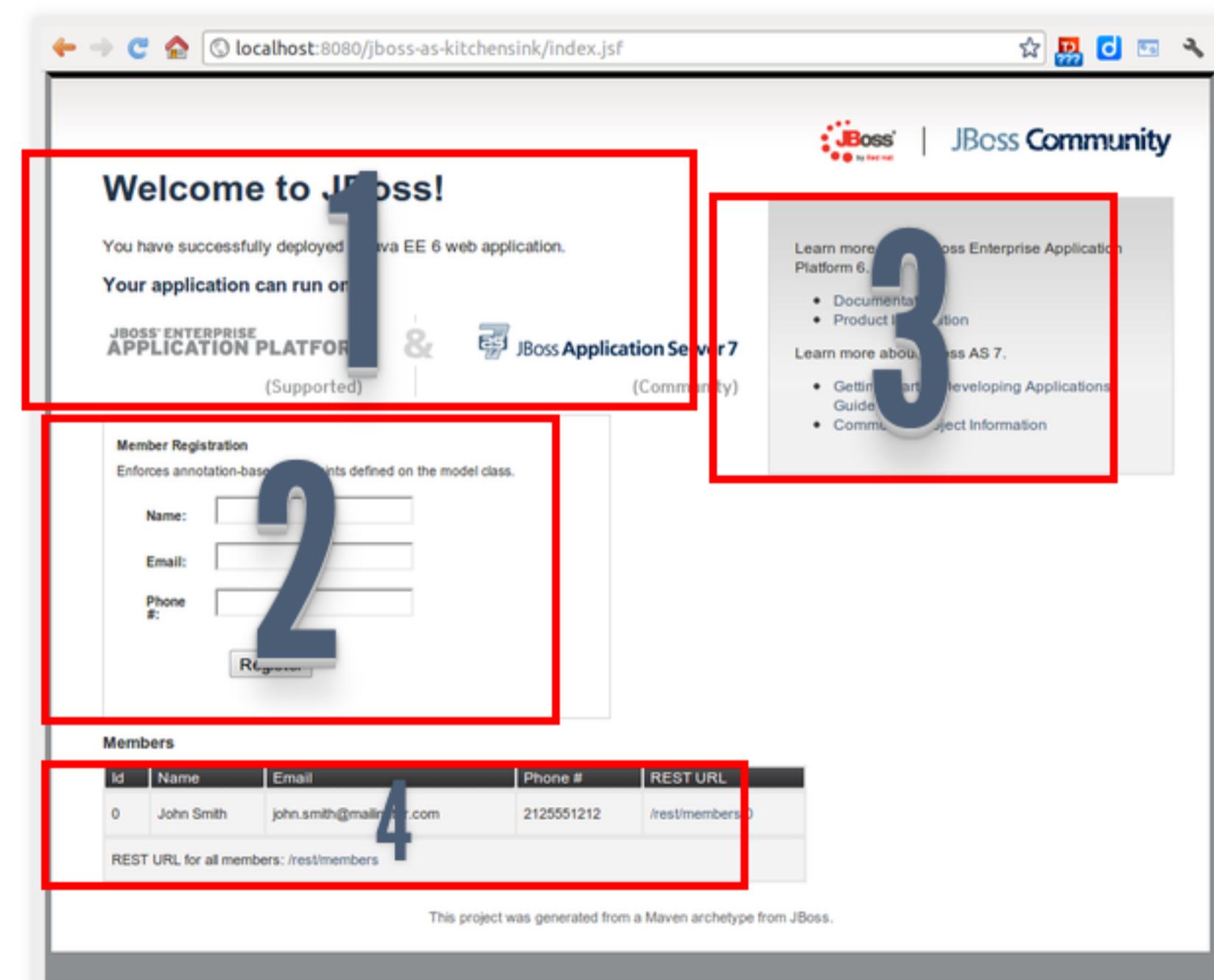
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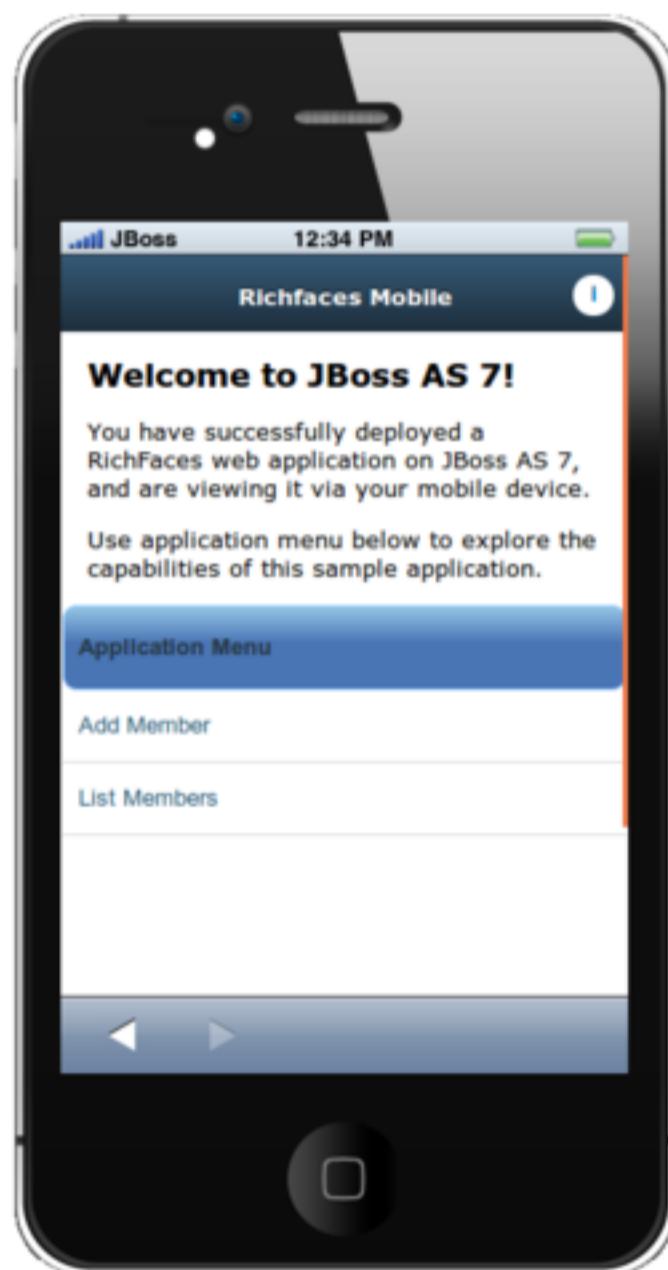


# CASE STUDY: “KITCHENSINK” QUICKSTART



# KITCHENSINK: “MOBILIZED”

Demo time!



# MANIPULATE THE LOCATION HASH

Directly, using html links

```
<a href="#about">i</a>
```

Using javascript

```
<rich:panelMenuItem label="Add Member"  
onclick="location.hash='new'"  
mode="client" />
```

# MOBILE COMPATIBLE WITH SLIDFAST

*A collection of lightweight CSS and Javascript assets*

# “VANILLA” JSF MOBILE FACELET

```
<?xml version="1.0" encoding="UTF-8"?>
<ui:composition template="/WEB-INF/templates/mobile.xhtml"
    xmlns:ui="http://java.sun.com/jsf/facelets"
    xmlns:f="http://java.sun.com/jsf/core"
    xmlns:h="http://java.sun.com/jsf/html">
<ui:define name="content">
    <h:outputStylesheet name="mobile.css" library="css"/>
    <h:outputScript>
        //initialize mobile RichFaces with slidfast
        slidfast({
            defaultPageID: 'home-page',
            callback: 'handleHashChange',
            backButtonID: 'back-button'
        });
    </h:outputScript>
    <div id="browser">
        <header>
            <div>
                <div id="back-button" class="hide-button">Home</div>
                <div id="info-button" class="right-header-button info-link">
                    <a href="#about">i</a>
                </div>
                <p>Mobile JSF</p>
            </div>
        </header>
        <h:form id="mobileForm">
            <div id="page-container">
                <div id="home-page" class="page stage-left">
                    <ui:include src="/mobile/home.xhtml"/>
                </div>
                <div id="new" class="page stage-right">
                    <ui:include src="/mobile/new.xhtml"/>
                </div>
                <div id="list" class="page stage-right">
                    <ui:include src="/mobile/list.xhtml"/>
                </div>
                <div id="about" class="page stage-right">
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# SINGLE-PAGE PROGRAMMING MODEL

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<h:form id="mobileForm">
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        </div>
    </div>
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```

# SCALE W/ DYNAMIC UI:INCLUDE

```
<div id="page-container">
    <div id="home-page" class="page stage-left">
        <ui:include src="/mobile/home.xhtml"/>
    </div>
    <div id="app-page" class="page stage-right">
        <ui:include src="#{pageBean.page}"/>
    </div>
</div>
```

# SCALE W/ DYNAMIC UI:INCLUDE

```
<div id="page-container">
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    <div id="app-page" class="page stage-right">
        <ui:include src="#{pageBean.page}"/>
    </div>
</div>
```

# UPDATE THE PAGEBEAN - JSF

```
<h:inputHidden id="page" value="#{pageBean.location}" />
<h:outputScript>
    var handleHashChange = function (page) {
        var hiddenInput = 'mobileForm:page';
        $(document.getElementById(hiddenInput)).val(page);

        var options = {
            execute: hiddenInput,
            render : '@form',
            onevent : function(event) {
                if(event.status == 'success') {
                    slidfast.core.slideTo('app-page');
                }
            }
        }
        jsf.ajax.request(hiddenInput, null, options);
    }
</h:outputScript>
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            execute: hiddenInput,
            render : '@form',
            onevent : function(event) {
                if(event.status == 'success') {
                    slidfast.core.slideTo('app-page');
                }
            }
        }
        jsf.ajax.request(hiddenInput, null, options);
    }
</h:outputScript>
```

# UPDATE THE PAGEBEAN - RICHFACES 4.2

```
<h:outputScript target="head">
<a4j:jsFunction name="handleHashChange"
    render="@form"
    oncomplete="slidfast.core.slideTo('app-page')"
    <a4j:param name="page" assignTo="#{pageBean.location}" />
</a4j:jsFunction>
```

# UPDATE THE PAGEBEAN - RICHFACES SANDBOX

```
<slidfast:pageChanger activePage="#{pageBean.location}" render="app-page" />
```

# UPDATE THE PAGEBEAN - RICHFACES SANDBOX

```
<slidfast:pageChanger activePage="#{pageBean.location}" render="app-page" />
```

```
<slidfast:page id="app-page" stage="right">
  <ui:include src="#{pageBean.page}" />
</slidfast:page>
```

# “SLIDFAST” JSF MOBILE FACELET

```
<?xml version="1.0" encoding="UTF-8"?>
<ui:composition template="/WEB-INF/templates/mobile.xhtml"
    xmlns:ui="http://java.sun.com/jsf/facelets"
    xmlns:h="http://java.sun.com/jsf/html"
    xmlns:slidfast="http://richfaces.org/slidfast">
    <ui:define name="content">
        <h:outputStylesheet name="app.css" library="css"/>
        <h:outputStylesheet name="mobile.css" library="css"/>
        <div id="browser">
            <header>
                <div>
                    <div id="back-button" class="hide-button">Home</div>
                    <div id="info-button" class="right-header-button info-link">
                        <a href="#about">i</a>
                    </div>
                    <p>Richfaces Mobile</p>
                </div>
            </header>
            <h:form id="mobileForm">
                <slidfast:pageChanger id="pageChanger" activePage="#{pageBean.location}" render="app-page" />
                <slidfast:pageContainer id="pageContainer">
                    <slidfast:page id="home-page" stage="left">
                        <ui:include src="/mobile/home.xhtml"/>
                    </slidfast:page>
                    <slidfast:page id="app-page" stage="right">
                        <ui:include src="#{pageBean.page}"/>
                    </slidfast:page>
                </slidfast:pageContainer>
            </h:form>
        </div>
        <h:outputStylesheet library="org.richfaces" name="rf-mobile-skin.css" />
    </ui:define>
</ui:composition>
```

# “SLIDFAST” JSF MOBILE FACELET

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                        <a href="#about">i</a>
                    </div>
                    <p>Richfaces Mobile</p>
                </div>
            </header>
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                <slidfast:pageContainer id="pageContainer">
                    <slidfast:page id="home-page" stage="left">
                        <ui:include src="/mobile/home.xhtml"/>
                    </slidfast:page>
                    <slidfast:page id="app-page" stage="right">
                        <ui:include src="#{pageBean.page}"/>
                    </slidfast:page>
                </slidfast:pageContainer>
            </h:form>
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</ui:composition>
```

# “SLIDFAST” JSF MOBILE FACELET

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                    <p>Richfaces Mobile</p>
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                <slidfast:pageContainer id="pageContainer">
                    <slidfast:page id="home-page" stage="left">
                        <ui:include src="/mobile/home.xhtml"/>
                    </slidfast:page>
                    <slidfast:page id="app-page" stage="right">
                        <ui:include src="#{pageBean.page}"/>
                    </slidfast:page>
                </slidfast:pageContainer>
            </h:form>
        </div>
        <h:outputStylesheet library="org.richfaces" name="rf-mobile-skin.css" />
    </ui:define>
</ui:composition>
```

# RESPONSIVE LAYOUT

Richfaces

RichFaces Bootstrap

Build JSF applications with the amazing [Bootstrap](#) components.

Click one of the menu links above to see some Bootstrap components in action!

# THE END?

# THE END?

**THE BEGINNING - OF YOUR MOBILE ADVENTURE WITH  
RICHFACES!**

# CREDITS

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Permissions beyond the scope of this license may be available at <https://github.com/bleathem/talks/tree/master/2012-JBW>.

# ADDITIONAL RESOURCES

## Source code:

- [JBoss-as Kitchensink quickstart](#)
- [JBoss-as Kitchensink quickstart | mobile w/ Vanilla JSF](#)
- [JBoss-as Kitchensink quickstart | mobile w/ RichFaces](#)

## Articles:

- [HTML 5 Rocks article - introduces and motivates the slidfast approach](#)
- [RichFaces Mobile wiki page - all things RichFaces + mobile](#)
- [Getting Started With Mobile RichFaces](#)

# STAY IN THE LOOP

Project website: <http://richfaces.org>

Twitter: <https://twitter.com/#!/richfaces>

Google+: <http://richfaces.org>

RichFaces Forums: <https://community.jboss.org/en/richfaces?view=discussions>

Blog feed: <http://planet.jboss.org/feed/richfacesall>

IRC: #richfaces