

JBoss Community

MOBILE JSF With RichFaces

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JavaOne 2012 - San Francisco
2012-09-01

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)



WHY MOBILE?

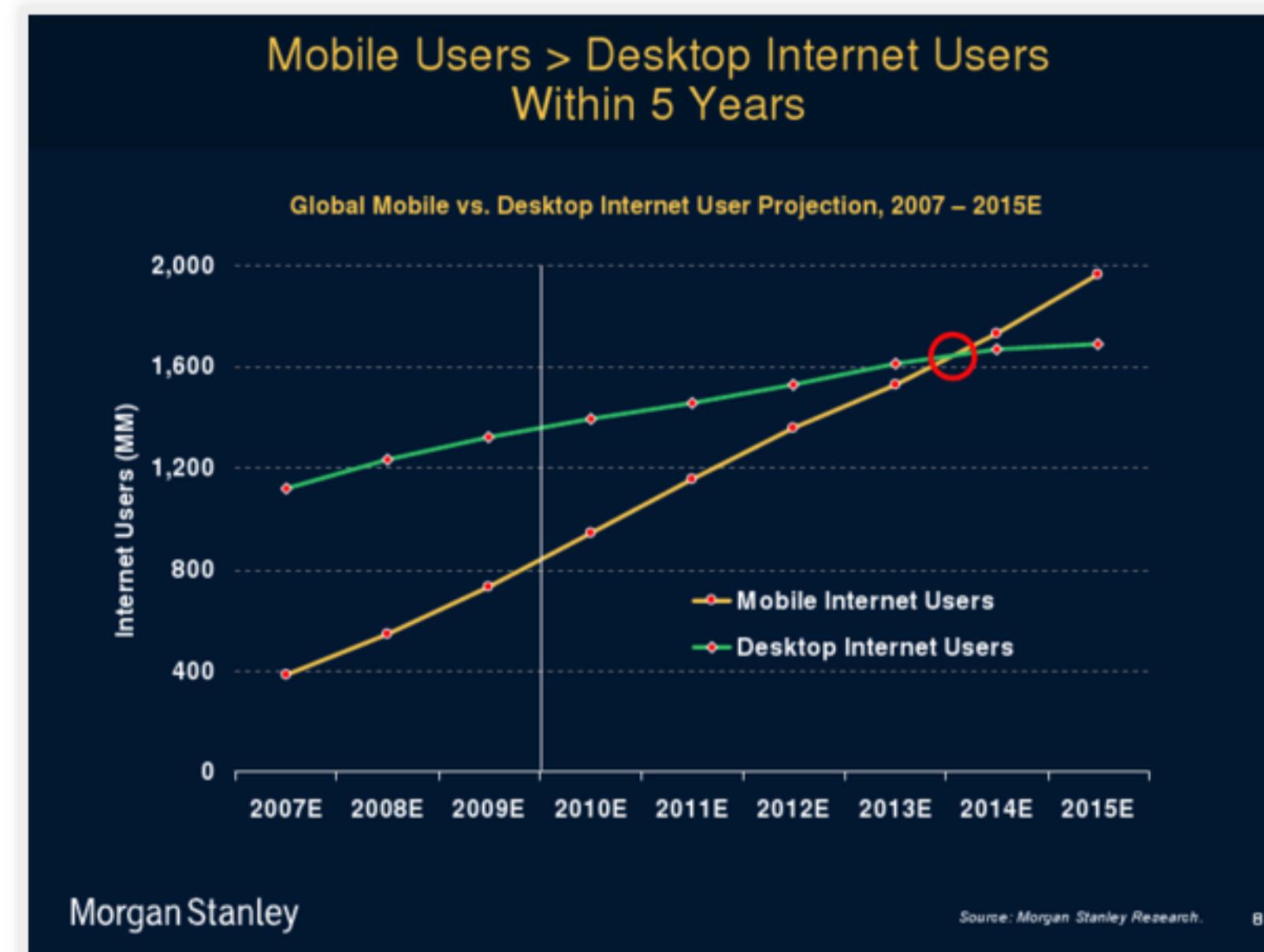
I write desktop apps!



SMARTPHONES!



MOBILE PHONES ARE EVERYWHERE!



CHOOSE: NATIVE APP OR MOBILE

Native:

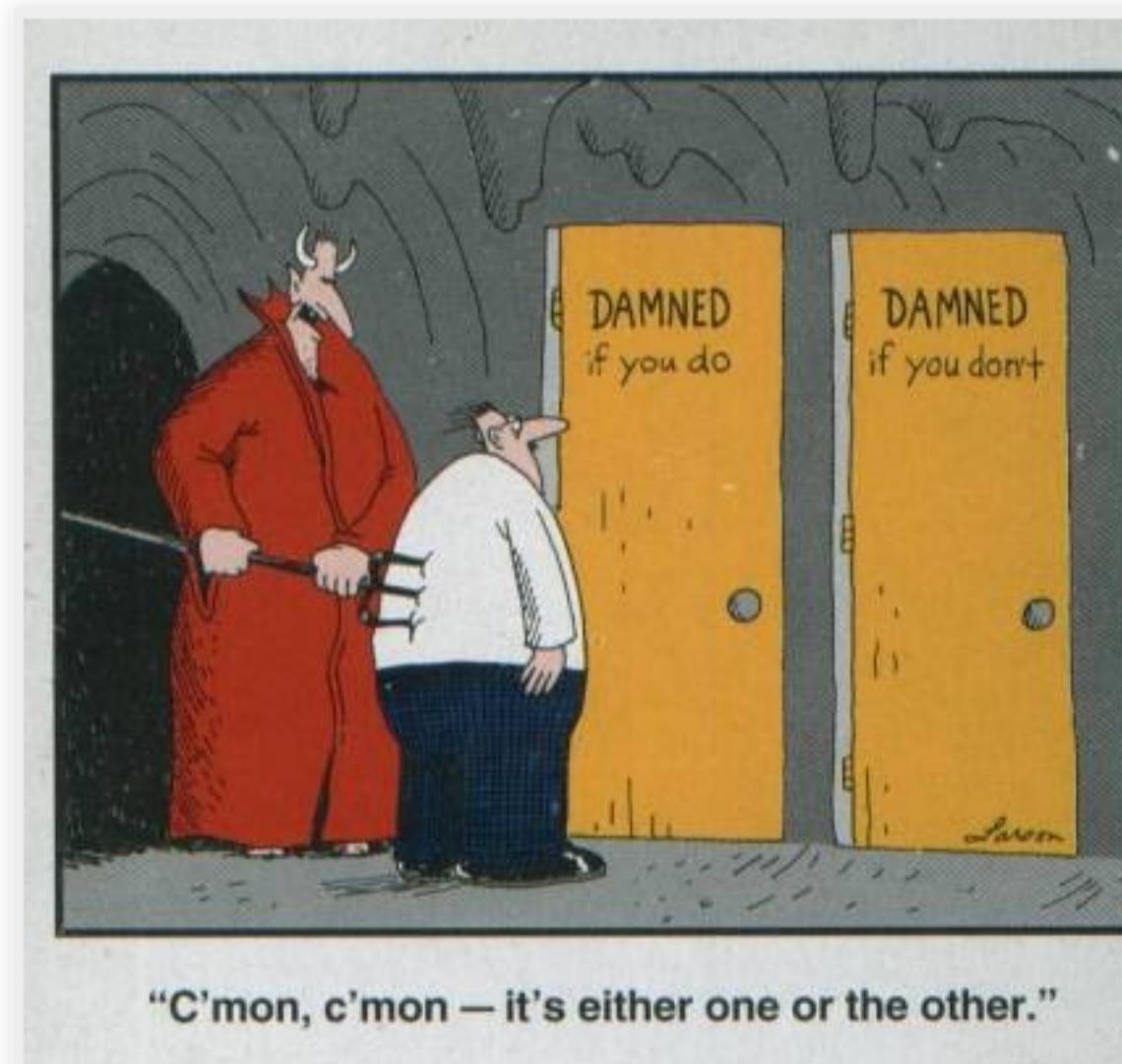
- Responsive
- Touch-specific controls
- Native L&F

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!**

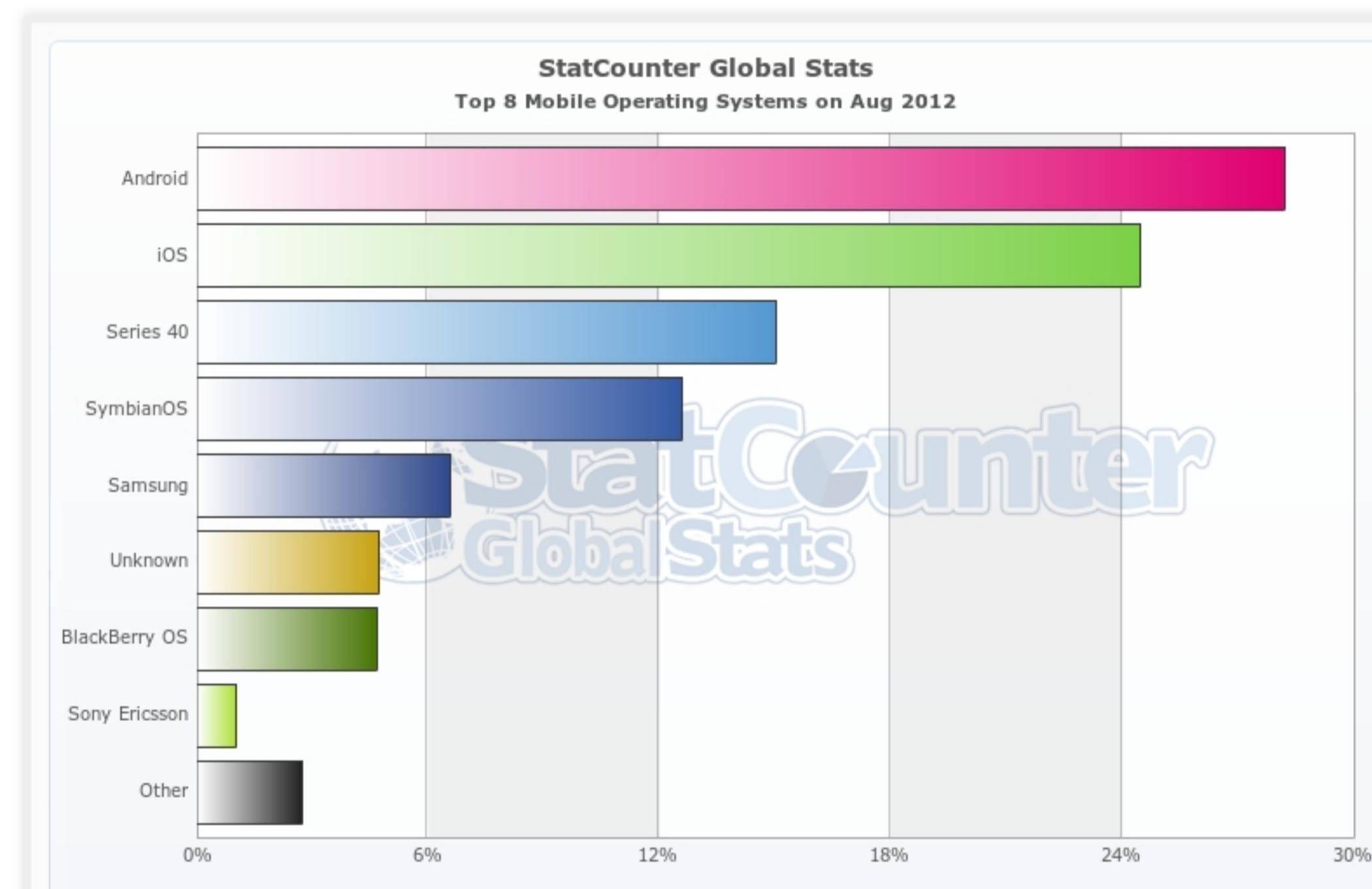
MOBILE WEB IS READY

HTML 5
CSS 3
JavaScript



Html 5 Web App → Native App

TARGET = WEBKIT



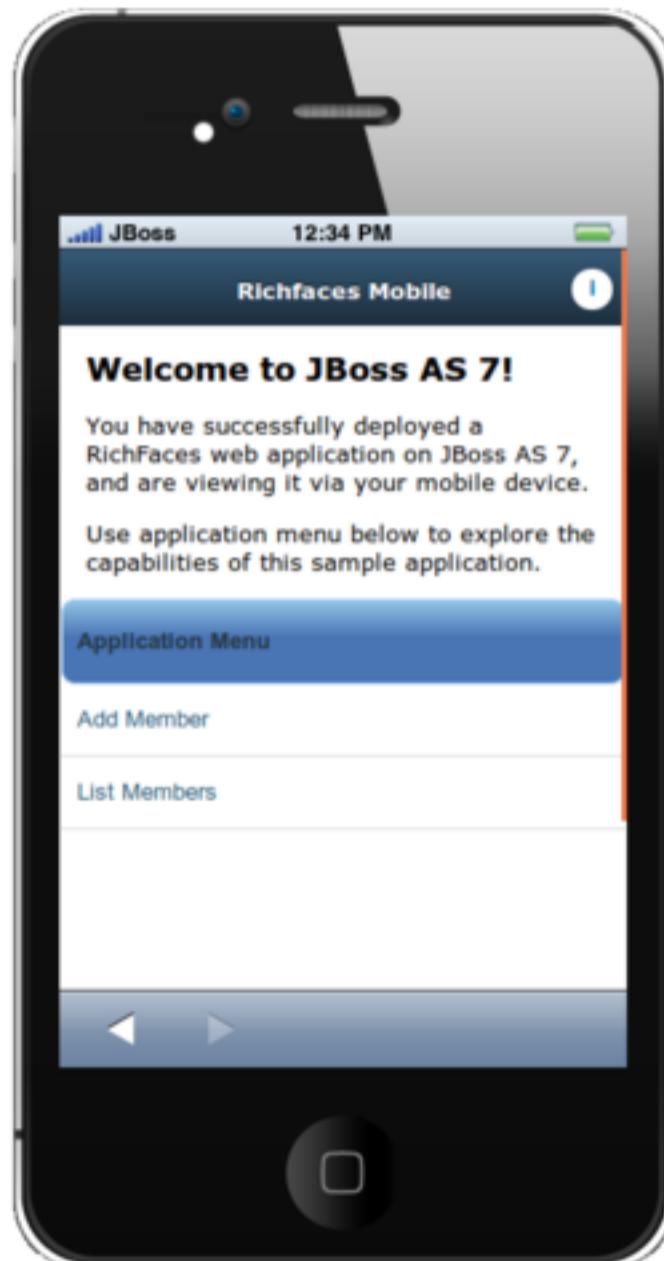
JAVASCRIPT APIs

Geo-location
Local Storage
Web Sockets
Canvas
Drag and Drop

bit.ly/webkit-comparison

HIDE THE LOCATION BAR

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



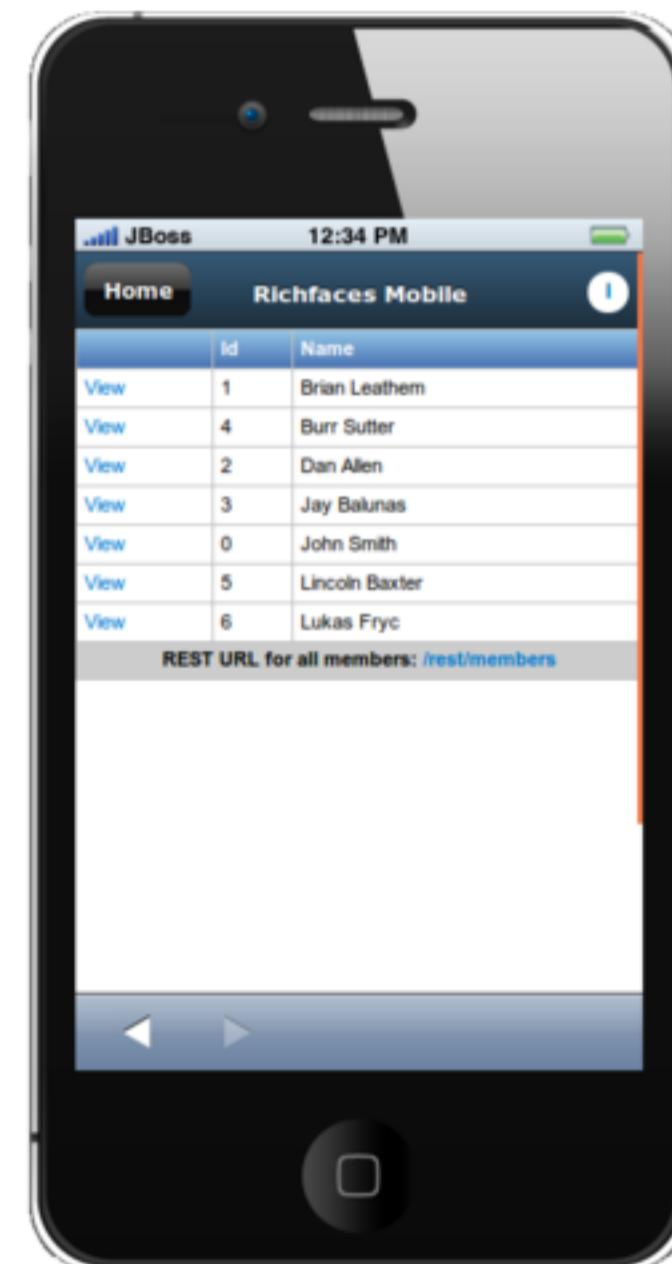
ORIENTATION DETECTION



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

A large, bold, red word "AJAX" is positioned on the right side of the slide. The letters are slightly slanted upwards from left to right, creating a dynamic feel. The red color is a vibrant shade, making it stand out against the white background.

JSF BECAUSE...

Component-oriented
programming model



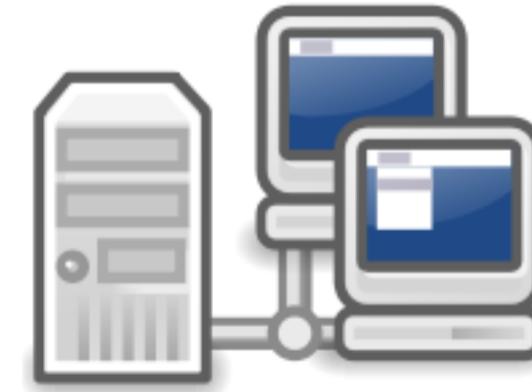
JSF BECAUSE...

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

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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);  
    }  
}
```

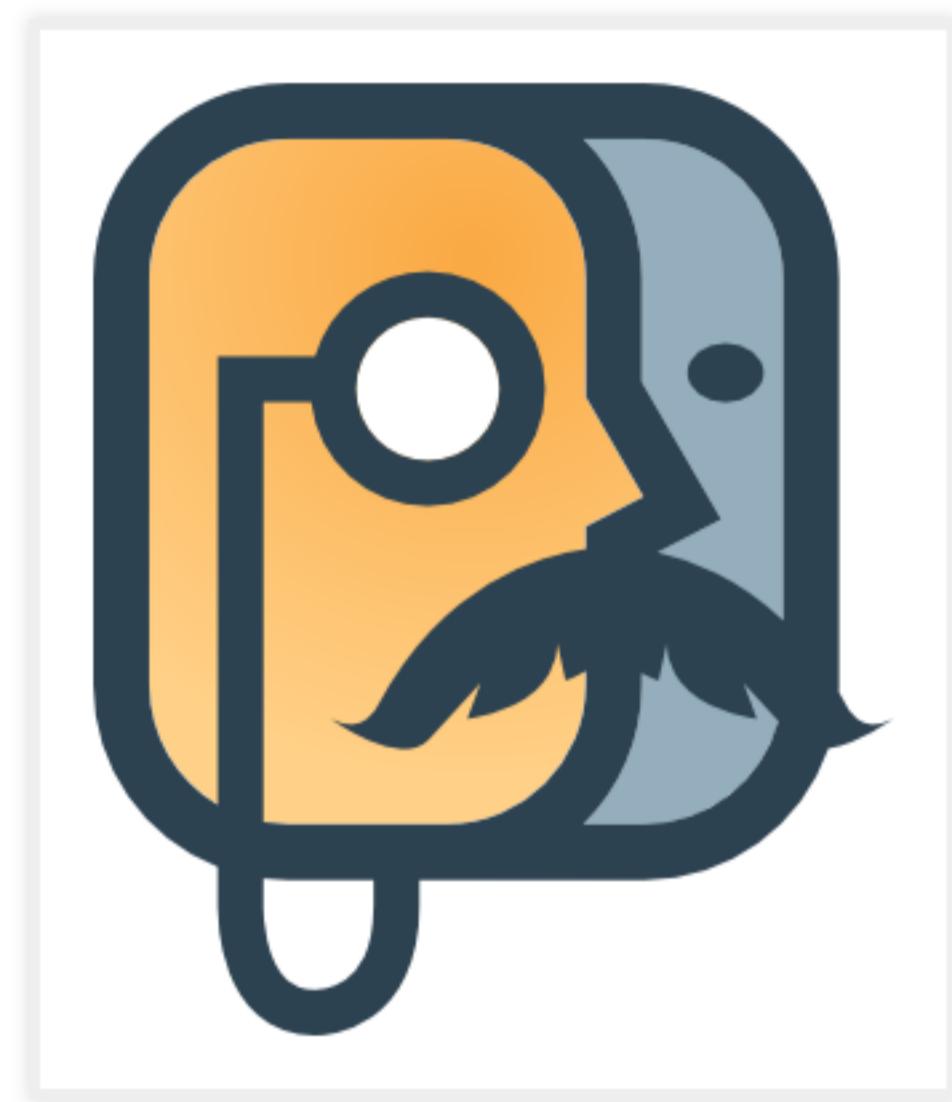
DEVICE DETECTION

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" />
```

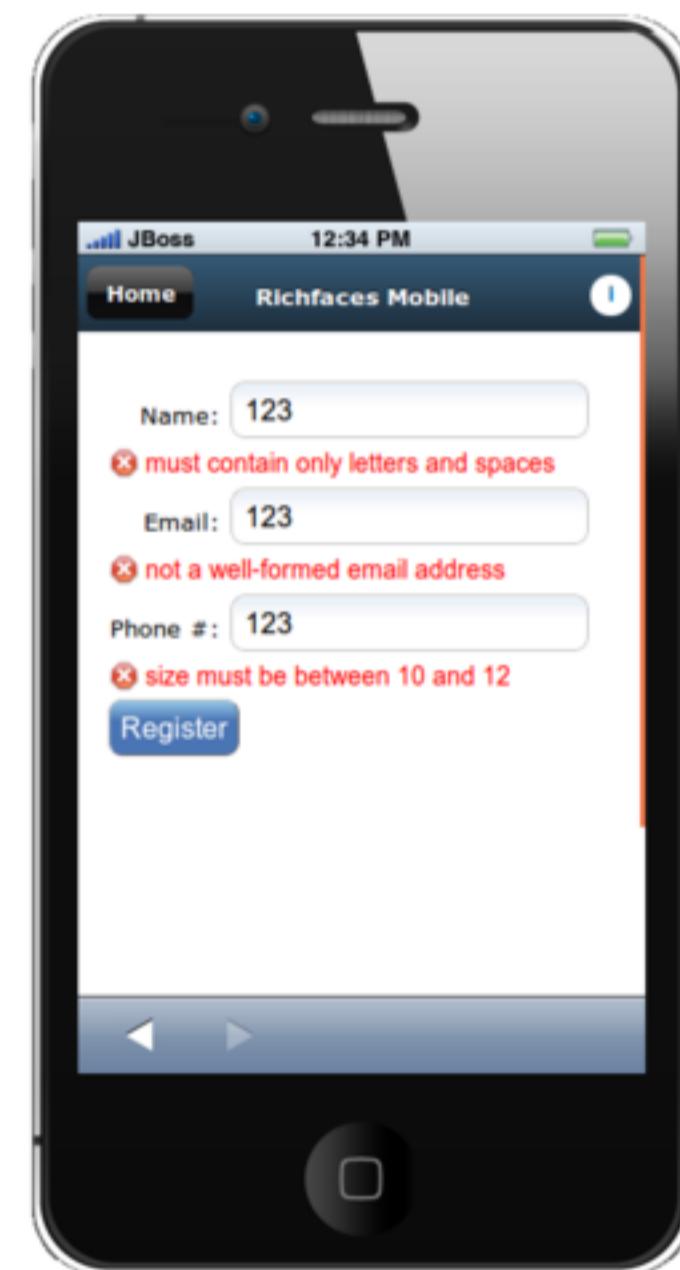
Java Source

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

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

CLIENT-SIDE VALIDATION

Perform validation locally

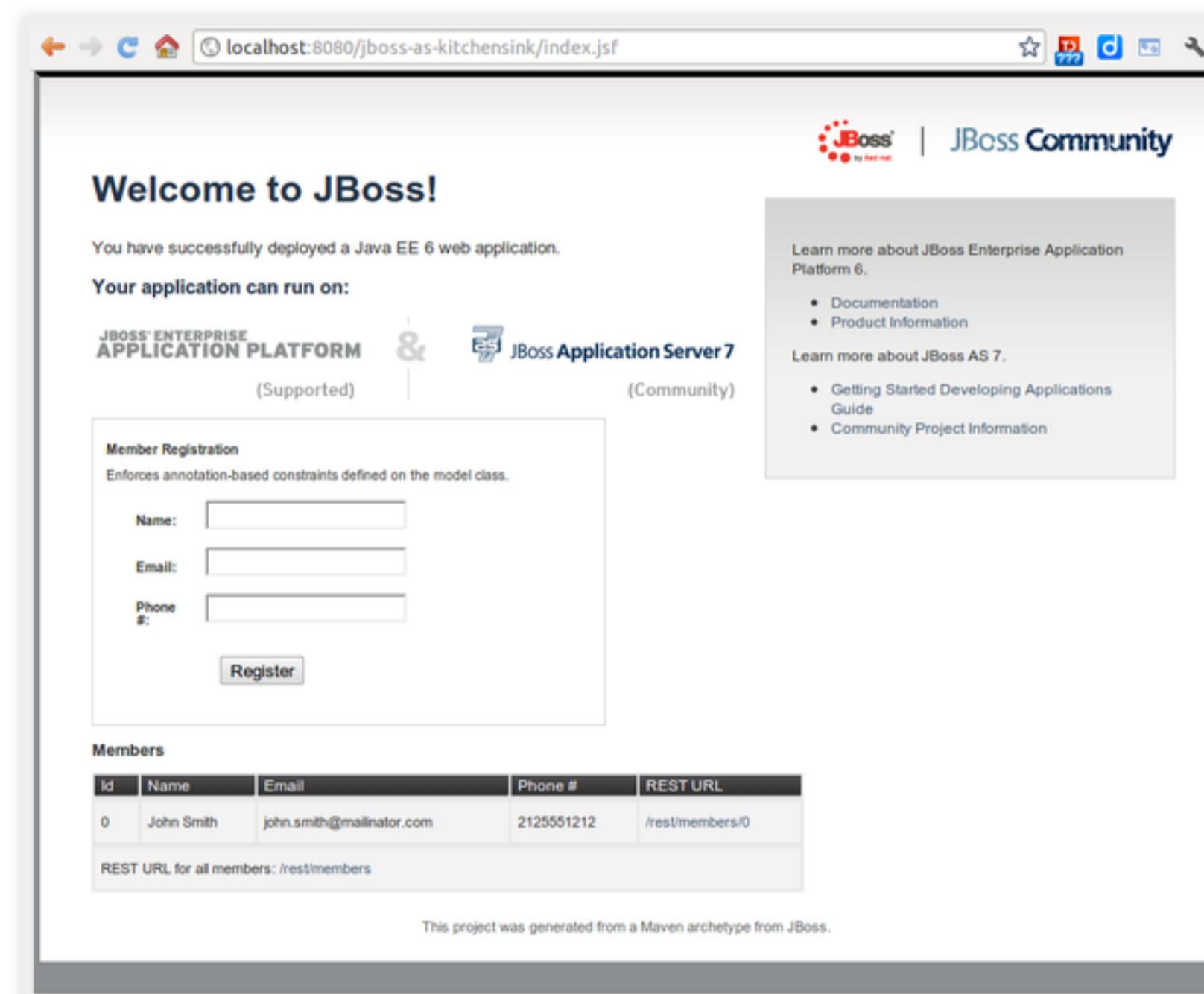


A4J:JSFUNCTION

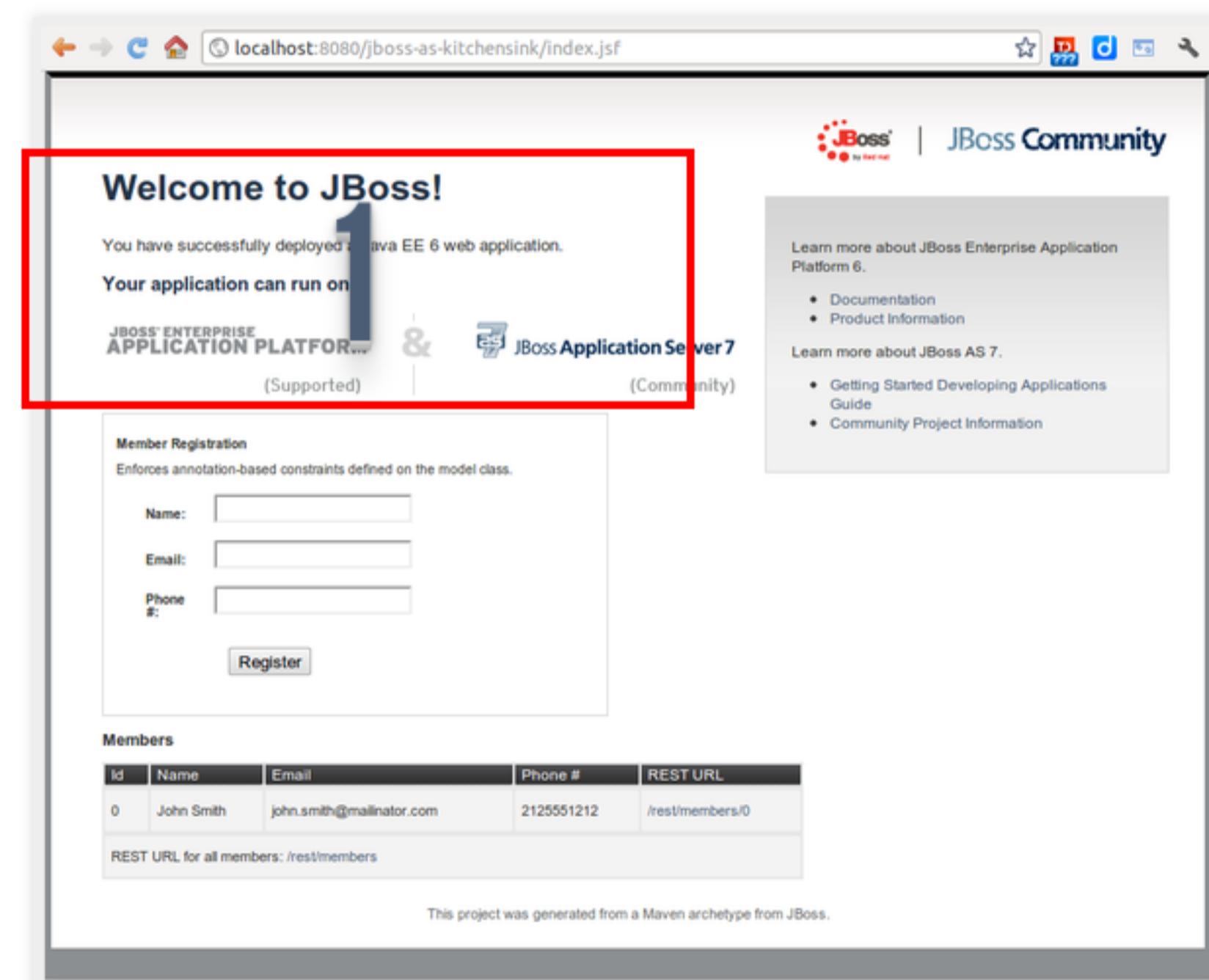
A facelet component interface to the JSF AJAX API

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

CASE STUDY: “KITCHENSINK” QUICKSTART



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CASE STUDY: “KITCHENSINK” QUICKSTART

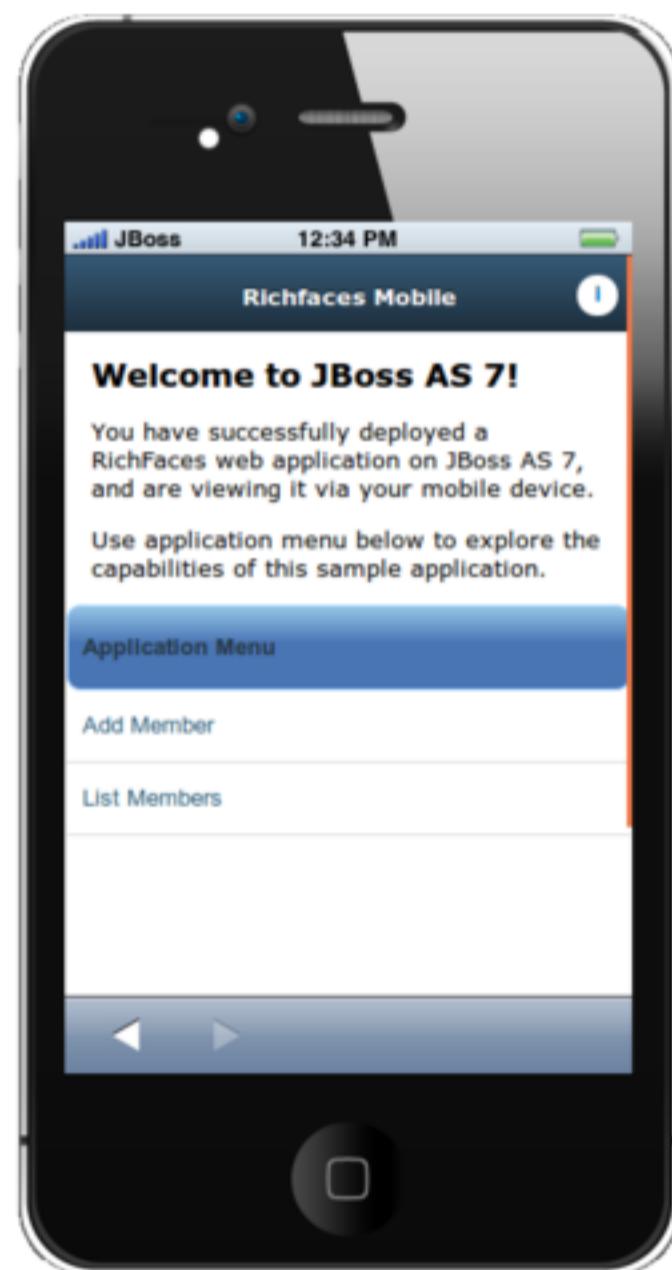


CASE STUDY: “KITCHENSINK” QUICKSTART



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">
                    <ui:include src="/mobile/about.xhtml"/>
                </div>
            </div>
        </h:form>
    </div>
</ui:define>
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                    </div>
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                        <ui:include src="/mobile/list.xhtml"/>
                    </div>
                    <div id="about" class="page stage-right">
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                </div>
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                </div>
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                </div>
                <div id="about" class="page stage-right">
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SINGLE-PAGE PROGRAMMING MODEL

```
<h:form id="mobileForm">
    <div id="page-container">
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        </div>
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            <ui:include src="/mobile/list.xhtml"/>
        </div>
        <div id="about" class="page stage-right">
            <ui:include src="/mobile/about.xhtml"/>
        </div>
    </div>
</h:form>
```

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">
    <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>
```

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) {
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            }
        }
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    }
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UPDATE THE PAGEBEAN - JSF

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                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>
```

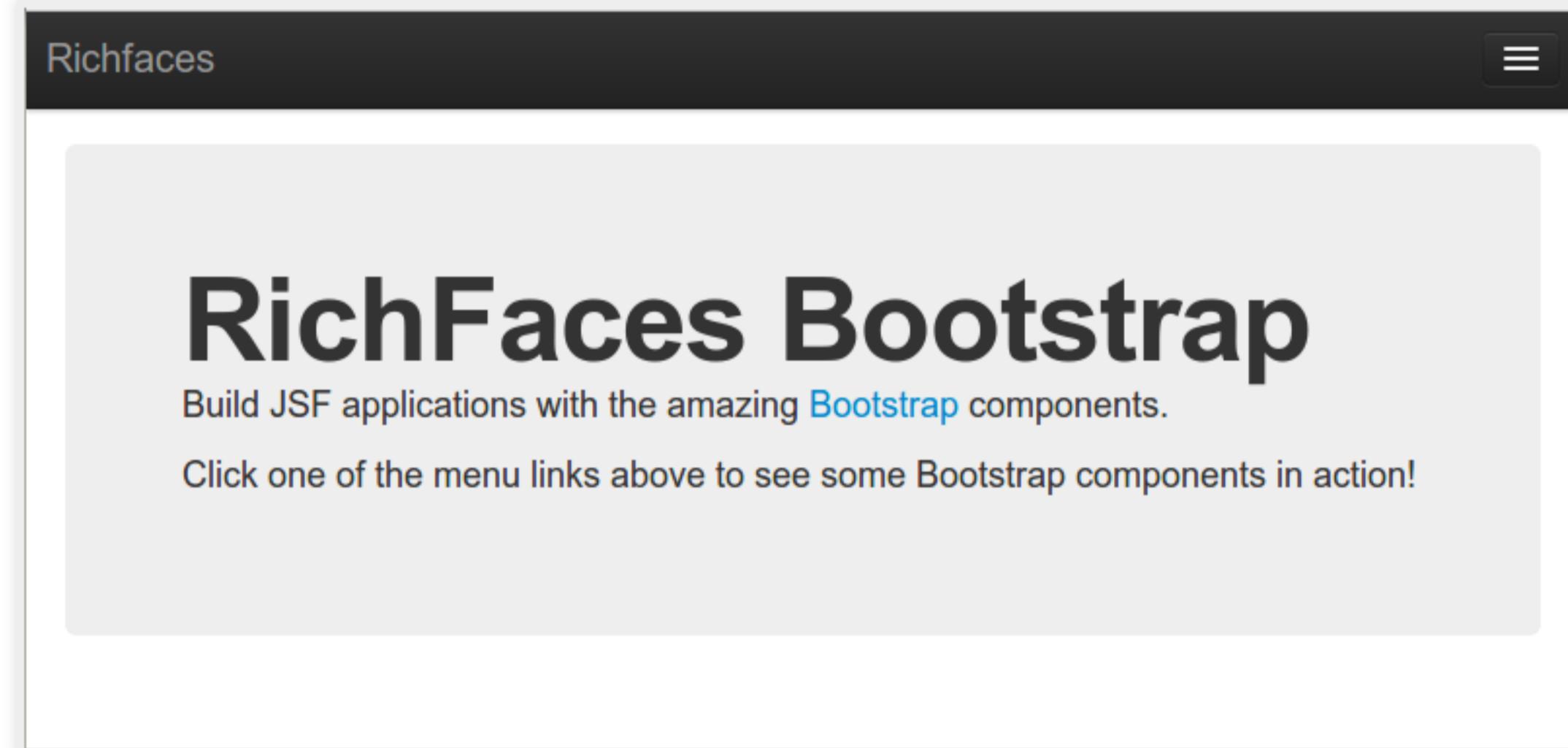
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RESPONSIVE LAYOUT



THE END?

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

CREDITS

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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