

# Using JBoss Seam to go from Stove-Piped Apps to an Integrated Web 2.0 Platform

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# A bit about me...



- Started in the Air Force managing satellite development
- Been developing Java EE systems since 1997
  - CORBA Instructor
  - Developed systems for:
    - McKesson
    - Celgene
    - GE Healthcare
    - American Psychological Association
    - US Navy
    - Intuit
- Been Chief Technologist at Vizuri since 2002





# Goals for this presentation?

- See Seam's power beyond a Web 2.0 framework
- Show Seam's integration capability using real world examples
- Share other significant Seam features you can use
- Answer your questions



# Session Agenda

- The problem and the opportunity –  
“Developing web apps for an integrated enterprise”
- 4 Minute JBoss Seam Overview
- Seam Integration Features
- APA Case Study – Seam as an integration hub
- Other significant Seam benefits you should know about
- Questions

# The problem and the opportunity

“Developing web apps for an integrated enterprise”



# Selecting a framework for your next web application



- Teams often focus on features like RIA and Web 2.0
- Underestimate the value of integrating with existing systems



# Integrating a new system into the enterprise



- Ways to integrate a new web application into an ecosystem of existing systems?
  - A great approach is a Service Oriented Architecture (SOA). Develop business oriented, reusable services.
  - But SOA requires additional investment and senior executive commitment to realize returns.
  - Another approach is to leverage a web frameworks integration functionality.

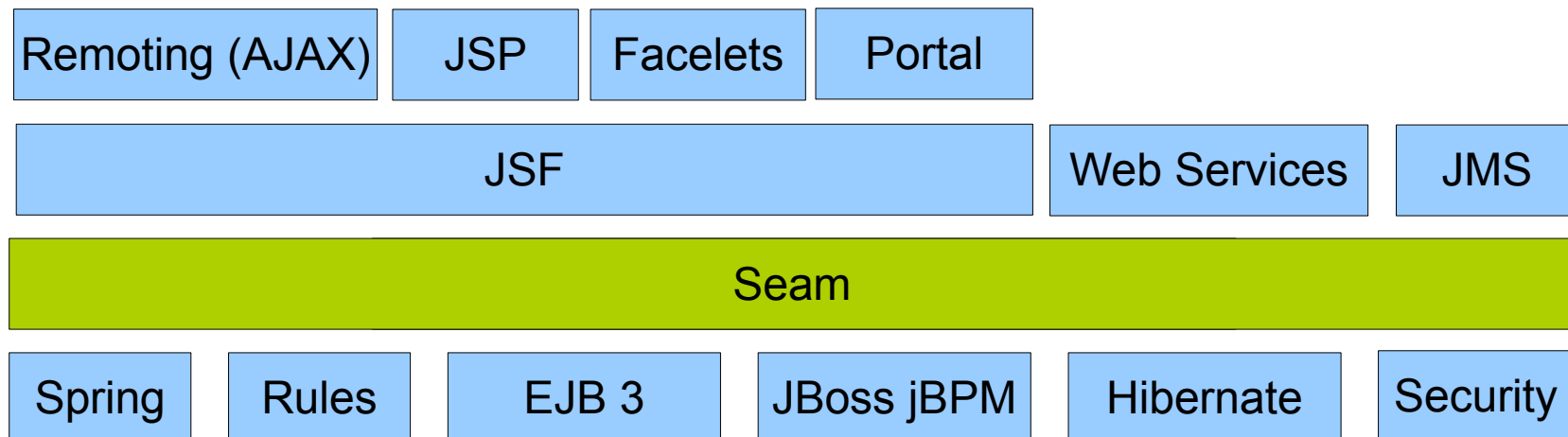
# 4 Minute JBoss Seam Overview





# What is JBoss Seam?

- Leading Rich Internet Application (RIA) Framework
- Establishes a common context for components
- Easy access to context via Expression Language (EL)

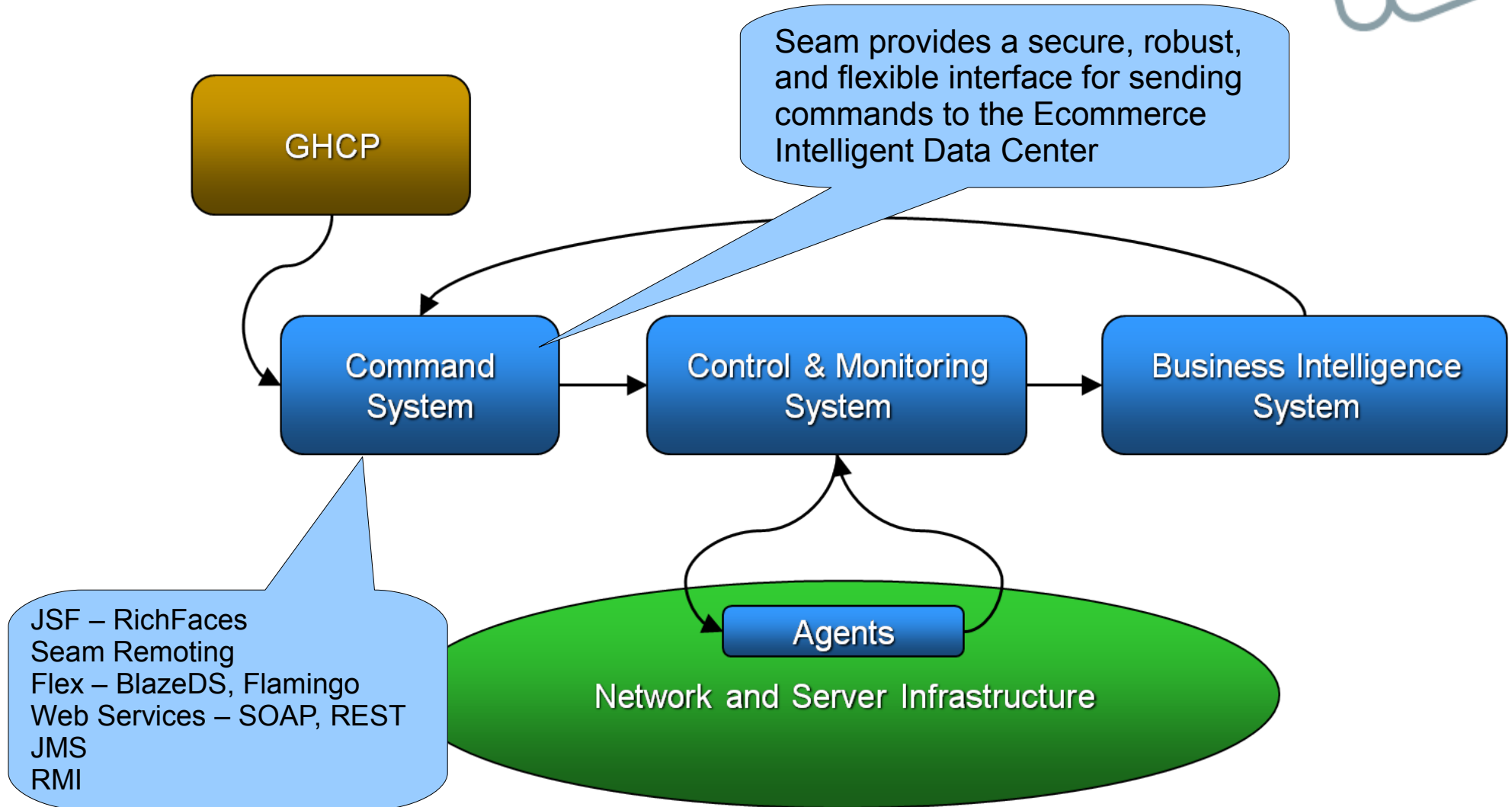




# Seam Highlights

- Seam context and component architecture
- JSF and Hibernate integrated framework
- Replace XML with annotations
- Seam-gen for rapid starts
- Address JSF deficiencies
  - page Actions, parameters, navigation and exceptions
- Simplified Security
- SeamTest for continuous integration
- Web 2.0 – RichFaces, Ice Faces, Seam Remoting, GWT
- Extras – jBPM, PDF, email, Excel, CAPTCHA, Web Services, JMS, Hibernate Search, Spring Integration

# A Quick Example of Using Seam in an Integrated Environment...



Using JBoss Seam as  
an integration hub at  
a recent project at the APA

# American Psychological Association (APA) Background



- Professional organization based in Washington, D.C.
- Largest association of psychologists -148,000 members
- Publishes ~53 journals ~65 books each year.
- Mission of the APA
  - Advance the creation, communication and application of psychological knowledge to benefit society and improve people's lives. The APA website is one of the primary means of communication and knowledge distribution within the APA community.



# APA Web Relaunch Project



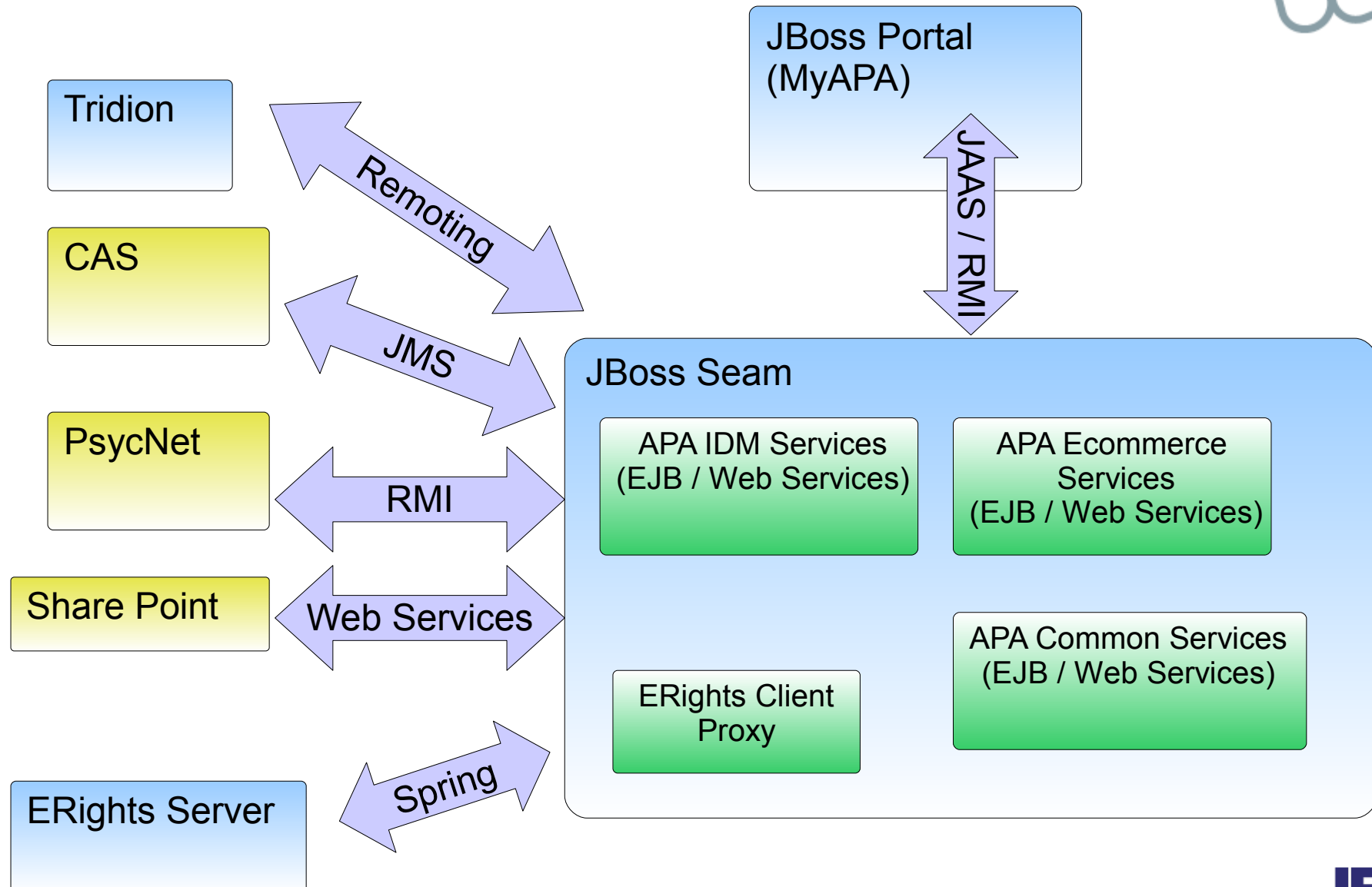
- Designed to integrate a suite of customer facing, stovepipe web applications
- Integrate a commercial digital rights licensing product
- New content management system – Tridion
- New ecommerce shopping cart
- New user portal - MyAPA
- Provide a rich user experience (RIA)



# Integration Features of JBoss Seam

- **Seam Remoting**
- **JMS Integration**
- **Web Services – SOAP and RESTful**
- **RMI**
- **Security Integration – SSO, JAAS, JBoss Portal**
- **Spring Integration**
- **jBPM**
- **JBoss Rules – Drools**

# APA Web Relaunch Architecture



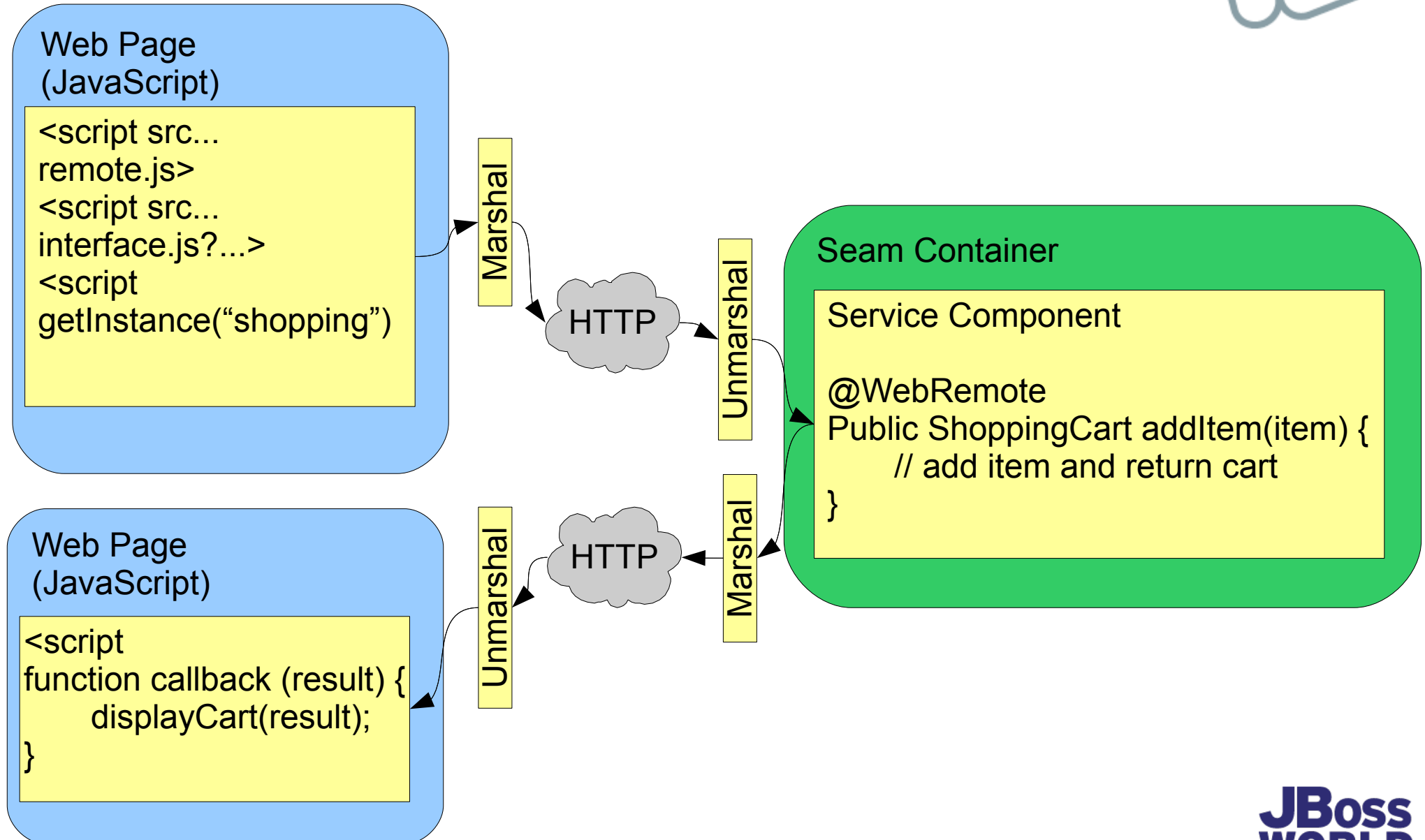
# Using Seam Remoting for Integration



- Allows Seam components to be accessed via AJAX
- APA web relaunch uses Seam Remoting to integrate...
  - Tridion (website content management)
  - Overall User session across non-Seam applications
  - Shopping cart functionality for non-Seam applications



# What is Seam Remoting?







# Remoting Shopping Cart Example

```
@Local
public interface IShoppingCartServiceLocal {

    @WebRemote
    public ApaCartSummary addToCart(String itemId, Integer quantity)
        throws ServiceException;

    @WebRemote
    public ApaCartSummary getCartSummary() throws ServiceException;

    @WebRemote
    public Integer changeQuantity(String itemId, Integer quantity)
        throws ServiceException;

}
```



# Remoting Shopping Cart Example

```
<script type="text/javascript"
src="/apa/seam/resource/remoting/remote.js"></script>
```

```
<script type="text/javascript"
src="/apa/seam/resource/remoting/interface.js?
shoppingCartManagementService"></script>
```

```
function addItemToCart(itemId, quantity){
    Seam.Component.getInstance("shoppingCartManagementService").
        addToCart(itemId, quantity, displayCartCallback);
}
```

```
function displayCartCallback(cartSummary) {
    alert("Got call back " + cartSummary.quantity + ", " +
        cartSummary.totalPrice);
}
```

# Spring Integration



- APA selected RightAccess and RightCommerce for digital rights management
- Both products are based on Spring
- Seam's integration of Spring made integrating RightAccess and RightCommerce quick and clean
- Spring components become “first class” Seam components



# RMI Integration

- A legacy APA system (PsycNet) based in Cold Fusion needed to integrate with the Seam shopping cart
- Seam allowed for a variety of integration options
  - Seam Remoting
  - Web Services
  - RMI
- The Cold Fusion team selected RMI
- This example demonstrates the practical flexibility of using Seam
- RMI support in EAR deployments

# Web Services Integration



- Web Services were deployed where other apps need to access services hosted in the core Seam app
  - The Share Point intranet uses Web Services to look up User and Group data
  - The order fulfillment gateway uses Web Services to retrieve user and inventory data when needed





# Web Service Example

```
@Stateless
@LocalBinding(jndiBinding = "/apa_ejb3/InventoryService/local")
@RemoteBinding(jndiBinding = "/apa_ejb3/InventoryService/remote")
@WebService(name = "InventoryService")
@SOAPBinding(parameterStyle = SOAPBinding.ParameterStyle.WRAPPED)
@WebContext(contextRoot="/apaservice", transportGuarantee="NONE")
@Name("inventoryService")
public class InventoryServiceImpl implements
    IInventoryServiceLocal, IInventoryServiceRemote{

    @Logger
    Log log;

    @In
    ShoppingCartService shoppingCartService;

    @WebMethod(operationName="GetApaProducts",
        action="GetApaProducts")
    public List<ApaInventoryProduct> getApaProducts(
        @WebParam(name = "itemList") List<String> itemList)
        throws ServiceException {

    }
}
```

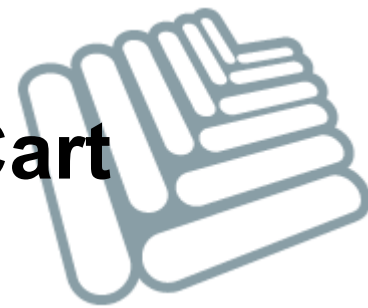


# JBoss Portal Integration

- APA selected the JBoss Portal as the new platform for the MyAPA portal (my.apa.org)
- Portal security was integrated in two steps
  - Checked for RightAccess cookie in login page
  - Used a custom JAAS login module to make a RMI call to the core Seam app and validate cookie

Other significant Seam features  
we have used

# Rich Internet Application (RIA) Shopping Cart



- Used JBoss Seam and RichFaces to develop a RIA shopping cart experience
- AJAX components streamlined the check out process
- Reduced likelihood of customer falling out of checkout
- RichFaces components enhanced developer productivity

# Screen Shot from Checkout Process



Cart

1 Shipping

2 Payment

3 Review

4 Thank You

## Shipping address

Continue

Is the address you'd like to use displayed below? If so, select the corresponding box below. Or you can enter [a new shipping address](#).

☒ **IDEM Admin**  
750 1st Street NE  
Washington, VA, 22030  
US

[Edit](#) [Delete](#)

☐ **Use a New Shipping Address**

## Shipping Method

☒ Standard Shipping 7.00

< Back to Cart

Continue

## Shopping Cart

	Description	Quantity	Price
	<a href="#">A Lifetime of Intelligence</a> Ian J. Deary, PhD; Lawrence J. Whalley, PhD; and John M. Starr, PhD Hardcover - October 2008 <b>List Price: \$69.95</b> Member/Affiliate Price: \$49.95 <a href="#">How do I get this price?</a>	<input type="text" value="1"/> <a href="#">Update Quantity</a> <a href="#">Remove</a>	<b>\$69.95</b>
<b>Order Subtotal:</b>			<b>\$69.95</b>

[Ordering Help/FAQ](#)

[Shipping Rates & Delivery Area](#)

[Member/Affiliate Discounts](#)

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# CAPTCHA with enhanced Audio CAPTCHA



- Used Seam's out of the box CAPTCHA component
- Enhanced CAPTCHA by providing an audio option to support 508 compliance.

```
@Name("audioCaptcha")
@Scope(ScopeType.APPLICATION)
@BypassInterceptors
@Install(precedence = APPLICATION)
public class AudioCaptcha extends AbstractResource {

    public String getResourcePath() {
        return "/audioCaptcha";
    }

    public void getResource(HttpServletRequest request, HttpServletResponse
        Response) throws ServletException, IOException {
    }
}

jQuery("#audioCaptcha").click(function() {
    jQuery("<iframe src='/apa/seam/resource/audioCaptcha
    height='18px'></iframe>").appendTo(jQuery(this));
});
```

# Seam-gen



- Used seam-gen to quickly create the initial project.
- Good way to bring new developers up to speed
- Great for quick demo with existing DB schema



# Conversations

- Shopping Cart checkout process scoped to Seam's conversation scope.
- Conversation starts when an item is added to a user's shopping cart.
- Conversation ends with confirmation at end of checkout process.
- Increases scalability by reducing session size

# Questions