Fun and Profit with the Google Checkout API

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Checkout API Evangelist

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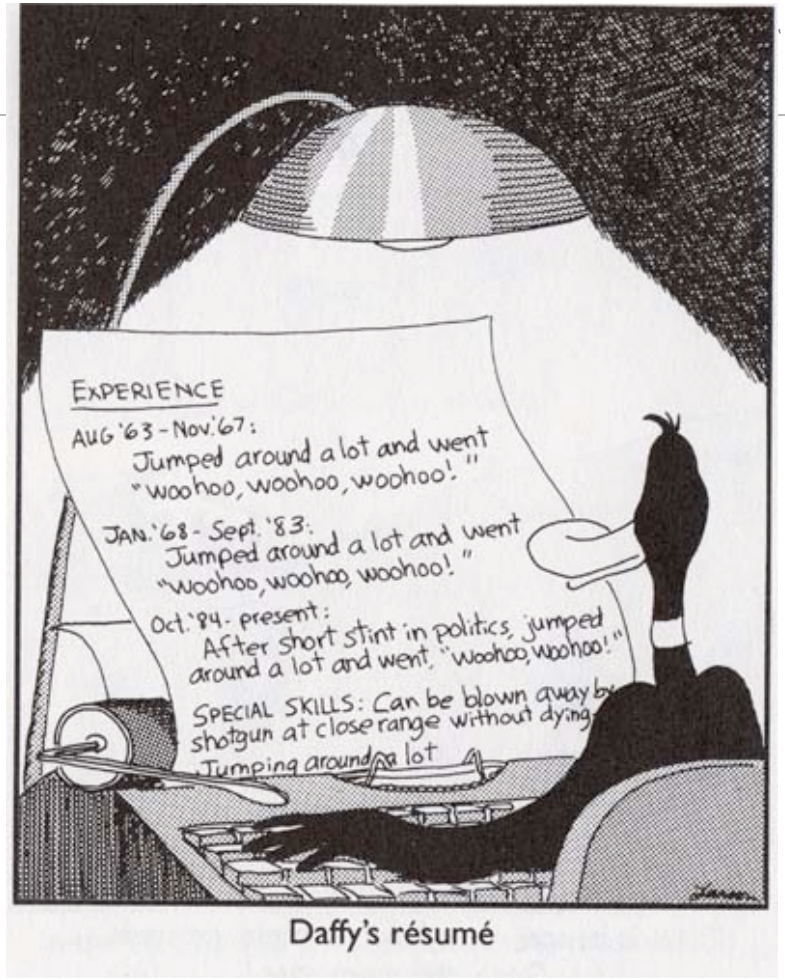
P@ in a slide

- API Evangelist - Google Checkout
- Software plumber
- Family man: married, 3 kids
- Java geek… in scripting rehab: Ruby, JavaScript, PHP, Python
- Open Source: ROME, AdWords (java, C#, ruby)
- Sun: Blogs, Portals, eCommerce
- Netscape/AOL: LDAP, Calendar, App Servers, CMS, MyNetscape (RSS)
- More on my blog http://wordpress.chanezon.com



Daffy's résumé

Agenda

Google

- API: Platforms and Bridges
- Google Checkout
  - Service
  - API
    - Level 1 Integration: Easy
    - Level 2 Integration: Possible
- Demos
  - Google Earth-Checkout Mashup
  - Google Adwords-Checkout Mashup
  - Google Checkout Buttons Generator
- SOAP vs REST
- XSD vs RELAXNG
- Conclusion

Google APIs

Why are we doing do it?

- Our mission: “Organize the world’s information and make it universally accessible and useful”
  - We can’t organize it all ourselves

24 Google APIs on http://code.google.com… and counting!

- Google Checkout API
- Google Data API
  - Calendar API
- Maps API
- AdWords API
- Blogger API
- Data APIs
- Desktop SDK
- Earth (KML)
- Enterprise APIs
- Homepage API
- Related Links
- Sitemaps
- Talk (XMPP)
- Toolbar API
- Ajax Search API
- …

API Metaphor: Platforms

Google

One stop shop, soup to nuts

API Metaphor: Platforms

Google

Islands of data

API Metaphor: Platforms

Google

Build tall structures on top

API Metaphor Bridges

Google

User - Search results (Ajax Search)

Ajax

User - Maps (Maps)

User - Data (Gdata)

REST

Buyers - Sellers (Checkout)

Advertiser Ads (AdWords)

SOAP

Publishers - Ads (AdSense)

API Metaphor Bridges

Google

User - Search results (Ajax Search)

User - Maps (Maps)

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Buyers - Sellers (Checkout)

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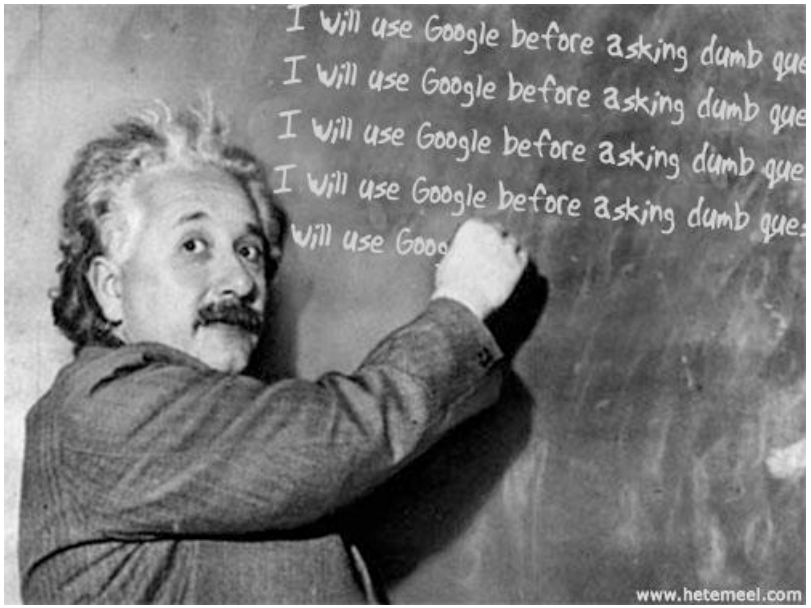
SOAP

How?

Google

This is fine and dandy but how do I use all that in my webapp?

- APIs = Plumbing



"If I had my life to live over again, I'd be a plumber."

Albert Einstein

Data plumbing technologies

Google

ODBC

OLEDB

(P@: In my case JDBC, EJB and Hibernate… but same feeling)

Remoting technologies

XML over HTTP

SOAP, WSDL

WS_* specs to your hearts content...

Google™ Checkout

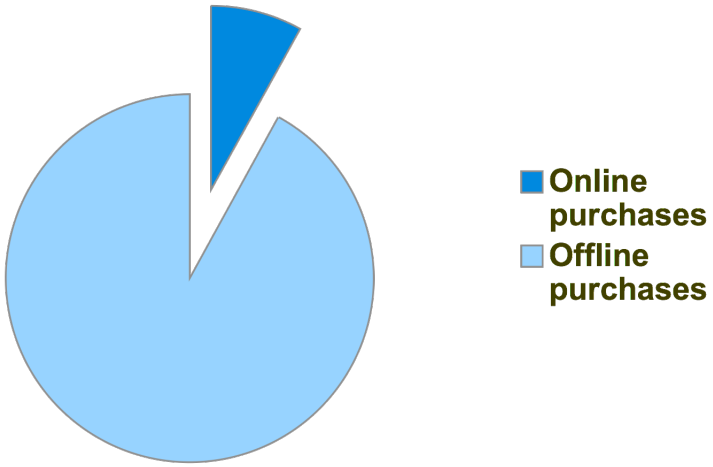
Fast, secure checkout across the Web

Opportunities in E-Commerce

Google

Only 8% of all retail purchases are expected to occur online in 2006*

2006 Consumer Purchases by Channel



* 2006 State of Retailing Online, Shop.org/Forrester

Problem: Discovery, Checkout

- Difficult to find trustworthy sellers
- Long, repetitive, checkout processes
- 63% of shopping carts are abandoned after beginning checkout*

* Online Customer Experience Survey, Allurent, February 2006

Opportunity: Search, Convenience

- 37% of online purchases start with search*
- 25% of search queries result in a purchase directly related to the query**
- Fast checkout can improve conversion

* 2005 Online Holiday Mood Study, Shop.org/BizRate Research
** The Role of Search in Consumer Buying, comScore/Google

Introducing Google Checkout

Google Checkout is an alternative checkout process that provides a fast, secure way to buy and sell online.

Shoppers

- Easily identify Checkout merchants on Google with the Checkout badge
- Conveniently make purchases with a single login/password
- Review and manage purchases from various merchants in one central location

Merchants

- Acquire more leads by displaying the Checkout badge
- Convert more sales by offering a streamlined checkout process
- Lower costs with free transaction processing based on your AdWords spend

Google

retailco

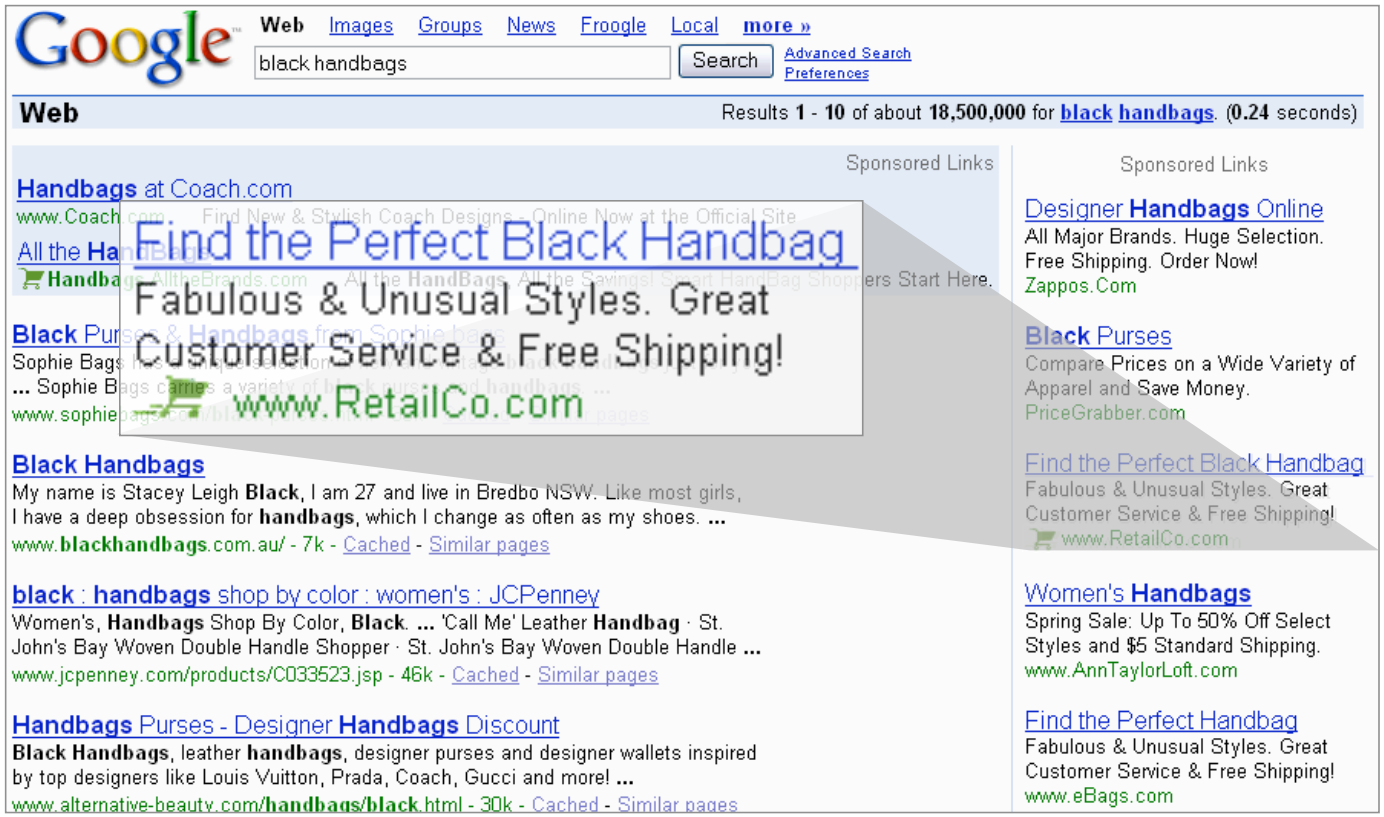
(fictitious company used for illustrative purposes)

Search…Find…Buy…

Shoppers use Google to search for items to buy.

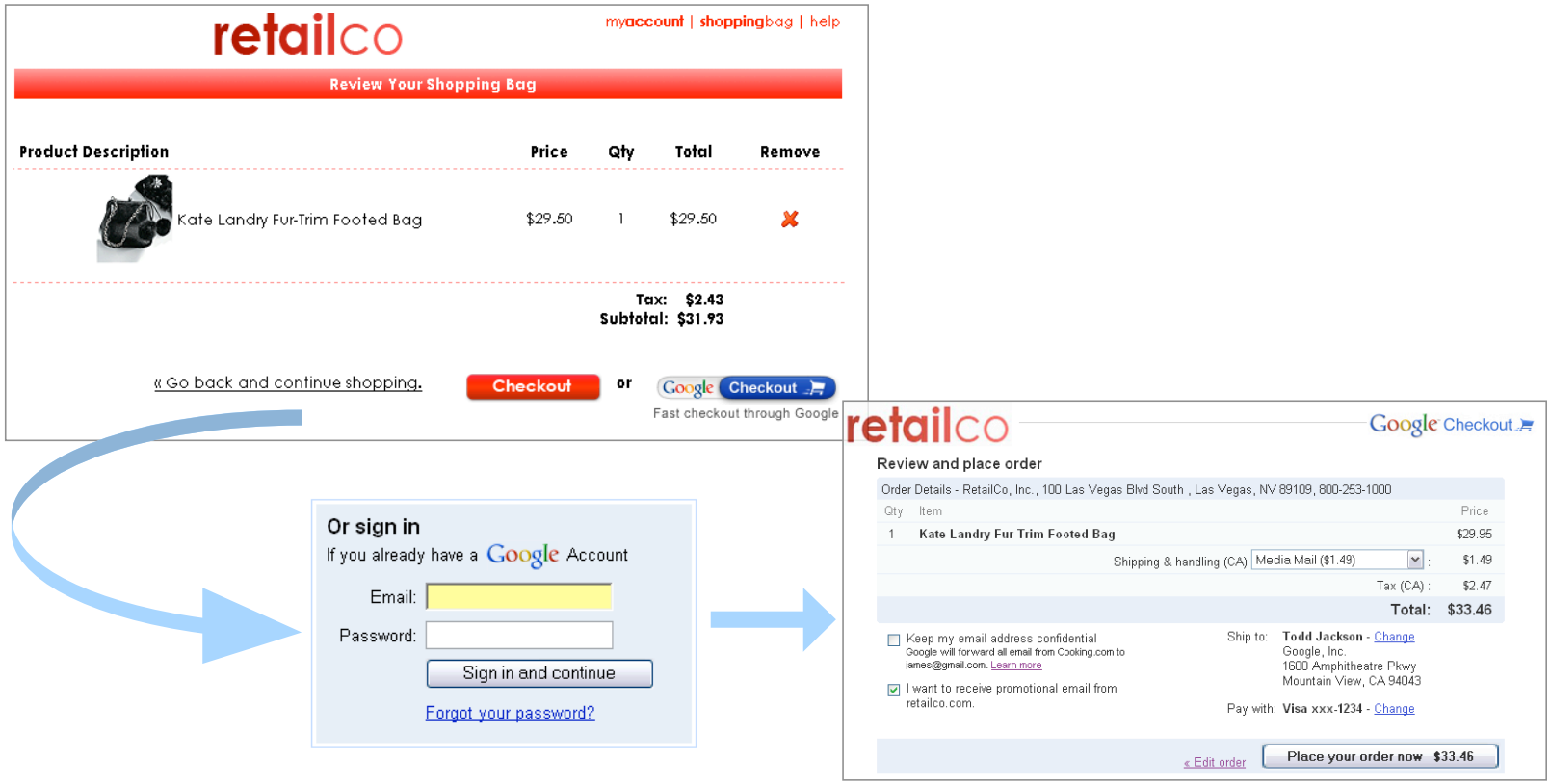
Search…Find…Buy…

Shoppers look for the Google Checkout badge to find merchants to buy from.



Search…Find…Buy…

To buy, shoppers need only click Google Checkout and enter their username/password.



Order History

Google Checkout users can easily manage all of their purchases in a central location.

Google Checkout **Purchase History**

Default shipping address
Todd Jackson
Google Inc
1600 Amphitheatre Pkwy
Mountain View, CA 94043
Edit shipping addresses

Default payment method
Visa xxx-1234
Expires 04/07
Todd Jackson
1600 Amphitheatre Pkwy
Mountain View, CA 94043
Edit payment methods

See all sellers I've rated

Orders 1 - 20 of 35 orders Next »

Order Date	Item	Seller	Status	Amount
May 30, 2006	Kate Landry Fur-Trim Footed Bag	retailco.com	In progress	$99.16
May 18, 2005	Alice in Wonderland Book	Bill's Books	In progress	$2.45
Sep 14, 2005	Chocolate Chip cookies	Jane's Cookies	Ready for pickup	$1.50
Sep 2, 2005	Michael Jackson	Google Video	Credit card declined	$27.34
Sep 2, 2005	Tiger Woods highlights	Google Video	Completed - Rate this seller	$5.95
Dec 14, 2004	Tree landscape	Smith Photography	Cancelled Refund - Dec 15, 2003	$15.34 ($15.34)
Dec 14, 2004	Fruit in bowl still life	Smith Photography	Shipped	$47.50

1 - 20 of 35 orders Next »

Product Benefits

For Buyers…

Convenience

- Google Checkout badge helps identify merchants to buy from
- One place to track purchases

Speed

- Single log in for easy buying across the web

Confidence

- Credit card number concealment
- Fraud protection
- Email forwarding

For Merchants…

More Leads

- Google Checkout badge helps attract more customers

More Conversions

- Streamlined checkout process increases conversions

Lower Costs

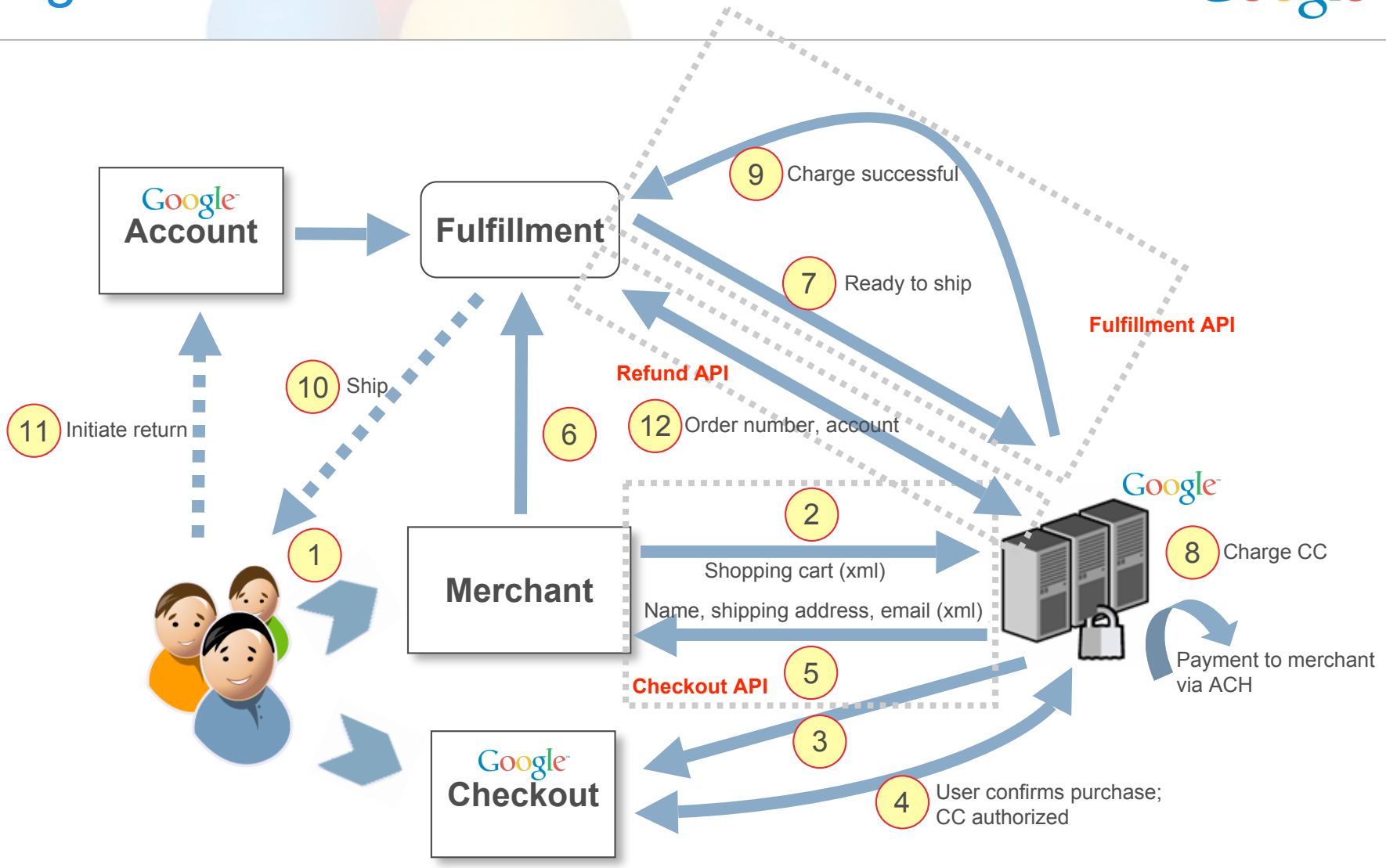
- Free transaction processing for sales up to 10X AdWords spend
- Low 2% + $0.20 per transaction fee for all other sales
- Fraud protection

AdWords and Google Checkout

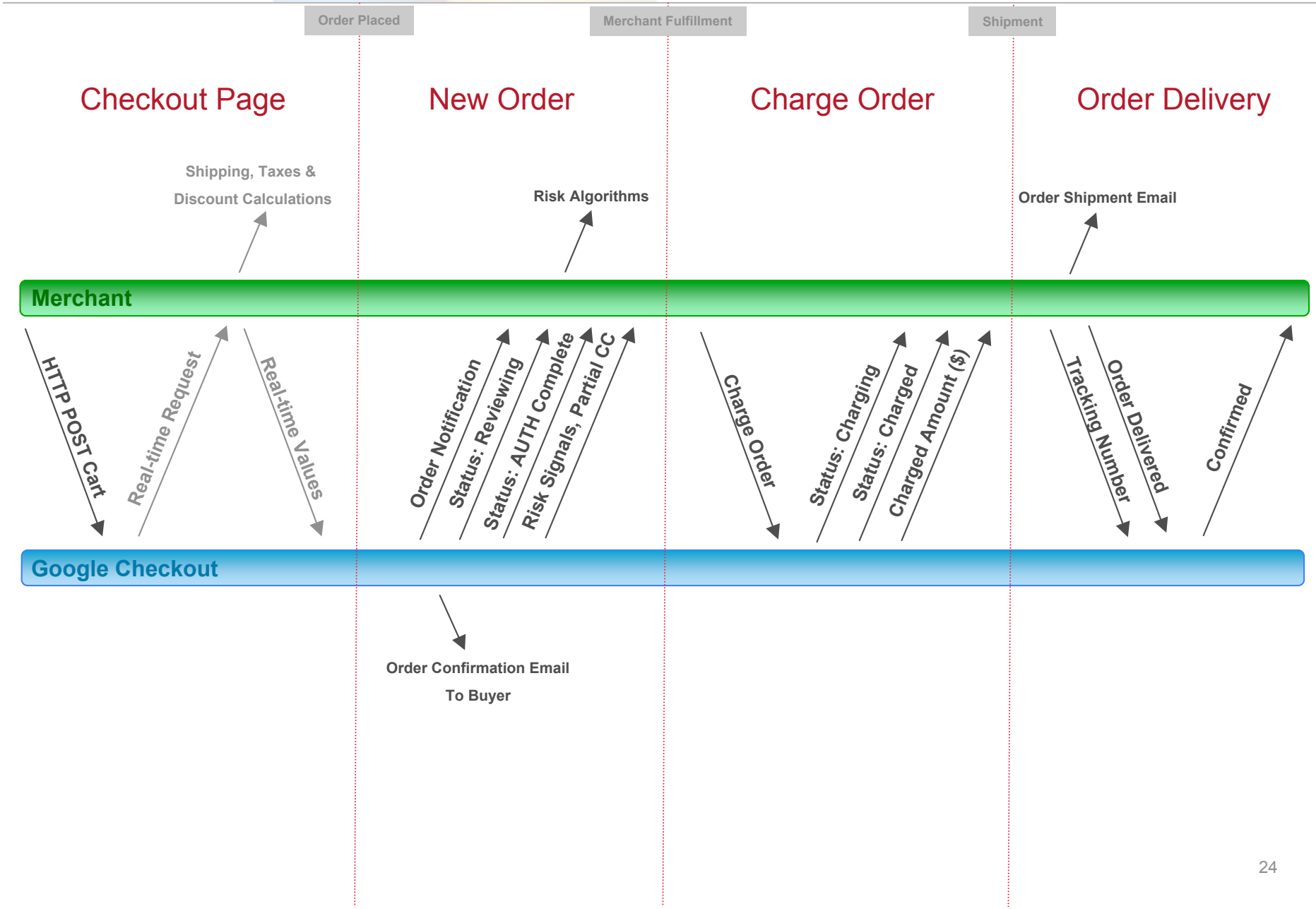
AdWords and Google Checkout work together to increase sales and lower costs.

1. Promote your business with AdWords
2. Get more traffic with the Google Checkout badge
3. Get higher sales conversions by offering a streamlined checkout process
4. Lower your costs with free transaction processing

Google Checkout Transaction Flow



Order Flows: Typical



Google Checkout Integration Options

- Buy Now buttons
- e-commerce partners
- Name/Value pair API
- Google Checkout XML API
- Systems Integrators specialized in Checkout

http://checkout.google.com/seller/developers.html

For Developers: bonuses for bringing Google Checkout to your merchants
https://services.google.com/inquiry/checkout_ecommerce

Holiday promotions

- Free processing for merchants during holiday season
- $10 off $30 purchase for buyers

Google Checkout API

2 levels of integration

- Level 1: post shopping carts (taxes, shipping, coupons)
- Level 2: merchant calculations, order management, 2 ways API

REST API

- XML over HTTP
- XML Schema
- Synchronous / Asynchronous (notifications)
- HMAC-SHA1 for signature, Basic auth over SSL
- Samples and Libraries in many environments
  - PHP, Java, Windows Classic ASP (COM), .NET
  - OsCommerce, Zen Cart

Google Checkout API Level 1

Easy
Static Checkout Buttons

Large – 180 x 46

Form with hidden fields

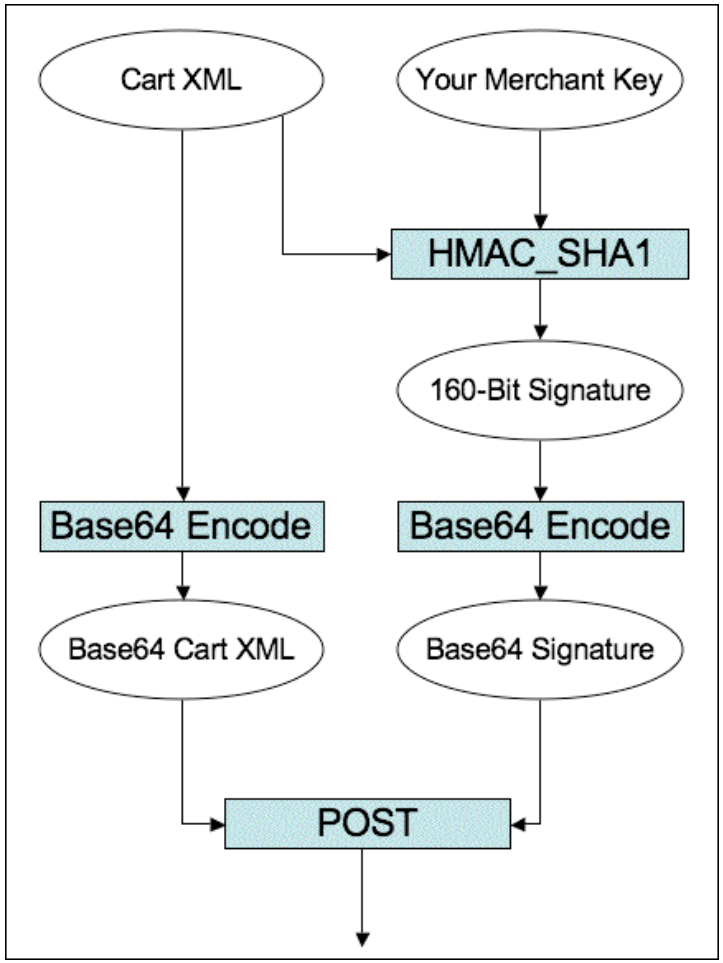
```
<form method="POST"
action="https://sandbox.google.com/cws/v2/Merchant/12
34567890/checkoutForm"
    accept-charset="utf-8">
    <input type="hidden" name="item_name_1"
value="Peanut Butter"/>
    <input type="hidden" name="item_description_1"
value="Chunky peanut butter."/>
    <input type="hidden" name="item_quantity_1"
value="1"/>
    <input type="hidden" name="item_price_1"
value="3.99"/>
    <input type="hidden" name="_charset_"/>
    <input type="image" name="Google Checkout"
alt="Fast checkout through Google"

src="http://sandbox.google.com/buttons/checkout.gif?m
erchant_id=1234567890

&w=180&h=46&style=white&variant=text&loc=en_US"
height="46" width="180"/>
</form>
```

Google Checkout API Level 1

Post Cart XML + Signature



Checkout API PHP Sample Code

Google

Create a shopping cart XML and generate a button: cartdemo.php

```php
//Create a new shopping cart object
$merchant_id = "912132643578668";  //Your Merchant ID
$merchant_key = "GlH1q4EnO76AerDy8dPZow";  //Your Merchant Key
$server_type = "sandbox";
$cart =  new GoogleCart($merchant_id, $merchant_key, $server_type);

//Add items to the cart
$item1 = new GoogleItem("MegaSound 2GB MP3 Player",
    "Portable MP3 player - stores 500 songs", 1, 178);
$item2 = new GoogleItem("AA Rechargeable Battery Pack",
    "Battery pack containing four AA rechargeable batteries", 1 , 12);
$cart->AddItem($item1);
$cart->AddItem($item2);

//Add shipping options
$ship = new GoogleShipping("Ground", "flat-rate", 5);
$ship->SetAllowedCountryArea("CONTINENTAL_48");
$cart->AddShipping($ship);

$ship = new GoogleShipping("2nd Day", "flat-rate", 10);
$ship->SetAllowedCountryArea("FULL_50_STATES");
$cart->AddShipping($ship);

//Add tax options
$tax_rule = new GoogleTaxRule("default", 0.08);
$tax_rule->SetStateAreas( array("CA") );
$tax_table = new GoogleTaxTable("default");
$tax_table->AddTaxRules($tax_rule);
$cart->AddTaxTables($tax_table);

//Display Google Checkout button
echo $cart->CheckoutButtonCode("large");
```

Level 2 Integration

Google

Level 1: Merchants use the UI to manage orders

Level 2: lets you integrate your order management system with Google

Google calls an endpoint on the merchant side

- SSLv3 + Basic Auth

Merchant Calculations API

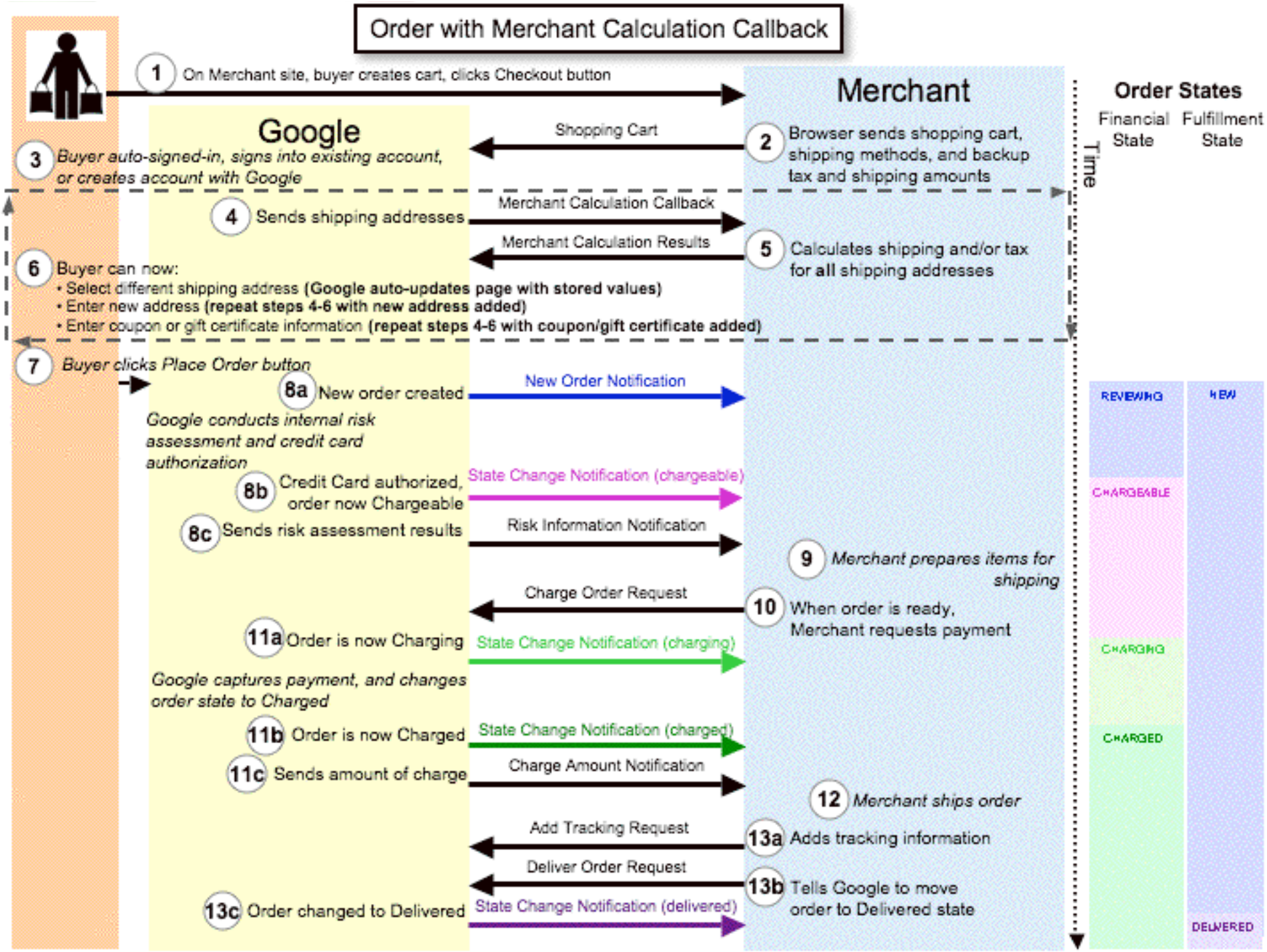
- Merchants can apply their own business logic to compute values
- Shipping, Taxes, Coupons
- 3s to answer, else Google uses default values

Notification API

- New Order, Risk Information, Order State Change, Amount
- If fails, retry policy up to 30 days

Order Processing API

- Change order state


Order with Merchant Calculation Callback
Google
Merchant
Order States
Financial State
Fulfillment State
Time
1 On Merchant site, buyer creates cart, clicks Checkout button
Shopping Cart
2 Browser sends shopping cart, shipping methods, and backup tax and shipping amounts
3 Buyer auto-signed-in, signs into existing account, or creates account with Google
Merchant Calculation Callback
4 Sends shipping addresses
Merchant Calculation Results
5 Calculates shipping and/or tax for all shipping addresses
6 Buyer can now:
• Select different shipping address (Google auto-updates page with stored values)
• Enter new address (repeat steps 4-6 with new address added)
• Enter coupon or gift certificate information (repeat steps 4-6 with coupon/gift certificate added)
7 Buyer clicks Place Order button
8a New order created
New Order Notification
Google conducts internal risk assessment and credit card authorization
8b Credit Card authorized, order now Chargeable
State Change Notification (chargeable)
8c Sends risk assessment results
Risk Information Notification
9 Merchant prepares items for shipping
Charge Order Request
10 When order is ready, Merchant requests payment
11a Order is now Charging
State Change Notification (charging)
Google captures payment, and changes order state to Charged
11b Order is now Charged
State Change Notification (charged)
11c Sends amount of charge
Charge Amount Notification
12 Merchant ships order
Add Tracking Request
13a Adds tracking information
Deliver Order Request
13b Tells Google to move order to Delivered state
13c Order changed to Delivered
State Change Notification (delivered)
REVIEWING
NEW
CHARGEABLE
CHARGING
CHARGED
DELIVERED

Google Checkout Resources

Google

- Main site: http://checkout.google.com
- Google Checkout Video / Demo: https://checkout.google.com/seller/demo.html
- Places to Shop: http://www.google.com/buy/m.html
- Developers Center: https://checkout.google.com/seller/developers.html
- Google Checkout API Center: http://code.google.com/apis/checkout/
- Developer's Guide: http://code.google.com/apis/checkout/developer/index.html

Google AdWords-Checkout Business Mashup

Google

Demo

Designed by Thomas Steiner

Fully Buzzword Compliant:-)

- PHP, SOAP, REST, Ajax, Business Mashup, Google

Sample: shows how to integrate AdWords and Checkout in your PHP application

Open Source soon

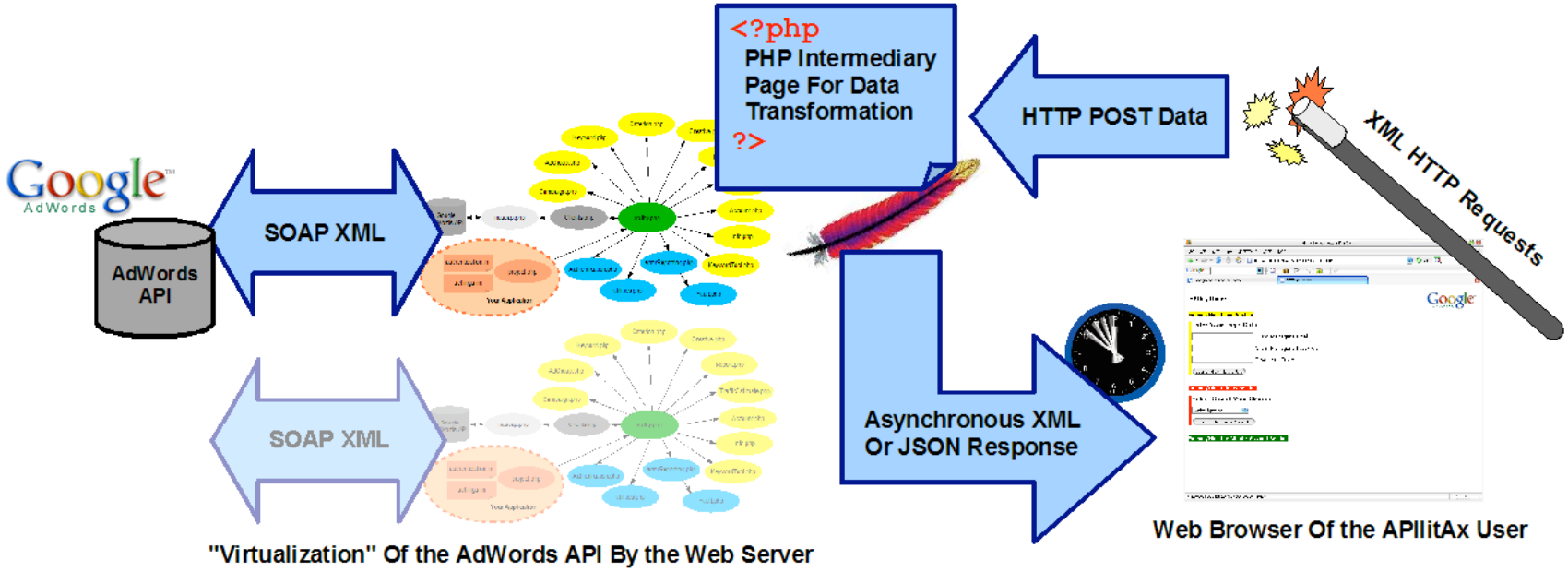
Demos

Google

- Google Checkout Buttons Generator
  - http://www.chanezon.com/pat/code/com.google.api.checkout.CheckoutButtonGenerator/CheckoutButtonGenerator.html
- Google Earth-Checkout Mashup
  - http://www.chanezon.com/pat/presos/earth/flatland.kmz
  - http://www.chanezon.com/pat/presos/earth/shops.kml
- Google AdWords-Checkout Mashup
  - https://storetest.chanezon.com/index_vendor.php
  - https://storetest.chanezon.com/index_buyer.php

Principle

- JavaScript XML HTTP requests from a web application access intermediate local PHP files communicating via HTTP POST data
- PHP files make the APIlity API calls, running on the local server
- Asynchronous responses are translated back into JavaScript

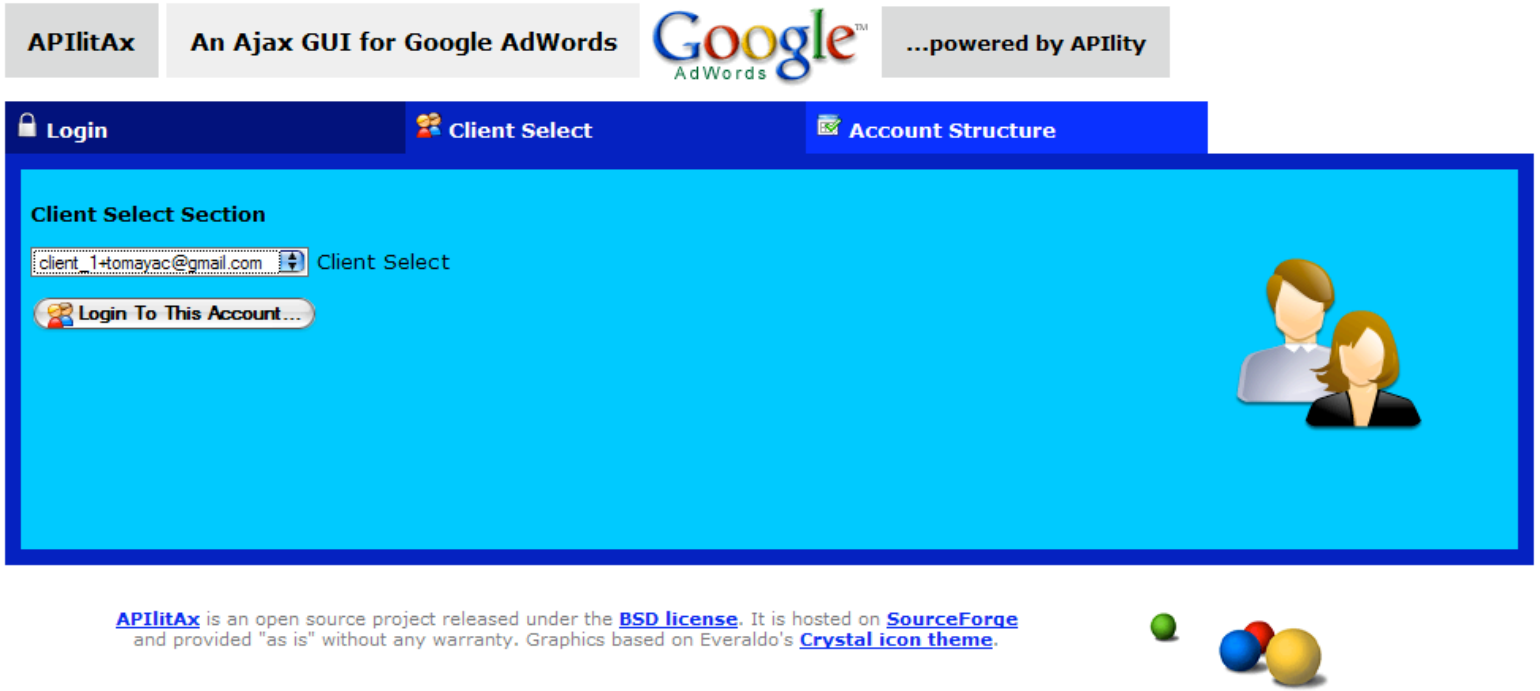


APIlitax (cont'd)

Google

What does it look like?

– Client Select section:

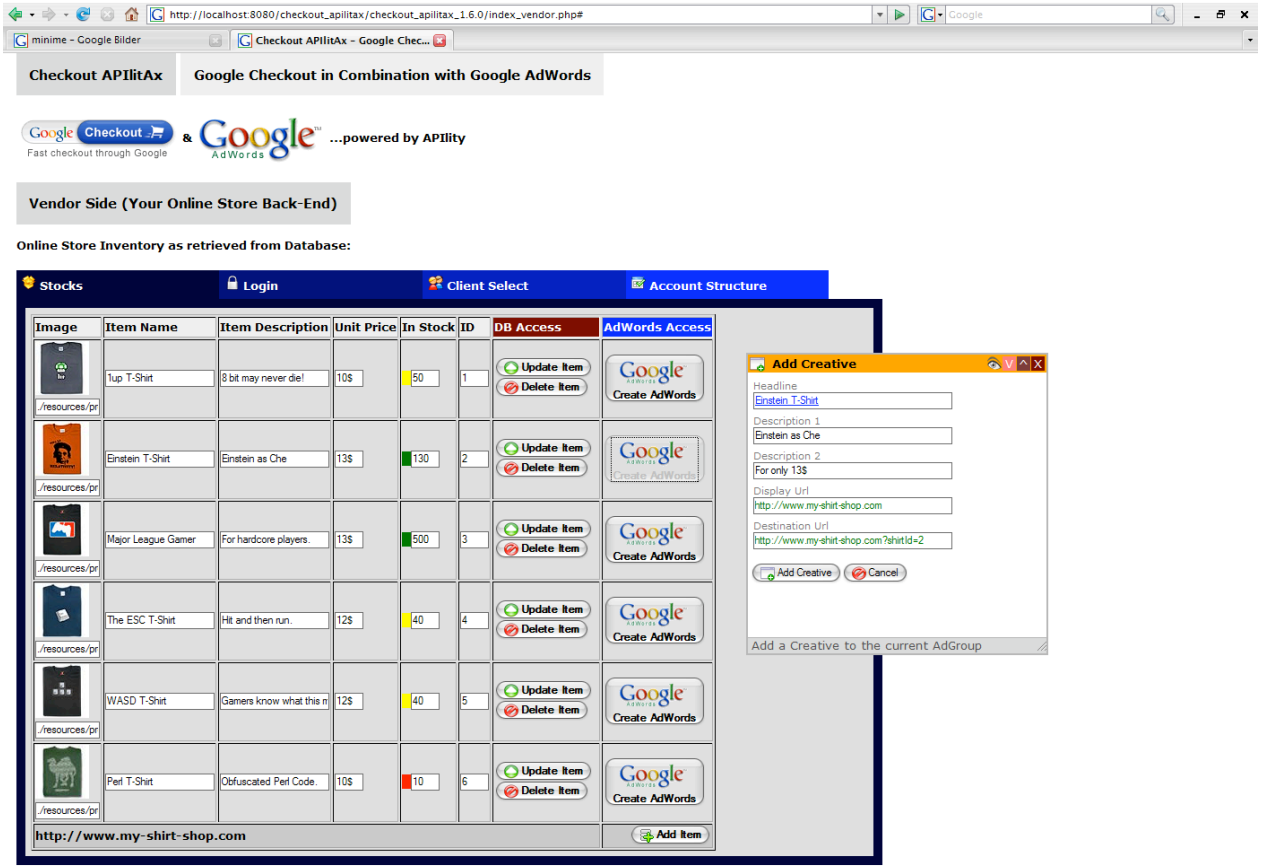


➔ http://apilitax.sourceforge.net

AdWords-Checkout Mashup

What does it look like?

- Merchant Side



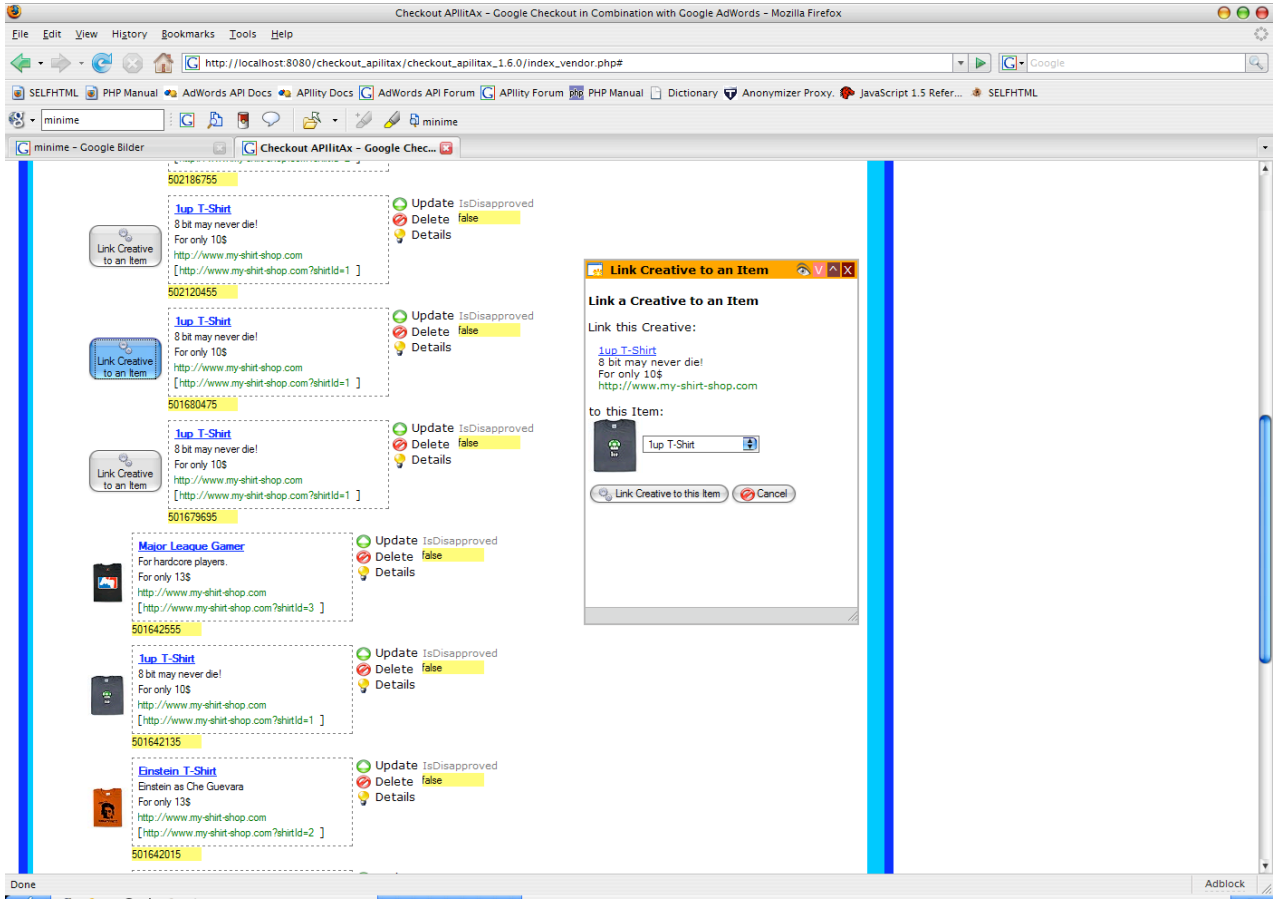
Checkout APIlitAx is an open source project released under the BSD license. It is hosted on SourceForge and provided "as is" without any warranty. Graphics based on Everaldo's Crystal icon theme.

AdWords-Checkout Mashup

Google

What does it look like?

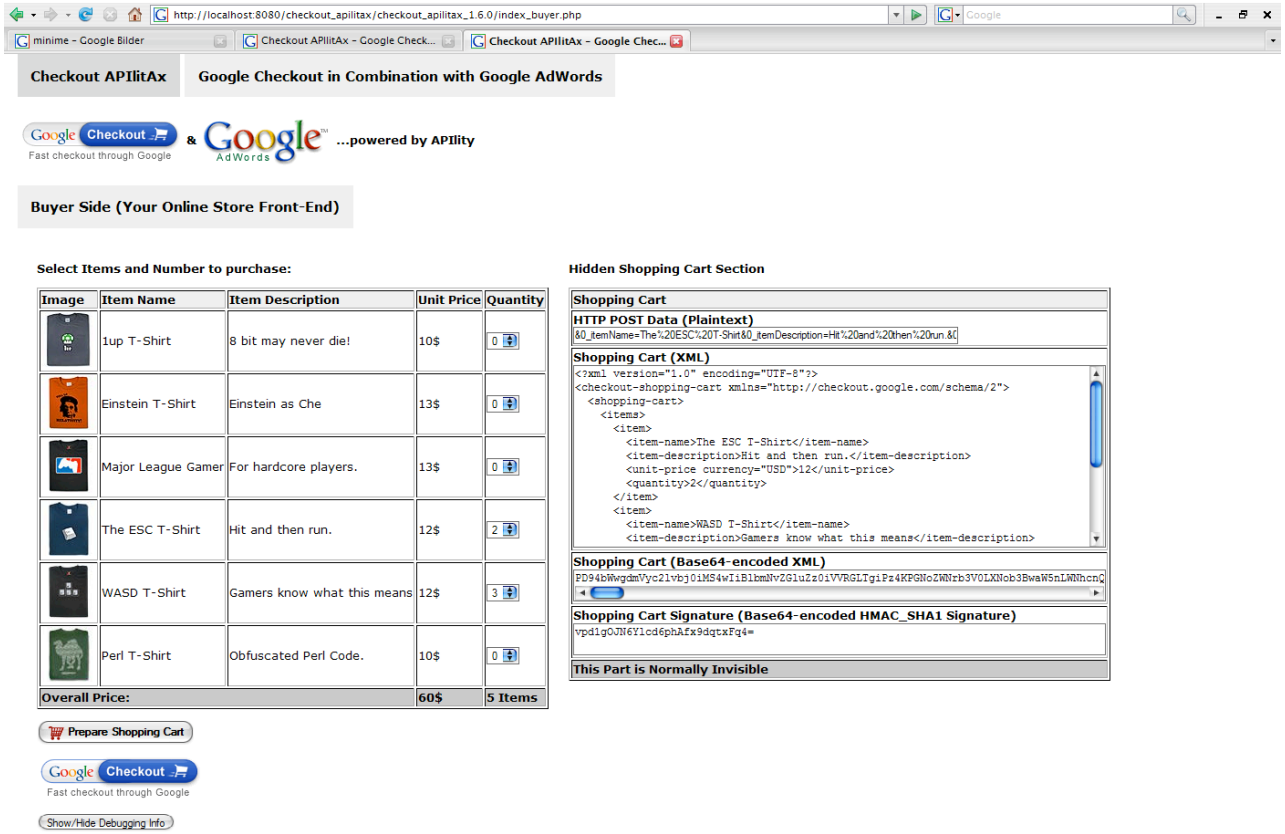
- Merchant Side



AdWords-Checkout Mashup

What does it look like?

- Buyer side



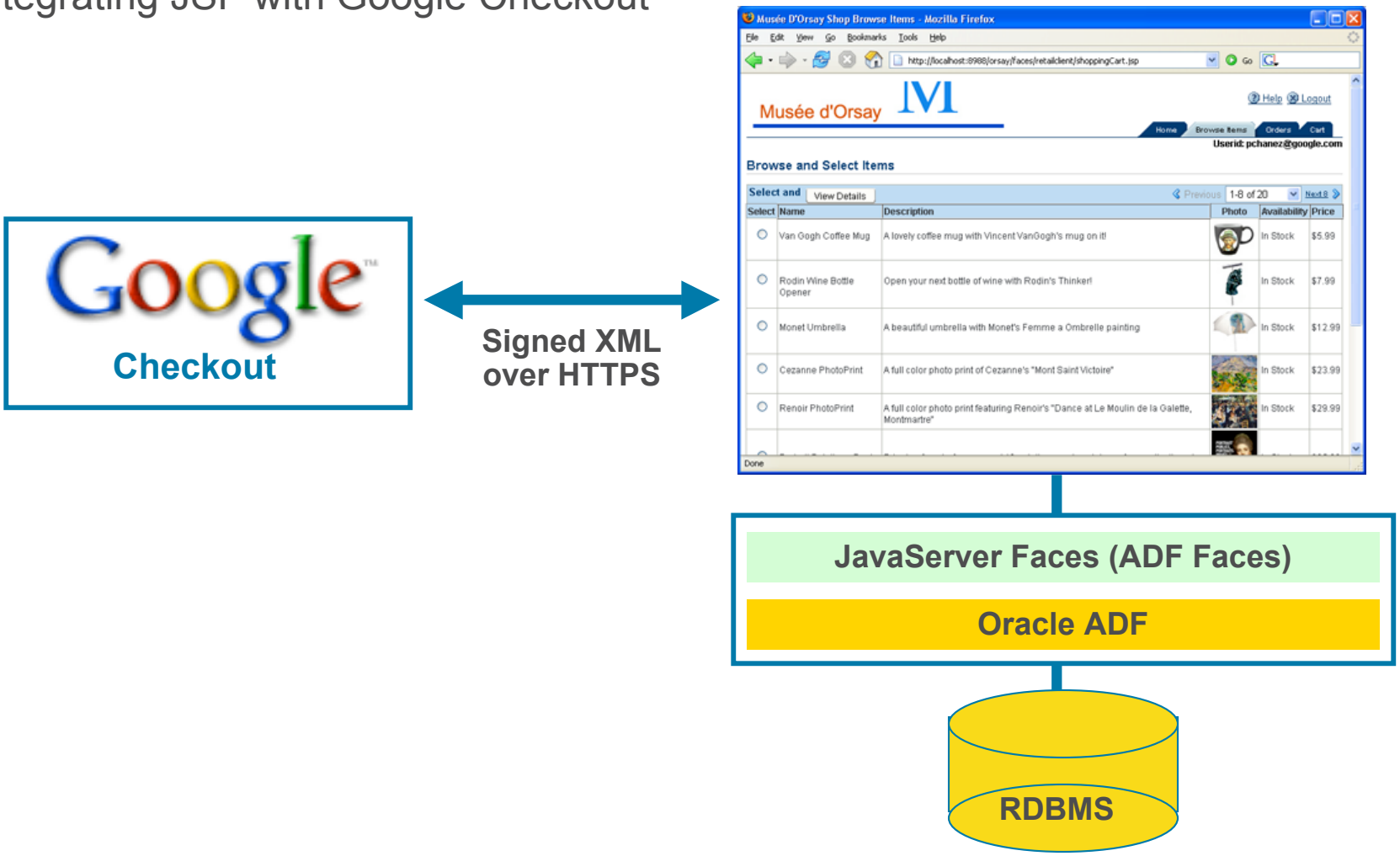
AdWords-Checkout Demo

Google

AdWords-Checkout Mashup live demo

Earth-Checkout Mashup

Integrating JSF with Google Checkout



SOAP vs REST

Google

	+	-
SOAP	Client toolkits: most code can be generated from WSDL Batch support: you batch inside of request	Doc/Lit support uneven
REST	url for resources Can use http libraries, no need SOAP client lib Caching Can load balance without parsing xml based on url components (like checkout API does)	Less code generation: xsd -> lang OK but still need to do http work No agreement on batch (cf Atom PaceBatch discussion)

SOAP vs REST

Google

"S for Simple": Recent blog thread summarized by Tim Bray

- http://www.tbray.org/ongoing/When/200x/2006/11/16/WS-Socratic

"Why SOAP sucks" Nelson Minar, ex-Google, designer of early Google APIs SOAP Search and AdWords

- http://www.somebits.com/weblog/tech/bad/whySoapSucks.html

"There's an amusing dialogue floating around about how simple SOAP is. As someone who bears some past responsibility for well used SOAP services (Google's APIs for search and AdWords) let me say now I'd never choose to use SOAP and WSDL again. I was wrong."

"Truly, none of this protocol fiddling matters. Just do something that works."

XSD vs RELAXNG

Google

We publish the API schema as XSD

- Java -> XSD generation

Some client libraries leverage that: Java (JAXB), .NET

- PHP, Perl, (Ruby) craft and parse xml manually

Should we do RELAXNG as well?

> *"The time has come to declare it a worthy but failed experiment, tear down the shaky towers with XSD in their foundation, and start using RELAX for all significant XML work."*
>
> Tim Bray http://www.tbray.org/ongoing/When/200x/2006/11/27/Choose-Relax

What would be the added value? Code generators in PHP, Perl Ruby?

Conclusion

Google

Google Checkout Holiday Promotions

- Buyers: $10 off purchases of $30
- Sellers: free processing

Google Checkout API:

- Easy things easy: Level 1 integration
  - static Buy Now buttons, html buttons, signed xml
- Difficult things possible: Level 2 integration
  - Uniform XML + HTTP API
  - Open Source Client libraries for many platforms (Java, .NET, PHP…)
  - Pre-integrated in many platforms (OSCommerce, Zen Cart)
  - Professional help available from partners
- Developers can make money with Checkout
  - Incentive program if you help merchant integrate
  - https://services.google.com/inquiry/checkout_ecommerce

Questions

Google