



# Apache OFBiz: Real-World Open Source Java™ Platform ERP

Supreme JUG Commander Juggy the Java Finch  
General David Jones  
Admiral Ean Schuessler

Open for Business Project, Apache Foundation  
<http://ofbiz.apache.org>

TS-7900



# Apache OFBiz

Free Software Enterprise Business Logic  
for Java™ Technology

A demonstration on setting up, followed by a brief tour of the platform and its features; the intention being that you may return home and experiment with OFBiz out in your own business

# Agenda

What is OFBiz?

A quick start

Technical overview

Customized applications

Community is critical

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## What is OFBiz?

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# What Is OFBiz?

- OFBiz is a general purpose framework for building software that controls common business processes
- Unlike many systems which provide abstract software structures, OFBiz attempts to supply a set of data structures and software libraries for managing more concrete business elements such as orders, employees, contracts, and manufacturing processes

# OFBiz Features

- **Advanced e-commerce** (integrated catalog, pricing, order and sales management)
- **Customer relationship management**
- **Warehouse management and fulfillment** (auto stock moves, batched pick, pack and ship)
- **Accounting** (invoice, payment and billing accounts, fixed assets)
- **Work efforts** (manufacturing, events, tasks, etc.)
- **Content management** (product content, web sites, documents, blogging, forums, etc)

# What Is OFBiz?

- Save effort by customizing existing business logic rather than reinventing the application from low level storage and messaging primitives
- The OFBiz data schema is based on Len Silverston's comprehensive survey of industry data modeling practices
- OFBiz provides more than 700 data classes representing common business structures

# A Short History of OFBiz

- Conceived **May 13<sup>th</sup>, 2001**
- **First 6 Months:** identified universal data model and basic platform objectives
- **Next 3 Years:** community building, iterative development and refinement of framework
- **Last 2.5 Years:** extensive refactoring and improvement of base enterprise application artifacts
- **Apache Top Level Project** in December, 2006



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# A Quick Start

- Pull down the latest from SVN, build and run

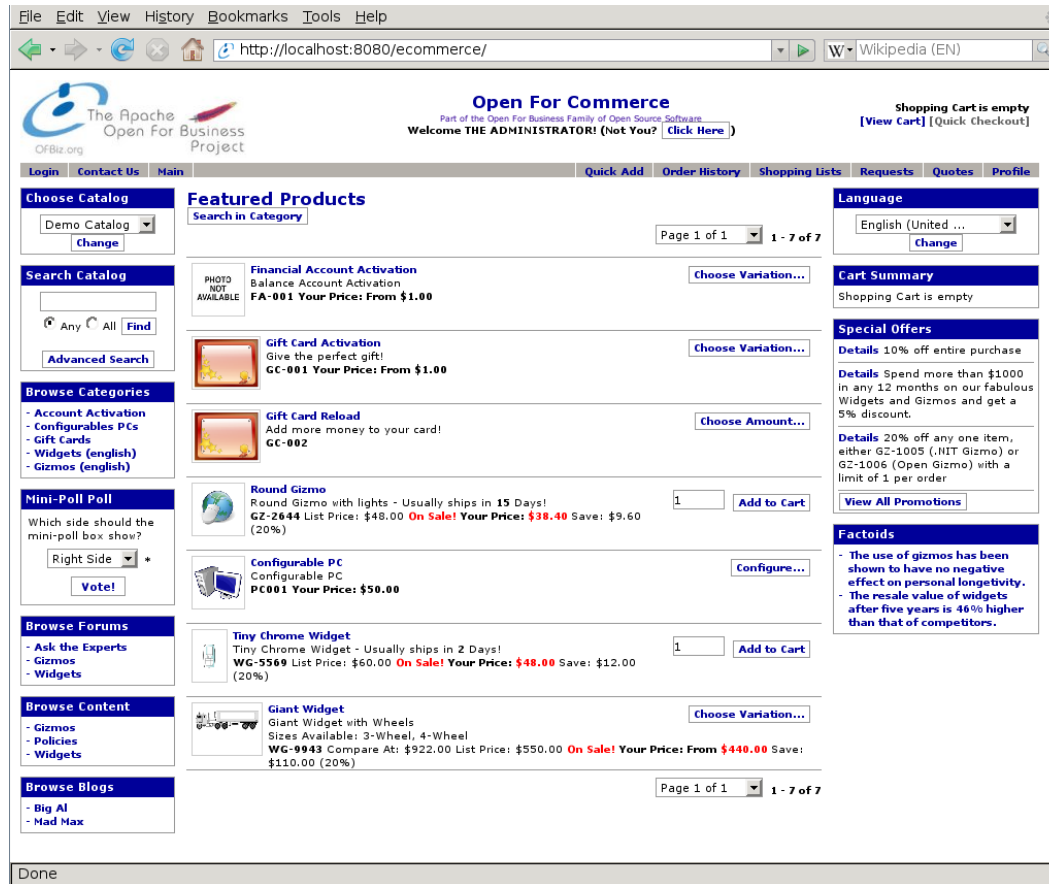
```
$ svn co http://svn.apache.org/repos/asf/ofbiz/trunk ofbiz  
... checkout messages ...
```

```
$ ./ant run-install  
... build messages ...
```

```
$ java -jar ofbiz.jar  
... startup messages ...
```

- This will give a base install running on an embedded Derby database and web services listening on port 8080 and 8443

# http://localhost:8080/ecommerce



The screenshot shows a web browser window displaying the 'Open For Commerce' application. The browser's address bar shows 'http://localhost:8080/ecommerce/'. The application header includes the Apache Open For Business Project logo and a welcome message for the administrator. The main content area is divided into several sections: 'Choose Catalog' with a dropdown menu, 'Search Catalog' with search filters, 'Browse Categories' with a list of categories, 'Mini-Poll Poll' with a voting interface, 'Browse Forums' with a list of forum topics, 'Browse Content' with a list of content items, and 'Browse Blogs' with a list of blog posts. The 'Featured Products' section displays a list of products with their names, descriptions, and prices. The right sidebar contains a 'Language' dropdown, a 'Cart Summary' showing an empty cart, 'Special Offers' with details of discounts, and 'Factoids' with interesting facts about gizmos.

OFBiz provides web-based ecommerce with pricing rules, customer reviews and ratings, promotional codes that track sell through and configurable products that can drive manufacturing processes.

# Configurable Products



Configurable PC

Configurable PC

PC001

Product Aggregated Price: \$385.00

[Tell-A-Friend](#)

**Select the memory configuration:**

- RAM 256 MB (\*)
- RAM 512 MB +\$115.00

**1st Hard Disk drive**

- HD 2 GB (\*)
- HD 4 GB +\$200.00

**2nd Hard Disk drive**

[Details](#)

- No option
- HD 2 GB +\$220.00
- HD 4 GB +\$420.00


**Select the PCI cards:**

- Ethernet Card +\$18.00
- Modem 56k +\$15.00

For instance, this sample configurable PC allows the user to specify a variety of options on the product. The configuration of the options impacts the final ticket price. The sub-assemblies of a product can drive sophisticated Bill Of Materials decisions in the OFBiz manufacturing application.

# http://localhost:8080/manufacturing

Production Run ID: 10000

**Product Name** Configurable PC [PC001]  
**Current Status Id** Created  
**Facility ID** Web Store Warehouse [WebStoreWarehouse] ▼  
**Quantity**   
**Start Date**    
**Calculated Completion Date** 2007-04-17 15:42:01.016  
**ProductionRun Name**   
**Description**

Purchasing a configurable PC generates a series of manufacturing tasks that must be executed to complete the order.

Order Items

| Order Id      |
|---------------|
| WS10000/00001 |

Z

Tasks

| Sequence Num | Routing Task Name | Fixed Asset        | Start Date              | Calculated Completion Date | Estimated Setup Time | Estimated Run Time |
|--------------|-------------------|--------------------|-------------------------|----------------------------|----------------------|--------------------|
| 10           | Stock out [10001] | DEMO_MACHINE_GROUP | 2007-04-17 15:09:11.016 | 2007-04-17 15:19:11.016    | 0                    | 600,000            |
| 20           | Assembly [10002]  | DEMO_MACHINE_GROUP | 2007-04-17 15:19:11.016 | 2007-04-17 15:34:11.016    | 0                    | 900,000            |
| 30           | Test [10003]      | DEMO_MACHINE_GROUP | 2007-04-17 15:34:11.016 | 2007-04-17 15:42:01.016    | 20,000               | 450,000            |

Materials

| Routing Task Id   | Product Name                     | Quantity |
|-------------------|----------------------------------|----------|
| Stock out [10001] | Ethernet Card 10/100 [ETH_BRAND] | 1        |
| Stock out [10001] | HD 2 GB [HD2GB_BRAND]            | 2        |
| Stock out [10001] | RAM 256 no parity [RAM256_BRAND] | 2        |

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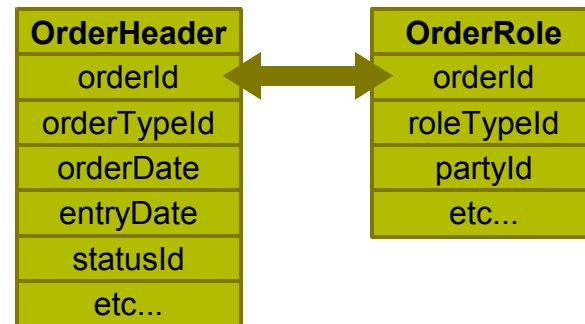
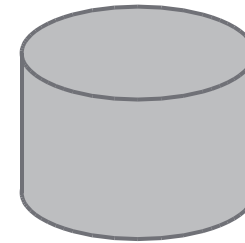
# Technical Overview

- The Entity Engine
  - OFBiz apps work with relational stores directly
  - Entity Engine provides a “ResultSet on steroids” interface to relational data called a GenericEntity
  - Schemas and queries are database agnostic
  - A caching infrastructure is provided to accelerate common lookups. Cache sizes can be adjusted on an Entity by Entity basis

# Entity Engine

```
GenericValue order =
    delegator.findByPrimaryKey(
        "OrderHeader",
        UtilMisc.toMap(
            "orderId", myOrderId));
```

```
List shippingCustomers =
    order.getRelatedByAnd("OrderRole",
        UtilMisc.toMap(
            "roleId",
            "SHIP_TO_CUSTOMER"));
```

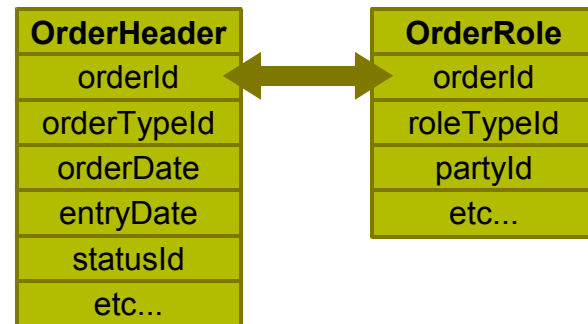
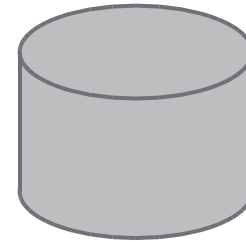




# Entity Engine

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```



# Technical Overview

- The Service Engine
  - Services are exposed as stateless units of functionality with named parameters and can be called synchronous, asynchronous or scheduled
  - Services can be implemented in a variety of languages; The calling interface shields any calling code from the implementation details
  - Services can be delegated to remote machines via SOAP, XML-RPC and other messaging services; OFBiz services can also be externally exposed via the same protocols

# Service Engine: An Example Service

```
<service name="quickShipEntireOrder" engine="simple" auth="true"
  location="org/ofbiz/shipment/shipment/ShipmentServices.xml"
  invoke="quickShipEntireOrder">
  <description>Quick Ships An Entire Order Creating One Shipment Per
    Facility and Ship Group. All approved order items are automatically
    issued in full and put into one package. The shipment is created in
    the INPUT status and then updated to PACKED and SHIPPED.
  </description>
  <attribute name="orderId" type="String" mode="IN" optional="false"/>
  <attribute name="originFacilityId" type="String" mode="IN"
    optional="true"/>
  <attribute name="setPackedOnly" type="String" mode="IN"
    optional="true"/>
  <attribute name="shipmentShipGroupFacilityList" type="List" mode="OUT"
    optional="false"/>
</service>
```

# Service Entity Condition Actions

- Service entity condition actions allow “AOP-like” triggering of other orthogonal services when some system service is called

```

<!-- if new statusId of a SALES_SHIPMENT is SHIPMENT_PACKED,
      create invoice -->
<eca service="updateShipment" event="commit">
  <condition-field field-name="statusId" operator="not-equals" to-field-
name="oldStatusId"/>
  <condition field-name="statusId" operator="equals"
value="SHIPMENT_PACKED"/>
  <condition field-name="shipmentTypeId" operator="equals"
value="SALES_SHIPMENT"/>
  <action service="createInvoicesFromShipment" mode="sync"/>
</eca>
  
```

# Service Engine: MiniLang

```

<simple-method method-name="quickShipEntireOrder">
  <entity-one entity-name="OrderHeader" value-name="orderHeader"/>
  <iterate list-name="orderItemShipGroupList" entry-
    name="orderItemShipGroup">
    <set value="SHIPMENT_INPUT" field="shipmentContext.statusId"/>
    <call-service service-name="createShipment" in-map-
      name="shipmentContext"/>
    <iterate list-name="perShipGroupItemList" entry-name="...">
      <call-service service-name="issueOrderItemShipGrpInvResToShipment" in-
        map-name="issueContext"/>
    </iterate>
    <iterate list-name="itemIssuances" entry-name="itemIssuance">
      <call-service service-name="addShipmentContentToPackage" in-map-
        name="shipItemContext"/>
    </iterate>
    <set value="SHIPMENT_PACKED" field="packedContext.statusId"/>
    <call-service service-name="updateShipment" in-map-name="packedContext"/>
    <set value="SHIPMENT_SHIPPED" field="packedContext.statusId"/>
    <call-service service-name="updateShipment" in-map-name="packedContext"/>
  </iterate>
</simple-method>
  
```

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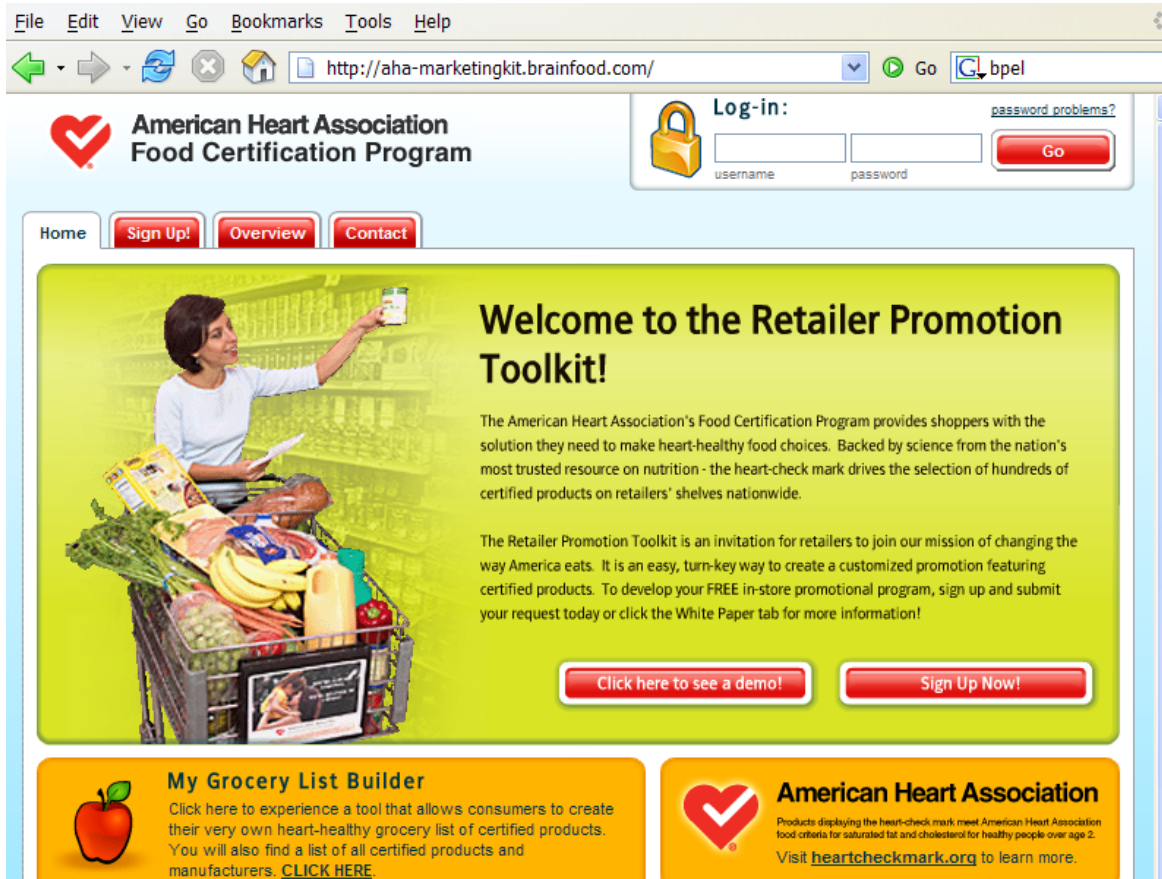
Community is critical

# Customized Applications

- The vocabulary of business entities in the OFBiz framework can be used to implement business processes other than its default e-commerce application
- Common business objects such as parties (individuals, groups and companies), physical assets (tools, buildings) and more are available in the baseline toolkit
- Building on these primitives can provide a big boost once you are familiar with them

# Customized Applications

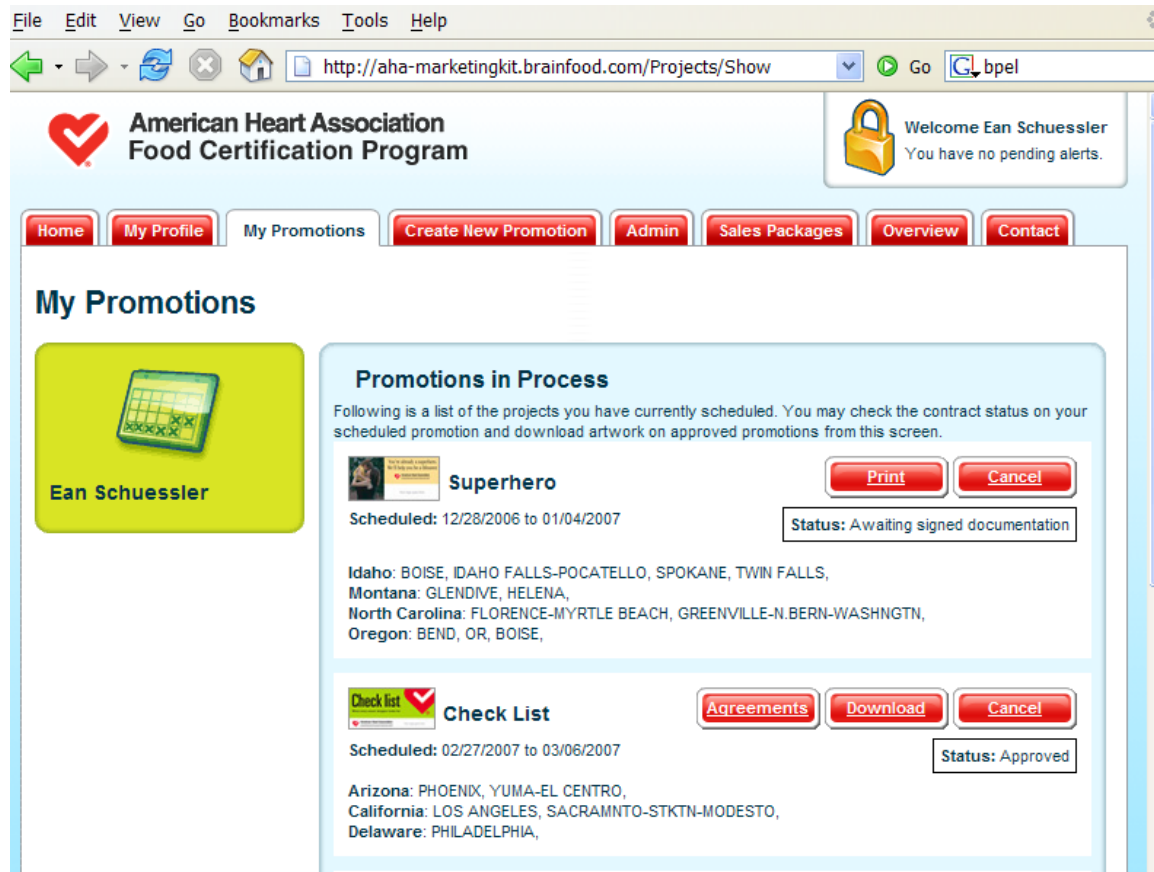
## Automated legal contract management





# Customized Applications

## Automated legal contract management



File Edit View Go Bookmarks Tools Help

http://aha-marketingkit.brainfood.com/Projects/Show

**American Heart Association**  
Food Certification Program

Welcome Ean Schuessler  
You have no pending alerts.

Home My Profile My Promotions Create New Promotion Admin Sales Packages Overview Contact

### My Promotions

**Ean Schuessler**

#### Promotions in Process

Following is a list of the projects you have currently scheduled. You may check the contract status on your scheduled promotion and download artwork on approved promotions from this screen.

**Superhero**

Scheduled: 12/28/2006 to 01/04/2007 **Status:** Awaiting signed documentation

Idaho: BOISE, IDAHO FALLS-POCATELLO, SPOKANE, TWIN FALLS,  
 Montana: GLENDIVE, HELENA,  
 North Carolina: FLORENCE-MYRTLE BEACH, GREENVILLE-N.BERN-WASHNGTN,  
 Oregon: BEND, OR, BOISE,

**Check List**

Scheduled: 02/27/2007 to 03/06/2007 **Status:** Approved

Arizona: PHOENIX, YUMA-EL CENTRO,  
 California: LOS ANGELES, SACRAMNTO-STKTN-MODESTO,  
 Delaware: PHILADELPHIA,

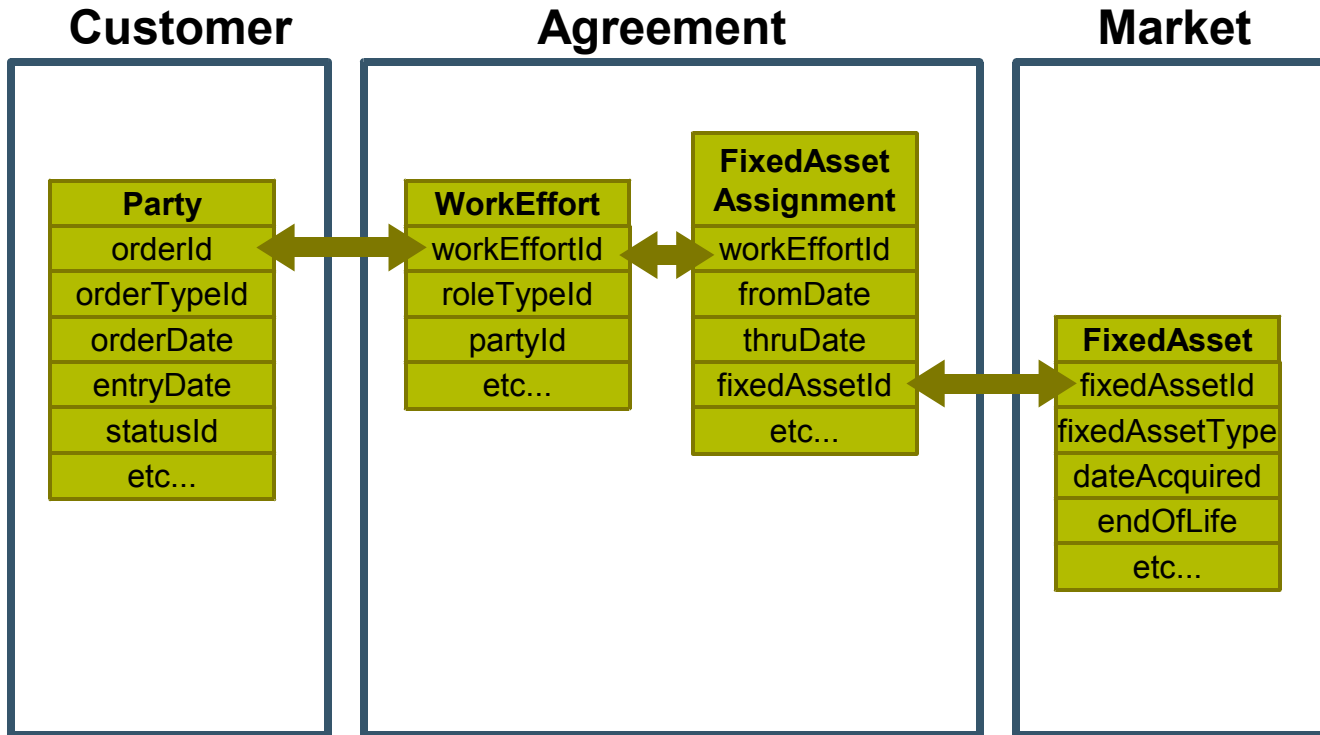
# Customized Applications

## Automated legal contract management

- The web framework is flexible enough that you can build applications with very different look-and-feel that leverage the large selection
- For this legal contract management application, no new data classes were required; All of the business elements mapped cleanly to existing OFBiz primitives
- The OFBiz web framework is an area where a lot of innovation is being incorporated

# Customized Applications

Automated legal contract management





# Demo



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# Community Is Critical

- Software implementation is a unique way to share business practices and verify execution
- An open organization that is not a for-profit company helps insure that the platform is not dominated by one particular commercial interest
- The Apache Foundation is a reliable organization for businesses to invest effort in; Many organizations probably already use Apache software

# Community Is Critical

- Most business programmers work for organizations that are not primarily in the software business
- Customizing business logic is more common than customizing low level code like operating systems or web servers
- If sharing code for low level system services can succeed then sharing high level business logic should be an even larger win
- **We just have to work together**



# Q&A





# For More Information

- <http://ofbiz.apache.org>
- The Data Model Resource Book
- <http://www.universaldatamodels.com>



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